



# The promotion of academic pediatric otolaryngology by journal peer review

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## Abstract

The professional journal promotes and sustains academic departments through several mechanisms that include peer review, editing, timing and solicitation of works. The ways in which peer review strengthens and augments academic pediatric otolaryngology are through the creation of new knowledge; knowledge transfer—teaching; the establishment and development of quality medical/surgical standards; scholarship; and the fostering of the development of the next generation of academic physicians is detailed.

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The most salient of the precepts that define ‘academic’ as concerned with a discipline, such as a pediatric otolaryngology, which is involved with health care delivery are:

1. creation of new knowledge
2. knowledge transfer—teaching
3. establishment and development of quality medical/surgical standards
4. scholarship
5. foster development of the next generation of academic physicians.

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The medical journal can and has contributed to all of these tenets through a number of mechanisms, including:

1. peer review
2. editing
3. solicitation
4. timing.

The most important of these and today's subject is the peer review. To paraphrase Winston Churchill<sup>1</sup>:

Many forms of review have been tried, and will be tried in this world of greed and ego. No one pretends that peer review is perfect or all wise. Indeed, it has been said that peer review is the worst form of review except all those others that have been tried from time to time.

The process is straightforward. A knowledgeable editor and/or associate editor(s) who has special knowledge in the area covered by the submission selects the reviewers. Usually two or more individuals, who are considered to be peers—although the term peer does not fully characterize the reviewer—evaluate each article submitted to the journal. The reviewer should be a person who has special knowledge in the area(s) covered by the submitted manuscript and consequently he/she may be a little more than a peer. The reviewed manuscript is returned, in a timely fashion, to the editor who evaluates the manuscript and the reviews. Then, one of four actions is taken: the manuscript is accepted, it is sent back for greater or lesser revisions, it is rejected or it can be sent for further review if the editor feels that the initial reviews have not been adequate.

## **1. The creation of new knowledge**

The reviewers are charged with evaluating a number of specific aspects of the manuscript. Of greatest importance is whether or not the data justifies the conclusion(s). A report, which states that it has cured halitosis with a patented and secret garlic preparation but does not have the data, would be rejected and, thus, not be added to the cannon of knowledge.

As a further example, a submission that details a number of controlled clinical and molecular biological studies to look at the effect of genetics on the incidence of otitis media should have the data to justify the conclusions. Such a report would usually raise a number of questions such as what was the basis for determining the relationship between study individuals—were they really related; whether the number of cases reported was

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<sup>1</sup> Many forms of government have been tried, and will be tried, in this world of sin and woe. No one pretends that democracy is perfect or all wise. Indeed, it has been said that democracy is the worst form of government except all those others that have been tried from time to time.

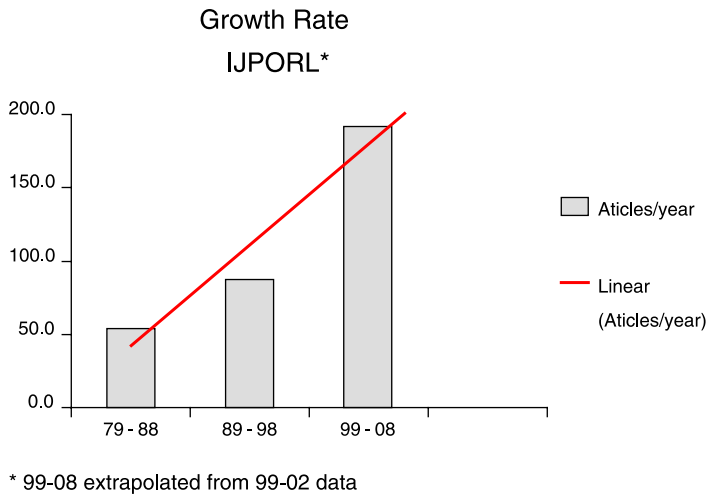


Fig. 1. The increase in the number of peer-reviewed articles published in the International Journal of Pediatric Otolaryngology, 1979–2002 and extrapolated to 2008.

appropriate for the particular study-power function; the need for measures of significance and confidence limits to determine the clinical utility of the findings; and whether or not the population studied would be applicable to a number of different populations or just to a limited group.

All studies, which involve the experimental manipulation of human subjects, are required to be approved by a research ethics committee an Institutional Review Board (IRB), and there needs to be evidence that each subject or his/her proxy gave informed consent.

The peer review process constantly, consistently and objectively applied to all reports allows for the dissemination of an enhanced communication, the published and then cited article, that adds to the knowledge base. Much of the otolaryngic literature up to the 1980s was not peer reviewed. Thus, I feel it is retarded advancement of the discipline when compared to sister specialties. The information was either wrong or misstated so that what was ‘true’ was lost in unwarranted hyperbole. During the last decade, associated with near universal peer review, ORL has seen an increase in the quality of its publications that have made quantal advances to our knowledge of disease cause, and care. This is consistent with the experience of the International Journal of Pediatric Otolaryngology (IJPORL), peer reviewed since its inception in 1979. The IJPORL has experienced an almost twofold increase in the rate of publication each decade (Fig. 1) which is evidence of the development and growth of world wide Academic Pediatric Otolaryngology.

## 2. Knowledge transfer—teaching

The peer review process becomes the teacher to all those who submit manuscripts. Obvious defects in design, analysis and conclusions are noted and this information is sent

back as instruction to the authors. They in turn evaluate the reviewers' comments and usually accept them. If there is a disagreement, then this is communicated to the editor and a decision made as to the validity of the difference. The process uses the reviewers as teachers to the entire world.

There is another aspect of the teaching which occurs, especially in the now common place use of English as the language of scientific and academic communication (60% of published articles in the IJPORL originated from non-English-speaking countries). The editor and the reviewers will correct semantic and syntactical errors. Often, the entire manuscript will be rewritten so that the information may be clearly understood. This serves to instruct the authors of standard grammar and the accepted mode of structuring a report. The peer review system is significant as a teacher of English usage and adds to the academic process for it allows for effective international communication and enabled a further development of Pediatric Otolaryngology worldwide as can be seen by the geographic distribution of origins of the published reports in the IJPORL (Fig. 2).

There is another didactic consequence of the peer review process which involves the reviewers themselves. Each must discipline her- or himself to objectively evaluate the manuscript. When there are substantial differences between the reviews, the editor will send reviewer A's review to B if it is felt that B did not critically perceive problems with the paper. This is a very effective teaching strategy.

### 3. Establishment and development of quality medical/surgical standards

The world has been and will be for the foreseeable future made up of communities that have different amounts and types of recourses for health care. Medical journals which are international in both their contributors and their readership through a consistent use of peer review set an optimal standard for medical care which is

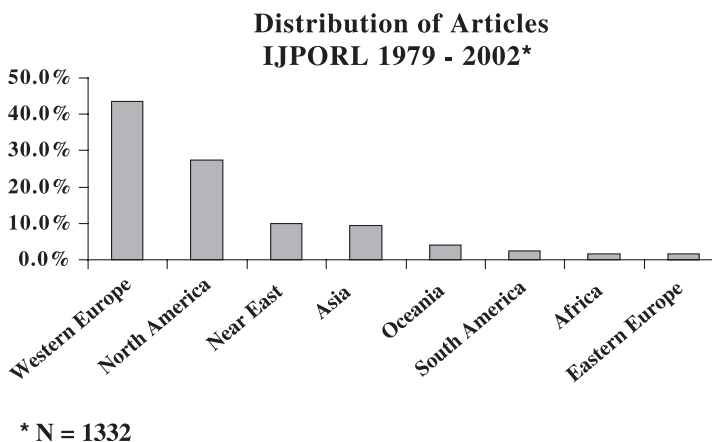


Fig. 2. Geographic distribution of published articles in the International Journal of Pediatric Otorhinolaryngology, 1978–2002.

independent of the particular economic or social conditions of the community submitting the manuscript. Thus, an article that has been submitted in which normal children were exposed to X-ray that was neither useful to determine treatment nor had informed consent was rejected. The authors are informed that the reviewers and the editor felt that the use of the X-ray without medical indication, regardless of the informed consent was antithetical. This form of peer review feedback results in heightened sensitivity and improvement in quality of care.

Another example was a submitted report of a series of medical and surgical interventions. The reviewers and the editor realized that these interventions were obsolete and/or contraindicated based on current knowledge and that alternative contemporary and indicated interventions were available to that community. This information and the rejection of their article is given to the authors and one would suspect, with reasonable certainty, that the effect would be to modify the forms of care resulting in the upgrading of the medical and surgical standards of that community. This little appreciated benefit of the peer review process contributes to improving healthcare and discharging the professional and ethical responsibilities of Academic Pediatric Otolaryngology.

#### **4. Scholarship**

It is said that we all stand on the shoulders of giants, and a major function of academic discipline is to recognize those shoulders and build upon these previous knowledge bases. The peer review process facilitates this by reviewing the citations that are in the proffered manuscript. There is an Aristotelian mean<sup>2</sup>—too much is excessive and does not help direct the reader but equally detrimental are too few or inappropriate citations or a manuscript lacking those references which are germane to the substance of the proposed article. The reviewers will, from my own experience, suggest in about 10–20% of the reviews, that some references be deleted and other added. These suggestions, usually followed, develop and deepen the scholarly dimension of our academic effort through the recognition of existing knowledge.

#### **5. Foster development of the next generation of academic physicians**

As physicians interact and evolve through peer review system, as authors, ad hoc reviewers, reviewers, associate editors, etc., they acquire the skills and knowledge so that they may become the next generation of academics. A young physician submits a work that results in a critical review. It is sent back with the reasons for the return and may have to go through the process one or two more times. The article is published and the author(s) have rightful felling of accomplishment and pride. The next submission has fewer critiques and this success adds to their sense of achievement. This peer review system empowers people worldwide by showing them the tenants of academic pediatric

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<sup>2</sup> Aristotle's *Nicomachean Ethics* (Book II).

otolaryngology and enabling then to participate in this area and, if needed, establish their own academic centers.

Change is the only constancy for human endeavor and engenders new challenges even for the organizations responsible for the dissemination of accurate and scholarly information—the professional journal. The Internet allows for instantaneous dispersal of information, good, bad and indifferent. If the data has not undergone peer review, then caveat emptor, and we now are awash with inaccurate counter productive information—perhaps more so than in the past. The peer review process is value added and will become even more critical in the developing of academic disciplines. A person who ‘published’ on the Internet without peer review will soon find that the rewards are short lived. Those that ‘publish’ on the Internet with peer review will find that their work is well received, and will generally contribute to the advancement of the specialty. These processes will take time and there is and will be a period of a considerable amount of unreviewed work. This will diminish as the consumer finds that the information is not correct, not useful and probably in some instances harmful. The ‘market place’ will make the decision for peer review.

Another development concerns the economics of science in general and medicines in particular as medical costs increasingly consume a greater portion of the GDP (it is estimated that in the US medial care may reach 20% of GNP in the next few years). There are and will be appreciable economic motives underlying all aspects of the dissemination of medical knowledge. This includes economic interests of the author in the material proffered for publication, the withholding of negative information by sponsors, publishing companies need of advertising revenue and/or increased subscriptions, etc. All of these can manifest themselves subtly and result in a degraded data set. The insurance of a nonbiased free forum lies with the editor of the journal. This person must be constantly aware of the

<u>Decision</u>	<u>Evaluation</u>	<u>The language of the article needs</u>
Accept without change	Excellent	No correction
Accept after minor revision	Good	Correction
Accept after condensing	Acceptable	Restyling
Reconsider after major revision		Rewriting
Reject		
	Yes No	Yes No
Is the article within the scope of journal?		Are the references adequate?
Do the authors' conclusions flow from the data?		Is the nomenclature correct?
Are the results novels?		Are the figures relevant?
Are the results important?		Are the captions of the figures appropriate?
Is the paper easy to follow?		Are the tables relevant?
Does the abstract cover the contents of Paper adequately?		
	Needed	If needed Present Not Present
IRB		
Informed consent		
Comments:		

Fig. 3. An example of the information requested from a reviewer which is used to decide whether an article is accepted, is returned to make suggested changes or is rejected.

economic pressures and be willing to confront this issue when it arises. If the issues are not resolved, then the editor should make the issue public and take appropriate action. This applies to both journals that are solely commercially sponsored and those that are owned by professional organizations. There is less pressure on the latter but as many of these are now published by major concerns, there is an admixing of professionalism and commerce. Mostly for the betterment of the product but the editor must be sensitive to subtle pressures which over time can erode a scholarly edifice.

The journal per review process (Fig. 3) has been and will continue to be a major promoter of Academic Pedantic Otolaryngology though its many effects in the areas of the creation of new knowledge; knowledge transfer—teaching; develop and establish quality medical/surgical standards; scholarship; and the perpetuation of the next generation of academics.