How to Write a Case Report

The author discusses the steps for writing a case report, including finding a case, identifying collaborators, performing a literature review, identifying the uniqueness of a case, the case report format, and submission and publication.

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Traditionally, case reports have served as a vehicle for the development of clinical science. Through case reports, new conditions are brought to the attention of the medical community, generating interest and awareness among physicians and researchers, who often undertake retrospective studies and prospective analyses based on the information in the case reports and case series.

The hypotheses posed in case reports often serve as the basis for questions that are subsequently addressed in the laboratory and basic clinical investigation. For example, it was the publication of four case reports of a new hematologic disorder by Thomas Hodgkin that, in time, resulted in the identification of Hodgkin’s disease. More recently, the publication of a new previously undescribed syndrome in young homosexual men served as the first evidence of acquired immunodeficiency syndrome. Case reports are the substratum for development of medical science. They also serve as an excellent means for practicing physicians to broaden their knowledge of the medical literature, as well as the research process.

Case reports identify you as a person who possesses interpretive, communicative, and language skills, as well as the independence of mind to pursue an individually guided project. When searching for an employment or training opportunity, case reports set you aside from the majority of applicants who have not been involved in research or publication. They demonstrate unique abilities and are a major asset to a curriculum vitae.

Case reports do not require an elaborate research set-up or significant financial support. An intelligent and aware physician can identify cases, perform literature research, identify unique features of the particular case, and complete a well-written case report practically anywhere. Case reports have been successfully published from inner-city clinics, the jungles of Africa, private practice, and major academic institutions. All it takes is interest, persistence, intelligence, and a paper and pen.

I will discuss the steps necessary for finding a case, identifying collaborators, performing a literature review, identifying the uniqueness of a case, placing it in the proper format, and submitting it for publication.

Identifying an Appropriate Case

Sir William Osler once said that “an appropriate case for a case report is a common manifestation of an unusual disorder or an uncommon manifestation of a common disorder.” I would add a third category: a rare condition for which treatment guidelines have not been published in the medical literature. It is generally easier to present a second or third case of an unusual condition than to credibly present a completely new condition or syndrome. However, this can be accomplished with appropriate documentation, as will be outlined.

I would caution that a prepared mind is absolutely required to identify an appropriate case. Unusual cases and unusual clinical situations abound all around us. How often do we say to ourselves, “This is a really interesting case,” or share an unusual clinical case history with colleagues, without performing a literature review. It is often assumed that this particular situation must have been extensive-
ly described or that it is common. However, this is often not the case. A literature review should be performed in any unusual or "interesting" clinical situation. Often, the clinical scenario has not been previously described or has been described only a limited number of times. However, and of greater importance, a literature search will identify features that are unique to that particular case. You must remember that it is the uniqueness of a case or clinical situation that warrants sharing it with colleagues via the medical literature.

As a rule of thumb, a condition that has been presented four to six times or less is appropriate for publication, even if it is similar to the cases that have already been published. If the condition has been published more than ten to six times, unique and unusual features are necessary for a relevant publication, such as a new clinical presentation, new pathologic features, insights into the pathogenesis or pathophysiology, or response to a novel treatment approach. As a general rule, when more than ten case reports have been published on a specific condition, the case must be sufficiently unique to merit review. In that situation, a case series (i.e., several case reports with a review of literature) might still be accepted for publication. Presenting a case series and reviewing the literature allows you to provide recommendations for staging, diagnosis, or treatment, as well as to make generalizations that were not previously noted in the literature.

Frequently, a multidisciplinary approach is required to provide these recommendations. For example, a surgeon may be required to provide recommendations for combined surgical and medical treatment, a radiologist to note unique features of a roentgenologic presentation, or a pathologist to caution about pitfalls or opportunities in the differential diagnosis.

**Collaboration with Other Specialties**

The best case reports are those that contain contributions from several specialties. It is well appreciated that most medical conditions require cooperation between several medical specialties. For example, successful treatment of breast cancer involves a surgeon, chemotherapist, and radiation oncologist. A patient with lupus may see a rheumatologist, nephrologist, and dermatologist. Almost always, a radiologist or pathologist is involved behind the scenes.

Identifying an appropriate case, in itself, often requires collaboration. It is often the pathologic issues that are unique to a case, but sometimes the radiologic presentation makes the case sufficiently special to be considered for publication. In addition, case reports are made more credible by the inclusion and publication of pathologic or roentgenologic material. For example, presenting the third case report of an unusual tumor practically demands publication of the histology. To select the appropriate fields and prepare black and white transparencies or slides, a pathologist is almost a necessity. The same can be said of a new radiologic presentation of a condition. In addition, if a treatment recommendation is being formulated, a multidisciplinary approach warrants comments from a surgeon, pathologist, radiologist, and other medical specialists. I usually request that my collaborators write "their" section of the report (e.g., the pathologist will write the description of the pathologic material in the case presentation section and contribute a paragraph discussing the case from the pathologic perspective in the discussion section).

**Format of a Case Report**

The case report consists of a title, abstract, introduction, case presentation, discussion, and references. Needless to say, before actually writing an article, the journal to which it will be submitted should be selected. The "Instructions for Authors" should be reviewed to determine the format of the case presentation. Some medical journals, especially the specialty leaders, have recently been deemphasizing case reports, preferring to focus on prospective studies and basic research. Nevertheless, the majority of journals will still happily accept a high-quality case report.

The title must be well selected to communicate the salient points of the report, such as focusing on the newly described pathologic condition. Clearly identify in the title whether recommendations for treatment and a review of the literature are the major focus of the article.

The abstract section should briefly restate the introduction and the unique features of the case. The material does not need to be repeated in the discussion section; however, the major conclusion of the article should be emphasized in the abstract.

The introduction section can be approached from several different aspects. Sometimes it is appropriate to begin from the epidemiology of the condition.

*Continued on following page*

January 1998 • Resident & Staff Physician 61
On the other hand, the radiologic, pathologic, surgical, or medical issues can be briefly reviewed. Reviewing articles that have been previously published on the topic often provides a guide to the most efficacious introduction. For example, if the fourth known case report of a particular condition is being presented, the previous three case reports may be examined and the approach that they utilized can be followed.

The case report itself should emphasize clinical features and include the history, physical examination, and laboratory studies. The features that support the case should be clearly identified. In addition, facts that challenge the conclusions of the article should also be disclosed. These facts should be described in a narrative fashion without drawing excessive attention to them.

One is often faced with the issue of how to select relevant facts. You must be honest and present all the information that is significant. However, editorial license permits selecting the information for your goal, which should be to provide understandable and uncluttered background to the presentation. Needless to say, one cannot hide facts that run counter to the main conclusion. However, issues that are not germane or relevant to the point of the article do not need to be overemphasized. For those who are new to case reports, reference to well-constructed published case reports will go a long way in familiarizing you with the appropriate case presentation and structure.

As the introduction and case presentation are being written, the uniqueness of the case and the lessons to be drawn from it should again be considered. The discussion section is the opportunity to call attention to these features, as well as to address weaknesses in the thesis. It is appropriate to begin the discussion with a short review of previously reported cases, followed by an explanation of why this case is unique. Objections that might be raised by a peer reviewer or any reviewer of the article should also be addressed.

The last several paragraphs of the discussion should deal with the conclusions that are derived from the experience. At this point, it is appropriate to elaborate on the pathophysiologic or etiologic mechanisms that might explain the facts or features that have been observed. The article may be closed with some suggestions regarding future investigation on a basic molecular or clinical level.

The structure of the discussion is somewhat different if a literature review is incorporated. In this case, the literature review section should be significantly expanded, and recommendations based on it should occupy a greater proportion of the discussion. Remember, presentation of recommendations potentially allows the author to significantly impact on the medical care of many patients. The condition reported might be much more common than generally appreciated, and the article may serve as the basis for the standard of care in the future and may be repeatedly cited in the medical literature. An article will certainly determine the approach used by physicians who face the same situation in the future. Because your article is most recent, it will be drawn on by all who take care of patients with the condition that was described. This obligates you to take extra care with your recommendations and to qualify them appropriately as interim and tentative conclusions based on the experience with the case.

Submitting and Publishing

Once the case report has been written, it should be formatted in accordance with the instructions for authors. They are usually provided in every issue, the January and June issues, or the January issue alone. These instructions point out requirements for submission; formatting of the title page, copyright assumption, number of manuscripts; layout of the legends, charts, and figures; and styling of the slides and references. Following these guidelines increases your chance of a favorable response by peer reviewers and is, in fact, a simple courtesy to your colleagues who will be reviewing your work.

Some journals may charge for publishing color slides, and this should be taken into account. Black and white slides often demonstrate findings quite adequately and, unless color is absolutely necessary for the definition of your work, it should be considered.

The submission should be accompanied by a cover letter directed to the appropriate editor identified in the instructions for authors. The cover letter should state that you are submitting a manuscript for consideration for publication. You may choose to briefly summarize your case (in one to two sentences) and then request to be informed about the results of the peer review. Most editors will acknowledge the receipt of a manuscript with a form letter, a postcard, or via fax. A manuscript number will be assigned, which
should be used in future communications. Most journals will let you know about their decision within six weeks, although, occasionally, more time might elapse. I recommend that if you are not contacted in three months, you should contact the journal directly. I also suggest that the submission be sent by an overnight carrier to eliminate undo delay and provide the security of knowing that the submission has been received.

If at First You Don’t Succeed

Aspiring authors are often discouraged by rejection of their work. In truth, rejection is an opportunity to improve the manuscript. Along with the rejection letter, anonymous peer review comments will usually be provided. These are often very useful in identifying flaws in the article. These flaws should be corrected, and the issues raised by the peer reviewer should be addressed before the manuscript is resubmitted. These comments should be seen as an opportunity to learn from experts in the field.

Many journals now assign a ranking to each manuscript, which is based on the journal’s interest in the subject matter as well as the reviewers’ comments. It is conceivable that the manuscript is quite good, but did not rank high enough to warrant publication. For example, if the journal plans are to publish 300 articles and the ranking of your submission is 301, your very good manuscript may not be selected. However, if the article is sent to a different journal, it might be ranked higher and be slated for publication. Thus, if at first you don’t succeed—try, try again. Almost every manuscript will eventually be published, given sufficient persistence.

The Author

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After receiving his medical degree from the State University of New York Health Science Center at Brooklyn, Dr. Levin completed residencies in internal medicine at New York Downtown Hospital and Hahnemann University Medical Center and a fellowship in hematology and oncology at Long Island Jewish Hillside Hospital and Medical Center in New Hyde Park, New York. He is currently Co-Director of Hematology and Oncology at Brookdale University Hospital and Medical Center in Brooklyn. Dr. Levin is the author of ten case reports and has contributed extensively to the medical literature.

I recommend beginning with the most prestigious journal possible, assuming that it accepts case reports. As you incorporate the reviewers’ comments, you may send it to less well-known journals. Most case reports are published on the second, third, or fourth try. Once the case report has been published, you may be given the opportunity to obtain reprints, usually for a charge. If you obtain reprints, you will be able to give the article to colleagues without running afoul of copyright restrictions. Many requests for reprints come from countries where copying machines are either tightly controlled by the government or not widely available.

Where to Next?

Once a case report has been published, you may plunge farther into the field of medical creativity. You will find subsequent case reports much easier to select, compose, and publish. As you gain experience, you will be able to identify appropriate cases and prepare them for publication within a matter of days. You may also wish to pursue the avenues of further investigation that have been identified. This experience may lead to basic or clinical research related to the case described. Many a career has been built from such beginnings. Case reports are an important stepping stone to becoming a qualified, clinically competent, and research-savvy medical practitioner.

Send Us Your Picture Quizzes

We invite readers in all specialties to submit a self-assessment picture quiz like the ones on pages 64 and 75 in this issue. Each quiz should include a brief case description, four possible diagnoses, and a brief discussion giving the correct answer and an explanation of why the other choices are not correct. Quizzes should be accompanied by a photograph, an ECG tracing, or a photomicrograph. We will pay for each quiz accepted. Send your submission to Resident & Staff Physician, Romaine Pierson Publishers, Inc., 1065 Old Country Road, Suite 213, Westbury, NY 11590.

We need you.

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January 1998 • Resident & Staff Physician 63