A Report on Health Care in Nicaragua

Robert Drickey, MD, Daisy Gin, RN, and Jonathan Rapp, MD
San Francisco, California

DR. DONALD FINK (*Chairman, Division of Family and Community Medicine*): Today's Grand Rounds is a report from the third annual US–Nicaragua Colloquium on Health held in November 1985 in Managua. Three members of our family practice program attended, along with a number of other people from the medical center and from other parts of the country. The presenters are Robert Drickey, who is Medical Director of the Family Health Center and Assistant Professor of Family Medicine, Jon Rapp, who is a family practice resident, and Daisy Gin, the charge nurse of the Refugee Clinic in the Family Health Center. Ms. Gin will begin the discussion.

DAISY GIN (*Charge Nurse, Refugee Clinic*): In November 1985, 120 North American health workers, including 20 Canadians and 100 US citizens visited Nicaragua to participate in the Third North American–Nicaraguan Colloquium on Health. The colloquium was a joint effort of the Nicaraguan Ministry of Health, the Health Workers Union, Physicians Association, and (in the United States) the National Central American Health Rights Network. The theme of the colloquium was "united in science, we struggle for peace." The conference was endorsed by the Pan American Health Organization and the American Public Health Association. Continuing education credits for physicians and nurses were offered by the University of California at San Francisco. Our purpose in participating in the conference was to exchange knowledge and experience with our Nicaraguan counterparts. We examined the accomplishments and problems of the Nicaraguan health care system six years after the Sandinista revolution. Our visit included tours of hospitals, neighborhood clinics, rehabilitation and psychiatric facilities, day care centers, and women's associations. We attended scientific presentations by Nicaraguan health professionals that included a wide range of topics from the medical complications of illegal abortions to cardiovascular research. Many of the North American health professionals provided technical assistance in the form of lectures and workshops with their Nicaraguan counterparts.

A $100,000 donation of badly needed medical supplies was presented to offset partially the effects of the US economic embargo of Nicaragua. This embargo has affected health care by preventing the purchase of spare parts for medical equipment and the purchase of medications.

Many members of the North American delegation formed a task force to investigate the health consequences of the Contra or counterrevolutionary war in Nicaragua. The investigation included interviews with representatives of the International Red Cross, the Pan American Health Organization, North American health professionals working in Nicaragua, and members of the Nicaraguan Ministry of Health. We visited health facilities that were targeted by Contra activity to survey the physical damage and to ascertain the impact on health care services. We interviewed survivors and witnesses of the attacks.

Nicaragua is the largest of the Central American countries. It is bordered by Honduras and El Salvador to the north and Costa Rica to the south. It has a geographic area approximately equal to that of the state of Iowa. Its three million inhabitants are nearly equally divided between rural and urban areas.

Nicaragua is a very poor country. The average monthly income is equal to approximately $50 US. The population is racially diverse: approximately 70 percent are of mixed Hispanic and Indian ancestry, 9 percent are black, 17 percent are of European descent, and 4 percent are Indian and others. Nicaraguans are young, with approximately 50 percent under the age of 16 years. Spanish is spoken predominantly on the Pacific Coast, where there is a history of Spanish colonization. The Atlantic Coast has a history of English and Dutch colonization and a black slave settlement. English is spoken more than Spanish on the Atlantic Coast, along with indigenous dialects.

Nicaragua's economy depends heavily on agriculture and the export of coffee, sugar, cotton, and beef. The economy includes publicly owned enterprises such as farm collectives. Seventy percent of agriculture and 60 percent of industrial facilities are privately owned, however.

While in Nicaragua we learned of significant advances since the revolution in the provision of health care services.

Submitted, revised, January 5, 1987.

From the Division of Family and Community Medicine, University of California, San Francisco, California. Requests for reprints should be addressed to Dr. Robert Drickey, Family Health Center, San Francisco General Hospital, 1001 Potrero Avenue, San Francisco, CA 94110.

We also learned of the enormous difficulties faced after decades of poverty, repression, and a war, which left a devastated economy, 50,000 dead, and thousands more wounded.

DR. JONATHAN RAPP (*Family Practice Resident*): I will talk about the health care delivery system that exists in Nicaragua now and compare it with the system that existed before the Sandinista revolution in 1979. I will also present some statistics reflecting the health of the Nicaraguan people under the two systems.

In Nicaragua before 1979 there were 19 separate state or provincial agencies concerned with the delivery of health care. There were also four national health care delivery agencies. Each of these 23 agencies operated essentially independently. Although attempts to integrate them and to create a better organized health care delivery system were initiated, because of vested interests within these agencies and because of corruption, five-year plans and attempts at integration within the health care system were largely failures. At that time Nicaragua had the lowest life expectancy in the region, 52.9 years for women, and among the highest infant mortality rates, 121 for every 1,000 live births.[1]

The major governmental agency offering health care was the Social Security Institute. Although this institute received more than 50 percent of the national health care budget, it served only about 8 percent of the population. In contrast, the Ministry of Health had sole responsibility for rural care, yet it received 16 percent of the national health care budget, 75 percent of which was spent in Managua, the capital city. Thus, there was tremendous regional maldistribution in the delivery of health care. Only about 28 percent of the people in the country had access to health care services other than that offered by folk healers.[1] Sixty percent of national human and material health care resources were concentrated in Managua.[2] According to Instituto de Nutricion de Centro America y Panama, 68 percent of the children in the nation were malnourished. Potable water was available in only eight of the 19 states, and 53 percent of the population was illiterate.

The war during the revolution had a devastating effect on this already inadequate infrastructure. Clinics, hospitals, and whole neighborhoods were destroyed during the war. Many physicians, particularly those with advanced training, left the country. Somoza left the nation practically bankrupt. There was about $3 million US money—about $1 per person—in the national treasury at the end of the war.

That was the situation faced by the Sandinistas in July 1979. There have been significant advances since then. MINSA, the Ministry of Health, established a national unified health system within one month after the 1979 revolution.[3] All the health care and medications that are

Continued on page 352

Continued from page 350

provided by the system are free to the consumer. This national unified health system, which is partially subsidized by what was formerly the National Social Security System, can be described as a stepped-care referral system with an emphasis on primary and preventive care at its base.

There are four levels of health care facilities: health posts, health centers, regional hospitals, and referral hospitals in Managua. The base of the system is the health post, which often is a room in a house staffed by one or two health personnel, a physician, a nurse or other health worker. There are 330 health posts in the country now. The goal is to establish 400 health posts. These provide the first line of health care delivery.

The second level is the health center, or the Centro de Salud. Currently there are about 105 health centers in the nation. Generally the health centers are medium-sized clinics with several nurses, physicians, and auxiliary personnel. Often open 24 hours a day, they serve as a referral center for the health posts when patients require more advanced care. It is at the level of the health posts and health centers where most services are offered. These services are primarily those that were formally given priority by the Ministry of Health.

One priority is immunizations. Tuberculosis (BCG), diphtheria, pertussis, tetanus, measles, and polio vaccinations are given to all children. Dental care, including both curative and preventive care, is a second priority. A third priority program is environmental sanitation, primarily aimed at pest control and clean water. Prenatal and postnatal care are also priorities; in these programs breast feeding and family planning are emphasized. Pediatrics, including developmental assessment, newborn classes and care, and special programs directed toward the care of malnourished children, is yet another priority.

Other work is also carried out at the health centers and posts oriented specifically toward major public health threats, especially infectious diseases. An example is the fight against infant diarrhea, involving clean water campaigns, environmental sanitation, and oral rehydration. Another special program is tuberculosis detection and control. Patients have sputum smear examinations and are treated at the health centers. X-ray examinations are obtained when needed, and patients' families are aggressively sought out, tested, and treated as indicated. Vaccination against tuberculosis is a universal goal.

Another special program is directed toward malaria detection and control. Adults with febrile illnesses that suggest the possibility of malaria routinely have blood smears done and are treated when appropriate.

One other unusual program involves utilizing some of the indigenous health resources in Nicaragua. In particular, attempts are made to integrate local midwives into the health system through classes at the health centers offered by physicians and nurses. Attempts are made to learn about and utilize folk remedies.

At the third tier of the integrated health system are the regional hospitals. There are about 30 regional hospitals in Nicaragua that serve as secondary level referral centers for the health posts and health centers. Any patient who requires hospitalization for specialty care is referred to the fourth tier of the integrated health system, the referral hospitals in Managua. Most of the referral hospitals have polyclinics with specialists attached to them for patients who require outpatient specialist care.

It is important to note that in the context of this national unified system, private sector health care is also encouraged in Nicaragua. Many physicians, in addition to providing health care services within the public sector, have a private office as well. The Minister of Health discussed this with colloquium participants and said, "Private care plays a perfectly good social role." This is the typical approach in Nicaragua toward private sector economic activity: if it plays a beneficial social role, it is encouraged.

Within the administrative structure of the four levels and within the private sector, the health care priorities previously discussed are carried out. The priorities are based on low technology; they are oriented toward preventive care and primary care, and they address the most pressing needs of the people.

The Ministry of Health has attempted to equalize the regional distribution of health care in a number of ways. First, funds available for hospitals have been decreased so that relatively more is available for primary care. Second, the number of health care personnel and their distribution has been changed through planning. Statistics are available regarding the number of hospital admissions, the number of outpatient visits, and the number of physicians and nurses per capita in different regions. Resources remain unequally distributed but are much less so than before the revolution. The construction of new health centers and new hospitals will be mainly in rural areas that are underserved. Physicians are now required to provide two years of social service, mainly in rural areas, after they graduate from medical school. Some vital statistics and reportable diseases from 1978, the last year before the revolution, were compared with 1984, the last year for which full statistics are available (Table 1). It is apparent from this comparison that the reorganization and reprioritization described above have had beneficial effects on health delivery and health status.

DR. ROBERT DRICKEY (*Assistant Professor, Family and Community Medicine*): I was able to visit the medical school in Managua on several occasions during my stay in Nicaragua. I will speak of changes in medical education in postrevolutionary Nicaragua. Before the revolution health care was oriented basically around the urban hospital and medical specialties, although there were no residency programs in Nicaragua. Most Nicaraguan physi-

cians received postgraduate training outside the country, and many stayed outside the country. After the revolution, the immediate goal was to train more physicians. The medical school class was expanded from 140 to 600. Previously there had been a long-established medical school in Leon, about 60 miles northwest of Managua. After the revolution, a new campus of the medical school was opened in Managua. There are about 300 students at each campus.

At the medical school in Managua, there are few microscopes and few books. They have some audiovisual equipment and some copying equipment, so the basic science teaching takes place by lecture, handouts, and shared microscopes.

Besides training more physicians, another postrevolutionary goal is to train generalist physicians, that is, physicians who could immediately after completion of medical school go into their two years of social service to rural areas and be good general physicians.

One of the major innovations in medical education in Nicaragua is called the Work-Study Program.[4] During the first through the fifth years of medical school, the students spend one or two half-days each week working in various communities, factories, and health centers. In addition, they participate in the annual harvest of coffee, cotton, and sugar. During the month of harvesting and living on the farms with the *campesinos,* students become familiar with the health education, immunization, and basic health services available to the population.

The friendships that develop with community members help to minimize the cultural and educational barriers that often impede primary health care projects. Similar communication develops through ongoing work in factories and poorer communities. Students conduct health assessment surveys and work with community workers in local health centers to carry out programs in hygiene, health education, and patient care. Nicaragua plans to devote more resources to the Work-Study Program in the next few years.

The Nicaraguan health care system is still specialty oriented. They have developed 16 residency programs in various specialties. Medical school graduates provide two years of social service before they are able to enter into a specialty residency program. Recently the Ministry of Health and the medical schools have begun to consider the possibility of establishing a family practice residency program.

MS. GIN: We left Nicaragua impressed with the advances in health care, including the right of all people to access to health care, the focus on eliminating causes of major health problems by applying preventive measures, and the curtailment of high death rates for infectious diseases and malnutrition.

It is disturbing, however, that health workers and health facilities in Nicaragua are targeted for attacks by Contras.

TABLE 1. COMPARATIVE HEALTH STATISTICS FOR NICARAGUA FOR 1978 AND 1984–1985

	1978	1984
Life expectancy	52.9 yr	56.7 yr
Mortality	16.4/10,000	9.7/10,000
Infant mortality	121/1,000	71/1,000
Cases of infectious diseases	1980	1984
Polio	21	0 (none since 1982)
Measles	3,784	153
Diphtheria	2,469	60
Malaria	25,456	15,702
Health care delivery	1978	1985
Physician visits per person	1.0	1.9
Prenatal care	23%	92%
Pediatric care (6 yr)	unknown	51%
Oral rehydration in pediatric diarrhea	unknown	51%
Medical and nutritional care in pediatric malnutrition	5%	47%
Lactating mothers cared for	5%	44%

This is in direct violation of the Geneva Convention and other international agreements relating to medical neutrality. The health care system is especially targeted because it is a reflection of the success of the Sandinista government in providing for the needs of the people. The successes are well known internationally. The health care system serves as a stabilizing force in the country.

The Contra war has adverse effects on the health of the people in three broad categories: biological, economic, and psychological. Among the biological effects, as of October 1, 1985, 3,652 civilians have been killed by Contras. Mothers and children comprise 10 percent of that figure. Among the 4,039 civilians who have been wounded, there are many amputees. More than 5,200 civilians have been kidnapped or disappeared. There are 7,582 orphans in Nicaragua today. In the military, 7,599 Nicaraguans have been killed. There are no accurate figures to date on the number wounded. The Contras operate mainly by terrorizing the rural population with attacks and ambushes on small towns.

Thirty-eight of the civilian deaths have been salaried health workers. Eleven other health workers have been wounded and 28 have been kidnapped. All of these attacks occurred while the health workers were involved in providing health services. Sixty-one health facilities have been completely or partially destroyed since 1981. Thirty-seven others have been closed because of Contra activity.

These attacks have had a major impact on the availability of health services in Nicaragua. Approximately 5,200 Nicaraguan health workers have left their usual jobs to provide health services in combat zones. Vaccinations,

continued on page 356

continued from page 353

sanitation, nutrition, and other public health and preventive programs have been curtailed because of threats to the safety of health workers.

The war has severely affected both the general Nicaraguan economy and the economy of the health sector in particular. Because of interference with international loans, the US economic embargo, and attacks by the Contras on its economic infrastructure, Nicaragua must now spend 40 percent of its budget on defense. As a result, Nicaragua's ability to import medicines and medical supplies, build new health facilities, and repair those damaged in the war has been drastically limited.

Although the psychological effects of war are difficult to quantify, most Nicaraguans have been adversely affected emotionally during four years of Contra attacks and the increased militarization of their society. Many have been forced to cope and adjust to the ongoing stresses of war. Psychologists, psychiatrists, administrators, and other clinical staff of Nicaraguan medical facilities spoke of substantial increases in the utilization of outpatient psychiatric services in the past three years as the war has intensified. A broad range of psychological problems have been noted, including nervousness, psychosomatic complaints, tension, anxiety, and depression. Most profoundly affected are those who have lost family members in combat. Mothers with sons and daughters fighting in the war have also shown significant increases in anxiety and depression. Children have become preoccupied with issues of war and peace. Many of the 7,582 children who have been orphaned by the war are at considerable psychological risk. Nearly all Nicaraguans have close contact through family or friends with combatants and loss of life.

In summary, the current war is having devastating biological, economic, and psychological effects on the Nicaraguan people. We saw the direct results of the war during our visit.

DR. DRICKEY: Today, we have reported on our participation in the third annual US–Nicaragua Colloquium on Health. In addition, we have described health conditions and health services in prerevolutionary and postrevolutionary Nicaragua. Finally, we have briefly described some of the effects of the Contra war in Nicaragua. We urge each of you to continue to stay informed about what is happening in Nicaragua. One of the best ways to become informed is to visit Nicaragua for yourself. We urge you to attend a future US–Nicaragua Colloquium on Health.

References

1. Halperin D, Garfield R: Developments in health care in Nicaragua. N Engl J Med 1982; 307:388–392
2. Strelnick H: The Sandinista revolution in health. Health PAC Bull 1984; 13-14:7–21
3. Sandinista National Liberation Front. The historic program of the FSLN. In Rosset P Vandermeer J (eds): The Nicaraguan Reader: Documents of a Revolution Under Fire. New York, Grove Press, 1983
4. Smith M, Drickey R: Education for primary health care: A report on the US–Nicaragua Colloquia on Health. Mobius 1985; 5(3):135–140