



Open Access and development: physician, heal thyself!

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Open Access:
a panacea for developing countries

Research into all aspects of health and biomedicine has transformed the lives of the peoples of the world over the last half century. Thanks to advances in public health systems, we are now able to avoid most epidemics and contain those which start. With the help of vaccines, smallpox has been eliminated and the incidence of leprosy, polio, malaria and other diseases has been dramatically reduced. We have the mechanisms to protect increasing proportions of the world's peoples against old threats and new, such as SARS. Most populations are gaining precious years of life expectancy and, for most, infant and maternal morbidity in particular is a decreasing concern.

These very positive health outcomes for most peoples have been the result of information, the stuff in which we deal. Research has driven the invention of new pharmaceuticals, equipment, diagnostic methods and treatments, and more effective approaches to health service delivery and management. Communication of that research in the health and biomedical scholarly literature has inspired further research and informed both practitioners and health planners and administrators. Mass communications have taken that knowledge throughout the health sector and to the public.

This is a great story which bears repetition even though it is well known. It is to be celebrated because the outcomes have improved the lives of people throughout the world. But the triumph is marred by inequity: too many people, mostly in the poorer nations but including some population segments in the richer, have not benefited sufficiently from the advances and some have not benefited at all. Here in Sub Saharan Africa, we are very conscious of the inexorable HIV/AIDS pandemic. The inhabitants of the nations around us are exposed to pathogens which are no longer known, or virtually unknown, in the richer countries – pathogens such as yellow fever, typhus and dengue. Although the mass starvations experienced during the last century are no longer such a threat – political opportunism aside – many suffer hunger and deprivation and too many still starve to death.

At the root of this inequity lies poverty, the poverty of nations, communities and individuals. But it is not merely the relative poverty recorded in the statistics of national gross domestic product (GDP) or other macroeconomic measures; it is the poverty in access to information, especially the health and biomedical information which makes such a difference to the prospects of individuals, communities and peoples. That information includes the scientific records of research and development,

implementation programs and case studies, drug patents and information, and health promotion materials. Libraries of various types deal in all of these categories of information and almost all are frustrated by the limitations of the current information systems, limitations which lead to information poverty.

The provision of guidance to health authorities has improved considerably through the work of the World Health Organization (WHO) and other international and national agencies and thanks to the Internet. With a few clicks, I can now go to www.who.int and find the World Health Survey Report for South Africa which provides standardised information on the health of populations and the operation of health systems. Or I can check the current status of avian influenza or the vaccination requirements for the next country I will visit. But that access to vital information is only available to those who have the infrastructure, skills, language and finance to use the services. The further distribution of the information within countries depends on those factors but also the sophistication of public administration and well developed open media. In many nations, the mechanisms to distribute health and other information widely and in the many necessary languages are inadequate or non-existent. Providing access to such information is an important role for libraries acting in conjunction with health authorities.

However, the issue which concerns us today is the lack of ready access to the health and biomedical research literature which is a result of the commodification of scholarly publishing. For many years, the high prices of key journals and indexes have been well beyond the reach of almost all libraries in developing nations (as well as some in the developed). Even significant university and research libraries were reduced to depending on cast-off copies from institutions in richer nations. Researchers and physicians have to depend on information which was two to three years old or on preprints and post prints forwarded by colleagues with greater access.

The shift to digital journals and databases exacerbated this problem. Not only could the institutions not afford to pay the exorbitant subscription prices but few had both the equipment and reliable, reasonable bandwidth connections to access the services.

Thankfully, we have moved on. Thanks to services such as HINARI¹ and its companion programs AGORA² and OARE³, authorities and institutions in developing countries can access the research literature. Via HINARI, which was established by WHO in partnership with major publishers, 2,500 publicly funded and non-profit institutions in 109 developing countries now have free or low cost access to some 3,750 journals and databases from 100 publishers covering medicine, nursing and related health and social sciences. A recent review showed that HINARI, AGORA and OARE are considered to be important resources and, as a result, the partners agreed that they should be continued at least to 2015 – the deadline for the United Nations' Millennium Development Goals. This is a wonderful advance and we must acknowledge the willing participation and support of major scientific publishers including Elsevier Science and Blackwell Publishing as well as non-profit publishers, universities, foundations and other agencies.

These initiatives have been supported by programs to provide better connectivity and bandwidth in developing countries. Much has been achieved but there is a long way to go and I fear that the advantages of the already advantaged are increasing at a faster rate than the improvements for the disadvantaged. This represents a major challenge for all if the goals of the World Summit on the Information Society are to be achieved.

Together with programs such as the World Trade Organization's "paragraph 6" system, initiatives such as eIFL⁴, HINARI and others have helped to redress the information poverty suffered by our colleagues in developing countries. The WTO "paragraph 6" system allows patented products to be produced without the approval of the patent holder, who nevertheless receives some remuneration, for countries unable to produce the medicines themselves⁵. Rwanda has recently advised WTO that it would import HIV/AIDS medicine under this provision (TriAvir, a fixed-dose combination product of Zidovudine, Lamivudine and Nevirapine manufactured in Canada by Apotex, Inc), the first use of the provision notified. Brazil and Thailand have recently made use of related TRIPS flexibilities for patented pharmaceutical products, against heavy industry pressure.

Such initiatives are helping to support positive health outcomes in developing countries. But they are not sufficient. They can best be considered transitional because they provide access from the poorer

countries to essential health and biomedical information but do not address the structure of the health and biomedical information system. It is the structure of that system, and especially the commodified scholarly publishing system, which works against poorer countries and those outside the scientific mainstream. Although the initiatives are to be welcomed and applauded for the real and immediate access to information that they provide but they do not change the power relationships which govern the information and cash flows in the system. Information in the form of research publications and patented knowledge continues to flow from the richer industrialised countries with well established research structures to the poorer and developing nations and revenues continue to flow the other way. This maintains the relative position of the players both those seeking information and those selling it, or supplying it through informational aid programs such as those I have mentioned.

We need more. We need a reform of the structure of the health and biomedical information system; indeed, we need a reform of the whole STM information system. Leaving aside the issues relating to patents, I will focus on the scholarly and research publication system which most directly concerns us as library and information professionals. The best hope for reform of that system lies in the Open Access movement which has developed so quickly. Its goal of providing free access to scholarly information through open access journals, conference papers and other publications and through the dissemination of material published elsewhere through institutional and disciplinary repositories presents a profound challenge to the scholarly publications system. In a few years, it has generated a tremendous range of freely available journals as can be seen on the Lund list, the Directory of Open Access Journals, which now lists 2797 free, full text, quality controlled scientific and scholarly journals, 835 journals of which are searchable at article level⁶. Many are of high quality, some having transferred from previous publication as high cost journals; others have yet to establish their quality. But the key point is that they aspire to high quality and that their primary focus is on the communication of research findings and scholarship, not on the generation of revenue. They maintain the beneficial characteristics of the scholarly publication system: quality assurance through peer review, openness to examination and if necessary refutation, thematic organisation, location through disciplinary indexes. But they avoid the exploitative aspects of the commodified business model with which we – especially our budgets – have been struggling.

Through the development of the Public Library of Science (PLOS) and BioMed Central titles, for example, a strong body of health related literature is being published. Other titles are supported by individual institutions, including my Library which hosts UTSePress, the publisher of five peer reviewed journals, although none in health as yet. The list provides a gateway to a tremendous range from many countries: Australia, Brazil, Colombia and so on, through the alphabet. Open Access has not only challenged the previously dominant publishing model but has exposed a whole body of valuable literature which was previously largely inaccessible. One has only to consider, for instance, the very interesting journals emerging from Brazil, a huge equatorial country with particular health challenges and solutions.

These open access journals have been complemented by the development of such services as PubMed from the US National Library of Medicine which provides such extensive access to biomedical articles back to the 1950s, currently over 17 million citations, many with links to full text articles and related resources. The initiatives to establish open access repositories opens up increasing proportions of the literature published in for payment journals as well as many reports and other 'grey literature'⁷. Other initiatives are building backfiles and archives and working to crack the complex issues of long term preservation which are a central responsibility and concern for libraries – issues which have tended to be brushed aside in the push towards payment for digital services.

The initiatives are underpinned by the good work of IFLA/CLM, Creative Commons, SHERPA and others on copyright, licensing and other policy issues. Together they are creating a new scholarly and research communications system.

None of this is without cost. The journals, repositories, preservation services and other initiatives need hosts, organisations which are ready and willing to commit to their ongoing sustainability. And the best way to ensure sustainability is to find a strong synergy between the goals of the host organisation and the aim of providing free access to quality assured scholarly and research literature as is demonstrated by the US National Library of Medicine's maintenance of PubMed and the hosting of so many journals by universities and research institutions like UTS.

The sustainability of this emerging new scholarly and research communications system is still not clear but it is clear that the system which had worked well for two and a half centuries has been terminally destabilised by commodification. The emerging new system is developing rapidly and showing promise of establishing its own stability. And in the process it is addressing many of the disadvantages faced by colleagues in developing countries by providing free access to the literature. It can't address the issues of inadequate infrastructure which need action elsewhere, but it can and is addressing the issues which lie in our domain with remarkable success. In addition it is changing the dynamics from those based around major publishing operations in the 'northern' centres to multipolar global publishing which is exposing important scientific literature which had previously been ignored or at least neglected.

This process of renewal for the scholarly and research publishing system represents a move from dysfunctionality back to health. It is showing signs of being truly a case of 'physician, heal thyself!' It is a process that we should all endorse and support wholeheartedly as our services constitute vital elements of the scholarly publishing system.

Notes & References

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