Managing Conflict of Interest in Clinical Practice

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Conflict of interest, even the appearance of potential conflict, has long been a concern for physicians and scientists. Conflict of interest arises when an activity is accompanied by a divergence between personal or institutional benefit when compared to the responsibilities to patients and to society; it arises in the context of research, purchasing, leadership, and investments. Conflict of interest is of concern because it compromises the trust of the patient and of society in the individual physician or the medical center.

The Bayh-Dole law of 1980 allowed inventors to participate with their academic home institutions in the sharing of royalties that accrue from the licensing or commercialization of intellectual property and thereby provided the catalyst for greater federal government scrutiny of the potential for conflict of interest in academic medicine. The increase in opportunities for conflict of interest in clinical practice, not just research, is now an undesirable consequence of this royalty-sharing policy.

Clinical conflicts of interest exist and are likely increasing in the modern academic medical workplace. Some result from increased competition for federal funding for research, necessitating supplementation of research funds from industry to maintain the academic mission. Aggressive industry marketing of clinical products can be accompanied by immense purchasing incentives to use these products. Enhanced professional reputations may result for clinicians and investigators associated with an innovative product. All provide ample opportunities for relationships that may lead to potential, or at least an appearance of, conflict of interest. In an era characterized by the wealth of mass communications used in promotions, it is all too frequent for a well-intentioned clinical investigator to appear to be serving the marketing needs of the industry rather than patients' clinical needs.

Modern conflicts of interest in clinical medicine deserve fresh thinking, and we are only beginning to understand and address these conflicts. The best interests of our patients are served by complete disclosure of individual and institutional conflicts of interest. Although several institutions have published or made available in the public domain their recommendations for management of interactions between their clinical faculty and the pharmaceutical industry, policies that address clinical conflicts of interest have only recently been added to policies that address conflicts of interest in research.

In this article, we briefly review current policies dealing with nonfinancial and financial conflicts of interest in the medical environment and provide hypothetical examples that elucidate the problem of conflicts of interest that arise in clinical practice. Using the ongoing approach adopted at Mayo Clinic to address clinical conflicts of interest, we identify important pitfalls encountered in implementing the new policy and provide insights that might create a model for dealing with clinical conflicts of interest in the long term, both intramurally and extramurally. Clearly, there is a need for substantial study and greater experience across many academic medical centers to formulate mature recommendations. Our hope is that this analysis serves to stimulate discussion that may ultimately lead to improved policies and effective implementation of those policies.

DEALING WITH NONCLINICAL AND CLINICAL CONFLICTS OF INTEREST IN THE MEDICAL ENVIRONMENT

Several policy recommendations for identifying and managing conflict of interest in research and education within academic medicine are detailed in federal regulations, the Association of American Medical Colleges task force reports, and standards set by the Accreditation Council for Continuing Medical Education. These principles have been broadly applied and extended beyond the research environment to management of conflicts in purchasing decisions, financial investments, and leadership activities. For example, at many academic centers, individuals who have conflicts of interest are generally excluded from voting on purchasing decisions. Additionally, leaders (including internal and external trustees) are required to disclose significant conflicts of interest in accordance with institutional policies and Internal Revenue Service regulations, respectively, and to recuse themselves from decisions pertaining to their interests. External trustees are expected not to involve themselves in the business decisions of companies in which they have significant personal interest when these companies conduct business with...
the academic medical center. Such recusal is required during their tenure as trustees and for a period (often 5 years) after completion of their service as a trustee. This “5-year look back” is consistent with the Intermittent Sanctions Policy of the Internal Revenue Service, which is applied to nonprofit organizations that engage in transactions that benefit a disqualified person within the organization. Failure to comply with these regulations allows the Internal Revenue Service to penalize the disqualified person receiving the benefit and the organization, including revocation of its exempt (nonprofit) status.

**Dealing With Clinical Conflicts of Interest in the Medical Environment**

In a study from the Department of Clinical Bioethics of the Clinical Center at the National Institutes of Health, there were a variety of reactions among research participants informed about investigators’ interactions with industry. These reactions ranged from concern to indifference to acceptance and even encouragement of investigators’ interaction with industry, even if it leads to financial interests. However, most research participants wanted to receive notification of investigators’ involvement with industry, and many assumed that institutions managed potential conflicts of interest. Few research participants said investigator involvement with industry would affect their decisions to participate in the research.

Similarly, a recent analysis of cancer research trials determined that enrolled participants were not concerned about financial ties between researchers or medical centers and drug companies and would still have enrolled in the trial if they had known about such financial ties. A substantial minority wanted to be informed about the oversight to protect against financial conflicts of interest and about researchers’ financial interests. Thus, although disclosure of information regarding investigator financial interest to research participants is often recommended, its usefulness is limited, especially when patients are motivated to participate because of the need to find a cure for their illness. In summary, patients expect academic centers to have an established oversight system to protect research participants from potential conflicts of interest of investigators.

**Recent Recommendations to Enhance Management of Conflicts of Interest**

Learned bodies and opinion leaders continue to provide insights and recommendations to academic medical centers to counter or manage practices that create clinical conflicts of interest. These include prohibition of the following: (1) direct provision of drug samples to physicians (while creating an arms-length system for indigent patients to have access to such samples), (2) direct financial relationships of formulary and equipment committee members with drug or device companies, (3) participation in educational activities of speakers’ bureaus of the companies, and (4) publication by physicians of any article ghostwritten by industry employees. These 4 principles are already implemented in the policies of Mayo Clinic.

However, 3 other principles proposed in the article published in *JAMA* in 2006 are not yet implemented by Mayo Clinic. These require further study to strike the right balance between ethical management of financial support that is needed to sustain the academic mission of the academic center in the face of diminishing federal support of education.

The first principle is the banning of all gifts (large and small) from drug and device makers, including free meals (eg, meals provided at medicine grand rounds or journal club gatherings). Although prohibition of free meals and provision of gifts have been widely discussed, we perceive that it is in the interest of society that appropriately managed gifts used exclusively for the purpose of education or research, rather than for profit in clinical practice, be made available to academic centers. Appropriate management includes specifying the deliverables associated with the donation so that it reflects a true exchange transaction rather than an “unrestricted gift” and disclosure of the donation in publications and presentations.

The second principle is prohibition of support of continuing medical education programs (including travel to such programs) by industry. During the past few years, there has been a noticeable trend for intermediary education companies (which may be for-profit or not-for-profit) to lead such activities using education grants provided by drug and device companies. Thus, the industry support is not direct, but it is still unclear whether such indirect support really reduces the potential for conflict of interest or influences prescribing patterns and hence the clinical practice of participants attending the program. The counterargument is that such continuing medical education programs have educational value and that there will be an opportunity cost if such education is restricted.

The third principle in the *JAMA* article is the establishment of a central fund, pooling gifts from multiple sources to be distributed by the academic medical center according to its priorities. This is a laudatory goal, but to be effective it may need to be implemented by all academic centers, and the process used to assign resources within an academic medical center must be transparent (eg, to the donor, to the departments in the center) and accountable to all interested parties.

In general, regulations intended for management of conflicts of interest in research and education are currently more mature and generally accepted than those that address conflicts that arise in clinical practice.
**Scenarios Associated With Potential Conflicts of Interest in Clinical Practice**

Analysis of clinical situations that present potential conflict of interest is often complex and needs to be addressed using multiple approaches. Three fictional scenarios illustrate specific challenges in identifying and managing potential conflicts of interest.

**Scenario 1: Selection of Medication From a Menu of Drugs With Similar Efficacy.** In clinical practice, 2 or more medications or classes of medication often have similar potential for benefit. What determines the clinician’s choice of a diuretic for heart failure, antiplatelet adhesive-ness medication for angina, laxative for constipation, non-steroidal analgesic for degenerative joint disease, or anti-inflammatory medication for inflammatory bowel disease? These choices determine medication spending of a few dollars (eg, for aspirin or chloroquine or prednisone for a rheumatological or inflammatory bowel disease) to a few thousand dollars (eg, for a monoclonal antibody prescribed for these conditions) per month.

Physicians may appropriately choose newer and more expensive medication based on either published data or personal observations that indicate that the drug is safer and/or more effective than an older inexpensive regimen. On the other hand, perhaps influenced consciously or sub-consciously by personal relationships with industry, physicians may inappropriately prescribe newer, more expensive drugs that are not necessarily more effective for the specific clinical situation.

**Motivation or Benefit.** Evidence shows that prescribing practice is altered by interaction with the pharmaceutical industry, often leading to a clinical decision that is not supported by the available literature. The motivation for selecting one medication over another may be the personal financial benefit that results from consulting or participating in education programs funded either directly or through an “independent” education company by the manufacturer of the drug. An alternative motivation may be the receipt of a research grant that results in no personal financial benefit. Finally, the clinician may be influenced consciously or sub-consciously by personal relationships with industry or a desire to appear on the cutting edge of medical advances.

**The Conflict and the Associated Potential for Harm.** How can the patient be protected from the selective, perhaps capricious or conflicted, prescribing practices of the individual physician? What can an institution do when the anticipated efficacy of medications for the specific indication in an individual patient is similar, but the choice may expose the patient to a greater risk of adverse effects, eg, greater risk of angina or stroke with a cyclooxygenase 2 inhibitor rather than a nonselective nonsteroidal anti-inflammatory drug; greater risk of persistent bleeding in a patient with an ulcer who is taking a platelet IIb/IIIa antagonist rather than aspirin; and a potentially greater risk of infection/lymphoma with maintenance anti-tumor necrosis factor therapy than with maintenance corticosteroids?

**Management Options.** If the clinician has a personal financial or nonfinancial interest, the potential for conflict of interest needs to be managed. Potential management options to consider are as follows: (1) **de minimis** (Latin for “about minimal things”) financial interest that triggers oversight of the prescribing practices of the clinician; (2) limit on personal income from industry relationships to ensure that compensation meets market standards and avoids the concern that the payment is for consciously or subconsciously inducing “loyalty” in the prescribing practice; (3) independent review of research contracts and budgets that should be auditable as a deterrent to “padding”; and (4) recusal of the involved clinician from purchasing or formulary decisions, which may ultimately influence not only the individual’s practice but also that of the medical center. However, these management strategies come at a potential risk that physicians, who are sensitized by the potential for being perceived as having a conflict of interest, may select drugs that may be inferior to the more expensive, newer drug. Thus, balance in these management approaches is essential to safeguard the best interest of the patient.

**Scenario 2: Selection From a Menu of Devices With Similar Efficacy Projected for an Individual Patient.** There are many instances in procedural and surgical clinical practice in which 2 or more devices or procedures have similar potential to benefit the patient. Indeed, situations may even exist in which the choice of an interventional approach may not provide a significantly better benefit than noninterventional therapy. A classic example is the choice for a patient with serious but stable angina among medical therapy vs one of a variety of cardiac interventions (balloon angioplasty, stent, drug-eluting stent) vs coronary artery bypass grafting. Another example is the choice among a variety of orthopedic prostheses for the patient who has an undisputed need for surgical joint replacement. The choice may be further complicated if the surgeon has contributed intellectual property that led to the academic center licensing the product and receiving a sales-based royalty.

**Motivation or Benefit.** The motivation for choice of one treatment over another should be dictated by the nuances of the individual case, with the best interest of the patient at the focal point of decision making. However, in situations in which there are no specific benefits of one therapeutic approach over another, it is conceivable that one approach may selectively benefit the institution and, through its royalty-sharing policy, an individual (independent of any patient considerations). Thus, a physician with a potential...
conflict of interest (through personal gain) may be in a position to direct the care and select a specific treatment for an individual patient.

**The Conflict and the Associated Potential for Harm.** The conflict is similar to that observed in Scenario 1 for the clinician who benefits through consulting, royalty income, or research grants from the manufacturer or by participating in educational meetings. The potential for harm exists when the pros and cons in the choice of the device or treatment are subject to influences other than the best interest of the patient.

**Management Options.** In addition to the management options in Scenario 1, federal legislation and regulation on kickbacks in the health care setting (referred to as the Stark law17,18) provide consideration in managing this kind of conflict of interest in clinical practice. Under the Stark law, the individual and institution are excluded from financial benefit associated with use of a device (on which sales-based royalty is received) when the device is implanted or used in their own clinical practice. This includes a prohibition on receiving royalties for the use of the device by the inventor. To make such policy operational, the academic medical center needs adequate tracking systems to identify inventor use of their own inventions to ensure that the sales occurring at the institution are deducted from the annual computation of sales from which the sales-based royalty is calculated.

**Scenario 3: Development of Practice Guidelines and Their Use by Formulary Committees.** Consensus practice guidelines are intended to have significant impact on clinical practice through decision making. Practice guidelines and formulary committees are designed to debate and develop recommendations that are then implemented as limits on the clinical choices of their colleagues. Thus, they can standardize care and introduce evidence-based criteria for selection of treatment. Incumbent on this process is the requirement for clear objectivity in the formulation of the guidelines. Participation in development of guidelines by individuals having conflicts of interest may introduce bias that may negatively impact patients’ well-being (eg, exposure to clinical risk and acquisition of financial burden when a treatment is only partly funded by the third-party payer).

**Motivation or Benefit.** The motivations in scenarios 1 and 2 all may apply because participants in the development of the guidelines may receive personal benefit through consulting fees, royalties, or research grants. Guideline development requires interpretation of the literature and the recommendations by one person or a group of clinicians (and other experts) from the same or different academic centers, and their judgment may conceivably be tainted or may be perceived to be tainted by conflict of interest.

**The Conflict and the Associated Potential for Harm.** The conflict, typically represented by personal financial interest, has even greater potential for harm as guidelines are implemented by a spectrum of health care delivery systems through their formularies. What are the responsibilities of the academic medical center in managing such potential conflicts of interest?

Substantial scrutiny is necessary to ensure that authors of consensus practice guidelines do not have personal conflicts of interest.19 Of note, a Dutch group was able to develop consensus for clinical guidelines but could not develop guidelines on management of conflict of interest issues because of a lack of consensus.20 The potential for good from consensus guidelines is significant but so is the harm if the guideline is biased and if that bias is in a direction detrimental to patient care. Such documents from governmental and national organizations or learned physicians are used extensively by formulary committees or groups entrusted with purchasing decisions. These decisions can meaningfully impact the revenues of the product manufacturer. At the same time, a biased guideline could potentially induce harm by not reflecting the best management strategy or exposing the patient to personal or financial risk. Thus, although institutions may manage individual conflict of interest by requiring employees to recuse themselves from the purchasing process, the institution is potentially vulnerable when it follows consensus guidelines developed by learned groups that did not appropriately manage their conflicts of interest.

**Management Options.** Development of consensus practice guidelines usually occurs outside the purview of any single medical center; hence, policies developed by a single academic medical center may not affect management of conflicts of interest in consensus guidelines development. Nevertheless, we believe that the academic medical center should educate its staff regarding responsibilities when invited to participate in development of guidelines and to ensure objectivity in the institution’s formulary practice.

In some countries, national bodies or centralized systems such as the National Institute of Clinical Excellence in the United Kingdom are entrusted with guideline development.21 This independent organization is responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health, as well as providing appraisals of health technology, clinical guidelines, and interventional procedures.21 There are no uniformly accepted guidelines for management of conflicts of interest in development of practice guidelines in the United States, although the National Institutes of Health Consensus Development Program sponsors evidence-based assessments of important medical issues.
As reported recently by Steinbrook,
these assessments include systematic literature review prepared through the Agency for Healthcare Research and Quality, a public conference with research presentations (which may be provided by speakers who have conflicts of interest as long as those conflicts are disclosed), jurors and witnesses who do not have conflicts of interest, and a consensus statement that is disseminated widely and ultimately reflects the conclusions of the panels. In practice, most guidelines in the United States are not produced under the auspices of this program.

The academic medical center may educate its staff to adopt strict criteria and self-recusal from participating in development of practice guidelines. For example, the National Institute of Clinical Excellence regulations exclude individuals from any participation in practice guidelines advisory groups for the following reasons: (1) receipt of consulting fees or conduct of fee-paid work, (2) directly held equity, or (3) receipt of expenses or hospitality provided by the manufacturer of the drug or device being evaluated.23 “Policing oneself” is a necessary approach since learned bodies or nongovernmental groups seem little inclined to require such recusal.

A systematic analysis of 52 guidelines compared the quality of the Agency for Health Care Policy and Research (now the Agency for Health Care Research) guidelines with those of subsequent "updates" authored by other experts and guidelines that referenced or were adapted from the same guidelines. The comparison was based on 30 criteria and concluded that North American guidelines developed after and in the same topic areas as the Agency for Health Care Policy and Research guidelines are of substantially worse methodological quality, with the 2 most common problems being failure to conduct a systematic review and failure to use a multidisciplinary panel.24 The one important caveat to consider is that most qualified participants in such consensus guideline development may be those with the greatest conflicts because they are sought out by industry for their expertise. This reflects the same tension that led Dr Scott Gottlieb, who at the time was the Food and Drug Administration’s (FDA) Deputy Commissioner for Medical and Scientific Affairs, to state the following: “Some of the most valuable input often comes from people who are active practitioners but also heavily engaged in clinical research and we need to make sure that we continue to have the ability to recruit top clinical trialists” to the Advisory Committees of the FDA.25 Ultimately, there is need for a balanced approach to participation in guideline development and adoption of principles to identify more clearly the conditions under which conflict of interest waivers may be granted. The more recent FDA guideline26 on recusal of advisory panel members with personal conflicts exceeding $50,000 seems excessively liberal, especially since it exceeds the threshold of $10,000 for definition of significant financial conflict of interest in Public Health Service regulations.

Suggested Additional Approaches to Addressing Clinical Conflicts of Interest
To manage these typical scenarios, we recommend a centralized database of all relationships with industry. All physician interaction with industry should require a 3-way contract between the individual, the institution, and the external party. Contracts are recorded in the database. The availability of this database is critical to identify a relationship that may result in conflicts of interest and to ascertain that compensation to the physician reflects the true market value of the service rendered and is not a form of “loyalty fee” or undue inducement. Similarly, all research contracts should be centralized, and the research budget should be reviewed by the clinical department’s research committee, the institutional review boards, and Research Administrative Services. Any information related to the contract is ultimately available to the internal audit and compliance offices. Such a system is in place at Mayo Clinic.

For the situations presented in Scenario 2, Mayo Clinic policy essentially follows the federal Stark law,17,18 which prohibits reimbursement of health services if a physician or immediate family member has any financial relationship with the providing entity. Although the law provides exceptions that allow certain financial benefits,27 academic medical centers usually elect to follow an approach that conforms to the spirit, not just the letter, of the Stark law. Accordingly, Mayo Clinic has determined that neither the institution nor its physicians will profit personally from prescription of any invention that originates at Mayo Clinic, and appropriate databases have been developed to manage this policy. Moreover, if research on the effectiveness or safety of the device in clinical practice is conducted, the inventor is not permitted to be the principal investigator, the data must be corroborated by an investigator who has no financial conflict of interest, and the individual and institutional conflict of interest must be thoroughly disclosed to the journal.

With regard to Scenario 3, an additional management approach is education to raise the awareness of the clinical staff about the importance of disclosure and, if the level of remuneration exceeds $10,000 personal payment or royalty per year, recusal from participating in the development of management guidelines. As previously stated, there is a need for balance and for national guidelines to ensure that the experience and knowledge of the best qualified individuals are not lost. It is also important to raise awareness
of formulary and purchasing committees of undisclosed conflicts of interest of opinion leaders who participated in guidelines being used to make purchasing decisions. Some of the best adjudicators of potential conflicts of interest of such opinion leaders are other members of staff in the same clinical discipline.

**Development of a Clinical Conflict of Interest Policy at Mayo Clinic**

Mayo Clinic has instituted policies that go beyond federal requirements to identify and manage conflict of interest in clinical practice (Table 1) in parallel with policies already in place for conflicts of interest in research and education.3 The current Mayo Clinic effort is to be regarded as work in progress because further experience with limitations in the policy of its implementation will provide opportunities for enhancement.

The policy consists of 4 important principles, 3 on disclosure and 1 on management. The policy mandates the following: open disclosure of individual and institutional industry relationships to patients, access to further information through a centralized office, and public acknowledgment that neither the institution nor its physicians profit personally from prescription for Mayo Clinic patients of any licensed or drug technology that originates at Mayo Clinic. General information on how patients can access information on individual and institutional industry relationships is provided to the patient at the time of first registration with Mayo Clinic. Furthermore, the institution requires establishment of conflict of interest oversight and management strategies for staff who personally receive either consulting fees or royalties of more than $10,000 per year from any single commercial entity.3 By policy, all Mayo Clinic staff are required to disclose annually all financial relationships with industry.

**Limitations.** Further work is needed to operationalize and optimize the policy. Centralized and comprehensive information regarding contracts with industry related to consulting fees and royalties provides an effective tool for managing conflicts in research or purchasing. However, such an approach does not easily identify the conflicts of interest of the individual staff physician in clinical practice. If we are to avoid medical McCarthyism,28 there must be an “honor system” whereby individuals with conflict of interest make honest and informed selections of treatments for individual patients in their practice.

**Conflicts in Clinical Practice Arising From Equity Ownership.** This complex, controversial issue is the subject of ongoing study. It could be argued that the value of equity held in a publicly traded company would be less likely to be influenced by prescriptions written by a single physician because the impact on the value of the equity is likely to be minimal. Nevertheless, with high-cost medications (eg, biological agents including monoclonal antibodies), devices (eg, cardiac stents of different types), or prostheses (eg, joint replacements), it is conceivable that clinicians with high volume and specialized practices might be perceived to have conflicts of interest that arise from prescription of treatments manufactured or distributed by companies in which they own significant equity.

Equity owned in privately held companies presents no potential for conflict of interest with respect to clinical practice as long as the products are not approved for use in

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**TABLE 1. Mayo Clinic Policy on Conflict of Interest in Clinical Practice and Its Management**

<table>
<thead>
<tr>
<th><strong>Institutional conflict of interest</strong></th>
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<tbody>
<tr>
<td>Disclosure: A statement included in patient information materials acknowledges that Mayo Clinic has institutional relationships with commercial entities that may result from licensing agreements, partnerships, or leadership activities.</td>
</tr>
<tr>
<td>Information: General questions about potential institutional conflicts of interest may be addressed to the Mayo Clinic Conflict of Interest Review Board.</td>
</tr>
<tr>
<td>Declaration to patients: Mayo Clinic receives no royalties from the sale of items invented at Mayo Clinic that are prescribed for Mayo Clinic patients.</td>
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<tr>
<th><strong>Individual conflict of interest</strong></th>
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<tbody>
<tr>
<td>Disclosure: A statement included in patient information materials acknowledges that Mayo Clinic staff members may have relationships with commercial entities that may result from licensing agreements, know-how agreements, consulting agreements, or board membership involving the individual, Mayo Clinic, and a commercial entity.</td>
</tr>
<tr>
<td>Information: General questions about potential institutional conflicts of interest between their caregivers and commercial entities may be addressed to the patient’s physician or the Mayo Clinic Conflict of Interest Review Board.</td>
</tr>
<tr>
<td>Declaration to patients: Neither Mayo Clinic nor its physicians or other caregivers receive royalties from the sale of items invented at Mayo Clinic that are prescribed for Mayo Clinic patients.</td>
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<th><strong>Management strategies</strong></th>
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<tr>
<td>Mayo Clinic staff physician who earns annual consulting fees for personal gain of greater than $10,000 from a consulting relationship with one commercial entity or annual royalties greater than $10,000 from a commercial entity for licensed technology or know-how will be referred to the Conflict of Interest Review Board. This board will review all pertinent relationships and provide management oversight of these relationships.</td>
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<tr>
<td>Depending on the degree of the potential conflict, management strategies will include 1 or more of the following:</td>
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<tr>
<td>Verbal disclosure to patient with documentation of disclosure in medical record.</td>
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<tr>
<td>Corroboration by a colleague without a conflict of interest of any prescription involving a product from the commercial entity.</td>
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<tr>
<td>Corroboration by a colleague without a conflict of interest documented in the medical record of any prescription involving a product from the commercial entity.</td>
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<tr>
<td>Appointment of an Oversight Committee to monitor practice patterns.</td>
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<tr>
<td>Transfer of patient care to another colleague without a conflict of interest.</td>
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<td>Cessation or modification of relationship with a commercial entity, if necessary.</td>
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the practice of medicine. However, if such products are approved, there is potential for significant financial conflict of interest when a physician-inventor holds equity in a privately held company. Divestiture appears to be the optimal strategy. This situation is the subject of ongoing study before amending the policy.

**Unrestricted Grants and Conflicts in the Practice.**

When funds are provided at a clinician’s request in the form of a contribution or unrestricted grant given in support of an educational activity, resident travel, or journal clubs or a research program, without requirement for specific accounting for the funds spent, there is potential for conflict of interest in the practice of medicine, with risks similar to those discussed under Scenario 1. Current policy addresses some types of grants (eg, free samples). In addition, Minnesota law prohibits certain gifts from drug wholesalers and manufacturers. At present, this type of activity is not actively managed by the Mayo Clinic Conflict of Interest Board.

**Opportunity Costs From the Management of Conflicts of Interest in Clinical Practice**

With the establishment of management strategies, there are some opportunity costs. It is possible that depriving the patient of care by the most knowledgeable physician who has a significant conflict of interest may not be in the best interest of the patient. As shown in Table 1, there is a need to provide a proportionate management strategy that reflects the magnitude of the financial interest. Ultimately, the academic medical center must be empowered to enforce the main mission and commitment of its staff to the care of the patient and to require cessation or modification of the relationship with a commercial entity, if necessary.

This “scaled” management approach differs from the absolute trigger of recusal with personal financial interest of more than $10,000 per year. After a few years of experience with the loss of some of the most knowledgeable editorialists because of financial conflicts of interest, *The New England Journal of Medicine* changed its policy from “no conflict” to “no significant conflict.” Similarly, we perceive that management of conflicts in clinical practice can be achieved in a manner that follows principles and maintains the benefit of the physician’s care of the patient.

Participation of clinical staff on consulting or medical advisory boards facilitates involvement in clinical research trials. Theoretically, the consulting fees on aggregate may well exceed $10,000; however, this is rarely the case for interactions with a single company or product and in our experience during the past 4 years would have required significant changes in the clinical practice of fewer than 20 of almost 2000 research and clinical staff at Mayo Clinic.

Given the fact that the *de minimis* of $10,000 was established in 1996, the threshold may be ready for an adjustment for inflation.

Similarly, there is a need for balance in the appraisal of conflict among experts authoring a guideline to avoid dismissing experts with potential conflicts of interest due to a formulaic approach. Such experts are indeed capable of producing guidelines that represent high-quality, evidence-based information. Their exclusion with a formulaic approach represents another opportunity cost to optimizing these management strategies. For example, it would be reasonable for a formulary committee to approve a guideline without review for conflict of interest if the conclusions are based on the highest level of evidence (eg, systematic review based on prospective randomized, controlled clinical trials, especially those that include active comparators). In contrast, recommendations based on case series or poor-quality case-control or cohort studies or expert opinion should be scrutinized for potential conflicts of the experts. This is consistent with recommendations on the evaluation of guidelines.

There needs to be enhanced communication from the nonconflicted formulary committee regarding the grade of evidence that leads to approval. If the drug or device was approved as highly effective, physicians would not believe that they are being watched for every new expensive drug prescription. On the other hand, physicians would know that their prescriptions are subject to being monitored for certain drugs that the institution believes are only marginally more effective than an existing less expensive item.

**A Look to the Future: The Ideal Scenario for Dealing With Clinical Conflicts of Interest Long Term**

We perceive that it would be advantageous to have a set of uniform policies and management strategies, both intramurally and extramurally, based on the consensus and experience among academic medical centers. Intramurally, these efforts will start with education of the medical staff and the office of intellectual property about these potential conflicts of interest and education of formulary committees about the perils of uncritically following nongovernmental consensus guidelines. Even if it were possible to design policies to address all potential clinical conflict of interest scenarios, one is still left with the challenge of ensuring that those policies are optimally enforced and fairly adjudicated. As such, it is imperative that an institution spend considerable effort educating its members about policies and procedures, making it apparent that the policies will be applied evenly regardless of an individual’s professional stature, ability to generate revenue, or other confounding variables.
REFERENCES