

Maintaining Public Trust in Medical Journals

THOMAS J. LIESEGANG, MD, ANDREW P. SCHACHAT, MD, AND
DANIEL M. ALBERT, MD

ONLY RECENTLY HAS THE MEDICAL ESTABLISHMENT begun to require financial disclosure from research scientists at the time of presentation or submission of manuscripts.¹ The oversight of nonfinancial conflicts or bias traditionally has been left to the academic community and the professions to monitor, whereas during the past decade, financial conflicts have become a shared and contingent responsibility of academia and the federal government, with the public a more frequent, vocal observer.²

Are conflicts of interest now so pervasive as to be unimportant? Are all such ethical issues now situational? Is it reasonable to assume that readers can dissect the nuances of financial disclosure within the complexity of the presented journal article? Is "reader and public beware" the appropriate mantra for medical journals? Can research be done if we altered the system? Can authors who do not have conflicts of interests compete in the future against the financial leverage of those with conflicts? What happens when we all have conflicts of interest? Is losing public trust inevitable? Although the commercialism of medicine is an all-encompassing concern, this editorial will only address conflicts as they relate to publishing.

Thompson³ defines a financial conflict of interest in the strict sense as a condition rather than a behavior, because researchers who might benefit financially by distorting their work have a conflict of interest regardless of whether they actually distort their work. The circumstances rather than the outcome determine whether there is a conflict of interest. Semantically, then, a conflict is present under any financial situation. It is then the perceived or real bias that physicians are concerned about, whereas the public has more trouble differentiating but is concerned about both conflict and bias.

Financial conflicts of interest in medicine remain a contentious issue in the profession. It is still not fully

accepted by organized medicine, and increasingly criticized by the public, that clinicians should gain financially from their practice in any way other than through their direct fees or salaries for service.^{1,3} The public fails to comprehend why medical researchers should gain financially from companies whose products they are evaluating or are reviewing for publication. The relationship of trust between the public and academic medicine is especially evident and was recently scrutinized in medical research involving the participation of human subjects.² The public is wary of any perception that faculty investigators or their institutions have financial interests that might compromise their independence and credibility.

All of the partners in publishing (authors, editors, reviewers, institutional review boards, financial supporters) have obligations with regard to disclosure and management of conflict of interest or bias.⁴ Authors should be as objective as possible in presenting their findings, and editors and reviewers should be entirely objective in evaluating them. Personal rivalry; political, financial, academic, or technological competition; philosophical values and beliefs; or religious considerations should not be permitted to affect objectivity. A few journals refuse to consider manuscripts describing research involving a commercial product when the research was supported financially by a commercial organization involved in the manufacture or sale of the product. A few journals will not permit editorials, review articles, or perspectives authored by individuals with potential conflicts of financial interest, feeling that these pieces rely especially heavily on interpretation and judgment and thereby make conflict of interest and the potential for bias especially problematic.^{5,6}

The debate is not just an academic discussion. A survey in 1997 of 61,134 articles in some 181 journals revealed that only 0.5% disclosed a conflict of interest related to the topic of the article. Admittedly the study was done a few years ago, but the results did not accurately reflect reality at the time.⁷ Presenters at meetings often disclose no conflict of interest within their talks and then go on to present a biased presentation (personal observation by the first author as a CME monitor).

In a recent survey 20% of clinical research respondents admitted to delaying publication of their results by more than 6 months at least once in the previous 3 years to allow for patent application, to protect their scientific lead, or to

Accepted for publication Dec 9, 2004.

From the Editorial Offices of the AMERICAN JOURNAL of OPHTHALMOLOGY, OPHTHALMOLOGY, and ARCHIVES of OPHTHALMOLOGY.

This is part of an ongoing series on Editorship being published in the AMERICAN JOURNAL of OPHTHALMOLOGY, ARCHIVES of OPHTHALMOLOGY, and OPHTHALMOLOGY. The opinions expressed are solely those of the authors.

Inquiries to Thomas J. Liesegang, MD, Mayo Clinic College of Medicine, 4500 San Pablo Rd, Jacksonville, FL 32224; fax: (904) 953-2551; e-mail: tliesegang@mayo.edu

slow the dissemination of results that would hurt sales of their sponsor's product, even in the absence of overt pressure from the company.⁸ At least eight studies have shown that industry-sponsored research that gets published tends to produce pro-industry conclusions.⁹ By reanalyzing data the researchers found that papers based on industry-sponsored research are significantly more likely to reflect favorably on a sponsoring company's drug or device than research that is supported by a nonprofit entity or the federal government. Furthermore, the industry-sponsored research is more likely to be of lower quality¹⁰⁻¹⁴ and is less likely to be disseminated to the scientific community.^{15,8}

Conflicts of interest among authors have a potential effect not only on the quality, outcome, and dissemination of research¹⁰ but also on the public's perception of and trust in researchers and in universities.¹⁶ There is public concern that researchers may have permitted the pharmaceutical and biotech industries to manipulate them and their medical science through financial relationships. The public depends on ethical medical research and expects the medical profession and journals to monitor this research process and report misguided relationships.

Researchers now have personal financial relationships with industry sponsors far more intricate than grants for an individual research project, leading to increased public and governmental scrutiny of the effect on faculty behavior.¹⁷ Short-term relationships certainly may help foster subsequent sponsorship of the investigators' research projects; more complex and long-term relationships, such as founding a company, serving on an advisory board, and owning stock, seem problematic but are accepted by many institutions with inconsistencies in policy.¹⁰

The problem of conflicts of interest in medicine interests the public and is more complex than clinical researchers might recognize.^{3,18-20} Although "simple disclosure" is touted by individual physicians, researchers, the profession, and governments as a remedy, it seems that the public feels that simple disclosure is insufficient, because those who receive the information may not know how to interpret it and have no recourse.^{1,21} This has led some to consider more stringent methods of enforcement, including abstention (recusal), divestiture, or prohibition to remove all possible conflicts. Certain circumstances probably require stringent enforcement, such as when establishing clinical practice guidelines for the profession in the area of drug treatment.³ The simple disclosure method utilized at present may not maintain the public's confidence in professional judgment unless the degree of financial involvement is disclosed, perhaps with data from both the researcher and the institution, within the submission that can be easily evaluated by the editors, reviewers, and readers.

Some major journals set an upper limit on the annual sum that a person may receive before a relationship is automatically considered substantial. A substantial interest includes any holding in which the potential for profits is

not limited, such as stock, stock options, patent positions, salary, consulting fees and honoraria, and intellectual property rights (patents, royalties, and copyrights).

When an investigator studies the product of a for-profit enterprise from which the investigator has received money previously or intermittently (e.g., as a consultant or in the form of an honorarium), there seems to be no direct relationship between the evaluation and any personal gain the investigator may anticipate. However, the existence of payments and the goodwill developed in the past could influence research and opinion and must therefore be regarded as a conflict of interest with the potential for bias.²² Likewise, opinion leaders may consult for multiple companies with the mistaken belief of maintaining objectivity, but they are frequently placed, or allow themselves to be placed, in compromising positions. Opinion leaders may be naïve, not realizing that some of these attitudes can subtly influence scientific judgment in ways that may be difficult to discern.^{5,6} The Accreditation Council for Continuing Medical Education has recently applied more stringent requirements for CME providers that are specifically aimed at addressing the issue of conflict of interest or bias.²³

The public's understanding of how biomedical researchers develop projects and how they are financed is probably rudimentary. Rather than ignoring this naivety, academic medical centers, professional societies, commercial firms, and the government should enhance public understanding of the economics of how research is conducted and the social benefits derived and then better define the rules that moderate the financial conflicts of interests.² Persons outside of medicine might work with medicine to define those rules (unless they have a conflict of interest) better than we do now. It would be helpful to have clearer and stricter rules in place before engaging in public debate. Even as we debate pharmaceutical influence and conflict of interest or bias, medical editors and the profession realize that the public and the government will nonetheless have insatiable demands for improvement in preventative, therapeutic, and surgical therapies for disease.

Counter to the concerns of the public, however, some institutions are softening their conflict-of-interest guidelines to retain their faculty. At many of the top research universities and medical schools around the country, a substantial percentage of the faculty enjoys the perks of industry relationships.⁵ At Massachusetts Institute of Technology, 31% of the science and engineering faculty has outside income; at Stanford Medical School, it's 20%.²⁴ Critics of this position argue that these major medical institutions should instead develop uniform and more rigorous rules or ethical guidelines⁴ and become more aware of these "Faustian bargains" wherein the talent and prestige of the academic institution are used to serve industry.^{5,25}

An alternative opinion is that mandatory financial disclosure actually does not allow a manuscript to be judged solely on its merits, because such disclosure is based

on the faulty assumption that only financial considerations influence authors and that all authors are influenced. It has been argued that such disclosure unfairly prejudices the reader against the author²⁶; most journal editors do not accept this argument.

To maintain the public trust and ensure society of scientific excellence, editors must avoid being manipulated by deviant manuscripts based on faulty or incomplete data and by undue conflict of interest or bias. Although editors would like to believe that all authors critically scrutinize their own research, there are other scenarios to consider. Editors and publishers realistically are in no position to investigate or police the possible conflicts of interest or bias. They must, however, respond to valid inquiries, because an undisclosed conflict deprives the readership of its entitlement to know potential sources of bias. These complaints may go back to the institutional review boards, in which case the editors should still be concerned about “who is guarding the hen house.”

REFERENCES

1. Kassirer JP, Angell M. Financial conflicts of interest in biomedical research. *N Engl J Med* 1993;329:570–571.
2. Korn D. Conflicts of interest in biomedical research. *JAMA* 2000;284:2234–2237.
3. Thompson DF. Understanding financial conflicts of interest. *N Engl J Med* 1993;329:573–576.
4. Albert DM, Liesegang TJ, Schachat AP. Meeting our ethical obligations in medical publishing: responsibilities of editors, authors, and readers of peer-reviewed journals. *Arch Ophthalmol*. Forthcoming.
5. Angell M. Is academic medicine for sale? *N Engl J Med* 2000;342:1516–1518.
6. Angell M, Utiger RD, Wood AJ. Disclosure of authors' conflicts of interest: a follow-up. *N Engl J Med* 2000;342:586–587.
7. Krinsky S. *Science in the private interest: has the lure of profits corrupted biomedical research?* Lanham, Maryland: Rowman & Littlefield, 2003.
8. Rennie D. Thyroid storm. *JAMA* 1997;277:1238–1243.
9. Bekelman JE, Li Y, Gross CP. Scope and impact of financial conflicts of interest in biomedical research: a systematic review. *JAMA* 2003;289:454–465.
10. Cho MK, Shohara R, Schissel A, Rennie D. Policies on faculty conflicts of interest at US universities. *JAMA* 2000;284:2203–2208.
11. Bero LA, Galbraith A, Rennie D. The publication of sponsored symposiums in medical journals. *N Engl J Med* 1992;327:1135–1140.
12. Cho MK, Bero LA. The quality of drug studies published in symposium proceedings. *Ann Intern Med* 1996;124:485–489.
13. Bero LA, Rennie D. Influences on the quality of published drug studies. *Int J Technol Assess Health Care* 1996;12:209–237.
14. Rochon P, Gurwitz JH, Cheung CM, Hayes JA, Chalmers TC. Evaluating the quality of articles published in journal supplements compared with the quality of those published in the parent journal. *JAMA* 1994;272:108–113.
15. Blumenthal D, Campbell EG, Anderson MS, Causino N, Louis KS. Withholding research results in academic life science. *JAMA* 1997;277:1224–1228.
16. Bodenheimer T. Uneasy alliance—clinical investigators and the pharmaceutical industry. *N Engl J Med* 2000;342:1539–1544.
17. Boyd EA, Bero LA. Assessing faculty financial relationships with industry: a case study. *JAMA* 2000;284:2209–2214.
18. Council on Scientific Affairs, Council on Ethical and Judicial Affairs. Conflicts of interest in medical center/industry research relationships. *JAMA* 1990;263:2790–2793.
19. Blumenthal D, Gluck M, Louis KS, Wise D. Industrial support of university research in biotechnology. *Science* 1986;231:242–246.
20. Shimm DS, Spece RG Jr. Industry reimbursement for entering patients into clinical trials: legal and ethical issues. *Ann Intern Med* 1991;115:148–151.
21. Rodwin MA. Physicians' conflicts of interest: the limitations of disclosure. *N Engl J Med* 1989;321:1405–1408.
22. Shalala D. Protecting research subjects—what must be done. *N Engl J Med* 2000;343:808–810.
23. The 2004 updated ACCME standards for commercial support: standards to ensure the independence of CME activities. Available at: http://accme.org/whatsnew/sec_new_nw1_255.asp. Accessed October 6, 2004.
24. Brownlee S. Doctors Without Borders: why you can't trust medical journals anymore. *Washington Monthly* 2004;36. Available at: <http://www.washingtonmonthly.com/features/2004/0404.brownlee.html>. Accessed October 5, 2004.
25. Rothman DJ. Medical professionalism—focusing on the real issues. *N Engl J Med* 2000;342:1284–1286.
26. Rothman KJ. Conflict of interest. The new McCarthyism in science. *JAMA* 1993;269:2782–2784.