Reflections on Curative Health Care in Nicaragua

R. Giuseppi Slater, MD

Abstract: Improved health care in Nicaragua is a major priority of the Sandinista revolution; it has been pursued by major reforms of the national health care system, something few developing countries have attempted. In addition to its internationally recognized advances in public health, considerable progress has been made in health care delivery by expanding curative medical services through training more personnel and building more facilities to fulfill a commitment to free universal health coverage. The very uneven quality of medical care is the leading problem facing curative medicine now. Underlying factors include the difficulty of adequately training the greatly increased number of new physicians. Misdiagnosis and mismanagement continue to be major problems. The curative medical system is not well coordinated with the preventive sector. Recent innovations include initiation of a "medicina integral" residency, similar to family practice. Despite its inadequacies and the handicaps of war and poverty, the Nicaraguan curative medical system has made important progress. (*Am J Public Health* 1989; 79: 646–651.)

Introduction

Few developing countries have attempted fundamental revision of their health care delivery systems to enable them to truly serve the poor who form the vast majority of their population. Since its victory over the Somoza dictatorship in 1979, the Sandinista revolution in Nicaragua has placed great emphasis on improving health care and has received international acclaim for its achievements in public and preventive health.[1–3] After nine years, it is also important to see how well the present medical system meets the never-ending demand for curative medical care. A realistic examination of the Nicaraguan experience is important to better understand the difficulties and possibilities inherent in seeking such change.

This article is based on my personal experience working for a year in the regional hospital and in a neighborhood health center in the northern city of Estelí, as well as several months' work with the new Nicaraguan family practice residency program in Managua. It is also based on extensive visits to many other health facilities in Nicaragua and numerous conversations with health personnel, both Nicaraguan and foreign, at all levels of the health care system. To the maximum extent possible, I have attempted to supplement personal observations with reference to the limited data and published material available about Nicaraguan health care.

Three broad criteria can be used to assess health care delivery: access and affordability, efficacy in diagnosis and treatment, and effectiveness in coordinating with the preventive health sector. In simpler terms, how easy is it to get health care, how good is the health care, and how much does the health care seek to maintain health as well as restore it? Viewed from these perspectives, Nicaraguan health care is a mixture of successes and problems.

Access and Affordability

Before the revolution, only a limited number of Nicaraguans (primarily public employees and National Guard members and their dependents) had guaranteed access to government-supported health care.[3–6] For most of the population, obtaining health care meant cash-up-front. People in Estelí described to me how the hospital, in Somoza's time, had a three-tier admission system: those with a certain amount of money were admitted to large open wards and received limited therapy; those with more funds were placed in semi-private rooms; and those with ample resources had private rooms and a readily available physician. Hospital workers reported watching patients die at the emergency entrance because they lacked the admission fee.

Since the institution of the Unified National Health System (SNUS) three weeks after the victory of the Sandinista Revolution in 1979, health care in public facilities has been offered to all Nicaraguans at no cost.[2,3] To fulfill this commitment, the Nicaraguan Government first sought to train more health workers and build more facilities. In the first several years after the revolution, the medical school curriculum was revised to emphasize primary care issues.[7] A second medical school was opened, in Managua, and class size was expanded in the original medical school in León, resulting in a four-fold increase in medical school enrollment between 1979 and 1984.[3,7] By 1984, residencies had been initiated in 16 medical specialties and master's degrees were offered in Epidemiology, Public Health, and Hygiene; previously, no postgraduate medical training had been available in Nicaragua. Nursing schools were expanded and a new program was begun to train laboratory technicians.[6,8,9] The number of primary care health facilities more than tripled over one decade, increasing from 172 in 1977 to 472 in 1984 and to 588 in 1987.[6,10]

The impact of the contra war, including the resultant economic disruption, has slowed or reversed some earlier gains,[2,11] as has continued rapid population growth which currently averages 3.3% per cent per year despite significant emigration.[12] Figure 1 illustrates the initial marked increase in the quantity of health care providers per 100,000 population in Nicaragua after the revolution as well as the subsequent leveling off; Figures 2 and 3 show similar progress in increased utilization of health care services as well as the recent declines. Reflecting overall progress, including public health advances, infant mortality dropped from 121/1000 to 76/1000 live births between 1977 and 1983[2,11] and by 1986 declined to 64.5/1000.[12]

After the revolution, Nicaragua was divided administratively into six regions and three "special zones." For health care administration, each is defined as a "health region" (see Figure 4). A health region is subdivided into many health areas, throughout which are distributed health posts, the first line of primary care. They refer patients needing more advanced care to a smaller number of health centers located

Address reprint requests to R. Giuseppi Slater, MD, PO Box 1129, Salinas, CA 93902. At the time of the study, Dr. Slater was attending physician, Hospital Regional Alejandro Dávila Bolaños, Estelí, Nicaragua, and consultant to the Division of Advanced Medical Education, Ministry of Health, Managua, Nicaragua. This commentary, submitted to the Journal April 11, 1988, was revised and accepted for publication November 1, 1988.

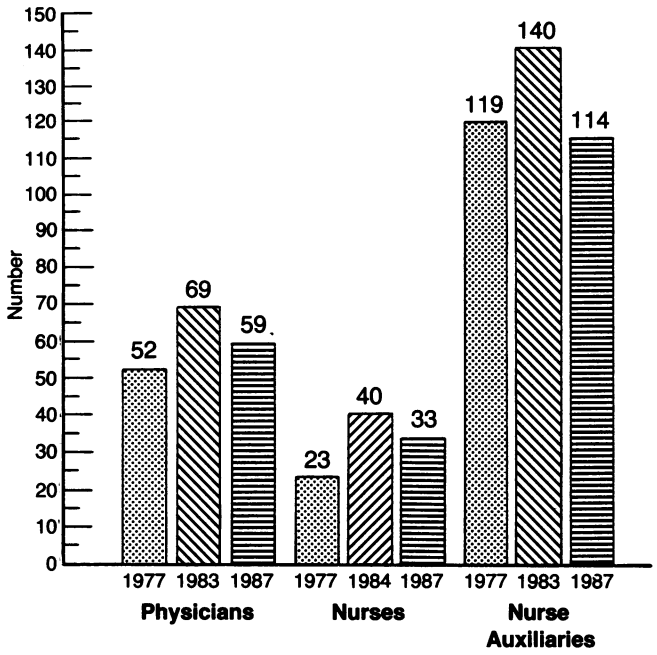

FIGURE 1—Increased Numbers of Physicians, Nurses, and Nurse Auxiliaries per 100,000 Population in Nicaragua since the Sandinista Revolution in 1979. SOURCE: References 6, 8 and 10.

in urban areas. Patients requiring hospital care go first to municipal hospitals, located in the larger towns. These in turn refer to the regional hospital, located in the principal city of the region. Managua and León, which have the nation's two medical schools, also have the national referral hospitals that offer tertiary care.

A typical health post is managed by a nurse, has a doctor at least part-time, handles acute and chronic illnesses, pre-

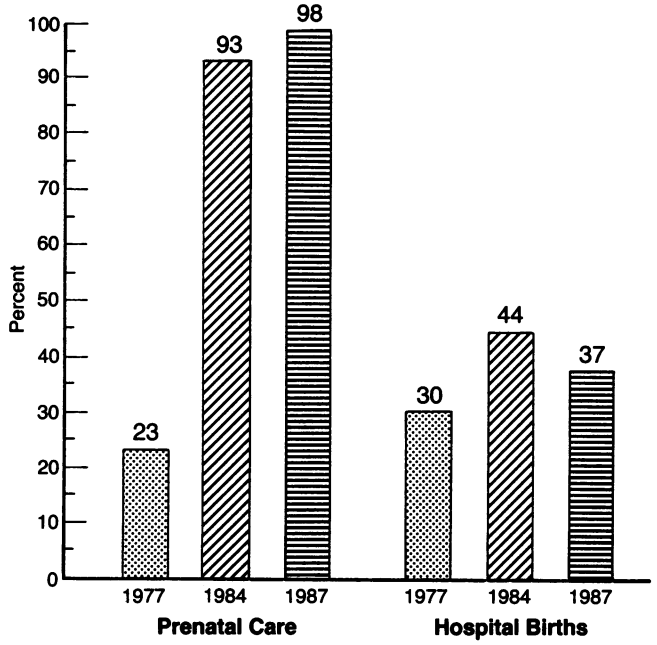

FIGURE 3—Increased Percentage of Prenatal Care and Hospital Births in Nicaragua since the Sandinista Revolution in 1979. (Includes care given by nurses and midwives.)
SOURCE: References 6, 8 and 10.

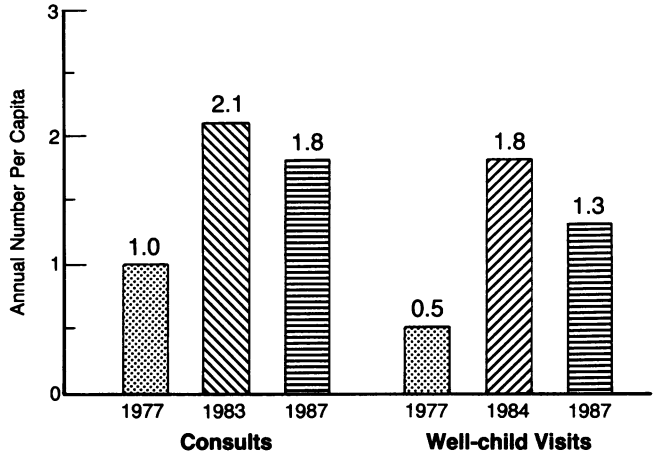

FIGURE 2—Increased Outpatient Consults and Well-Child Checkups for Children Under Age Five in Nicaragua Since the Sandinista Revolution in 1979. SOURCE: References 6, 8 and 10.

natal checks, well-child visits, vaccinations, and minor suturing and wound care. Sometimes an Oral Rehydration Unit is included, where babies and children with mild to moderate degrees of dehydration are observed and given packets of salt and sugar containing liquids (the World Health Organization formula, provided by UNICEF). There is no clinical laboratory testing. No appointment is required. Special efforts have been made to place health posts in the most underserved rural and urban sectors.

Health centers are staffed by doctors who may be

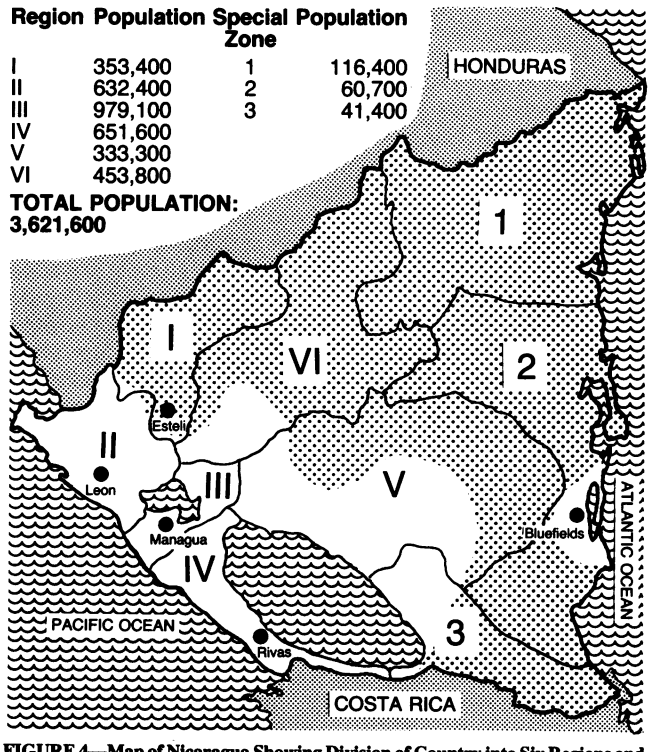

FIGURE 4—Map of Nicaragua Showing Division of Country into Six Regions and Three Special Zones, along with Current Population Data.
SOURCE: Reference 12.
NOTE: Each region or zone is defined as a "health region" and is further subdivided into "health areas" (not shown). Shaded area of map indicates war zones.

physicians just out of internship and completing two years of obligatory government service (an obligation common throughout Latin America) or by specialists (pediatrician, internist, etc.) completing residency training. There is on-site laboratory and x-ray equipment in a few health centers, and dentistry may also be offered. Some health posts and centers also have beds, where patients may be held for short periods of observation and treatment. In isolated areas, vaginal deliveries are performed in health centers. Patients are seen both by appointment and on a walk-in basis.

Municipal hospitals are staffed mainly by newly graduated generalist physicians completing their obligatory service, while regional hospitals have some specialists and, as teaching facilities, have intern staff as well. Although most of the physicians in outpatient facilities are Nicaraguan, there continues to be a shortage of Nicaraguan hospital physicians. Thus, in Region I (Estelí), more than 50 per cent of the hospital physicians in 1986 were international volunteers, mainly from Cuba but also from Western Europe, Canada, the United States, and other Latin American countries.* Of the 637 specialists in Nicaragua in 1987, 103 were foreign volunteers, nearly half from Cuba.** Cuba also provides generalist physicians completing obligatory postgraduate service who help staff health posts and centers as well as hospitals.

In practice, the system may not always function as planned. Although utilization of community-based facilities for primary care has increased greatly,[2] it is common in cities to see long lines outside hospital emergency rooms at 8:00 am while neighboring health posts may have only a trickle of patients. Some patients avoid the health posts and the centers and go directly to the hospital for ambulatory care because they feel the doctors may be more specialized (and thus better) or that more medicines or laboratory tests are available. While this is often true, the fact remains that, even in the hospitals, specialists are in short supply and medicines and laboratory tests are frequently unavailable.

People with money continue to utilize the private medical sector, which may provide up to 15 per cent of outpatient medical services.[3,5] In Nicaragua, the medical economy like the general economy is a mixed one; as in many developing countries, physicians tend to work mornings in government institutions and afternoons in their consultorios privados (private offices). Equipment and procedures absent in public medicine can often be found in private clinics, laboratories, pharmacies, and hospitals. In Estelí, private laboratories could often provide many clinical chemistry, blood cultures, and antibiotic sensitivity tests unavailable in the government hospital. Such services, though inexpensive by developed country incomes, cost at least the equivalent of several days' salary for an average Nicaraguan worker. Outside Managua and León, subspecialists such as urologists or otorhinolaryngologists are rarely found in the public sector, yet are readily accessible in private consultorios. Their fees limit access to those who can afford to pay them; sometimes payment in dollars is demanded.

For others, especially rural peasants and farm workers (campesinos) and people with less education, the traditional health care system of herbalists, curanderos, and lay midwives continues to be an alternative. Patients told me various reasons for consulting traditional healers: long-standing belief in their methods and medications, lack of access to more modern medical care in areas that are remote or destabilized by the contra war, and fear or distrust of doctors and hospitals.

*Sanchez E: Director of Planning, Region I Ministry of Health, Estelí, Nicaragua. Personal communication, 1986.

**Unpublished data, Ministry of Health, Managua, Nicaragua, 1988.

Diagnosis and Treatment

Although tremendous efforts have been made to increase the number of doctors and nurses, the demand for medical care is overwhelming now that free health care is deemed a right for everyone. Beyond the initial step of increasing the quantity of health workers is the even more difficult challenge of improving their training and work environment. The lack of clinical teachers and attending physicians, already acute because of the exodus of well-trained doctors after the revolution, is worsened by the contra war, which has caused diversion of resources and manpower, including medical manpower.[2] Finally, the poverty of the country, exacerbated by the enormous costs of the war, has restricted all efforts to improve the quality as well as quantity of medical attention.

Outpatient Care

Physicians in outpatient clinics I observed in five of the six regions and one of the special zones often see large numbers of patients—up to 50 in a four-hour period. Foreign physicians working in different areas confirmed my impressions that physical examinations are often rudimentary and examining rooms are commonly dark, noisy, and shared by several practitioners, separated only by small partitions. Most patients spend only a few minutes with the doctor and then receive four or five prescriptions.[13] Charting is rarely done, except for minimal obstetric and well-child records. Medicines are virtually free, but quantities are limited.

Outpatient medical care is uneven and variable in its effectiveness. Patients get little information or health education from physicians, leading to frequent noncompliance or miscompliance. Other foreign physicians as well as I have witnessed the unnecessary or inappropriate prescription of drugs and the inadequate or inappropriate treatment of chronic conditions. Much of the impetus for this polypharmacy comes from the patients themselves. The beliefs, so prevalent in Latin America, that more medicine is better, and that injections and infusions are more powerful than pills, create expectations among patients that physicians find difficult to resist.

Nevertheless, the majority of every-day problems are adequately diagnosed and treated. The Oral Rehydration Units are one of the great successes of outpatient care, and many a child has been spared hospitalization because of this widely available service; more severely dehydrated children are detected and referred to hospital in a timely manner. Extensive popular education campaigns have played a key role in the development of this program.[13]

Hospital Care

Hospital conditions vary enormously. In Estelí, the hospital is over 40 years old and was partially destroyed by the National Guard in 1979. Water is shut off in most of the hospital during much of the day; lights sporadically go off during surgery and the back-up system sometimes fails. The wards are large dark chambers; occasionally two people share a bed. One the other hand, cities like Bluefields (on the Atlantic coast), and Matagalpa and Rivas have newly built modern hospitals with some semi-private rooms, up-to-date

sterilizing equipment, steam laundry, overhead paging, and new x-ray machines.

My own observations of many Nicaraguan hospitals and the reports of other foreign physicians working in these institutions indicate that, despite the limited resources, common problems are usually handled adequately if not optimally. Problems arise with more complex illnesses, however, because of lack of training or diagnostic capability. Patients of any age with unclear diagnoses tend to be treated vigorously with multiple antibiotics and frequently with steroids. Emergency suturing is often done by people with little training, even for complex cosmetic lacerations, so that the wounds are closed but the scars are unsightly. Crisis situations are often poorly managed. Many of the worst problems of mismanagement come from the smaller hospitals that are staffed only by newly graduated physicians with no back-up.

Regional and municipal hospitals have no facilities or personnel for psychiatric patients. When acutely psychotic patients are hospitalized, they are placed in the medical wards with other patients. Hospital workers and physicians, with little training in psychiatric illness, are often reluctant to deal with them. The outpatient-based mental health workers (psychologists and social workers) make daily rounds and medicate these patients, but control methods are poor, so that such patients are sometimes tied to their beds or roam freely about the premises. In contrast, the national psychiatric referral hospital in Managua has succeeded in lowering its formerly overwhelming patient census by opening day treatment centers around the city and helping families to care at night for patients who are family members. This program will be applied nationally as soon as resources permit.[14]

Numerous factors contribute to the occurrence of clinical disasters. Medical training is spotty, because of limited resources. Medical students often have access only to outdated texts; many of their clinical teachers are social service doctors just out of internship and assigned to the medical schools. Basic skills in history–taking and physical examinations are limited. Experience with laboratory procedures is minimal so that many physicians regard any laboratory result as gospel, no matter how inconsistent it is with the clinical picture. Moreover, laboratory results are often unreliable and such basic tests as blood typing, hematocrit, and pregnancy testing are often unobtainable because of lack of reagents or equipment. Only a few clinical chemistries are available; bacteriology is limited to staining, serology to VDRL. Pap smears and biopsies require two to four months turnaround time (only León and Managua have pathologists) and, even so, approximately 25–30 per cent of the requests are never returned.

Other components of hospital care contribute to suboptimal results. Nurses and nursing aides, with little training in physical diagnosis, sometimes fail to recognize the ward patient who is deteriorating or developing complications. Vital signs are frequently done casually, and accurate fluid balance records are very hard to obtain.

The referral hospitals in Managua and León have somewhat more resources than the regional facilities, but intensive care units lack functioning monitors, blood gases are usually unobtainable because reagents are lacking, and diagnostic imaging capabilities include only basic x-ray and "sometimes-available" ultrasound. Chemotherapy or radiotherapy for cancer is limited, and no oral narcotics are available for terminal patients. Some medical problems can be diagnosed and treated only in other countries. Although Cuba and some European countries accept such patients, the process of referral is complicated, bureaucratic, and out of the reach of most patients.

The problems, errors, and shortcomings that affect medical care in Nicaragua are serious. Misdiagnosis and mismanagement are a significant cause of current morbidity and even mortality. Nevertheless, there is no question that most people have benefited enormously by the free medical care that is now available to all. The occasional dramatic failures are countered by the common unspectacular successes.

Linkage with the Preventive Sector

The outpatient health facilities should be a key link between curative and preventive health services because they provide both types of service, especially in the area of maternal and child health. Child nutrition has received special focus, and the health posts and centers seek to identify malnourished children, educate the mothers in such cases, and enlist them in special programs to receive supplementary food grants. For sheer lack of resources and trained personnel, especially health educators and social workers, results are uneven and it is not uncommon to see the same malnourished child return many times to the clinic or hospital. Clinic nurses, auxiliaries, and physicians have not been prepared for the preventive and educational aspects of health care; moreover, they are overwhelmed by other tasks. As an example, while oral contraceptives and IUDs (intrauterine devices) are dispensed, women learn little about their bodies and physiology or about the contraceptive methods they are given. In other programs, such as prevention of cervical cancer (the leading cancer in Nicaraguan women), the delays and frequent loss of Pap smear results minimize effectiveness.

There is no link between hospitals and preventive care. Part of the problem is lack of a standardized referral system. Patients often leave the hospital with little understanding of what happened to them during their stay. They receive brief written summaries (often just the discharge diagnosis) and are told to get follow-up care in the health post or center. Minimal patient education is done by hospital personnel, and there are no educators working in the hospital comparable to those working in the community where specially trained volunteers ("brigadistas") have been an important strategy of the Ministry of Health.[3–5] Social services are understaffed, making it difficult to obtain home evaluations for children with frequent hospital admissions for diarrhea and malnutrition.

One positive area is the promotion of breastfeeding. This was one of the first health priorities after the revolution, and postpartum women are given all available aid and encouragement to help them establish lactation, even when their babies are temporarily unable to nurse. Rooming-in was established in maternity wards in the early post-revolution years and the promotional distribution and advertising of commercial infant formulas were banned. Little data are available to support the general impression that more women are breastfeeding, however. Results of the few existing studies suggest that many women revert to bottle-feeding within the first four months.[15,16]

Discussion and Conclusions

Nicaragua, in the nine years since the Sandinista revolution, has developed a medical system that is physically and

financially accessible, offers care that is very uneven in quality, is generally adequate for most common problems, and is suboptimally coordinated with preventive health efforts. Such conclusions, however, must be viewed in a larger framework. It is vital to compare the present situation with pre-revolutionary conditions and with health care in the rest of Latin America to appreciate the achievements as well as understand the problems.

The present system is an immense improvement for the great majority of Nicaraguans, who previously had limited or no access to health care. Quality of care has probably decreased for those with wealth, but even in the Somoza epoch the wealthy (including the Somozas themselves) were quick to seek medical care outside Nicaragua when faced with serious illness.

Other Latin American countries have far more sophisticated medical capabilities than Nicaragua but, except for Cuba and Costa Rica, there is no other country that has managed to offer free curative health services throughout the country that reach even the most rural areas. The usual pattern is that physicians cluster in the cities and that services are often limited by access or the ability to pay.

Nicaragua in the 1970s was among the poorest of Latin American nations. Since the revolution, up to 10.9 per cent of the national budget has gone for health care,[10] but the poverty of the country continues to limit efforts to upgrade medical care. Phone communication is extremely difficult or impossible, paper is scarce, transportation is overcrowded, funds for equipment and maintenance are limited, and the situation is exacerbated by war.

Beyond the material deficits are the cognitive and psychological consequences of underdevelopment. Illiteracy was reduced from over 50 per cent to less than 13 per cent soon after the revolution,[1] but many people have only rudimentary reading and writing skills. Fatalism and inertia based on past experience must be overcome; long-established but questionable hospital routines require change and patients with chronic disease must be convinced to continue therapy.

The American economic embargo imposed on Nicaragua in 1985 by President Ronald Reagan has had major effects on the health care system. Prior to the embargo, most medicine and medical equipment imported into Nicaragua was American. Although the embargo supposedly excludes medical material, in practice most American companies and shippers are no longer supplying Nicaragua. The consequences are readily visible: Kodak x-ray film processors stalled for lack of chemicals, blood-gas machines inactivated by lack of parts, American microscopes unusable without replacement bulbs. Moreover, the costs of the economic sanctions to the Nicaraguan economy have meant less funds available for health.

The effects of the contra war on the health care system include the intentional destruction of facilities and deliberate killing of health personnel.[2,11,17–19] The war has also diverted resources destined for health care, displaced large numbers of people, and disrupted health services in the northern areas of the country.[2,11,20] In Estelí, I attended women arriving from war zones with complications of high-risk pregnancies who had been unable to obtain ongoing prenatal care for their underlying diabetes, renal insufficiency, or hypertension because the health facilities in their area had been destroyed or travel was dangerous because of contra mining of roads.[21] Estelí itself had been scheduled for construction of a new hospital in 1986; the site had already been prepared but the costs of the war forced cancellation of the project.

Even without the war, improving curative health care in Nicaragua would have been more difficult than developing the public health sector. The minimal existence of a public health system in Somoza's time allowed the new government to build a new one almost from scratch, whereas it was necessary to contend with an already entrenched medical care system and hierarchy when planning and implementing new ways of delivering medical care. In addition, curative services require a much greater investment in training and technology than preventive services, so advances are necessarily slower.

Nicaraguan health officials, cognizant of all the above mentioned problems, continue to apply new approaches to better the system, especially to improve clinical training and continuity of care.[22] The internship year, previously spent entirely in the hospital, was recently changed to add a 10-week block of training in a health center because internship is followed for most graduates by two years obligatory service in outpatient facilities. Health centers in Managua are now being kept open 24 hours a day to relieve the burden on hospital emergency rooms. Standardized forms have been introduced to summarize the obstetric history and outcome of parturient women and to specify and record vaccination schedules for their infants; these forms are distributed to women after delivery. In Estelí, a government-sponsored Center for Natural Childbirth offers free prenatal classes preparing women and their partners with Lamaze and other instruction for a better birthing experience. It has been so successful that similar centers will be opened around the country. Also in Estelí, a "Rescue of Popular Medicine Project" has involved the systematic classification and evaluation of herbal medicines and other natural remedies to determine whether they are effective enough to replace imported pharmaceuticals, thus saving precious foreign exchange. This project also is being expanded to other regions. A carefully constructed National Medical Formulary of less than 500 agents was instituted in 1985 to foster more rational and economic distribution and utilization of conventional pharmaceuticals at different levels of the health care system.

Perhaps the most important development is a new residency training program in "medicina integral." Health planners were concerned that too many specialists were being trained and that three-fourths of all practicing physicians were hospital-based, with excessive concentration in the most urbanized regions (León and Managua).[23] In response, they developed a three-year program that borrows heavily from Western family practice concepts but also includes emphasis on public health and administrative training. The residency training will aim at producing physicians with broad skills who can manage the municipal and regional hospitals and the larger health centers as well as staff isolated rural facilities. These physicians will be trained in the management of common problems, including surgical procedures such as cesarean sections and appendectomies, but they will also be able to recognize, stabilize, and refer more complex conditions, including acute psychiatric illness. The curriculum begins with an intensive block designed to improve skills in history–taking, physical examination, laboratory utilization, and appropriate medication prescribing. The long-range plan is to make these new "médicos integrales" the cornerstone of the system, thereby improving the distribution and continuity of care.

On a personal level, doing medical work in Nicaragua is

deeply gratifying despite the limitations and frustrations. Socioeconomic status is not a consideration in treating patients, nor is there any subtle prejudice against the poor. There is remarkable patience in the face of constant inconvenience and hardship. A democracy of scarcity prevails: patients of all walks of life are together on the wards, while hospital personnel share all facilities equally, including meals in the same dining hall. Young physicians are eager for teaching and support. In general, there is a sense of unity and common purpose among health workers and patients that helps everyone tolerate the difficult conditions.

Improving curative health care in third world countries has received much less attention in recent years than improving public health. Still, the need for medical care will always exist, and the availability and adequacy of such care is highly visible to the general population, which may influence public confidence and participation in preventive efforts. New strategies are necessary for developing nations seeking to create, with limited resources, health care delivery systems truly responsive to national needs. Despite the obstacles of poverty and war, Nicaragua has made considerable progress in this area. For a poor person in need of medical care, Nicaragua today is a much better place than eight years ago and better for such a person than a great many other Latin American countries.

ACKNOWLEDGMENTS

The author gratefully acknowledges inspiration and advice received from Richard Garfield, RN, MPH, DrPH, editorial assistance from John Midtling, MD and Paul Barnett, BS, and unstinting support from Pablo Romero, MD and the physicians and staff of the Santa Lucía Medical Group, Salinas, California. I am also grateful to the many friends and colleagues who provided funds and materials to help support my work in Nicaragua.

REFERENCES

1. Halperin D, Garfield RM: Developments in health care in Nicaragua. N Eng J Med 1982; 307:388–392.
2. Braveman P, Siegel D: Nicaragua: A health system developing under conditions of war. Int J Health Serv 1987; 17:169–178.
3. Braveman P: Primary health care takes root in Nicaragua. World Health Forum 1985; 6:369–372.
4. Donahue JM: The politics of health care in Nicaragua before and after the revolution. Human Organiz 1983; 42:264–272.
5. Garfield RM, Taboada E: Health services reforms in revolutionary Nicaragua. Am J Public Health 1984; 74:1138–1144.
6. Boletín Estadístico Número 3: Población, Recursos, Actividades (Serie Histórica 1974–78). Managua, Nicaragua: División de Planificación, Oficina de Información y Estadística, Ministerio de Salud, June 1981.
7. Facultad de Ciencias Médicas, Universidad Nacional Autónoma de Nicaragua-León: El estudio trabajo, una experiencia de integración docenciaservicio en la formación de médicos en Nicaragua. *In:* Memorias de Seminario de Integración de la Investigación y Docencia a Modelos de Atención Primaria en América Latina. Guadalajara, Mexico: Universidad de Guadalajara/Universidad Autónoma Metropolitana-Xochimilco, 1984; 53–69.
8. Nececidades Prioritarias de Salud en Centroamérica y Panamá: Nicaragua. Report prepared by the Ministry of Health of Nicaragua with collaboration of the Pan American Health Organization. Presented to Contradora, Madrid, November 1985.
9. Braveman P, Roemer MI: Health personnel training in the Nicaraguan health system. Int J Health Serv 1985; 15(4):699–705.
10. Informe General para el Plan de Salud 1988–1990. Managua, Nicaragua: División de Estadística, Ministerio de Salud, 1988.
11. Garfield RM, Frieden T, Vermund S: Health-related outcomes of war in Nicaragua. Am J Public Health 1987; 77:615–618.
12. Plan de Salud 1988–1990. Managua, Nicaragua: Ministerio de Salud, 1988; 10.
13. Donahue JM: The Nicaraguan Revolution in Health. South Hadley: Bergin & Garvey, 1986.
14. Envio: Salud Mental—Atrás quedó el pasado. May 1987; (71) 13–23.
15. Efecto del acercamiento temprano madre-infante sobre la incidencia y duración de la lactancia materna. Managua, Nicaragua: Area Materno-Infantil, División Nacional de Atención Médica, Ministerio de Salud, May 1983.
16. Ellsberg MC, Shirley RA: Factores que inciden en el inicio y duración de la lactancia materna. Bluefields, Nicaragua: Ministry of Health, June 1986.
17. Siegel D, Baron R, Epstein P: The epidemiology of aggression: Health consequences of war in Nicaragua. Lancet 1985; 1:1492–1493.
18. Garfield RM: Health and the war against Nicaragua: 1981–1984. J Public Health Policy 1985; 6:116–131.
19. Garfield RM, Rodriguez P: Health and health services in Central America. JAMA 1985; 254:936–943.
20. The cost of US aggression. Dirección de Información y Prensa de la Presidencia de la República de Nicaragua, Managua, March 15, 1985.
21. Kinzer S: Landmines in Nicaragua cause rising casualties. New York Times, July 19, 1986; A5.
22. Braveman P, Mora F: Training physicians for community-oriented primary care in Latin America: Model programs in Mexico, Nicaragua, and Costa Rica. (commentary) Am J Public Health 1987; 77:485–490.
23. Curriculum General y Plan de Estudios de la Residencia de Medicina Integral. Docencia Superior, Ministerio de Salud, Managua, Nicaragua, 1987.

New Journal Launched: *AIDS Education and Prevention*

The first issue of the official journal of the International Society for AIDS Education was recently released by Guilford Publications, Inc. Entitled *Aids Education and Prevention,* this interdisciplinary journal is committed to providing professionals with the state-of-the-art information they need. It will publish high-caliber contributions that highlight existing and theoretical models of AIDS education and prevention, including their development, implementation, and evaluation.

The journal will address the distinct problems of various populations under the threat of AIDS. Also, the journal will cover various public health, psychosocial, ethical, and public policy issues related to AIDS education and prevention. Regular features will include scientific research, reports from the field, critical reviews of major problem areas, reports from meetings, book and video reviews, and a community bulletin board listing conferences, seminars, and meetings.

Price per volume of the quarterly journal is $30 (individuals and nonprofit AIDS service organizations); $60 (institutions). The publisher, Guilford Press, is at 72 Spring Street, New York, NY 10012. The editor, Francisco S. Sy, MD, DrPH, is Associate Professor of Epidemiology, School of Public Health, University of South Carolina, CARE Project, Columbia, SC 29208. Tel: (803) 777-2273.