
# Conflict of Interest in Medical Research, Education, and Practice

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# Conflicts of Interest and Development of Clinical Practice Guidelines

Clinical practice guidelines lie at the intersection of medical research, education, and practice. They build on medical research and serve an educational function. In clinical care, they may influence patient and physician decisions about health care interventions, health plan coverage for medical services, and assessments of the performance of individual physicians and institutions that provide health care.

Ideally, clinical practice guidelines are based on valid scientific evidence, critical assessment of that evidence, and objective clinical judgment that relates the evidence to the needs of practitioners and patients. Arguably, the most significant problem in the development of sound clinical practice guidelines is the lack of research that can be used to guide the development of comprehensive recommendations on clinical practice. Clinical trials often exclude children, older adults, and patients with multiple or uncommon diagnoses or complex personal situations. Given the lack of evidence on many clinical topics and patient populations and the frequent lack of consistent research findings, expert judgment based on clinical experience remains a significant element in the development of evidence-based practice guidelines. As the methods manual of the American College of Cardiology and the American Heart Association states, it is not often that there is "an abundance of evidence available that leads directly to an indisputable recommendation" (ACC/AHA, 2009, p. 27).

Financial relationships with pharmaceutical, medical device, and biotechnology companies may create conflicts of interest and a risk of undue influence on judgment both for entities that sponsor the development of clinical practice guidelines and for the individuals who participate in their development. In addition to financial relationships with industry, other potential sources of bias in the development of clinical practice guidelines

include professional affiliations and practice specialization, reimbursement incentives, intellectual preconceptions and previously stated positions, and the desire for recognition and career advancement (see, e.g., Kahan et al. [1996], Ayanian et al. [1998], Murphy et al. [1998], Fitch et al. [1999], and Detsky [2006]).

This chapter begins with definitions and a brief historical overview and description of groups that develop clinical practice guidelines. It then reviews what the committee learned about the nature and the effects of sources of funding on the development of clinical practice guidelines, the financial interests of individual participants, and policies on financial relationships and conflicts of interest. A later section reviews other methods for promoting objectivity in the development of clinical practice guidelines and trust in those guidelines. The final section presents recommendations on how to reduce conflicts of interest in the development of clinical practice guidelines.

## BACKGROUND AND CONTEXT

### Definitions

As defined in an earlier Institute of Medicine (IOM) report, *clinical practice guidelines* are "systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances" (IOM, 1990, p. 8). The IOM report emphasized the role of formal evaluations of the evidence base for clinical practice guidelines and the linking of recommendations to those reviews. *Systematic reviews*, the common term used today for formal evaluations of the evidence, are highly structured assessments of the research literature that use explicit, previously defined methods and tools to identify, select, assess, and summarize research studies relevant to a technology, treatment of a clinical condition, or similar topic (see, e.g., OTA [1994] and Cochrane Collaboration [2005]). A *meta-analysis* is a quantitative summary of the data examined in a systematic review. As explained below, various groups have devised tools for assessing the extent to which a set of guidelines are based on systematic, evidence-based procedures.

### Evolution of Clinical Practice Guidelines

The American College of Cardiology, the American College of Physicians, the National Institutes of Health (NIH) Consensus Development Program,[1] the U.S. Preventive Services Task Force, the Blue Cross and

[1] Since 1977, the Consensus Development Program at NIH has sponsored "an unbiased, independent, evidence-based assessment of complex medical issues" (NIH, undated). It orga-

Blue Shield Association, ECRI (now the ECRI Institute), and the RAND Corporation were, among others, leaders in devising systematic methods for assessing the evidence and developing clinical recommendations for practitioners, patients, payers, and others (see, e.g., IOM [1985, 1988] for contemporary descriptions of such activities). In 1989, the U.S. Congress created the Agency for Healthcare Policy and Research (AHCPR) and gave it responsibility for creating a public-private partnership to develop, disseminate, and evaluate clinical practice guidelines (P.L. 101-239). In 1995, the Congress came close to defunding the agency in response to lobbying by back surgeons who disagreed with the agency's guidelines for the treatment of low back pain developed by an AHCPR Patient Outcomes Research Team (Deyo et al., 1997; Gray et al., 2003; see also Clancy [2003], Gaus [2003], and Wennberg [2003]). Other government bodies charged with some aspect of technology assessment have also been defunded under circumstances that underscore the political sensitivity of this activity (for example, the National Center for Health Care Technology in 1982 and the congressional Office of Technology Assessment in 1995) (see, e.g., Bimber [1996], Rettig [1997], Eisenberg and Zarin [2002], and Keiper [2005]).

After its close call, AHCPR—rechristened the Agency for Healthcare Quality and Research (AHRQ)—withdrew from the work of developing clinical practice guidelines. Instead, the agency supports evidence-based practice centers that conduct systematic reviews that government agencies, professional societies, and other groups can request and use to develop guidelines and other recommendations. In 2008, AHRQ supported 14 such centers, 5 of which focused on assessments for the Centers for Medicare and Medicaid Services. One evidence review (performed under a grant from AHRQ) by the RAND Corporation's Evidence-Based Practice Center concluded that the quality of practice guidelines suffered as a result of the retreat of the agency from guideline development (Hasenfeld and Shekelle, 2003; see also Grilli et al. [2000]).

The U.S. Preventive Services Task Force, which was created several years before AHCPR/AHRQ but which is now part of the agency, continues to develop evidence-based guidelines for preventive services. It is currently supported by one evidence-based practice center. Other federal agencies, such as NIH and the Centers for Disease Control and Prevention, also develop practice guidelines.

To support the dissemination of the clinical practice guidelines developed and submitted by others, AHRQ sponsors the National Guideline

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nizes conferences that are jointly sponsored and administered by one or more NIH institutes or centers and the Office of Medical Applications of Research, which is located in the Office of the Director of NIH. Other federal agencies may participate if their expertise is relevant to the topic. Currently, the Agency for Healthcare Research and Quality provides a systematic review of the conference topic from one of its Evidence-Based Practice Centers.

Clearinghouse. The guidelines posted by the clearinghouse are summarized in a common format that includes headings for information about the source(s) of funding and about financial disclosures or conflicts of interest.[2] Although the clearinghouse is the most comprehensive source of information on the funding of guideline development activities and on financial disclosures and conflicts of interest, its data have some significant limitations. The analysts who compile the guideline summaries primarily rely on source documents provided by the guideline sponsor, and those documents may be incomplete. For example, because the source documents are silent on the topic, "Not stated" entries for "financial relationships/conflict of interest" may be found in clearinghouse summaries of guidelines for groups such as the American College of Physicians and the U.S. Preventive Services Task Force. These two groups do, in fact, have a process of disclosing, evaluating, and managing conflicts of interest.[3] Given these and other limitations in the clearinghouse database, the committee used information from the database on funding sources and disclosures with caution.

The guideline initiatives described above and other initiatives have gradually but not fully replaced less rigorous guideline development efforts that lacked formal procedures, clear reporting of the authors involved with and the methods used for the systematic review of the evidence, and explicit links between the recommendations and the supporting evidence. Shortcomings in the processes for the development and reporting of clinical practice guidelines persist. These shortcomings include the incomplete disclosures of the financial relationships of the participants and the funding sources and informal procedures, which increase the opportunity for undue influence and bias (see, e.g., Shaneyfelt et al. [1999], Burgers et al. [2003], Harpole et al. [2003], Hasenfeld and Shekelle [2003], Shiffman et al. [2003], Boluyt et al. [2005], Guyatt et al. [2006], Poitras et al. [2007], Nix [2008], and Nuckols et al. [2008]).

[2] The criteria for the inclusion of a guideline in the clearinghouse relate to sponsorship, evidence of some kind of literature review, adoption of the guideline within the last 5 years, and print or online availability of the complete text of the guideline.

[3] To cite one example of how such omissions may occur, when U.S. Preventive Services Task Force guidelines are published in journals that require disclosures, they include a statement (compare, e.g., the guidelines on screening for lipid disorders in children as published in *Pediatrics* at USPSTF [2007a] and as published online at USPSTF [2007b]). In contrast, guidelines presented on the agency's website do not routinely include information about the group's conflict of interest policies and procedures or about the authors' financial relationships (see, e.g., guidelines on screening for sickle cell disease in newborns at USPSTF [2007c]). The processes for developing the guidelines were the same, but the information in the clearinghouse varies because the source documents varied in the information that they provided. A discussion of task force policies can be found online in the procedure manual, but the site does not highlight it (USPSTF, 2008).

### Systematic Process for Developing Clinical Practice Guidelines

The adoption of explicit, systematic methods for reviewing evidence and developing and documenting practice guidelines is, as discussed further below, an important strategy for reducing the opportunities for bias, whether the source might be intellectual and professional preconceptions, financial interests, or something else. Table 7-1 depicts a generic process for developing evidence-based guidelines that is similar to that used by a number of government and professional societies. (Sponsor means the entity developing the guideline.)

At each step in this process, financial relationships may create conflicts of interest. Any of the responsible parties identified in Table 7-1 could have financial relationships with industry that could unduly influence recommendations—even when systematic reviews and other safeguards are employed. Thus, some groups have conflict of interest policies that apply not only to the expert panels that develop guidelines but also to some or all of the other responsible or involved parties. As described in Chapter 4, the evidence base itself can be biased to the extent that the publication of

**TABLE 7-1** Basic Elements of Process for Developing Evidence-Based Practice Guidelines

| Responsible Party | Activity |
|---|---|
| Sponsor | Select topic and provide financial and other resources |
| Sponsor | Appoint a panel to develop the guideline that balances relevant expertise and perspectives and that is subject to conflict of interest policies throughout the process |
| Panel | Develop a work plan and specify clinical questions and outcomes of interest |
| Panel or contractor | Conduct a systematic review of the relevant evidence by using standardized methods for selecting studies, analyzing and rating the evidence, identifying and evaluating benefits and harms, and presenting conclusions |
| Panel | Develop and agree on a draft guideline with recommendations explicitly linked to the evidence and expert judgment |
| Panel or sponsor | Distribute a draft for internal and external review |
| Reviewers | Review of guideline by external reviewers and internal reviewers (e.g., the governing board of a professional society) |
| Panel | Revise a draft and produce the final guideline |
| Sponsor or journal | Publish and disseminate the guideline |
| Sponsor | Monitor new research findings and determine whether a guideline should be updated |

negative findings or findings unfavorable to a product have been delayed or suppressed.

Professional societies and other groups sometimes rely on evidence reviews conducted by AHRQ's Evidence-Based Practice Centers. (Professional societies and other groups can nominate topics for reviews. In late 2008, the agency's website listed 11 evidence reports on clinical topics as under development.) Others groups may use a combination of staff and expert panel members to conduct reviews. One reason for the latter course is the expense. Systematic reviews for a complex clinical topic may cost in the range of $300,000 to $350,000 or more (personal communication, Beth A. Collins Sharp, director, Evidence-Based Practice Centers Program, Agency for Healthcare Research and Quality, November 14, 2008). On the basis of the committee's review of descriptions of the systematic review process for several professional and patient advocacy groups, groups that rely on staff or volunteer experts vary considerably in the resources that they devote to such reviews, the rigor of their evidence review processes, and the products of these reviews.

## Possible Benefits and Risks of Industry Involvement in Guideline Development

The committee found little systematic information about the funding of guidelines, the financial relationships of participants, or the effects of both. In developing this discussion and the recommendations in this chapter, it drew on testimony at its meeting and a convenience sample of information available on the Internet, as well as its experience and judgment.

### *Potential Benefits of Industry Relationships*

Industry funding for the development of clinical practice guidelines may allow some groups to create guidelines on new topics when they otherwise would not. Groups that develop practice guidelines may also benefit from presentations by industry employees as part of the evidence consideration process, and industry employees may be asked to review evaluations of the evidence for their technical accuracy. Individual panel members who have financial relationships with industry often have expertise that is pertinent to the development of a guideline.

### *Risks of Industry Relationships*

As observed above, relationships with industry and conflicts of interest in the development of clinical practice guidelines may exist at both the individual level (i.e., participants may have industry ties) and the institu-

tional level (i.e., the sponsoring group may rely on industry funding for guidelines). These relationships raise the possibility of conflicts of interest and undue influence at each step in the guidelines development process.

**Selection of topics** Groups that require industry funding for the development of practice guidelines may propose topics that will attract industry funding (e.g., a guideline on how to use a product but not whether it should be used). Among the topics proposed to potential funders, companies may favor topics and questions for which the evidence is most likely to support conclusions favorable to a particular company.

**Review of evidence** Studies examining the association between industry ties and the outcomes of systematic reviews or meta-analyses raise concerns.[4] Although these studies do not deal explicitly with the entire process of developing clinical practice guidelines, they examine a key element. In one study, industry-sponsored meta-analyses of drug trials were less transparent about the methods that they used, were much more likely than Cochrane Collaboration reviews to recommend the experimental drug without reservation, and had fewer reservations about the methodological limitations of the trials included in the analysis (Jorgensen et al., 2006).[5] All of the industry-sponsored reviews but none of the Cochrane Collaboration reviews recommended the experimental drug without reservation.

Another study examined review articles on the health effects of secondhand smoke (Barnes and Bero, 1998). Ninety-four percent of the review articles written by individuals affiliated with the tobacco industry concluded that passive smoking is not harmful to health, whereas 13 percent of the reviews written by authors without such an affiliation made that conclusion. The association between the conclusion that secondhand smoke is not harmful and an affiliation with the tobacco industry persisted even after the analysts took into account the methodological quality of the review, the year of publication, the clinical topics examined, and whether the review was subject to peer review.

[4] As described in materials prepared for the Cochrane Collaboration (2002, unpaged), "meta-analysis is a two-stage process. The first stage is the extraction of data from each individual study and the calculation of a result for that study (the 'point estimate' or 'summary statistic'), with an estimate of the chance variation we would expect with studies like that (the 'confidence interval'). The second stage involves deciding whether it is appropriate to calculate a pooled average result across studies and, if so, calculating and presenting such a result. Part of this process is to give greater weight to the results from studies which give us more information, because these are likely to be closer to the truth we are trying to estimate."

[5] The authors identified 24 Cochrane Collaboration reviews for which another meta-analysis studied the same two drugs in the same disease and was published within 2 years of the Cochrane Collaboration review. (Eight of the 24 comparison guidelines were industry supported; 9 had no declared source of support; 7 reported nonprofit support or self-funding.)

As discussed in Chapter 4, which describes additional studies, a review of meta-analyses on hypertensive drugs found that financial ties to a single pharmaceutical company were not associated with findings that favored the company but were associated with favorable conclusions (Yank et al., 2007). The authors further noted that peer reviewers and journal editors did not prevent the publication of biased conclusions.

**Expert panel deliberations** The committee found no systematic studies of the relationship between participant financial relationships and the content of guidelines. One study did find, however, that only 7 percent of participants in guideline development surveyed believed that their own relationships with industry influenced their recommendations, but 19 percent believed that their coauthors' recommendations were influenced by such relationships (Choudhry et al., 2002). Because more than half of the participants reported no process for disclosing financial relationships, it is not clear how well informed the respondents were about their colleagues' relationships. (The extent of the relationships identified in the study is discussed below.)

**Dissemination of guidelines** Even if industry support is limited to the dissemination of guidelines, such support could influence the overall strategy for dissemination in ways that unduly favor a company's product. This is one interpretation of the controversy over guidelines related to sepsis summarized in Box 7-1 below.

## GROUPS THAT DEVELOP CLINICAL PRACTICE GUIDELINES

A range of public and private groups develop or collaborate in the development of clinical practice guidelines (Table 7-2). On the basis of guidelines included in the National Guideline Clearinghouse, medical specialty societies are the most common developers of the guidelines; they accounted for almost 40 percent of the guidelines in the clearinghouse database in April 2008. Professional societies report that practice guidelines are among the most valued services that they provide (see, e.g., Bennett et al. [2003], Masur [2007], and Sagsveen [2008]). Evaluations of specialty society guidelines have sometimes been critical of their lack of systematic reviews of the evidence and other characteristics (see, e.g., Grilli et al. [2000]); but the committee's review indicates that many specialty societies have taken steps to make their procedures more systematic, transparent, and evidence based by hiring knowledgeable staff and developing methods, process manuals, and policies that include conflict of interest policies and procedures. The committee found less information about the clinical guideline development-related activities of disease-specific groups.

**TABLE 7-2** Number of Clinical Practice Guidelines in the National Guideline Clearinghouse by Selected Types of Sponsors, as of March 16, 2009

| Type of Sponsor | Number of Guidelines |
|---|---|
| Medical specialty society (U.S. and other) | 959 |
| Professional association (U.S. and other; mostly nonphysician or mixed groups) | 408 |
| Government agency (non-U.S.) | 214 |
| Federal/state/local government agency | 165 |
| Nonprofit organization | 142 |
| Independent expert panel | 97 |
| Academic institution (U.S. and other) | 98 |
| Disease-specific society (U.S. and other) | 202 |
| Hospital/medical center (U.S. and other) | 26 |
| For-profit organization | 21 |
| Managed care organization | 11 |
| Total, all guidelines, all sponsors | 2,343 |

NOTE: Some guidelines are developed collaboratively by more than one type of sponsor. For example, a guideline may list as developers one or more professional societies and one or more disease-specific societies. The National Guideline Clearinghouse (NGC) search option does not generate unduplicated counts by category of sponsor. The unduplicated count presented here was provided by NGC staff. Nineteen of the 26 guidelines from a hospital or medical center were submitted by a single institution.
SOURCE: Personal communication, Mary Nix, Health Scientist Administrator, National Guideline Clearinghouse, March 22, 2009.

Public agencies also develop practice guidelines. U.S. federal and state agencies and public agencies from other countries accounted for more than 500 of the guidelines in the National Guideline Clearinghouse.

Some groups involved in guideline development have sought partners. For example, the American College of Cardiology and the American Heart Association have collaborated in their guideline development program since the 1980s (ACC/AHA, 2009). Several groups are investigating an international collaboration to develop guidelines for the care of respiratory diseases (personal communication, Holger Schunemann, M.D., Ph.D., chair, Department of Clinical Epidemiology and Biostatistics, McMaster University, February 19, 2009). Compared with the complexity of simply adding individuals with different professional and other backgrounds to a guideline development panel, the management of partnerships between and among agencies tends to be more complicated because each partner usually has, for example, its own policies and procedures. Nevertheless, the

potential benefits of collaboration include the sharing of costs, broadening of the scope of the questions examined, and reductions in the number of dueling guidelines that may undermine the credibility and acceptance of recommendations.

## FINANCIAL RELATIONSHIPS IN GUIDELINE DEVELOPMENT

### Sources of Funding for Guidelines and Systematic Reviews

The committee found no systematic assessment of the public or private sources of funding for the development of clinical practice guidelines (see, e.g., Boyd [2008]) or systematic reviews of funding sources (Jorgensen et al., 2006). Nearly all (98 percent) of the summaries of more than 2,000 guidelines included in the National Guideline Clearinghouse as of April 21, 2008, contained a statement about the funding source, usually indicating that the group that developed the guideline had funded it (Nix, 2008). Some information is inconsistent. For example, in the summary statement for guidelines on bronchial intraepithelial neoplasia/early central airways lung cancer, the section on the source of funding states that a professional society funded it, whereas the section on financial disclosures/conflict of interest states that funding came from five pharmaceutical or biotechnology companies (NGC, 2009c; see also Kennedy et al. [2007]). Similarly, a guideline on the prevention and treatment of mucositis listed the two authoring groups as the source of funding, but the information on financial disclosures/conflicts of interest referred to unrestricted grants from unnamed companies (NGC, 2009h; see also Keefe et al. [2007]).

Some professional societies, such as the American College of Physicians, the American Academy of Neurology, the American Society of Hematology, and the American Society for Clinical Oncology, fund their guideline development programs from general revenues and, in some instances, grants from independent nonprofit organizations (ASCO, 2008; Sagsveen, 2008; personal communication, Martha Liggett, executive director, American Society of Hematology, February 24, 2008; personal communication, Vincenza Snow, director, Clinical Programs and Quality of Care, American College of Physicians, February 23, 2009). As discussed in Chapter 6, a society's general revenues may include a significant share from industry, for example, income generated by journal advertising or by pharmaceutical or device company exhibits at professional society meetings.

The committee is aware that some smaller professional societies that have sought to fund clinical guideline development and systematic reviews without industry support have found it difficult to do so (personal communication, Roger Chou, assistant professor of medicine and medical informatics and clinical epidemiology, Oregon Health Sciences University, April 2, 2008). Professional societies can, however, nominate topics for

AHRQ-supported systematic reviews, and if such a topic is selected, even a resource-limited society will have an evidence-based review with which to work.

Most, if not all, guidelines developed by government agencies in the United States (e.g., the U.S. Preventive Services Task Force) and elsewhere (e.g., the National Institute for Health and Clinical Excellence in the United Kingdom) are publicly funded. One controversial exception involving a Texas state agency is described in Box 7-1, which cites several controversies involving financial relationships in practice guidelines.

Practice guidelines are sometimes developed by ad hoc groups, which by their nature are not likely to have a well-developed infrastructure for the performance of evidence-based reviews and other activities, including procedures for identifying and managing conflicts of interest. Box 7-1 described one ad hoc initiative related to heart disease screening guidelines that provoked concerns about bias and conflict of interest.

The Cochrane Collaboration (an independent, nonprofit, international organization that produces systematic reviews, among other activities) does not allow industry funding for a review. It does, however, allow commercial contributions to a central pool of funds to be used for certain other activities, such as the translation of reviews into different languages (Cochrane Collaboration, 2006).

Although the committee found no systematic information, industry involvement in the dissemination of guidelines appears to be fairly common. For example, companies may buy copies of the journal issue in which a guideline is published. They may also develop derivative materials (e.g., summaries for lay audiences) based on the guideline. The committee was unable to systematically investigate whether dissemination activities resulted in materials that altered or elaborated on a guideline in ways that departed from the conclusions in the guideline itself.

### Nature and Extent of Individual Relationships with Industry

The committee found little systematic study and documentation of financial relationships between industry and the individuals who author clinical practice guidelines. A 2002 study reported that the authors of practice guidelines had widespread financial relationships with the pharmaceutical industry (Choudhry et al., 2002).[6] Of 44 practice guidelines that Choudhry et al. initially reviewed, only 2 included disclosures of the authors' financial relationships with industry. A follow-up survey of 100 authors involved with 37 of the guidelines found that 87 percent of the authors had some

[6] The study covered guidelines that were published between 1991 and 1999, that had identifiable authors, and that had been endorsed by a "recognized" North American or European professional society.

**BOX 7-1**
**Cases and Controversies Involving Conflicts of Interest in Guideline Development**

In an investigation of pharmaceutical companies' use of educational grants (based on information provided by 23 companies), staff of the Finance Committee, U.S. Senate (2007) found that "several companies helped fund the Texas Medical Algorithm Program (TMAP) run by the Texas Department of State Health Services to develop psychiatric treatment algorithms" (p. 12). A whistleblower complaint led to the dismissal of the state employee who headed the effort and had served as a paid consultant to a company that benefited from the treatment guidelines (Waters, 2006, unpaged).

In 2006, the *Boston Globe* reported that an ad hoc group of physicians had solicited nearly $56,000 from several pharmaceutical companies to have their heart disease screening guidelines published in a supplement of a leading cardiology journal (Smith, 2006; see also, e.g., Naghavi et al. [2006]). The guidelines were subsequently criticized by an official of the National Heart, Lung, and Blood Institute, who pointed out that the supplement had been financed by a company that stood to profit from implementation of the recommendations, that the authors of the guidelines failed to reveal their relevant financial relationships with that company and others, and that the process for developing the guidelines was not evidence based or subject to rigorous review (Lauer, 2007).

Eichacker and colleagues (2006) alleged that industry funding was used to support a "three-pronged marketing strategy" to increase sales of drugs for the treatment of sepsis (p. 1640). They cited a marketing document, which is no longer available online, that described a strategy "to first raise awareness about rationing and then the disease state as a means of enhancing prospects of utilization" and then employ "highly-specific marketing initiatives to physicians and the medical trade media"; a grant would then be used to create a task force to study health care rationing in the intensive care unit; and lastly to "[r]aise awareness of severe sepsis and generate momentum towards development of treatment guidelines for the infection through establishment of the Surviving Sepsis Campaign" (AHRP, 2006, unpaged). The Infectious Diseases Society of America chose not to endorse the sepsis guidelines on the basis of concern about "the manner in which the guidelines were developed, the use of a suboptimal rating system, and their sponsorship by a drug company" (Eickhacker et al., 2006, p. 1642; see also Masur [2007]). A recent set of revisions to the guidelines reported no industry funding for guideline development meetings, and 7 of the 24 authors reported no "potential" conflicts of interest (Dellinger et al., 2008).

financial relationship or interaction with industry and that 59 percent had relationships with companies whose products were considered in the guideline. The most frequent relationship with companies involved honoraria for speaking (64 percent of the respondents, who reported an average of 7.3 companies as sources of the honoraria). Thirty-eight percent of the authors had an employee or consultant relationship with one or more companies. The majority of the authors surveyed reported no discussion of financial relationships during the guideline development process.[7]

Journal articles and other publications that contain practice guidelines vary greatly in the extent to which they include disclosures of the relevant financial relationships of the participants in the guideline development process. For the most part, disclosures emphasize financial relationships with pharmaceutical and device companies, although some describe ties to other kinds of organizations (e.g., federal research agencies and managed care organizations). Some guideline documents do not indicate whether the participants with no listed disclosures were explicitly asked to declare if they had no relevant relationships. The categorizations of the relationships are also not consistent across guideline disclosures. Some lump together relationships (e.g., research and consulting or honoraria and participation in speakers bureaus) that others report separately.

When guidelines include financial disclosure statements, the content is quite variable, as Box 7-2 illustrates. An analysis of the guideline summaries in the clearinghouse as of April 2008 found that almost half (47 percent) indicated "Not stated" under the summary heading for financial disclosure/conflict of interest (Nix, 2008). An earlier analysis found that the proportion of summaries that included some information on financial relationships or conflict of interest increased from just over 20 percent to approximately 50 percent from 1999 to 2006 (Tregear, 2007). (Most summaries in the clearinghouse are based on the source document cited for the guideline, but some reflect supplementary information provided by the groups submitting the guidelines.) In a later section, Box 7-3 provides additional examples of disclosures about conflict of interest policies.

[7] The committee also located an article reporting on a review by the Dutch Health Care Inspectorate of the influence of pharmaceutical companies in the development of practice guidelines in The Netherlands (Smulders and Thijs, 2007). As summarized in the English-language abstract, the agency concluded that "virtually all opinion leaders are financially supported by pharmaceutical companies, and therefore, potential conflicts of interest are unavoidable" (p. 2429). The agency recommended making potential conflicts more transparent by full disclosure of all relationships, especially financial relationships. It also suggested that allowing companies to review draft guidelines might reduce "undesirable initiatives" to influence guidelines, that individuals with certain kinds or levels of relationships might be precluded from participation in guidelines development, and that an independent review process might be instituted to assess guidelines for signs of interference by pharmaceutical companies.

**BOX 7-2**
**Examples of Financial and Conflict of Interest Information Excerpted from Summaries in the National Guideline Clearinghouse**

*Example A*
FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST
Not stated. [This is the most common entry for the period from 1999 to 2006.]

*Example B*
FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST
All participants involved in guideline development have disclosed potential conflicts of interest to their colleagues, and their potential conflicts have been documented for future reference. *They will not be published in any guideline, but kept on file for reference, if needed.* Participants have been asked to update their disclosures regularly throughout the guideline development process. [emphasis added; NGC, 2009e; see also NASS, 2008]

*Example C*
FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST
All members of the Expert Panel complied with the Infectious Diseases Society of America (IDSA) policy on conflicts of interest, which requires disclosure of any financial or other interest that might be construed as constituting an actual, potential, or apparent conflict. Members of the Expert Panel were provided the IDSA's conflict of interest disclosure statement and were asked to identify ties to companies developing products that might be affected by promulgation of the guideline. Information was requested about employment, consultancies, stock ownership, honoraria, research funding, expert testimony, and membership on company advisory committees. The Panel made decisions on a case-by-case basis as to whether an individual's role should be limited as a result of a conflict. No limiting conflicts were identified.

*Potential Conflicts of Interest:* L.A.P. has served as a speaker and consultant to Schering-Plough and Pfizer. P.G.P. has received grant support from Schering-Plough, Pfizer, Merck, and Astellas; has been an ad hoc consultant for Pfizer; and has been a speaker for Pfizer and Astellas. C.A.K. has received research grants from Merck, Astellas, and Schering-Plough and serves on the speakers bureau for Merck, Astellas, Pfizer, and Schering-Plough. All other authors: no conflicts. [NGC, 2009d; see also Chapman et al. 2008]

Indirect evidence for widespread relationships with companies is presented in a study of participants involved with the development of the *Diagnostic and Statistical Manual of Mental Disorders* (Cosgrove et al., 2006). These diagnostic criteria, like practice guidelines, are based on expert reviews of the relevant evidence. (An AHRQ-funded study on conflicts of interest in commercial drug compendia should be published soon. Many

health plans, including Medicare, use evidence summarized in compendia as a basis for payment and coverage decisions.)

The committee also found a few assessments of the adequacy of disclosures in studies that have applied the standardized evaluation tool AGREE (Appraisal of Guidelines Research and Evaluation), which is further described below. One of the evaluation criteria (Item 23) is whether a guideline document includes information about participant conflicts of interest. Another criterion (Item 22) is whether the guideline is editorially independent from the funding source. Studies have found shortcomings in reporting on conflicts of interest by participants and editorial independence in a wide array of clinical practice guidelines, including guidelines on stroke rehabilitation (Hurdowar et al., 2007), occupational medicine (Cates et al., 2006), pediatrics (Boluyt et al., 2005), lung cancer (Harpole et al., 2003), low back pain (Arnau et al., 2006), and nonsteroidal anti-inflammatory drug and acetaminophen treatment of osteoarthritis of the hip or knee (Wegman et al., 2004). It is not clear whether a lack of disclosure was related to the policies of the group developing the guidelines (e.g., no policy on disclosure or disclosures were not revealed) or the policies of particular journals (e.g., no request for disclosure). A study of 191 guidelines published in six leading journals in 1979, 1984, 1989, 1994, and 1999 found reporting of conflicts of interest only in the most recent year (1999) and then for only 7 of the 40 guidelines and 18 authors for that year (Papanikolaou et al., 2001). Although all the disclosures were in journals that had disclosure policies, only 4 percent of the articles in those journals included disclosures.

### Consequences of Financial Relationships

The committee found no systematic studies that investigated the association between the funding source and the development process or the content of the clinical practice guidelines. As illustrated in Box 7-2, it did find cases that raised concerns about the influence of industry funding.

The committee also found no systematic studies of the relationship between participant financial relationships and the content of the guidelines.[8] As described above, a study by Choudhry and colleagues (2002) found that

[8] In a possibly relevant study of a different kind of panel, Lurie and colleagues (2006) examined the financial relationships and decisions reached in 221 meetings of 16 advisory committees of the Food and Drug Administration. They reported that in nearly three-quarters (73 percent) of the meetings at least one committee member had a financial link to the maker of a drug being considered by the committee or had a link to a competitor company. Overall, approximately one-quarter (28 percent) of the members reported conflicts. They concluded, "A weak relationship between certain types of conflicts and voting behaviors was detected, but excluding advisory committee members and voting consultants with conflicts would not have altered the overall vote outcome at any meeting studied" (p. 1921).

only 7 percent of participants in guideline development surveyed in their study believed that their own relationships with industry influenced their recommendations, but 19 percent felt that their coauthors' recommendations were influenced by such relationships. Also as described above, studies examining industry ties and the outcomes of systematic reviews raise concerns about undue influence.

A few case studies examine conflicts of interest for specific guidelines or guideline development programs. For example, in 2006, 14 of 16 members of a group that worked on the development of guidelines for the treatment of anemia in patients with chronic kidney disease received consultant fees, speaking fees, research funds, or some combination thereof from at least one company that could be affected by the guidelines (Coyne, 2007). The principal funder of the guidelines was a company that would be affected by the guidelines, and the chair and cochair of the work group had financial relationships with that company (KDOQI, 2007). The work group recommended that the dosage of a drug made by the company be raised, which could have substantially increased costs to the Medicare program. By coincidence, the guidelines were announced at the same time that research that showed adverse patient outcomes associated with the approach recommended by the guidelines was published. The lead investigator of the research allegedly informed the guideline development work group that the study in question had been terminated early, and he advised that they wait for the results before issuing the new guidelines. The group, however, chose not to wait. The entity that sponsored the work group recently described changes in its conflict of interest policies, which it described as providing "an even higher level of transparency" by providing that financial disclosures would be discussed at the meetings of guideline development groups, that those reviewing the evidence would be "empowered to assure that all guideline recommendations are supported by the evidence," that the organization's compliance officer would monitor guideline development activities and report to the organization's board on issues relating to conflict, and that no future guideline could be funded by a single industry sponsor (NKF, 2007).

## POLICIES ON CONFLICTS OF INTEREST IN CLINICAL PRACTICE GUIDELINE DEVELOPMENT

### Characteristics of Policies

The committee examined a convenience sample of conflict of interest policies identified through the National Guideline Clearinghouse, presentations at committee public meetings, organizational websites, documents describing guidelines, assessments of specific guidelines, other publications,

and discussions with staff or members of organizations involved with guideline development. It found no systematic information on the conflict of interest policies of groups that develop clinical practice guidelines. Reviews by Boyd and Bero (2006) and Boyd (2008) likewise found no systematic descriptions or assessments of these policies.

The availability, representativeness, and quality of the available information are limited in several important ways. As noted above, even if the developers of guidelines have conflict of interest policies, they may not refer to them in individual guideline documents. This in turn means that the summaries in the National Guideline Clearinghouse are likely to have no information either. A number of groups have recently revised aspects of their policies, and the committee is aware of other groups that are considering changes. In some cases, these changes may not be reflected on websites or in publications.

From the policies examined, the committee identified several variations in organization conflict of interest policies and procedures. They vary in the

- information required for disclosure, including how detailed the information disclosed must be, how often disclosure is requested, and whether a panel member needs to explicitly state that he or she has no relationships to disclose;
- management of disclosed information, including who reviews it and whether other panel members are told of conflicts;
- procedures for managing the relationships disclosed, including limitations of participation by members with conflicts (such as serving as chair or cochair or voting);
- provisions for public disclosure of conflict of interest policies, funding sources, and individual financial relationships;
- procedures for managing relationships with companies that provide funding for guidelines development; and
- assignment of explicit responsibility for monitoring whether institutional policies are followed.

The frequent lack of transparency of conflict of interest policies limits the ability of guideline readers to consider financial relationships and conflicts of interest as part of their assessment of the credibility of a set of guidelines. To give a sense of what readers of guidelines may encounter, Box 7-3 includes additional examples of the range of summary statements in the National Guideline Clearinghouse. (See also Box 7-2.)

The committee found few descriptions of the policies used to manage the relationship between guideline developers and industry for groups that accept industry funding for guideline development. One exception is the

**BOX 7-3**
**Examples of Conflict of Interest Policy Descriptions Excerpted from Summaries in the National Guideline Clearinghouse**

*Example A*
FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST
Not stated. [This is the most common entry for the period from 1999 to 2006.]

*Example B*
FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST
To assure the integrity of the Advisory Committee on Immunization Practices (ACIP), the U.S. Department of Health and Human Services has taken steps to assure that there is technical compliance with ethics statutes and regulations regarding financial conflicts of interest. Concerns regarding the potential for the appearance of a conflict are addressed, or avoided altogether, through both pre- and postappointment considerations. Individuals with particular vaccine-related interests will not be considered for appointment to the committee. Potential nominees are screened for conflicts of interest, and if any are found, they are asked to divest or forgo certain vaccine-related activities. In addition, at the beginning of each ACIP meeting, each member is asked to declare his or her conflicts. Members with conflicts are not permitted to vote if a conflict involves the vaccine or biologic being voted upon. [NGC, 2009g; see also ACIP, 2007]

*Example C*
FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST
The American Academy of Neurology (AAN) is committed to producing independent, critical and truthful clinical practice guidelines (CPGs). Significant efforts are made to minimize the potential for conflicts of interest to influence the recommendations of this CPG. To the extent possible, the AAN keeps separate those who have a financial stake in the success or failure of the products appraised in the CPGs and the developers of the guidelines. Conflict of interest forms were

American College of Chest Physicians, whose policies are summarized in Box 7-4.

### Effectiveness of Policies

The committee identified no evaluations of the impact of conflict of interest policies on the content of guidelines or other outcomes. The review by Boyd and Bero (2006) also found no rigorous assessments of conflict of interest policies for guideline development and no evaluations of different strategies for implementing or enforcing them.

obtained from all authors and reviewed by an oversight committee prior to project initiation. AAN limits the participation of authors with substantial conflicts of interest. The AAN forbids commercial participation in, or funding of, guideline projects. Drafts of the guideline have been reviewed by at least three AAN committees, a network of neurologists, Neurology peer reviewers, and representatives from related fields. The AAN Guideline Author Conflict of Interest Policy can be viewed at www.aan.com. With regards to this specific report, all authors have stated that they have nothing to disclose. One of the authors performs epidural steroid injections. [NGC, 2009b; see also Armon et al., 2007]

*Example D*

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Standards and guidelines are to insure that individuals participating in professional activities are aware of author relationships with commercial companies that could potentially affect the information presented. The American Thyroid Association has endorsed the requirement that authors disclose any significant financial interest or affiliations they may have with the manufacturers of products or devices that may be discussed in the development of guidelines. In compliance with this policy, a superscript number placed by the name of an author denotes an author who has indicated an affiliation with organizations which have interests related to the content of these guidelines. The intent of this policy is to openly identify potential conflicts of interest so that physicians may form their own judgments about the guidelines with full disclosure of the facts; it remains for the audience to determine whether an author's outside interest may reflect a possible bias in either the exposition or the conclusions presented. [NGC, 2009f; see also Cooper et al., 2006a]

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NOTE: As explained in the text of this chapter, the documents on which guideline summaries are based may not include references to organizational policies that have governed the development of the guideline. Thus, a "Not stated" response does not necessarily indicate that a group has no policy.

## Other Strategies to Limit Bias in the Development of Clinical Practice Guidelines

Those committed to the development and implementation of sound, credible, and useful guidelines have devised a number of methods and tools that can be used to support the creation of such guidelines. Several are listed in Box 7-5, roughly according to the step in the process of guideline development described in Table 7-1. Arguably, the most important steps are the conduct of a systematic review of the evidence and the linking of recommendations to the evidence in an explicit fashion. The strategies—and continuing areas of debate and methodological refinement—are described in depth elsewhere (see, e.g., Higgins and Green [2008] and IOM [2008]).

**BOX 7-4**
**Policies of American College of Chest Physicians on Industry Funding of Guideline Development**

- Fund development activities are undertaken by the organization's executive office without the involvement or knowledge by the organizational unit responsible for guideline development, and each guideline ideally is either self-funded or funded by at least three to five outside sources.
- Names of sponsoring companies are not revealed to staff, society members, and other participants in guideline development until the information is disclosed in the final publication.
- Sponsors do not nominate topics, participate in meetings, or review drafts. They see the guideline only upon publication.
- The organization does not inform sponsors of the participants involved in developing a guideline, the specific questions investigated, the methodologists or evidence-based practice center involved in the evidence review, the reviewers, or meeting times or places.
- Guidelines refer to pharmaceuticals only by their generic names and not by their brand names.

SOURCE: Baumann et al., 2007; Lever and Lewis, 2008.

In general, they reinforce conflict of interest policies by limiting the opportunity for secondary financial interests to exert undue influence on the primary interest of developing sound guidelines.

Unfortunately, as Steinberg and Luce (2005) have observed, rigorous methods for clinical practice guideline development and reviews of the clinical evidence are not applied consistently, and the conclusions of evidence reviews are not always interpreted appropriately. Furthermore, given that the evidence base is weak in many areas, they advise, "physicians, policymakers, and others acting on the basis of judgments, recommendations, or measures . . . should not blindly assume that the label [evidence-based] truly applies" (p. 91).

As noted earlier, in addition to developing methods to limit bias, individuals and groups have been developing tools for standardizing the presentation of guidelines and assessing the quality of guidelines across several domains (see, e.g., IOM [1992], the AGREE Collaboration [2003], and Shiffman et al. [2003]). Methodologists have also developed tools that can be used to assess the quality of systematic reviews (Shea et al., 2007; see also Oxman et al. [2006a]). The 23-item AGREE instrument, which was developed by experts from 13 countries with funding from the European Union, includes two elements that relate to conflict of interest, specifically, that the "guideline is editorially independent from the funding

**BOX 7-5**
**Other Strategies for Limiting Bias in Clinical Practice Guideline Development**

*Using an explicit process to select topics for clinical practice guideline development.* Various groups and individuals have recommended a formal process and the use of explicit criteria for the selection of topics for guideline development (see, e.g., Battista and Hodge [1995], IOM [1995], and Oxman et al. [2006a]). Although the primary rationale is to use limited resources to evaluate areas that offer the greatest potential to improve the quality or effectiveness of health care, another potential benefit is a reduction in the opportunity for financial relationships and other sources of bias to influence the selection of topics.

*Creating a diverse expert panel.* The inclusion of individuals with a range of relevant professional and other backgrounds on guideline development panels can help check financial, professional, and other sources of bias; promote the fuller consideration of potential outcomes, relevant evidence, and aspects of implementation; and help win broader acceptance by professionals, consumers or patients, health care plans, and others who play roles in the successful implementation of guidelines (see, e.g., IOM [1990, 1992, 2008] and AGREE Collaboration [2003]).

*Systematically reviewing relevant evidence.* As summarized by Higgins and Green (2008, Section 1.2.2) for the Cochrane Collaboration, key elements of this critical step include

- "a clearly stated set of objectives with pre-defined eligibility criteria for studies;
- an explicit, reproducible methodology;
- a systematic search that attempts to identify all studies that would meet the eligibility criteria;
- an assessment of the validity of the findings of the included studies, for example, through the assessment of risk of bias; and
- a systematic presentation, and synthesis, of the characteristics and findings of the included studies."

*Using systematic procedures to evaluate the evidence, employing expert judgment, and linking recommendations to the evidence.* Methodologists have developed and tested formal processes for developing consensus and otherwise structuring the expert judgment process (see, e.g., Fink et al. [1984], Murphy et al. [1998], Verkerk et al. [2006], and Renfrew et al. [2008]). In addition, considerable effort has been invested in developing and testing explicit methods for reporting and rating the evidence relevant to guidelines and for rating the strength of the recommendations (see, e.g., Guyatt et al. [1995], Lohr [2004], and Schünemann et al. [2006], and Schünemann [2008]).

*Obtaining expert reviews.* An independent, expert review of the guidelines and related documents is an important tool that can be used to improve the identification, evaluation, and use of the evidence. The process used to select expert reviewers should explicitly identify and assess reviewer ties with potentially affected companies.

body" (Item 22) and that "[c]onflicts of interest of guideline development members have been recorded" (Item 23). In addition, the Conference on Guideline Standardization (COG) proposed a somewhat similar 18-item checklist for reporting (documenting) guidelines (Shiffman et al., 2003). The COG list includes the identification of the funding source or sponsor, its role in developing or reporting the guideline, and the disclosure of conflicts of interest.

These and other instruments are not intended to be used to assess the full substance of the guidelines. In and of themselves, they will not identify, for example, whether key evidence has been overlooked or incorrectly assessed, whether relevant benefits or harms have been ignored or improperly weighed, or whether critical barriers to implementation have been missed. Notwithstanding some shortcomings of guideline assessment tools, their development and application underscore that it is important for documents containing clinical practice guidelines to provide potential users of the guidelines with informative descriptions of the development process, the evidence base, the participants, and the applicable conflict of interest policies. When users of guidelines confront guidelines that lack such descriptions, they would be prudent to treat the guidelines with caution and search for other guidelines that provide appropriate documentation.

Even when the developers of clinical practice guidelines use sound methods, they are often limited by shortcomings in the evidence base. A review of the guidelines in the National Guideline Clearinghouse reveals recommendation after recommendation that is supported by weak, mixed, or no evidence. Both to support the development of practice guidelines and for other purposes, many groups in the United States and elsewhere have called for greatly increased public investments in comparative effectiveness research and analysis for at least two decades (for a small sampling, see IOM [1985, 2007, 2008], OTA [1994], CBO [2007], and MedPAC [2007]). At the end of the next section, the committee endorses the recommendations for such investments that another IOM committee made recently. Overall, the combination of a better evidence base for clinical practice guidelines and better tools for assessing that evidence not only strengthens the usefulness of practice guidelines but also reduces the potential for conflicts of interest to bias guidelines.

## RECOMMENDATIONS

Given the important role that clinical practice guidelines play in many aspects of health care, it is important that these guidelines be free of industry influence and be viewed by clinicians, policy makers, patients, and others as objective and trustworthy. The committee found substantial variation in the extent to which different groups disclosed their conflict of interest

policies and the financial ties to industry of the sponsoring group and the members of the guideline panel. It also found little systematic descriptions or assessments in the literature. On the basis of its judgment and experience (including experience with conflicting guidelines and guidelines not based on formal reviews of the evidence), the committee believes that the risk of undue industry influence on clinical practice guidelines is significant, and that risk justifies that strong steps be taken to strengthen conflict of interest policies governing the development of guidelines. Recommendation 7.1 proposes several such steps.

**RECOMMENDATION 7.1 Groups that develop clinical practice guidelines should generally exclude as panel members individuals with conflicts of interest and should not accept direct funding for clinical practice guideline development from medical product companies or company foundations. Groups should publicly disclose with each guideline their conflict of interest policies and procedures and the sources and amounts of indirect or direct funding received for development of the guideline. In the exceptional situation in which avoidance of panel members with conflicts of interest is impossible because of the critical need for their expertise, then groups should**

- **publicly document that they made a good-faith effort to find experts without conflicts of interest by issuing a public call for members and other recruitment measures;**
- **appoint a chair without a conflict of interest;**
- **limit members with conflicting interests to a distinct minority of the panel;**
- **exclude individuals who have a fiduciary or promotional relationship with a company that makes a product that may be affected by the guidelines;**
- **exclude panel members with conflicts from deliberating, drafting, or voting on specific recommendations; and**
- **publicly disclose the relevant conflicts of interest of panel members.**

Transparency is one key element of Recommendation 7.1. Groups should disclose their conflict of interest policies and their process for seeking members without conflicts of interest and its results. The disclosure of the relevant financial interests of members of guideline development panels should be sufficiently specific and comprehensive that it helps others judge the severity of the conflicts of interest, including allowing the identification of fiduciary interests (e.g., membership on company boards) and promotional relationships (e.g., participation in industry speakers bureaus).

Groups that develop guidelines should also disclose the sources and the amounts of funding provided for guideline development, including unrestricted company grants. Some committee members also wanted groups that develop guidelines to report publicly all their sources, amounts, and purposes of funding because industry contributions to general revenues (e.g., from journal advertising or unrestricted grants) could also create undue influence. The committee did not reach a consensus on this point. Other committee members were also concerned about the overall reliance of some professional and patient groups on industry funding, but they believed that this reporting of all sources and purposes of funding is not necessary, provided that groups developing guidelines adopt and implement rigorous evidence-based procedures, report indirect and direct funding sources for each guideline, and institute the conflict of interest policies and procedures recommended in this report. Another safeguard would be the continued development of processes for rating guidelines development processes, as described above. Moreover, if the U.S. Congress requires companies to report payments not only to individuals but also to a range of medical organizations, that information, in combination with the annual reports that many professional society and patient groups issue, should allow the calculation of industry funding as a share of total revenues.

Transparency also involves the inclusion of the specified information with each guideline that a group sponsors. Preferably, the information would accompany the written text, but it could—particularly if it is very lengthy—be provided by an Internet link that is maintained through the life of the guideline.

In addition to expanded disclosure about funding, the committee recommends an end to direct industry funding of clinical practice guidelines. It recognizes that this step might have the undesirable effect of reducing the involvement of professional societies in guideline development but believes that it is necessary to avoid the conflicts that come from industry financing. It is also likely that an increase in public support for systematic reviews of the evidence would buffer such effects because these reviews are an expensive part of the process of developing evidence-based guidelines. Professional societies and other groups with a shared interest in certain clinical problems could also collaborate on the development of guidelines and spread the costs. In addition, a pooling mechanism might be created—as has been suggested by some for continuing medical education—to support indirect industry funding of the development of clinical guidelines in certain broad categories.

Another important step is to exclude or substantially limit the participation of individuals with conflicts of interest on panels that develop clinical practice guidelines. As more academic institutions and other groups as well as individual professionals take the steps recommended in Chapters 5

and 6 of this report, it should be easier to find individuals who are free of conflicts of interest involving promotional relationships (e.g., participation in speakers bureaus). If groups conclude that participants with conflicts of interest are essential to provide the necessary expertise, they should demonstrate to the public that they have made a good faith but unsuccessful effort to find individuals with the required expertise and without conflicts of interest. They should also preclude individuals with conflicts of interest from chairing guideline development panels, restrict the number of individuals with conflicts of interest on panels to a distinct minority (e.g., to 25 to 30 percent of the membership), and prohibit members with conflicts of interest from drafting and deciding specific recommendations.

In addition to actions by the institutions directly involved in the development of guidelines, organizations with an interest in unbiased clinical practice guidelines can create incentives for groups that develop guidelines to adopt the recommendations presented in this report. The committee understands that the National Guideline Clearinghouse will be phasing in a requirement for the disclosure of conflicts of interest, but the committee recommends that it extend the requirement to include the disclosure of funding and policy information, consistent with Recommendation 7.1. It would also be desirable for the clearinghouse or some other entity to begin substantive assessments of the quality of clinical practice guidelines.

**RECOMMENDATION 7.2 Accrediting and certification bodies, health insurers, public agencies, and other similar organizations should encourage institutions that develop clinical practice guidelines to adopt conflict of interest policies consistent with the recommendations in this report. Three desirable steps are for**

- **journals to require that all clinical practice guidelines accepted for publication describe (or provide an Internet link to) the developer's conflict of interest policies, the sources and amounts of funding for the guideline, and the relevant financial interests of guideline panel members, if any;**
- **the National Guideline Clearinghouse to require that all clinical practice guidelines accepted for posting describe (or provide an Internet link to) the developer's conflict of interest policies, the sources and amounts of funding for development of the guideline, and the relevant financial interests of guideline panel members, if any; and**
- **accrediting and certification organizations, public and private health plans, and similar groups to avoid using clinical practice guidelines for performance measures, coverage decisions, and similar purposes if the guideline developers do not follow the practices recommended in this report.**

The committee expects that the adoption of the committee's recommendations will reduce the probability of undue influence from industry funding and may also reduce the number of conflicting and competing clinical practice guidelines. Some groups that have operated with undisclosed industry support or that have been unwilling to disclose the financial relationships of guideline development panel members may remove themselves from the guideline development process. Other groups may collaborate to share the costs of developing guidelines on topics of common interest.

Although the committee believes that an expanded role for public-sector sponsorship of the development of systematic reviews and clinical practice guidelines would be desirable, an examination of this issue is beyond its scope. The committee endorses the recommendation in a recent IOM report for expanded federal support for assessments of the effectiveness of clinical services (IOM, 2008). That report called for the U.S. Congress to direct the U.S. Department of Health and Human Services to designate a single entity with the responsibility and capacity to "to ensure production of credible, unbiased information about what is known and not known about clinical effectiveness" (p. 171). That entity would establish priorities for and manage the development of systematic reviews of clinical effectiveness, develop standards for such reviews and for clinical guidelines, and address conflicting guidelines. The report also recommended that accreditation organizations and other groups preferentially use guidelines developed by using the standards described in the report. In addition, it recommended that guideline development panels minimize bias by including a balance of competing interests, prohibit voting by participants with conflicts of interest, and publish conflicts that have been disclosed.

### Other Relevant Recommendations in This Report

In addition to the two recommendations in this chapter, recommendations elsewhere in this report are relevant to institutions that develop clinical practice guidelines. Consensus standards on disclosure elements and procedures would make disclosures more informative as well as less burdensome for those making disclosures to multiple institutions (Recommendation 3.2). A national system for public reporting by companies of their payments to individuals and organizations would allow the easier verification of certain disclosures (Recommendation 3.4). Limitations on certain industry ties and practices (e.g., the receipt of gifts and participation in speakers bureaus) should reduce conflicts of interest among the pool of experts considered for participation in clinical practice guideline development (Recommendations 5.1, 6.1, and 6.2).

The adoption of explicit policies and procedures on institutional conflict

of interest would challenge professional societies, patient advocacy groups, and other entities that develop clinical practice guidelines to confront the scope and appropriateness of their financial ties with industry, eliminate questionable ties, and prudently manage others (Recommendation 8.1). The next chapter discusses conflicts of interest at the level of institutions.