OCCASIONAL NOTES

THE BEHRHORST FOUNDATION AT 25 YEARS

A Report from Chimaltenango, Guatemala

In 1962 Carroll Behrhorst, M.D., left family practice in Kansas and moved to Guatemala to open a small clinic offering medical services to the local Indian population. He settled in Chimaltenango, a bustling market town located in the heart of the rugged western highlands. Since then his single-bed examining room has evolved into a major Guatemalan institution, the Behrhorst Development Foundation, that provides health services to the country's neglected rural poor.[1] During 1984 and 1985, I spent five months at the Behrhorst Foundation as an observer, trying to understand how it has grown, indeed flourished, despite difficult circumstances engendered by poverty, limited resources, and civil strife. The foundation appears to owe its success to a sensible definition of goals and to innovative health care programs that could profitably be emulated in other developing countries.

In Guatemala most Indians live in the countryside, where they earn a bare living by farming. Exports of cash crops such as coffee, sugar, and cotton provide most of the country's income. Because of slumping world commodity prices, the economy has entered a deep recession, with a resulting sharp drop in per capita income.[2] Domestic fiscal problems and a rising foreign debt have forced the government to cut health care expenditures by 60 percent over the past decade.[3] Most health care resources are concentrated in Guatemala City, the relatively prosperous capital with a population of 1.5 million, which has modern hospitals equipped to provide tertiary care, including open-heart surgery and neonatal intensive care. Away from urban areas, most Indians have no real access to medical care. A World Bank report described government health services outside the capital as "few or nonexistent."[4]

In the 1970s an ambitious system of 600 rural health posts staffed by doctors was constructed by the Ministry of Health. In the face of budget cutbacks, however, these health posts have proved too costly to maintain. Many are now abandoned; the remainder are inadequately staffed and often lack basic medical supplies.[5] In larger towns there are private doctors and hospitals, but only a minority of the people can afford them. Often pharmacies serve as health centers by selling expensive prescription medicines without providing examination or diagnosis. Health statistics record death rates from respiratory and diarrheal diseases and parasitic infections that are the highest in Central America and more than 100 times higher than those in the United States.[6] The life expectancy for Indians is only 45 years.[7] Up to 60 percent of children under five years of age have nutritionally deficient diets.[8] Infant mortality among Indians is listed officially as 114 per thousand,[5] but in some communities half the children die.

When the Behrhorst Clinic first opened in Chimaltenango, the town had no other health care facility. The clinic achieved immediate popularity, and soon more than 100 patients began arriving every day. Many came from remote villages and were too sick to journey home again. A small hospital was built, which grew to 70 beds; it now handles 3000 admissions and more than 20,000 outpatient visits annually. About a third of the patients are children, often with communicable diseases that are preventable by immunization. The most frequent diagnoses are dehydration, diarrhea, respiratory infection, parasitic disease, and malnutrition (Franklin R, et al.: unpublished data). These are familiar diseases in developing countries, for which relatively effective, low-cost treatment is available. To derive maximum benefit from its limited resources, the Behrhorst Clinic has concentrated its efforts on these diseases. Remarkable results have been achieved by the administration of vaccines, antibiotics, anthelmintics, and rehydration solutions.

Some valuable lessons have emerged from the experience of the past 25 years. The belief is widely held that the Third World has a shortage of doctors, but surprisingly, the clinic has functioned well with only two physicians, including Behrhorst himself. The sophisticated training and skills of a doctor are neither affordable in communities such as Chimaltenango nor essential for the delivery of primary care. Most common afflictions of poverty are easily diagnosed by means of a careful history and physical examination; if the diagnosis is not obvious, then treatment must be empirical. Complex diagnostic testing is simply too expensive and diverts scarce funds better spent on treatment. The Behrhorst Clinic deliberately limits laboratory services to an absolute minimum: blood count, urine and stool analysis, tests for acid-fast bacteria, Gram's staining, and malaria smears. The doctor trained to rely on bacterial cultures in selecting an antibiotic or on serum electrolyte levels in judging a patient's fluid status will find these skills superfluous. This explains in part why most Guatemalan physicians prefer to live in Guatemala City or have emigrated to the United States. Only a wealthier medical setting can offer the rewards of practicing medicine that is based on advanced diagnostic and therapeutic standards.

Instead of depending on doctors, the Behrhorst Clinic has relied heavily on nurses for the delivery of health care. Skilled nurses, usually women, are few in Central America because women are traditionally limited in their pursuit of professional careers and are allowed only a minor role in medicine. The Behrhorst Clinic recruited talented assistants from local communities and trained them as nurses, in some instances providing them with scholarships to nursing school. A dozen nurses, some with 10 to 20 years of dedicated service, currently share the responsibility for running the hospital. They are granted considerable autonomy in patient care, often deciding when to admit patients or to begin administering antibiotics. They also manage a number of special programs developed by the

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clinic. One nurse trained in nutrition encourages breast-feeding and teaches the parents of malnourished children how to prepare a balanced diet from inexpensive native foods. Another nurse directs a tuberculosis program that involves more than 400 patients. When new cases are identified, she is responsible for educating patients, screening families, and monitoring treatment.

Family-planning services are managed almost entirely by nurses. As community members familiar with local customs and cultural values, they are best able to explain the benefits of limiting family size. This is an urgent goal in Guatemala, whose population has grown explosively over the past 25 years, from 4.0 to 7.9 million, despite the exodus of many refugees.

The most successful family-planning method is the oral contraceptive, but acceptance of this method is still very poor. Only 4 percent of married women of reproductive age practice birth control; consequently, families have an average of more than six children.[4] For Indians, large families are a cherished tradition and a means of guaranteeing the family's survival. Family planning will be accepted only as part of a comprehensive health care effort that also reduces infant mortality and protects children from disease. In the past decade, fertility rates have shown a slight but encouraging decline.

In the late 1960s, the Behrhorst Clinic established a program of training health workers as a way to make medical care more accessible at the community level. The goal of the program, which continues today, is to reach beyond the relatively limited numbers of patients who can travel to the clinic for treatment. Each participating village selects a representative to attend the clinic for regular teaching sessions in the rudimentary principles of medicine. After completing the training program, each health promoter is certified to diagnose common ailments and to dispense basic medicines. Most health promoters have little formal education, but this has generally not proved to be a handicap. For example, to treat intestinal parasites it is unnecessary to know the details of the worm's life cycle or to recognize ova under the microscope. Health promoters are taught that for tapeworms the curative drug is niclosamide, for roundworms the choice is mebendazole, and if no worms are seen, a trial of metronidazole or a sulfa drug is warranted. The health promoter also stresses the importance of boiling drinking water, washing hands before eating, and digging latrines. Such a network of health workers can ultimately prevent or treat more parasitic infections than a small group of doctors working in a single clinic. Although not every infection will be evaluated correctly by the health promoters, a patient who does not respond to therapy can be referred by the health promoter to the clinic for further treatment. About 100 health promoters have been trained so far, some of whom care for 500 patients every year. Many health promoters have become community leaders by organizing projects to build latrines, vaccination campaigns, and agricultural programs. Unfortunately, as community leaders, they have also become targets of political violence.

With the success of its training for health promoters, the Behrhorst Clinic has expanded its extramural efforts to raise living standards by developing community resources and thereby indirectly improving health. In 1980 the Behrhorst Clinic was renamed the Behrhorst Development Foundation to reflect this shift in emphasis. Most of its resources are now devoted to programs that aim to break the cycle of disease by attacking its root causes. An example is the foundation's water projects. Most communities in rural areas have no potable water and suffer severe crop losses from water shortages during the dry season. Children drink contaminated water and become sick with gastrointestinal disease. They are treated successfully with rehydration solutions and medicines, only to fall ill again within a few months. To help solve this problem, the foundation has hired engineers to design and organize dozens of water projects. With labor provided by each community, miles of water pipes have been laid to bring fresh water from mountain springs to storage cisterns and irrigation systems. As water supplies have increased, crop yields have risen and malnutrition has decreased. The availability of potable water has also reduced the rates of diarrheal disease.

Rapid population growth has forced Indian families to subdivide their land until many can barely survive on their reduced plots. Despite its agricultural wealth, Guatemala now imports sizable quantities of corn to feed its people. The thirst for land is so intense that many farmers cultivate the sheer slopes of volcanoes. The problem is compounded by the inequitable distribution of land — a common situation in much of the developing world. In Guatemala the wealthiest 10 percent of the population owns 75 percent of the land.[9] Attempts at land reform have been stalled for years; the lack of progress has fed social unrest. Since 1970, to address the problem of land distribution, the foundation has operated a revolving loan fund for small groups of farmers who wish to purchase land for cultivation. The loans are made at low interest with flexible repayment schedules; farmers can thus repay the loans with profits earned from their newly purchased land. Smaller loans are also available for various agricultural projects and supplies. These initiatives have opened a peaceful avenue for change, although the problem of land ownership will ultimately require government reforms.

Families whose land holdings are too meager for them to survive by farming must work as migrant laborers on large fincas (plantations) that produce export crops. Guatemala has approximately 800 major fincas employing 0.5 million laborers, including women and children. On the fincas, workers are crowded into poor housing, are paid low wages, and have no access to medical care. To improve conditions, the foundation has opened small outpatient clinics on some fincas, staffed by Behrhorst-trained health promoters equipped with a stock of basic medicines. The

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cost of running the health post is paid by the owner of the finca, who benefits indirectly from the improved health and morale of the work force. This program is growing rapidly and is making health care available to one of the most neglected parts of the population.

The Behrhorst Development Foundation is a nonprofit institution managed by a Guatemalan board of directors. Its lack of government affiliation allows it independence, some degree of protection from domestic politics, and freedom from administrative bureaucracy. The development projects described above are supported by contributions from various governmental and private agencies overseas and by funds from the Guatemalan government. The cost of running the hospital itself, which consumes about a quarter of the $230,000 annual budget,[10] is covered by patient charges, which average $3 per day, and by sales of medicines. The hospital has a pharmacy that makes a small profit by selling generic medicines obtained in bulk from foreign suppliers. This arrangement helps to reduce the extremely high cost of modern pharmaceuticals. The hospital is operated on an unsubsidized, fee-for-service basis to ensure that the level of services provided does not exceed what can be afforded locally. User fees have the disadvantage of discouraging access to health services, but they cut waste and provide an efficient way to budget resources. Moreover, the Indian population strives for self-sufficiency and expects to pay for services. Relief programs that offer free clinics or surplus food handouts may also create dependency, weaken cultural values, and hamper economic development.

Over the years, political violence in Guatemala has been the most serious obstacle to progress in health care. Since 1980, open war has been going on between the army and various leftist guerrilla factions fighting for power. Although the foundation has maintained strict neutrality, at least a dozen health promoters have been killed in indiscriminate army counterinsurgency actions. In 1983, gunmen killed a Guatemalan doctor working at the clinic[11]; later the same year, the director of the loan program disappeared. This violence has disrupted the foundation's work and forced a cutback in the health promotion program. Health conditions in the highlands have worsened lately because of the social dislocation and economic damage caused by the fighting.[12] Enduring progress will be impossible until peace and security are established. In the past two years, the war has subsided and the army has ceded power to an elected civilian president; these changes offer hope for the future,[13] but lasting peace will come only with social justice, land reform, and an end to the exploitation of the poor. In a sense, these are the most urgent medical priorities.

Throughout the world, the gap in standards of health and health care between rich and poor nations is widening. This trend must be reversed. Guatemala, with its rapidly growing rural population struggling with poverty and repression, typifies the challenge. In the past, medical progress has been expected to provide the solution: another vaccine, a better contraceptive, a more potent antibiotic. In fact, adequate technology is now available for the task at hand; the key is the effective application of appropriate technology and resources. All too often, medical services in poor countries like Guatemala have been modeled after those in developed countries and have relied chiefly on doctors, expensive diagnostic procedures, and traditional approaches to medicine. Such programs seem likely to fail to achieve the World Health Organization's goal of "health for all by the year 2000."[14]

The Behrhorst program has adopted a different strategy. Doctors have been used as organizers and teachers, not as primary health care providers. The fight against disease has been waged largely outside the hospital by health promoters working at the community level. The highest priority has been assigned to potable water, better sanitation, vaccination, contraception, improved nutrition, land ownership, and economic development. Progress has been slow but real. The Behrhorst Foundation has made a permanent commitment to Guatemala and has adapted its programs over the years to meet local needs.

Those who expect quick results from development programs are bound to be disappointed. Crash programs and rapid infusions of money breed corruption and waste, because there is no effective structure in place to make use of resources. It takes time to create workable programs, to train personnel, and to forge bonds of friendship and trust with local communities. Moreover, it is vital that health programs be directed and staffed by the people they aim to serve. The employees of the foundation have been Guatemalan, usually Indian, with the exception of Behrhorst himself. Now, after 25 years, the foundation has reached a crossroads. Behrhorst is stepping down to leave the future entirely in Guatemalan hands. His philosophy of health care in the developing world will continue to serve as a guide in the work that lies ahead.

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BOOK REVIEWS

To Be Old and Sad: Understanding depression in the elderly

By Nathan Billig. 114 pp. Lexington, Mass., Lexington Books/D.C. Heath, 1987. $8.95.

This short book on depression in the elderly is by a sensitive, knowledgeable psychiatrist with extensive experience working with the elderly. He states in the preface, "I intend this book as a practical, informative, supportive work geared to families with elderly members and to older adults who are concerned about the possibility of depression in themselves, in friends, and in family members and who want to learn more about its origins, symptoms, and treatment. It is also intended for students in fields concerned with elderly adults and for practitioners in medicine, counseling, nursing, and other helping professions." Because the book is intended to reach such a diverse audience, it is written in straightforward language, provides basic information, and lists only three general "related readings" rather than the more detailed references typical of a monograph for professionals.

The author describes the biologic and psychosocial changes that may predispose an older person to depression. In addition, he notes that medical illnesses or the medications used to treat them may cause depression. With illustrative case vignettes, the book describes the signs and symptoms of depression, the process of evaluation, the various types of depression, the important differences between dementia and depression in an older patient, the various treatments available, and the importance of involving family members in treatment.

Some of the information seems excessively detailed for a lay audience, such as a list of the diagnostic criteria in the *Diagnostic and Statistical Manual* (3rd edition) of the American Psychiatric Association. Other sections are vague; for example, in the chapter on dementia one finds it stated that "a group of drugs called memory enhancers may in some cases slow the progress of the memory loss. These medications are generally safe, although their effectiveness is controversial." Most readers would like to know which drugs the author is describing. For a medical audience, the description of antidepressant treatments is too brief. Many geriatric psychiatrists would find the author excessively cautious about the use of monoamine oxidase inhibitors, overly enthusiastic about the use of lithium, and surprisingly gentle in "not recommending" psychoanalytic psychotherapy as "the sole treatment for older adults with major depressive episodes." The physician interested in treatment of depression should refer to Salzman's book *Clinical Geriatric Psychopharmacology*, published in 1984 (New York: McGraw-Hill).

This book is useful primarily for the reader who is not a physician. Its chief strength lies in the author's forceful message that depression is not a normal part of growing older, that it is a very painful condition for older people and their families, and that safe and effective treatments are available.

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Melancholia and Depression: From Hippocratic times to modern times

By Stanley W. Jackson. 441 pp. New Haven, Conn., Yale University Press, 1986. $35.

Dr. Jackson has written a remarkable book. He looks at the history of clinical depression from the time of ancient Greece and Rome to the development of the *Diagnostic and Statistical Manual* (3rd edition). His attention focuses not only on clinical description, but also on the conceptualization of causes and on therapeutics. He selects and summarizes from many primary sources: Hippocratic writings, Aristotle, Rufus of Ephesus, and Galen; Arabic medical authorities; medieval Christian theologians; Renaissance writers; the chemical and mechanical theoreticians of the 17th, 18th, and 19th centuries; and the major influences on our own era, from Kraepelin and Freud to Winokur and Spitzer.

After a historical and chronologic overview in the first half of the book, Dr. Jackson takes up some aspects of depression thematically, each chapter organized historically. He looks at the relation of melancholia to mania, hypochondriasis, grief and mourning, and religion and the supernatural, and then examines variants of melancholia, such as love-melancholy and nostalgia.

Although the clinical syndrome of depression is the book's object, it is here reflected in the humanities and in medical history. The author demonstrates how cultural belief systems shape our view of depression. The Hippocratic writers elaborated a humoral system to explain diseases, including melancholia. The medieval theologian Cassian perceived the sin of acedia to be, "weariness or distress of the heart." In literary 18th-century England, authors Rogers, Cowper, and Johnson wrote of the existential pain they suffered from melancholy. Our 20th-century views divide themselves into several schools of understanding: descriptive systems, psychoanalytic formulations, biologic hypotheses, and sociocultural perspectives.

The book is rich, dense, and comprehensive — a treasure for those who wish to understand depression. The sweep of its view of melancholia is huge. The author's talent is in looking at many historical details and resisting the urge to draw simple conclusions. He respects how differently, for instance, medical writers have seen hypochondriasis: as a form of depression, as a syndrome in its own right, or as one symptom complex accompanying a variety of psychiatric illnesses. He details the particular points of view, quotes original sources extensively, and leaves the reader with a sense of the difficult, unyielding complexity inherent in making sense of melancholia. The reader gains a feeling for the common core of human experience that each historical period has tried to understand and treat.

Although this book is not about the treatment of depression, it will appeal to all who wish to understand depression broadly, as a part of the human condition, seen historically and in the variety of cultural modes in which it has been conceived. It is so rich in detail and ideas that it may well be the starting point for further investigations. In the tradition of the best historical works, the book gives us a place to stand from which perhaps to see a little more clearly our own efforts to understand depression.

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Limits of Scientific Psychiatry: The role of uncertainty in mental health

By John O. Beahrs. 230 pp. New York, Brunner/Mazel, 1986. $30.

In the search by psychiatry to define itself, treatment approaches are too often embraced or rejected on grounds other than their probable efficacy. Militating against this tendency is the multiaxial organization of the *Diagnostic and Statistical Manual of Mental Disorders* (3rd edition) (DSM-III), the current standard diagnostic manual. Reflecting the biopsychosocial model put forth by Engel, DSM-III has added breadth to case formulation and has helped to prevent treatment plans from overlooking patients' needs in areas outside the clinician's focus. Even so, some DSM-III axes are seen by certain psychiatrists as paramount, and schools of thought and whole departments emphasize one over the others.

Because of its eclecticism, the biopsychosocial model has too often been thought of as a convenient fiction that permits several psychiatrists to sit in the same case conference without arguing. Clearly, what is needed are organizing principles to integrate pragmatically the paradigms represented in DSM-III. Such an integrative "executive" program would permit rational and coordinated

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