# Promoting More Conservative Prescribing

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ALTHOUGH MEDICAL AND PHARMACY CURRICULA and journals are rich with information about drugs and treatment of specific diseases, there is a paucity of education on ways to become effective lifetime prescribers. Two recent reports from the Association of American Medical Colleges (AAMC) lamented the current state of pharmacology teaching[1] and the disturbing extent of pharmaceutical industry influence at all stages of medical education.[2] Given the well-documented prevalence of medication-related harm and inappropriate prescribing,[3,4] such educational reform is necessary but not sufficient to ensure that patients are optimally treated. Beyond improved training in pharmacology and minimization of unbalanced industry-sponsored education, trainees need guiding principles to inform their thinking about pharmacotherapy to help them become more careful, cautious, evidence-based prescribers.

In this Commentary, we offer 25 such principles (BOX), making no claims that they represent the definitive or comprehensive antidote to the many factors contributing to suboptimal prescribing. However, based on our experience educating physicians, pharmacists, and medical students, we believe these lessons are fundamental for teaching clinicians how to develop excellent prescribing skills, yet such fundamentals are absent or underemphasized in current medical and pharmacy education.

The AAMC report emphasized expanded teaching about "factors that make each patient unique," pharmacology and pharmacokinetics, optimal dosing, prescribing regulations, drug interactions and adverse reactions, and use of drug compendia and informational resources.[1] However, prescribers also need to be taught a set of skills and attitudes that will help them approach claims for drugs, especially new drugs, more critically. Although the AAMC document discusses the need for a number of patient monitoring and communication functions embodied in these conservative prescribing principles, without a more cautious and, frankly, more skeptical approach to using drugs, prescribers will lack the will and the skills to resist ubiquitous promotional messages encouraging them to reach for newer and often more expensive medications.

Such skepticism needs to be grounded in historical and current lessons that offer reasons for precaution. Lessons from iatrogenic events related to agents such as thalidomide, phen-fen, or rofecoxib (Vioxx); recognition that new medications are tested in limited numbers of patients with few comorbidities, typically for a relatively short time; and disquieting revelations that promotional activities distort what prescribers learn about drugs[5] are lessons worth learning and incorporating into prescribing decision making. Although the attitudes and behaviors recommended in our principles should not be terribly controversial, taken together they represent a departure from current practice. If prescribers routinely heeded these principles, many patients could be spared the risk or expense of needless or harmful drug therapy.

## Principles for More Conservative Prescribing

**Think Beyond Drugs.** More than learning to "just say no" to drugs, clinicians require confidence, time, evidence, and readily available options for alternate ways of helping patients. These include physical therapy, exercise, diet changes, counseling, stress reduction techniques, or even surgery where appropriate. Placing more emphasis on prevention will lead to a greater return for clinicians' investment of time and resources.

**Practice More Strategic Prescribing.** Smarter approaches to initiation, selection, and changing drug regimens are needed. Too often clinicians reflexively prescribe for each symptom a patient experiences. Although operational aspects of the principles in this category need to be more rigorously studied and individualized for each patient, problem, drug, and indication, the need for more judicious prescribing practices is obvious.

**Heightened Vigilance Regarding Adverse Effects.** Studies show that the adverse effects of many drugs are either

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**Box. Principles of Conservative Prescribing**

**Think Beyond Drugs**

Seek nondrug alternatives as first rather than last resort

Treat underlying causes rather than solely treating symptoms

Look for prevention opportunities rather than exclusively focusing on established disease or symptom amelioration

**More Strategic Prescribing**

Defer immediate drug treatment whenever possible and desirable

Use only a few drugs; learn to use them well

Avoid drug switching without compelling evidence-based reasons

Be skeptical about "individualizing" therapy when trials suggest little evidence of benefit in the studied cohort

Be cautious about telephone or e-mail prescribing

Whenever possible, start only 1 new drug at a time

**Heightened Adverse Effects Vigilance**

Maintain a high index of suspicion for adverse drug effects

Educate patients about potential adverse effects to ensure more timely recognition

Be alert to clues of drug withdrawal symptoms masquerading as disease "relapses"

**Caution and Skepticism Regarding New Drugs**

Learn about new drugs and new indications from unbiased sources and from colleagues with reputations for conservative prescribing

Do not rush to use new drugs, for new adverse effects often emerge later

Be certain drugs improve clinical outcomes rather than solely modify a surrogate marker

Do not stretch indications away from trial-based evidence

Avoid seduction by elegant pharmacology or physiological mechanisms in the absence of demonstrated clinical outcomes benefit

Beware of selective reporting or presentation of studies

**Shared Agenda With Patients**

Do not reflexively succumb to patients' requests for new drugs they have heard advertised or recommended

Avoid prescribing additional drugs for "refractory" problems, failing to appreciate possible nonadherence

Obtain accurate medication histories to avoid repeat prescriptions for drugs previously tried unsuccessfully

Discontinue drugs not working or no longer needed

Work with and promote patients' desires for conservative therapy

**Weigh Long-term, Broader Impacts**

Think beyond short-term effects; consider longer-term benefits and risks

Seek better prescribing systems (computerized physician order entry, reliable laboratory monitoring) rather than just new drugs as ways to improve pharmacotherapy

entirely overlooked or their recognition is delayed—both in individual patients[6] and in populations using the drug.[7] Patients need to be better educated in anticipating problems, and signals of potential adverse effects need to be addressed in more scientific and timely ways. Closer linkage between macro-level epidemiological pharmacovigilance and personal clinician vigilance needs to occur.

**Caution and Skepticism Regarding New Drugs.** New drugs often appear to be safer—a deceptive impression resulting from more limited experience with their use. Only when more adequate types and numbers of patients are studied for sufficiently long periods can a more accurate profile of their risks and benefits emerge. Although many payers stress prescribing generic medications for cost savings, another important value of generics is the greater safety knowledge inherent in their longer track record compared with more newly marketed brand name products.[7] When using new drugs, prescribing should be more limited and should target patients, indications, and situations for which benefit has been demonstrated.

**Shared Agenda With Patients.** Much excessive prescribing is attributed to patients' demands for drugs—demands driven by direct-to-consumer advertising[8] or expectations for medications such as antibiotics, sleep medications, or analgesics. Prescribers need to learn new approaches, deploying aikido-like tactics, skillfully leveraging them to redirect rather than simply refuse such requests. Thus, in lieu of blanket refusals and administrative barriers and in lieu of the imposition of arbitrary and often unfair formulary tiers and co-pays, more thoughtful clinical approaches to rationalizing utilization are needed. These should involve patients directly based on their personal medication experiences, accurate drug histories, trust built on realistic expectations, and a shared desire to use only the minimum number of drugs necessary.

**Weigh Longer-term, Broader Effects.** Drugs can provide short-term benefits, but often their long-term effects are subobtimal or unknown. For example, treating obesity or onychomycosis with drugs can be quite effective in the short term, but long-term results are often disappointing.[9,10] Ecological effects of antibiotics are obviously important considerations, but the environmental effects of other pharmaceutical chemicals is also an emerging issue.[11] To achieve safer, more effective prescribing practices requires more than the mere development of new chemical entities or the restraining of the prescribers' pens—it also requires efforts to make prescribing systems safer.[12]

## Countervailing Factors—Barriers to Conservative Prescribing

Despite their apparent simplicity and logic, implementing these prescribing principles is not easy. Understanding and overcoming barriers is critical. Practicing clinicians face tremendous time pressures—the ease of writing a prescription compared with pursuing alternative approaches cannot be overestimated. Specialist physicians feel compelled to prescribe newer drugs because many referred patients report failing more conservative therapies, and a specialist physician's reputation is seemingly enhanced by using the latest treatment advances. Advocates of more aggressive control of risk factors for cardiac and other chronic diseases are now tying physicians' payments to their performance in overcoming "clinical inertia," a concept that conservative approaches superficially resemble. Meanwhile with income bonuses linked to patient satisfaction ratings, why risk disappointing patients who request a medication they had seen advertised? Patients who have unresponsive or incurable conditions cling to hopes raised by so-called promising studies, often appealing to their physicians for a chance to try new drugs.

The published medical literature is a minefield deterring conservative prescribing. Various factors mitigate a balanced picture of risks and benefits. From well-documented biases that arise in industry-funded and designed studies that dominate therapeutic research to more subtle publication biases (negative trials are less newsworthy) that also work against conservative prescribing conclusions,[13] there are relatively few funded advocates or breakthrough studies urging a conservative course. Even ethical patient protections such as early stopping rules—which can tilt toward early study termination at a time significant benefit is demonstrated but perhaps before sufficient time for rarer adverse outcomes emerge—or ethical qualms in withholding active drug treatment for a control group all lean away from conservative findings and lessons.

## Conclusions

Considered in isolation, none of these conservative prescribing principles is particularly novel. But taken together they represent a significant shift in current prescribing patterns. Medical therapy for many acute and chronic diseases and their risk factors has come to be dominated by aggressive treatment approaches. From diabetes to rheumatoid arthritis, from mental disorders to heart failure, a philosophy of "newer and more is better" has replaced one that stresses "fewer and more time-tested is best." These principles aim to restore a balance between these 2 philosophies, recognizing that as guiding principles, they should be flexibly interpreted in response to specific therapies, individual clinical circumstances, and local organizational factors.

From Osler[14] to leading pharmacology textbooks, taking a more skeptical and conservative approach to pharmacotherapy has a long and honorable history in medicine. These principles extend the AAMC recommendations in urging more cautious and judicious drug use. Rather than therapeutic nihilism, the approach of these guidelines aims to better respect the limitations of knowledge and more closely align clinicians with the interests of patients.

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