New Family Practice Residency Programs in Nicaragua and Costa Rica

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Family medicine, which arose in the United States in the 1970s as a response to the increased specialization, fragmentation, and depersonalization of medical care in a society of affluence, has been germinating recently in the very different environment of Latin America. By the beginning of this decade, family practice residencies were well established in Mexico and were being initiated or studied in eight other Latin American nations, including countries as diverse as Brazil and Bolivia.[1] Cuba introduced family medicine several years later.[2,3] In February of 1987, family practice residency programs were inaugurated in Nicaragua and Costa Rica, countries profoundly different from each other in their political, economic, and health circumstances.

Various factors have been identified to explain the growing appeal of family medicine in Latin America. One attraction was the relative cost effectiveness of training primary care physicians who are able to diagnose and treat the great majority of presenting problems, in contrast to the current prevalence of minimally trained general practitioners (*médicos generales*), who merely refer large numbers of patients to expensive, hospital-based specialists (in Latin America, any physician completing residency training is termed a specialist: internist, pediatrician, etc).[4] Increasing interest throughout Latin America in the concept of community-oriented primary care, which views the patient within the context of his or her community and emphasizes broad epidemiologic and social factors and multidisciplinary approaches to assess and treat the needs of the patient-community entity, also produced a more receptive climate for family medicine.[5] In addition, family medicine was seen as a way to improve health care delivery to the very large underserved population.[6]

It is instructive to examine the origins and nature of the new family practice residency programs in Nicaragua and Costa Rica. Such a review can offer insights into the potential and problems of introducing family medicine in the varied situations of developing nations.

NICARAGUA

A severe shortage of specialists along with an overwhelming demand for basic health care in the face of limited and even diminishing resources was the setting that spawned family practice in Nicaragua. Before the Sandinista revolution of 1979, Nicaragua was one of the poorest countries in Latin America, and its health statistics were among the worst in Central America.[7–10] Within three weeks of the Sandinista victory, a unified national health system was created, and free health care was offered to all Nicaraguans in public facilities.[11,12] Health expenditures as a percentage of the national budget were increased over several years from the prerevolution figure of less than 6 percent to almost 11 percent.[10,13,14] Special emphasis was placed on public and preventive health, with campaigns ranging from malaria control and mass polio vaccination to the development of a nationwide network of oral rehydration units, where sick babies could be evaluated and given oral fluid resuscitation or else referred to hospitals when necessary.[7–10]

Such programs, as well as increased access to curative medical services, helped Nicaragua reduce its infant mortality rate from 121 per 1000 to 76 per 1000 live births between 1977 and 1983[11,15] and subsequently to 64.5 per 1000 live births by 1986,[16] reduce diarrhea-dehydration from the first- to the fourth-ranking cause of pediatric hospital-reported mortality,[9,17] and completely eliminate polio by 1982.[15] Health advances attained in the early postrevolution years have slowed or reversed during the contra war. Causative factors include the destruction of health care facilities, killing of health workers, diversion of economic resources, displacement of large numbers of people, and disruption of health services in northern Nicaragua.[11,15,18–20]

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Despite the gains, health planners in Nicaragua are still faced with the typical disease profile and health needs of a poor country with the additional handicap of an economy and society drained by prolonged war. The postrevolution exodus of physicians, especially specialists, has been a major problem.[9] To counteract this exodus, postgraduate residency training was established in 16 medical specialties by 1984 along with masters degree programs in epidemiology and public health and hygiene (before the revolution, no postgraduate training was available in Nicaragua).[13,21]

Hospital physicians, particularly specialists, are still lacking; in 1986 more than 50 percent of the hospital physicians in Region I (Estelí)—one of the six major administrative regions of Nicaragua and located in the war zone near Honduras—were international volunteers, the majority from Cuba but including physicians from Western Europe, Canada, the United States, and many Latin American countries (E. Sanchez, Director of Planning, Region I Ministry of Health, Estelí, Nicaragua, personal communication, August 30, 1986). In 1987, 103 of the 637 specialists in Nicaragua were foreign volunteers, nearly one half from Cuba (E. Morati, Director of Statistics, Ministry of Health, Managua, Nicaragua, personal communication, July 27, 1988).

Officials in the Nicaraguan Ministry of Health spent over one year examining various models of family practice, focusing especially on the experience of other Latin American countries that had initiated this specialty and also studying the evolution and teaching of the discipline in the United States. Officials from the Pan American Health Organization were consulted, and family physicians from the United States, either working in Nicaragua or visiting at intervals, participated in the planning process. Also, physicians from the German Democratic Republic (East Germany), which maintains a large hospital in Managua, played a central role; a form of family medicine has been part of their medical system for several decades.

The first class of residents included three women and two men. All had completed the two years of social service required after internship in Nicaragua, and most had acquired additional primary care experience. Selection criteria included evaluations of past performance and interviews. The residency is based in the East German hospital, with some rotations (especially obstetrics and neonatology) in Nicaraguan facilities. A major outpatient health center in Managua is being converted to a family practice clinic, with the residents assigned panels of families to provide a longitudinal experience in primary care. The East German physicians, along with some Nicaraguan physicians, are the primary preceptors of the residents, but physicians from the United States also function in this role.

Nicaraguan health officials decided to use the term *medicina integral* (integral medicine) rather than *medicina familiar* (family medicine) to describe their new specialty. In part, this decision was based on their desire to include significant training in epidemiology, scientific investigation, and administration as part of the residency. The new term also reflects the various roles the officials intend for the new *médicos integrales:* management of most common outpatient and inpatient medical problems to improve continuity of care and reduce the need for specialists, especially in regional and municipal hospitals and major health centers; administration of hospitals and major health centers; epidemiological investigation; and supervision and training of allied health workers. The overall goal is eventually to make the *médico integral* the cornerstone of the health system.[22]

The three-year curriculum reflects these goals as well as the desire of health officials to orient the medical training toward the most pressing national priorities. The residency opens with a four-week introductory block to upgrade basic skills in history taking, physical examination, and use of medication. Because one half the population of Nicaragua is younger than 16 years of age, maternal-infant care is a top priority, and obstetrics and gynecology and pediatrics are emphasized. Significant time is also allocated to psychiatry, especially the stabilization and long-term management of psychiatric patients, another priority because of the nationwide scarcity of psychiatrists, especially outside the leading cities of Managua and León. Surgical procedures such as cesarean section and appendectomy are taught, as are principles of emergency care and stabilization of traumatized and critically ill patients. Residents planning to work in remote areas will receive additional surgical training. Epidemiology and health administration are included. Residents are expected to do home and community visits for many of their family practice patients and produce health needs assessments at these different levels. A short research paper is required for each of the first two years, and a longer thesis must be presented at the termination of the program. In addition, the residents must pass periodic written examinations and be evaluated by their preceptors. In turn, the residents are required to critique each block and rotation.[22]

It has not been easy to put such a broad program into practice. The poverty of Nicaragua has been exacerbated by the enormous costs of the contra war. Medical resources are stretched very tight, and there is an overwhelming demand generated by the national commitment to free health care and the effects of the war.[11,15,20] The shortage of qualified, dedicated health professionals with administrative abilities has made it difficult to provide constant, focused leadership for the program. Top-level ministry people working with the program are burdened by numerous other responsibilities or are pulled away to

deal with other urgent problems. The nonexistence of family medicine in the country means that leadership is exercised by physicians of diverse backgrounds, ranging from public health and epidemiology to obstetrics and gynecology and pediatrics. Direction of the program has been increasingly entrusted to the East German physicians who manage the hospital where the residency is based.

The severe shortage of resources means the residents have few bibliographic materials and minimal medical technology at their disposal, making even more difficult the basic challenge of family practice residency: mastering in a limited time the essence of many disciplines of medicine. The international composition of the teaching faculty has posed problems, requiring the residents to learn from instructors (the East German physicians) who frequently require translators and come from a different cultural and medical reality. Differences between East German and Nicaraguan medical practice have been confusing for the residents. Despite these formidable obstacles, the program has been maintained on schedule. The second class has 11 residents, and plans call for expansion to 20 residents per year.

COSTA RICA

In Costa Rica, family practice arose in a country of limited economic resources with remarkable development of health services and a disease profile fairly similar to developed countries. The establishment of family practice is occurring, however, during a time of economic crisis that threatens the continued ability of their health system, heavily weighted toward specialist and hospital care, to continue to meet national needs. Health conditions in Costa Rica are strikingly different from Nicaragua. This unique nation, although economically still classified as a developing country, had attained by the early 1980s health indices comparable to those of developed countries and among the best in Latin America, equaled or surpassed only by Cuba.[23–25] Virtually universal health coverage (over 96 percent) was established by 1984. Infant mortality is 18.5 per 1000 live births, and the life expectancy of children born in 1984 is 73.5 years. Cardiovascular disorders, neoplasms, and accidents are the leading causes of mortality.[17,23,25]

These achievements reflect the social progress produced by several decades of social democratic policies and internal peace. Costa Rica constitutionally abolished its armed forces after a short civil war in 1948 and has invested heavily in social programs, especially since the early 1970s. Relevant indicators of such progress include a literacy rate of 92 percent,[25] four public universities in a nation of 2,400,000 inhabitants,[26] and potable water for 92 percent of the urban population and 70 percent of the rural population.[25]

Key components of the health improvements were the government's stated commitments, beginning in 1971, to expand health coverage to the entire population, to centralize and nationalize many health services, and to focus on primary care and preventive efforts as well as improved curative services.[24] The Caja Costarricense de Seguridad Social (Costa Rica's social security agency) was delegated responsibility for curative medical care, especially hospital services, while the Ministry of Health was assigned responsibility for public health, preventive medicine, and primary care, especially for those without access to the Caja system. The Caja was intended to be self-financing, with contributions coming from employees, employers, and the state, while the Ministry of Health relied heavily on international aid programs. Budgets were greatly expanded in both agencies, and hundreds of rural health posts were constructed, staffed by nurses and physicians and deploying specially trained health auxiliaries to offer outreach health education and preventive programs on a village and house-to-house level. At the same time, new regional and central clinics and hospitals were constructed.[23–25]

The Third World economic crisis of the early 1980s, provoked by falling prices for raw material exports and rising prices for petroleum and imported manufactured goods, as well as an ever-increasing debt load, has placed severe stress on the Costa Rican social democratic health model. With the government unable to fulfill its financial obligations to the social security system, large internal deficits were produced, and services were cut extensively. At the same time, national health needs were increasing dramatically because of the abrupt impoverishment of a significant portion of the population resulting from the national economic crisis and forced currency devaluations.[17,23–25] This problem was exacerbated by the fact that the government, during the preceding years of health care expansion, had emphasized the development of curative and hospital-based medical services.[23]

When Costa Rican health officials began to plan their family practice residency program, they focused, like their Nicaraguan counterparts, on the nature and evolution of family practice programs in other Latin American countries, especially Argentina, Mexico, Venezuela, and Panama. Advice from the International Center for Family Medicine, headed by Dr. Julio Ceitlin from Argentina, was especially important. Supplementary consultation was obtained from the Pan American Health Organization and from sources in the United States.

As established with the formation of the first class of residents in 1987, resident selection is based on a combination of written and oral examinations, evaluation of past performance and recommendations, and personal interviews. Physicians must have completed their required

two years of postinternship social service.[27] All members of the initial class of residents, four women and six men, have had additional primary care experience.

The residency is based both in hospitals and in health centers and community clinics. Hospital rotations in internal medicine, surgery, obstetrics and gynecology, and pediatrics occupy a major portion of the first two years, with formal didactic instruction given daily during the first year. In addition, the curriculum includes a four-week geriatrics rotation, including night call, in a geriatrics facility. There is also a psychiatry rotation, combining inpatient and outpatient experience, crisis call, and instruction in acute stabilization and chronic management of psychiatric disorders. A new health center is being developed exclusively as a family practice facility for the residency. Residents are assigned their first family practice patients halfway through the first year, and the number of families and patients they attend is increased steadily throughout the residency.

The entire third year is devoted to outpatient medicine, including family and community medicine and relevant medical specialties. Home and community visits and health assessments are an important part of this phase, and rural health issues are addressed. In addition, there is instruction in health administration, epidemiology, and public health. Residents are required to undertake an original clinical investigation and submit a written presentation during the third year (in each of the first two years shorter papers are required). Evaluation of resident performance includes periodic written examinations, faculty assessment of performance on each rotation, and grading of the papers and investigation.

The family physicians emerging from this program will be expected to function in outpatient settings, not hospitals. They will staff and supervise rural and urban clinics and health centers and may provide administrative as well as medical services. They will have their own patients and communities (either villages in rural areas or neighborhoods in urban areas), and will offer acute and ongoing individual care and define and meet community health needs. Only family physicians in remote areas will perform deliveries (physicians planning work in such areas receive additional obstetrics training during the residency); most family physicians will provide prenatal and postnatal care but will refer women in labor for in-hospital births attended by obstetricians (the country's small size, good roads, and reasonably accessible network of rural hospitals make this strategy more feasible in Costa Rica than in other developing countries). Surgical problems will also be referred, except for problems resolvable by minor surgery.

The basic goal of the residency is to create a large number of skilled primary care specialists who will diagnose and treat up to 90 percent of presenting problems and coordinate referral of patients with more complicated problems to other specialists. In this way it is hoped that the health system can function with fewer specialists and with lower costs. Further savings are expected from the family and community-based preventive efforts to be undertaken by the new family physicians.[27]

Initiating a family medicine residency has been much easier in Costa Rica than in Nicaragua because of the more developed health infrastructure and the absence of wartime stress. The major problem has been finding faculty and other physicians who can serve as role models for residents in a country in which family medicine is completely new. On the other hand, the program has had steady direction and leadership.

A recent decision to offer experienced general practitioners a special course of in-service training as an alternative pathway to certification in family medicine has been controversial. Family medicine residents worry that such "grandfathering" could dilute the new specialty and intensify the forthcoming challenge of gaining the confidence and respect of the established specialties. The deteriorating national economic situation and continuing health cutbacks will also pose problems for the residency and complicate the goal of program directors to obtain equal status and comparable compensation with other primary care specialists for their graduates.

COMMENT

That countries as different as Nicaragua and Costa Rica are seeking to improve their health care systems by making a major commitment to family medicine shows the great potential utility of this specialty for Third World nations, even ones with very different levels of development. Nicaragua is confronted by a health situation of unmet basic needs and a shortage of physicians with advanced training, with these problems being especially severe in the smaller cities and rural areas. A key goal of their program is to have their *médicos integrales* assume some of the functions of the traditional specialists. Costa Rica, having overcome many of the basic health problems confronting underdeveloped nations, faces problems similar to those of developed countries: the increasing prevalence of diseases that require expensive technology and facilities to treat and that are much cheaper to prevent, burgeoning numbers of specialists with fragmentation of health care, and soaring health costs at a time of diminishing resources. Thus, Costa Rican officials are especially attracted to the concept of the family physician as gatekeeper who is able to manage most problems and to refer only cases truly requiring the attention of a more limited specialist. In addition, both countries seek an expanded role for their new primary care specialists in the areas of public health and administration.

Problems common to both countries have arisen in the course of developing new residency programs. The most immediate concern has been the lack of family physician role models for the residents, as program leaders and faculty of necessity have been drawn from physicians of divergent backgrounds. There is also preoccupation with the eventual acceptance of the first graduates, both by the general public and the medical profession. Officials in both countries are anxious to have their graduates seen as qualified specialists and not glorified *médicos generales.* Part of the concern about appropriate prestige and economic compensation for the new graduates is a desire to keep them working in the public sector, especially in underserved areas. Both countries have mixed medical economies, and many physicians not only work in government facilities but also maintain private practices. There is some fear that the new family physicians might abandon the public sector to build more lucrative private practices among the upper social classes that can afford private medical services.

Most fundamental of all, for both countries, will be the challenge of producing enough family physicians to significantly affect health care delivery. Nicaragua, after the Sandinista victory, had initially sought to increase its supply of specialists; by 1987, according to the Ministry of Health, there were 1,672 postgraduate physicians for Nicaragua's 3,600,000 inhabitants,[16] and almost two thirds were specialists or in specialty training, with excessive specialist concentration in the most urbanized regions.[22] Specialists constitute 46 percent of the 3,469 physicians currently registered in Costa Rica, with similar concentration in the most urbanized areas (College of Physicians and Surgeons, San José, Costa Rica, personal communication, September 14, 1988). Both countries will need to accelerate markedly their output of family physicians, without compromising the quality of physician preparation and despite limited resources, if they are to succeed in establishing the specialty as a foundation block of their health care systems.

For developing countries, family medicine holds many potential benefits. There could be improved linkage of preventive and curative medicine, more cost-effective and better disseminated primary care, and improved health care administration, both at local and national levels. If countries like Nicaragua and Costa Rica realize even some of these benefits, they could ultimately provide useful lessons for other developing countries and developed countries as well.

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