

Family Medicine in Costa Rica: The Beginning

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In 1987 the University of Costa Rica School of Medicine began residency training in family medicine for ten first-year residents. A constellation of factors led to the development of a family medicine program at this time in a country the size of the state of West Virginia with a population of 2.5 million residents. This program provides a unique opportunity to study the potential impact of family medicine on a well-designed health care system that can be applicable to both developed and developing countries.

HISTORICAL BACKGROUND

In the first half of this century, the health profile of Costa Rica was similar to that of most other Central and South American countries. In 1930 the life expectancy was 42.2 years, the death rate was 23.2 per 1,000, and the infant mortality rate was 172 per 1,000 live births. In 1927 the Secretary of Public Health and Social Welfare was created at the cabinet level. This department initially was funded to the extent of \$11 per capita.

The first efforts at an organized national public health program focused on the prevalent infectious diseases of the time, diseases such as tuberculosis, malaria, leprosy, yellow fever, and typhus. The Ministry of Health conducted traditional public health programs in infectious disease, sanitation, maternal child health, and nutrition education. In 1940 the government created the Caja Costarricense de Seguro Social, a cabinet-level bureau with

the responsibility of providing clinical health services to the general population.

A key development occurred in 1948, when the government decided to disband the military and pursue the ethic of universal access to education and health care services. The School of Medicine was founded in 1947 and followed the specialty-oriented models of the North American and European medical schools of the time.¹

During the decades of the 1950s and 1960s the number of physicians gradually increased and the health indices in the country rose. This progress was made possible through a commitment to health and education on the part of the government and with the help of a considerable amount of foreign aid. After a year of required service in underserved parts of the country, physicians predominantly pursued specialty training and settled in the population centers in the central valley. In 1970 the country first formulated a national health plan that involved the coordinated efforts of several governmental ministries and bureaus. The initial goals of the health plan included (1) increasing the life expectancy by 8 years, (2) decreasing the infant mortality to fewer than 50 deaths per 1,000 live births, (3) eradicating human rabies, (4) reducing the prevalence of endemic goiter to less than 10 percent, and (5) supplying potable water to 100 percent of the urban areas and 70 percent of the rural areas.²

Remarkable progress was achieved during the 1970s in the successful pursuit of these goals. The services of the social security system were extended to 93 percent of the population. In Table 1 the general health indices achieved in that decade are compared with selected developed and developing countries. In Figure 1 the dramatic decline in the infant mortality rate is illustrated. Data in Table 2 reflect the transformation of the most common causes of infant mortality in underdeveloped countries in 1971 to those common to the developed world in 1982. These health changes have resulted in a decrease in the proportion of the population aged under 15 years and a rapid increase in the middle-aged and elderly groups.³ These

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TABLE 1. GENERAL INDICES FOR COSTA RICA AND SELECTED COUNTRIES*

Indices	Costa Rica	USA	USSR	Mexico	Honduras
Mortality rate (per 1,000)	4.2	8.7	10.3	7.3	5.3
Literacy (%)	95	100	100	82	60
Life expectancy (years)	73	74	73	66	60
Per capita income	\$1,730	\$10,630	\$4,100	\$1,640	\$560

* From Antillon³

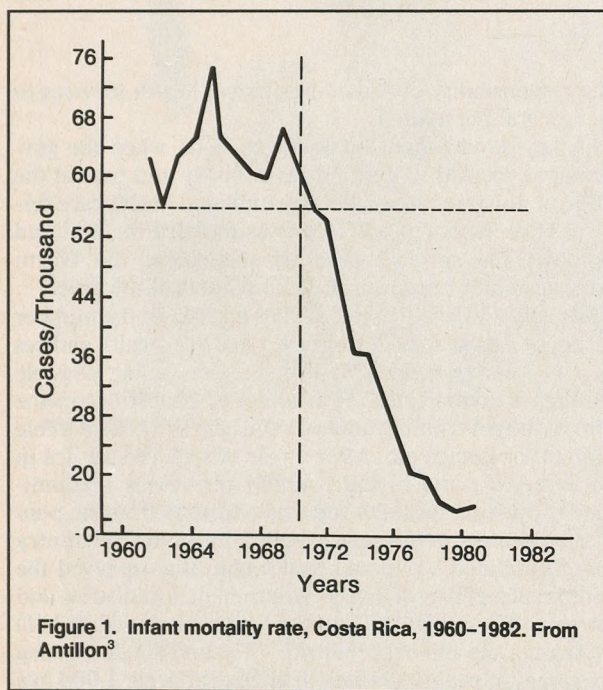


Figure 1. Infant mortality rate, Costa Rica, 1960-1982. From Antillon³

improvements were effected with a public expenditure of \$65 per capita.

CURRENT SITUATION

The social and economic forces of the 1980s have placed a significant strain on the ability of the health care system to maintain and continue the progress in providing health care for all the citizens of Costa Rica. Financing the national debt has led to pressures from the World Bank to devalue the currency, which, in turn, has created a greater need to examine critically all cost-effectiveness issues in the health care sector.⁴ The Caja Costarricense, which administers and budgets the clinical health care services, has come to appreciate more acutely the expense and inefficiencies of a tertiary specialty-oriented health care system predominantly based in the Central Valley, wherein the major cities of San Jose, Heredia, and Alajuela are located. The quality of the tertiary care was excellent, but the demands of the system required that specialists care for more primary and secondary types of problems.

The Ministry of Health had established a nationalized system of health centers, each with a network of satellite clinics strategically located throughout the country. Well-trained teams of allied health care professionals, including public health nurses, nutritionists, sanitarians, microbiologists, and health assistants, have been able to visit, monitor, and assess the health-risk factors of 75 percent of the domiciles in urban areas and 90 percent of the homes in rural areas. These teams could identify family members, their ages, methods of contraception, chronic diseases, history of substance abuse, and immunization patterns.

Documenting the health needs and risks of urban residences has been complicated in the 1980s by the mobility of the migrant farm laborers, and by the government, which has had a no-restriction policy on the immigration of refugees from Nicaragua and El Salvador. The political instability of the Central American region has also placed a great strain on the ability of the health care system to identify problems and meet the needs of the people. The

TABLE 2. CHANGES IN THE PRINCIPAL CAUSES OF MORTALITY IN THE NATIONAL CHILDREN'S HOSPITAL*

Rank	1971 Principal Cause	Rank	1982 Principal Cause
1	Diarrheal illnesses	1	Perinatal complications
2	Pneumonia and bronchopneumonia	2	Congenital malformations
3	Septicemia	3	Malignant tumors
4	Meningitis	4	Meningitis
5	Premature births	5	Pneumonia and bronchopneumonia

* From Antillon³

Costa Ricans are committed to providing the refugees with the same public services as the residents. In the past decade this refugee migration has been equivalent to 11 percent of the population of the country, or approximately 250,000 persons,⁵ equivalent to about 30 million immigrants in the United States.

With these pressures, both the Ministry of Health and the Caja Costarricense have identified the need for skilled, committed, primary care generalists who could provide the missing bridge between the community-based public programs and the hospital-based tertiary care specialists. Currently the general practitioners staffing the health centers have had no formal postgraduate training beyond medical school and their year of required national service. There is little incentive or prestige for pursuing a career as a generalist.

A FAMILY PRACTICE RESIDENCY PROGRAM

To the Ministry of Health and the Caja Costarricense, the development of a family practice residency program seemed to be a logical step in addressing the primary care problem. The president of the Caja Costarricense de Seguro Social, Dr. Guido Miranda, authorized the first graduate unit of family and community medicine at the Centro Nacional de Docencia e Investigacion en Salud y Seguridad Social to develop the curricular, administrative, and clinical resources for the family practice residency program. This unit of Family and Community Medicine decided to share the responsibility for the program development with the third major institution that shapes health care in Costa Rica, the School of Medicine of the University of Costa Rica.

Although government supported, the School of Medicine is administratively autonomous from both the Ministry of Health and the Caja Costarricense. Like many medical schools in the United States, it has no Department of Family Medicine, and there is little internal incentive on the part of the established departments to create such a new department. The Catedra de Medicina Preventiva y Social was the department with a tradition of pursuing a systemic view of the health care needs of the country, and thus it became the department identified to assist with curriculum development. The faculty in that department, however, were predominantly epidemiologists, anthropologists, sociologists, social workers, and specialists in health care administration who did not have extensive experience in clinical care. Currently they are seeking the proper balance of clinical, administrative, community medicine, and

epidemiologic skills that would be best suited for maximizing the effectiveness of the national health care system, and are experiencing some communication problems between clinicians and nonclinicians, similar to that experienced by some programs in the United States.

The plan to establish family medicine in Costa Rica is meeting with barriers similar to those encountered by efforts in the United States and elsewhere in Latin America. These barriers include economic constraints and uncertain funding sources, resistance by specialty interests, the lack of role models for students and residents, and the uncertainty in finding the optimal balance between clinical patient-care skills, community medicine, health care administration, and behavioral medicine.

The health care system in Costa Rica also has some of its own strengths that may make it an ideal laboratory in which to study the maximum potential effectiveness of family medicine. The health care system is already capable of identifying the health care needs of 85 to 95 percent of the population. The population is reasonably stable and seeks its health care from established, well-defined, government-run sources in the communities. A support system of allied health professionals and a consistent government policy of health care access for all provide valuable resources to the primary care physician. The population is one in which the nuclear and extended family is still a viable, powerful resource in health care for the major causes of modern morbidity and mortality. There is an excellent system of specialty backup for consultation and referral. Finally, the country has a longstanding tradition of democracy and a modest middle-class standard of living that has been able to provide basic services to the populace without the devastations of violence, widespread poverty, or overpopulation. With these strengths, the future may well provide the capability to implement and document the effectiveness of community-oriented family medicine in ways that will be both educational and valuable to the health care planning of many countries.

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MONISTAT* Dual-Pak*

Suppositories/Cream

MONISTAT* 3 Vaginal Suppositories

(miconazole nitrate 200 mg)

MONISTAT-DERM* Cream

(miconazole nitrate 2%)

INDICATIONS AND USAGE: MONISTAT 3 Vaginal Suppositories are indicated for the local treatment of vulvovaginal candidiasis (moniliasis). Effectiveness in pregnancy or in diabetic patients has not been established.

MONISTAT-DERM Cream—For topical application in the treatment of cutaneous candidiasis (moniliasis).

CONTRAINDICATIONS: MONISTAT 3 Vaginal Suppositories—Patients known to be hypersensitive to the drug.

MONISTAT-DERM Cream has no known contraindications.

PRECAUTIONS: MONISTAT 3 Vaginal Suppositories—General: Discontinue drug if sensitization or irritation is reported during use. The base contained in the suppository formulation may interact with certain latex products, such as that used in vaginal contraceptive diaphragms. Concurrent use is not recommended.

Laboratory Tests: If there is a lack of response to MONISTAT 3 Vaginal Suppositories, appropriate microbiological studies (standard KOH smear and/or cultures) should be repeated to confirm the diagnosis and rule out other pathogens.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term animal studies to determine carcinogenic potential have not been performed.

Fertility (Reproduction): Oral administration of miconazole nitrate in rats has been reported to produce prolonged gestation. However, this effect was not observed in oral rabbit studies. In addition, signs of fetal and embryo toxicity were reported in rat and rabbit studies, and dystocia was reported in rat studies after oral doses at and above 80 mg/kg. Intravaginal administration did not produce these effects in rats.

Pregnancy: Since imidazoles are absorbed in small amounts from the human vagina, they should not be used in the first trimester of pregnancy unless the physician considers it essential to the welfare of the patient.

Clinical studies, during which miconazole nitrate vaginal cream and suppositories were used for up to 14 days, were reported to include 514 pregnant patients. Follow-up reports available in 471 of these patients reveal no adverse effects or complications attributable to miconazole nitrate therapy in infants born to these women.

Nursing Mothers: It is not known whether miconazole nitrate is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when miconazole nitrate is administered to a nursing woman.

MONISTAT-DERM Cream—If a reaction suggesting sensitivity or chemical irritation should occur, use of the medication should be discontinued. For external use only. Avoid introduction of MONISTAT-DERM Cream into the eyes.

ADVERSE REACTIONS: MONISTAT 3 Vaginal Suppositories—During clinical studies with the MONISTAT 3 Vaginal Suppository (miconazole nitrate, 200 mg) 301 patients were treated. The incidence of vulvovaginal burning, itching or irritation was 2%. Complaints of cramping (2%) and headaches (1.3%) were also reported. Other complaints (hives, skin rash) occurred with less than a 0.5% incidence. The therapy-related dropout rate was 0.3%.

MONISTAT-DERM Cream—There have been isolated reports of irritation, burning, maceration, and allergic contact dermatitis associated with application of MONISTAT-DERM.

Family Medicine: A Guide Book for Practitioners of the Art (2nd Edition).

David B. Shires, Brian K. Hennen, Donald I. Rice. McGraw-Hill Book Company, Toronto, 1987, 632 pp., \$27.50 (paper).

This book, originating from some of our Canadian colleagues, is now into its second edition. The editors note that all the contributors have worked within the Metro Halifax-Dalhousie University setting and therefore reflect a unity of experience and mutual understanding not often seen in a multiple-author work. They feel that the viewpoints and opinions stem from a variety of sources, reflecting a worldwide range of understanding of family medicine, and thus prevent the book from being a parochial document.

Closer inspection leads this reviewer to challenge that statement. While the book does provide a very interesting overview of family medicine, which could be of exceptional value to the student, it probably would not be of the same high value to an established practitioner.

Some examples of such parochial attitudes include the definition of hypertension in adults under the age of 65 years as the recording of blood pressures of 160 mmHg or above systolic and/or 100 mmHg diastolic on three consecutive occasions. The authors note that an appropriate-sized cuff should be used. Any recording over 140 mmHg systolic and/or 90 mmHg diastolic is regarded only as an elevated blood pressure reading. Pointing out the benefits of nondrug therapy initially, a stepped-care approach for pharmacological management of the condition is recommended. This regimen would probably not now be recommended universally.

One excellent feature of the book is the diagrammatic representation of diagnostic and management approaches to some of the common health problems presented to family physicians.

The section on patient management is also very valuable and deals with such issues as the physician and patient, patient-oriented therapy, self-care, and cultural factors influencing compliance. On the other hand, the office-management section is more applicable to Canadian standards of practice.

In summary, this book should find a useful place in every family medicine library, particularly in those libraries related to residency and undergraduate training. In that setting, it should be discovered as one among several other very valuable sources of information about family medicine. It is doubtful if a physician would find sufficient that is of value in it to warrant purchasing it individually.

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Management of Hypertension (2nd Edition). Norman M. Kaplan. Creative Infomatics, Durant, Oklahoma. 1987, 194 pp., \$10.00 (paper).

The stated goal of *Management of Hypertension* is to provide an up-to-date reference on the practical treatment of hypertension. I feel that the book succeeds well in this stated goal. It is concise, and measuring 4½ × 7 inches, it is quite portable. It is nicely organized to assist the reader in rapidly finding the information desired.

The initial several chapters that deal with the definition of primary and secondary hypertension and nonmedication therapies are probably too simplistic for the practicing clinician. I would take issue with the section on pregnancy-induced hypertension (PIH), which does not utilize mean arterial pressure as a predictive parameter, and is far too general to be helpful at all.

The true strength of the book is the discussion of the general guidelines and approaches to hypertension and



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*Trademark

the chapters on individual therapeutic agents. These latter chapters provide brief five- to ten-page summaries of various drug classes, their mode of action, clinical usage, and side effects. I found these chapters to be quite practical in assisting me in the management of my hypertensive patients in the office.

At approximately \$10, the *Management of Hypertension* is a bargain. I would think it would be of particular value to medical students or residents as a concise, but thorough, reference.

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Atlas of Pediatric Physical Diagnosis.
Basil J. Zitelli and Holly W. Davis
(eds). The C. V. Mosby Company, St. Louis, 1987, \$64.95.

This book is unusual. One first notices the trim size: 10 × 12 inches, but after all, it is an atlas. Upon opening the cover, the reader notes color photographs on virtually every page. In fact, a collection of pediatric physical diagnosis slides, based on material presented in the book, is separately available for purchase. The cost (\$64.95) is low for a book that seems quite expensive to produce.

The objective of the editors is to present common and important clinical entities that lend themselves to visual recognition. With 33 contributors, the book is organized into 20 sections including genetics, common chromosomal disorders, child abuse and neglect, pediatric infectious diseases, and pediatric orthopedics. Each section includes some 25 to 100 illustrations with text linking them together and followed by a short bibliography.

The emphasis is on illustrations: color photographs, line drawings, radiographs, and tables. The text is well prepared, but it is clearly subordinate to the visual presentation. As might be expected when combining slide

collections of many individuals, some of the color photographs are better than others; however, most are excellent. The legends accompanying the illustrations are clear and informative. In the second edition, the editors might choose to delete pictures of healthy children to illustrate that normal-appearing children may have disease (eg, Fig 13.36). Other candidates for elimination are pictures of equipment and supplies needed for examination.

This is a book each of us should spend some time reviewing to refresh our ability to identify problems. It would be a valuable addition to the library of a family practice residency or a practice group.

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Disorders of the Cervical Spine: Diagnosis and Medical Management.
John H. Bland, W. B. Saunders Company, Philadelphia, 1987, 377 pp. \$49.95.

When I received this book for review, the first question that came to mind was "Why are they sending me this kind of text for review in a family practice journal?" Once I started reading it, however, the answer became apparent: This book is a primary reference on the disorders of the cervical spine from every conceivable viewpoint and perspective; as such, it is of value to any generalist faced with a patient who has a "pain in the neck."

In a surprisingly readable and most engaging manner, the author has prepared a comprehensive review of the clinical and pathological elements affecting both the normal and abnormal function of the cervical spine. This review is achieved from a medical-rheumatologic viewpoint, notable because essentially all other references on the cervical spine are orthopedic in their orientation.

The book is divided into three sections. The first part is a review of the scientific foundation and diagnostic methods surrounding the evaluation of the cervical spine. A unique viewpoint is discussed in the chapter entitled "Rheumatologic Neurology," a discussion that I have never seen before in the medical literature. This section also consolidates current knowledge on the cervical spine from embryology to sophisticated laboratory studies.

In the second part, clinical management of specific disorders is discussed, including neoplasms, trauma, inflammatory disorders, and a multitude of idiopathic disorders. These topics are approached in a problem-oriented format with an outline structure discussing each clinical entity. Brief case presentations, excellent illustrations, and precise descriptions of diagnostic methods make this section not only enjoyable to read, but an excellent review of specific clinical entities.

The third section is a review of three special considerations of importance to the cervical spine. The first is an attempt to assist physicians in determining which consultant, neurosurgeon, orthopedist, physiatrist, or rheumatologist is most appropriate for the evaluation of specific patient complaints. The second section is an attempt to assist in the determination of disability for victims of cervical spine disorders; and the third is a very useful and entertainingly presented section on malingering, hysteria, and "compensationitis."

I think this book would be a ready reference for house staff, students, primary care physicians, and "neck-bone specialists" alike. Its attractive binding and sturdy construction, so typical of Saunders publications, ensure its benefit as a welcome addition to any medical library.

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