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COMMITTEE I

COMMENTS BY EFRAIM OTERO, M.D., TO PAPERS PRESENTED IN
SESSION II : Information Technologies and Institutional Collaboration.

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My comments are derived from my experience of 11 years as Director of COLCIENCIAS (the Colombian National Science Foundation) where I am now the Chairman of the Advisory Committee on Information Sciences, as well as the experience of working 16 years with Dr. José F. Patino, one of this session's speakers, in developing INFORMED, an on-line biomedical information systems for doctors and medical students in Colombia which includes a data bank on national publications and authors.

Before thinking in establishing a national or regional network one should consider first the problems of infrastructure. The majority of libraries in medical schools throughout Latin America (and in this we coincide with the observations made by C. Zielinsky in Africa and the Middle East (1) and probably applies to other universities and non-medical institutions) subscribe to fewer than 50 journals; less than 10 per cent have a computer or a CD-ROM player ; budgets for new books, software and online charges are tiny or non-existent; telephone and telecommunication systems are sparse, unreliable and expensive, so use of networks is rare. Also, where access to networks already exists, it is used mainly for simple communications rather than to scan medical or scientific literature, or is monopolized by commercial or financial enterprises.

On the other hand, we can observe that the cost of information is overtaking the costs of information technology. As computer (hardware) prices drop or remain stable and as Third World countries invest in modernizing their telecommunications, the basic

cost of contents (software), reinforced by copyright protection, encryption and tagging systems hike costs up. Hence those countries or groups that are already information-poor shall become poorer in the long run, unless other measures are introduced. However, we observe also that international foundations and NGO's try helping less developed countries to acquire scientific literature and current technology but, no matter how good their intentions are, those actions usually serve as a vehicle for opening up new markets to western information providers.

We should also consider that the famous information superhighway (including Internet) is generally a one-way street, going from the First to the Third world, but not viceversa. This is not always the First world fault, since scientific production is hampered by the fact that developing countries lack a sufficiently robust scientific and informational infrastructure to support basic research; as a result, those countries cannot provide academic and economic incentives to produce the necessary associated research literature ; their journals usually have linguistic, financial and production difficulties, leading to irregular publication, indifferent esthetic qualities, poor edition and proof-reading. Many articles are not even subject to stringent peer review. Thus, if we take MEDLINE or the Science Citation Index, we observe that they typically index some 3000 journals, of which 98% come from the First and only 2% from the Third world. Journals that are not indexed are rarely stocked by librarians, so they are rarely cited by authors or rarely cited at all.

The other problem that we should consider is the language barrier. English has been called by one of the speakers as the *lingua franca* of scientific literature. Over 80% of all scientific research published in indexed journals is in English. And is estimated (at least for medical doctors and students, which make one of the most cultured professions in Latin America) that less than 10% of them have even a reading knowledge of English.

From the health point of view, we must consider that the two-way flow of information is indispensable, since today's diseases are not respecters of frontiers or zones of the earth, as tropical or "exotic" pathologies were conceived in the past. Sufficient cases are known today of lethal extra-African viruses, of the so-called airport malaria, plague, AIDS, substance abuse etc. in regions that were considered impenetrable by those health scourges, establishing often what Gellert, of Harvard University, denominated in 1990 "global interdependences"(2). We think that two-way information is also becoming a global interdependence. All efforts should be made to accord information from all sources equal access, equal financing and equal rights so as to establish the bases of a true international network which serves as the foundation of a new global university.

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References

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2. Gellert, GA.: Global health interdependence and the International Physicians Movement. J.A.M.A. 264:610, 1990.