How to Prepare an Article for Publication

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INTRODUCTION

As a general rule, prosthetists and orthotists do not write articles. One only needs to consider the developments and techniques that have been described verbally at seminars and meetings and never written about in our various journals to substantiate this claim.

If you are not present to hear of the new development, you may never have the opportunity to put it in practice. If you are present but do not have a published reference, you have only your own memory and notes to aid you in attempting it or in telling others of it. With the lack of an accurate written chronicle, progress is slowed as considerable time and effort is spent reinventing the wheel. The end result is that progress in prosthetics and orthotics advances unevenly and imperfectly to the detriment of the patients we are dedicated to helping. After some new development is presented it is not at all uncommon to hear someone say "So what—I did that three years ago." The fault lies not with the individual who had the initiative and energy to tell his colleagues of his work, but with the person who couldn't be bothered.

It is the duty of every professional to advance not only his own standard of practice but also the standards of the profession as a whole. One advances one's own standard of practice by keeping current with new developments, by implementing them, and by striving to build upon them and develop new procedures. One advances the profession's standards by transmitting new developments to one's colleagues. The most efficient and durable way of doing this is by doing it in writing. The reasons we as a profession have neglected this vital obligation are not hard to fathom.

Unlike the academic professions where the "publish or perish" syndrome prevails, success or failure as a prosthetist/orthotist does not hinge on one's ability to write. Only in recent years, with the advancement of standards for entry into the profession, have communication skills been a criteria for being a prosthetist/orthotist. At a

more fundamental level, writing an article is a solitary, time-consuming chore that often goes unrewarded, while giving a verbal presentation oftentimes is rewarded with a free trip to somewhere and the attention of one's peers while you give it.

Recognition of the problem has been widespread. One attempt to counter it has been Michael Quigley's "Author's Assistance Progam." T.R. Owens, C.O., in response to the problem, requested one of the authors (C.H.P.) to give a presentation on the topic at an AOPA Regional Meeting in San Antonio, Texas, in May, 1983. It was T.R. Owen's belief that if an outline could be developed, an individual would add a few words to it, and that someone more experienced could take the results and refine them into a finished article.

This article is essentially a merger of the two approaches and an attempt to reach a wider audience. It presents not only suggestions on format, but also details on the preparation of the manuscript and illustrations and what to do with them afterwards. The hope is that it will simplify the process enough to encourage someone to write who would not otherwise attempt it. The object is to get something recorded on paper. If a manuscript, however crude, has merit, there are adequate facilities to refine it.

FORMAT

The most difficult problem any fledgling writer faces is how to organize and present his material. In its most basic form, any article is divided into three parts—introduction, body, and conclusion. The introduction obviously acquaints the reader with the subject and provides background information necessary to understanding the author's main topic. The body presents this main topic in as much detail as necessary. The conclusion brings the article to a proper ending by briefly restating the main points of both the introduction and body. Each of these three parts consists of various subparts and, if necessary, one or more of these subparts may be so large as to warrant a subheading of its own. Such subheadings include: review of the literature, method, clinical material, results, and discussion.

Any article, however long and elaborate, is an attempt at imparting information and to answer a variety of questions. In the appendix a simple format is presented for each part of the article and a variety of questions have been posed. One way to go about writing an article would be to sit down and answer each of these questions. The various questions raised may be moved about and indeed even eliminated if that proves helpful.

The best way to learn to do something is to imitate someone experienced at it. Anyone attempting to write an article should read a variety of articles, especially from recent issues of the journal to which he intends to submit his article. Of particular note in this regard are two books: *Selected Articles from Artificial Limbs* and *Selected Reading—A Review Of Orthotics and Prosthetics*. The various journals of associated professions should be consulted. These include *Journal of Bone and Joint Surgery, Archives of Physical Medicine and Rehabilitation,* and *Bulletin of Prosthetic Research*. One cautionary note in regard to these various journals is necessary, however.

Most journals describe the results of various research projects. For these projects to be recognized as scientifically valid, they must adhere to rigid protocols. The articles desribing the results are similarly "force fit" to a common mold and subjected to an elaborate review process. Indeed, so elaborate is the process in some cases, that it can take two years or more to get an article published. The situation in prosthetics and orthotics is quite different.

Not only do we use a less elaborate review process but for the most part the articles published do not describe research projects. We are far more likely to be concerned with the technical how-to-do aspects of a subject. Validation comes not from the use of statistics and double blind tests but the individual's subjective reactions of relatively few patients. This is a fundamental difference in purpose that affects the style and format of an article.

STYLE AND CONTENT

The field of prosthetics and orthotics sponsors three publications. The *Almanac* appears monthly and features news and current events. The journal, *Orthotics & Prosthetics* is intended as a scientific publication that in an objective verifiable fashion describes new devices and procedures as well as the results of scientific investigations. *Clinical Prosthetics & Orthotics (C.P.O.)* addresses broader, more philosophical issues, and by its very nature is intended to be more subjective; it endeavors to publish editorials and to stimulate discussion, pro and con. Both *Orthotics & Prosthetics* and *C.P.O.* publish technical notes: this article presumes that the aspiring author will be writing a technical article for *Orthotics & Prosthetics.*

In writing an article the author should bear in mind the reason he is writing it. He is attempting to communicate to his fellow practitioners news of a new device or development that he has found useful in his practice. He should tell them what it is, why it came about, and how to do it. Appropriate precautions should be taken in telling what it does, how to use it, and for whom it is good. Wild or extravagant claims should be avoided.

No journal with pretentions to being scientific or objective can put itself in the position of publishing a commercial advertisement in the guise of an article. It is all well and good for an author to have a vested interest in describing a development, but he must take due care in doing so. The advantages and disadvantages should be set forth honestly and nothing should be said that cannot be verified. His interst in the item should be clear. If an author finds himself troubled by this point he would do well to review the recent articles of Timothy Staats, C.P.O., and Carlton Fillauer, C.P.O., as examples, and to discuss the matter with the editor.

A technical note differs from a lead article in length and formality. Essentially it is intended to describe a simple modification or variation of an existing technique that does not merit the full-blown formal treatment of a lead article. It should contain the same sort of information, but in shorter form with little or no background information with few, if any, references, and maximum reliance on photographs.

TITLE

The title should succinctly and accurately describe the topic of the article. Its purpose is to get the reader's attention. The title is often used as a basis for listings under a variety of subheadings in medical abstract publications (Fig. 1).

18. PROSTHESIOLOGY

18.1. Prosthetics

266. A case of forearm amputation with additional multilevel partial amputations - Fogdestam I., Hamilton R. and Lundborg G. - Dept. Plast. Surg., Univ. Goteborg, Sahlgrenska Sjukhuset, S-41345 Goteborg SWE - *HANDCHIRURGIE* 1981 13/1-2 (120-125) - summ in GERM, FREN

A right-handed 4½-year-old boy had a sharp amputation 3 cm proximal to his left wrist joint in a hay-cutting machine accident. In addition, he

Fig. 1. An accurate title is important as many articles are listed by title in medical abstract publications. The example shown above is from *Excerpta Medica Rehabilitation and Physical Medicine,* a publication that summarizes hundreds of articles from many related journals.

AUTHORS

The names of the author or authors should appear next and with them their degrees or qualifications. A separate footnote for each author at the foot of the first page or at the end of the article should identify his position or title, and address. Authors' names may be listed in order of importance or alphabetically. It is common practice to add the names of other professionals as co-authors if they provided assistance in the development of the new technique, even though they did not help write the article. The first name to be listed is most important and should be the one responsible for the article. If you can-

not decide whether or not an individual should be listed as a co-author, it is best to include his name to be safe and prevent misunderstandings.

REFERENCES

Each reference should be identified the first time it appears in the text and consecutively numbered. Thereafter it is referred to by the same number. In the bibliography there is a correct form for describing each of a variety of sources. The correct forms will vary from journal to journal. For *Orthotics and Prosthetics*, they are:

a. Book

Murphy, Eugene F., Ph.D., "Lower-Extremity Component," *Orthopedic Appliances Atlas*, Vol. 2, J.W. Edwards, 1960, pp. 217–224.

b. Journal Article

Panton, Hugh J., B.S., C.P.O., "Considerations for Joints and Corset," *Newsletter . . . Amputee Clinics* 8:3: June, 1975, pp. 1–3, 6–7.

c. Lecture or Verbal Presentation

1. Holmgren, Gunnar, "The PTB Suction Prosthesis" from the written material of a lecture delivered at the third of the "Strathclyde Bioengineering Seminars" 8–11 August, 1978.
2. Wagner, F.W., Jr.: "Classification and treatment for diabetic foot lesions"; Instructional Course, American Academy of Orthopedic Surgeons, New Orleans, Louisiana, Feb. 1976.

d. Personal Communication

Irons, George, C.P.O., Personal communication, June 1977. Presently, Director of Research, United States Mfg., Glendale, California. Formerly, Research Prosthetist, Patient Engineering Service, Rancho Los Amigos Hospital, Downey, California.

ILLUSTRATIONS

Good photographs are extremely important for orthotics and prosthetics articles, as a device cannot be described adequately in words alone. While it is possible to print illustrations from Polaroid photographs, far better quality is obtained from black and white prints. Color slides cannot be used. Thirty-five millimeter cameras with electronic exposure controls are readily available today, convenient to use, and give better results than "instamatic" style cameras.

Considerable care should be taken during the photographic session to arrange proper lighting, frame the shot, and to avoid distracting clutter in the background (refer to the Forsgren, Hittenberger article in this issue). If more than one person is involved and especially if the photographer is not totally familiar with the subject, the matter should be thoroughly discussed and what is desired to be shown in each view identified.

Action shots should be kept to a minimum, but, when necessary, the motions should be rehearsed and allowance made to do it more than once if possible. Plan on taking four to five times as many photographs as will actually be used. Photographs can, of course, be useful other than just as illustrations.

In writing about a technical procedure or process, many individuals have found it helpful to first take a full series of photographs and then to arrange them in proper order. This helps the writer to organize his thoughts and to make sure he does not miss a point. The task then becomes one of writing a narrative describing the technical procedure illustrated and of filling in the blanks that cannot be properly shown in a photograph. Each photograph should be numbered and referred to appropriately in the text. If doubts exist as to which of two photographs properly illustrates a point, use both but give them a separate number. The editor can always eliminate one.

Captions should be provided for each photograph. The captions can repeat portions of the text, and can stress certain as-

pects of the technique or device that would be difficult to describe by words alone. Captions for all illustrations can be typed out on one sheet that can be attached to the end of the article.

Graphics, or drawings, are very helpful. One good drawing can clearly illustrate a number of points, where photographs may fall short. Graphic drawings are not expensive. Most printers can refer you to an artist who can convert your idea to a professional illustration for a moderate fee. Graphics add clarity to articles and present a professional touch.

PREPARATION OF THE MANUSCRIPT

When the author is satisfied with the final content of the article, a process which may take two or more revisions, he should prepare it for mailing to the editor. The manuscript should be typed double space, with wide margins, and on a single side of the paper. Each page should be numbered, for the convenience of the editorial staff during the editing process. Similarly, three copies should be sent. Care should be taken not to mar the face of the photographs, and, if they are mounted on paper, to use only rubber cement. On the back of each photograph indicate proper orientation by using an arrow pointing up, give the last name of the first author, and the figure number. The manuscript, caption, list, and photographs should all be checked carefully to make sure that the numbers of illustrations, captions, and references match those in the text and are in proper order.

The three copies of the manuscript and the photographs should be mailed flat in a large manila envelope with cardboard sheets or a manila file folder used to protect the photographs. For caution's sake, the author should retain one copy of the manuscript, the negatives, and if at all possible, a set of the prints for his own records. A brief cover letter should accompany the manuscript. Mail to:

Managing Editor
Orthotics and Prosthetics
National Office
717 Pendleton Street
Alexandria, VA 22314

THE EDITORIAL PROCESS

When it is received, the managing editor sends a letter acknowledging receipt of the article to the lead author and makes copies for distribution to the Editorial Board for their review. Two originals with photographs are mailed to the editor. The Editorial Board consists of six orthotists and prosthetists who are appointed by the AOPA President to review the articles submitted for publication. Editorial board members voluntarily read every article and review it using a brief review form. The Editorial Board's recommendations determine which articles are published, and frequently recommend that more information on a certain aspect of a technique be clarified. Specifically, the Editorial Board looks at the following aspects when reviewing each article:

1. Clear and understandable description of the technique.
2. Adequate explanation of indications and contraindications.
3. Validity of studies when a number of cases are reviewed and statistics are used.
4. Correct terminology.
5. Author's bias.

Finally, the Editorial Board determines whether or not to accept the article and the priority for publication. The Editorial Board forwards its comments to the editor.

The editor of the journal is a prosthetist/orthotist employed by AOPA with overall responsibility for the scientific, technical and grammatical aspects of the

journal. The editor works closely with the Editorial Board and meets with them on an annual basis. The editor reads the reviews of the Editorial Board members and acts upon their comments by editing the articles, getting more information from authors, notifying authors of acceptance or rejection of their articles, and by determining which articles will be published in each issue. The editor checks every article a minimum of three times for spelling, grammar, format, terminology, references to illustrations, etc. Once the editor has completed his initial work on an issue, the entire issue is forwarded to the managing editor and his assistant at the AOPA National Headquarters.

The managing editor is on the National Headquarters staff and is responsible for all publications. Once he receives the journal from the editor, he reviews the manuscript for any further editing, marks the copy for typesetting, and forwards it to the typesetter. After the type is set into long columns called "galleys," the managing editor and his assistant then lay out "dummy" pages resembling the pages in the journal allowing space for any advertisements and announcements. These dummy pages are mailed to the editor for his review. At this stage, editorial changes can still be made, but they are more expensive because the type must be reset.

Once the typesetting and pasteup are complete, and reviewed at the National Headquarters, the journal is forwarded to the printer, who adds all illustrations and makes a "blue line" copy of the journal that looks the same as the final printing will look. Small errors can still be corrected on the blue line copy, but all corrections at this stage are very expensive. The blue line is reviewed by the editor who then phones in his corrections to the managing editor.

When the journal is printed, extra reprints are provided to the authors of each article.

The time from submission of an article to actual printing averages from between six months to one year. The earliest an article can possibly be published is three months from the date of its receipt at the National Headquarters, and that only occurs when the article is extremely well written and is considered by the Editorial Board to be of high priority.

CONCLUSION

As professionals, we are obligated to do what we can to advance the state of the art and share new developments with each other; the most lasting way to do this, and the way that has the greatest impact, is to write. There are a variety of reasons why most of us do not live up to this obligation, but ultimately all these reasons boil down to one thing. Inertia! When we consider the magnitude of the task and the time available, most of us give in to inertia and nothing gets done.

The only way to tackle any large complex task is to break it down into a number of simple small tasks that can be accomplished in the time available. As with any such job, the first task is to get organized and develop a scheme of action. This article has been developed in an attempt to assist you in overcoming the first hurdle. Once a beginning is made, and if the basic principle of doing one small task at a time is adhered to, then finishing the job simply becomes a matter of perserverance.

APPENDIX I

with

Outline, Suggested Titles and Subtitles

Title of Article

Author(s)

Introduction

Description of device or technique
Review of previous methods (refer to articles when possible)
Indications and Contraindications
Follow-up experience

Description of Technique

Patient evaluation
Negative impression procedure
Positive model modifications
Fabrication
Fitting procedure
Finishing
Instructions to patients
Follow-up schedule
Modifications of technique for other circumstances

Discussion

Patient preferences, planned improvements, overall experience with technique, number of patients fit

CONCLUSION

Brief statement summarizing major reasons why the technique is used

References or Bibliography

APPENDIX II

The following gives a list of some of the questions an author might wish to address in his article and an order in which he might consider them. Some of the questions have been stated in more than one fashion. For a particular article it may not be necessary to answer all the questions. It may be desirable to change the order.

I. Introduction (Background information and basic description of idea)
What is your new development, device, procedure, material?
What are its advantages?
What are its disadvantages?
Why did you develop it?

What are the current or old ways of doing the same thing?
What is wrong with each of them?
Why is your way better?
What variants did you work with before you settled on this final version?
Why is it better?
How would you describe it?
What are the properties of the new material?
What is the mechanical, biomechanical, physiological basis behind it?
What are the specific precautions to be observed?

Results
How long have you used it?
How many patients have you used it with or for?
How many of them liked it?
How many disliked it?
Why?
What advantages did they observe?
What advantages did you and others observe? Disadvantages observed by them, you, and others?
How many of the new device or devices fabricated with the new material or process failed?
Why?
What did you do to remedy the situation?

II. Body (How To)

A. Patient selection criteria
For what specific situation do you recommend this?
What do you discuss with the patient to make sure he is interested?
Advantages?
Disadvantages?
What do you look for?
Patient evaluation procedures?

B. Measurement
What materials and devices do you need?
How do you position the patient?
What is the patient to do to assist you?
What is the assistant to do?
Is it necessary to rehearse the position with them?
What landmarks do you mark?
What measurements do you take?
How do you take the cast?
What type of plaster of paris bandage do you use?
Any special precautions to be observed in preparing the measurements and training or in pouring the positive mold?

C. Model Modification
Where do you remove material; how much?
Where do you add material; how much?
What do your measurements tell you about the model, how do you use them, what are the tolerances and reduction factors to be observed?
What are your trimlines?
How do you prepare the model for fabrication of the device?

D. *Fabrication*
How do you do it?
How much do you use?
What do you use?
What size, thickness?
How do you prepare it for use?
What temperature?
How long?
How do you handle it?
How many people?
Special precautions?
Cooling, drying, setting time?
Trimlines?
How do you finish it?

E. *Fitting*
What position should the patient be in?
What should he be wearing next to the skin?
How do you don the device?
How do you evaluate fit?
How do you evaluate function?
Specific trouble spots?
How do you modify it?
How do you take it off?

F. *Finishing*
How do you finish the device?

G. *Delivery*
What should the patient be told to watch out for during the break-in period?
Specific areas or spots?
How long to wear at a time?
How long to take off?
Length of break-in period?
When should they get in contact with you?
What do you look for in evaluating final fit and function of the device?
Specific problems they should look for?

H. *Follow-up*
When should you see the patient again?
How often?
What should be done?
Specific precautions?
Training necessary?

III. Conclusion
Briefly summarize the main points of the article telling what, why, and advantages at the very least. Generally, just a few sentences and rather stilted in tone.