Polypharmacy in the Elderly

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Polypharmacy

• “The desire to take medicine is perhaps the greatest feature which distinguishes men from animals.”
  – Sir William Osler, in H. Cushing, Life of Sir William Osler (1925)

• “I firmly believe that if the whole materia medica as now used could be sunk to the bottom of the sea, it would be all the better for mankind – and all the worse for the fishes.”
  – Oliver Wendell Holmes, 1860
Polypharmacy

• “As older patients move through time, often from physician to physician, they are increasing risk of accumulating layer upon layer of drug therapy, as a reef accumulates layer upon layer of coral.”

  – Jerry Avorn, MD - Arch Gen Med 2004; 164:1957-59
“(Over)medicating the Elderly”

• 10-20% of adults over the age of 65 who go to the hospital do so because of medication related problems

• One in three elderly hospital patients becomes sicker during hospitalization because of prescription medications

• 30-50% of prescriptions written for older adults are taken improperly

• Up to 140,000 seniors die each year because of medication related problems
  • Dr Duxbury UAB Magazine 2005
“(Over)medicating the Elderly”

• “Adverse reactions to medication represent the number-one health problem facing the elderly today” Dr Andrew Duxbury, MD a geriatric medicine specialist at UAB

• His solution is to find one “main brain” for each patient, meaning one physician who can serve as a gatekeeper for all prescriptions, and to recommend an annual “brown bag visit”

• He also says “natural medications, such as herbal supplements, are not solutions to the problem of too many pills”
  • Dr Duxbury UAB Magazine 2005
Reasons for Drug Related Problems in the Elderly

• Multiple medical problems
• Multiple physicians
• Multiple medications (polypharmacy)
• Age related changes in pharmacodynamics
• Age related changes in pharmacokinetics
• Inappropriate medication(s) and doses
• The “prescribing cascade” IE. Drug(s) prescribed to treat a side effect of existing medication(s)
• Inadequate monitoring
• Drug interactions
• Lack of patient adherence/persistence
• Poor communication/coordination
• Costs
Disease(s) or Condition(s) Associated with Potential Medication Related Problems in Older Adults

- Heart Failure
- Hypertension
- Peptic Ulcer Disease
- Epilepsy
- Clotting Disorder
- Bladder Outflow Obstruction
- Stress Incontinence
- Arrhythmia
- Insomnia
- Parkinson Disease
- Cognitive Impairment
- Depression
- Anorexia/Malnutrition
- Syncope/Falls
- SIADH/Hyponatremia
- COPD
- Chronic Constipation
- Obesity

From Updated Beers List
Arch Intern Med 2003;163:2721
Age-Related Changes in Pharmacodynamics

What the drug does in the body or the time course and intensity of the pharmacologic effect(s)

Age related changes:

- Increased sensitivity to sedation and psychomotor impairment
- Increased sensitivity to anticholinergic effects
- Decreased heart rate response to beta blockers
- Increased drowsiness and lateral sway with alcohol
- Increased level and duration of pain relief with opioids
Age and Disease Related Changes in Pharmacokinetics

• Absorption
  • Increased gastric pH
  • Decreased absorptive surface
  • Decreased splanchnic blood flow
  • Decreased GI motility

• Distribution
  • Decreased cardiac output
  • Decreased total body water
  • Decreased lean body mass
  • Decreased serum albumin
  • Increased α1-acid glycoprotein
  • Increased total body fat
Age and Disease Related Changes in Pharmacokinetics

• Metabolism
  • Decreased hepatic mass
  • Decreased hepatic blood flow

• Excretion
  • Decreased renal blood flow
  • Decreased glomerular filtration rate
  • Decreased tubular secretion
    • Mayo Clin Proc 2003:78:1573
Estimated Rates of Emergency Hospitalizations for Adverse Drug Events in Older U.S. Adults, 2007–2009

• Adverse drug events send at least 265,000 seniors to U.S. emergency departments every year and hospitalize nearly 100,000 patients 65 and older, according to a Nov. 24, 2011, study in The New England Journal of Medicine.

• What is striking, experts say, is the study’s finding that four kinds of medications — warfarin, insulins, oral antiplatelet agents and oral hypoglycemic agents — together account for seven in 10 emergency hospitalizations among seniors.

• Nearly two-thirds of all emergency hospitalizations among Medicare patients are due to unintentional overdoses.
Estimated Rates of Emergency Hospitalizations for Adverse Drug Events in Older U.S. Adults, 2007–2009

• The Joint Commission includes "reducing the risk of patient harm from falls" as a National Patient Safety Goal.
Fall Prevention in the Elderly

- One in 4 people age 65 and older will fall every year...leading to about 7 million injuries and over 27,000 deaths.
- Check for meds that may contribute to falls...and stop, switch, or lower doses if appropriate.
- Re-evaluate the need for CNS meds...such as opioids, antipsychotics, benzodiazepines, and non-benzo sedatives (zolpidem, etc).
- Use antidepressants cautiously, if needed. Lean toward a less-sedating SSRI (sertraline, etc) or an SNRI (duloxetine, etc).
- Also try to avoid first-generation antihistamines (diphenhydramine, etc). Instead, use a second-generation (loratadine, etc) or a nasal steroid for allergies...or sleep hygiene or possibly melatonin for sleep.
- Reassess the use of antihypertensives if elderly patients have dizziness or orthostatic hypotension...or diabetes meds if patients have hypoglycemia
Fall Prevention in the Elderly

• The Joint Commission includes "reducing the risk of patient harm from falls" as a National Patient Safety Goal.

• Explain that falling is NOT a normal part of aging.

• Evaluate gait, strength, and balance with quick screening tools such as the Timed Up and Go test.
  • Ask the patient to get out of a chair...walk 10 feet...then return to the chair and sit down again. Older patients who take 12 seconds or longer to complete the test may be at a higher fall risk.

• Recommend other ways to reduce fall risk...such as regular exercise, rising slowly, good lighting, using grab bars, and removing throw rugs.

• Suggest 800 or 1,000 IU/day of vitamin D for most seniors. It may reduce fall risk...possibly by improving muscle strength and balance.
The Timed Up and Go (TUG) Test

• Purpose: To assess mobility

• Equipment: A stopwatch

• Directions: Patients wear their regular footwear and can use a walking aid if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters or 10 feet away on the floor.

• Instructions to the patient: When I say “Go,” I want you to: 1. Stand up from the chair 2. Walk to the line on the floor at your normal pace 3. Turn 4. Walk back to the chair at your normal pace 5. Sit down again

• On the word “Go” begin timing.

• Stop timing after patient has sat back down and record. Time: __________ seconds

• An older adult who takes ≥ 12 seconds to complete the TUG is at high risk for falling.

• Observe the patient’s postural stability, gait, stride length, and sway. Circle all that apply: Slow tentative pace; Loss of balance; Short strides; Little or no arm swing; Steadying self on walls; Shuffling; En bloc turning and/or Not using assistive device properly.

• 1. Don’t recommend percutaneous feeding tubes in patients with advanced dementia; instead offer oral assisted feeding.

• Careful hand-feeding for patients with severe dementia is at least as good as tube-feeding for the outcomes of death, aspiration pneumonia, functional status and patient comfort. Food is the preferred nutrient. Tube-feeding is associated with agitation, increased use of physical and chemical restraints and worsening pressure ulcers.

Five Things Physicians and Patients Should Question

• 2. Don’t use antipsychotics as first choice to treat behavioral and psychological symptoms of dementia.

• People with dementia often exhibit aggression, resistance to care and other challenging or disruptive behaviors. In such instances, antipsychotic medicines are often prescribed, but they provide limited benefit and can cause serious harm, including stroke and premature death. Use of these drugs should be limited to cases where non-pharmacologic measures have failed and patients pose an imminent threat to themselves or others. Identifying and addressing causes of behavior change can make drug treatment unnecessary.
• Avoid using medications to achieve hemoglobin A1c <7.5% in most adults age 65 and older; moderate control is generally better.

• There is no evidence that using medications to achieve tight glycemic control in older adults with type 2 diabetes is beneficial. Among non-older adults, except for long-term reductions in myocardial infarction and mortality with metformin, using medications to achieve glycated hemoglobin levels less than 7% is associated with harms, including higher mortality rates. Tight control has been consistently shown to produce higher rates of hypoglycemia in older adults. Given the long timeframe to achieve theorized microvascular benefits of tight control, glycemic targets should reflect patient goals, health status, and life expectancy. Reasonable glycemic targets would be 7.0 – 7.5% in healthy older adults with long life expectancy, 7.5 – 8.0% in those with moderate comorbidity and a life expectancy < 10 years, and 8.0 – 9.0% in those with multiple morbidities and shorter life expectancy.

• 4. Don’t use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.

• Large scale studies consistently show that the risk of motor vehicle accidents, falls and hip fractures leading to hospitalization and death can more than double in older adults taking benzodiazepines and other sedative-hypnotics. Older patients, their caregivers and their providers should recognize these potential harms when considering treatment strategies for insomnia, agitation or delirium. Use of benzodiazepines should be reserved for alcohol withdrawal symptoms/delirium tremens or severe generalized anxiety disorder unresponsive to other therapies.
Five Things Physicians and Patients Should Question

• 5. Don’t use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.

• Cohort studies have found no adverse outcomes for older men or women associated with asymptomatic bacteriuria. Antimicrobial treatment studies for asymptomatic bacteriuria in older adults demonstrate no benefits and show increased adverse antimicrobial effects. Consensus criteria has been developed to characterize the specific clinical symptoms that, when associated with bacteriuria, define urinary tract infection. Screening for and treatment of asymptomatic bacteriuria is recommended before urologic procedures for which mucosal bleeding is anticipated.

• 6. Don’t prescribe cholinesterase inhibitors for dementia without periodic assessment for perceived cognitive benefits and adverse gastrointestinal effects.

• In randomized controlled trials, some patients with mild-to-moderate and moderate-to-severe Alzheimer’s disease (AD) achieve modest benefits in delaying cognitive and functional decline and decreasing neuropsychiatric symptoms. The impact of cholinesterase inhibitors on institutionalization, quality of life and caregiver burden are less well established. Clinicians, caregivers and patients should discuss cognitive, functional and behavioral goals of treatment prior to beginning a trial of cholinesterase inhibitors. Advance care planning, patient and caregiver education about dementia, diet and exercise and non-pharmacologic approaches to behavioral issues are integral to the care of patients with dementia, and should be included in the treatment plan in addition to any consideration of a trial of cholinesterase inhibitors. If goals of treatment are not attained after a reasonable trial (e.g., 12 weeks), then consider discontinuing the medication. Benefits beyond a year have not been investigated and the risks and benefits of long-term therapy have not been well-established.
7. Don’t recommend screening for breast or colorectal cancer, nor prostate cancer (with the PSA test) without considering life expectancy and the risks of testing, overdiagnosis and overtreatment.

Cancer screening is associated with short-term risks, including complications from testing, overdiagnosis and treatment of tumors that would not have led to symptoms. For prostate cancer, 1,055 men would need to be screened and 37 would need to be treated to avoid one death in 11 years. For breast and colorectal cancer, 1,000 patients would need to be screened to prevent one death in 10 years. For patients with a life expectancy under 10 years, screening for these three cancers exposes them to immediate harms with little chance of benefit.
• Avoid using prescription appetite stimulants or high-calorie supplements for treatment of anorexia or cachexia in older adults; instead, optimize social supports, provide feeding assistance and clarify patient goals and expectations.

• Unintentional weight loss is a common problem for medically ill or frail elderly. Although high-calorie supplements increase weight in older people, there is no evidence that they affect other important clinical outcomes, such as quality of life, mood, functional status or survival. Use of megestrol acetate results in minimal improvements in appetite and weight gain, no improvement in quality of life or survival, and increased risk of thrombotic events, fluid retention and death. In patients who take megestrol acetate, one in 12 will have an increase in weight and one in 23 will die. The 2012 AGS Beers criteria lists megestrol acetate and cyproheptadine as medications to avoid in older adults. Systematic reviews of cannabinoids, dietary polyunsaturated fatty acids (DHA and EPA), thalidomide and anabolic steroids, have not identified adequate evidence for the efficacy and safety of these agents for weight gain. Mirtazapine is likely to cause weight gain or increased appetite when used to treat depression, but there is little evidence to support its use to promote appetite and weight gain in the absence of depression.
• 9. Don’t prescribe a medication without conducting a drug regimen review.

• Older patients disproportionately use more prescription and non-prescription drugs than other populations, increasing the risk for side effects and inappropriate prescribing. Polypharmacy may lead to diminished adherence, adverse drug reactions and increased risk of cognitive impairment, falls and functional decline. Medication review identifies high-risk medications, drug interactions and those continued beyond their indication. Additionally, medication review elucidates unnecessary medications and underuse of medications, and may reduce medication burden. Annual review of medications is an indicator for quality prescribing in vulnerable elderly.
10. Avoid physical restraints to manage behavioral symptoms of hospitalized older adults with delirium.

Persons with delirium may display behaviors that risk injury or interference with treatment. There is little evidence to support the effectiveness of physical restraints in these situations. Physical restraints can lead to serious injury or death and may worsen agitation and delirium. Effective alternatives include strategies to prevent and treat delirium, identification and management of conditions causing patient discomfort, environmental modifications to promote orientation and effective sleep-wake cycles, frequent family contact and supportive interaction with staff. Nursing educational initiatives and innovative models of practice have been shown to be effective in implementing a restraint-free approach to patients with delirium. This approach includes continuous observation; trying re-orientation once, and if not effective, not continuing; observing behavior to obtain clues about patients’ needs; discontinuing and/or hiding unnecessary medical monitoring devices or IVs; and avoiding short-term memory questions to limit patient agitation. Pharmacological interventions are occasionally utilized after evaluation by a medical provider at the bedside, if a patient presents harm to him or herself or others. Physical restraints should only be used as a very last resort and should be discontinued at the earliest possible time.
“The Prescribing Cascade”

• A prescribing cascade occurs when the adverse effect(s) of a medication is misinterpreted as a symptom or sign of a new disorder and a new medication is prescribed to treat it.

• This new unnecessary medication may cause additional adverse effects, which may then be misinterpreted as yet another disorder and treated with yet another unnecessary medication
"The Prescribing Cascade"

- Antipsychotics may cause extra pyramidal effects which may be mistaken for Parkinson’s Disease elderly patients and be treated with anti-Parkinson medications which may result in orthostasis, delirium and antagonism of the antipsychotic medication.

- Metoclopramide -> Parkinson’s -> levodopa/carbidopa
- Amlodipine -> edema -> furosemide
- NSAID -> hypertension -> antihypertensive
- NSAID -> GI distress -> cimetidine -> delirium -> haloperidol
- HCTZ or furosemide -> Hyperuricemia -> Gout -> additional antihypertensive
- Type 2 DM -> metformin -> neuropathy -> gabapentin
6 steps to preventing adverse drug events in seniors

• Start low and go slow. Seniors process medicines differently from younger patients and often require lower doses than what is generally recommended as an adult dose. Titrate more slowly than with a younger patient.

• Counsel seniors on the name, dose, indication and potential side effects when prescribing new medications. Ask them to report any significant side effects immediately. Use the “teach-back” method, asking patients to repeat what they understand about what you have said.

• Ask patients to bring each of their medications to an appointment after a medication change. Seniors have greater trouble reading and understanding health information, such as prescription labels. Have them read each label and express in their own words what they believe it says about how and when to take the medication and what the drug’s purpose is. Correct any misunderstandings about prescription labels and have patients or family write out, in the patient’s own words, instructions for taking the medicines.

• Keep an accurate medication list for each patient, and ask patients about medications prescribed by other physicians, as well as any over-the-counter drugs or herbal supplements. Watch for potential contraindications and superfluous medications. Update seniors’ drug lists at least once or twice a year, reconcile medications after a hospital stay and routinely ask about side effects.

• Ask regularly if patients are taking their medicines, including as-needed drugs. If a prescribed medication is not being taken, it may signal that a patient had an adverse reaction to the drug. A patient’s noncompliance could lead to higher doses and unintentional overdose if the senior then starts taking the drug.

• Submit adverse events to the Institute for Safe Medication Practices’ National Medication Errors Reporting Program. Also, report serious problems to the Food and Drug Administration’s MedWatch program.
  - Sources: American Geriatrics Society Foundation for Health in Aging; Sharon Brangman, MD; Institute of Medicine; Urmimala Sarkar, MD, MPH
Deprescribing Protocol

5 steps:

• (1) ascertain all drugs the patient is currently taking and the reasons for each one;

• (2) consider overall risk of drug-induced harm in individual patients in determining the required intensity of deprescribing intervention;

• (3) assess each drug in regard to its current or future benefit potential compared with current or future harm or burden potential;

• (4) prioritize drugs for discontinuation that have the lowest benefit-harm ratio and lowest likelihood of adverse withdrawal reactions or disease rebound syndromes; and

• (5) implement a discontinuation regimen and monitor patients closely for improvement in outcomes or onset of adverse effects.

Which Meds to Consider Stopping?

Figure. Algorithm for Deciding Order and Mode in Which Drug Use Could Be Discontinued

1. No benefit
   Significant toxicity OR no indication OR obvious contraindication OR cascade prescribing?
   Yes
   No

2. Harm outweighs benefit
   Adverse effects outweigh symptomatic effect or potential future benefits?
   Yes
   No

3. Symptom or disease drugs
   Symptoms stable or nonexistent?
   Yes
   No

4. Preventive drugs
   Potential benefit unlikely to be realized because of limited life expectancy?
   Yes
   No

Continue drug therapy

Withdrawal symptoms or disease recurrence likely if drug therapy discontinued?
   Yes
   Taper dose and monitor for adverse drug withdrawal effects
   No
   Symptoms stable or nonexistent?
   Yes
   Restart drug therapy
   No

Discontinue drug therapy

Prudent Prescribing Principles

• Know your patients and their drug cabinets
• Educate yourself and your patients
• Understand biases in clinical trials
• Ask about compliance
• Always include ADRs in the differential diagnosis of a new problem
• Try non-pharmacologic strategies
• Offer drug therapy when indicated
What is the Purpose of the ADS/Beers 2015 Criteria?

• To identify potentially inappropriate medications that should be avoided in many older adults

• To reduce adverse drug events and drug related problems, and to improve medication selection and medication use in older adults

• Designed for use in any clinical setting; also used as an educational, quality, and research tool
Optimizing Use of the Beers Criteria: A Guide

- As part of 2015 update of the Beers Criteria, AGS created a workgroup to encourage optimal use of the criteria by patients, clinicians, health systems, and payors
  - Included input from key stakeholders
- Workgroup developed:
  - 7 key principles to guide optimal use of the criteria
  - Guidance for how clinicians and others can apply these principles in everyday practice
7 Key Principles

• There are 7 key principles to guide optimal use of the Beers Criteria

• But, the most important take-home message is this:

  *Use clinical common sense!*

• The Beers criteria are intended to support, not contradict, common sense and good clinical care
Key Principle #1

Medications in the AGS 2015 Beers Criteria are potentially inappropriate, not definitely inappropriate.

• The Beers Criteria comprise meds which have unfavorable balance of benefits and harms for many older adults
  – Particularly in light of available alternatives
• But, there are some older adults in which use of Beers Criteria meds can be appropriate
• So, Beers Criteria meds merit special scrutiny....but they should not be considered definitely inappropriate for all older adults
Key Principle #2

Read the rationale and recommendations statements for each criterion. The caveats and guidance listed there are important.

• Medication appropriateness is not black or white
• Many medications are considered potentially inappropriate only in certain circumstances
• Understanding true meaning and purpose of each criterion is critical for proper interpretation
Key Principle #3

Understand why medications are included in the AGS 2015 Beers Criteria, and adjust your approach to those medications accordingly.

- It is not enough to know that a medication is included in the criteria. Clinicians should know why it is there
  - This info is provided in the “rationale” statement of each criterion
- Reason why a medication is in criteria can help guide how stringent we should be in avoiding it
- Also, allows us to individualize decision-making for individuals based on their anticipated risk
Key Principle #4

Optimal application of the AGS 2015 Beers Criteria involves ... offering safer non-pharmacologic and pharmacologic therapies.

- AGS is developing a list of alternative therapies
- Often the best alternatives involve non-pharmacologic strategies, including patient counseling and lifestyle changes
Key Principle #5

The AGS 2015 Beers Criteria should be a starting point for a comprehensive process of identifying and improving medication appropriateness and safety.

• The Beers Criteria capture only a small percentage of medication-related problems in older adults

• The criteria work best when used as a starting point to review and discuss a patient’s entire medication regimen
  – This involves addressing a range of issues including (but not limited to) medication appropriateness, adherence, and adverse events
Key Principle #6

Access to medications included in the AGS 2015 Beers Criteria should not be excessively restricted by prior authorization and/or health plan coverage policies.

• Incentivizing judicious use of Beers Criteria medications through insurance design can be reasonable
• But, onerous restrictions can disrupt care and hinder access to medications for patients who need them
• Programs that restrict access should be carefully targeted and give clinicians efficient opportunities to justify use
Key Principle #7

The AGS 2015 Beers Criteria are not equally applicable to all countries.

- The criteria were created principally based on medications available in the United States
- Prior versions of Beers have been adapted for several countries
- It is reasonable to use broad-based categories of the criteria to identify potentially inappropriate medications
Application of Key Principles For Patients & Caregivers

• Don’t stop taking a medication just because it is on the Beers Criteria

• But, talk with your clinicians if there is a safer and/or more effective alternative
  – This can include doctors, nurses, pharmacists, and others

• Learn about all of the medications that you take, and let your clinician(s) know if you think you might be having a side effect, or if you are having any other problem.
Application of Key Principles for Clinicians

• Think of the Beers Criteria as a warning light

• Whenever you think about prescribing or renewing a Beers medication, the “warning light” should make you stop and think:
  – Why is the patient taking the drug; is it truly needed?
  – Are there safer and/or more effective alternatives?
  – Does my patient have particular characteristics that increase or mitigate risk of this medication?
  – But, keep in mind that there are situations in which use of Beers medications is justified and appropriate
Application of Key Principles for Clinicians

• Don’t let Beers Criteria distract you from closely attending to other elements of prescribing that are not addressed by the criteria.

• These include
  – Other high-risk medications (e.g. warfarin, hypoglycemics)
  – Medication adherence
  – Unnecessary medication use
  – Underuse of medications
  – And more (!)
Application of Key Principles for Health Systems & Payors

• Performance monitoring systems based on Beers Criteria can work well on a population level, but these systems should not judge care as inappropriate for a individual patients

• Don’t forget to measure other domains of pharmaceutical care quality like medication monitoring, medication adherence, and underuse of medications

• If used in prior authorization or similar systems:
  – Give clinicians an efficient means to justify use for specific patients
  – Where possible, suggest alternative therapies
AGS/BEERS Criteria for Potentially Inappropriate Medication Use in the Elderly

- Anticholinergics (including first generation antihistamines)
- Antispasmodics
- Nitrofurantoin
- Peripheral alpha 1 blockers (including doxazosin)
- Central alpha blockers (including clonidine)
- Digoxin
- Antidepressants (including TCA’s, paroxetine)
- Antipsychotics (including both first and second generation or atypical agents)
- Benzodiazepines
- Non-Benzodiazepine BZ selective hypnotics (including zolpidem etc.)
AGS/BEERS Criteria for Potentially Inappropriate Medication Use in the Elderly

- Desiccated thyroid
- Estrogen with or without progesterone
- Insulin: sliding scale
- Sulfonylureas (chlorpropamide, glyburide)
- Metoclopramide
- Proton Pump inhibitors
- NSAID’s
- Meperidine
- Skeletal muscle relaxants
Judicious Prescribing

• Judicious prescribing is a prerequisite for safe and appropriate medication use. Based on evidence and lessons from recent studies demonstrating problems with widely prescribed medications, we offer a series of principles as a prescription for more cautious and conservative prescribing. These principles urge clinicians to:

• (1) think beyond drugs (consider nondrug therapy, treatable underlying causes, and prevention);
Judicious Prescribing

• (2) practice more strategic prescribing (defer non-urgent drug treatment; avoid unwarranted drug switching; be circumspect about unproven drug uses; and start treatment with only 1 new drug at a time);

• (3) maintain heightened vigilance regarding adverse effects (suspect drug reactions; be aware of withdrawal syndromes; and educate patients to anticipate reactions);

Principles of Conservative Prescribing; Arch Intern Med.
Published online June 13, 2011
Judicious Prescribing

(4) exercise caution and skepticism regarding new drugs (seek out unbiased information; wait until drugs have sufficient time on the market; be skeptical about surrogate rather than true clinical outcomes; avoid stretching indications; avoid seduction by elegant molecular pharmacology; beware of selective drug trial reporting);

Principles of Conservative Prescribing; Arch Intern Med.
Published online June 13, 2011
Judicious Prescribing

• (5) work with patients for a shared agenda (do not automatically accede to drug requests; consider nonadherence before adding drugs to regimen; avoid restarting previously unsuccessful drug treatment; discontinue treatment with unneeded medications; and respect patients’ reservations about drugs); and

• (6) consider long-term, broader impacts (weigh long-term outcomes, and recognize that improved systems may outweigh marginal benefits of new drugs).

Principles of Conservative Prescribing; Arch Intern Med. Published online June 13, 2011