

**Open Access: Barriers and
Opportunities for
Lower-income Countries**

Dan J Ncayiyana, MD

**Editor: *South African Medical
Journal***

**International Seminar on Open
Access for**

Developing Countries

**Salvador, Bahia September 21-
22 2005**

Definitions

- ‘Open access to scientific and medical literature allows anyone, anywhere, with a connection to the Internet to find and read published research articles online, and to use their contents in the course of scholarship, teaching, and personal inquiry’ [*Public Library of Science*]
- Open access refers primarily to *articles*, not to journals *per se*

- Open access literature must be free of charge to the reader, and free of most copyright and licensing restrictions, in any language and in any science discipline
- Stated differently, open access is the storage of peer reviewed health and medical or any other scientific literature in a public digital repository in such a manner that it can be retrieved or 'mined' using appropriate electronic search tools

Open access repositories

- Examples of digital repositories dedicated to open access include PLoS, PubMed Central, BioMed Central, and INIST (a repository for mainly French literature).

Open access vehicles

- open access journals, and
- open access archives and repositories

Archiving

- Archiving is when authors deposit peer reviewed articles published or accepted in their departmental or institutional archives

Traditional paper journals online

- Most are accessible strictly by subscription only;
- Some allow only certain portions of the journal to be accessed without charge
- A minority publish their entire journals online for open access without any restrictions

Web-based journals

- Internet-based journals have been established by entities such as PLoS and Biomed Central for publication of high quality open access articles on the web.

Open access paper journals: minority

- 24 000 known research journals in circulation today across all disciplines and languages worldwide
- 2.5 million articles per year
- Of these, only about 100 000 articles are open access
- The web-based *Directory of Open Access Journals* (DOAJ) lists only 1761 scientific journals, including health and medical publications.

open access movement gains momentum

- increased demand for global exchange of scientific information
- escalating costs of paper journals for individual readers, and science libraries around the world.
- Scientific paper publishing is worth \$7 billion a year
- profits of as much as 40% on journal business.
- Society-owned science journals are cash cows
cash cows

- Also driven by funding agencies:
- the NIH supported by Congress,
- the Wellcome Trust and
- the Howard Hughes Hughes Medical Institute.

Challenges for lower-income country research

- little or no international reach, with
- only about 5% of the journals originating from developing countries meeting the criteria for indexing in international databases
- little academic credibility, and have little or no impact on the health status of the local communities they seek to influence

Language barriers:

- Latin-American journals represent less than 2% of journals indexed in Medline, and
- less than 1.7% of the references in Medline come from Latin-America.
- Non-English language-based indexing systems are emerging as a result, for French and Ibero-American literature

Research capacity constraints

- Inadequate funding from public and private sources
- Lack of interest among international funding entities to support research into the health problems of the developing world
- Impoverished academic and laboratory facilities
- Lack of institutional and political commitment to quality research [4]
- Poor technical human resource support
- Relentless brain drain of experienced researchers to wealthier countries

Capacity challenges for journals

- The majority were severely under-funded
- They did not publish regularly
- They lacked high quality articles
- They had no access to reliable standard peer review

- They had huge distribution problems
- They lacked the managerial, marketing, technological and editorial skills
- They operated in environments of poor communications infrastructure, specifically with respect to power, postal service, telephone and Internet connectivity

Promoting open access for research and research journals from lower-income countries

- Greater receptiveness to research papers from developing countries
- Greater receptiveness in the open access journals to research dealing with health problems of the South
- A suitable application of the 'author pays' formula for researchers from the South

- Commitment to health and medical research by governments of developing countries
- International support for indigenous research and open access research journals in developing countries