Publication Ethics: *Clinical Chemistry*

**Editorial Standards**

*Each person’s work is always a portrait of himself.*  
—Samuel Johnson (1709–1784)

In the last decade there has been increasing adverse publicity regarding the ethics of researchers, and in some cases journals, for not presenting research data and conclusions in an honest and transparent manner. As editors, we acknowledge our responsibility in making efforts toward reversing this trend. Therefore, on the first anniversary of *Clinical Chemistry’s* new editorial team, we want to review the Journal’s policies regarding ethics in publication and to clearly identify the steps *Clinical Chemistry* is taking to avert ethical breaches in the publication of reports.

Assurance of the scientific integrity of any publication depends on 3 parties—the editors, the authors, and the reviewers. Editors exercise control over the entire evaluation process of a manuscript and must be beyond reproach. Authors take responsibility for honest and complete reporting of original data produced in ethically conducted research studies. Reviewers give their honest appraisal of a study’s novelty, scientific value, experimental design, and completeness of the data reported. We present the Journal’s positions on several areas of publication ethics with the intention of ensuring the integrity of material published in *Clinical Chemistry*.

**Editors**

Editors are accountable to authors, readers, and the public. The editors have sole responsibility for the integrity of material published in the Journal and exercise control over this process as mandated by their contracts with the AACC. The editors oversee the entire evaluation process of all manuscripts, including specifying the requirements for submission, selection of reviewers, management of the review process, and decisions regarding acceptance of manuscripts for publication. The editorial process has to be honest and fair, and all decisions regarding the outcome of a manuscript must be made without delay. Editors must establish policies and procedures to assure authors, reviewers, and readers of the transparency of the process and the integrity of the overall system in accord with clearly stated ethical principles (1). Following the lead of the American Heart Association, the American Society of Hematology, and other scientific organizations, the AACC has recently developed conflict-of-interest guidelines for the leadership of the editorial board, which encompasses the editor-in-chief, deputy editors, and associate and section editors. This effort is intended to assure both authors and readers of the integrity of the editorial process, and to ensure that the Journal follows the highest ethical standards in the scientific publishing community. The AACC Board of Directors will oversee the editor-in-chief for potential conflicts of interest, and the editor-in-chief in turn will ensure that the Journal decision makers comply with the guidelines. The AACC Board of Directors recently approved these guidelines, which will be posted on both the Journal and AACC Web sites.

**Authors**

As many as 33% of the 3247 NIH-funded US researchers who responded to a questionnaire admitted that they had engaged within the previous 3 years in one of several questionable research practices deemed by officers of funding agencies as potentially sanctionable offenses (2). These practices included publishing the same data in 2 or more journals, withholding details of methodologies or results, inappropriate assignment of authorship, misrepresentation of data from other studies, and circumvention of minor aspects of the requirements for the use of human participants in research studies. Although such data are sobering, the estimates probably are conservative, given the potential of such questionnaires for nonresponse bias.

Unequivocal professional transgressions on the part of authors, such as fraud, plagiarism, and falsification or fabrication of data, are universally condemned, and *Clinical Chemistry* has specific policies adapted from those of the International Committee of Medical Journal Editors (ICMJE) (3) and the Committee on Publication Ethics (COPE) (4) to address such behaviors.

There are, however, gray areas for which consensus has not yet been reached within the editorial community at large (5). Journals have the responsibility to develop their own guidelines and policies for address-

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1 Nonstandard abbreviations: ICMJE, International Committee of Medical Journal Editors; COPE, Committee on Publication Ethics.
duplicate publication

Duplicate publication can occur in various ways. The most egregious form is knowingly publishing the same original data, or subsets of the data, in 2 different journals. This mode includes republishing an article in another language and not acknowledging or citing the original publication and/or the original copyright owner not having given consent to publish the translated article. We consider any duplication of material readily available to the general scientific community as potentially representing duplicate publication. Meeting proceedings in indexed journals, although not necessarily peer-reviewed publications, will be considered duplicate publications unless the material is published only as an abstract or a short summary. In the same vein, simultaneous submission of the same work to 2 or more journals is an unprofessional and totally unacceptable practice that wastes reviewers’ and editors’ time. Accordingly, the Journal asks authors during the submission process to certify that the work is not currently under consideration elsewhere.

As part of the editorial process, the editors in general and the deputy editors in particular use numerous electronic tools to determine whether submitted information has previously been published, in whole or in part, or has been plagiarized. Deja vu, SPlaT, Google, and PubMed are a few of the tools used.

Redundant publication and the minimum publishable unit (Salami publication)

A more subtle and common form of duplicate publication is partial duplication of the data or text in 2 or more publications. In some instances, such partial duplication falls into gray areas requiring individual judgments regarding novelty or acceptability for publication. Redundant publication of text containing the same introductory sentences, descriptions of patient populations, or methods from the authors’ previous work is undesirable, demonstrates a lack of originality of thought, and may have copyright implications. The display of scientific posters on the Web in video format can easily be interpreted as duplicate publication, depending on how publicly available such Web content is. Of course, the use of phrases and text from other individuals’ work or from one’s own work without proper attribution is considered plagiarism and is unacceptable.

Republication of methods and results that are part of meeting proceedings in nonindexed journals represents, in most cases, a redundant publication. It is our policy to judge such instances on a case-by-case (individual) basis with the expectation that authors will notify the Journal of publication of the methods or results in another format. Other forms of redundant publication include posting of similar data and results on a company Web site, in printed advertisements, or in product inserts.

Institutional pressures to publish large numbers of reports may lead authors to split studies into multiple smaller publications with similarities and overlapping coverage. These “salami” or “minimum publishable unit” reports attempt to maximize the mileage from a single study. In the long run, such practices detract from the reputations of both the authors and the journals that might be fooled by them. As editors, we strive to identify reports that show substantial overlap with other, previously published work. To achieve this goal, we ask authors to disclose whether the work is closely related to their own previously published materials (follow-up study, reanalysis of the same data set, and so forth). If potential overlap is acknowledged, authors are expected to submit the related publications in a supplement for the editors’ and reviewers’ judgment. Failure to do so may lead to automatic rejection of the submitted manuscript. When in doubt, authors must act responsibly by informing the editors and making inquiries.

Inappropriate authorship credit

Another important aspect of publication integrity is the proper and truthful attribution of authorship in the scientific literature. Individuals should be credited as authors only if they have participated in the work in a substantive way and are prepared to take public responsibility for its content.

To be considered for authorship, an individual must meet the ICMJE criteria (3): “1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Authors should meet conditions 1, 2, and 3.” Professional medical writers can make valuable contributions to the publication process and often improve the clarity of communications. Readers, however, must be told about the involvement of professional writers, and any use of a “ghost author” must likewise be revealed. Clinical Chemistry currently requires attestation from all authors that their contributions meet the three ICMJE criteria. In the future it is likely that Clinical Chemistry will require more detailed descriptions of the actual contributions of each author.

Ensuring transparency

Readers of the scientific literature must have confidence that all factors that might influence the interpre-
tation of a study have been revealed. Such factors include disclosure of the role of the sponsors in the planning and execution of the study, in the interpretation of the data, and in the reporting of the findings. Study authors must disclose any secondary interests that could unduly influence their research objectivity. Such secondary interests can be divided into the categories of tangible and intangible conflicts of interest. Tangible conflicts of interest consist primarily of financial conflicts of interest. Intangible conflicts may include, for example, strongly held personal beliefs that affect the conduct or interpretation of the scientific study. They can also include practices perceived to enhance the personal prestige or scientific standing of the researcher, such as intentionally withholding relevant research data or other information (complications, failed experiments, biased selection or retention of study participants, and so forth). Although guidelines for disclosing financial conflicts of interest are well established and almost universally applied as part of governmental research regulations and university research policy regulations, and although they are enforced as part of the editorial policies of scientific journals (including this one), journals must rely on the scientific integrity of the individual investigator to recognize and address potential conflicts of interest that fall in the intangible category.

The growing intermingling of commercial interests with scientific research requires that known and potential financial conflicts of interest be explicitly disclosed so as to maintain the transparency of findings published in research studies that relate to commercial products. Clinical Chemistry follows the guidelines of the ICMJE (3) regarding the collection and disclosure of conflict-of-interest information. The information collected includes: source of funding for the study, including the role of the sponsor in study design, recruitment of study participants, interpretation of data, and drafting of the manuscript. Authors are asked to disclose information regarding remuneration received from all commercial funding sources, including salaries, retainers, consulting fees, stock holdings, intellectual property benefits, or other tangible benefits received quid pro quo for services provided.

Conclusion

In summary, authors, reviewers, and editors all have the responsibility for assuring the scientific community and the general public that reported research has been conducted, evaluated, and reported in accord with high ethical standards. The existing system of scientific reporting relies heavily on the honesty and integrity of all parties involved. Although clear transgressions of established norms are universally condemned and rejected, consensus in the scientific publishing community on other practices that fall into the “gray zone” of ethical behavior is currently lacking. We have clearly stated our interpretation of the gray areas and the Clinical Chemistry policies that will apply until common understanding and agreement is reached.

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