A GRASSROOTS STRUGGLE FOR HEALTH AND RIGHTS IN RURAL MEXICO

— David Werner, 1994 —

Note: This "case study" was originally prepared in 1994 by David Werner for inclusion in a book to be titled "Society and Health Case Book," edited by Benjamin C. Amick III and Rima Rudd. Unfortunately the third book was never competed. We therefore make it accessible on this website.

Project Piaxtla is a rural health care initiative run by local villagers in western Mexico. Named after the local river, Piaxtla was started 30 years ago to serve a large, rugged, sparsely populated, mountainous region in the state of Sinaloa. The program is based in Ajoya, the largest village (population l,000) in its area of coverage. This grassroots initiative has followed an uncharted course which has led it from a narrow focus on curative and then preventive measures to a comprehensive approach which confronts the underlying social, political, and economic causes of poor health. From the first, a major concern has been the survival, health, and quality of life of children. These have improved over the years, although new, more global obstacles threaten to reverse some of the gains. The author of this account, David Werner, has been involved with the program as an advisor and facilitator since its inception.

THE PROBLEMS:

In brief: The problems addressed in the project area are *pervasive poverty, ill health, and high child mortality largely due to (1) an inhospitable physical environment and (2) institutionalized inequity: the exploitation of destitute peasants by powerful land barons.* This unfair local situation is perpetuated by *a global model of economic development that likewise favors the rich and powerful.*

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The Sierra Madre Occidental is a rugged range of mountains that separates the relatively fertile coastal plains of Western Mexico from the central plateau. Even today few roads traverse this extensive range. A large number of homesteads and small villages are accessible only by mule-back or on foot. People to a large extent provide for their own basic needs in terms of shelter, food, health care, and skills training. Schools, which are few and far between, often do not go beyond the 3rd grade of primary education. The local *campesinos* (poor farmers) have traditionally subsisted off the land. Their main crops are corn (maize) and beans. However, in the last two decades the growing and trafficking of illegal dugs (marijuana and opium poppy) have added new sources of both revenue and destitution.

When the villager-run health program called Project Piaxtla began in 1965, the overall level of health of the *campesinos* was distressingly low. An early survey conducted by village health workers showed that 34% of children were dying before reaching 5 years of age. Most of these deaths were related to undernutrition. Children, many of them undersized with protruding bellies, were afflicted with the typical diseases of poverty. These included diarrheas, respiratory infections that often turned into pneumonias, and various parasitic infestations, external and internal, ranging from scabies and head lice to a multiplicity of intestinal worms. High in the

mountains goiter was endemic due to insufficient iodine, which also accounted for cretinism and prevalence of partial deafness among children. Chronic eye, ear, and skin infections were common. Lack of immunization led to endemic polio, epidemics of measles and whooping cough, and a high death rate from neonatal tetanus. Tuberculosis was widespread and usually untreated because it was considered incurable. As a result, a discouraging number of babies died from the "slow meningitis" of TB contracted from their ailing mothers. Roughly 70% of women were visibly anemic, and complications of childbirth claimed the lives of one in ten women. The chance of survival of children who had lost their mothers was particularly poor, even though grandparents or other relatives usually took these children in.

In sum, the pattern of illnesses afflicting the campesinos of the Sierra Madre—mostly the vicious cycle of infectious diseases and undernutrition—was typical of poor rural families throughout the Third World.

In trying to find solutions to the prevailing health problems in the area, the village health workers of Project Piaxtla became increasingly aware of the need to identify and combat the underlying, man-made causes of poverty. They came to realize that poverty is rooted in unequal distribution of resources, especially land. While most peasant farmers owned little or no productive farmland and often lacked adequate food, a few families (in violation of the Mexican Constitution) possessed vast plantations on the most fertile land and owned thousands of cattle. However, most of the peasant farmers fatalistically accepted this long established gulf between the "haves" and "have nots" as an immutable fact of life, like the pendulum of the seasons between floods and drought. The poor deeply resented the cruelty of the rich, especially when collection on usurious loans left their larders empty and children hungry. Yet the sharecropper child's death from marasmus and the land baron's death from cirrhosis were ultimately both explained as "God's will." The village health team's focus on inequity as a core determinant of poor health became clear only after repeated failures to substantially reduce child death rates through conventional medical and public health measures. We will therefore postpone further analysis of the underlying problems of poverty and inequity to the subsequent sections of this narrative.

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Note: Before continuing with this "case study," I should forewarn the reader that Project Piaxtla—as an informal, loosely organized initiative run by local villagers—may differ significantly from other "interventions" in this book. Launched in the mid-1960s with the idealistic, naive and sometimes blundering assistance of outsiders (principally the author), the Piaxtla experience was not methodically "planned" or charted ahead of time. No preliminary base-line studies or systematic analyses were carried out to establish fixed goals and objectives. Indeed, only in the third stage of the program's development did community diagnosis and situational analysis become a standard part of health worker training (see page 00).

The Piaxtla initiative began as a personal, if contagious, gut-response to distressing problems and needs. It grew organically, its roots ferreting a path around unforeseen impediments as they were encountered. Planning—such as it was—was a continuous learning process. The program evolved like peeling an onion: as the outer, most immediate problems were addressed, underlying problems were revealed and confronted, layer after layer. Through repeated efforts to defend the health and lives of deprived people against overwhelming obstacles, it gradually became clear to those involved that ill health and high death rates were linked to unfair social structures (unfair land distribution, slave wages, and usurious loans, etc.). These inequities are rooted in the colonial history of Latin America and extend over 500 years to the current global paradigm of economic development, which continues to favor the powerful at the expense of the poor. With

growing awareness of the structural causes of pervasive ill health at both the micro and macro levels, the village program began to take on new, broader dimensions. It evolved from a narrow focus on health care to a comprehensive struggle for equity, sustainable development, and the most basic human right: *freedom from hunger*.

In the following sections I will try to put this evolving perception of problems and needs into more of a contextual framework, as they relate to historical and current events.

THE SITUATION:

Physical environment. In remote places like Mexico's Sierra Madre, it is easy to blame the devastating health problems and high death rate of children on the harsh physical environment and geographic isolation. Such was the author's interpretation of the situation when he first set foot in the area in 1964. This interpretation is in part valid. The local people eke out their existence from a terrain which in many ways is hostile. During the long dry season, which may last for 8 or 9 months, the landscape turns into a virtual desert. In the worst years grazing animals die of thirst and some families must hike a mile into deep ravines in search of water, which they carry back to their mountainside huts in gourds. The short summer rainy season—from June 24 to late September—at best allows one harvest a year (except for a few more fortunate families who manage to irrigate their fields from rivers or streams in the valleys).

Subsistence agriculture in the region is difficult and uncertain. Most families plant the steep mountainsides by slash and burn farming, timbering and planting a new parcel each year on increasingly impoverished soil. One out of every 3 years, on average, crops fail due to inadequate rain, floods, or high winds. Often the poorest families run out of food before the next harvest is in, and try to live off wild fruits, nuts, *quelite* (a wild, spinach-like plant) game, fish, and crayfish. But timbering, over-grazing, over-hunting, and dynamiting of river fish by hungry families has led to diminishing natural reserves. During lean times often the best a mother can feed her hungry children is a watery soup made with bits of tortilla and chilies.

The highest child mortality occurs during the rainy season, for at least 3 reasons: 1) it is when food most often runs out (before the annual harvest); 2) it is when drinking water is most contaminated, sanitation is worst, and diarrheal diseases are most prevalent; and 3) it is when rivers flood, trails wash out, and medical assistance is least accessible.

Health care. Even today, a vast area of the Sierra Madre Occidental remains a region *where there is no doctor*. Many families live one or two days by foot or mule-back from the closest road, from which point it is still another 100 miles to the nearest city (Mazatlan). For medical emergencies, often the closest official clinic or hospital is too distant to reach in time. Sometimes in the case of a surgical emergency such as appendicitis, obstructed labor, or an abdominal gunshot wound, family and friends make an heroic effort to carry out the ailing person. The stretcher bearers trot along the narrow trails, stopping only briefly, day and night. Runners are sent ahead to intermediate settlements to recruit volunteers to replace those who are exhausted. But despite such efforts, too often death intervenes along the trail.

For the poorest families, even these potentially life-saving marathons are often out of the question. The high cost of medical care in the cities makes its availability even more remote. In theory, poor people are entitled to reduced rates in the public hospitals. But in practice, such "safety nets" for the poor often do not work. Hundreds of poor farming families have been economically ruined by the costs of medical or hospital care in the cities, only to see their loved

ones die from inadequate care. Consequently, families usually only make the long trip to the city hospitals as a last resort, when the illness has progressed to an advanced or incurable state. Not surprisingly, many villagers regard the hospital as a place where you go to die.

In consequence of their geographic and economic periferalization, most of the health care for these mountain people is what they can provide for themselves. Each cluster of villages and homesteads has its own *curanderos* (traditional healers), which include *herberos* (herbalists), *hueseros* (bone-setters), *sobadores* (masseurs), *parteras* (local midwives), and *espiritualistas* (spiritual healers). In addition, there are growing numbers of practitioners who use modern medicines. These comprise *inyectadoras* (women who inject) and *médicos practicantes* or self-made "doctors" who buy pharmaceuticals in the coastal cities and sell or apply them (often at elevated prices). Village shops function as mini-pharmacies, carrying not only traditional cure-alls (sulfur, gentian violet, vinegar, laxative salts) but also a wide variety of Western medicines. In addition to non-prescription items such as vitamin tonics, cough syrups, pain killers, and stool thickeners, they also stock many antibiotics and oxitocics (hormones used to control bleeding at birth). Some of these drugs are potentially useful, but many are irrational or dangerous.

In spite of the various categories of healers, in these villages as in most of the world, the primary health care providers are mothers. Every woman has a wealth of survival and healing skills. She tends to seek help outside the home only after first trying a range of home remedies. The Piaxtla health team has come to realize that *one of the most effective ways to improve the health care and survival of children is to help mothers build upon and upgrade their health-protecting skills.*

Many of the traditional home remedies in the area make sense. Beyond doubt, some are physiologically effective. For example, the pulp of the *cardón* cactus can be used to make a sterile poultice for severely bleeding wounds. Its astringent juice causes vaso-constriction which helps control bleeding. However, other traditional remedies appear to work primarily for psychological reasons. For example, for throbbing headache the forehead can be stroked with a live toad. In certain home cures, the initial psychological effect triggers a protective physiological response. For example, the leaves of *guaco* (a vine whose flower resembles a snake's head) are bound firmly against a snake-bitten limb, and the person is told it works as an anti-venom. Reassured, the person is less fearful and trembles less. Since the snake venom spreads mainly through the lymph ducts, the circulation in which depends completely on body movement and muscle contractions, the tranquilizing effect of the remedy actually slows the spread of the venom, thereby reducing the risk of fatal systemic poisoning.

Some traditional forms of healing entail risks that outweigh possible benefits. For example, human or animal excrement was widely used for different problems ranging from conjunctivitis to the freshly cut umbilical cord. The medicinal uses of human feces were so acclaimed that local healers referred to it as *hierba sin raiz* (herb without roots).

For obvious reasons, such treatment sometimes led to serious infections, even tetanus. Fortunately, the most risky home remedies are now less widely used. In part this is due to the educational efforts of the village health workers, who have tried to discourage the worst and encourage the best of both traditional and western medicine.

Irrational use of pharmaceuticals. As is true worldwide, in the Sierra Madre the widespread overuse and misuse of modern pharmaceuticals has become a major obstacle to health. Health authorities tend to blame this pattern on the prevalence of self-care and on the unbridled use of prescription drugs by untrained and unlicensed practitioners. But in reality, many of the worst habits of irrational drug use have been initiated by licensed doctors in the cities and towns.

Especially when attending poor people, many doctors make a hurried, very superficial, often inaccurate diagnosis (even though they often request expensive, often unnecessary X-rays and lab tests). Then they prescribe a standard shotgun-like treatment which often includes six or more medications. Typically these include any and sometimes all of the following:

2 or more antibiotics (which are often redundant, incompatible, unnecessarily risky, and more costly than safer, better known alternatives)

one oral and one injectable course of vitamins

injectable iron (for which there is virtually no medically justifiable use)

a couple of analgesics (including dipyrone, which was long ago banned in the USA because of its dangerous side effects)

a corticosteroid (corticosteroids are powerful anti-inflammatory drugs which often give quick symptomatic relief but inhibit the body's defense system and thereby make underlying infection worse. In recent years, as the big cities became more crowded with young doctors competing for poor people's money, the prescription rate of corticosteroids has drastically increased. Some critics note that prescribing corticosteroids—which gives impressive results followed by a "rebound" of affliction when the medication is stopped—is an effective way for a doctor to make sure his patients keep coming back.)

Tragically, both untrained village healers and village mothers, wanting to practice "good medicine," carefully follow the prescribing patterns of the doctors. But, unfortunately, they are often deceived. Many doctors either own or get a cut from the pharmacies that carry the unusual, over-priced drugs they recommend. In addition, greedy entrepreneurs literally make a killing through unscrupulous sales of drugs to gullible clients. Snake oil has been replaced by patent Western medicines, peddled by itinerant vendors and by radio and TV. In the Sierra Madre, every morning before dawn villagers turn on their radios to listen to *ranchera* country music. And between the songs come advertisements for wonder drugs to cure all the aches and pains that plague poor, undernourished village people: products guaranteed to bring prompt relief from back ache, headache, belly ache, nagging cough, diarrhea, arthritis, anemia, and fatigue. Poor people are cajoled to spend their limited food money on these overpriced products which at best give only temporary relief.

In sum, the biggest toll on health caused by the overuse and misuse of medicines does not come from medical complications, but from increased poverty and undernutrition as result of the money poor people spend on medicines and medical services.

Drug use, growing, and trafficking. Apart from pharmaceuticals, other drugs—both legal and illegal—contribute to the health problems and high child mortality in the Sierra Madre. As everywhere, tobacco takes a high toll, both directly among those who breathe the smoke, and indirectly among the children, whose hunger is increased because their parents spend scarce food money on cigarettes. Adding to tobacco's negative impact on health, in the last few years people's smoking habits have shifted from inexpensive role-your-own stogies to slick multinational products, with much of their puerile advertising aimed at children.

But the biggest health cost comes from alcohol. From adolescence to middle age (when some fathers begin taking better care of their health and their families) most men are festive and often chronic drinkers. Drunkenness is part of the rite of growing up, of becoming a man, of respite

from the insults of daily life, of release from reserve and restraint. Unfortunately, when men drink, they not only spend the money in their pockets; on a prolonged binge they may even sell their stored grain or unharvested maize. (Some would sell their land if they had full title to it.) And when their wives complain that the children are hungry, too often the man—hiding his inner remorse through outward anger—may beat or even shoot his wife. And if the children try to intervene, heaven help them!

When drunk, men also fight among themselves. And because carrying a firearm is part of the drinking ritual, the fighting often ends in bullet wounds, disability, or death. The result of such shootings usually leads to displacement, destitution, and deteriorating health of the extended families, both of the shooter and the shot. Resulting blood feuds may last for generations.

Contributing even more to the increase in violence has been the escalating trade in illegal drugs. The Sierra Madre in the state of Sinaloa is the heart of clandestine production of marijuana and opium poppy. At one point or another, nearly every mountain family—men, women, and children—has been involved in growing of drugs. The narcotics control soldiers and police (financed and heavily armed by the United States) have done more to promote than curtail planting and trafficking of drugs. They have provided seed, monitored the crops, and taken bribes. And for the sake of appearances they have busted, beaten, jailed and killed a selection of the smaller growers. When the US "War on Drugs" calls for more arrests, the soldiers simply raid a small village at night (often a more accessible village where no drugs are grown), drag all the men and older boys from their beds, torture some of them to incriminate others, and cart those declared guilty off to jail. The next day the newspapers give the soldiers' account of how they caught the men red-handed in their poppy fields.

Complicating the scene yet further, in the last few years drug traffickers from South America, passing through Mexico on their way north to the USA, have begun to take side trips into the Sierra Madre to multiply their gains by swapping cocaine for raw opium. To create a market for cocaine, they have induced young men to take up the habit. Piaxtla health workers estimated that by 1993 between 50 and 70% of male adolescents in the foothills of the Sierra Madre used or at least had tried cocaine.

The tide of violence throughout Mexico (and much of the Americas) that has risen out of the illicit drug trade is staggering. Crime, corruption, and the widening gap between rich and poor has led to a growing sub-culture of violence as struggling families rise and fall through sudden cycles of prosperity and destitution. Falling real wages and rising unemployment have put millions of children and youth onto the streets, desperately seeking the means to endure. Involvement in the use and peddling of drugs offers a tempting if risky solution. On the streets, drugs and violence go hand in hand.

Throughout Mexico gunshot wounds, mostly drug related, have produced a legion of spinal cord injured and brain injured young men (and some women). Hundreds of these physically and psycho-socially injured young persons have found their way to PROJIMO, a community based rehabilitation program run by disabled villagers, which grew out of Project Piaxtla. Because PROJIMO is, in a sense, one of the *"outcomes"* of Project Piaxtla, we will discuss it in that section.

Social factors.

The longer you spend in the Sierra Madre and the closer you live with the poor, the more you will become aware that the physical and environmental causes of ill health form only part of the

picture. While it is true that the remoteness and geography of this mountain region leads to difficult access to health care, it soon becomes apparent that a number of human factors complicate the situation and contribute to ill health. Most evident are things such as the high cost of modern health services and medicines, the cursory diagnosis and irrational use of pharmaceuticals by many urban doctors, the unscrupulous promotion of patent cure-alls by radio, the recruitment of addiction of village youth by big-time drug traffickers, the widespread corruption of officials, and the brutality of soldiers. However, as the village health team has increasingly become aware, the human causes of poor health and high child mortality go much deeper: deriving in large part from inequitable distribution of land, wealth, and power.

Land distribution as a determinant of health. One of the most critical determinants of health in the Sierra Madre (as in many rural areas of the world) is land tenure. When Project Piaxtla began, many *campesinos* owned little or no land. What land they did own was of inferior quality. In contrast, a handful of local families held large tracts of fertile, river valley land, owned large herds of cattle, and were quite wealthy. These few rich families completely controlled Ajoya's community council. They blocked all attempts by poor farmers to organize or demand their constitutional land rights, when necessary resorting to violence.

Because neither the author nor the village health workers fully analyzed the many social and political factors affecting health until the village health program was well underway, we will return to such "situational analysis" when discussing the intervention. (Indeed, the health workers' role in facilitating community groups to critically analyze the root causes of ill health became a core feature of the Piaxtla initiative.) To put the evolution of the program into perspective, however, it may help to first relate a brief history of the region, especially in relation to conquest and land tenure.

Historical perspective. In Mexico, land distribution has long been a critical issue. Historically in the Sierra Madre Occidental, the struggle of poor campesinos for their land rights goes back 500 years. When the Spanish *conquistadores* first entered the Piaxtla Valley, they claimed to own the Indians' land and tricked them into buying it back in exchange for their gold, some of their girls, and whatever else took their fancy.

Quietly enduring this abuse, the Indians in this remote mountain region continued to plant and harvest their land in relative peace for many years. Then, in the late 19th Century, the dictator-president, Porfirio Dias, started giving huge tracts of land to his friends and cronies. Ignoring the land titles given to the Indians by the *conquistadores*, Dias gifted the entire Piaxtla river valley to a wealthy man named Manjarrez. Manjarrez went to the valley and told the Indians they had either to move away or work as serfs.

But the Indians, having already been tricked into buying their own land from the Spaniards, refused to yield. Manjarrez brought a squadron of soldiers to enforce his claims. But he was in for a big surprise. Indian chief, Feliciano Roque blew on his conch and his warriors poured down from the hills. In a fierce battle the government troops were wiped out. According to the legend, “The soldiers’ blood ran down the dry arroyo into the river.”

Infuriated, Manjarrez asked Porfirio Dias for more troops. Dias refused. And for several years the Piaxtla valley became, in effect, a tiny independent nation governed (quite wisely, it is said) by Chief Roque. But Manjarrez did not give up. Using the tactic of “divide and conquer,” he bribed an Indian to assassinate Roque. This led to internal fighting and tribal disintegration. Manjarrez moved in with a few soldiers and soon subjugated the Indians. Some stayed to work as serfs and share croppers. Others retreated into the hills to grow scanty crops on steep slopes

through slash-and-burn farming. Either way meant less food. Often a family's supply of maize and beans ran out. There were seasons of hunger, usually during the rains before the next harvest was in. Most adults could survive these hard times. Many children could not. These were the conditions, repeated throughout the nation, that led to the Mexican Revolution in 1910.

In the Mexican Revolution—with the war cry: "*Tierra y Libertad*" (Land and Liberty)—landless campesinos throughout the countryside united behind popular leaders such as Pancho Villa and Emiliano Zapata. At last, the Dias dictatorship was overthrown and a new, truly revolutionary Constitution was drawn up.

The heart of the Mexican Constitution was (until recently) its agrarian reform legislation, which included the famous *ejido* system. According to this system, a group of villagers could join to form an *ejido* or communal land holding. The local farmland was divided equitably among all families. Each family would receive provisional title to their parcel, could farm it and benefit from the produce as they chose. But ultimate ownership stayed with the *ejido.* The family could not sell its parcel nor have it seized for unpaid debt. This protected small farmers from losing their land through sale or confiscation for debt. To further prevent the return of huge plantations, limits were placed on the legal size of property holdings.

Some social analysts say the *ejido* system contains the best of the political Right and the Left. It encourages the personal incentive and high production of private ownership. And it also guarantees the equity of land distribution intended by socialism.

However, the *ejido* system has worked better in theory than in fact. Since the Mexican Revolution, the biggest problem has been institutionalized corruption. Although the Constitution calls for a democratic multi-party system, for 60 years a single political party, the PRI (Institutional Revolutionary Party), backed by brutal military and police forces, has remained in power. To stay in power in spite of growing inequities and hardships for the poor, it has resorted to vote fraud, intimidation, torture, and strategic assassination of human rights leaders. (The killing of outspoken journalists has been wryly dubbed "the ultimate form of censorship.")

Under such a corrupt regime, the *ejido* system and laws limiting size of land holdings have often failed to protect small farmers' land rights. The rich and powerful routinely pay off government officials to break the rules and to silence those who protest. Nevertheless, the land reform statutes of the Mexican Constitution have, until recently, provided a legal and moral base whereby poor farmers could organize to defend their revolutionary rights to *Land and Liberty*.

For the campesinos of the Sierra Madre, the new Constitution of 1917 brought the promise of change. In the Piaxtla valley community of Ajoya, poor families joined together to form an *ejido* (communal land holding). They elected an ejidal president and requested the Office of Agrarian Reform in the state capital to come oversee the redistribution of land.

But violence interceded. The day before the land engineers arrived, the newly elected ejidal president was shot dead. The next day the "group of six" large landholders paid off the land engineers, who left the large plantations untouched. . . . As the years passed the big landholders, or *latifundistas,* backed by corrupt government officials and hired thugs, managed to see that their unconstitutionally large plantations remained intact.

Over the following decades, from time to time the poor farmers of Ajoya tried to reassert their constitutional land rights. But until the early 1970s, their efforts were repeatedly crushed. When Project Piaxtla began, many people knew that the inequitable distribution of land was a cause of

poverty, hunger, and poor health. But the chances of changing that situation seemed remote. Each time another child died, the family wept and resigned itself to "the will of God."

THE INTERVENTION:

First, let me say that the concept of "intervention"—a term chosen by the editors of this book—does not comfortably fit the gradual, endemic, largely unplanned evolution of the villager-run health initiative known as Project Piaxtla. "Intervention" has an intrusive, even militaristic connotation. It bespeaks a strategy which outside authorities impose on "target populations." For North Americans to use the term in the context of Latin America is especially unfortunate.

The Piaxtla health initiative began more with a vision than a plan. Over time, the vision evolved in response to the changing situation and growing awareness of key participants. The lack of clearly defined objectives and goals created some difficulties, but also permitted flexibility for a bottom up response to new obstacles and possibilities as they arose. The village health team sought to be an informal cooperative of equals rather than an efficiently-run hierarchy. They jokingly referred to their modest endeavor not as an *organization* but as a *disorganization.* And they credited that disorganization for both their biggest failures and successes. In terms of achieving a wider impact, the team's desire was not that their program be *replicable*, but that it provide stimulating ideas and methods from which others could learn, select, and adapt. Each program's sense of ownership, originality, and adventure is paramount.

How the initiative began. The project began by accident. In the winter of 1964-65 the author, a biologist and at that time a high-school teacher, was hitch-hiking in Western Mexico, looking for interesting birds and plants.

How was the area where the project was to evolve selected? Completely by chance. Traveling northward in Sinaloa, I chose on my map a road that went farthest back into the mountains, and took it. Where the dirt road ended, I followed the foot-trails deeper into the mountains. I was impressed by the beauty of the ragged crags and ravines, but even more by the friendliness and warmth of the villagers. Time and again, families would welcome me—a total stranger—into their home, feed me better than they were eating themselves, and expect nothing in return. I felt that these isolated mountain people lived more like human beings ought to than most of us do.

However, I also became aware of the enormity of people's health problems. One evening at dusk I was hurrying along a narrow trail, hoping to reach the next village before nightfall. On passing a small pole-wall hut, a young man called out to me. "You'll not make it to Bordontita before dark," he said. "There are poisonous snakes and scorpions in the forest at night. Why don't you stay here?" I accepted the offer. The mother sent a boy to look for eggs under a chicken, and cooked them for me, though the rest of the family was eating only tortillas with a few boiled beans. That night, as the winter wind blew through the pole walls of the hut, I felt cold in my sleeping bag. The seven members of the family curled together on the earth floor under two thin blankets, trying to keep warm. By around 2:00 A.M. it was so cold that the adults got up, built a fire, and sat around it with the children slumbering in their arms, until dawn.

The next morning, by daylight, I noticed that one young boy was limping. His foot was swollen and oozing pus. I asked what had happened. He said he had stepped on a thorn—three months ago. Then I noticed that the throats of two younger children, about 4 and 6, were bulging with endemic goiters. I had no training in medicine other than a bit of first aid. But I knew that early, simple treatment of the boy's foot could have prevented prolonged suffering and possible

disability. And I knew a bit of iodized salt could prevent or cure early goiter. I gave the family my sweater and continued on my way.

At that time (1964) I was an "eco-biology" teacher in a small alternative school (Pacific High School), now defunct. On discussing the health situation in the mountains of Mexico with a group of students, several of them became excited about putting together basic medical kits and taking them to village healers in the Sierra Madre. The students met with doctors experienced in tropical medicine and then assembled the medical kits in old coffee cans. To provide instructions for persons who can not read or write, they created a series of comic strip-like drawings, which they color coded to the medicine bottles. A group of a dozen students and I drove to Mexico and, with a couple of donkeys to help carry supplies, made a loop of about 100 miles through the mountains, giving a medical kit to the traditional healer in each small mountain village we passed through.

In reality, the villagers helped us more with our health problems than we helped them. When we were two days from the closest road, one of our girl students fell ill with pneumonia and pleurisy. To help her breathe, villagers sat with her all night, with her head draped with a shawl over a bucket of steaming hot water. (This technique, learned from the villagers, was subsequently included in the village health care handbook, *Where There Is No Doctor.)*

The villagers response to our visit was so enthusiastic that I decided to take time off from teaching and spend a year in the Sierra Madre, as a sort of communicator and translator of health and medical information. The year led into decades, and in time a comprehensive villager-run health program emerged and evolved according to the local possibilities and needs.

How the initiative is structured

In its heyday as a health program, Project Piaxtla consisted of a network of village outposts throughout a remote 15,000 square kilometer expanse of the Sierra Madre Occidental. The village health workers (called *promotores de salud*) in charge of the posts were persons from their own communities chosen through a group process.

In the selection process, the villagers would first identify the qualities they wished to see in a health worker. Emphasis was placed on human qualities and an empathy for those in greatest need. While basic literacy was usually considered advantageous (in order to be able to look up information in their books, rather than relying on memory), formal educational requirements were usually avoided. In part this was because more highly educated persons are often less inclined to stay in the village. And it was in part because persons from more highly educated persons tend to be from more affluent families, and too often cater more to the needs of the rich than the poor. Preference was often given to persons who were already herbalists, midwives, bonesetters or other traditional healers. Such persons already had the respect of their communities, and their training added to the concepts of modern medicine, as well as health education and organizational skills, with a growing emphasis on prevention and community action.

For cultural and logistic reasons most of the *promotores* selected were men. But in practice, women often proved to be the most caring, most capable, and long-lasting health workers.

The training of the health promoters consisted of an initial 6-week course followed up (at least in theory) by short refresher courses and supportive visits to the village posts. Although volunteer “outsiders” (visiting doctors, nurses, etc.) helped teach some of the early courses, it was soon found that the more experienced local health workers often did a better job. This was because

the latter used the local vernacular, were more familiar with local perceptions and health-related beliefs, and—most importantly—because they were more likely to relate to their fellow villagers as equals.

The training tried to help the health workers recognize and build on the best of both traditional and modern forms of healing. It took a problem-solving, learning-by-doing approach. Rather than requiring memorization of detailed information, the course focused more on helping students learn how to look things up in their books. This was done through role plays and through actual consultations with sick persons and family members. Care was taken, however, to avoid making the sick person and families feel like guinea pigs for student practice. To the contrary, the course facilitators would invite the family to "help teach" the trainees: to provide constructive criticism of the trainees' bedside manner, of their clarity in communicating important information, and of their readiness to include the sick person and family as equals in the problem-solving process. Thus the sick person and family, rather than feeling used as "teaching material," often took pride in helping to make the trainees better, more humane health workers.

Operating on a shoestring. Especially in its early years, Piaxtla functioned on a very limited budget. Funds came partly from the outside (friends and supporters who made donations, and sales of paintings, newsletters, and books, and eventually from non-government organizations) and partly from the very modest amount families were able to contribute for consultations. (Medicines were either subsidized or made available at cost, with no mark up in price—in order to avoid temptation to over-prescribe.) The *promotores de salud* (village health workers) in outlying villages were part time volunteers who sometimes received small gifts in exchange for their services. The only salaried workers in the project were the 6 to 8 members of the central health team: more experienced village health workers who trained the *promotores* and provided back-up and referral services. This central team worked full time for very low wages, equivalent to those of local farm hands. They felt that in order for basic services to be affordable by the poor, health providers should earn no more than the people they serve. They recognized that the huge income deferential between "working people" and professionals—including health providers—was a major cause of undernutrition, poor health, and inaccessibility of services to those who need them most. Therefore, while the team desperately wanted higher, fairer wages, they felt that they must work to achieve them for the entire community.

The vision and philosophy behind the Piaxtla experience

As stated earlier, Project Piaxtla was guided more by a loosely shared vision than by clearly stated goals and objectives. The difference between a *vision* and *goals/objectives* is like that between *change* and *stasis* (or *status quo).* Goals and objectives tend to be firmly defined, aimed at fixed, often immutable targets. A vision, on the other hand, is more easily felt than expressed; it is constantly changing and evolving, along with changing circumstances, growing experience, and increased human understanding. A vision is a dream of what could be—a better life, a happier, fairer world: if only enough of us would put aside the fears, conceits, and selfishness that divide us and work together toward the well-being of all! A vision, like a rainbow, is never quite reached. But without vision, the best planned programs, for all their fancy goals and objectives, may do little to lead us toward a happier, healthier world.

The vision of Project Piaxtla is no doubt somewhat different for each of its participants (thus providing dynamic tension for change). But encompassing those differences there is a certain common understanding. It is a shared commitment to work toward the dignity, basic equality, and fundamental rights of all human beings. It embraces the belief that deeper human satisfaction

comes from giving, sharing, and helping others grow, rather than from taking, hoarding, and holding others down. It contains a deep sense of defense for the underdog, for the vulnerable, for the misunderstood, for the outcast. It comprises a faith in human goodness: that through understanding and encouragement the kindness and caring can blossom even in the cruelest, most hurtful human beings; that more can be gained by building on people's strengths than by attacking their weaknesses. It is founded on a deep belief in social justice and equity: in the resolution of problems through conciliation and candid confrontation, rather than through obedience or enforcement of rigid rules and regulations. It profoundly respects human diversity, and is quicker to condemn unjust systems than ruthless individuals. (Although, in truth, this is more an attempted expression of my own 'vision,' I know that many of those who have immersed themselves in Piaxtla share many of these sentiments, although they may express them better in actions than in words.)

The spirit of siding with the underdog, of defending the "wretched of the Earth," is reflected by an incident that happened in the early years of Piaxtla. One day the village health team learned that a simple-minded 13-year-old who had somehow become pregnant was severely hemorrhaging as result of an incomplete spontaneous abortion. To save her life, she urgently needed a D&C (dilatation and curettage) which could only be performed by a physician in the city, three hours away. But the cost of this procedure would be prohibitive for the impoverished family. The girl's father had left long before with another woman. Her aging mother, who earned a pittance selling tripe on the street on weekends, wrung her hands in despair, seeing no way to prevent her daughter from bleeding to death.

Learning of the girl's plight, the village health workers held a quick meeting. There were no funds available for such emergencies. The only money on hand was that for the wages of the health team, and pay day was just around the corner. Without a second thought, the team voted to forego their month's wage to save the girl's life, even though this meant their own families would have to go into debt with the local store keepers in order to keep feeding their families.

This sort of heart-felt generosity is not uncommon among poor villagers who live at a subsistence level. It is much less typical for health practitioners or project leaders.

Another one of the guiding principles of Piaxtla is an appreciation and respect for people's common sense and practical skills, especially those of people with little or no formal schooling. Piaxtla asserts that with clear, appropriate information, people have a great capacity for self care. Therefore, the first responsibility for health practitioners at all levels is to share their knowledge, to help ordinary people—mothers, fathers, and school-aged children—become health workers in their own rights. These basic principles are spelled out in the preface to the book *Where There Is No Doctor*, which grew out the Piaxtla experience (see Implications For Practice, page 00.)

Evolution of the initiative.

The Piaxtla initiative evolved in three main areas: (A) The *facilitation and direction* of the program gradually became less dependent on outsiders, more self-sufficient. (B) The *focus of action* of the program started by attending to people's immediate felt needs for curative care, and gradually moved toward preventive measures and then to more organized actions to deal with underlying causes. This trend was accompanied by a shift from a narrow focus on "health care" to a broad focus on community development and ultimately on human rights. (C) The program's *outreach and area of influence* gradually expanded. As the project matured, it became more involved in networking, sharing of methods and experiences, and building solidarity with other

grassroots initiatives struggling for the health and rights of disadvantaged people—not only in the Sierra Madre, but throughout Latin America and the world. Because this third area was largely a result of the first two areas of Piaxtla's evolution, it will be discussed under the section on "Outcomes."

It should be again pointed out that the evolution of the initiative in each of these three areas was not the result of a pre-formulated plan, but rather a consequence of growing awareness of underlying needs as well as a response to changing circumstances and emerging crises. As already explained, *planning was an ongoing learning processes.* The village team increasingly realized the significance of the ancient saying, *"Hacemos el camino caminando."* (We make our path by walking it.)

A. Facilitation and direction of the program

During the first decade of its existence, Project Piaxtla shifted, through a series of constructive crises, from outside (foreign) to inside (local) leadership and control. Guidance of the program evolved through three phases: from (1) the personal initiative of a single foreigner, working closely with disadvantaged villagers, to (2) a strong role played by young foreign volunteers, to (3) complete control and management by a team of local village health workers. The fact that the critical transition from phase 1 to phase 3 took so long is perhaps less a reflection of necessity than of naivety, inexperience, and inadequate planning. And whether, in last analysis, phase 2 did more to advance the local resolution of needs or to hold the process back is still a matter of debate. (Certainly this involvement of well-meaning outsiders fermented new ideas, built lasting friendships, and appears to have benefited the social consciousness and subsequent life-direction of many youthful foreign volunteers.)

Phase 1. As explained above, the initiative described here began as the personal response of an outsider (the author). At the start, I set up a small clinic on the porch of a poor family in the main village of Ajoya. As best I could, and with the help of a few medical texts and health care handbooks, I began giving simple advice and assistance for common health problems such as diarrhea, respiratory infections, skin ailments, minor injuries, etc. The novelty of the phenomenon—a physically disabled Gringo providing free medical care—attracted people from near and far. As the work load compounded, I began to recruit assistance from some of the village youths who were too poor to continue with their studies, and who hung out around the clinic and the strange gabacho out of curiosity. In time some of these young recruits learned a wide variety of skills and eventually became leaders in the expanding community health program.

Within a few months, people from neighboring villages farther back in the mountains requested that I set up clinics in their villages, too. From this demand sprung the idea of training persons from different communities as village health workers. The first training sessions were in the form of informal apprenticeships involving a two way flow of knowledge: teaching a few "modern," concepts and skills, exploring possibilities for adapting them locally, and at the same time learning from the trainees about health-related customs, beliefs, and traditional forms of healing, and exploring possibilities for integrating beneficial aspects of the new and the old.

Transition to phase 2. During the first year of the project, to help raise a bit of financing, I wrote a periodical *Report from the Sierra Madre,* which companions in the North helped to duplicate and distribute among friends and supporters. On reading the reports, several adventurous young North Americans wanted to volunteer. Over the first few years the number of outside volunteers increased until much of project coordination, teaching, and even services were provided by a

"mini peace corps" of enthusiastic young Americans, who would stay from a few months to a year or longer.

Some of these young volunteers were pre-medical students waiting to get into medical school (and looking for exceptional "practical experience" to add to their application forms). Eventually an informal two-month summer training program was set up, unofficially, at the Stanford Medical Center in California. The training, which amounted to basic "primary health care" adapted to circumstances in Mexico's Sierra Madre, was coordinated by former volunteers.

It is worth noting that college students, with no more health or medical training than this two-month crash course taught by former volunteers, tended to function much more capably as community health workers—including their ability to resolve common medical needs—than did those graduate medical students who also came as volunteers. (It is also worth noting that, following up on these young North American volunteers years later, the majority—after becoming doctors, physician assistants, etc.—have ended up working with community projects serving disadvantaged and under-served families. Many of them credit their continued commitment to serve under-served communities and to "work for the people, not the money" (a Piaxtla slogan) to their early formative experience in the Sierra Madre.)

From the very first, it was the understanding of all involved that the primary role of outside volunteers was to provide back up and training for the local *promotores de salud.* To avoid creating dependency, under no circumstances were outsiders to take charge or assume a strong leadership role. It was mutually agreed that the program belonged to the villagers and that the local village health workers were the key players and providers of services.

But in the real world, theory and practice often conflict. The young Northern volunteers for the most part strongly believed in their low-key, secondary role and in the importance of helping build the confidence of the mountain people in their own local health workers, rather than turning for assistance to outsiders. But in practice, many of the young North Americans, especially those with aspirations of becoming health professionals, could not resist the opportunity to play doctor (or to feel the heartfelt appreciation by the villagers for their assistance). And for their part, the villagers —whose marginalized social status has taught them to put more faith in foreigners and "city slickers" than their neighbors—often would seek out the Gringo for health services and advice, even in cases when the local *promotor* was much more experienced and knowledgeable.

As the Schweitzeresque mythology about Project Piaxtla spread in the US, more and more young Americans wanted to volunteer. This permitted selection of only the most committed, capable, and idealistic candidates. Paradoxically, however, as the capabilities and humanitarian qualifications of outside volunteers improved, these eager beavers tended to undermine local self-reliance and participation. The village *promotores* had a hard time competing with gung-ho idealistic volunteers who had come to donate a few months of their life to help "the poorest of the poor" before returning to the comforts of their Northern homes. Unable to compete with such intense (if short term) commitment, the local health workers grew discouraged and moved into the background. Increasingly the program was run by, and became dependent on, well-meaning outside volunteers—in spite of best intentions of all concerned to avoid such a situation.

Finally, after nearly ten years in which outsiders played a key role, the situation reached a state of crisis. The local health workers held a meeting and decided it was time for the Gringos to go home. The Gringos, aware and concerned about their paradoxical role, agreed—and their exodus took place amicably. At this same time it also became increasingly clear that the best thing that I, as the founder of the program, could do to promote the autonomy and further evolution of the

program was, at the very least, to spend long periods of time far away from it. This I did regret, since the program and the villagers had by this time become a core part of my life. Fortunately (at least for me) the health team and villagers felt strongly that I continue to periodically visit the program.

By this time the book *Where There Is No Doctor* was widely used in many languages, and I had invitations to visit community based health programs in many parts of the world. So my primary role changed into that of a gatherer and sharer of grassroots health experiences.

After the ongoing involvement of outsiders had been terminated, the Piaxtla health team nevertheless continued to invite selected health professionals for short term visits to help upgrade the skills of the local workers. The local team impressed on these visitors that their role was only to teach and not to provide services—and under no circumstances to take charge. In other words, the professionals were *on tap* and not *on top.*

Once Piaxtla became independent of full-time outside input, the program really began to evolve in exciting new ways. Local people became more deeply involved, and concern increasingly focused on the underlying causes of poor health.

B. Focus of action

The focus of action of the Piaxtla health program, more or less parallel with the development of leadership, evolved through three stages. The project began with CURATIVE CARE , which was what people wanted. Then, after the village health workers and community became successful at treating many of the common ailments, people became concerned that many of these ailments kept coming back. So the program's focus gradually shifted toward PREVENTION: latrines, clean water systems, immunizations, etc. As a result, the health of the children improved somewhat. But still there were a lot of deaths, especially among the young of the poorest families. It became increasingly evident that many of the families, although they worked extremely hard to make ends meet, were unable to get out of the vicious cycle of poverty and undernutrition. This was in large part because they were taken advantage of in a variety of ways by those who had more land, wealth, and power. So little by little—triggered by crises in which the health and lives of poor, exploited families were at stake, the program's focus changed again: this time to ORGANIZED ACTION by disadvantaged people to defend their health and rights.

In this way, the village health program evolved from *curative care* to *preventive measures* to *social and political action.*

At the same time this evolution in the focus of the program was taking place, the village health team was developing a *learner centered, discovery based, problem solving approach to health education.* We will take a closer look at some of the these methods as we describe in greater detail the different stages of the program.

Stage 1. Curative care

Everybody knows that "an ounce of prevention is worth a pound of cure." Then why did Project Piaxtla begin with curative medicine? Because nobody involved knew any better. What was apparent to everyone was that children were sick and dying and they urgently needed attention.

On looking back, for a while the village health leaders criticized themselves for not having started with prevention. But later, as they became more aware of how important it is to "listen to the people and build on what they know and want," they realized that beginning with curative care was the best way to get initial enthusiastic support and involvement of the whole community.

The same principles apply to a community health project as to a sick child: *first treatment, then prevention.* For example, severe watery diarrhea can drain the life out of an undernourished baby in a matter of hours. When a mother arrives with a purging baby, if the health worker starts off by explaining to her the importance building a latrine, washing hands, etc., the mother will become desperate rather than pay attention. But if the health worker first attends to the sick infant, helping the mother learn how to help manage his illness, then she will be eager to learn how to prevent the illness from coming back. Therefore treatment is not only the doorway to prevention, but early treatment is one of the best ways to prevent minor ailments or injuries from becoming more serious or deadly. At best, curative and preventive action go hand in hand.

When Project Piaxtla began, common preventable diseases took many lives, especially of children. As is typical in poor Third World Communities, infectious diseases resulting from poor nutrition, lack of sanitation, and lack of protection from immunizable communicable ailments of childhood took an extraordinarily high toll.

Two of the biggest killers of young children were diarrhea and tetanus (especially neonatal tetanus). Following the historical stages of the project, we will look first at approaches to curative measures focusing on these two diseases. Subsequently we will look at prevention. But to put these critical health problems into the local context, first let us examine some of the pre-existing forms of healing in the area and their strengths and weaknesses, as well as efforts by the village health workers to compatibly integrate the best of both the traditional and modern forms of treatment.

Building on local traditions and forms of healing

Although, even today, there are no medical doctors in a vast area of the Sierra Madre, this does not mean an absence either of health care or healing arts. As mentioned above, a variety of traditional healers answer to a wide spectrum of needs.

Almost invariably, the first persons to attend the health problems of children are mothers, and every village woman has a wide range of healing skills. Today their pharmacopoeia includes everything from herbal remedies to the use of modern medicines. One goal of the health program has therefore been to help villagers in general, and mothers in particular, upgrade their knowledge and skills. Thus one of the biggest challenges has been to help people identify and utilize the best of both traditional and Western medicine.

Management of diarrhea. In the early days of Project Piaxtla, the biggest killer of children was diarrhea. Often the direct cause of death from watery diarrhea is dehydration. To help mothers learn to understand and combat dehydration, the health workers found ways to build on their existing knowledge and traditions.

In much of Latin America people believe that diarrhea in a baby is caused because her brains have slipped downwards. This belief derives from the fact that the “soft spot” (fontanelle) on top of the baby's head sinks downward as the baby begins to dehydrate. Traditional treatment to "*levantar la mollera"* (lift the fontanelle) involves sucking on the soft spot, pushing upward on

the baby's palate, and holding the baby upside down over hot oil and slapping her feet—all steps to lift or jolt the brains back up into their normal position.

Rather than tell mothers their beliefs are wrong, village health workers have learned to build on those parts of their beliefs that are scientifically sound. They do not say, "Mother, you have it backwards. The sinking of the soft spot doesn't cause diarrhea. Rather, the loss of liquid—or dehydration—from diarrhea causes the soft spot to sink in." Instead, they say, "Mother, how astute of you to recognize that the sunken soft spot is a danger sign in your baby with diarrhea! . . . What else in your baby is sunk in?" The mother says, "The eyes." "What else do you notice about the eyes?" "They look dryish: no tears." "Dryish. No tears. How about the mouth?" "My baby's mouth looks pasty and dryish, too." "Dry eyes. Dry mouth. When did your baby urinate last?" "Now that you mention it, not since last night . . . That's not good, is it?"

In this way, the health workers builds on the mother's own perceptions, without contradicting her beliefs. She is helped to make her own observations and draw her own conclusions, recognizing for herself the signs of "dryness" or dehydration. Then the health worker and mother can try a new way of "lifting the soft spot"— by giving the baby lots of liquids and continued feeding.

The international debate over oral rehydration therapy (ORT). To combat dehydration, a child with diarrhea needs to drink large amounts of fluid. Some fluids work better than others. Drinks made with sugar and salts (in correct amounts) are absorbed more quickly from the gut into the blood-stream. Internationally, there has been a long-standing debate over which approach to *oral rehydration therapy* is most appropriate: use of "home fluids" or manufactured packets of Oral Rehydration Salts (ORS). Encouraging use of suitable "home fluids" is not only cheaper and quicker than packets, but also places greater control over the technology in the hands of the family and community. However, from the first, UNICEF, WHO, and USAID have strongly promoted factory-made packets. At first the packets were made available free in health posts. But with cut-backs in health budgets of Third World governments, the sales and distribution of ORS packets has now been privatized and commercialized. As a result, in many countries poor families are spending a substantial part of their limited food money for ORS packets. Because under-nutrition is the main predisposing determinant of death from diarrhea, it is easy to see how the "social marketing" of ORS packets may in part be counterproductive in terms of child survival. Fortunately, UNICEF and WHO have now begun to place stronger emphasis on the importance of home fluids. However, after a decade of pushing the packets, it has proved difficult to convince people (and especially health professionals) that promotion of home fluids can save both money and lives.

The Piaxtla wonder drug: a big mistake. Through its own mistakes the Piaxtla health team learned the harm that can be caused by mystifying and medicalizing oral rehydration therapy. When it began promoting ORT three decades ago, it found mothers reluctant to simply give their sick child a home-made drink prepared from common household ingredients. They wanted "real medicine." So the team turned to trickery. They packaged measured quantities of sugar, salt, and baking soda in little plastic bags, added a pinch of red Kool-Aid to make the mix look medicinal, and promoted it as the *Piaxtla Wonder Drug.*

Soon the health team realized its lethal mistake. During the rainy season when child death from diarrhea is especially high, flooded rivers and slippery trails block access to health posts. By leading people to believe they needed a "wonder drug," health workers were depriving them of the knowledge and ability to manage diarrhea effectively in their own homes. Although their Wonder Drug was *technically safe and effective,* within the *geographic and social context it was dangerous.* The delusions and dependency it promoted cost children's lives. An alternative was

needed that would place the *technology in people's hands*, so that families could manage most child diarrheas in their own homes without having to depend on medicines and services beyond their reach or control.

Making the shift was not easy. But fortunately the program was still small and flexible. Its aim was simply to help disadvantaged people meet their needs. It had no major investment, economically or politically, in its misconceived "wonder drug." So the health workers gathered courage and openly admitted that their scheme for "socially marketing" ORT had backfired. They told people what was in the plastic bags and apologized for tricking them by adding the Kool-Aid.

Over the next several years, a variety of active, learning-by-doing methods and aids were developed to help parents and school-aged children clearly understand about dehydration and rehydration. The process was demystified, so that families would discover why giving children with diarrhea plenty of drink and food is so important, and why a simple homemade solution usually works better than losing time and money by going a long way for unnecessary medicines—or packets of sugar and salts that look like medicine. For parents who can read and write—or whose children can—health workers made simple, illustrated sheets showing how to prepare and give a "special drink" for diarrhea in the home. These instructions were eventually included in the villagers' health care handbook, *Where There Is No Doctor*. Other ORT-related teaching methods and aids are described in *Helping Health Workers Learn.*

Throughout the Third World many community-based programs, coming to the same conclusions as the Piaxtla health team, have also tried to demedicalize and demystify oral rehydration so as to place the technology as much as possible in the people's hands. By contrast, however, most large government programs still favor promoting ORT as a pre-packaged "medicine." This "pharmaceuticalization" of a simple solution has led to a great deal of misunderstanding and needless expense for poor families, possibly contributing to the continued high incidence of preventable dehydration and death. For instance, *mothers who have been led to think that ORT is a medicine often give it to their children in "doses" that are much too small and infrequent to be effective.*

After several years of promoting a home-made rehydration drink using sugar and salt, the Piaxtla health team made another shift in recommendations which went even further toward placing the technology in people's hands. Researchers in several countries had discovered that rehydration drinks made from rice powder, corn meal, or other local starchy food rehydrate more quickly and safely than do sugar-based solutions. Traditionally in the Sierra Madre of Mexico, mothers have given rice water to their children with diarrhea. So now the health workers build on this local custom by encouraging mothers to make rice or maize based rehydration drink. And they use the whole historical sequence of their mistakes in promoting a "modern" approach to ORT, to help people rediscover the value of some of their traditional forms of healing.

The author (David Werner)and David Sanders, author of *The Struggle for Health,* are currently finalizing a book called *Questioning the Solution: Oral Rehydration, Child Survival, and Primary Health Care.* This book explores approaches to community health care within the overall context of development and equity. It focuses on ORT to show how high-level decision-makers often try to use "technological fixes" to ameliorate problems rooted in social inequities as with an international ORT campaign which was launched as part of the co-called Child Survival Revolution. But results have fallen short of expectations, since the campaign does little to get at the root problems of abject poverty and undernutrition.

By contrast, in countries like Cuba, Costa Rica, Sri Lanka, and Kerala State in India—where there has been a strong political will in favor of equity, and the basic rights of entire population to receive basic education, primary health care, and adequate food—the child death rate from diarrhea have plummeted, and overall levels of child mortality fell far below those of other countries with similar economic constraints.

Treating tetanus at the village level. When Project Piaxtla began, tetanus was still the commonest cause of death in babies during the second and third weeks of life. Some mothers had lost two or more babies from *mozusuela* (the local term for neonatal tetanus). When babies with tetanus were taken to the city hospitals, they nearly always died. So families were reluctant to take their babies to the distant hospitals, and the village health team did its best to manage tetanus at the village center. As their skills improved, they achieved a survival rate for neonatal tetanus of around 70%—as high or higher than that in the best teaching hospitals anywhere in the world.

The key to survival of newborns with tetanus was the babies' mothers—for three reasons. First, village women have observed so many babies with neonatal tetanus that they are quick to recognize early signs (which include irritability and diminished suckling). They are therefore in a position to seek help early. Second, at the first sign of tetanus (when the procedure is still relatively easy) the health worker puts a naso-gastric tube in the baby. During the two weeks or so during which the baby with "lockjaw" cannot swallow, the mother manually extracts milk from her breasts, and feeds it to the baby through the tube. Not only does this provide the baby with adequate nutrition needed to help overcome the tetanus; the breast milk also provides antibodies to help fight off secondary infections. Third, the mothers are encouraged to help prevent stasis pneumonia in the babies (who are heavily sedated to reduce the severity of tetanus spasms) by rhythmically rocking the baby in their arms for extended periods of time. This is not recommended in medical textbooks, which warn that any sudden motion, noise, or lights will trigger the agonizing spasms of tetanus. However, the village health workers discovered, while transporting children with tetanus over rough roads, that the child with tetanus soon accommodates to rhythmic continuous motion, thus avoiding the triggering of spasms. Thus by having the mother of a baby with tetanus rock her baby in her arms, not only is the risk of pneumonia reduced, but the mother is comforted psychologically by knowing she is actually doing something to improve her child's chance of survival, rather than standing helplessly by.

Stage 2. Preventive measures

Preventing tetanus and other immunizable diseases. Clearly, the definitive, long term answer to the problem of tetanus, measles, and several other infectious diseases of childhood is immunization. But helping people understand the value of immunization was not easy. Several years before the Piaxtla program began, a daring traditional healer tried to introduce immunization into the remote mountain villages. But the villagers, unaware of the potential benefits, were suspicious of medicating healthy children. When, in response to the smallpox vaccine, children developed a sore and a low-grade fever, families began to protest. One father threatened to kill the healer if he continued to vaccinate. Thus the immunization program came to an abrupt halt. Years later, soldiers occasionally went into the mountains on immunization campaigns. But the villagers have little trust of soldiers. Since children can usually run faster than soldiers, few were vaccinated. The campaign did more to impede community participation than promote it.

Therefore, when the Piaxtla health team first tried to start an immunization program, there was a lot of resistance. The team saw need for a major education campaign. One of the most effective

educational activities was “campesino theater,” with skits based on real-life dramatic events in the villages. One time in the village of Guiapa a seven year old girl named Alicia developed tetanus from having her ears pierced with a non-sterile needle. She was taken to city hospital, where she died. Two weeks before she developed lockjaw, the girl and her two sisters had their ears pierced, with the same needle. But only Alicia got tetanus. A few months before, a village health worker had vaccinated her two sisters. But Alicia had hidden, and had not been vaccinated. Therefore she was not protected, and lost her life to tetanus.

The village health team used the story of Alicia and her sisters to create a theater skit showing how immunization can save lives. Because Alicia's death was still fresh in everyone’s mind, the skit had a strong impact. The next time the heath workers vaccinated in Guiapa, nearly every child was immunized. As a result of a tetanus immunization program for pregnant women, and helping traditional birth attendants learn cleaner, safer delivery techniques (including cutting the umbilical cord close to the baby's body with a new razor blade) neonatal tetanus has all but disappeared in the area of coverage of Project Piaxtla.

Measures to prevent diarrhea. Preventing child death from diarrhea is much more complex than preventing death from tetanus, because there are so many contributing infectious agents and causal factors. There is no universal vaccine against diarrhea, and probably never will be. Oral rehydration therapy may help prevent dangerous dehydration in the individual bout of diarrhea. But for an undernourished child in an unsanitary environment, diarrhea strikes again and again. Each episode tends to leave the child more undernourished. As the child’s defenses deteriorate, the diarrhea becomes more frequent and more persistent. Eventually the child succumbs either to the combination of chronic diarrhea and malnutrition, or to an acute illness such as pneumonia.

In last analysis, according to former head of Mexico’s National Nutrition Program, “The child who dies from diarrhea dies from malnutrition.” Child malnutrition, in turn, has many causes and must be combated on many levels.

The Piaxtla team took several measures to combat child death from diarrhea. In addition to the use of home-made rehydration drinks, families were encouraged to give their children frequent meals, both when ill with diarrhea and after recovery, in order to combat weight loss and undernutrition. To reduce the spread of diarrhea-causing infections, building and proper use of latrines was promoted, as were community initiatives to provide an adequate supply of clean water. Breast feeding was also strongly encouraged.

Promotion of breast-feeding. A major contributing cause of the high infant death rate from diarrhea is prevalence of bottle-feeding. UNICEF estimates that unscrupulous promotion of breast milk substitutes (infant formula) causes over one million child deaths annually. Studies in several Third World countries have shown that the death rate in bottle-fed babies is often at least 20 times higher than in exclusively breast-fed babies. Because breast-feeding is one of the best health-protective measures, the Piaxtla health workers have done their best to educate women about the benefits of exclusive breast-feeding during the first months of life. They also warn people about the devious ways that multinational companies (such as Nestles) try to convince mothers to bottle-feed their babies.

Another form of community awareness raising has been through Child-to-Child, an approach by which school-aged children learn ways to protect the health of their younger brothers and sisters. Primary school children conducted “participatory research” in their village, recording which of their younger siblings were breast-fed or bottle-fed, and how many times in the last year they had had diarrhea. The school children discovered that *the incidence of diarrhea was five times*

greater in the bottle-fed as in the breast-fed babies. Some of the village mothers became so concerned with the implications of the children's study that they organized a street theater drama on *"The Importance of Breast-Feeding."* As a result of the village campaign to promote breast-feeding, many mothers decided to breast-feed the babies, and to wait longer before introducing weaning foods.

Birth Spacing. Frequent pregnancy and short birth intervals contribute to the vicious circle of undernutrition and diarrhea, and consequently to the high death rate in children from 6 months to two years old. When a nursing mother becomes pregnant again, breast-feeding is usually discontinued. Common weaning foods (especially watered-down breast-milk substitutes) often provide inadequate calories and easily become contaminated. Undernutrition and illness ensue. Therefore provision of family planning methods together with explanation about the health benefits (to both mother and child) of birth spacing can help reduce mortality from malnutrition and diarrhea.

The Piaxtla team began introducing modern family planning methods in the 1960s, after a survey disclosed interest in birth spacing on the part of 70% of couples. The survey also revealed that some couples were using dangerous methods to prevent or terminate pregnancy (for example inserting parts of a dead cat into the vagina.)

The Piaxtla team realizes how important it is that methods for child spacing be provided as a free and informed choice, and in no way be imposed. In many countries, including Mexico, the heavy-handed push for family planning has made many couples so suspicious that they not only reject child spacing, but are even suspicious of pre-natal care. In the Third World as a whole, the discouragingly low (and declining) rate of immunization of pregnant women against tetanus can in part be explained by the fear of women that the anti-tetanus injection during pregnancy will cause either abortion of sterilization.

Death-rate somewhat reduced. As an outcome of the increased emphasis on preventive measures, child mortality declined somewhat. However, there were still a lot of thin, pot-bellied, sickly children, and in the rainy season some of them continued to become wasted and die. To the village health workers it became increasingly clear that health education and standard preventive measures were not enough. Undernutrition remained an underlying cause behind most children's deaths. To a limited extent, undernutrition could be combated by encouraging more mothers to breast-feed, and by teaching mothers how to provide more calorie-rich food with the extremely limited amount of money and farmland available to them. But many of the factors predisposing toward death from diarrhea were clearly outside the control of the individual mother or family. Any strategy to resolve the root causes of undernutrition and the high child death rate would require organized action.

Stage 3: Organized action to confront the root causes of poverty and poor health

Organized action to protect people's health and rights did not begin as part of an overall plan, but in response to specific abuses and pressing individual needs as they arose. One of the first confrontations with the local power structure came about when a poor family's land was about to be confiscated by a wealthy land holder. (The following account is summarized from the Introduction of *Helping Health Workers Learn,* titled "Why this book is so political.")

Chelo, the father of the poor family, had advanced tuberculosis. His condition gradually improved with prolonged treatment provided by the Piaxtla team. Because his lungs were too damaged to allow heavy physical work, he was fired from his job as a field worker for the

wealthy land baron, and evicted from his small house owned by the same land baron. So Chelo built a small mud hut. With some assistance from the health team, Chelo cleaned up an unsightly garbage area on the edge of the village and gradually converted it into a productive vegetable garden. From its produce his family was able to make a modest income. Chelo's health gradually improved and his chronically undernourished children gradually put some flesh on their bones.

However, once the garbage plot was transformed from a wasteland into a fertile garden lot, the wealthy land holder decided he wanted it. Chelo protested. The village council—as was then the custom—was about to decide in the rich man's favor when the Piaxtla health team and community intervened. For years the health workers had provided treatment and assistance to help Chelo overcome tuberculosis and protect the health of his children, whose growth was stunted from chronic shortage of food. They knew that if Chelo lost the small patch of land, which was the family's life-line to subsistence, the chances were high that Chelo would have a fatal relapse of TB.

So at an all-village meeting, the health workers explained to the people about the threat to Chelo's land, and what losing it would mean to his health. They gave proof that the village authorities had given the land rights to Chelo first, and they asked for justice. Although the poor majority were accustomed to remaining silent at village meetings, and never voting against the wishes of the village authorities, this time they spoke up and voted in Chelo's favor. The village authorities were furious, and so was the landholder.

The health team had taken what could be called political action. But the health workers did not think of themselves as "political." They simply saw the health, and indeed the lives, of a helpless worker and his children threatened by the unfairness of those in positions of power. And they found the courage to speak out, to take action in his defense.

Through this and many similar experiences, those involved in the project came to realize that the health of the poor often depends on questions of social justice and equity. They have found that changes towards more equitable social structures are not likely to come from those who hold more than their share of land, wealth, or authority. Instead they must come through united effort of those who earn their bread by the sweat of their brows.

Health education as an entry point for organized action and change

As Project Piaxtla focused more on social causes of poor health, the village team developed teaching methods to build problem-solving skills and to help disadvantaged people take a more active role in the decisions and events that determine their well-being. To do this they experimented with a methodology called *discovery based learning.* With learner-centered methods, participants make their own observations, analyze their own experiences, draw their own conclusions, and collectively plan and take a strategic course of action.

This methodology is based, in part, on the educational *praxis* of the Brazilian educator, Paulo Freire. Placed in charge of Brazil's adult literacy training program, Freire reckoned that the best way to help people become literate was to make learning to read and write acutely relevant to their lives. This evolved what he called "education of liberation." Its aim is *to draw ideas out* of participants rather than just *putting them in.* The questions explored have no predetermined answers, but are those identified by the learning group as fundamental in their lives. The facilitator helps the group clarify and interrelate their key concerns, and explore possible

solutions. Through a process of analysis and reflection, people acquire tools to better understand and control events that shape their lives. At best, this awareness raising process (which Freire calls *conscientization)* leads to collective action.

Freire contrasts this "liberating" learning methodology with the conventional "banking" form of teaching ("education of oppression") where an all-knowing instructor deposits ideas and facts into students' heads, as into empty pots. Freire's methodology, explained in his classic book *Pedagogy of the Oppressed,* is designed to help disadvantaged people overcome fatalism and build self-confidence as independent actors. It helps *empower* people to act upon (rather than to stoically accept) the institutionalized cruelty and exploitation which afflict them. This process of enablement or *empowerment* proved so effective in awakening servile peasants and underpaid workers to make organized demands, that Freire's national literacy program was soon declared subversive. The military dictatorship that ruled Brazil at that time first jailed Paulo Freire and subsequently forced him into exile. However, Freire's liberating methodology was picked up and locally adapted by grassroots development, health, labor, and peasant movements in many parts of the world.

Project Piaxtla confidence-building, discovery-based learning methods have been used in training courses for village health workers, with hopes that the health workers will use similar methods in their villages to help people explore their health-related needs and seek realistic solutions on their own terms.

"Community diagnosis." To set the stage for this learner-centered discovery-based process, the content and priorities of each health-worker training course are determined with input from the learning group. The course starts with a lively "community diagnosis" or "situational analysis" in which each trainee identifies the health-related problems he or she considers most important in his or her own community. To make the experience more participatory and "hands on," the learners place small drawings indicating each problem they identify on a large flannel graph. After the graphic display is completed, participants place small flannel figures beside each problem. These figures represent relative *frequency* (small heads), *severity* (skulls of different sizes), *duration* (long wavy arrows for long-lasting or disabling problems), and *contagion* (one small head with arrows leading to other heads). Based on these categories, the group discusses the relative importance of the different problems, which often vary from community to community. Invariably debate ensues; for example, whether drinking and smoking are "contagious."

In listing problems, the facilitator encourages the group to mention not only specific illnesses such as diarrhea or measles, but also *health-related problems* such as food scarcity, water scarcity, land tenure, low wages, low social status of women, etc. Finally, with bits of yarn or ribbons, participants identify causal links between the problems listed. For example, health-related problems such as *water shortage, landlessness, loan sharks,* and *bottle-feeding* might be linked to *undernutrition,* which in turn could be linked to the *high death rate from diarrhea.* Then, considering their relative importance and the way certain problems lead to others, the trainees discuss which of the problems might be most effectively combated at the individual, family, and community level. They also contemplate which might require intervention at the national or even global level (for example, falling wages and increasing landlessness). In this way a dynamic, open-ended dialogue develops. The health-related problems identified by the group are organized in a context whereby the learners themselves help to define and plan the content of their course.
In this way, from the first day of their training, the health workers begin to value and build on their own observations and experiences. As the course proceeds and the trainees gain fuller

understanding of the complexity and interrelatedness of their health problems, the course content can be modified accordingly. What is important is that everyone—students and facilitators—respect one another's perspectives, and sharpen their analytic and problem-solving skills. To the extent that this equalizing process (between teachers and learners) is effective, health workers will be more likely to use similar empowering methods with groups of mothers, fathers, and children in their villages.

This approach to community diagnosis—and a wealth of other *discovery based learning methods*—are described and illustrated in *Helping Health Workers Learn,* a handbook that grew out of the Piaxtla experience and has been translated into many languages. The book also provides ideas for ways in which role plays and stories (true and constructed) can be used to help analyze the complexity and interaction of different factors effecting health, as well as to develop problem-solving techniques, and to explore possible solutions at the individual, family and community level.

Early social actions. As the health promoters looked deeper into the underlying, man-made causes of poor health and high child mortality, they began to seek ways in which, through collective action, they might break some of the links in the chain of events leading to the diseases of poverty and premature death. They started with some of the links which they thought might be easier to do something about at the local level, and which carried less risk of violent response from the power structure. However they soon discovered that any attempt to correct inequities of the status quo can precipitate heavy-handed response from those in privileged positions.

Actions organized through the Piaxtla health program mostly related to the ways in which poor campesinos were systematically cheated, mistreated, or exploited. Some of these activities included:

Demanding the owner of the local bus route to lower fares to the legal rates.

Organizing a protest to take control of the village water supply away from a wealthy man and to introduce a public water system controlled by the community.

Organizing, led by village women, to shut down the public bar (to reduce drunkenness, violence, and undernutrition).

Starting a farmworkers-run maize bank

Initiating a cooperative fencing program

We will briefly describe three of these initiatives.

Women Unite against Men's Drunkenness

As people of Ajoya and the surrounding area joined in the struggle for health, women as well as men began to discover and exercise their power. One way women did this was to collectively address the problem of male alcohol abuse. Men's drunkenness has long been a major cause of interpersonal and domestic violence in the region, with women and children often on the receiving end. Apart from direct physical violence, men's drinking habits also indirectly compromise the nutrition and health of women and children, since men buy alcohol with money needed for food and basic needs.

At one time there had been several bars (pubs) in Ajoya, but 50 years ago they had been officially closed because of alcohol-related violence. For over twenty years the village was free of public bars. (Of course some illegal sale continued.) Then in 1982 the son of the municipal president announced that he was going to open a *cantina* (pub) in Ajoya as a private business venture.

With help from Piaxtla's health workers, a group of concerned women organized to fight this move. To awaken people to the seriousness of the problem, and to rally support for organized action, they started with what has proved to be one of the most powerful educational media at the community level: *farmworkers' theater.* Before the whole village on a rustic outdoor stage, they put on a skit titled *"Women unite to overcome drunkenness"* to dramatize how the drinking habits of men bring harm to their loved ones. All the characters were played by women and children, with some women dressed in pants, mustaches, and sombreros to act the roles of men. The skit enacted how, in another part of Mexico (a squatter settlement on the outskirts of Monterrey), women had taken united action to restrain the drinking habits of the men.

In response to the skit and subsequent awareness-raising activities, the village women took united action to protest the opening of the bar. As result, several health workers and one school teacher who had helped organize the women were jailed. But the women held a protest rally at the jail until the last of the "prisoners of conscience" was released. Next the women and health workers contacted several state-wide newspapers. These published editorials criticized the municipal president's use of his public office to advance his private business interests at the expense of the health of people he was supposed to serve. Ultimately, the women succeeded in blocking the bar's opening, and soon women's groups up and the down the state organized similar protests to close down local bars.

Farmworkers' theater has repeatedly been used for awakening people to socially sensitive (and potentially explosive) concerns which affect health, and which call for united action to resolve them. For example, in the two organized actions described below, the cooperative maize bank and the invasion of large land holdings, the initial awakening of public concern and the challenge to take action were sparked by farmworker theater skits. Even the big land and cattle owners—who in time came to dread the skits—never failed to attend. Sometimes there was a long lag time from the date of the skit to that of organized action. But many villagers recognized that it was the skits that helped sow the seeds of collective action.

The farmworkers-run maize bank

One of the first, firmly established forms of exploitation which the poor farmers decided to tackle was the usurious system for loaning maize (corn). By the start of the planting season (the summer monsoons) poor farmers had often exhausted their grain stores and were forced to borrow maize from their wealthy neighbors. At harvest time six months later the poor farmers were required to repay three sacks of maize for every one borrowed. After payment, many families had almost no grain left. If unable to repay the debt, their creditors would seize their possessions. This often pushed poor families into complete destitution. Many were forced to give up farming and migrate to urban slums in search of work. (This sort of exodus from the rural area by land-deprived peasants helps to explain the huge squatter populations in mushrooming Third World cities—a situation that is causing a whole new dimension of health problems which further jeopardize child well-being and survival.)

To combat this exploitative loan system, the Piaxtla team helped the poor farmers set up a cooperative maize bank. This bank charged much lower interest rates, and any interest collected

was used to increase the bank's loaning capacity, not for private profit. This community-controlled loan program eventually spread to five villages. It helped to improve the economic position of the poorer families, and with it their nutrition and health. It also fostered greater cooperation and accountability among the small farmers, helping them to develop organizational, management, and even accounting skills. Most important, people began to gain confidence in their ability to improve their situation. In the course of establishing the cooperative maize banks, the subsistence farmers were learning to recognize and fight for their rights. This helped set the stage for their struggle to defend their constitutional right to effective land reform, and to achieve democratic representation in decision making at the community level. Within a few years, in Ajoya and the surrounding communities the poor farmers' organization became so large and strong that it began to break the control which the few wealthy families had had over the community council.

The cooperative fencing program

The next problem the poor farmers took on to improve their economic base was to figure out a cost-effective way to keep the rich farmers' cattle from entering their mountainside maize fields and eating their crops. The poorest farmers are those who plant the steep hillsides by the slash-and-burn method. Each year they timber a new patch of land, and fence it to keep the rich people's cattle from eating their crops. They obtain fencing wire from the same rich cattle owners. In return, they must grant the rich families grazing rights after harvesting on land they have cleared and fenced. Thus the cattle owners get new grazing areas cleared, fenced, and planted with fodder, for only the cost of the wire.

After discussing this situation and analyzing the implications on people's well-being, the Piaxtla health team, together with members of the small farmers organization, began to explore possible solutions. They organized poor farmers to join together and cooperatively fence in a whole hillside. Within a single large enclosure, all could plant their small plots of land, year after year. To buy the large quantity of barbed wire needed, the health team obtained *seed money* from a non-government organization. In this way the group of poor farmers, having fenced an entire hillside, could charge the cattle owners for grazing rights. Thereby in just two years, the poor farmers were able to pay back the loan for the fencing wire. From then on, the rental of grazing rights produced an income, which could be used to buy food.

When the first group of poor farmers succeeded in paying off their loan, the same money was lent to a new group. Through this rotating fund, a growing number of poor farmers became more self sufficient. The gap in wealth and power between rich and poor narrowed somewhat, and the health of some to the poorest children began to improve.

Through these and other organized actions, people began to gain confidence and experience strength through unity. Stoic resignation gave way to hope that by working together people could better their lives. This empowering process proved contagious. Soon neighboring communities began to join the informal but cohesive organization of poor farm workers. As the numbers and solidarity of the peasant farmers grew, they and their health team began to combat bigger, potentially more dangerous issues. After several years, they felt that they were strong and organized enough to tackle what many considered the biggest barrier to health: the inequitable distribution of land.

The invasion and redistribution of large land holdings

After gaining self-assurance, organizational skills, and unity through combating other, less inflammatory problems, poor farmers of the Sierra Madre were finally ready to tackle the most basic situation contributing to hunger and poor health: the inequitable distribution of the fertile, river valley farmland. They began to systematically invade and cultivate some of the large holdings of rich families—land to which they knew they had a constitutional right. They divided up the land fairly and then demanded *ejidal* land titles from the government. When the land authorities at state level ignored their demands, the poor farmers sent a committee to the Ministry of Agrarian Reform in Mexico City. The villagers persisted in their legal demands until the officials finally gave in, and ordered the state authority to grant title to the poor farmers' land claims.

To date, the peasant farmers have reclaimed, won legal title, and parceled out nearly half of the river valley land. To increase food production, in 1988—with the help of some outside seed money from the Dutch Embassy and a German non-governmental organization—they purchased water pumps and began to irrigate the land during the dry season. This enabled the poor farmers to harvest two crops of maize and beans a year instead of one. As a result, their families were able to eat better, earn income by selling some of their produce, and save some money for medical emergencies and other needs.

As will be described in greater detail under "Outcomes," the impact of these various actions aimed at achieving greater fairness—between rich and poor and between men and women—appears to have had an impact on health. In keeping with the WHO definition of health, these improvements were not only directed towards "absence of disease" but included, in a broad sense, people's "physical, mental, and social well-being." Health improvements were most visible and measurable in young children, among whom moderate malnutrition was greatly reduced and severe malnutrition virtual disappeared. (These trends were recorded for more than a decade through "growth monitoring," including monthly weighing of children under age five). The marked improvement in child nutrition was reflected by a drop in child mortality to one fifth the rate when the program began (see page 00). Today, more youngsters are healthy, growing well, and bursting with energy and life.

Villagers accredited much of the improvement in health to the various organized actions they had undertaken to achieve greater equity, especially in terms of land distribution. But the process remained local and incomplete. The local *campesinos* realized that if improvements in health were to be sustained, more good river-side land needed to be invaded and redistributed: not only in the Piaxtla valley but throughout the country.

Of course, this struggle for land, liberty, and health in the Sierra Madre was not an isolated event. In many parts of Mexico, grassroots groups were beginning to organize and demand their rights. (By *rights,* they refer to such things as equitable distribution of land, fair wages, legal recourse, honest respectful treatment by authorities, democratically elected (without fraud) representative and accountable government, and guarantees that the basic needs of all people are met. All of these rights were originally guaranteed in the Mexican Constitution of 1917, but have never been fully respected by government or the ruling elite.) As these grassroots groups have gained in numbers and strength in Mexico in recent years, high level attempts to silence them became more frequent and repressive. (The most recent and well known of these is the Zapatista uprising in Chiapas which has been met with brutal resistance by the government and international business interests.) On occasion, Piaxtla health workers have been jailed. And in a program which the Piaxtla team helped to start in the neighboring state of Durango, two health workers were killed by the state police. Partly for their own survival, and because strength lies in numbers and in

unity, grassroots groups felt the need to improve communications and work together in mutual self defense.

The Piaxtla health team and the farm workers organization knew that as long as an unaccountable club of wealthy businessmen and self-seeking politicians ruled the country, their gains at the local level were tenuous. The health team joined with other grassroots programs to organize "educational interchanges." This eventually led to both a national and a regional network of community-based health programs, covering Mexico and Central America. These grassroots networks share the commitment that *the struggle for health is a struggle for liberation from unjust and inequitable social forces.*

New threats to the peasants' gains: free trade and the global economy

In the 1990s a new and bigger obstacle has threatened to reverse the gains in land and health achieved over the years through the Piaxtla initiative. This new threat stems not so much from the local or state level as from international and global forces. It is a consequence of the post-Cold War *New Economic World Order* with its push for "liberalization" of national economies: the so-called *free market system* that favors large national and multinational corporate interests, often at substantial human and environmental costs. In Mexico this *neo-liberal* (or, some say, *neo-colonial*) agenda has been spearheaded by the North American Free Trade Agreement (NAFTA), an accord between the United States, Canada, and Mexico.

In preparation for NAFTA, the United States pressured the Mexican government to eliminate the progressive land reform statutes from Mexico's Constitution. It argued that these statutes—primarily laws that limit the size of private land-holdings, and the *ejido* system that safe-guards small farmers from losing their land through sale or debt—are *barriers to free trade*. Since constitutional statutes prevented US agribusiness from buying up huge tracts of Mexico's land to grow winter vegetables for export into the US, the White House insisted that the Mexican Constitution be changed.

Not surprisingly, then President Salinas de Gotari was quite willing to gut the Mexican Constitution of its progressive land policies. The ruling party (PRI) is controlled by a powerful club of bureaucrats, businessmen and big land owners who for decades have sought ways to sidestep the equity-enforcing statutes of the country's Constitution. The US pressure for free trade provided an excuse to dismantle the revolutionary statutes that safeguarded the needs of the poor from the greed of the rich. So even before NAFTA was passed, President Salinas and his Congress gutted the Mexican Constitution of its progressive land statutes. The *ejido* system was dismantled and laws limiting the size of land holdings were repealed. In effect, these regressive constitutional changes catapulted Mexico back to the pre-revolutionary feudal system with its *latifundia* or giant plantations. As one old *campesino* said, "We've lost everything our grandfathers fought and died for!"

To convince poor farmers to accept the gutting of agrarian reform statutes from the Constitution, the Mexican government has launched a massive disinformation campaign. It tells farmers that, with the end of the *ejido* system, at last they become full owners of their own land, to do with it as they choose. This official disinformation—broadcast day and night on radio and TV—has caused a split within poor farmworkers' organizations throughout Mexico. Even within the Piaxtla program a division arose. Some farmers swallowed the government line and said, "For the first time the land is completely our own!" But those who were more astute understood that, with the loss of the *ejido* system, small land owners would soon begin to lose their land, either selling it in hard times or forfeiting it for debt.

Either way, one thing was clear: These constitutional changes put a stop to legal reclamation and redistribution of large land holdings. Before NAFTA, the *campesinos* in the Sierra Madre had proudly invaded large holdings as citizens defending their constitutional rights. Now, under the modified Constitution, if they invaded large holdings they would be common criminals, and harshly treated as such. By 1993, even before the changes in the Mexican Constitution became law, some of wealthy land barons whose vast acreage had been invaded and redistributed, were already slipping payoffs to local authorities in anticipation of repossessing their former plantations. (For example, shortly before NAFTA came into effect a former *cacique* (head-man) in Ajoya—who had lost most of his land to the organized reclamation initiated by the health team—generously gave a bull to the Municipal President in anticipation of recovering his lost plantations as soon as the agrarian reform laws were annulled. Ironically, the *cacique's* plan was frustrated by the growing poverty and flood of crime linked to NAFTA, which directly affected his family. After his brother and nephew were kidnapped and murdered, the *cacique* hurriedly fled town before his land-holdings could be reinstated.)

Free trade in poverty, racial violence, and repression

The changes in the Mexican Constitution in preparation for NAFTA were officially hailed as a progressive step toward national economic growth and prosperity. But many social analysts predicted that these measures would have devastating human and environmental costs. The newly legalized concentration of farmland into fewer hands triggered an exodus of landless peasants to the mushrooming city slums, where it swelled the ranks of the unemployed competing for jobs. With such a huge surplus of hungry people ready to work under any conditions, real wage levels dropped and the bargaining power of organized labor (which long ago was largely coopted by the government) was further weakened. At the beginning of 1995, the devaluation of the peso and harsh austerity measures imposed by the government led to extreme hardships for the poor. The combination of falling wages and rising unemployment inevitably is bound to take a high toll on people's health, especially that of children.

Racism and violation of human rights. As landlessness, poverty, and unemployment in Mexico increase, more and more *braceros* or "wet-backs" illegally cross the US border in search of work. In the United States, in turn, NAFTA's effects have precipitated an upsurge of racism and human rights violations. As US industries moved factories south of the border to take advantage of low Mexican wages and weak enforcement of workers rights and safety, thousands of US workers lost their jobs. Working-class wages have fallen and the gap between rich and poor continues to widen. Unfortunately, many US workers—ill-informed about the root causes of their deteriorating situation—have tended to blame the influx of Latinos for their rising unemployment and falling wages. There has been an increase in "hate crimes" and racial violence, and harsher police measures to curb the flood of *illegal aliens*. Already there is talk of sending the US army to back up the Border Patrol. In California, if the xenophobic Proposition 187 is constitutionally approved, undocumented immigrants will be denied health services and pre-natal care, and their children will be barred from schools. This means that health and education are no longer basic human rights. Thus the new global trend for "free trade" policies that primarily benefit big business and multinational corporations are contributing to less equitable social structures, more restrictive control of workers, and more violations of their rights: both north and south of the border, and world wide.

This new global dimension to the perpetuation of poverty and poor health has caused a backsliding in some of the gains achieved by Project Piaxtla. It has also created a whole new set

of challenges on larger scale, with a need to join with other grassroots groups and movements struggling for people's health and rights, in Mexico and beyond. Piaxtla's role in some of these networks and coalitions will be discussed with other outcomes of the project.

OUTCOMES

The Piaxtla health and development initiative has had a number of significant outcomes, both quantitative and qualitative. Outcomes can be more or less divided into those within the local project area, and the impact/influence of the program further afield (in the Americas and worldwide).
We will begin with the local outcomes, and lead into the more global ones.

1. Improvements in child health: drop in mortality and improved nutrition.

When Project Piaxtla began in 1965, a crude survey indicated that the Under-Fives Mortality Rate (U5MR) was 340 per 1000 live births. By 1990 the U5MR had dropped to around 50/1000. This is still more than acceptable but a marked improvement over the earlier rate.

Equally important, now there are far fewer malnourished, sickly, and stunted children. More youngsters are healthy, growing well, and bursting with energy and life. Clearly, the improved nutrition of children helps to explain the steep decline in mortality. But many other factors are involved. One of these was improvement in the health of their mothers.

2. Improvements in women's health and decline in child-birth related mortality

When the village health program began one of every 10 women died due to complications related to childbirth. Today, although exact figures are unavailable, fewer than one in a hundred women die in childbirth. The death rate is higher in more inaccessible mountain villages, lower where the network of roads has been extended, allowing for quicker portage to hospitals in cases of emergency. An increase in prenatal care, with recommendations for hospital delivery (or near-a-hospital delivery) in cases of real or suspected complications, has contributed to the falling death rate.

Equally important has been a reduction in the high incidence of severe anemia in women. This can be explained in part by iron supplements during pregnancy, but also by improved overall nutrition (for the many reasons explained earlier, including the organized action of women to constrain the drinking habits of the men). Another factor has been reduction of hookworm infection due to screening and treatment, introduction of latrines, and enough spare cash to buy sandals. Women's increased participation on community decision making, and stronger sense of their rights, may also contribute to their improved status, nutrition and survival. Obviously, however, they still have a long way to go.

3. Redistribution of land: more to eat.

Obviously many factors contributed to the improvements in health over the years. It is not easy to judge how much can be credited to the Piaxtla initiative.

Villagers are very aware that children tend to be healthier and fewer die than used to, and most agree that their villager-run health program has played a key role in realizing these health improvements. But if you ask "What actions brought the biggest improvements?" few people

will say curative or preventive medicine. Many will mention *organized action to reclaim their land and their rights.* Most families realize that the main reason why so many of their children used to get sick and die is that often *they didn't get enough to eat.* With their collective efforts to set up a peasant-controlled maize bank and cooperative fencing program, to combat excessive use of alcohol, and—above all—to more fairly distribute the best farmland, they have been able to increase their economic base and put more food on the table. All in all, they gained more control over their health and their lives.

Since the early years of the health program, at the local level there has been a visible shift in power. In the first years, village council meetings—though democratic in theory—were strongly controlled by a few forceful land barons and cattle owners. But as the poor gained strength and unity (through a variety of health-related efforts), the few wealthy men who previously dominated decisions felt so disempowered that they seldom attended *ejido* meetings. Outnumbered, they could no longer swing votes by threatening to evict sharecroppers or refuse them loans. In this way, the local *struggle for health,* which turned into a *struggle for land and liberty,* also led to a more democratic and equitable community with greater accountability of leaders.

4. PROJIMO: a program for and by disabled villagers that grew out of Piaxtla.

This is one of the most exciting, though totally unplanned and unanticipated, outcomes of Project Piaxtla. In the evolution of the Project, a number of village health workers happened to be physically disabled. With the passing years, some of these disabled health workers proved to be among the most outstanding. Having experienced elements of marginalization and prejudice in their own communities, they tended to empathize with, and reach out to persons who were disadvantaged for whatever reason. So by becoming health workers, in some ways their weaknesses became their strengths.

In 1980 a group of disabled health workers, some of whom had become leaders in the health initiative, launched a sister program to Project Piaxtla, which they called PROJIMO: Program of Rehabilitation Organized by Disabled Youth of Western Mexico. Over the years PROJIMO has grown and evolved into an innovative initiative in which disabled villagers provide a comprehensive range of services ranging from peer counseling to the individualized design and construction of wheelchairs, orthopedic appliances, artificial limbs and a wide variety of mobility and rehabilitation aids. PROJIMO has played a leading role in the evolution and democratization of what has become known worldwide as Community Based Rehabilitation (CBR). In its early days, CBR was a top-down package of simplistic interventions which tried to normalize disabled persons into society. The PROJIMO role model has played a part in helping to transform CBR into an open-ended bottom-up process in which disabled persons themselves take charge. Today, in a growing number of countries, disabled persons are playing a leading role not only in demanding rights for themselves, but in working toward a fairer social order in which all persons—weak and strong, regardless of their creed, color, gender, background, orientation, or abilities—have equal voice, equal respect, and equal opportunity to develop their full potential.

5. Self-help hand-books used worldwide. As has just been noted, both Piaxtla and PROJIMO have had impact and influence far beyond that expected of the small local grassroots initiatives that they are. Both programs are widely known throughout the Third World, where they have substantially influenced rethinking of what have become known as Community Based Health Care and Community Based Rehabilitation. The Piaxtla and PROJIMO experiences have been used as models for the empowerment of marginalized people and groups, and how to place greater control of health and services into people's hands.

One reason Piaxtla and PROJIMO have had such a wide influence is that they have given birth to three self-help books—*Where There Is No Doctor, Helping Health Workers Learn,* and *Disabled Village Children.* All three books are now used widely throughout the Third World, and also by marginalized and low-income communities in the North. (Recently the All Russia Society of Disabled People translated *Disabled Village Children* into Russian, and feel it will be an enormous help to families with disabled children, especially now that pubic assistance has been drastically cut back.)

The major contribution of all three books has been to simplify and make accessible knowledge and skills often jealously guarded by professionals. They have contributed to the demystification of health services and to "putting health into people's hands." *Helping Health Workers Learn* in particular explores the social, political, and economic causes of poor health in terms ordinary people can understand and using an empowering, discovery-based methodology. The author and the programs responsible for these books were awarded the first International Health Education Award presented by the World Health Organization.

6. Multiplying effect: regional training courses and "educational exchanges"

In addition to the handbooks that have grown out of Piaxtla and PROJIMO, the "multiplying effect" of the programs in the Sierra Madre has been facilitated through a series of training courses and "educational exchanges." Since the early years of Project Piaxtla, the village team began to periodically invite village-level leaders and health workers from other parts of Mexico and Central America to take part in hands-on educational workshops or *intercambios* (exchanges). In these workshops representatives from different community based programs would present a *situational analysis* from their area and give an overview of the strategies and methods being used to confront both immediate health problems and the underlying causes of poor health. A lot of emphasis was placed on teaching methods, especially those designed to build confidence, raise awareness, develop problem-solving skills, and mobilize people to take organized action. Different methods would be demonstrated, sometimes through role plays. Then participants would divide into small groups with the challenge of trying to create more innovative or effective teaching aids and methods. Many of the diverse discovery-based learning methods and materials included in *Helping Health Workers Learn* were compiled through this creative/sharing/inventive process in these workshops.

In addition to workshops and interchanges held in the Sierra Madre, members of the Piaxtla village team also traveled far afield to participate in interchanges with other community-based programs in the Americas and (less frequently) as far away as India, Bangladesh, Canada, and the Philippines. Following the overthrow of the Somoza dictatorship in Nicaragua, representatives of the new Sandinista health ministry visited the Piaxtla health program in Mexico, and later invited health workers from Piaxtla to visit and conduct workshops in Nicaragua to help with the planning and methodology for a more community based and people centered national health plan.

PROJIMO, in turn, has held a large number of regional workshops, seminars, and mini-courses on a wide range of disability issues. Themes of these gatherings ranged from technical skills (brace-making, limb making, wheelchair design and instruction, special seating, etc.) to social issues such as integration into schools, peer counseling, sexuality, disability rights, leadership training, and group dynamics. This series of courses has now been taken over by a network of community based programs (see below), and the locus of the individual workshops is held at the program that has more expertise in the theme being covered.

7. Child-to-child

Project Piaxtla was involved in the international Child-to-Child initiative from its start in 1979, with the International Year of the Child. Many of the original Child-to-Child activities, now applied around the world (even in some Northern countries) were initially developed and tried out in Mexico by the Piaxtla team. Since PROJIMO was launched, the team of disabled rehabilitation workers have further developed a range of Child-to-Child activities to encourage other children to be more understanding and supportive of a child who is different, to include disabled children in their play, and to assist them in school.

Martin Reyes, who joined the Piaxtla village health team nearly 30 years ago when he was 14 years old, was one of the original facilitators of Child-to-Child and has been actively involved ever since. Now, under the coordination of CISAS in Nicaragua, he is responsible for the "training of trainers" in Child-to-Child throughout Latin America. In all of the workshops he holds, he insists that the group of prospective facilitators learn together with (and from) a group of school-aged children. Martin has made an enormous contribution to make the Child-to-Child initiative a more empowering and liberating experience for children.

8. Influence on government health and rehabilitation programs in Mexico

The response of the Mexican government to Piaxtla and PROJIMO has been varied. Whereas the health ministry, over the years, has provided more barriers than assistance, some of its community programs have actually adapted some of the methods and ideas from Piaxtla (and from *Where There Is No Doctor)*. The planning branch of the education ministry invited one of the village leaders of Piaxtla (Martin Reyes) and the author to assist in revising the health component of primary school text books, into which they incorporated ideas from Child-to-Child. And the Ministry of Agrarian Reform, which started its own rural health program because it felt the health ministry was not doing an adequate job, had the village health team from Piaxtla travel to the state of Puebla to train the first batch of village health assistants. National directors of Social Security rural health program also invited input from the Piaxtla team, who proposed giving more training and responsibility to village heath workers. (However these same directors confessed their frustration at the barriers thrown up by the medical establishment, and some quit their posts.)

PROJIMO has also had some influence on government rehabilitation programs. A forward-thinking director of the Center for Rehabilitation and Special Education (CREE) in the state capital for a time brought therapy assistants to visit and gain ideas from PROJIMO. He also launched a series of municipal "community based rehabilitation" programs, modeled to a large extent after PROJIMO. However, these initiatives died out after two or three years—probably because the disabled persons involved did not have the sense that they were really in charge.

9. Networks and coalitions of community based programs: in Mexico and beyond.

Project Piaxtla has been active in helping to promote networks of community based health programs, both in Mexico and Central America. In Mexico, PRODUSSEP, an association of more than 40 non-government community health programs, coordinates seminars and workshops, runs a resource center providing a wide variety of educational materials at the community level, and distributes essential medicines to member programs at reduced costs. PRODUSSEP is a member of an international network, the Regional Committee of Community Health Programs in Central America and Mexico.

Both PRODUSSEP and the Regional Committee, in turn, have links with the International People's Health Council, a world-wide group of progressive health movements and health rights activists who try to unite grassroots initiatives in a struggle for fairer and healthier global policies.

PROJIMO, likewise has played an important role in a budding network of organizations of disabled persons and of local community-based rehabilitation programs in Mexico and Central America. What distinguishes this network from many others is that, (1) the participating programs tend to comprise and respond to the needs of the poorest social class (as distinct from many disability programs which comprise and cater to middle and upper class families), and (2) many of these programs are organized and run *by* disabled persons (or parents of disabled children) rather than *for* them.

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Evaluating the program's overall success. It is hard to measure the success of a program like Project Piaxtla, especially when it comes to gauging its contribution to long-term social change, which is the ultimate determinant of health. Piaxtla and the organization of poor farmers that grew out of it have sparked a process of empowerment which, as discussed, has had a limited but significant impact locally. Children in Ajoya and the surrounding area are visibly better nourished now than they were when the program started. Despite the steady drop in real wages in Mexico as a whole, extreme poverty in the program's area of coverage appears to be less common or acute than it used to be, although economic difficulties have noticeably increased since the introduction of NAFTA and the crash of the peso. The gap between rich and poor in the distribution of land, wealth, and power has narrowed substantially. And to date the villagers have mostly succeeded in sustaining the land redistribution they achieved, despite the recent weakening of Mexico's agrarian reform statutes.

But the successes of the program are at best tenuous. Today the program itself is but a shadow of what it used to be. Indeed, many community programs throughout Mexico and beyond have had a hard time surviving within an increasingly difficult political and economic environment. For years, the Piaxtla team knew it was playing with fire. The government made repeated attempts to shut down the program. Members of the Piaxtla team and of the organization of poor farmers have been jailed and threatened. And two health workers at a program on the far side of the Sierra Madre, which was started with help from Piaxtla, were killed by the police for organizing local residents to stand up for their timber rights. (An American plywood company was paying the corrupt leaders of the local ejido for the timber they removed. When the health workers organized the *ejido* to demand fair disbursement of this money among all the families, the lead health workers were assassinated by State Police.)

The government has also tried to put Piaxtla out of business by starting its own rival health services in the area (instead of attending to the many areas of Mexico which are still without any health services). Paradoxically, while the government clinic seriously weakened Piaxtla's health service (which is currently in disarray), it has also freed the program's health workers to address the more basic social, economic, and political causes of poor health. In the final analysis, the Piaxtla team's organizational work to combat inequities has done more to reduce child mortality and improve people's health—and overall quality of life—than a narrow medical approach alone could have accomplished.

Unfortunately, however, the improvements in health gained by organized action are currently being undermined by socioeconomic regressive trends at the national and global levels. The networks of community based programs in Mexico, Central America, and worldwide are becoming increasingly aware that they must align themselves with a global campaign to try to

reign in the colossal forces of greed that are now jeopardizing the health of humanity and the planet.

IMPLICATIONS FOR PRACTICE

Some of the basic principles for the promotion of community health, as recognized through the Piaxtla experience, are summed up in the Introduction of *Where There Is No Doctor:*

> Health is not only everyone's right, but everyone's responsibility.
>
> Informed self care should be the main goal of any health program or activity.
>
> Ordinary people provided with clear, simple information, can prevent and treat most common health problems in their own homes—earlier, cheaper, and often better than doctors.
>
> Medical knowledge should not be the guarded knowledge of the select few, but should be freely shared by everyone.
>
> People with little formal education can be trusted just as much as those with a lot. And they are just as smart.
>
> Basic health care should not be delivered, but encouraged.

As the program evolved with changing circumstances, the Piaxtla team became more aware of the man-made causes of poor health. Additional understandings derived from the Piaxtla adventure might be summarized as follows:

> Health depends more on social, economic, and political factors than on technological interventions.
>
> A healthy community (or health-promoting society) is one with a strong commitment to equity: where land and resources are fairly distributed, minimum wages are sufficient to meet families' basic needs, and everyone is assured access to basic education, primary health care, and sufficient food .
>
> It is therefore important that short-term health measures be planned and implemented in ways that advance—rather than obstruct—long-term equity-oriented goals.
>
> To be effective and sustainable, health initiatives need to involve ordinary people in planning, implementing and controlling them.
>
> To get people involved, start with their felt needs. Often this means beginning with curative care and using that as a doorway to preventive measures and social action.
>
> To place "health in the people's hands," it helps to build on their local traditions, knowledge, skills, and experience.
>
> Look for ways to demystify, simplify, and combine the beneficial aspects of both traditional and modern healing. This can give better results than either system alone.

Development of critical awareness and problem-solving skills is necessary for disadvantaged people to defend their health and rights.

To help develop these skills, it helps to use hands-on, discovery-based learning methods in which participants make their own observations and draw their own conclusions.

Flexibility is needed in order to adapt to changing times and needs. Planning must be an ongoing learning process.

As the factors determining health are increasingly determined by forces outside the control of individual families, communities, and even countries, networking and organized action from below is needed, from the local to global levels.