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## Medical Librarians and Research: Myths, Realities, and Opportunities

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Forum Bibliotek Medycznych 2/1 (3), 509-514

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2009

Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej [bazhum.muzhp.pl](http://bazhum.muzhp.pl), gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

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## **MEDICAL LIBRARIANS AND RESEARCH: MYTHS, REALITIES, AND OPPORTUNITIES**

I want to start my presentation by saying thank you for the invitation to be with you today. I also want to acknowledge the importance of the Polish people who have made Canada their adopted home and the role they have played in developing and enriching Canada. One of the first men to come to Canada was Auguste Francois Globenski, an army surgeon. He arrived in 1752 and his descendents were important members of the government of Canada as it sought nationhood in the mid to late 1870s. Currently Canada is home to 817,000 people who claim Polish heritage. My city, Hamilton, includes 11,565 of them, 2.5% of our population. Several have been very influential in the evidence-based medicine movement at McMaster.

As background to this talk and paper, I have been a librarian for 35 years but only my first 5 involved work in a library. I am proud to be a librarian and have enjoyed my work immensely. I consider my work outside the library to be my most important contributions to librarianship.

Frances Groenl, one of Canada's most influential medical librarians, claims that we have three core values that have stood the test of time. She also feels that these values will continue to serve us well. She states that medical librarians:

1. provide access to health information for all who need to use it.
2. work to improve information literacy and health information literacy.
3. assure the preservation of the literature of health sciences.

Although these core values are unchanged and unchanging, the context within which we practice librarianship has drastically changed. One of the biggest shifts we have encountered is information availability. I came into the profession when librarians and libraries collected and controlled access to "scarce" information resources. The value of these resources was based on quality. We chose and stored this information and provided physical access to it and training in its use. Now there are almost limitless amounts of information located anywhere there is a computer. Quality no longer forms the basis of importance; popularity does. We count stars, hits, and downloads and rely on ranked retrieval sets<sup>2</sup> rather than quality indicators. One of the best examples of this is the search engine Google which bases ranking on numbers of links.

Technology too has changed the way we function as librarians. I know that I do not need to labor this point with this audience. However, I cannot resist just one example of how technology is changing the way that I work. I have often taken a collection

of citations and analyzed MeSH headings and phrases looking for trends and hints to improve my searching and understanding of the literature on a topic. Now products like PubReMiner and PubFocus can do this multi-hour task almost instantaneously. They perform thorough analyses of MEDLINE citations without error and can use a much larger number of citations. Their presentation of the data is clear and concise and allows me to transfer the results electronically to other programs for more advanced analyses of my own.

Although our core values hold and the skill sets we acquired in library school and the experience we have accumulated since are vital to health librarianship, we must change. As Kim Dority<sup>3</sup> says in her book “Rethinking Information Work,” we have to “port” our existing skill sets into new opportunities that we identify or build to keep our profession strong and our jobs secure.

This brings me to the main focus of this paper: research and health information scientists. Being involved in producing research and applying the findings from the best-possible research is the way that we transform and enhance our profession and our institutions. Health librarians historically have been involved in research in four separate areas. First we provide support for research projects within our institutions. Most often we have done literature searches at the grant writing phase and at the completion of the project when papers are written up. The case study of a woman dying in Baltimore shows why our skills are needed<sup>4</sup>—with a well-done literature search the woman would not have been given the study drug by inhalation. She would still be alive.

The second area of research is where librarians have done their own high-quality research on library-related topics and problems. This area is what I consider to be evidence-based librarianship. Many examples exist and I will not attempt to list them here. Third is the area of research that is probably the most common route that librarians take in their research careers. These projects are those in which the librarians team up with other researchers and work as true partners. Many of these projects naturally relate to health information. The projects and their results are much stronger because of the partnerships librarians build with people from disciplines such as information science, clinical practice, or computer sciences. The fourth area in which librarians have contributed to research exists outside of librarianship. For example, Ash’s work on physician order entry systems, although linked to health information, has somewhat limited influence on day to day librarianship<sup>5</sup>.

This paper concentrates on the second and third categories of research areas: research done by librarians to improve their own profession and research done by librarians working in collaboration with researchers from other disciplines. To set the stage I will discuss four myths about health librarians and research. The four myths that apply to health librarians and research are:

1. librarians only work in libraries

2. librarians cannot do research
3. librarians can do research
4. research can be done without librarians

Starting with the first one (librarians only work in libraries), I was very surprised at the results I obtained when coworkers and colleagues conveyed their thoughts when they considered the two concepts medical librarians and research. This myth showed up several times. I mention it in this paper as it reminded me yet again that as librarians we need to remember that not everyone recognizes or understands the vast array of jobs and careers that we embrace. We do high-quality and important research in health professional schools, information companies, professional societies, and almost any company or institution that values information or relies on information technology. We must make sure that the world knows this.

The second myth is that librarians cannot do research. This myth is one with which I strongly disagree. We have done, are doing, and will do high-quality research. My caveat however, is that we cannot do good research in isolation (without internal and external support) or with only the knowledge and skills that we have at graduation from library school. We can do good research only if the following four factors are in place.

First, we need a good grounding in our profession and job and strong knowledge in a specific area of practice. This knowledge must be both practical and theoretical. We must take time to know what went on before in this area, what research theories apply to this area, and where and what research is being done in this area. Often building this foundation of knowledge and experience into expertise can take five to 10 years of concerted effort<sup>6</sup>.

Second, we need good ideas—ideas and questions are the foundation of good research. A researcher needs to be curious and willing to ask tough (i.e., important questions) and challenge the status quo. These questions should pertain to one's own institution and situation as well as to the broader discipline or domain. Good questions need to be grounded in practice, important to the situation, and answerable. Asking good questions is hard. Librarians are good at answering questions (reference work). We need to work at being good at asking questions if we want to succeed in research.

The third requirement for being able to do good research is having institutional support. This support has two components and both are equally important. Of course one needs release time, energy, and adequate resources. The other area of support is being in a culture that values, encourages, and rewards research. If either area of research support is lacking, one can still do research but unsupported projects become harder to do and take longer to complete; other obligations take up work time and energy. Professional organizations and research groups of peers can provide this support if it is lacking in one's job.

The final important requirement is research knowledge and skills. One can get these through experience, working as part of a team where the other members have the needed expertise or through formal education. Research, like most important endeavors, is built on proven norms, standards, and methods. Research training can be gained through courses and workshops although formal graduate level courses that lead to a degree are often seen as being more valuable. In addition, PhD courses are considered to be more valuable than master's level courses. Another important avenue to obtaining research skills is to work with a mentor who can pass on knowledge and provide a research network. Mentors are invaluable for learning the culture of research—and keeping one from making common mistakes or poor decisions. I would like to encourage all of you to consider learning more about research methods. Do not be afraid to ask a respected older colleague to be your mentor. Being asked to do this is a mark of respect and most librarians nearing retirement are more than willing to take on a mentor role for someone interested in enhancing librarianship.

This brings me to the next myth—librarians can do research. This myth is an internal “librarian-based” myth and one that I feel is quite dangerous. Those who believe this myth consider themselves capable of doing research without training. They feel that it is okay to do “research” without skills, experience, or support and that poor-quality research is okay within our profession. I feel strongly that unless we are willing to do high-quality and important research, substitution with poor quality “studies” will hurt us professionally both in the short and long term. If we want to be taken seriously in the research world, we must do serious, high-quality research.

The final myth as seen from outside our profession is that research can be done without librarians. It can be, of course, but so much health care research could benefit from our skills and knowledge. Several of the areas in which I feel we are invaluable are systematic reviews and clinical practice guidelines, production of new information resources, integration of information resources into electronic medical records systems, and information literacy for health professionals and consumers. I also want to mention several less obvious areas of fruitful collaboration between librarians and clinicians and encourage you to consider if any of these are opportunities that you would like to pursue.

Knowledge translation (KT) is going to become more important in the next decade. As a society we have discovered much new science and many health care advances. We have not, however, taken the time and energy to translate them into health care practice (i.e., get the new knowledge applied). The foundation of KT is knowledge synthesis—an area where librarians can shine. Our contribution will be valuable if we can find new ways to collect evidence quickly and efficiently—more is not necessarily better in the information retrieval world. Can we find procedures that tell us when we can STOP doing searching rather than always saying more searching is

better? Can we use computers to help us screen material? Can we get grey literature faster and better?

A second opportunity or challenge is one that my baby boomer friends and I will leave with you. When we retire we take much of the history and background of an institution with us. Are there ways that librarians and libraries can capture and summarize this invaluable, mostly unwritten information? Can we go beyond traditional archives to fill the void that may be left by the boomers as we retire?

A third research opportunity I see is that as health care becomes more complex, institutions and groups are coming to the realization that health professions need to become interdisciplinary in their view of health. Are there voids that we as an information profession can fill? If we want to be part of this interdisciplinary expansion we need to show with strong evidence what we can provide to enhance health practice

I also see research opportunities in relation to teaching health literacy. We need to build bridges with our public librarian peers, pharmacists, and other health professionals dealing with the public. I also feel that the new information technologies have not moved to their second stage of development. By this I mean that a technology is developed to deal with an existing problem or situation. Once the new technology is in place we then find/discover/research new ways to use the technology. For example, when television was invented it was first used to show men reading news stories—much the same as the readers had done in a radio environment. By analogy, many new uses for our new technologies will soon be apparent. This presents us with many exciting research and development challenges and opportunities.

I also see heightened levels of respect for librarians working in research. More librarians are getting research training, often formally through PhD programs. Institutions are hiring librarians with PhDs to be the head of libraries, in part because of the growing recognition of the importance of research within an institution. This benefits librarians in two ways. Libraries have greater research visibility. In addition, these research-trained librarians are providing support and acting as role models for their professional staff to conduct important and high-quality research.

In summary, I see tremendous possibilities for research by librarians both within our profession and as collaborators with people in other disciplines. Our roles and abilities are especially important in areas of research synthesis, information support, multidisciplinary health/wellness care, and training. It is an exciting time to be a librarian interested in research. Research opportunity is, and will be, knocking at our doors—we need to be ready, willing, and able to answer this call.

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I wish to thank my friends and colleagues, Cindy Walker Dilks and Nancy Wilczynski for help and suggestions for this paper. Both have been wonderful friends for many years—Cindy is a librarian and Nancy deserves to be one.

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## **EDUCATING AUTHORS OF BIOMEDICAL PUBLICATIONS TO THE BENEFITS OF OPEN ACCESS JOURNALS**

### **Introduction**

The scientific research community worldwide is gradually adopting the Open Access (OA) publishing model in order to gain wide visibility and impact of its research output. The number of OA articles is rapidly increasing together with the awareness of the benefits of this movement considered as a real cost-effective alternative to the traditional publishing model represented by biomedical commercial and learned society publishers of major STM journals.

In spite of the advantages of this new generation of journals (OA journals) some reluctance to support the OA concept still persists among scientific authors. This is mainly due to the lack of or low value of impact factor (IF) of OA journals which leads researchers to consider them as no high quality sources. Some OA journals are however quickly gaining IF and thus they are becoming more "appealing".