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Update—Cuba: On the Road to a
Family Medicine Nation
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Update—Cuba: On the Road to a Family Medicine Nation

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THIRTY years of revolution, of consistent commitment to improving living conditions and providing the Cuban people with an exemplary national health care system, have led to significant changes in health status and marked improvement in major health indicators. Cuba has created a system which provides comprehensive, accessible health care services to the entire population, free of charge. The current focus on elaborating a strategy to advance medical science, health services, and health status to the highest levels of the international scale is unique and is an astounding objective for a developing, Third World country. This ambition is even more astonishing in the midst of the crisis of the Third World debt and the economic problems reverberating throughout the world.

The Cuban commitment to health and health services has been uncompromising and ongoing. Starting from practically nothing, they have proceeded step-by-step, making progress, making errors, confronting problems, reassessing, redesigning, but above all, evolving. The growth of the health care system is linked to economic and social development in other sectors, but even in the worst economic times the Cuban government has consistently allocated funds necessary to support the needs of the system.

The success of the Cuban efforts can be appreciated by comparing some commonly used health indicators within the hemisphere. Life expectancy for Cuba for the 1985–1990 period is 75.2 years (1) while it is 66 years for Latin America and 75.5 years for North America (2). Infant mortality for 1990 in Cuba was 11.1 per 1,000 live births (3). Using United Nations estimated and projected figures for the 1985–1990 period, Cuba ranked 31 out of 191 countries (2). Maternal mortality in 1987 (4) for Cuba was 3.4 per 10,000 live births while in South America it was 8.5: 9.7 in the tropical zones and 5.1 in the temperate zones, 4.2

for the Caribbean and 0.6 for North America (5). Cuban maternal mortality in 1989 was 2.9.

The story of Cuba's rich experience is largely untold. Since the revolution 30 years ago, reliable, timely or responsible reporting about what is taking place 90 miles from the southern shores of Florida has been minimal. Particularly in the midst of our own health care crisis, this Cuban experience deserves our attention; we have much to learn and much to offer.

It is beyond the scope of this article to study in detail Cuba's health care history, much less to analyze it within its full context—a complete social, economic and political analysis—but it needs to be pointed out that the Cuban progress in health reflects Cuba's progress in building a socialist society. Economic organization, social and cultural goals, and political priorities are intimately related and determine the direction and possibilities for development in sectors such as health.

BACKGROUND

Cuba's current government came to power on January 1st, 1959, led by Dr. Fidel Castro Ruz, who for 30 years has been intimately involved in developments in health care services and consistently attentive to the health needs of the Cuban population. The new government inherited an ineffective health department whose sparse annual budget was mostly diverted by dishonest officials for their own use. About 20% of the population had health service coverage through a self-financed system of care, called "mutualist." This system had 242 clinics and hospitals in 1958, approximately 1.4 million associates, and an annual budget of 40 million pesos (twice that of the state budget). The mutualists controlled 12,841 of 28,536 hospital beds nationwide. Service from private practitioners and private clinics was available principally in Havana. The geographic unevenness of medical care was striking. The abundance of physicians in private practice in the urban centers led to fierce competition for paying patients, resulting in underemployment and unemployment among physicians. Suburban, rural and mountainous areas had practically no service at all. Medical education was expensive, and scholarship aid was limited (6).

In 1958, the health status of the majority of the population was typical of an underdeveloped nation. Poor hygiene and sanitation combined with low nutritional levels to create high infant mortality (more than 60 per 1,000 live births), high general mortality (6.4 per 1,000 inhabitants)

(7), high maternal mortality (125.3 per 100,000 live births) (8), lower life expectancy (65.10 in 1960), and easy spread of transmissible and infectious diseases. Of 300 urban towns with populations of 1,000 or more, 112 had aqueducts, but only 38% carried potable water; only 4% had sewage systems, and garbage was collected in open trucks and dumped on open ground (9).

The production of pharmaceuticals, medical equipment and supplies was controlled by foreign or transnational corporations. Of approximately 2,000 pharmacies nationwide, 60% were in Havana. The over-the-counter availability of almost any drug encouraged uncontrolled distribution, and the lack of qualified personnel or government regulations adversely affected quality control (7).

THE EARLY YEARS

The initial steps of the new government included the separation of all health personnel with ties to the previous dictatorship; rationalizing the production, importation and distribution of medicine, together with sweeping price reductions (10); a push to complete construction of works in progress, rapidly adding 7,000 new hospital beds, followed by an additional 7,000 in the next decade; the renaming of the national health department (the Ministry of Public Health, MINSAP) and its reorganization (reflecting early efforts to create central planning with local control by adding regional directors of health); the nationalization of all private health facilities and their incorporation into MINSAP (a process that was not fully complete until 1970); and the creation of sanitary units which traveled throughout the country correcting environmental problems and carrying out health education and vaccination campaigns.

One early, important initiative was the establishment of the Rural Medical Service to provide comprehensive health care, preventive services, and health education in outlying rural areas. Fifty local hospitals with 30 beds each and dozens of medical posts were rapidly constructed (11). During the next few years hundreds of doctors and dentists from Havana volunteered to work in these newly established units, caring for people who, mostly, had never seen a doctor before.

By 1961, local health centers, called polyclinics, were being opened to provide ambulatory services. By 1962, when the health care system was regionalized, 161 polyclinics were in operation. In 1964, a fundamental transition in the definition of primary care services took place: The polyclinics were to focus on prevention in the provision of medical care, and

provide comprehensive services to individuals and families in their communities.

In 1960, typhoid fever was endemic (over 1,000 cases a year), with periodic epidemics of poliomyelitis, diphtheria, and tetanus (300 to 500 cases annually) and high mortality from tuberculosis and the diarrheas. One early measure undertaken was a collaboration agreement with the Pan American Health Organization to eliminate malaria (Cuba was declared free of malaria by the World Health Organization in 1973), followed by the organization of systematic, national vaccination campaigns and programs to control such diseases as tuberculosis, leprosy and the diarrheas (9). The program against acute diarrheal diseases (ADD) began in 1962. That year, 4,147 people died from ADD, at a rate of 57.3 deaths per 100,000 inhabitants, representing 8.2% of total deaths in the year. Over 85% of these deaths were in children under 1 year of age. In 1989, ADD caused a total of 285 deaths, for a rate of 2.7 per 100,000 inhabitants representing 0.4% of total deaths. Only 81 or 28.4% were in children under 1 year. The data represent a mortality reduction of 95.3% in 30 years (12, 1).

With regard to the struggle against all types of tuberculosis, similar success can be noted. In 1962, 1,402 people died of tuberculosis, at a rate of 18.5 per 100,000 inhabitants. The incidence was 3,818 new cases during that year, at a rate of 52.1 per 100,000. In 1989, 38 people died of tuberculosis (0.4 per 100,000), and the incidence was 581 new cases, (5.5 per 100,000), representing a decline of 97.8% in mortality and 89.4% in incidence (13).

Another essential element was getting people active at the community level in health and health affairs, a principle of the health care system that has served well in its development. Involving people through popular organizations such as the neighborhood block committees or the women's federation was more than just a good solution for the lack of health personnel in the early years. Their active engagement served as a vehicle for their own education and as a better guarantee of covering target and high-risk groups, because the block representative knew all the members of the community, as the recently arrived polyclinic staff could not.

The ongoing problem of worldwide medical emigration to the United States became more acute in Cuba in the years following the revolution. From 1953-1959 the number of physicians who left Cuba varied be-

tween 22 and 42 annually, but in 1960 it jumped to 582 and reached its peak in 1961 with 778. By the mid 1960s Cuba was left with 3,000 physicians and only 16 full professors at the medical school (14).

Training of all types of health professionals began in earnest. MINSAP employed 9,828 people in 1960 and 290,799 in 1989, of which approximately 70% were women (1). Cuba had one medical school, one dental school and 6 nursing schools in 1959. In 1991, there are 21 medical, 4 dental and 34 nursing schools. In 1965, for every 10,000 inhabitants, there were 8.0 physicians and 1.5 dentists; in 1989 there were 33.1 physicians and 6.1 dentists (15).

Dividing the country into regions allowed for the distribution of services in accord with health, geographic and demographic conditions. By 1972, 43 health regions with 332 health areas had been defined, each with a polyclinic serving between 25,000 and 35,000 people. The health area was further subdivided into sectors, and a primary care team was assigned to each. Each team had a pediatrician, internist, obstetrician-gynecologist and dentist, complemented by a full range of ancillary services and subspecialty consultants. The model called for the provision of comprehensive, ongoing care for individuals and families, in their communities, homes, workplaces, schools or wherever they might be. The success of the model depended heavily on good teamwork to coordinate care. Target populations (0-4 and over 65 years of age) and high-risk groups (i.e., hypertensives, diabetics, asthmatics, epileptics, etc.) were defined, and clinical protocols for their care were advanced, a system which the Cubans call "dispensarización."

By the end of the first decade, a unified, Cuban national health care system had been created and was firmly in place. These efforts paid off in changes in major health indicators, reductions of infectious diseases, and improved hygienic and environmental conditions. Socioeconomic programs resulted in declines in malnutrition (aided by universal rationing of essential foods for the basic diet at controlled prices), full employment, and compulsory education. The health care infrastructure was assured. Inpatient facilities of all types were opened, remodeled, or expanded, increasing the number of hospital and social assistance beds (which include old age homes, nursing homes and homes for the physically and mentally handicapped), and appropriate technology was introduced and distributed on a rational basis throughout the country. By 1989 there were 263 hospitals with 63,068 beds, 176 social service units

with 13,610 beds, 420 polyclinics, 229 urban and rural medical posts, 163 dental clinics (11) with 4,762 chairs, 148 maternity homes, 23 blood banks, and 12 national research institutes (1).

THE SECOND DECADE

In the early 1970s a major survey on patient satisfaction showed that the polyclinics were not yet achieving the desired results. Frequently, the population was unhappy about poor relationships with providers, and long waits were common. Continuity and coordination of care were not up to standard. Many people still sought care at the hospital emergency room. The development of the doctor-patient relationship was hampered because physicians divided their days between the hospital and the polyclinic, and arrived for packed sessions, too busy to allow more than minimum contact with patients. Easy accessibility led to increasing numbers of "inappropriate" consultations for minor problems, which contributed to the long waits and rushed encounters. The years of health education had created a sophisticated patient population which expected more.

The majority of the urban polyclinics were staffed by residents on rotation, and in the rural zones by residents assigned for two years, creating staff instability. Care was often fragmented, not only within the family but for any given individual patient with contact at different levels of the system. Communication and coordination among team members (professional, technical, auxiliary and representatives of the mass organizations) were sparse. The lack of a patient-provider relationship was not replaced by a patient-team relationship. Thus, despite the emphasis on prevention, health care continued to be overly treatment-oriented. Clinical and administrative leadership of the polyclinics remained in the hands of physicians (as it does even today) who were simply not prepared to effectuate a real team model.

Developments in medical education had not kept pace with the progress of the health care system. Hospital-based medicine was still more prestigious. Clerkships and rotations were at inpatient sites, focused on the care of the sick and end-stage disease. Many physicians were uncomfortable in primary care settings because much of what they had learned was not applicable to those settings. The local general practitioner had all but disappeared in the first decade, and now was to be replaced by a well-trained, specialized team of internists, pediatricians, obstetrician-

gynecologists and dentists. The Cubans were still embracing the notion that the best medical care would be offered by specialists and that a family doctor was, by definition, someone without residency training—the old “G.P.” (16).

Cuba moved to resolve the problems. The year 1974 was a landmark year in the development of Cuban primary care. A new model for the polyclinics called “medicine-in-the-community” was proposed. The conceptual base will be familiar: health and illness are conditioned by the interaction of people, as biosocial beings, with the environment. Health care workers need to know the health situation of the community and its members and the biological, social, economic, and cultural factors that influence it; the functioning, organization and use of the system; and the level of patient satisfaction. This information was viewed as necessary to improve health levels and make better use of human and material resources. The fundamental objectives were health promotion, health maintenance, and health improvement. Beginning in 1976, the primary care system was strengthened through the implementation of this model.

Educational changes were made so that adequately trained personnel would be available to implement the new model. Polyclinics were designated as “teaching” sites for clerkships and rotations, and changes were made in the curricula for training all health personnel. Residency programs were reviewed and revised and new specialties were added.

The Cubans, accustomed to macro-level changes, had once again turned the system around. There is no question that the implementation of this new primary care model broadened coverage and increased efficiency. Average numbers of medical consultations increased and the numbers of referrals to secondary care institutions decreased. The health status of the population continued to improve. But busy physicians had large panels of patients to take care of: pediatricians, 2,000–3,000 children, internists and obstetricians-gynecologists, 3,000–5,000 (17). Further changes would be necessary to resolve systemic problems which still prevented the development of effective doctor-patient relationships.

With a consolidated, nationwide health care system, Cuba entered the third decade fully committed to becoming a potent force in world medicine and health care. They had health indicators rivaling developed countries, a generation of health care workers brought up in the revolution, remarkable plans for growth, and new aspirations and objectives.

THE THIRD DECADE

Fidel Castro made a series of speeches in the early 1980s which signaled radical changes and defined intriguing new directions for the country's health care system. The road which Cuba is to travel will lead to the nationwide placement of 20,000 family physicians who will provide basic primary care services. The new specialty responds to the demands of economic and social development, the growing material and spiritual needs of the population (18), and changes in the nation's health profile. Cuba will be the first country in the world with comprehensive family practice coverage of 100% of its population, "a revolution within the revolution," as the Director General of the World Health Organization said (19), and an epidemiologist's dream. The "rearguard" of these new "guardians of health," as Castro called them, will be fortified through the further development of the secondary and tertiary care systems. These and other changes will bring Cuba to a position of world leadership in medicine and health care. This innovative service plan is designed to counteract dehumanization in medical care resulting from super-specialization and the use of high technology.

The drive to strengthen the secondary and tertiary care systems is broad and far reaching, and serious efforts are being made to advance on every front of medicine, science and health. Institutions have been or are being remodeled, renovated and upgraded. Hospital bed capacity is being rationalized all over the country. The highly specialized national institutes are accelerating research while continuing their teaching and service programs. National reference centers are being opened in areas where they did not previously exist. New diagnostic techniques like ultrasound are being introduced throughout the hospital network (20), while up-to-date diagnostic technology has been acquired and is available in major centers, including CAT scanners; the first nuclear magnetic resonance equipment in Latin America; and the hyperbaric chamber. The introduction of high technology on a nationwide basis and the rationalization of its use has been carefully planned to exploit limited resources. The first machine in the Third World for non-surgical destruction of kidney stones (extracorporeal litholysis), was installed at Havana's premier tertiary-care institution, the Hermanos Ameijeiras Hospital, and a second, more advanced machine is in use in the province of Santiago. New treatments used nationally and produced for export have been developed in areas as disparate as interferons; epidermal growth factor

to aid burn victims; a meningococcal meningitis B vaccine created in Cuba; a device to speed hypnotic induction for conditions as varied as anxiety states, obesity, and dental treatment; Psicomet-2, a computerized psychological diagnostic system designed and built in Cuba; and orthopedic external fixators pioneered in Cuba along with the opening of a major international training center for their use. The organ transplant program counts on an organized and efficient, computerized network for donor-recipient matching. Neural brain implants for the treatment of Parkinson's Disease were pioneered at the new Cuban, Ibero-American Center for Transplants and Regeneration of the Nervous System. A Cuban-designed and built artificial heart is being used selectively, and the Cubans have become proficient in limb reattachment and in-vitro fertilization. New institutions have been opened like the national network of immunoassay centers which use a Cuban Elisa system called SUMA in the prenatal diagnosis of congenital malformations, congenital hypothyroidism, Down's syndrome, neural tube defects and others. This computerized system is produced for export and is used nationally to test all pregnant women. The prenatal testing program is coupled with genetic counseling. The Cubans inaugurated the first Center for Biotechnology and Genetic Engineering in Latin America; a national center with a computerized system for epidemic alert and imported disease surveillance; 31 new neonatal-care units; 6 new cardiac-care centers; a tertiary-care ophthalmology hospital which includes a center for serial ocular surgery (20); and much more. These developments, commonplace in the developed world, are unprecedented in a developing country.

Medical Education

Despite major curricula revisions in 1963, 1968, and 1976, difficulties persisted in educating physicians for primary care. High dropout rates at medical school were attributed to a poor selection process which over-emphasized academic performance. Course content was theoretical and unrelated to the needs of practice. Teaching methods created student passivity, evaluation was inadequate, and electives and clerkships were limited. The prestige and status of hospital-based medicine was harder to combat under these circumstances. A national review commission issued major recommendations in 1982 with regard to changes in the medical school curriculum and admission procedures. As a result, a fascinating and uniquely Cuban process began which led to the development of an entirely new curriculum for medical education (21).

The student selection procedure was changed. Tenth grade students begin a familiarization process in areas of professional preference and opt for the career of their choice the following year. Applicants are evaluated and interviewed by fellow students and professors from the social, psychological, cultural, academic, attitudinal, and political points of view throughout high school, and entrance recommendations are made. The applications of those completing the process are sent to MINSAP for final selection based on cumulative grade-point average, geographic considerations, and the number of students to be admitted. Interestingly, the Cubans established a quota system to guarantee entrance of males into medicine because females have higher grade-point averages. Women need a 94.5 grade-point average and males 90.

A National Commission to develop a new curriculum to fit the panorama of Cuba's contemporary aspirations sent study teams to seven countries (Canada, the United States, Sweden, the USSR, Czechoslovakia, England and France). The responsibility for development was given to the Higher Institute of Medical Sciences of Havana. The Commission gathered opinions from medical educators throughout the country and used the materials brought back from abroad by the seven teams.

The focus was on primary care and family practice. What would this "new family doctor" do? Medical graduates working in primary care settings were interviewed for their ideas about changes in training. The Commission studied presenting problems, complaints, and the nature of patient visits at the polyclinics; and causes of morbidity and mortality.

In 1984, 10 medical graduates began to work in the first family-medicine pilot project at the Lawton Polyclinic in Havana. These doctors were interviewed regularly and detailed records were kept of their activities. Putting all this information together, they identified the 285 most common health problems of the population and then physician activities (functions and tasks) in the areas of treatment, prevention, administration, teaching, and research for each problem. Committees (called vertical subcommissions composed of clinicians, scientists and medical subspecialists) reviewed and analyzed the information. Their findings were sent to all the 21 medical schools for feedback and modification. The vertical groups identified knowledge, attitudes, and skills required for diagnosis and management for each health problem. At the same time the National Commission (13 members and a chair) was analyzing study plans from Latin America and previous Cuban experience. An "interface committee" then integrated the results of the vertical and horizontal studies.

The time came for curriculum development. Many positions were represented, including those who wanted only an organ systems approach and those who did not want any integrated courses. The Commission bogged down and spent months trying to figure out how to proceed. They had the end-point objectives. They understood that their new family doctor was to be substantially different from the old "G.P." This doctor would not work alone in an isolated practice and be expected to care for any patient problem that happened to appear, but would be a member of a powerful health care organization, closely linked to physicians with residency training in 54 specialties, and would have access to an increasingly viable system of continuing education. These circumstances permitted the developers to avoid the push for exhaustive courses and to choose what they thought would be indispensable and essential to coping with the most common health problems, leaving the rest for residency training and continuing education (22). They identified the knowledge and skills students entering medical school would be likely to have. They achieved a breakthrough when they rejected the idea that objectives and content had to be developed sequentially and moved to a "dialectical" or interactional model.

In the new plan, the social and biomedical sciences and clinical theory are reunited with clinical practice, hygiene and epidemiology. The first major course, "Health and Society," uses scientific, clinical, epidemiologic and problem-solving methods to answer everyday community health problems. This course is intended to give students a vision of medicine as a sociobiological science (including epidemiology, health organization, medical sociology, social psychology, biostatistics, demography and medical ecology) and to involve them immediately in the kind of work they will do. Basic sciences come later.

The general focus of the new six-year study plan is on problem solving and critical thought. Physicians need a preventive-prophylactic-epidemiologic view of medicine. Previous inappropriate course sequencing was changed and repetitive content was eliminated. Tutorials were added and new teaching methods were adopted to encourage active student involvement and student-teacher interchange. New textbooks were written, and a new evaluation system was developed. Clerkships were expanded to allow for ample hands-on experience. To put the plan into effect for the 1985 school year, the first two years were prepared in detail, leaving the Commission breathing space to complete the later years. A "transit" plan for students who had already completed 2 years under the old curriculum

complicated the work. The first medical students to complete training entirely under the new curriculum will graduate at the end of the 1991 academic year.

Residency Training

Residency training in family practice is called General Comprehensive Medicine (Medicina General Integral, MGI). A provisional version of the program was developed in 1985 and was followed in 1986 by the publication of a residents' manual outlining their expected professional performance. A total of 835 physicians have graduated under this plan, 400 of whom took their final examinations in December 1990.

In 1988 the elaboration of a more detailed training program was initiated and implemented in the 1989-1990 academic year. Internship in Cuba is included in medical school, and residency training is three additional years. There are presently 5,718 residents in training in all three years (23). The version of the program published in 1989 is richly detailed and emphasizes the importance of prevention, health promotion, psychosocial and epidemiologic aspects of dealing with families and communities, while defining a new teaching methodology. Job profiles for family doctors were expanded in 1989 to include the school or factory doctor, necessitating the design of an integrated training program which would serve for all family practitioners irrespective of their future job assignment (i.e. community, school, factory, etc.). This new version is written but not yet printed and is based on teaching modules that cover areas in prevention, promotion, care, rehabilitation, education, and administration such as: community health diagnosis; illness and disease managed at the primary, secondary, or tertiary care levels; the individual and family life cycles; family crises; health education; healthy lifestyles; sex education; family planning; prevention of transmissible and non-transmissible diseases; epidemiologic vigilance; environmental hygiene; etc. (24). The psychosocial teaching component of the new program is stronger than in any previous version. The program serves as a learning and performance guide for both residents and teachers. The polyclinic, in addition to being the backup facility for patient care, becomes in the new plan the basic educational institution for residents in training, and its staff are the professors. The training experience is managed by what is called the Basic Work Group (BWG). To date there are 431 BWGs. The BWG includes polyclinic staff from each of the basic primary care specialities (i.e. pediatrics, internal medicine, obstetrics-gynecology, and

psychology). The program calls for a hygiene-epidemiologist to be included in the BWG, but there is a shortage of trained personnel. Therefore the more frequent arrangement is that the locally based hygiene-epidemiologist from the municipal office attends the monthly administrative-clinical meetings and all Community Health Diagnosis sessions, and is also available for interconsultation. While the psychologist is a full member of the BWG teaching staff, insufficient numbers create a situation where one psychologist is responsible to various BWGs. They are, however, expected to precept with each resident 2–3 times a month, participate in administrative and academic activities, and be available for consultation. MGI residency graduates are working in 35 BWGs. Each BWG is responsible for 15–20 residents who are divided into 3 or 4 subgroups. The professors from internal medicine, pediatrics, and obstetrics-gynecology rotate monthly as the subgroup's principal tutor (25, 23).

There is no time in the new program for electives that are freely chosen by the resident, but flexibility in learning comes from a system in which the professor, staying abreast of the learning needs of the resident via the health problems that present in the practice, directs what is essentially a tutorial process. The BWG counts on the local medical school for consultation, support and information. The faculties of each medical school attend workshops on teaching methodology organized by the national level and receive instructional materials.

Conflicting needs of service and education have become apparent as the new plan is implemented. With the expansion of the family-practice service model to previously uncovered areas of the country, physicians and nurses are assigned to polyclinics where most of the professors are new at teaching. Provider stability is achieved by the permanent assignment to a panel of patients of the family physician-nurse team which does not rotate nor is reassigned after graduation. This, however, has its educational price because the professors of the BWGs with the greatest teaching experience no longer have many residents in training, their slots having been filled by their graduates, except for those few slots where vacancies are created by leaves or by family physicians beginning a second residency in another medical subspecialty. The situation is further complicated by the large numbers of residents entering training; e.g., in the 1989–1990 academic year there were 2,496 new residents beginning their training. This presents an interesting dilemma, the solution of which will have to be found by those in charge of medical care and those concerned with medical education. The educational burden thus created

falls not only on the residency training program but on the system of continuing education where another "revolution" is taking place.

Continuing Medical Education

The family doctor program alone has approximately 8,500 new physicians and nurses and there are approximately 26,000 additional physicians nationwide. With the exception of specific educational needs that can only be met in the capital, it is neither rational nor feasible to bring these physicians to Havana or to the provincial capitals for CME courses. A new system is needed for educating health personnel locally. This job falls to the National Center for Continuing Medical Education (CENAPEM) (26), which is feverishly working on the development of a CME model to be implemented in all the local health systems, i.e. the 169 municipalities of the country. The new system will be designed to bring CME to health professionals where they are (what the Cubans call education in service) and will require training of local facilitators or teachers in the use of new educational techniques (27). The work is just beginning. Selected municipalities in various areas of the country are being studied to identify learning needs, measure motivation and commitment as they relate to ongoing education, and develop teaching methods and strategies. These studies are only one source of information for planning. The national groups for each medical subspecialty, the vice-ministries and national departments of MINSAP, and special educational commissions are all participating. The plan will include a new evaluation system (28).

When taken together, the new medical school curriculum, the residency training program, and a comprehensive and effective system of CME give the country a real shot at having personnel properly trained and prepared to carry out the primary care service model. This should achieve the objective of improving quality of care, one of the major goals of the country as it advances toward the year 2000.

Primary Care Team

The family medicine plan calls for the placement of a primary care team composed of a family physician and nurse who live and work in the community they serve. Each team cares for a panel of 600–800 people. In addition to these community doctors, family physicians work in a series of other institutions such as schools and factories. Backup services at the local polyclinic include expanded laboratory, X-ray and ancillary

services, emergency room services, supervision and teaching, and subspecialty consultation.

Cuba has a population of 10.5 million, with one physician for every 302 people and one dentist for every 1,621 persons. To date, 8,541 family physicians cover 4.9 million people or 46.9% of the population. Of 169 municipalities in the country, 164 have some family medicine coverage and 18 are totally covered. Of 422 polyclinics, 164 are completely covered by family medicine and 305 have at least partial coverage (29). Presently reserve doctors work for one year and then enter the residency program, but in the future all reserve physicians will be residency-trained. Current expectations are that the city of Havana will have full family physician coverage by 1992 and the entire Cuban population by 1995 (30). By the end of the century Cuba expects to have 65,000 physicians, of whom 10,000 will be working abroad in international aid programs. Fidel Castro has said, "And then we will graduate 10,000 more to assure doctors a year sabbatical every seven" (31).

These new family doctors have vastly expanded potential to improve the health of the population by providing comprehensive care for individuals and families through intimate ties to their patient panels and by improving hygiene and sanitation because of their familiarity with the environment. The system is now structured in a way that allows the physician to have detailed knowledge of the community and its members. The charge is to: 1) promote health through education, lifestyle changes, improvement of hygienic and sanitary habits and conditions; 2) prevent illness and conditions dangerous to health; 3) guarantee early diagnosis and comprehensive medical care over time; 4) develop community-based rehabilitation for the physically or psychiatrically disabled; 5) aid the social integration of families and communities; 6) complete residency training in family practice with scientific excellence and a willingness to serve humanity; and 7) do research which responds to the health needs of the population (32).

Housing construction was necessary to guarantee adequate living conditions for the team in the community. The housing model features consultation space on the ground floor and apartments for the physician, nurse and their respective families. The community decides where to build the unit and, in most cases, construction is done by voluntary labor.

The family practice program should change the quality of care at the primary care level. Doctors and nurses now have real opportunities to improve relationships with patients and their families over time, to ac-

quire more intimate knowledge of and responsibility for the health of the communities they serve, and to increase their leverage to improve basic sanitary and health conditions. The primary care team focuses on reducing risk factors and implementing national health promotion programs such as encouraging exercise, improving diet, and reducing smoking, alcohol intake and obesity.

All professional education in Cuba is free, and after graduation physicians work for one to three years in what is called social service. In family practice, the social service requirement is usually one year prior to entering the residency, during which time the physician continues to care for the same panel of patients. This arrangement was altered in geographically inaccessible areas because the training requirements could not be met in those locales. In the mountains, which had coverage priority, the family doctors remain for two years, completing their social service requirement, and then are reassigned to more populated municipalities for the residency. It is hoped that service providers in the mountains will stabilize when there are larger numbers of residency graduates.

Although the program is very new, some preliminary observations about its effectiveness can be made. Most importantly, people served by family doctors appear to be immensely satisfied with their care as demonstrated by surveys and a variety of other measures. In sectors with family physicians, infant mortality has been noticeably reduced. Emergency room visits and referrals to secondary care institutions have decreased. A home admission policy attached to the program has shortened average hospital stays for patients who can be medically supervised at home. All family doctors have a regular schedule of office hours in the morning, and home and field visits in the afternoon. Field visits, particularly in the mountains and rural areas, include such tasks as inspecting the local food store for hygienic and sanitary conditions, assuring that the pharmacy is properly stocked, and that goods are appropriately stored. Improvements in immunization coverage for vaccine-preventable diseases has resulted in reductions of morbidity for such diseases as measles, German measles and mumps. Clubs for older members of the community, called "Circulos de Abuelos" (Grandparents Clubs), emphasize daily exercise and combat social isolation. Organized by family physicians, there are currently some 4,560 of these clubs with more than 115,000 members (33).

Management of patients with chronic diseases has been measurably improved. In the total population in 1989 (including all areas), hyperten-

sive patients were diagnosed and followed at a rate of 37.0 per 1,000 inhabitants, but in areas with family physicians the rate was 60.0. Diabetic patients in the total population were followed at a rate of 15.1 per 1,000, and the rate was 18.8 in areas with family physicians, while the rate for asthmatics was 20.5 in the total population and 41.1 in areas with family physicians (1). These figures indicate improved screening and more complete and consistent follow-up care in communities served by family physicians. This is hardly surprising since the first task of the family physician upon entering practice is to complete a census of the entire patient panel, including personal interviews and physical examinations.

Systemic impediments have been removed, but effective training in doctor-patient communication still needs improvement. Many of these young doctors do not yet have the communication skills, life experience or psychological sophistication to fully exploit the advantages of a true doctor-patient partnership. However, having grown up since the revolution, and being members of the communities they serve, these physicians do have different attitudes about the value of the doctor-patient relationship which provide a basis for future development.

The general medical culture of the population is still developing. Patients still do not demand that doctors involve them in their care. Many physicians, particularly in large secondary and tertiary care institutions, still tend to function as directors of the show. Patients are expected to follow medical advice, and many doctors seem unaccustomed to answering questions about recommendations or procedures. Such poor communication becomes a source of unnecessary anxiety for patients and results in lost opportunities for patient education.

In the health care system in general, problems of lack of efficiency, the need for increased productivity, improved quality of care, and trimming personnel remain on the agenda. Subspecialists still have more prestige than family doctors. The ideas that hospital medicine is "quality" and primary care facilities inadequate, that tertiary care physicians are well trained and family and polyclinic doctors are not, do not change overnight.

With the beginning of the 1990s, another decade of transformation, exertion and struggle is in the making. The challenge to change lifestyles is complicated, multifactorial, and dependent on factors outside the aegis of the medical care system. For example, while accidents are the fourth cause of death for all ages, one study showed that many Cubans still believe that they can drive better with a few drinks under the belt (34),

and Cuban drivers in general, if they haven't already removed the seat belts from their cars, don't use them. Malnutrition (with the exception of obesity) has essentially been eliminated. However, the favorite diet is still high in animal fat and low in fiber; frying is a favored cooking method (commonly with lard); and vegetable consumption is not habitual. It is estimated that only 10% of the Cuban population exercises regularly. Efforts to cut petroleum consumption due to the recent oil crisis have included the distribution of bicycles to large numbers of people, which portends well for the health of the riders.

CONCLUSIONS

The spectacular nature of Cuba's progress in health and science is best appreciated in the historical, contextual framework of a Third World country in development. Progress in public health is intimately related to developments in other sectors of society, although at times it appears that public health has advanced more rapidly. These formidable achievements are due to a firm commitment on the part of the government. Time and time again the system creatively responds to problems, not with bandages but with the application of macro-level systems thinking leading to massive structural changes. Cuba has come a long way in 30 years, firmly grounded in an analysis of achievements, problems and possibilities. Major health indicators demonstrate the success of their efforts. The family practice program is a landmark, but the plan as it is constituted could not have taken place before for many reasons. A generation of physicians committed to the ideals of this national health system was essential for the initiation of a successful program.

The Cuban health care system enters its fourth decade with indisputable achievements to its credit and in the middle of a new and rather complex set of readjustments which will require transformations at all levels, particularly in primary care. The struggles and challenges they face to achieve their goals are significant, and are further complicated by the current world situation. But if history is any indication, they will be successful.

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ABSTRACT

Beginning with an overview of developments during the last 30 years, this article focuses on the current Cuban plan to convert the country into a family practice nation by creating a new primary care system. The new system is based on the training and placement of no less than 20,000 family physician and nurse teams to cover the entire population by 1995. Cuba has come a long way in 30 years, as demonstrated by major health indicators.
