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Journal Selection for Medline

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Abstract

MEDLINE citation and abstract data, accessed via the PubMed system, is the most widely used biomedical resource in the world. The decision whether or not to index a journal is an important one as it may have a positive impact on a journal's subscription base, its manuscript submissions, and even its advertising rates. Decisions are made on the basis of NLM scope and coverage policies, scientific quality of the journal, and other factors. This presentation will explain in detail how journals are reviewed and what attributes reviewers consider when assessing journals. It will show how the review committee has concentrated, in recent years, on reviewing more journals that cover health conditions in the developing world. Detailed data will illustrate the distribution of MEDLINE journals by country, language, and other variables. The presentation will include advice that might help journals wishing to receive a favorable review.

The world-wide users of MEDLINE are researchers, practitioners, educators, administrators, students, and the general public whose needs vary considerably. All are important, and the goal of MEDLINE is not met by concentrating on one set

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of users at the expense of others. The highest quality and most useful journals are selected without regard for place of publication.

Introduction

This paper is about Journal Selection for MEDLINE[®], the world's most frequently accessed database, which is accessed over the Internet using our product PubMed. This paper will explain more about its value, the variety of journals indexed in it, and how the National Library of Medicine determines which journals to review and which journals to index.

For those unfamiliar with the National Library of Medicine, here are a few key facts. The National Library of Medicine (NLM) is not only the largest medical library in the world, but we are much more. NLM has research and development programs, an incredible historical collection, a grant funding mechanism, and overall, NLM helps the advance of medical care and scientific research.

Background

The history of indexing starts in 1879 when the Library's director, Dr. John Shaw Billings, determined that health professionals worldwide needed to know about medical advances published in journals. In those days, Dr. Billings' assistants would copy the names of authors and titles of journal articles on file cards and Billings would assign medical terms or subject headings to describe their content.

The story of discovery that began with Index Medicus in 1879 continued pretty much unchanged until the development of MEDLARS in 1964. MEDLARS, which stands for Medical Literature Analysis and Retrieval System, was the first automated search process, although it took more than three weeks for users to receive the results of their search requests. NLM staff did all searching, not the user. MEDLINE, or MEDLARS Online, in 1971 was a big improvement as trained librarians performed searches in a few minutes. The next breakthrough was in the mid-1980s when NLM developed a floppy disk called Grateful Med that allowed searching from one's own PC. Ten years later, we moved MEDLINE to the Web and in 1997 it became free on a system called PubMed.

Vice President Al Gore said in 1997 "This development, by itself, may do more to reform and improve the quality of health care in the United States than anything else we have done in a long time. I really believe that." The Library's decision to make the MEDLINE data free not only to U.S. citizens but to individuals throughout the world has had an unprecedented impact on health care.

The importance of the medical journal literature

The medical journal literature so important because it provides immediate access to new research as well as to work previously performed.

Often the information sits waiting for the right moment to be discovered as when Ernst Chain and Howard Florey read Alexander Fleming's article on penicillin in 1938, nine years after it was first published. Chain and Florey were able to develop penicillin into a drug suitable for inoculating millions of allied soldiers in World War II. For that achievement, they along with Fleming won the Nobel Prize.

There are many reasons for choosing to publish in a particular journal — quality, prestige, size of circulation, and others. A recent survey conducted in Australia listed "Inclusion in MEDLINE" as the number one reason.

Medline statistics

In 2004 we indexed more than 575,000 articles in 4800 journals. About 120 new journals are added to MEDLINE each year. About 10% appear only in electronic form, and the number is growing every year.

What happens to all these citations and abstracts, many linked to full text? They are searched more than 60 million times each month by millions of users worldwide. About 50% of that is in the United States but users in more than 150 countries worldwide search our database.

Since there is often confusion between MEDLINE and PubMed, an explanation is needed. MEDLINE contains full-indexed citations and these records are retrievable in PubMed, NLM's database. But PubMed has other citations not indexed in Medline.

To further confuse our users, we have three other databases, which sound like Medline and PubMed but are different. These are MedlinePlus, PubMed Central and OldMedline. Brands such as Medline and PubMed are important to develop, but sometimes we confuse users unintentionally.

The size of Medline is impressive as you can see. Its scope is biomedicine, but since 2000 NLM has concentrated on reviewing more basic research journals in the life sciences, chemistry, physics, and engineering.

Some refer to getting indexed in MEDLINE as a Catch-22, or a situation that seems impossible to resolve. However, that is not the case – many new journals do get recommended for inclusion.

Selection Process

The group that decides what journals are indexed is called the Literature Selection Technical Review Committee or LSTRC for short. The Director, NIH, appoints its members for four-year terms on the recommendation of NLM's Director.

The 15 members of LSTRC include physicians, dentists, nurses, scientists, and librarians. We try to appoint individuals with broad experience and expertise so they can cover as many subject areas as possible.

There are primary and secondary reviewers assigned for each journal based on the subject coverage of the journal. Each of these persons spends several hours reviewing the 20-24 primary and secondary journals assigned. They also examine the remainder of the 140 titles considered at each of three meetings held during the year. There are guidelines for rating each journal. The most important of these is its "scientific merit" or quality of content.

The next guideline is "importance", that is what does the journal add to the literature in its subject field OR does it fill an important niche or specialty not already well covered.

Of course, the editorial processes, including peer review, are also considered. The qualifications of the editor are examined, as is the composition of the Editorial Board. Statements relating to ethical issues, conflict of interest, and the inclusion of dissenting opinions in the journal are examined. Reviewers would not want to see pharmaceutical or medical equipment advertising that influences content or disrupts the flow of articles.

Production quality is not as important as other considerations, but we do make sure the material is readable and reproducible. Reviewers know that not every journal can have the appearance of those published by large U.S. or European publishers.

Journals do not have to include only original research articles, lots of other content is acceptable. At the moment we are seeing more review journals than any other kind.

Some content is unacceptable for indexing. If a journal has reprints, book reviews, and the like it can still be recommended for indexing, but we would not index those unacceptable portions.

There is no appeal process for journals not selected, but most journals request a second or third review. On rare occasions, when the committee determines that it lacks the expertise to adequately review a particular journal, we will ask outside experts to prepare a review. Their opinion will substitute for LSTRC.

While there is always the need to try to schedule low-priced journals for review, journal price is not a factor that is considered in the review process. Neither is impact factor or the other measures shown on this slide.

The Digital Divide

The Global Technology divide is a good place to begin a brief discussion of the composition of Medline because the database mirrors the technologically advanced countries in that most of its journals are published in the Northern hemisphere or Australia. 90% of the 4800 journals are published in North America or Europe. The Southern Hemisphere, including South America, Africa and parts of Asia, is clearly underrepresented. This is a situation we wish to remedy, but it is a slow process. For one thing, there are not as many journals published in the Southern Hemisphere

as in the North. Also, many Southern Hemisphere journals are not published by commercial companies but by academic medical centers with limited resources.

We have added almost 400 journals to Medline in the past three years. Most continue to be published in Europe and North America, although Asia, especially China, has seen a marked increase in coverage.

As I mentioned earlier, the US leads all countries but still only accounts for 44% of the journals indexed. Western Europe dominates the remaining top 10 countries, although Japan and China account for the fastest growing portion. In total, journals indexed in Medline are published in 85 countries.

We are occasionally accused of a bias toward reviewing English language journals. In recent years, three-quarters of journals reviewed were in English.

Of that subset of journals, two-thirds were published in the major English-speaking countries. However, one-third of the English language journals were published in countries with other national languages.

There is no denying that English has become the language of science as 84% of all journals indexed, and I might add, 89% of citations added last year, are to English-language articles.

The developing world countries, where higher percentages of the populations are susceptible to the ravages of disease, account for only 9% of MEDLINE titles.

We need more and better-quality journals from these countries, but it is truly a labor of love to edit, produce and distribute quality journals, often with limited staff support. In what appears to be another Catch-22, we need stronger local and regional journals that cover important public health issues, but local authors know that they will achieve advancement faster by publishing in international journals. Somehow, local journals must appeal to local authors who have high-quality manuscripts.

Africa, especially the sub-Saharan region, is particularly underrepresented in Medline. This continent comprises 4% of NLM's current journal subscriptions, but less than 1% of the journals indexed in Medline.

African researchers need to publish more often and when they do, they should publish in African journals. Not only are we missing out on research in malaria, AIDS, TB, and other infectious diseases, but we are now seeing more research on non-infectious illnesses such as cancer, diabetes, smoking, and mental health.

To this end, NLM and the Fogarty International Center have started a pilot project partnering 4 excellent Western journals with journals in Malawi, Uganda, Ghana and Mali. Our goal is to improve editorial processes, increase manuscript submission, improve journal production, and ultimately have all four African journals approved for inclusion in Medline. If this pilot project succeeds, we could see it expand to other African journals or even other regions.

Conclusions

Medline will index quality journals in any language or discipline, but some areas are of high interest. These include journals from underrepresented countries, subjects that are underrepresented in the database; journals that have local or regional health issues that differ from those in the U.S. or Western Europe.

These are some of the emerging topics that receive a close look from our reviewers. Reviewers feel that these should have more representation in MEDLINE.

We know that the journal selection process may not be perfect in every respect – what human process is? But it has worked well for 17 years and we hope to make it even better.