A WRITER'S TOOLKIT

CONTENTS

CONTRIBUTORS

This toolkit is designed to help medical school faculty write for publication. We especially hope to help junior faculty with scholarly writing that will facilitate promotion by providing information relevant to relatively new medical writers who wish to present their research, educational, or clinical findings to the field. We also have provided some additional information for medical educators.

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INTRODUCTION

An environment of inquiry and scholarship is one of the defining characteristics of colleges and universities. For individual faculty members, excellence in scholarship results in academic promotion, greater research funding and national or international stature in their field. Scholarship can take many forms. For architectural faculty, it might be the design of innovative buildings, or for music faculty it could be the creation of novel compositions. For medical school faculty, scholarship generally means publication in peer-reviewed scientific journals. Unfortunately, the pedagogy of physician training generally does not include any instruction on scientific writing or the process of publication. Thus, young faculty members often are left to acquire these skills with relatively little formal guidance.

The Academy at Harvard Medical School was established to promote the education of physicians and scientists at HMS. The mission of the Academy includes fostering the *"careers of educators in medicine and science"* and *"supporting educational research and scholarship in medical and graduate education"*. This monograph, "A Writer's Toolkit" was written by the Writing for Scholarship Interest Group of *The Academy* as a resource to help young faculty members who wish to report and share their research, educational or clinical findings, learn the nuances of scientific writing and the publication process. Although the *Toolkit* originally was intended for an audience of local faculty, the *Interest Group* believed that the contents of the monograph would be of potential use to medical school faculty at other institutions as well. It is the hope of the *Interest Group* that this *Toolkit* will be a useful addition to the armamentarium of all young medical school faculty as they embark on their professional writing careers.

We have organized this Writer's Toolkit into sections that follow the usual sequence of steps used in writing a paper for the medical literature, from conception of the idea for the paper through responding to reviews. In this way prospective authors may consult particular sections when facing a particular issue (e.g., conducting a literature search, establishing authorship, negotiating the review process) or read through the entire document to understand the longitudinal process of writing a journal article. The roles of statistical consultation, use of figures and tables, and a variety of potentially helpful resources and links are also

provided. In addition, although not specifically organized into teaching modules, medical educators interested in teaching about writing may find particular sections or groups of sections helpful in discussions of different aspects of the writing process.

CREATING YOUR VISION

The first step in any written scholarship is conceptualizing the scholarly project and establishing the importance of the topic.

Writing a paper may arise naturally out of research you have been involved in since you first entered a lab as a medical student or resident and were given a project by a mentor. Perhaps you were intrigued by a clinical question or dilemma that led you to a research project. Or, you might wonder whether your students would learn something better if you were to change the way you teach, so you decide to test the outcomes scientifically.

In some cases, you may not be drawn to research but may need to produce scholarly publications in order to be recognized in your field and achieve academic promotion. Promotion criteria differ significantly between institutions. Most universities make the criteria for promotion available online. As an example, the Yale School of Medicine promotion requirements are at http://medicine.yale.edu/facultyaffairs/appts/index.aspx.

Whatever the reason for starting a scholarly project that will result in a publication, it has to be sustained by true curiosity and passion for your topic. If you can align your clinical or teaching interests with your research interests, the project is even more meaningful. Discussing the project with a trusted colleague or mentor may lead to a collaboration and/or valuable advice about the direction or focus of the project.

While you can write on your own, the process is more fun and usually more successful and satisfying if undertaken with a mentor, colleague, and/or a group of investigators. Your department chair or division chief may suggest someone for you to work with. In addition, some academic hospitals have a Faculty Development Office that can match you with a mentor if you are unable to find a mentor within your own department. If available at your university, you can also search the local research networking website to identify local collaborators in your field of interest. For example, at the University of California San Francisco a similar resource is the Clinical & Translational Science Institute (CTSI) at UCSF: http://ctsi.ucsf.edu/ There are at least 60 institutions with similar research networking sites, listed at: https://www.ctsacentral.org

Helpful resources about the promotion process include:

Buchanan GR. Academic promotion and tenure: a user's guide for junior faculty members. Hematology Am Soc Hematol Educ Program. 2009; 1:736.

McHugh, PR. A Letter of Experience about Faculty Promotion in Medical Schools. Acad Med 1994; 69: 877.

CONDUCTING A LITERATURE SEARCH

Before starting a scholarly project, it's important to see what others have done in the area of your interest. This provides background for your own work and allows you to build on the existing body of knowledge. The key to conducting a productive and useful literature review is to identify relevant papers that are specifically targeted to your topic of interest.

Once you have decided on a topic to explore, a thorough literature search to see what has been published previously is essential. The best strategy for a literature search is to take a systematic approach, which entails the following steps:

1. **Query Clarification:** First, clarify your question or hypothesis using key components. It is ideal if the question is objective, explicit, and precise. Components can be categorized by the term PICOS, an acronym for Patient/Population, Intervention, Comparison, Outcome, Study design. For medical education searches, you can use the acronym PEO (Participants, Educational aspects, Outcomes).

   PEO Example query: *Which teaching strategy helps medical students (Participants) retain information better (Outcomes): lectures or a problem-based curriculum (Educational aspect)?*

2. **Keywords and MeSH Headings:** Identify the main words or phrases from the question/hypothesis to determine the term(s) to be used during the literature search. Based on these words/phrases, then list synonyms, formal and informal terms, alternative spellings, and related words. When using the MEDLINE/PubMed, there is an indexing system, known as Medical Subject Heading or MeSH. MeSH terms are based on their conceptual meaning. Using the specific words/phrases previously identified, find relevant MeSH terms by searching the MeSH database found on MEDLINE/PubMed at http://www.ncbi.nlm.nih.gov/pubmed/

   Example query: *Possible MeSH terms for the example query would include terms such as "Students, Medical", "Lectures", and "Problem-Based Learning." Note that if you are using the MeSH "Problem-Based Learning", the topics listed below could be included or excluded to broaden or limit your search:*

   - *Learning, Problem-Based*
   - *Problem Based Learning*
   - *Curriculum, Problem-Based*
   - *Curriculum, Problem Based*
   - *Problem-Based Curriculum*
   - *Problem-Based Curricula*
   - *Curricula, Problem-Based*

- *Problem Based Curricula*
- *Experiential Learning*
- *Learning, Experiential*
- *Active Learning*
- *Learning, Active*

3. **Database Selection:** Most resources will be available via your university or hospital's digital library, which provides access to many resources such as PubMed, the Science Citation index, electronic journals, digital textbooks, the Cochrane library, and many more. Your local medical school library should have similar resources available to you. Using your local library as a gateway provides broader free access to online PDFs of articles than would be available to the public. All libraries provide free access to some online journals that would otherwise charge for access. The reference librarians are a wonderful resource who can help you learn to negotiate the digital library.

    Medical libraries close to you can be located with this directory:
    http://www.nlm.nih.gov/medlineplus/libraries.html

4. **Determine which electronic database fits with the research topic:** Your options include:
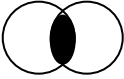
    - **MEDLINE/PubMed**: MEDLINE is a free database of 5,500 biomedical journals from 1946 to the present, maintained by the National Library of Medicine. Approximately 2000-4000 citations are added daily. MEDLINE can be accessed directly at www.ncbi.nlm.nih.gov/pubmed or via your medical library.

    - **Embase**: Embase is a subscription based pharmacological and biomedical database of approximately 7500 journals from 1947 to the present day produced by Elsevier. Since Embase requires a subscription, it is wise to consult your medical library to see if your institution has a subscription. You can subscribe at www.embase.com

    - **CINAHL:** CINAHL (Cumulative Index to Nursing and Allied Health Literature) is a resource for nursing and allied health professionals published by EBSCO. CINAHL can be accessed at http://www.ebscohost.com/academic/cinahl-plus-with-full-text

    - **Web of Science**: contains 7 databases gathered from journals, books, and reports about science, social sciences, arts and humanities, chemical methods, and organic compounds. Conference literature in all scientific fields is also included. Accessed via your medical library or with a subscription at www.thomsonreuters.com

- **ERIC (Education Resources Information Center)**: ERIC is a free digital library of education research and information, sponsored by the Institute of Education Sciences of the United States Department of Education. ERIC can be accessed via at www.eric.ed.gov

- **POPLINE** (POPulation information 12nline): POPLINE is a free database of citations in the field of population, family planning and related health issues dating back to 1973. POPLINE is maintained by the Knowledge for Health (K4Health Project) http://www.k4health.org/at the Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs and is funded by the United States Agency for International Development (USAID) http://www.usaid.gov/ POPLINE can be accessed directly at www.popline.org

- **PsycINFO** is a subscription database that provides systematic coverage of the psychological literature from the 1800s to the present. http://www.apa.org/pubs/databases/psycinfo/index.aspx

5. **Searching Approach:** There are two distinct strategies for performing a search:

- Start with a broad search and limit later. Most people prefer this strategy. To broaden a search:

    o Remove specific terms
    o Use alternative terms
    o Click the "related articles"

- Start with a narrow search and then remove terms to broaden the search. To narrow a search:

    o Replace general search terms with more specific ones
    o Add more terms to your search using "AND"
    o Use limits (e.g., age group, publication type, human studies, date, etc)

- Note that using the MeSH subject headings discussed above makes it easier to narrow or broaden your search. (See Keyword and MeSH discussion above).

Table 1. PUBMED SEARCH: Using separate MeSH terms or keywords/phrases, you perform a search using the PUBMED search builder's Boolean features.

Boolean Feature	Schematic	Explanation	Example Query Results	Action Taken After Example Query Search
"AND"		Allows retrieval of articles containing both of the terms	("Students, Medical"[Mesh] AND "Problem-Based Learning"[Mesh] AND "team-based learning"[tiab]) 7 articles retrieved	*Because this search yields too few articles, consider adding MeSh terms using the "OR" operator or adding some key words. MeSH terms will yield the most relevant articles, although not necessarily the largest number of articles (see next row). You can also view the "Related articles" for each of the two articles selected*
"OR"		Allows retrieval of articles containing either or both of the terms	("Students, Medical"[MeSH] OR "Education, medical, undergraduate"[Mesh]) AND "Problem-Based Learning"[MeSH] AND "team-based learning"[tiab] 15 articles retrieved	*To continue to narrow or broaden the search, consider adding other MeSh terms using OR, AND, or NOT*
"NOT"		Allows retrieval of articles containing first term(s) and excludes articles containing second term	"Education, Medical, Graduate"[MeSH] AND "Problem-Based Learning"[MeSH] NOT "Education, Medical, Continuing"[MeSH] 176 articles retrieved	*Alternatively, use Limits (for dates, population, study, or publication type, etc.)*

Initial database search results can help identify the keywords within the abstract or title of the article. A search using MeSH terms will usually yield the most relevant articles, although not necessarily the highest number of articles. If an appropriate MeSH term cannot be found (particularly if your topic is new or rare), you can then use keywords or free-text search.

In addition to journal searches, you can also explore the content of books, conference proceedings,

abstracts, theses, or specific journal sites. By using personal communications or performing a general web search, your yield may be even greater.

6. **Saving Your Search:** A MEDLINE/PubMed search can be saved by establishing a personal account (MyNCBI, no fee required).There is also an option to receive an automatic email update about your specific topic. The references relevant to your paper that you find through your literature search can be collected and organized via EndNote or similar reference management programs (see Electronic Resources). These programs can also assist you by importing references into your working documents and providing automatic citation formatting which matches the style of the journal to which you intend to submit your work. You can also create a library of citations that you can easily find and reuse over the course of your scholarly career. Once you have found some relevant studies, consider asking a librarian to help you with a citation search which will allow you to see who has cited a relevant study and the references used in that study. Librarians will be happy to advise you and help with your search at any point in the research process.

7. **Article Retrieval:** You can reduce a search further by first reading all the abstracts, identifying the relevant abstracts, and then reading the corresponding articles. It is not sufficient to rely solely on abstract information because abstract content is not all inclusive, making it difficult to assess the quality of the article. When reading the article, focus on the study design to assess if the results are reliable or misleading.

References

McKee, M, Britton, A. Conducting a literature review on the effectiveness of health care interventions. *Health Policy Plan*. 1997; 12:262-267.

Haig, A, Dozier, M. BEME guide no.3: Systematic searching for evidence in medical education—Part 2: Constructing searches. *Med Teach*. 2003; 25:463-484.

Other Resources

The librarian in your local institution can provide you with search assistance or you can download a self help PubMed guide at http://www.ncbi.nlm.nih.gov/books/NBK3827/

ELECTRONIC RESOURCES

There are several electronic resources which make the task of scholarly writing easier and facilitate collaboration. Descriptions and links to several popular resources are below.

Managing references: It is useful to use a program designed to organize your references and automatically number and format references within a publication. If the manuscript is rejected by one journal, a reference program makes it relatively easy to reformat the references for another journal with different style requirements. If the reviewers require extensive re-writing with deletion or addition of references, this is easier to accomplish with such programs.

Several electronic reference programs are available. It is best to see what your co-authors are accustomed to using and follow suit so you can more easily work on the same manuscript. Popular programs include:

- Endnote® http://www.endnote.com/

- RefWorks http://www.refworks.com/

- Zotero http://www.zotero.org/

Zotero is free. Endnote and RefWorks are somewhat costly but discounts are generally available for faculty at academic centers. In addition, the software makers often offer educational discounts on their websites.

Working on documents with co-authors: These programs allow more than one person to work on a document, insert comments and see each other's changes:

- **Microsoft Word "Tracking changes"** – Tracking changes is a function embedded in the Microsoft Word Program. The details of use will vary depending on the version you have. To use this in Word 2007 or 2010, go to the Review tab in the command ribbon at the top of your page. Click on the Track Changes button and then click again on Track changes in the pull-down list. The button should turn on with a yellow color. The pull-down list also gives you a chance to change the tracking options, allowing you to assign different colors to different authors and so forth. You can turn it off again by just clicking on it. You can then choose to work in the final version so the changes don't distract you or you can work in the version that shows your markup of the manuscript. Select your choice in the pull-down menu to the right of the Track Changes button. The Show Markup pull-down list allows you to choose whether you want to see changes by all reviewers, whether you want to see formatting changes as well as text changes and if you want to see deletions, insertions, or both. You can add comments by clicking on the text you want to comment on and clicking on New Comment. A comment box will appear on the right side of your page and you can just write your comment in the box. To accept or reject changes, use these buttons and you can accept just selected changes or all changes in the document. The upper right hand corner of the screen has a question mark and

this will bring you to the help screen so you can look up additional questions you may have about using this feature or other features of Word.

- **Google Docs** http://www.google.com/google-d-s/b1.html. This is a free program that allows you to import your existing documents, spreadsheets and presentations, or create new ones from scratch. You can store documents and invite people to view your document and make changes.

- **Dropbox** https://www.dropbox.com. Dropbox is a free program (up to 2 GB) that allows you to sync files among computers and mobile devices, and upload any changes. You can also access your files off line and then they will automatically sync when you are online again. Previous versions of files are stored, allowing you to revert to older file versions. Folders can be shared with others, which allows collaborators to make all the edits in a single copy of the manuscript. Additionally, shared folders on Dropbox are useful for large files that are too big to email back and forth.

- **Open Office** http://www.openoffice.org/. This is a free open-source office software suite for word processing, spreadsheets, presentations, graphics, and databases. It is available in many languages and works on all common computers. It stores all your data in an international open standard format and can also read and write files from other common office software packages. It can be downloaded and used completely free of charge for any purpose.

- **Sharepoint** http://sharepoint.microsoft.com/en-us/Pages/default.aspx Sharepoint is an application that allows downloading and editing of files by multiple collaborators.

STATISTICAL CONSULTATION

A statistician can help you decide on the appropriate study design, control group, and power calculations when you are planning a study, then help you organize and analyze the data once it has been collected.

Once you have decided on a project and done a literature search, you are ready to start planning the data collection. If your study is descriptive, such as a report of a case or a small series of cases, you may not need a statistician. However, for most research studies, an expert statistician's advice and collaboration is invaluable to help you plan the size and type of study groups, variables to study, and data collection and organization to ensure that you collect appropriate data that can be analyzed. When the data are collected, the statistician can help you make sense of the results.

Most institutions have statistical consultation resources available. If your institution does not, you may be able to consult with experts at another institution. As an example, the Johns Hopkins Biostatistics Center provides consultations and statistical services for health researchers at other academic health centers, pharmaceutical companies, medical research organizations, managed care organizations and government agencies.

More information about these resources and other core facility resources for research can be found at research networking sites, listed at: https://www.ctsacentral.org

Grant writing guidance and advice can be found at the NIH website: http://www.niaid.nih.gov/researchfunding/qa/pages/writing.aspx:

There are a number of ethical issues and regulatory requirements that must be understood and adhered to in scholarly work.

Institutional Review Board

An institutional review board (IRB) is a federally-mandated committee that reviews, approves, and monitors human research to ensure that the research is scientifically well designed, and is in keeping with ethical and regulatory guidelines. You must consult the IRB at your institution (hospital and/or medical school) to obtain approval of any research before beginning a project involving human subjects. In clinical research "human subjects" may include patients, family members, genetic or pathology materials, or medical records. Educational research may include faculty members, other clinical staff, students, residents, fellows, or educational records. In addition, you will need to complete training to show that you understand the appropriate conduct of human research. As a minimum this training includes a course such as The Collaborative Institutional Training Initiative (CITI), which can be completed on line. https://www.citiprogram.org/ Guidelines for human subject research can be reviewed at the NIH site. http://researchethics.od.nih.gov/Resources/index.html. It is also important to note that all clinical trials must be registered in http://www.clinicaltrials.gov.

Educational research with medical students requires several levels of review to ensure scientific rigor and to protect medical students from excessive burden from surveys or other research that would require time away from their studies. Curricular activities that are not introduced for research purposes are likely to be IRB exempt. This means that an IRB reviews and approves the research but does not require annual review as required in expedited or full board review studies. Conferring with expert educational researches or IRB members can be helpful in determining when IRB approval is needed. Most medical schools require a similar process.

If your IRB needs guidance with cancer-related studies, collaboration with the National Cancer Institute's Central IRB can be considered. This approach can reduce the administrative burden on local IRBs and assure a high level of protection for research participants: http://www.ncicirb.org/ Medical schools with designated cancer centers usually require all cancer-related studies to go through the cancer center for IRB approval.

If available at your university, the local research networking website is a good place to start learning about research resources at your institution. At the University of California San Francisco the research networking site is the Clinical & Translational Science Institute (CTSI) at UCSF: http://ctsi.ucsf.edu/. There are at least 60 institutions with similar research networking sites, listed at: https://www.ctsacentral.org

Grant writing tips and guidelines are available from the National Institutes of Health at http://www.nlm.nih.gov/ep/Tutorial.html.

Helpful references for medical education research are:

Blanco, MA, Lee, MY. Twelve tips for writing educational research grant proposals. Medical Teacher 2012 Mar 27. [Epub ahead of print]

Dyrbye, LN et al. Medical Education Research and IRB Review: An Analysis and Comparison of the IRB Review Process at Six Institutions. Academic Medicine 2007; 82: 654.

Privacy

A patient's right to privacy must be respected and, if you choose to write about a particular patient or publish a photo of the patient, you must obtain his/her express permission. Each hospital and its legal counsel may use a slightly different form so it's best to consult with the legal department at your hospital before proceeding. The privacy of participants must be respected and federal regulations must be adhered to when performing any clinical research according to the Health Insurance Portability and Accountability Act (HIPAA). Learn more about HIPAA at this government website:

http://www.hhs.gov/ocr/privacy/hipaa/understanding/index.html/

Although not covered by HIPAA regulations, the anonymity of students, trainees, and other learners in educational research should similarly be guarded. Medical schools now require IRB consent for the use of medical students as subjects of educational research, and most schools have strict policies about the nature and volume of such studies.

Clinical experiences often inspire research questions and the design and development of clinical research protocols. It is not unusual for unique and interesting clinical cases to be written up as case reports for publication in medical journals or presentation at medical or scientific meetings. A case report or case series becomes a research study if the authors formulate an apriori hypothesis and treatment is governed according to a protocol. The authors should attempt to obtain IRB approval and written informed consent prior to treating the patients. Alternatively, the author should obtain IRB approval and patient consent to pursue publication shortly after providing treatment, and in advance of submission to a journal. A standard authorization form would be used if identifiable information is to be used in an educational publication. Examples of consents can be found in the Appendix of this document.

In contrast to a case report, when reporting larger series of patients who have been studied with specific research questions and formal systematic collection of data, this is considered prospectively designed research. The boundaries between case reporting and formal medical records research may be unclear and it is best to consult with your hospital IRB when you are uncertain about the need for review.

- Patient confidentiality should be respected in all clinical situations involving identifiable medical information from patients.

- Names, dates of birth, social security numbers, and other "codes" or combinations of identifiers, which might easily allow someone to identify a subject, should never be used in publications or external presentations.

- Unique family trees or pedigrees should be masked or disguised when such information could identify individuals or kindreds.

- Photographs should be appropriately masked to preclude identification of subjects.

- Patients should be asked to provide written consent to allow publication or electronic dissemination of pictures or other information (e.g. videos, voice recordings, transcripts), which might in any way identify them. Contact your Human Research or Public Affairs office, as appropriate, for sample research and non-research consent forms for use of potentially identifiable material. (See the Appendix for sample forms).

- Remember that individuals with unique or unusual diagnoses or illnesses may be identifiable based on limited information.

Formal medical record review to answer specific research questions is considered research on identifiable human subjects, and does require IRB review and approval. This often can be accomplished through a hospital's expedited IRB review process.

Be sure to abstract and retain only the minimum relevant clinical information. You should always destroy any links to human subjects when the research has been completed and published, and/or when your research goals are accomplished.

Choosing the appropriate target journal

To maximize the likelihood of publication, it is important to carefully consider which journals will be the best fit for your paper.

Where should I publish my article? The best answer to this question focuses on you, your work and your career trajectory. Before you begin to write – or at least before you finish the manuscript – ask yourself a series of questions:

- What is the story you want to tell? Is your work novel? Why?

- Who will be interested in what you are writing and for which audiences will it be relevant? Who is your preferred audience? Among whom do you want to make your mark? Among whom does your Chair want you to make your mark?

- Who will care? Is this a hot topic? Is it practical, generalizable, or theoretically grounded? Does it contribute new knowledge to the field?

- Is the information of interest to a general medical audience, or is it mainly relevant to specialists or subspecialists in your field?

- What are the potential target journals for your paper? Have these journals published articles similar to, but sufficiently different from, your paper?

- Is the journal "open access" or not? Most society-sponsored journals and some newer online journals allow free downloading of their articles either at the time of publication or shortly thereafter (open access). However, this is not often true for journals published by commercial publishers where access is obtained either by journal subscription or a fee charged per article. Open access provides the greatest visibility and potential readership for your paper, but it may not be related to the journal's impact on your field.

- What is the publication model for the journals you are considering? Traditionally, there are no fees for submission or publication; however, some journals will assess "page charges" if a paper is accepted, and newer online journals generally charge a fixed publication fee for accepted papers. Therefore, budgetary considerations may affect your choice of journal.

As you can see, some of these questions suggest that you consider how your current work fits into your career development. Not only will a publication add to your CV, but it will enter you into a network of like-minded

scholars who may review it or read it. The more the work contributes to new knowledge, the more often it will be cited and you will be perceived as a key contributor.

Next, narrow your choice of journals. Clearly, you will want to publish in a high-impact journal if possible. In the past 10 years, there has been a proliferation of biomedical and medical education journals. Most of these new publications are published online, and while many have a narrow focus and attract little general interest, some (such as PloS Medicine) have a diverse audience and impact. http://www.plosmedicine.org/home.action

With respect to medical education publishing, in the past half-century, 3,869 different journals (e.g., specialty or general medical journals, as well as medical education journals) published at least one article in which medical education was indexed as a major topic. In 2009, approximately 16% of journals indexed in PubMed published medical education articles, and there are several journals primarily dedicated to medical education. In addition many general and specialty specific journals publish some medical education articles; we suggest the author check with the journal to which he/she is thinking of submitting, including emailing the editor, to gauge that journal's interest in medical education reports.

To find the best fit for your paper, scan the relevant journals on line or in the library, ask your senior colleagues for ideas, and check each journal's impact factors. Take note of a journal's acceptance rate for papers and its expected time frame for review. Consulting each journal's on-line "Information for Authors" and talking with seasoned authors who have submitted to that journal are the best ways to get an estimate of a journal's "lag times" for reviews and for publication.

Look carefully through your target journal to see if they publish your type of article in your topic area, and find a model article to use as an example. Review the journal's specific Guidelines for Authors about their requirements for submission which are usually posted on the journal's Internet website. Table 2 displays specialty and medical education journals that frequently publish medical education articles, listed in order of number of publications. The table does not include journals published in non-US countries that are not distributed widely. New journals are also not included, such as Education in Primary Care (2009), the International Journal of Medical Education (IJME, an on-line journal, started in 2010), and the Journal of Graduate Medical Education (2010). Two other important publication venues worthy of mention are *Simulation in Healthcare*, and the *MedEdPORTAL* at https://www.mededportal.org/. MedEdPORTAL is the AAMC's repository of peer-reviewed resources in health sciences education where you may publish your educational materials.

Table 2. Journals that most frequently publish medical education articles

Journal	Notes*
Academic Medicine	Academic Medicine is the official journal of the Association of American medical Colleges and is considered the premier medical education journal. It leads in articles about academic medical centers. While US-based, it is read internationally by medical educators. (Impact factor: 3.524) http://journals.lww.com/academicmedicine/pages/default.aspx
Academic Psychiatry	Publishes papers on psychiatric educational research and innovative educational programs. Psychiatry audience. (Impact factor not rated) http://ap.psychiatryonline.org/journal.aspx?journalid=17
Advances in Health Sciences Education	Created to stimulate more theory-based health educational research. Tends to emphasize rigorous measurement. (Impact factor: 2.089) http://www.springer.com/education+%26+language/journal/10459
American Journal of Surgery	Publishes manuscripts from the Association for Surgical Education. Surgical audience. (Impact factor: 2.776) http://americanjournalofsurgery.com/
Annals of Internal Medicine	General medical journal that publishes some medical education articles. (Impact factor: 16.733) http://www.annals.org/
BMC Medical Education	British medical education journal of the BioMed Central family of online, open access journals. (Impact factor: 1.152) http://www.biomedcentral.com/bmcmededuc/
British Medical Journal	BMJ is a general medical journal with an international medical audience. (Impact factor: 14.093) http://www.bmj.com/
Canadian Medical Association Journal	This Canadian general medical journal that publishes some medical education articles. (Impact factor: 8.217) http://www.cmaj.ca/
Clinical Teacher	Focus on clinical education. Its articles cover a broad range of educational topics in an easily accessible style, including updates on the latest educational research and viewpoints on clinical teaching from around the world. (Impact factor not rated) http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1743-498X
Education for Primary Care	Primary Care audience. Publishes research, news and opinions on developments in primary care education. It also features practical ideas and innovations to support primary care educators in their role. (Impact factor not rated) http://www.ingentaconnect.com/content/rmp/epc/

Family Medicine	Despite being in existence only since 1985, Family Medicine accounts for almost as many medical education publications as Medical Teacher and JAMA. The audience is primarily Family Medicine physicians. (Impact factor: 1.33) http://www.stfm.org/fmhub/
International Journal of Medical Education	IJME is a peer-reviewed on-line open-access journal, first published in 2010. It publishes original research relevant to medical and clinical education by educators throughout the world. There is no word limit. Publication is free, although authors whose facility with English is limited may be asked to pay a small fee for editing. (Impact factor not rated) http://www.ijme.net
JAMA: The Journal of the American Medical Association	The JAMA September issue is dedicated to medical education and tends to feature multi-institutional trials, systematic reviews, and high impact outcomes. While highly competitive, the turnaround time for reviews is quick. General medical audience (Impact factor: 30.026) http://jama.ama-assn.org/
Journal of the American Osteopathic Association	Osteopathic medical journal, mainly osteopathic audience. (Impact factor not rated) http://www.jaoa.org/
Journal of Continuing Education in the Health Professions	A good journal for CME studies and interprofessional topics (Impact factor: 1.521) http://www.jcehp.com/
Journal of General Internal Medicine	The Journal of General Internal Medicine publishes high quality medical education research for an Internal Medicine audience. (Impact factor: 2.830) http://www.springer.com/medicine/internal/journal/11606
Journal of Graduate Medical Education	JGME is a relatively new journal (2010) published by the Accreditation Council for Graduate Medical Education (ACGME) which features a large number and variety of studies into various aspects of residency and fellowship education. (Impact factor not rated) http://www.jgme.org/
Journal of Surgical Education	Publishes surgical educational research. Surgical audience (Impact factor: 1.376) http://www.cursur.org/
Lancet	The Lancet is a general medical journal with an international medical audience. (Impact factor: 38.278) http://www.thelancet.com/
MedEdPORTAL	MedEdPORTAL is the AAMC's on line repository of peer-reviewed resources in health sciences education where you may publish your educational materials. (Impact factor not rated) https://www.mededportal.org
Medical Education	Medical Education is a premier medical education journal that is especially good for

	qualitative studies because it permits longer papers and has an international audience. The journal also provides a venue for brief descriptions of innovations in their "*Really Good Stuff*" section. It leads in articles about measurement of academic performance. (Impact factor: 3.189) http://www.wiley.com/WileyCDA/WileyTitle/productCd-MEDU.html
Medical Teacher	Medical Teacher publishes research, guidelines and BEME (Best Evidence in Medical Education) reviews. Some papers are published on-line. International audience. (Impact factor: 1.217) http://www.medicalteacher.org/
New England Journal of Medicine	NEJM is a general medical journal with an international medical audience. (Impact factor: 53.298) http://www.nejm.org/
Simulation in Healthcare	Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare is a new, multidisciplinary publication and will educational topics. (Impact factor: 1.833) http://journals.lww.com/simulationinhealthcare/pages/default.aspx
Teaching and Learning in Medicine	A good journal for program descriptions and evaluation. (Impact factor: 0.748) http://www.tandfonline.com/toc/htlm20/current
Yale Journal of Biology and Medicine	YJBM launched a new section of the Journal addressing educational scholarship in medicine and the sciences in March 2012. YJBM is a peer reviewed, open access Journal that has been in publication since 1928. It is indexed in PubMed and does not charge publication fees. (Impact factor not rated) http://medicine.yale.edu/yjbm/authorguidelines/typesofarticles.aspx

*Impact factors reflect 2012 figures.

Although a prestigious journal may seem desirable, gaining acceptance may not be feasible for a variety of reasons, including relevance, importance, and urgency of publication.

- **Relevance:** Is your manuscript likely to be of interest to this journal's readers? Browse through recent issues to see what the journal is publishing, and read the editorials and instructions to authors to identify guidelines and limitations. If something on your topic has been published here previously, is your work redundant or does it add new information or perspective? If the educational intervention is more likely to interest a specific specialty, your target could be the specialty journal rather than a broader medical education journal.

- **Importance:** Does your article address an important topic? Even when the editor and reviewers like a paper, they may feel that other, equally good papers address more important topics of greater interest and use to their readers.

- **Urgency:** If you are afraid of being scooped or need to complete a project sooner rather than later, you may want to avoid journals with long lag times between submission, acceptance and publication. Although most journals use electronic submission and review processes, editorial decisions may still take a long time.

Use your senior colleagues to advise you on targeting your paper. It will save you time and disappointment in the long run if you have a knowledgeable colleague critique your manuscript before you submit it. Ask for specific feedback: Is this interesting? Does it make a contribution? To whom? Why? A senior colleague can help you be realistic and aware of how your contribution fits into the field in which you are working. You don't want to aim too high, as medical education is burgeoning and publishing is increasingly competitive. Remember that you may have to publish minor contributions – preliminary studies, local interventions, novel programs – in less prestigious journals before moving on with your more finished studies to journals that have greater impact. However you also don't want to aim too low. If you think that your work is important, and your senior colleagues agree, a prestigious journal might publish your paper. Even if your paper is not accepted, the reviewers often provide useful feedback that can help you revise your paper for submission to another journal.

DEFINING THE SCOPE OF YOUR PROJECT

You need to determine the appropriate size and scope of your scholarly projects and any publications which arise from it.

Research often entails many elements and processes, and there is a natural instinct to define a "least publishable unit" to generate more than one manuscript out of a project. The drawbacks to this approach are: 1) it can decrease the likelihood of acceptance of your paper, 2) it can fragment your project and diminish the impact of your work on readers, and 3) it can cast an undesirable light on your academic integrity. Furthermore, it can have legal implications; upon publication your manuscript is usually copyrighted by the publisher, and putting significant overlap of text and results into another published manuscript can constitute copyright infringement.

However, there are instances in which publishing multiple manuscripts from a single project is appropriate. Consider the following guidelines:

- The format you choose may already dictate the scope of your manuscript (e.g., case reports, systematic reviews).

- Your manuscript should represent a single cohesive concept with all its logical extensions included. If your needs assessment informed the development of a curriculum you plan to describe, or you conducted an evaluation of an innovative program, both elements should be included in a single manuscript rather than published separately. If the project is so expansive that it cannot be reasonably described in a way that centers on a primary principle, then your work should be divided into multiple manuscripts, delineated by distinct research questions.

- If your methods section would essentially be replicated for a second manuscript, you should combine the two. A classic example would be a single study with multiple outcomes.

- The use of a particularly rigorous or comprehensive statistical or methods approach may merit its own manuscript. Examples would include an extensive literature review of an educational method in non-medical fields or an innovative approach to validating an instrument.

ESTABLISHING AUTHORSHIP

Before writing begins, there should be an open discussion of the planned publication venue and agreement on authorship credit and order. The discussion should include the tasks each author is responsible for and a timeline established for completing the paper. The discussion should be documented in writing, in the format of meeting minutes. An email is the best way to ensure that the agreement is date/time-stamped.

Once the article type has been chosen, the journal selected, and the order of authors agreed upon, the topic must be broken down and divided among authors. Each author on the paper should contribute substantially to the manuscript. The process can be quite political and emotional and, as above, the order of authorship must be agreed upon "up front" and each author's role clearly delineated. The order of authorship usually takes into account the contributions of the authors to the origination and conduct of the study as well as the writing of the paper. Residents or fellows in training who have carried out a study may be selected as the first author, even as they learn about the writing/submission process. A more senior author is typically the last author, with other contributors being placed in the middle positions. All authors must agree to the order prior to writing up the project (documented in email format), and the repercussions of not following through on any step of the project should be outlined. As a general rule, a project leader should be chosen (usually the first author with help from the senior author), and tasks not completed in the agreed upon timeframe may result in an individual being dropped as an author.

Publication is the currency of academia, and talking about authorship order is sometimes as touchy a subject as talking about money. Therefore, the first rule should be to negotiate authorship early and agree to revisit the subject should circumstances change during the life of the project.

To initiate the negotiation, one might distribute the Uniform Requirements for Manuscripts Submitted to Biomedical Journals at http://www.icmje.org/ and the Ethical Considerations in the Conduct and Reporting of Research: Authorship and Contributorship at http://www.icmje.org/ethical_1author.html. These international guidelines often serve as the basis for most local guidelines and can be used as a framework for the discussion of authorship.

The following should be discussed and negotiated before beginning writing the paper:

- **Who will be first author?** Generally, the first author is the member of the project team who has contributed the most to the study's design, implementation, and analysis. The first author has the major responsibility for writing, submitting and then revising the manuscript. S/he should be willing to assign other tasks to co-authors and to work with the senior author's guidance (assuming there is a senior author).

- **Who will be senior author?** There need not be one as the first author might also take this role. However, a mentor who oversees a project and guides junior faculty members through publication can be listed last as the senior author. S/he should take a major role in assuring the quality of the product, and merit authorship by contributing to the conception, design, analysis, interpretation of data, and writing and reviewing of the manuscript.

- **Who should be a co-author and who should be acknowledged?** Each author should make a substantive contribution to the project and to the manuscript. It is not only sufficient to acknowledge incidental contributions, but it is imperative not to bestow authorship upon persons who have not made an intellectual contribution to planning, executing or describing the project. If the intellectual work could not be completed without the person, s/he is likely to qualify for authorship. This sometimes, but not always, includes people who contributed to the mechanics of the project (e.g., enrolling and/or interviewing subjects, mailing reminders, copy editing, gathering references). Project participants who have helped out but not made major contributions can be acknowledged in the publication without authorship. As a general rule, it is better to be generous rather than stingy in including as authors all those who made a substantial contribution to the study's design, implementation, analysis and writing; however, there should never be "guest/ghost authors" who do not fulfill the above requirements.

- **Whose name comes second, third, etc.?** Many journals limit the number of authors to six, and when the article is cited, often only the first three names appear (followed by *et al.*). Therefore, while it might seem fair to list co-authors alphabetically or randomly if they have all contributed equally to the project, you might consider the following in making the middle author order decisions:

    - Importance to the co-author's career
    - Opportunity for further collaboration when the co-author might be given a more prestigious position

- **What will the relationship amongst the co-authors be going forward and how to resolve conflicts.** Will there be opportunities to collaborate again and, if so, are team members willing to take turns being first author? Over time, projects change as do team members' roles and responsibilities. If anyone fails to contribute as promised and does not meet project and writing deadlines, the team needs to reassess authorship. Completion of the project may depend upon this reassessment, and certainly it is unethical to bestow unearned authorship upon a colleague. Nonetheless, conflicts and misunderstandings arise. To prevent such events, team members should discuss authorship openly and take grievances to a senior department member and/or the Faculty of Medicine's Ombuds Office. Your

local institution should have a similar process. A good place to get advice would be to check with Dean's office. The following scenarios may serve as food for thought.

- **Does the Principal Investigator always deserve authorship?** As with other authorship issues, this should depend on what contributions the PI has made to the project and manuscript. A contentious example is described below.

  Drs. Green and Gray are co-Pis on a grant to conduct a survey of teaching faculty in multiple medical schools. Although Dr. Gray attended all meetings and managed the budget, Dr. Green developed the instruments, managed the team, and gathered, analyzed and interpreted the data. Most importantly, when it came time to write a manuscript, Dr. Gray did not contribute. Authorship became contentious and Dr. Gray threatened to write to the journal Editor objecting to the manuscript being considered for publication if he was not listed as first or last (senior) author. What should Dr. Green do?

- **What is the difference between a contribution that warrants authorship and one that warrants acknowledgement?**

  Dr. Fowler implemented changes in his clerkship, and then evaluated outcomes. Many people helped: several educational consultants helped design the intervention; teaching faculty carried out the intervention; a data analyst accessed and analyzed course evaluation data and produced tables; and an administrative assistant organized course materials. Dr. Fowler wanted to be inclusive so he invited everyone involved to be a co-author. Ignoring academic rank, whom would you invite to be a co-author?

- **Which parts of a study represent the team's versus an individual's intellectual property?**

  Five faculty members served as co-directors of an innovative required clerkship. After several years of running the course, two members of the team decided to study whether the highest rated teachers in the course have a particular teaching style, as measured by a nationally standardized instrument. They conducted the study without input from the whole team, but listed all team members as co-authors. Was the original design of the course, along with faculty recruitment and selection foundational to the study design?

- **What rights do co-investigators have to data generated by a PI's innovative project?** A renowned educator initiated a program for which she received a large grant. She gathered a team of co-investigators to help flesh out her design, implement the program, and then evaluate it. She generously allowed junior faculty to be first authors on papers about the program, while she served as senior author. One investigator wrote a paper, however, that the PI was unenthusiastic about and did

not want to co-author. Does the junior faculty member have the right to publish the paper alone? Is it wise to do so, given the PI's visibility as the creator of the project?

- The point approach to authorship. An alternate approach is to determine authorship order with a 1000-point system, based on the extent of an individual's contribution to six different phases of the project: idea, design, implementation, conducting the experiment, data analysis, and writing. Conceptualization of the project and writing earn the highest number of points. Those who make a certain cutoff are granted authorship, and their score determines their order on the list. Those who earn less than 100 points are acknowledged in a footnote.

Reference

Venkatraman, V.: Conventions of Scientific Authorship. Science Careers 2010: Issue for April 16, 2010 http://sciencecareers.sciencemag.org/career_magazine/previous_issues/(year)/2010/(month)/04/(day)/16
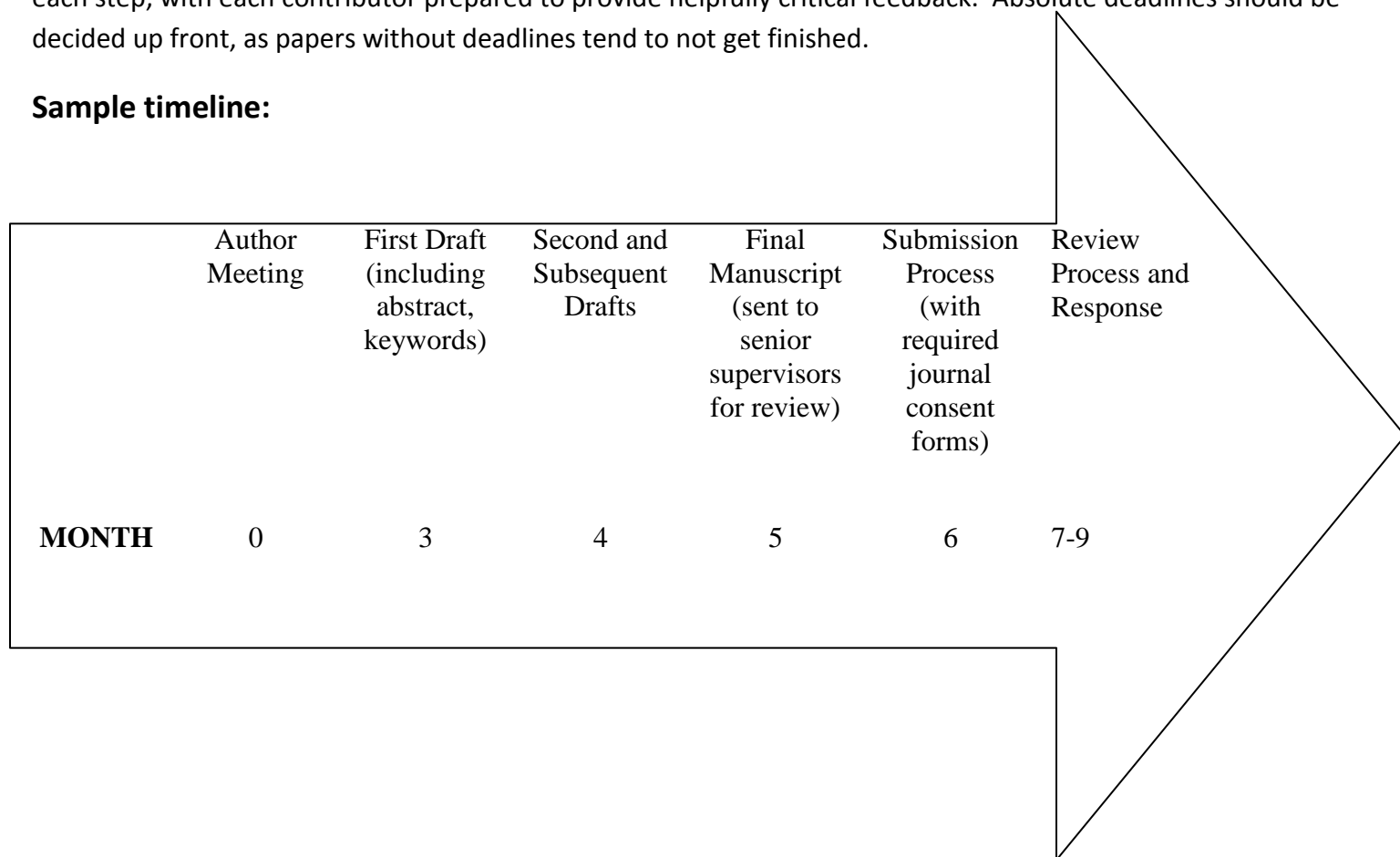
TIMETABLE

It is important to establish and agree on a timetable for writing and submitting a paper for publication.

The entire writing process generally takes several months, and deadlines for each draft and the final copy should be clearly delineated. The group must have clear and concise written/verbal communication during each step, with each contributor prepared to provide helpfully critical feedback. Absolute deadlines should be decided up front, as papers without deadlines tend to not get finished.

Sample timeline:

	Author Meeting	First Draft (including abstract, keywords)	Second and Subsequent Drafts	Final Manuscript (sent to senior supervisors for review)	Submission Process (with required journal consent forms)	Review Process and Response
MONTH	0	3	4	5	6	7-9

THE WRITING PROCESS

The only way to get to the end is to begin.

Getting Started

Writers at all stages of their career have thoughts on "getting started" ranging from "this is how I do it" to "I cannot get going, but have mastered the art of procrastination." When it comes time to write, you may have research data in hand or just what you think is a great idea. Before you write the first word, ask yourself the following question, "What is my message?" If you cannot articulate your message, you may not have a manuscript. The writing process itself is NOT the journey to figure out what you are going to say. This focusing exercise is amazingly helpful to the writing-launch process and can be executed anywhere (running, shower, daydreams etc). If a friend asks, "What are you working on these days?" see if you can tell the story of your project – and then see whether s/he understands it and finds it interesting.

At others times, you may think you have a message but are overwhelmed by the writing task which seems enormous. The answer is "chunking." Nearly all research papers can be broken into chunks (title page, abstract, intro, methods, results, discussion, bibliography, figures, pictures, legends). If, you can get one or two of these under your belt, you are on your way.

Links to a few others' thoughts on "getting started" are included here:

Getting Started With Writing

> http://www.bookcoachpress.com/writing-help/getting-started.html

How to Sit Down and Write an Article

> http://www.writing-world.com/dawn/dawn01.shtml

Before the actual writing of a manuscript is undertaken, the following is assumed:

- The paper has progressed beyond conceptualization and proceeded to preparation

- A literature search has been performed and circulated

- The target audience has been identified

- Authorship and editorial issues have been resolved

- The authors have met and assignments made for division of labor and individual responsibilities for writing the manuscript

- A basic outline for the paper has been prepared and circulated, all authors agree to its format and the review process is understood by all authors

Creating an outline for your paper

Writing a paper is always a stepwise "building project" intended to convince readers that they have made a good investment in reading the paper because it adds incrementally to their knowledge. All papers need to be structured to delineate an issue which needs to be explored further. In the case of research, the paper must also describe how the current study logically led to findings important in exploring/solving that issue. Creating an outline is a good way to organize your thoughts, place ideas in a logical progression, and begin the writing process. The outline provides a "skeleton" which will be "fleshed out" while writing the actual paper.

Some authors suggest using PowerPoint for outlining. Some prefer the outline tool in MS-Word. Whatever tool you use, outlining helps clarify your ideas and helps tell the story.

Writing the manuscript

Keep in mind that you need not wait until the completion of your study to write components of your manuscript, nor do you need to write the sections in order. Envisioning the title at the outset of study conception allows you to express your research question in a succinct manner. Drafting the tables helps you plan your analytic approach as well as frame the results. The IRB application (for human and animal studies) requires a background section that can serve as a template for your manuscript's introduction and methods sections. Documenting the methods as you conduct the study prevents you from leaving out essential details. After completing the study, writing the results and tables is relatively straightforward, which leaves the cognitively more arduous discussion section for the end. This approach avoids the pitfall of procrastinating in writing up your research, the findings of which are often time-sensitive.

JOURNAL ARTICLE STRUCTURE

Most research papers follow a logical structure, a basic formula of six sections that serve as the scaffold for the manuscript. The six sections are the abstract, introduction, methods, results, discussion and references. The sections tell the story of what you studied (statement of purpose or hypothesis), why you studied it (supported by references to prior research), how you found out (methods), what you found out (results), why the findings are important (discussion), and what literature you used in preparing the paper.

Title

The title should be concise and precise. In some fields, particularly genetics, the title summarizes the findings; this convention is not typically used in clinical or medical education research. If you have conducted a study design that involves significant rigor or effort such as a randomized controlled trial, this can be included in the title. An example would be, "Comparison of a web-based learning module to didactic lectures: a randomized controlled trial."

Abstract

The purpose of the abstract is to inform the reader of what the article is trying to convey to the readership in a short, sharply defined format that makes it easy for the reader to grasp quickly and then decide whether or not to delve further into the article. Abstracts must be brief (200-400 words depending on the journal) and contain an encapsulated version of the paper itself, i.e., introduction, methods, results, conclusions. (A discussion section is not included and left for the body of the manuscript). Although published before the text of the paper, the abstract is sometimes written after the entire paper is completed, just as the overture for a musical or opera is composed after the score is finished.

A cardinal rule of an abstract is that it must be short, to the point and not contain verbose, stilted or drawn-out sentence structure. You should write the abstract in the third person passive voice (e.g., "End-of-course test scores were compared in a study of 221 second year students at an east coast medical school randomized to a lecture-based or a problem-based neurosciences curriculum."), as if the editor were explaining your work to the readers. You should bear in mind that many readers will choose whether or not to read the paper itself based on the abstract. The reader is thinking the following when reading the abstract:

- Is this something that I am interested in or covers my area of research?

- Are the results and conclusions compelling enough to engage and capture my interest?

- Does it look like it will be relatively straightforward to read? Many readers will lose interest immediately if the abstract is not written at a level they can understand.

Introduction

 The purpose of the introduction is to tell the reader what the paper is trying to convey, what is already known about this issue from the relevant literature, and what the new or unanswered questions are that merit this investigation. A well-written introduction deals with these issues in a lively, succinct set of several paragraphs that literally leads readers into the body of the paper, immediately engaging them and making them want to continue. The writing style will vary depending on the journal, but it is always good to aim for as simple and direct a writing style for the body of the manuscript as possible. Flowery, verbose or grandiose passages, especially those that pontificate, are generally not well-received by reviewers or journal editors and also tend to turn off readers.

Methods

 The purpose of the methods section is to tell the reader *how* the study was conducted, so that the study can be reproduced if necessary by another researcher. It is essential that this section be very clear and almost formulaic, so that the reader can clearly understand the study's setting, timeframe, sample, measures, outcomes, and data analysis plan as well as the methodology. You should ensure that the methodology behind all data reported in the results section is represented in the methods section. In the case of an educational intervention, it is important to describe the program (it is the "treatment") as well as the evaluation methods, and to describe comparison groups' activities, so that readers may replicate the program and the study. In addition to a description of the research materials and methodologies used, the methods section usually includes a sub-section describing statistical analyses (and the statistics software used). In order to conserve print space and reduce verbiage, some journals require a complex methodology to be placed in an online appendix or supplement.

If a human or animal study, the authors should include a statement of IRB approval at the end of the methods section. You should be aware that many journals require a statement (and sometimes proof) that IRB approval was obtained. If a survey research study has been given exempt status by the IRB, this should be stated. For survey research, a copy of the survey may be included in an appendix or link to a website.

Results

The purpose of the results section is simply to present the study findings. Since journal space is always at a premium, well-constructed tables can be important to include in a results section because they allow the reader to grasp large amounts of essential information quickly and unambiguously. The results are

statements of fact and should not contain interpretations or commentary. You should make a concerted effort to make the results clear, straightforward and easy to grasp by the reader.

Order both text and tables to highlight your most important findings, whether positive or negative. From a stylistic standpoint, tables must be carefully thought out and constructed and be as succinct as possible. The text should not repeat all data that are contained within tables; instead, in the text you should highlight results of interest or summarize key findings. The wordier the text, the more likely reviewers and editors will get fatigued. Some journals require less important results from the study to be placed in an online appendix or supplement. Especially when reporting survey results, avoid reporting data simply in the order in which you collected them. Lengthy secondary tables are often best left to an appendix so that readers can refer to them if they decide to do so.

Discussion

The discussion section allows the authors to interpret their results and place them in the context of the fundamental question(s) that the authors were trying to address and answer. The discussion section can also contain commentary on the implications of the results, being very careful to avoid grandiose statements, and include suggestions for new directions and areas of research on the studied topic. Most importantly, the discussion is the vehicle for the authors to make their case as to how the results should be perceived and interpreted by the reader. It should contain commentary about how your results compare to previous studies with similar designs, subject population, or outcomes. Summarize your findings in a general way, minimizing numbers and statistics. Explain your findings and speculate, in a controlled and reasoned manner, about your results. For hypothesis-testing research, make sure you address how your results satisfied (or did not satisfy) all your hypotheses. For the sake of conciseness, avoid repeating your results at length, but do compare your results with prior literature.

Overgeneralization of the results beyond the limitations of the study usually provokes strong criticism from reviewers.

1. If you have referenced previous studies in the introduction, elaborate on those studies as they relate to your findings here (rather than in the introduction).

2. Conclude with the implications of your study for the future

Limitations

All studies and scholarly projects are inherently limited by the nature of their setting, sample, methods, outcome measures, etc. Many journals require a description of the limitations of the study. Even if not

specifically mentioned in the journal's *Instructions or Guidelines for Authors*, the authors should include a paragraph on limitations of their study in the discussion section (reflective critique is a criterion of scholarship). This puts the results and findings in context and helps keep the authors from making sweeping generalizations beyond the scope of their findings. It also indicates to reviewers that you are aware of design limitations that were unavoidable but might be remedied in future studies. In educational and clinical research, one can never control for all factors that depend upon variations in human behavior.

Conclusions

The concluding portion of the discussion section provides a summary of the investigation in broader context. In a way, it echoes the abstract, but is designed to wrap up the paper and present the essence of the study's findings and implications. The conclusion should be brief, informative and to the point, and should not overstate the possible impact of your research on the larger community. Conclusions are an important part of your paper or abstract as they are often what readers glance at first to get a "gist" of the paper and whether they are interested in reading more. It is helpful to be as specific as possible, so that readers can determine whether the results are relevant to their interests. Key considerations in writing the conclusions are:

- **Conclusions must be supported by data**. This is far and away the most important consideration in writing your conclusions. Don't overstate your findings. Over-reaching conclusions can stem from well-intentioned enthusiasm about the topic, but are a very common pitfall, and a frequent criticism of reviewers. After writing your conclusions, it can be helpful to "be your own reviewer" and challenge yourself by checking whether the conclusions are directly supported by the data. This is also a good time to return to your original question or hypothesis to be sure that you have been consistent throughout and that both your data and conclusions answer the question.

- **Consider mentioning the implications, next steps** or new directions in your field of study. This kind of statement can help the reader consider why your findings are important and where they might lead in the future.

- **Keep it brief.** Conclusions do not need to recap every important point in your paper or abstract, just 2-3 salient points you'd like to emphasize. Long conclusions can lose their potency.

- **Imagine your conclusions as a press release.** What would your conclusions look like as bold faced, big font, front page news? Since many readers go to the conclusions first (including media/reporters), try to think of how you might frame your conclusions so that they would catch someone's eye and interest them in reading your work.

References

The references section should conform to the style requirements spelled out in the journal's Guidelines for Authors. Various journals have their own particular style requirements for references and it is important to conform to them. Commercial bibliographic retrieval and formatting programs, such as EndNote® and Reference Manager® are particularly useful in preparing a manuscript. If the manuscript is rejected by one journal, these programs make it relatively easy to reformat the references for another journal with different style requirements. If the reviewers require extensive re-writing with deletion or addition of references, this is, again, easy to accomplish with such programs. (For more information, see Electronic Resources)

WRITING MECHANICS

Most journals have helpful Guidelines for Authors to help them prepare and submit a manuscript.

Journal Instructions

Consult your target journal's Guidelines for Authors before you begin writing and recheck them before you submit your manuscript. Remember, most journals have strict limits on the length of the abstract, introduction, methods, results and discussion sections. The *word count* feature in MS-Word enables the author to ensure that each of these sections conform to the journal's requirements. Most journals use an electronic format for submission. Each journal has a unique style for entering the title, authors, affiliations, funding sources and acknowledgements. The directions are usually straight-forward and should be followed exactly.

Style and grammar

In writing a manuscript for a scientific journal, the style should be informative with the *active voice* used whenever possible. The *passive voice* generally tends not to engage the reader. One must be careful not to use colloquialisms or to write in the style of a magazine article written for the layperson unless that is the specific target audience. The format of a medical review article describing new therapies and research for chronic pain written for *Time Magazine* will be very different from an article on the same topic written for a medical journal because the target audiences are vastly different. The former will have a relatively informal style and be easy to read and be understood by a layperson with a high school education. The latter will be scholarly, comprehensive, include the latest pertinent references and adhere to a proscribed format. If well written, it will be readily understandable by its target audience and be free of ponderous verbiage and hyperbole. This is not easy to accomplish and clear scientific writing requires lots of writing experience over the years. If authors consciously ask themselves during the writing process whether their style is easy to read and understand without compromising scientific accuracy or information content, this is bound to produce a better manuscript.

Writing for English language journals

Scientific journals published in English generally expect submitted articles to be written in idiomatic American or British English. Many international authors submit articles that do not conform to these standards and appear stilted and difficult to understand. The following appears in *Instructions for Authors* for a journal published by Blackwell: *"Authors for whom English is a second language may choose to have their manuscript professionally edited before submission or during the review process. Authors wishing to pursue a professional English-language editing service should make contact and arrange payment with the editing service of their choice."*

In addition, some publishers now offer editing and translation services for a fee. One example is Elsevier at http://webshop.elsevier.com

Tense

In general, the manuscript should be written in past tense, as it refers to work and results that took place in the past. As such, the methods and results section should be entirely in the past tense. Exceptions include statements that are universally accepted (e.g., "Genes are made of DNA."), are well supported by the literature (e.g., "Many medical errors are preventable."), or relate to implications of the study (e.g., "Our study suggests that residents are at risk for burnout.")

Ordinal versus Cardinal Numbers (New Oxford American Dictionary)

An ordinal number is a number defining a thing's position in a series, such as "first," "second," or "third." Ordinal numbers are used as adjectives, nouns, and pronouns. A cardinal number is a number denoting quantity (one, two, or three), as opposed to an ordinal number (first, second, or third). When using ordinal and cardinal numbers, the numbering should be consistent, i.e., 1st, 2nd, 3rd or first, second, third for ordinal numbers and 1,2,3 or one, two, three for cardinal numbers and not interchange the numbers' form in various portions of the manuscript.

Pronouns

Try to avoid the use of *he or she* and *him or her* in the text of a manuscript. Instead, a modified form of the noun can be used. For example, "When an authorship is considered, *the prospective author* should have made a substantive contribution to the manuscript..." instead of "When an authorship is considered, *he or she* should have made a substantive contribution to the manuscript…". Alternatively, the plural can be used: "When an authorship is considered, *prospective authors* should have made a substantive contribution to the manuscript."

References

1. Huth, EJ. How to Write and Publish Papers in the Medical Sciences. Philadelphia, ISI Press, 1982.

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AVOIDING PLAGIARISM

The Office of Research Integrity for the United States Department of Health and Human Services defines plagiarism as "both the theft or misappropriation of intellectual property and the substantial unattributed textual copying of another's work." Plagiarism applies to text, tables, data, radiographs, histopathology slides, diagrams, and pictures. The advent of the Internet has made plagiarism much more common, even among well-intentioned authors. Plagiarism can be categorized by the extent, uniqueness of the material, type of material, degree of referencing, and author's intent, as summarized in Table 3. Self-plagiarism, also known as text recycling, may be considered misconduct if there is excessive text duplication of one's own work, with extreme cases constituting duplicate publication. While you are doing research and taking notes for your paper, be careful to keep track of where all information comes from and be sure to provide appropriate attribution. Italicize or put quotes around any text you copy verbatim. Forgetting that they have copied something verbatim has been the downfall of some famous writers and academics, much to their embarrassment and consternation. However, by maintaining the highest ethical standard when submitting your work, you can avoid publication misconduct.

 New text-matching software programs now are being used by journals to assess for plagiarism. "CrossCheck" powered by iThenticate at http://www.ithenticate.com/ allows journals to compare submitted text to a large array of publications and freely available material on the Internet. It is important to remember that even "close copying," whereby text is not repeated verbatim, but only minor changes are made, constitutes plagiarism, whether the source is cited or not. Journal editors may take specific action against an author, depending on his/her degree of plagiarism. For example, if the plagiarism is defined as minimal, editors may ask the author to cite the original publication, while if the plagiarism is extreme, the author's institution may be contacted which can have obvious career implications. The Lancet has published a commentary stating that they have decided to use CrossCheck for all submitted seminars, series, and reviews. Other journals are sure to follow.

To minimize the possibility of plagiarism, you should:

1. Summarize material without viewing the original source.
2. Provide references whenever possible.
3. Include quotation marks and complete references for any content that is incorporated verbatim, and keep such content as brief as possible.
4. Obtain permission for partially or completely duplicating another author's work.
5. Consider submitting your finished paper to writecheck.com, a website that reviews papers for plagiarism, before submission.

Table 3: Degrees of Plagiarism

Category	Minimal	Moderate	Extreme
Extent of plagiarized material	A few words	Entire paragraph	Entire paper
Originality of plagiarized material	Widely-used phrase/idea	Phrase/idea used by a small number of authors	Original phrase/idea of another author(s)
Type/context of plagiarized material	Standard method	Description of another author's findings without attribution	Theft of actual data
Degree of referencing material	Source almost completely and clearly referenced but lacking indicators (italics or quote marks) that delineate the words quoted	Source partially and/or inaccurately referenced	No reference
Author intent to plagiarize or not	No intention to deceive	Intention to deceive	

Modified from: Wager E, p 3.

References:

Checking for plagiarism, duplicate publication, and text recycling. *The Lancet* 2011; 377:281-2

CrossCheck. http://www.crossref.org/crosscheck/index.html Accessed March 26, 2012

Stark, L, Perfect, TJ. The Effects of Repeated Idea Elaboration on Unconscious Plagiarism. Memory & Cognition 2008; 36: 65.

Tucci V, Galwankar S. JETS policy on plagiarism and academic dishonesty. *J Emerg Trauma Shock*. 2011; 4:3-6

US Department of Health & Human Services Office of Research integrity, Available at: http://www.ori.dhhs.gov/policies/plagiarism.shtml. Accessed June 13, 2011.

Code of Conduct and Best Practice Guidelines for Journal Editors. Available at: Committee on Publication Ethics website http://www.publicationethics.org/

PRE-REVIEW

Prior to submission, be sure to proofread the manuscript and check its style, spelling and grammar one more time, and then ask your mentor/senior colleague to pre-review your paper. In addition, a review by someone who is not part of the research or writing team can be very helpful.

Journal instructions: Check the style favored by the journal, for example:

- Chicago style (http://www.chicagomanualofstyle.org/16/contents.html)

- APA style (http://www.apastyle.org)

Formatting: Be sure to include headers and page numbers and double-space the manuscript.

Writing style: Writing should be in the active voice. Use of idiomatic American English is important if submitting to a mainstream U.S. journal.

Spelling and grammar checks: Manuscripts are usually prepared using a word-processing program such as Microsoft Word®. These programs generally include spell checkers and grammar checkers that screen for gross errors in subject-verb agreement, sentence fragments and other issues. Submitting a manuscript without checking for spelling and grammar is frowned upon by editors and is a major source of rejection for marginal manuscripts.

Proofread: Remember that spell and grammar checkers, although useful, are far from perfect and often miss subtle stylistic or meaning errors that a careful re-reading will detect. Have each author read the manuscript carefully. If the manuscript is written by one author, have another trusted colleague read and critique the article. Tedious, yes, but absolutely worth the effort!

Request a pre-review: Before submitting to a journal, ask your mentor or senior colleague to review your paper. It is better to use a "friendly critique" to improve your paper than to hear the same criticisms from journal reviewers that may negatively influence the publication decision.

FIGURES AND TABLES

Preparing figures and tables is an important part of writing an academic article.

Figures and tables can greatly enhance the content and value of a scholarly publication by providing an effective visual summary of information included within the written body of an article in a format that is more quickly understood and synthesized. In the case of scientific abstracts or any publications with very restricted word counts or page space, figures and tables allow authors to provide additional data and information in an efficient way. Figures and tables should definitely add supplementary value to the overall product; those that merely reiterate what is already effectively expressed in the text should be avoided.

Every journal has its own guidelines for the preparation, formatting and submission of figures and tables. It is important for authors to understand these requirements and to follow directions as carefully as possible. Failure to do so can result in a delay or rejection of a manuscript from the review process. Most journals ask for tables, figures and legends to be submitted on separate pages and in a specific order. Attention should be paid to the specific journal's format requirements; for example artwork can be created and scanned as TIFF (tagged image file format), an EPS (encapsulated PostScript) file, or a PPT (PowerPoint) file. Sometimes JPEG or GIF files cannot be used. Figures or images need to be properly referenced in the bibliography or in figure legends, per the guidelines of each specific journal. In some instances, accepted photographs or color figures carry an added expense to the author. Every journal also has guidelines about the preparation of legends for figures and tables. In general, legends should be brief and specific. All figures should be checked for accuracy and consistency.

SUBMISSION

When you submit a manuscript, you should introduce your work by writing a cover letter to the journal editor, explaining the topic, how your work adds to the literature and, possibly whom you would suggest might or should not be reviewers.

Writing a cover letter is a very important part of the submission process. It should convey why your study is relevant to and worthy of publication in the particular journal to which you are submitting it. A good cover letter should help facilitate the manuscript being considered seriously by knowledgeable reviewers as well as establish your credibility as an author.

The letter should be relatively brief (no more than 3 or 4 short paragraphs), and addressed to the Editor-In-Chief. The date should be current, and the title of the manuscript should be introduced with all authors listed. The premise of the study should be described, as well as the reasons why the findings are important and/or novel, and any implications that the work may have (i.e. state the main conclusion of the paper). You may choose to suggest individuals of high standing in the field as unbiased reviewers for the paper, although most journal editors prefer to select their own reviewers. The cover letter should end with a declaration of any conflicts of interest, as well as a statement indicating that the work is not currently under consideration at another journal, and has not been published elsewhere. Your name, address, telephone, fax, and email information should be clearly provided, as well as your appreciation for their review of your submission.

It is important to always consult the authorship guidelines for a given journal, as these may contain very specific requirements for materials that should accompany your submitted manuscript, i.e., signed consents for publication from all authors.

If the research for your manuscript was supported by the NIH, you need to keep the NIH Public Access Policy in mind when submitting your manuscript for potential publication with a journal. Since April 2008, the NIH Public Access Policy requires that any manuscript accepted for publication, which has also been supported by an NIH award, must be made publically available in the PubMedCentral repository at the National Library of Medicine. Failure to do this will jeopardize the Principal Investigator's ability to comply with their NIH award.

For example, if ANY of the authors acknowledge within their manuscript that an NIH grant had helped fund the research reported in the paper, then the authors need to arrange with the publisher to have this manuscript deposited into the NIH's PubMedCentral repository at the National Library of Medicine.

There are multiple scenarios that can come into play after making this disclosure to the publisher. Publishers have a variety of ways in which they accommodate authors with their NIH Public Access obligations; however, the publisher needs to first know if/when an author's work is indeed subject to the NIH Policy. The vehicle for "communicating" this requirement to the publisher is within the Author/Publisher Copyright Transfer

Agreement. Be sure to make this NIH Public Access disclosure to the publisher every time the manuscript includes an acknowledged that an NIH award has provided support. The librarian at your institution can help you with questions about this process.

References

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Accessed March 26, 2012.

Neill, US. How to write a scientific masterpiece. J Clin Invest. 2007; 117(12): 3599-3602.

THE REVIEW PROCESS

The decision to accept, recommend revision or reject a manuscript is made by the journal editor, based on the reviewers' evaluations of the paper. If a revision is recommended, you will receive reviewer comments and questions to address in a revision. Regardless of the editorial decision, you should receive comments from the reviewers. If you resubmit a revision, write another cover letter that summarizes the changes that have been made. If the article is rejected, don't give up – usually there will be another venue for publication.

The Editor and/or the journal staff will scan the paper and read the author's cover letter, which should describe the article and the journal category it belongs in. The Editor uses the cover letter and the paper's abstract as a screen to decide whether the content is within the journal's purview. If it is not, the paper may be returned to the author without review. The Editor may also reject the paper if he/she believes the paper is poorly written, doesn't conform to the journal's guidelines, the focus of the study is redundant with previous work, or the topic would not be of interest to the journal's readership. As an example, a study of the prevalence of insomnia in East Africa may not be of interest to a sleep journal that has a North American readership. If the paper is within the journal's purview and it is not rejected for other pre-review reasons, the Editor decides which reviewers to send it to, based on the listing of reviewers' expertise in the journal's database. Many journals, especially those with a large number of submissions, have Deputy and Associate Editors. For these journals, the Editor will usually assign the paper to the Deputy/Associate Editor who will assign the reviewers. While some journals let authors suggest reviewers, many do not. In addition, some journals allow the author to indicate which reviewers should not be used. Many journals do "blind reviews", with the authors' names and affiliations removed from the manuscript before it is sent to the reviewers, while others include this identifying data with the paper. Almost all journal correspondence is done via the Internet. Thus, the paper is sent out electronically to multiple reviewers who (hopefully) have extensive expertise in the paper's area. The minimum number of reviewers for almost all journals is two, but sometimes as many as five or more reviewers may evaluate a paper. For papers with complex analyses, an additional statistical reviewer is sometimes employed.

Each journal has instructions to its reviewers and its own evaluation criteria. Although these instructions and criteria are given to reviewers, they often are not published or readily available to authors submitting a manuscript. Below are some examples of the virtues reviewers look for in a paper, the general areas journals ask their reviewers to cover when evaluating a submission, and the forms many journals use to convey the reviewers' thoughts back to the editors and authors

Reviewers look for the following virtues in a paper:

- **Logical organization.** The introduction should give a clear rationale of why the study was done. The goals and hypotheses must be clearly stated. The methods should be sufficiently detailed so that the reader can understand what was done. In some journals, complex technical details can be supplied in an online supplement or appendix.

- **Clear and concise writing** without spelling and grammatical errors. A badly written paper will bias the reviewer against recommending acceptance.

- **Content area of interest to the journal's readers.**

- **Results presented clearly and easy to understand.** The data should be analyzed correctly. Numeric results should not be reported more than one decimal place beyond the level of precision with which they were measured, e.g., do not report averages on 5-point scales to 2 or more decimal places.

- **Important results**. This is probably the most important criterion because a journal does not want to publish a paper that doesn't have utility to its readership or contribute to the overall body of knowledge.

- **Thoughtful discussion** of the findings without over-generalization

The reviewers complete three types of review forms:

- Rating and Recommendation form
- Confidential Comments to the Editor form
- Comments for the Author form

Reviewers are asked to rate the paper in several areas, which usually include (at least) the following:

- Accuracy

- Balance

- Composition

- Innovation

- Timeliness

- Use of references

- Use of statistics – is an additional statistical review needed?

- Usefulness to readers of this journal

After rating the paper, the reviewers provide their recommendation about publication to the Editor. The recommendation options include:

- Accept after incorporation of improvements prompted by the reviews

- Revise and reconsider after minor revision

- Revise and reconsider after major revision

- Reject

On the Confidential Comments to the Editor form the reviewers tell the Editor their concerns/issues about the article and explain the reasoning behind their ratings and recommendations, including why the paper should or should not be published in this journal. These comments are not shared with the author. On the Comments for the Author form the reviewers discuss the paper's strengths and weaknesses, and hopefully suggest helpful ways the author might improve the paper, but do not state a publication recommendation.

The Editor, or Deputy/Associate Editor, after reading all of the reviews and the reviewers' confidential comments, makes one of the four basic publication decisions described above, writes a decision letter to the corresponding author, and sends the letter with the reviewers' comments to the author.

RESPONDING TO REVIEWS

Revision

If a revision is requested, see this as an invitation, rather than a rejection. There was something about your paper that interested the editor enough to invite you to take another shot, so consider yourself halfway there. It may be valuable to have a short "cooling off" period before preparing a revision. Authors are usually heavily invested in their work, and criticism can be difficult to receive. However, addressing the revision shouldn't be put off for long because many journals give authors a limited period of time to revise. Thus, it's best to share the reviews with your coauthors and use the reviewers' comments to improve your paper. Although there are exceptions, a revision which responds to reviewers' critiques generally results in an improved manuscript.

If you do revise and resubmit, it is vital that the author writes a cover letter describing how he/she has responded in the revision to each of the comments by the Editor and reviewers. In writing a revision, the author does not have to make all of the changes suggested (some requests from different reviewers will contradict each other, some are impossible with the data available, etc), but it is important to say what the author did and did not do in response to each comment to explain the changes in the revised paper. In all cases even if you disagree with the reviewer, it is important to be polite and respectful in your response to the critiques. In preparing a revision, many journals require that both a "redline" version showing where all the changes were made in the paper as well as a "clean" version be submitted. Authors should be aware that even if a "satisfactory" response is given for each of the reviewers' concerns, this does not guarantee acceptance.

Some journals return a revision to the original reviewers for further review, some send it to new reviewers, and at times the Editor or Deputy/Associate Editor will review the revision themselves rather than sending the paper out for further review. As before, the Editor or Deputy/Associate Editor makes the final publication decision. In some cases, further revisions may be requested before a final publication decision is made.

Rejection

If a paper is rejected, the reason(s) for rejection are often obvious from reading the reviews. In a few journals, the Editor, Deputy or Associate/Editor may provide explicit reasons for rejection, while other journals only

provide a generic rejection letter. Frequently, the reviews are "split" with one or more reviews favorable and others unfavorable. In such cases, the Editor, deputy or associate editor has made the editorial decision to reject. In rare cases, all of the reviews appear favorable or at least neutral, but the paper is still rejected. In such cases, the Confidential Comments to the Editor or a reading of the paper by the Editor has led to the rejection decision. If the reviews appear to be inappropriate or otherwise unfair, some journals allow for an appeal. Before deciding to ask for an appeal, you should carefully consider whether it is worth the effort because in most cases the decision will remain the same. Finally, if the paper is rejected, but the authors believe it has an important message, consider the issues raised in the reviews, revise the paper accordingly, and resubmit to another journal. Persistence usually results in a publication!

The good news is that many papers that are rejected initially are accepted elsewhere. In most cases, further refinement based on the reviews from the first journal is needed to attain publication. Two articles published in 2000 tracked the fate of papers that had been rejected. Within five years, 69% of papers rejected by a general medical journal (Annals of Internal Medicine) had been published elsewhere, most in specialty journals with lower impact scores, while within four years, 47 % of papers rejected by a specialty journal (Cardiovascular Research) had been published elsewhere. A 2010 article reported that 65.8% of articles rejected by the British Journal of Surgery in 2006 were published elsewhere by 2009. So the moral is, if at first you don't succeed, <u>try, try again</u>!

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Opthof,T, Furstner, F, van Geer M, Coronel, R. Regrets or no regrets? No regrets! The fate of rejected manuscripts. Cardiovasc Res 2000, 45(1):255-8.

Wijnhoven, BP, Dejong, CH. Fate of manuscripts declined by the British Journal of Surgery. British Journal of Surgery 2010. 97(3):450-4.

APPENDIX

Each institution has its own patient/subject consent forms for use in patient and other human subjects research, including educational studies. Below are some examples.

SAMPLE CONSENT FORMS FOR TEACHING OR PUBLICATION USE OF MEDICAL INFORMATION

Please note that these are generic examples of consent forms should be tailored to your own institution and project. These forms should not be used without approval from your own institution and IRB committee.

SAMPLE CONSENT 1

Patient Name: _____

DOB: _____

MRN: _____

To Whom It May Concern:

This is to certify that I give my consent to the use of medical data from my procedure on _____, for the

purpose of a publication in a scientific journal. Such medical details may include the type of operation, past

medical history, intraoperative vital signs, EKG records, etc. I understand that the publication will have no

identifying information (such as name, Social Security Number, Medical Record Numbers or photographs).

_____

Signature

SAMPLE CONSENT 2

Consent For: _____ Interview

(Please check as many as apply) _____ Audio Recordings

_____ Motion Pictures

_____ Photographs

_____ Electronic Images

_____ Live Broadcast

Patient:_____ **Date:**_____

Summary: *This form says that you, the patient, give your permission to be interviewed, photographed, filmed or taped for medical education and/or promoting the activities of the hospital, and that you give permission for free.*

In the interest of promoting the hospital and/or informing the public concerning activities at the hospital or for medical, educational or scientific purposes, I consent to an interview, audio recordings, the taking of motion pictures, videotape recording, or photographs, as indicated above, of the operation or treatment which is scheduled to be performed on me or in connection with medical services I am receiving from the professional who is responsible for my care, on or about _____, 20____. I authorize this under the following conditions:

    (1)   Such interviews, recordings, motion pictures, live broadcast, electronic images or photographs may be taken only with the consent of the professional responsible for my care.

    (2)   Only an individual approved by the Public Affairs department shall conduct or produce the interview, photographs, motion pictures or recordings.

    (3)   The interviews, photographs, electronic images, motion pictures or recordings shall be used for publicity, education or science; such photographs and information relating to my case may be published and republished, exhibited either separately or in connection with each other, in a professional journals or medical book, or used for any other purpose deemed proper in the interest of medical education, knowledge, research

or to promote activities at the hospital in the news media provided, however, that it is specifically understood that in any such publication or use, I shall not be identified by name without my consent below. I grant this consent as a voluntary contribution in the interest of medical education and knowledge, or to promote the hospital.

(4)   I waive all rights I may have to any claims for payment or royalties in connection with any publication, exhibition, televising or other showing of these interviews, films, electronic images, tapes, or photographs, regardless of whether such exhibition, televising or other showing is under philanthropic, commercial, institutional, or private sponsorship, and irrespective of whether a fee of admission or film rental is charged.

(5)   I understand that interviews, photographs, electronic images, films or tapes may be edited, modified, or retouched for artistic purposes to withhold identity or for other graphic production reasons which may or may not be within the hospital's control.

(6)   I _____ consent to be identified in the interview, film,
        photography,   (Insert "do" or "do not")

videotape, or audio recordings.

_____   _____

        Witness   (Patient, parent, legal guardian, health care agent, or

                                          Other person authorized to consent for patient)

(Adapted from consent form used at Massachusetts General Hospital)

SAMPLE CONSENT 3

I hereby consent to allow YOUR HOSPITAL, including any of its employees or agents, to interview me and/or to make a photograph, videotape, motion picture and recording of my surgical procedure. I authorize the use and disclosure of the below referenced protected information to the HOSPITAL with the understanding that it may include specifically protected health information which may include but not be limited to name, address, or pictures of me and be used for publicity, education or other such purposes as the HOSPITAL or its authorized representative might select.

I understand that the information I authorize an individual or organization to receive may be re-disclosed and no longer protected by federal privacy regulations. I know that I may revoke this authorization at any time by notifying the HOSPITAL in writing, provided the information has not already been disclosed. I know that this authorization is voluntary. I understand that treatment will not be conditioned on the completion of this authorization. I know that I have the right to request and receive a HOSPITAL Notice of Privacy Practices.

A. Detailed description of information which may be used and disclosed by the HOSPITAL:

- The information specifically described above may be used and disclosed in any form of communication and in archives.

- I understand that I will not receive or be entitled to any compensation related to the use and disclosure of this information

- I hereby waive any right or interest I might otherwise have in any product that may be developed in regard to the use and disclosure of this information and assign all rights I may have to THE HOSPITAL

B. The information, for the period_____ to_____ (specify dates), to be used and disclosed is checked below:

☐ Sound Recordings

☐ Videos   ☐ Motion Picture   ☐ DVD

☐ Words and images

☐ Medical Information relating to (fill in disease) _____

☐ Other (please specify) _____

C. This authorization expires in (please check appropriate box) : ☐ 3 months ☐ 6 months   ☐ indefinite

☐ other _____ (If not specified, all authorizations will expire 12 months from the date this form was signed)

_____   _____

Signature of Patient or Patient's Guardian   Date

_____

Print Name & relationship if other than patient

_____   _____

Signature of Provider/Designee   Date

Adapted from Beth Israel Deaconess Medical Center consent.

HELPFUL RESOURCES

Authorship

Authorship and Contributorship http://www.icmje.org/ethical_1author.html

Uniform Requirements for Manuscripts Submitted to Biomedical Journals:
Writing and Editing for Biomedical Publications http://www.icmje.org/

Venkatraman, V.: Conventions of Scientific Authorship. Science Careers 2010: Issue for April 16, 2010
http://sciencecareers.sciencemag.org/career_magazine/previous_issues/(year)/2010/(month)/04/(day)/16

General Writing Guidance

APA style (http ://www.apastyle.org)

Chicago style (http://www.chicagomanualofstyle.org/16/contents.html)

Clark. RP. The Glamour of Grammar; A Guide to the Magic and Mystery of Practical English; Little, Brown and Company; 2010. Day, RA. How to Write and Publish a Scientific Paper. Philadelphia, ISI Press; 1979.

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NIH Grant Tutorials http://www.nlm.nih.gov/ep/Tutorial.html

Writing a Great Grant Application, National Institute of Allergy and Infectious Diseases
http://www.niaid.nih.gov/researchfunding/qa/pages/writing.aspx

Journal Submission

Clarke, M. How Do I Submit a Paper to a Scientific Journal?
http://www.scidev.net/en/practical-guides/how-do-i-submit-a-paper-to-a-scientific-journal-.html

Gump, SE. Writing Successful Cover Letters for Unsolicited Submissions to Academic Journals. Journal of Scholarly Publishing. 2004; 35(2): 92-102.

Neill, US. How to write a scientific masterpiece. J Clin Invest. 2007; 117(12): 3599-3602.

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McKee, M, Britton, A. Conducting a literature review on the effectiveness of health care interventions. *Health Policy Plan*. 1997; 12:262-267.

PubMed Tutorials http://www.ncbi.nlm.nih.gov/books/NBK3827/

Plagiarism

Checking for plagiarism, duplicate publication, and text recycling. *The Lancet* 2011; 377:281-2

Code of Conduct and Best Practice Guidelines for Journal Editors. Committee on Publication Ethics website http://www.publicationethics.org/

Stark, L, Perfect, TJ. The Effects of Repeated Idea Elaboration on Unconscious Plagiarism. Memory & Cognition 2008; 36: 65.

Tucci V, Galwankar S. JETS policy on plagiarism and academic dishonesty. *J Emerg Trauma Shock*. 2011; 4:3-6

US Department of Health & Human Services Office of Research integrity
http://www.ori.dhhs.gov/policies/plagiarism.shtml.

WriteCheck: Improve your writing and avoid plagiarism. writecheck.com

Promotion

Buchanan GR. Academic promotion and tenure: a user's guide for junior faculty members. Hematology Am Soc Hematol Educ Program. 2009; 1:736.

McHugh, PR. A Letter of Experience about Faculty Promotion in Medical Schools. Acad Med 1994; 69: 877.

Regulatory requirements for research

NIH resources for research. http://researchethics.od.nih.gov/Resources/index.html

Research networking

Clinical and Translational Science Awards Consortium. https://www.ctsacentral.org

Review Process

Bordage, G. Reasons reviewers reject and accept manuscripts: the strengths and weaknesses in medical education reports. Acad Med 2001;76:889

Opthof,T, Furstner, F, van Geer M, Coronel, R. Regrets or no regrets? No regrets! The fate of rejected manuscripts. Cardiovasc Res 2000, 45(1):255-8.

Ray, J, Berkwits, M, Davidoff, F. The fate of manuscripts rejected by a general medical journal. American Journal of Medicine 2000. 109(2):131-5.

Wijnhoven, BP, Dejong, CH. Fate of manuscripts declined by the British Journal of Surgery. British Journal of Surgery 2010. 97(3):450-4.

Harvard Medical School Resources

*Most of these resources **are** accessible on the internet to academicians beyond HMS*. <u>Those that require a password are starred.</u> Your local institution may have similar resources.

Authorship Guidelines http://hms.harvard.edu/content/authorship-guidelines

Citation tools http://isites.harvard.edu/icb/icb.do?keyword=citationtools&tabgroupid=icb.tabgroup47722

Core facility resources http://cbmi.catalyst.harvard.edu/cores/index.html

Countway Library of Medicine at https://www.countway.harvard.edu/index.html (Classes and seminars at Countway https://www.countway.harvard.edu/classes)

*ecommons http://ecommons.med.harvard.edu/

Figures and imaging hand-outs and resources http://it.med.harvard.edu/pg.asp?pn=ris_handouts

*Grantwriter's toolkit http://catalyst.harvard.edu/services/elementsofgrantwriting/

IRB for educational research is granted through the HMS Academy http://hms.harvard.edu/content/educational-research-review-process.

IRB approval for cancer-related studies is granted through the Dana Farber Cancer Institute http://www.dfhcc.harvard.edu/clinical-research-support/

NIH Public Access Policy https://www.countway.harvard.edu/publicaccess

Promotion Criteria http://facultypromotions.hms.harvard.edu/

Research resources and networking (Harvard catalyst) http://catalyst.harvard.edu/resources.html/

Technology Services http://www.uis.harvard.edu/technology_services/

Writing Center http://www.fas.harvard.edu/~wricntr/resources.html

INDEX