Deciphering the Authorship Code

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Guidelines for Preparedness of Emergency Departments That Care for Children: A Call to Action

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Beginning with our July 2001 issue, Annals will ask its authors to clarify their contributions and to take responsibility for their papers, in new ways. Although some
Increasingly, authorship of multicenter trials is attributed to a group. All members of the group who are named as authors should fully meet the above criteria for authorship. Group members who do not meet these criteria should be listed, with their permission, in the Acknowledgments or in an appendix (see Acknowledgments).

A moment’s reflection leads to the conclusion that these criteria are limited, that they exclude many contributors to contemporary clinical research, and that few author credits in any journal comply with them. A study of the actual contributions described by authors published in The Lancet, one of the world’s top medical journals, revealed that 44% of listed authors did not meet these criteria for authorship. Most researchers do not agree with the Vancouver criteria, which were drafted by editors. They are, in fact, given lip service in most journals, and enforced in none.

Even when all authors are given credit as authors, and all have made genuine contributions, the list of names under the title of an article tells the reader little about who did what. This might not matter if the order of authorship were not so important for intellectual credit, academic promotion, and grants. Under the current system, the only means of communicating the magnitude of a contribution is the sequence in which the authors are listed. Most readers probably believe that the first author makes one of the largest contributions and is in charge of the overall manuscript, but there are no written rules in this regard. In some disciplines, being last is the position for the most senior author or the head of the laboratory. In others, it means you made the least contributions. Although many academicians would say that the sequence in some way reflects the magnitude of the contribution from greatest to least, there are no written or commonly accepted conventions. Eighty-two percent of journal editors polled did not know the meaning of author sequence in their own journals, and medical school deans disagreed about the significance of the sequence and could not interpret it for purposes of assigning academic credit. Among the many people who participate in some manner in a typical research project, who is entitled to credit as an author? The only answer to that question was first formulated in 1985 by the International Committee of Medical Journal Editors (ICMJE), a self-appointed body of editors of large medical journals. They currently define authorship as follows (http://www.icmje.org/index.html#authorship):

…Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content…. Authorship credit should be based only on: (1) substantial contributions to conception and design, or 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. Conditions 1, 2, and 3 must all be met. Acquisition of funding, the collection of data, or general supervision of the research group, by themselves, do not justify authorship.

How to improve this situation? Our current model of scientific authorship seems, curiously, to be derived from European novels of previous centuries, typically authored by only 1 person and felt to have sprung like Athena fully formed from the minds of their creators. However, contemporary science is performed not by an individual working in solitude in a wood-paneled study, but usually...
by a work team, a task force, or a large committee. Many people in many job descriptions are involved, and their contributions are complex and often highly technical. Many of these contributions would never fit the classic definition of biomedical authorship, but the study could not have been completed without them. In all of these regards, a contemporary research paper more closely resembles a committee report or a motion picture release, rather than a work of fiction or a textbook. That being the case, the solution might be to abandon the classic notion of “authorship” and rely instead on “contributors,” who could have many and varied roles. As with those other forms of collaboration, their roles and contributions could be described in the credits.

We are taking a step in that direction with our new policy. We will now request authors of original research to briefly describe their specific individual contributions. We have defined those roles a bit more generously than the ICMJE, and only state that authorship should require a substantial intellectual contribution of some kind to the project. We leave it to the authors to fill in the details, which we will publish with each article. A helpful taxonomy of possible contributions has been compiled by Yank and Rennie. Authors wishing further examples of how such credits might be listed are referred to the instructions for authors in journals such as JAMA, Annals of Internal Medicine, The Lancet, and BMJ. For example, a typical description of a multicenter clinical trial might be as follows:

MBK, BD, and NT conceived the study, designed the trial, and obtained research funding. MBK, BD, ML, and NT supervised the conduct of the trial and data collection. EW, SF, and MG undertook recruitment of participating centers and patients and managed the data, including quality control. NT and BD provided statistical advice on study design and analyzed the data; ML chaired the data oversight committee. BD drafted the manuscript, and all authors contributed substantially to its revision. MBK takes responsibility for the paper as a whole.

Only 86 words and no speculation needed to determine who did what. This new approach will give more accurate credit to contributors and better apprise the reader of their roles and responsibilities. It won’t be perfect and it won’t eliminate all ambiguity, but it will be a step in the right direction.


Pediatric Equipment Availability and Emergency Preparedness

See related article, p. 371.

Pediatric patients make approximately 22 to 30 million visits to emergency departments in the United States annually.1 There are little data available about the preparedness of these EDs to care for pediatric patients. A recent survey of the National Electronic Injury Surveillance System of the Consumer Product Safety Commission hospitals by the Emergency Medical Services for Children Program demonstrated deficiencies in pediatric equipment in a sample of 101 US EDs.2 This survey was completed by a diverse group of respondents, including ED directors, nurse managers, unit coordinators, ED charge nurses, presidents of health centers, hospital administrators, emergency medicine program coordinators, and other personnel. Additional limitations include the fact that there was no validation of paper survey results by a site survey.

In this issue of Annals, McGillivray et al3 report on a population-based survey of pediatric preparedness of all 737 EDs in Canada. The authors had an outstanding response rate of 88.3% of the total sample, with some of the 12 provinces having a 100% return of the questionnaire. The authors then selected a convenience sample of 38 (6%) of the responding hospitals to site visit by a team consisting of a physician, nurse, and/or research assistant to verify their preparedness. The site surveys were then compared with the paper questionnaire responses, and adjusted bootstrap confidence intervals were computed for the logistic models for 3 of the equipment items, including intraosseous needles, pulse oximeters, and pediatric defibrillation paddles. Hospitals were stratified by hospital level/category, annual census number of pediatric ED visits, availability of pediatrician on call, or availability of a physician who had completed the Pediatric Advanced Life Support (PALS) course on staff. Finally, distance from a university center and number of pediatric