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# HOW CLINICAL PRACTICE GUIDELINES CAN IMPROVE MEDICAL PRACTICE

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Clinical practice guidelines have been proposed as a means to achieve several goals in health care delivery, most notably to improve quality, decrease variability, and contain costs. In addition, guidelines are seen as a way to empower physicians (through their participation in guideline development), educate medical personnel and patients, influence public health care policy, close the gap between scientific evidence and clinical practice, and encourage researchers to study clinical processes and outcomes [1].

These are lofty goals. Clinical practice guidelines, however, can contribute to their accomplishment if the guidelines are clearly written, goal oriented, specific as to the patient and clinical situation to which they apply, subject to quality review, and evidence based as much as possible, with full disclosure when they are not. Finally, national or international guidelines must be adapted for local use, with generous input from the professionals who will use them.

## What Is a Guideline?

The Institute of Medicine (IOM) defines clinical practice guidelines as “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” [2]. Implicit in this definition is the requirement that sufficient scientific evidence be combined with clinical judgment to develop strong recommendations for health care. Also emphasized is the ability of guidelines to lead to the provision of appropriate health care services in the individual circumstances faced by practitioners and patients. Guidelines might be used to establish a schedule for screening diabetic patients for retinopathy, to determine the appropriate use of common diagnostic procedures such as blood chemistry screening, and to ensure maximal effectiveness of a therapeutic regimen for hypertension or hypercholesterolemia.

Clinical practice guidelines exist in many different formats (eg, text, algorithms, pathways, flowcharts) and may also be referred to as protocols, parameters, or policies. When evidence for the use of a practice guideline is so strong that exceptions to its application are rare, the guideline is considered to be a “standard of care” [3].

## Past and Present Sources of Guidelines

Clinical practice guidelines are not a new concept. Textbooks of medicine and surgery have long been repositories of recommendations for the evaluation and treatment of health problems. In the 1920s, the American Medical Association (AMA) began endorsing preventive care recommendations that were based on epidemiological data from the insurance industry. The early AMA recommendations and the “guidelines” commonly found in textbooks, however, would not fulfill the IOM’s definition of practice guidelines.

The concept of evidence-based practice emerged with the advent of randomized controlled trials (RCTs) and the subsequent use of RCTs in systematic reviews that document evidence. In 1984, the U.S. Public Health Service, taking the lead set by the Canadian Task Force on the Periodic Health Examination, commissioned the U.S. Preventive Services Task Force (USPSTF) to develop recommendations for appropriate preventive care interventions based on a systematic review of evidence of clinical effectiveness. The resulting USPSTF *Guide to Clinical Preventive Services* was published in 1989 and updated in 1996 [4]. The task force reconvened in late 1998 to update these recommendations.

In 1989, federal legislation led to the creation of the Agency for Health Care Policy and Research (AHCPR) within the U.S. Department of Health and Human Services. This agency was established, in part, to respond to concerns about the variability in health care practices and the uncertainty about the effectiveness of health care services. As part of its mission to improve quality, reduce costs, and improve access, the AHCPR was directly involved in developing clinical practice guidelines until 1996, when the agency’s role was redefined. The AHCPR now assists private sector groups by supplying them with scientific evidence needed to develop their own guidelines for evidence-based care.

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### National Guideline Clearinghouse™

The National Guideline Clearinghouse™ (NGC™) is a recently launched World Wide Web-based archive of clinical practice guidelines and related information. Sponsored by the AHCPR in partnership with the AMA and the American Association of Health Plans, this new database provides online access to guidelines that had previously been both inaccessible and difficult to evaluate. The NGC™ is available to Internet users free of charge at the following address: <http://www.guideline.gov>.

Guideline development has increased rapidly in response to a growing interest in improving medical care, reducing variability in health care decisions, and reducing health care costs. Disparities in the content of recommendations and the methodology of guideline development have further complicated the process of guideline use in day-to-day practice. The NGC™ attempts to eliminate these problems by creating standardized abstracts that include information on each guideline and how it was developed; presenting the full text of guidelines, or links to them, and information on how to get copies of the guidelines; comparing guidelines in similar subject areas;

and providing topic-related e-mail groups in which registered users can exchange useful information.

Submissions to the NGC™ are reviewed using specific criteria designed to provide the most relevant, comprehensive, and up-to-date guidelines in any given specialty. To be included in the NGC™, a clinical practice guideline must:

- Contain systematically developed statements to help physicians and patients make decisions about appropriate health care in specific clinical situations.
- Be produced with the support of medical specialty associations; relevant professional societies; public or private organizations; government agencies at the federal, state, or local level; or health care organizations or plans.
- Be able to produce documentation confirming that the guideline development team performed appropriate literature reviews and searches of scientific evidence published in peer-reviewed journals.
- Be written in English and in its most current form. (Guidelines must have been developed, reviewed, or revised within the last 5 years.)

Recent years have witnessed a flurry of practice guideline development by many organizations, including other federal agencies (eg, National Institutes of Health [NIH], Centers for Disease Control and Prevention, Food and Drug Administration), national medical specialty societies and other physician groups, as well as managed and other health care organizations. The AMA's *Clinical Practice Guidelines Directory* lists nearly 2000 guidelines from approximately 90 sources [5]. Two recent initiatives—the National Guideline Clearinghouse™ (*see sidebar*) and the AMA Clinical Practice Guideline Recognition Program—promise to facilitate both access to and assessment of the voluminous and bewildering array of clinical practice guidelines currently available.

#### What Constitutes a "Good" Guideline?

Guidelines are unlikely to be trusted by physicians or truly helpful in achieving improved health care outcomes if they are not well developed, scientifically based, and usable in practice. Good guidelines address common clinical situations and are practical and simple to follow. The more complex a guideline, the less likely it is to be evidence based, applicable to large numbers of patients, and amenable to implementation and critical review. Desirable attributes of clinical practice

guidelines as defined by the IOM are described in **Table 1** [2].

#### Content

Guidelines may include recommendations based on expert consensus, local convention, or best practices, but this should be clearly stated and distinguished from more scientifically based recommendations. The USPSTF and other guideline developers have created systems for grading recommendations based on the level of evidence that supports them [4]; although subtle differences exist between different systems, the highest rating is usually given to recommendations based on the results of RCTs, and the lowest rating is given to those based on expert consensus or case reports. The USPSTF uses a two-part system to rate its recommendations for periodic health assessments (**Table 2**): the *quality of evidence* in support of the recommendation and the *strength of recommendation* based on the quality of evidence combined with other factors, such as the burden of suffering, risk versus benefit of treatment, and clinical effectiveness studies. Additional factors that may be considered by other organizations in grading recommendations include cost, risk of side effects, magnitude of the condition in the population, and practical application of a recommendation [6].

**Table 1.** Desirable Attributes of Clinical Practice Guidelines

Attribute	Description
Validity	Practice guidelines are valid if, when followed, they lead to the health and cost outcomes projected for them. A prospective assessment of validity will consider the substance and quality of the evidence cited, the means used to evaluate the evidence, and the relationship between the evidence and recommendations.
Strength	Practice guidelines should be accompanied by descriptions of the strength of the evidence and expert judgment behind them.
Estimated outcomes	Practice guidelines should be accompanied by estimates of the health and cost outcomes expected from the interventions in question, compared with alternative practices. Assessments of relevant health outcomes will consider patient perceptions and preferences.
Reliability/reproducibility	Practice guidelines are reproducible and reliable if (1) given the same evidence and methods for guideline development, another set of experts produces essentially the same statements; and (2) given the same clinical circumstances, the guidelines are interpreted and applied consistently by practitioners (or other appropriate parties).
Clinical applicability	Practice guidelines should be as inclusive of appropriately defined patient populations as evidence and expert judgment permit, and they should explicitly state the population(s) to which statements apply.
Clinical flexibility	Practice guidelines should identify the specifically known or generally expected exceptions to their recommendations and discuss how patient preferences are to be identified and considered.
Clarity	Practice guidelines should use unambiguous language, define terms precisely, and use logical and easy-to-follow modes of presentation.
Multidisciplinary process	Practice guidelines should be developed by a process that includes participation by representatives of key affected groups. Participation may include serving on panels that develop guidelines, providing evidence and viewpoints to the panels, and reviewing draft guidelines.
Scheduled review	Practice guidelines should include statements about when they should be reviewed to determine whether revisions are warranted, given new clinical evidence or professional consensus (or the lack of it).
Documentation	In developing guidelines, the procedures followed, the participants involved, the evidence used, the assumptions and rationales accepted, and the analytic methods employed should be meticulously documented and described.

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**Development Process**

A guideline should be clearly written, with a statement of the reasons for its development (why is it needed?), the goals to be accomplished, the participants in its development, and the sponsor. The recommendations should be explicit, with sufficient information given so that the patients and the situations to which the guideline applies are clear. For example, the NIH guideline for the diagnosis and management of asthma clearly states the treatment that is appropriate at specific levels of disease severity [7]. The guideline recommends a stepped-care approach based on a patient’s asthma symptoms: the more severe or frequent the symptoms, the more aggressive the treatment. In that way, treatment is tailored to the individual patient. This is helpful to both the clinician and the patient by decreasing the potential for undertreatment as well as overtreatment.

Guidelines should be reviewed and updated regularly, and this schedule should be clearly stated. Obsolete guidelines erode clinician confidence in the guideline development process. In an area of vigorous clinical research, 3 to 5 years may outdate a guideline as new studies may drastically change practice recommendations. Every new study should not necessarily lead to a change in guidelines or practice. However, when several good studies show significant findings, a guideline should be reviewed and updated.

**Example: The “Ottawa Ankle Rules”**

An example of a successful guideline is the “Ottawa ankle rules” for use of radiography in the evaluation of ankle trauma, which clearly states the clinical situation in which a radiograph is recommended [8]. The criteria are few, straightforward, and easy to remember. If the patient has

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**Table 2.** Rating System for United States Preventive Services Task Force Recommendations

Rate	Description
<b>Quality of evidence</b>	
I	Evidence obtained from at least one properly randomized controlled trial.
II-1	Evidence obtained from well-designed controlled trials without randomization.
II-2	Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.
II-3	Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (eg, the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.
III	Opinions of respected authorities, based on clinical experience; descriptive studies and case reports; or reports of expert committees.
<b>Strength of recommendation</b>	
A	There is good evidence to support the recommendation that the condition be specifically considered in a periodic health examination.
B	There is fair evidence to support the recommendation that the condition be specifically considered in a periodic health examination.
C	There is insufficient evidence to recommend for or against the inclusion of the condition in a periodic health examination, but recommendations may be made on other grounds.
D	There is fair evidence to support the recommendation that the condition be excluded from consideration in a periodic health examination.
E	There is good evidence to support the recommendation that the condition be excluded from consideration in a periodic health examination.

NOTE: Determination of the quality of evidence (ie, "good," "fair," "insufficient") in the strength of recommendations was based on a systematic consideration of three criteria: the burden of suffering from the target condition, the characteristics of the intervention, and the effectiveness of the intervention as demonstrated in published clinical research. (Reprinted with permission from Guide to clinical preventive services: report of the U.S. Preventive Services Task Force. 2nd ed. Baltimore (MD): Lippincott Williams & Wilkins; 1996:861-2.)

pain and tenderness in one of two locations or is unable to bear weight, an ankle radiograph is beneficial. When studied prospectively, the use of the Ottawa ankle rules guideline showed a decrease in the number of ankle

radiographs performed, a decrease in the amount of time a patient spent in the emergency department, and a cost savings with maintained quality (no increase in undiagnosed fracture in the study group versus control group) [8]. By sufficiently narrowing the scope of the guideline, the developers were able to meet the IOM's criteria of a good guideline. The Ottawa ankle rules is one of the few guidelines to be studied in a controlled manner and published in a peer-reviewed journal, thereby fulfilling the goal of encouraging scientific investigation.

### How Are Guidelines Incorporated into Practice?

Several steps should be taken when incorporating guidelines into clinical practice to ensure a successful change in practice patterns. In the following discussion, these steps are illustrated using a scenario in which a health maintenance organization (HMO) suggests that a physician group implement a guideline for management of congestive heart failure (CHF).

### Identify an Area to Improve

As part of their routine quality assurance program, a large HMO with whom your multispecialty group contracts reviews your charts and finds that you are not meeting their criteria for quality care of patients with CHF. Specifically, your group is significantly below the HMO's benchmark for the use of angiotensin-converting enzyme (ACE) inhibitors and significantly above their benchmark for hospital admissions. They suggest that you implement a clinical practice guideline for management of CHF and state that they will return in 6 months for another quality review. Your group asks you to lead the effort to address these issues in your CHF care practices.

The first step in incorporating a guideline into practice is to identify an area in need of clinical practice standards. Such areas typically are identified through internal or external quality monitoring systems. Although the need may vary depending on patient population and physician knowledge base, it is more typical to develop guidelines to address high-volume, high-cost, or poorly managed medical problems. The condition should be sufficiently prevalent in the population and associated with sufficient morbidity, mortality, and cost to justify spending the time and resources needed to develop and implement a guideline. In the scenario described, the HMO has presented data suggesting that CHF care in the physician group is suboptimal. CHF is a good topic for which to implement a guidelines program, as published data and guidelines are available concerning optimal treatment of CHF.

Once a need is identified, someone—ideally a physician—must be responsible for overseeing the guideline development initiative. In groups with a guidelines committee, this person would be the chairperson or committee designee. More typically, these committees do not exist and a group member would be assigned the responsibility.

### Assess Existing Guidelines and Evidence

You search the medical literature for available clinical practice guidelines for CHF management and obtain copies of two—one from the American Heart Association (AHA) and another from the AHCPR—along with the research supporting the recommendations in the guidelines. After consideration of the guidelines and evidence you have collected, you decide that a guideline for CHF management would help your group achieve its goals of increasing the use of a beneficial therapy, decreasing cost by decreasing preventable admissions, and improving outcomes for patients.

The next step is to search the medical literature for existing guidelines developed by national or international organizations, including medical specialty societies. The AMA's *Clinical Practice Guidelines Directory* [5] is a good starting place to look for existing guidelines; a MEDLINE database search for guidelines, evidence (eg, meta-analyses), and consensus statements would also be helpful. If guidelines on the topic of interest exist, they should be obtained with the key references supporting their recommendations. If published guidelines do not exist, only the most focused topics should be pursued on a local level, as the development of a good clinical practice guideline can be prohibitively costly (in time and money) for most groups.

In appraising an existing guideline, it is important to evaluate it on the IOM criteria (Table 1) or similar criteria and to review the studies cited as support for recommendations. Is the evidence valid and reliable? Are the patients in the studies similar to those seen in the clinical practice that is considering adopting the guideline? Is all relevant evidence considered? Were important studies omitted? An existing guideline also should be assessed for practicality, applicability, and relevance to the clinical practice that is considering its adoption.

The physician leading the CHF improvement initiative found published guidelines for evaluation and treatment of CHF from the AHCPR [9] and from the AHA [10]. Both of these guidelines specify the patient populations appropriate for specific treatments and highlight the decrease in mortality seen with the use of ACE inhibitors in patients with left ventricular systolic dys-

function (LVSD), the indications for the use of digoxin and diuretics, and the need for patient education about the importance of exercise and dietary restrictions. As the AHA and AHCPR guidelines for CHF are more than 3 years old, the physician should search the medical literature for new evidence published since the guidelines were released.

### Form a Multidisciplinary Team to Adapt Existing Guidelines for Local Use

You assemble a guideline development team consisting of the necessary primary care physicians, cardiologists, and nurse practitioners. After a careful and critical review of the literature and published guidelines from the AHA and AHCPR, your guideline team decides that the recommendations of the AHA and AHCPR are valid. Based on feedback from group physicians, the scope of the AHA and AHCPR guidelines is narrowed to a level that can successfully be implemented into your group's practice.

National guidelines may not be appropriate for local facilities or patient populations and may need to be adapted to fit local needs and resources. Participation in this local adaptation process by the professionals who will use the guideline is very important to the ultimate success of the guideline [11]; having a voice in the adaptation and adoption of the guideline is believed to lead to better physician adherence. Although local adaptation is important in making the guideline work well for the group, it is important not to change the scientific basis of the guideline, or desired outcomes may not be obtained. The leader of the guideline development initiative should convene a multidisciplinary group of physicians, nurses, pharmacists, and any other medical professionals with a "stake" in the medical condition to discuss the merits of existing guideline recommendations, the original studies supporting them, and any new literature concerning the topic.

### Disseminate Guideline and Integrate into Practice

The narrowed guideline is distributed to all group physicians, and a senior cardiologist is recruited to give a brief presentation of the need for and science supporting the guideline at staff meetings. The guideline is implemented into practice via patient-specific computer-generated reminders for the use of ACE inhibitors in patients with CHF (ie, placed on the chart each visit).

A guideline must be effectively implemented for a true change in clinical practice to occur. Simply disseminating the guideline to physicians is not sufficient to achieve compliance with the guideline. To effectively change

physician behavior, guidelines must be integrated into daily routine. Ideally, guideline implementation should be patient specific and involve some intervention at the time of the clinical encounter (ie, when the patient is seen and clinical decisions are made) [12]. Following are methods for disseminating and implementing guidelines that have proven to be effective.

**Academic “detailing”** includes visits to medical offices or facilities by a respected colleague (sometimes called a physician “champion”) who introduces or promotes the guidelines to physicians through educational seminars or question-and-answer sessions [13].

**Computer-generated reminders** help prompt physicians to do the right thing at the right time (eg, reminding the physician and/or patient when a mammogram, Pap smear, or flu shot is due) [14]. These can range from a simple reminder for all patients with diabetes mellitus to receive a foot examination each visit to a complex individualized reminder to prescribe an ACE inhibitor for a diabetic patient who has proteinuria and is not currently on ACE inhibitor therapy.

**Computer-ordered entry** in office, clinic, or hospital can remind, encourage, or limit physicians’ choices based on a preprogrammed guideline [15]. If a computerized medical record is not available, preprinted order forms can be used in the same manner.

**Using nursing and office staff** in the implementation of guidelines can also be effective [16]. Physicians should ensure that certain routine procedures and treatments are part of the ancillary staff duties and that these duties are performed reliably. The staff may welcome the involvement in patient care.

Successful implementation is crucial for accomplishing the stated goals of a guideline. If the evidence supporting the guideline recommendations is compelling but practical obstacles to guideline implementation exist, it may be necessary to change the current system or practice to fit the guideline, rather than vice versa. Mobile mammography units are an example of a practical solution to the implementation of a breast cancer screening guideline. Many rural and/or poor women lack transportation to a distant radiology department. The benefit of mammographic screening is great enough that investment in mobile mammography units is a practical solution. By removing an obstacle to implementation of the recommendations (ie, no access), more women can receive a valuable service.

### **Monitor Quality Indicators and Outcome Measures, Provide Feedback, Update**

Three months after implementation of the CHF treatment guideline you audit your charts for improvement

in the use of ACE inhibitors in CHF patients. The number of patients with CHF/LVSD who receive ACE inhibitors has increased by 30% and is above the benchmark set by the HMO. The feedback is provided to the group physicians at staff meetings. Your admissions for CHF have not yet decreased but are expected to decline with more time and effort. You and the payer are satisfied with this initial effort at improving CHF patient care.

Clinical practice guidelines should be subject to continuous quality improvement. The quality indicators or outcome measures to be monitored should be determined when the guideline is implemented and should reflect the goals of the guideline. In the CHF example, the AHCPR and AHA guidelines state that patients with LVSD who are treated with ACE inhibitors have lower mortality rates. Therefore, the more patients treated with ACE inhibitors, the better the overall outcomes for patients. Because it is very difficult to assess mortality in small patient populations, monitoring the use of ACE inhibitors in patients with CHF/LVSD is an acceptable practice. It is an intermediate quality indicator, not an outcome, but it is practical and relatively easy to measure.

As in the CHF example, auditing records for physician compliance with a guideline’s specified quality indicators or outcome measures and feeding this information back to the physicians are ways to encourage compliance with guidelines. Providing feedback may stimulate discussions about the guideline, thereby educating those caregivers who are intended to use it and possibly improving compliance with the recommendations of the guideline. Physicians also need to give feedback to the guidelines committee about the content and implementation of the guidelines. Ideally, this feedback loop will improve physician confidence in the quality of the guidelines. Chart audits and feedback are becoming common procedures, even for individual and small group practices. In a review of 37 trials of the effectiveness of audit and feedback on improving practice and outcomes, Thomson et al [17] concluded that a small to moderate effect is seen in most cases; the change in practice behavior after feedback varied greatly and, therefore, may be more important for some subgroups of physicians.

### **Barriers to Guideline Use in Practice**

Boyle et al [18] recently reported on a 2-year study by the Hastings Center on the issue of physician objection or hesitation to adopt the recommendations of clinical practice guidelines. The researchers sought to determine the extent to which physicians were aware of,

trusted the reliability of, and put to use the available outcomes data. They concluded that physicians were most likely to object to the use of guidelines when they expressed skepticism about the source, reliability, and objectivity of the outcomes data; had objections or hesitations based on contrary patient preferences, clinical experience, or legal worries; and expressed tacit motivation. The conclusions of the study highlight the extent to which physicians must be educated about the development and use of clinical practice guidelines.

### When Guidelines Conflict

Perhaps the most bothersome feature of clinical practice guidelines is the confusion and distrust engendered when recommendations from different organizations conflict. Different groups may have required different levels of evidence (eg, RCTs versus cohort studies) or considered factors other than medical outcomes (eg, quality of life, frequency of adverse effects of treatment) when developing a guideline for the same condition. The recommended age for breast cancer screening for women is a good example of such a conflict. The NIH and National Cancer Institute recommend regular mammographic screening for women between the ages 40 and 49, whereas the American College of Physicians and the USPSTF currently do not. The reasons cited for this discrepancy are many: differing requirements of the evidence, total mortality versus disease-specific mortality reduction, questioned validity of subgroup analysis, and consideration of other factors that may be improved (eg, decreased morbidity, increased quality of life) [19–22].

Weakness of study designs, opposing results from multiple studies, lack of data, or skepticism about the validity of inferences drawn from the data [18] may underlie such conflicts. Good data simply are not available to guide many medical decisions; therefore, many guidelines that have been developed are based on consensus rather than evidence. These “consensus statements” can be educational but should not be given the same level of confidence as more evidence-based recommendations. Conflicting guidelines indicate topics that are controversial and in need of further discussion and study; the guideline stimulates these endeavors rather than answers questions about medical care. Such conflicts demonstrate the need for greater cooperation among guideline developers.

### Potential for Inappropriate Use

Guidelines may be used as evidence in malpractice cases or practice audits, which is not necessarily harmful to patient care as long as the guidelines are used to raise the

level of quality and not as a tool to persecute good clinicians. Very little is known about the use of guidelines in judgment in malpractice cases. In one study, only 17 of 259 malpractice cases referred to clinical practice guidelines; in 4 cases the guideline was used to defend the physician, in 12 cases it was used by the prosecution, and 1 case was indeterminate [23]. Because some physicians base their objections or hesitations to using guidelines on factors other than the reliability of the data or recommendations [18], local input into the development of guidelines may help decrease the risk of litigation or sanctions if a physician chooses, with good clinical reason, not to follow a particular guideline.

The Hastings Center study [18] found that physicians have additional concerns about practice guidelines that are not easily categorized. Some physicians believe that outcomes data and practice guidelines may be motivated more by economic concerns than by an interest in improving the quality of care, as in the case of some physicians' hesitation to follow the AHCPR's recommendations for watchful waiting instead of ear tube placement in treatment of pediatric otitis media. Physicians surveyed expressed hesitation to be the first in their area to alter accepted treatment practices, especially in the case of guidelines that recommend withholding treatment. In such cases, the expectation of patients to receive treatment was also an important factor.

Similarly, some physicians cited “the superiority of their own clinical experience and knowledge” [18] as reason for not following guidelines. Older physicians were found to be more likely to ignore recommendations to decrease the number of carotid endarterectomies performed, for example, than were their younger colleagues, as the former relied more on personal experience than on outcomes data. Finally, inconvenient, time-consuming, and potentially embarrassing guideline recommendations were also resisted; for example, some physicians did not follow recommendations to counsel patients about hormone replacement therapy in menopause and about smoking cessation.

### Conclusion

The criticisms of practice guidelines are valid and warrant much more scientific investigation so that the guideline development process will continue to improve. It is imperative that, as the guidelines movement continues to gain momentum, physicians take an active role in the development, dissemination, and implementation of evidence-based outcomes research. Volunteering to work on guidelines development committees is a good way for physicians to become involved in medical policy making, keep up on current literature, maintain control of their

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clinical practice, and form relationships with colleagues with whom they work and share patients. Although this process can be time-consuming and costly, if the guideline is truly needed and effective at accomplishing the intended goals, the rewards in improved outcomes and possibly decreased costs will be worth the effort and investment.

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