



**Figure.** Looking at the Patient with COPD.

COPD may be manifested in striking systemic features. These may vary markedly, even among patients with similar degrees of airflow limitation. The classic “blue bloater” (left) is characterized by hypoxemia, possibly with carbon dioxide retention, which may be complicated by pulmonary hypertension and signs of right-sided heart failure. The “pink puffer” (right), in contrast, is characterized by cachexia, relatively preserved blood gases, and often dyspnea even when the patient is at rest. Cough and sputum may be prominent in the blue bloater but may also be present in the pink puffer. Emphysema is often severe in the pink puffer but may also be present in the blue bloater. Thus, the two phenotypes illustrated here represent different systemic manifestations of a complex disease. Many patients with systemic manifestations of COPD do not resemble either of these patients.

These investigators developed a multistage scoring system that incorporates a spirometric measure of airflow together with an assessment of symptoms, body habitus, and exercise capacity. Variables that can be evaluated easily in any office setting were chosen intentionally, so that the index can be applied readily and simply. Having established the measures in a retrospective cohort, the investigators then prospectively validated the use of their “BODE index.” (The B stands for body-mass index, O for the degree of airflow obstruction, D for dyspnea, and E for exercise capacity.) The acronym, with its obvious implications, was suggested by Gordon Snider, a physician-scientist with a career-long interest in COPD, precisely because it provides useful prognostic information. This index is desperately needed.

Without doubt, the assessment of airflow is crucial in establishing the diagnosis of COPD and, in the opinion of many experts, can often help to guide therapy. The availability of other validated measures, particularly those that integrate multiple non-airflow-related variables, is also essential. Clinicians will be faced with increasing numbers of patients with COPD. Fortunately, we will also have increasingly effective forms of therapy. The successful development and use of these treatments will require careful assessment of patients. The BODE index promises to be an important tool in this regard.

of this crucial test in generalists’ offices. Unfortunately, additional information is still needed to complement the assessment of spirometry. The article by Celli and colleagues in this issue of the *Journal* (pages 1005–1012) helps to address this need.

From the University of Nebraska Medical Center, Omaha.

1. GOLD Workshop Report. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. Bethesda, Md.: NHLBI, 2003. (Accessed February 12, 2004, at <http://www.goldcopd.com>.)

## Improving Online Access to Medical Information for Low-Income Countries

Barbara Aronson

Over the past two years, the World Health Organization (WHO) has worked with publishing partners (including the *Journal*) to improve online access to scientific resources as a way of supporting health professionals, medical researchers, and academics in developing countries. WHO helped to create the Health InterNetwork Access to Research

Initiative (HINARI, <http://www.healthinternetwork.org>), which offers health and medical institutions in 69 of the world’s lowest-income countries free online access to a large library of important international journals. This initiative has been expanded to include an additional 44 countries that qualify for access to the journals at a very low price. To date,

**Table. Countries Whose Institutions Are Eligible for Free Access.\***

Country	No. of Registered Institutions	Country	No. of Registered Institutions	Country	No. of Registered Institutions
Afghanistan	1	Georgia	16	Nigeria	58
Albania	9	Ghana	20	Papua New Guinea	8
Angola	2	Guinea	0	Republic of Moldova	6
Armenia	14	Guinea-Bissau	1	Rwanda	5
Azerbaijan	6	Guyana	3	Sao Tome and Principe	0
Bangladesh	4	Haiti	6	Senegal	13
Benin	1	Honduras	16	Sierra Leone	2
Bhutan	6	Kenya	29	Solomon Islands	2
Burkina Faso	12	Kiribati	1	Somalia	4
Burundi	1	Kyrgyzstan	5	Sudan	28
Cambodia	9	Lao People's Democratic Republic	7	Tadzikistan	3
Cameroon	13	Lesotho	2	Togo	2
Central African Republic	1	Liberia	0	Tokelau	0
Chad	2	Madagascar	11	Turkmenistan	3
Comoros	0	Malawi	8	Tuvalu	0
Congo	0	Mali	12	Uganda	10
Côte d'Ivoire	7	Mauritania	3	Ukraine	39
Democratic Republic of Congo	11	Mongolia	10	United Republic of Tanzania	27
Djibouti	1	Mozambique	6	Uzbekistan	7
East Timor	0	Myanmar	8	Vietnam	34
Eritrea	3	Nepal	42	Yemen	18
Ethiopia	13	Nicaragua	11	Zambia	10
Gambia	5	Niger	3	Zimbabwe	9

\* Free access is provided to countries with a per-capita GNP of less than \$1,000. In addition, in the following countries, areas, and territories with a per-capita GNP of \$1,000 to \$3,000, institutions have registered for access to medical and scientific journals for \$1,000 per year: Algeria (10 institutions), Belarus (8), Belize (3), Bolivia (22), Bosnia–Herzegovina (2), Bulgaria (9), Cape Verde (1), Colombia (72), Costa Rica (10), Cuba (24), Dominican Republic (9), Ecuador (19), El Salvador (5), Federated States of Micronesia (1), Fiji (2), the former Yugoslav republic of Macedonia (6), Guatemala (8), Iraq (3), Jamaica (4), Jordan (13), Kazakhstan (6), Kosovo (2), Latvia (6), Lithuania (7), Maldives (3), Morocco (12), Namibia (1), Panama (8), Paraguay (9), Peru (67), Romania (30), Samoa (Western) (2), Serbia and Montenegro (12), Suriname (2), Swaziland (1), Syrian Arab Republic (7), Tunisia (7), Vanuatu (1), and West Bank and Gaza (3). Also qualified in this category are Equatorial Guinea, the Marshall Islands, Saint Vincent and the Grenadines, Tonga, and Wallis and Fortuna.

47 publishers from all streams of scientific publishing have joined HINARI to offer access to more than 2300 journals and other full-text resources.

A total of 1043 institutions in 100 countries (of a total of 113 eligible countries) have registered for the program. Institutions in countries with a per-capita gross national product (GNP) of less than \$1,000 receive free access to the journals (see Table). Institutions in countries with a per-capita GNP of \$1,000 to \$3,000 pay \$1,000 per year. These institutions include national universities, professional schools, research institutes, teaching hospitals, and

government offices. All staff members and students are entitled to this access.

HINARI was created after a study by WHO found that researchers and academics in developing countries identified access to the “priced literature” (i.e., journals) as their most pressing information problem. In the lowest-income countries, 56 percent of the institutions had no current subscriptions to international journals and 21 percent had an average of only two journal subscriptions. In the tier with the next-lowest incomes, 34 percent of institutions had no current subscriptions, and 34 percent had

two to five journal subscriptions. HINARI complements efforts by some of the major Web publishers to offer free, direct access to biomedical journals for users in the lowest-income countries. (The *Journal* also participates in the free-access program of HighWire Press and offers unrestricted access to all users from these 113 countries.)

HINARI has greatly improved access to information for these institutions, and the levels of use are growing steadily. In the first six months of 2003, HINARI users downloaded 34,680 articles from the 214 journals offered by Blackwell Publishing, and during the next six months, the number jumped by 113 percent, to 73,734 articles downloaded. Usage levels seem to depend more on good connectivity than on the relative economic strength of the country. Some of the biggest users are in Ethiopia, Nepal, Sudan, and Vietnam, all of which are among the poorest countries in the world. The high cost of reliable Internet access, computer equipment, peripherals, and supplies (workstations, printers, paper, toner, and electric generators for backup supply) is a major limiting factor, but access to equipment and to the Internet is growing throughout the developing world. And some participating institutions indicate that they are using their HINARI eligibility to leverage funding for equipment and Internet access from their governments and from international donors.

In 2004, the HINARI team at WHO and our partners — the publishers, the Yale University Library, the National Library of Medicine, and the Special Program for Research and Training in Tropical Diseases (cosponsored by the United Nations Development Program, the World Bank, and WHO)

— will be focusing particularly on user training. The publishers have donated the fees they have collected through the program in order to fund in-country training workshops. Training is closely coordinated with HINARI's sister program, Access to Global Online Research in Agriculture (AGORA), which is administered by the United Nations Food and Agriculture Organization.

Will improved online access have an effect on health in low-income countries? It is probably impossible to show a direct connection either between the lack of access to information and poor health or between improved access to information and improved health. There are many other reasons why health in these countries is poor and will not improve quickly. These include poor health services infrastructure, poor nutrition, lack of clean water, and poor sanitation, as well as war, drought, and political corruption. Most global health and medical research remains focused on the problems of wealthy nations. But low-income countries also have medical schools and universities. They have researchers and research institutes that carry out essential work on local problems and government offices that try to set effective policies. Warren Stevens of the Medical Research Council Laboratories in the Gambia has noted that intellectual isolation represents an important hindrance to the development of world-class researchers in African countries. Access to timely, relevant, high-quality scientific information represents a substantial gain for the researchers, students, teachers, and policymakers in low-income countries. Can this be called anything but progress?

From the HINARI Program, World Health Organization, Geneva.

## Questions for an Epidemic

Rafael Campo, M.D.

It is a perverse reaction, but one that I notice myself having more and more frequently these days. After all, it should not still be happening, not here in America, and most definitely not in Boston, where we probably have more HIV research laboratories and epidemiologists per square inch than anyplace else in the world. Yet here she is, with her squirm-

ing, beet-faced toddler on her lap, a metaphor for my unwillingness to give her the result. Behind her, a vast, bottomless, horribly red poppy in a print of the famous Georgia O'Keeffe painting threatens to inundate us, like some spreading stain of all the blood there is in the world. Her cell phone goes off, its ring a few familiar bars of "Guantanamo," an