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International Health: Problems and Programs in Anthropological Perspective

Sandra D. Lane and Robert A. Rubinstein

International health development work is among the most personally challenging, intellectually engaging, and potentially frustrating areas of medical anthropological practice. On a personal level, it can demand compassion and understanding in the midst of seemingly incredible amounts of disease, poverty, and suffering. Yet because an adequate understanding of the dynamics that lead to these conditions requires the integration of information from many spheres—biological, ecological, social, and cultural, for instance—using a variety of qualitative and quantitative methods, it engages the holistic commitment of anthropology as do few other anthropological activities. Notwithstanding this, it can be a frustrating area of work because the interaction of the broader political and economic contexts in which international health and development work is situated and the culture of the community of international health workers often leads to perverse outcomes.

These challenges, problems, and paradoxes are partly reflected in the following three examples:

1. In developing countries, 14 million children under the age of five died during 1987. More than 70 percent of these deaths were due to four main causes, all of which "are now susceptible to effective low-cost actions by well-informed and well-supported parents" (Grant 1988:3): diarrheal diseases, malaria, measles, and acute respiratory infection. In fact, children die of multiple causes, and malnutrition contributes to many of these.
2. U.S. foreign aid to Egypt since 1974 has totaled $13 billion. The principal bureaucratic means for distributing these funds is the U.S. Agency for International Development (USAID). In part because of AID policies and practices, this massive investment has not yielded equally impressive results. One problem is that AID assistance requires that projects use costly U.S. materials and equipment: "One Egyptian government source has estimated that AID financed purchases are from 30 to 40 percent more expensive than substitutes readily available even in U.S. markets. Goods must also be shipped on U.S. vessels, at a cost that is sometimes three times the going international rate" (Rodenbeck 1988:17; see also Sullivan 1984). And the annual cost of maintaining the Cairo USAID office is approximately $150 million.
3. After investing huge amounts of money in the basic laboratory work needed to develop effective low-cost oral rehydration therapy (ORT) for stemming the devastating effects of diarrheal diseases, these techniques are frequently unused or misused. In part this failure derives from the frustrating circumstance that research supporting health planning is constrained by bureaucratic commitments so that it necessarily fails to discover culturally appropriate ways of integrating low-cost technologies, like ORT, into people's daily lives. As Foster (1987a:715) observes, "The assumption that asking people about their health beliefs and behavior, and observing their health behavior, is not science unless the data are used to test hypotheses, often severely constricts research designs and research results." (See also Pacey 1982; Rubinstein 1984.)

International health is the term that is most frequently used when health policy planners speak about health in the developing world. Although the United States and other industrialized nations are normally included in the concept international, in the case of health development work they are most commonly the planners, and less developed nations such as Egypt, Liberia, and Bangladesh are the recipients. Thus, in practice, international health refers to the flow of advice, health professionals, and health technology from the wealthier nations to the poorer.

International health development began with the eighteenth- and nineteenth-century missionaries, who set up clinics and offered medicine to the people they were trying to convert. Following the missionaries, colonial governments established health services in their colonies. Leng (1982:411) argues that the development of medical care by the British colonialists in Malaya occurred mainly because the indigenous labor force was decimated by infectious diseases, and communicable diseases were threatening the lives of the colonizers. El-Mehairy (1984:11) also stresses that "Western governments undertook international health work to protect their people from exotic diseases . . . [and in] the hope of political and economic benefit from foreign aid."

In 1914 Charles Eliot set out these assumptions in a remarkably unself-conscious way in his report to the Carnegie Endowment for International Peace:

> The fundamental object of Western colonization, or other form of occupation in the East, is, as it always has been, the extension of European trade and the increase of European wealth; but the opinion is beginning to prevail extensively in Europe and among Europeans who live in the East, that these objects can best be accomplished by increasing the intelligence, skill, and well-being of the Eastern populations controlled, by raising their standards of living, relieving them from superstitious terrors, social bondages and industrial handicaps, and by creating among them new wants and ambitions. . . . The

principal means to these worthy ends are . . . preventive medicine and an effective public health organization directed to the relief of current suffering, the prevention of sweeping pestilences, and the increase of industrial efficiency. (Eliot 1914:4)

Thus although international health work has always drawn on the talents and energies of compassionate and caring health professionals, the social organization of international health work developed in the context of, and continues to be shaped by, the political and economic self-interests of powerful groups. In a real sense, international health development was not based on altruism but served the political and medical needs of the donor countries.

An unequal distribution of power is implicit in the relationship between the donors of medical assistance and its recipients. Arturo Escobar (1985), following Michel Foucault's analysis of the discourse of power, examines the jargon of international health. He argues that health development work was preceded by the "creation of abnormalities" such as the term *underdeveloped*, which held the West to be the "developed" goal to which other countries must aspire, and in doing so devalued more than half of the world (p. 387). The standard on which development is based is largely arbitrary, culture bound, and one-dimensional. The basis of this evaluation, industrialization and wealth, assumes that the "underdeveloped" countries would benefit from becoming more like the developed countries and that they therefore must attempt to change in that direction. A rarely stated but increasingly clear point is that a scale based on development devalues, or discounts, some aspects of culture that promote quality of life, including "non-Western" traditions of art, religion, intellectual accomplishment, and social support (Rahnema 1986).[1]

Once these kinds of assumptions coalesced to form the "problem of underdevelopment," its professionalization soon followed. As Escobar (1985) notes, major universities formed departments focused on development studies, which led to an institutionalized approach to the analysis and treatment of development projects (Sen 1979; Silverberg 1986) that restricts the range of information considered legitimate. A particularly extreme view of this process is expressed by Allan Hoben, who argues that development studies are a "positivistic and ethnocentric interpretation of a particular historical process, the emergence of capitalism, and the industrial revolution in Western Europe" (Hoben 1982:352; see also Hill 1986). This situation has resulted in calls for expanding the kinds of information considered appropriate for use in health planning (Rubinstein 1984; Foster 1987a, 1987b; Justice 1987), and it has spawned more passionate responses as well.[2]

Nearly all of the terms used in international health work reflect the unequal relationship between the haves and the have-nots. Thus, it is problematic to choose non-value-laden terms. In an effort to modify the term *underdeveloped*, scholars have used *developing* and *less developed countries* (LDCs), in the World Health Organization jargon. Marxists and others with a political-economic perspective began referring to the "Third World" to distinguish, prior

to the breakup of the Soviet Union, the First World (the United States and its allies) and the Second World (the Soviet Union and its allies) from the remaining polities in the world. The term *Third World* implies an understanding of the sociopolitical divisions between rich and poor nations, but it nonetheless lumps together quite diverse countries that often have little in common except poverty (Worsley 1984). Since there are no nonpejorative terms to describe the major recipient countries of international health aid, in this chapter we use *developing countries* and *Third World* interchangeably.

ASSUMPTIONS AND ORGANIZATION OF INTERNATIONAL HEALTH WORK

The assumptions of international health work have, according to George Foster (1987a, 1987b), historically included the assumptions that (1) wealthier countries have the capital, the talent, and the know-how to solve the health problems of the poorer countries; (2) the wealthier countries should therefore plan and direct such efforts; and (3) Western health care institutions and approaches will work in solving health problems in LDCs. These general assumptions are elements of a professional worldview that persists despite repeated demonstrations that it is inadequate. There is no reason to assume that development projects designed and implemented by Western experts will be appropriate or useful in the Third World. Judithanne Justice (1983, 1984, 1987) demonstrates that in Nepal, the primary health care model developed by WHO, the United Nations Children's Fund (UNICEF), and USAID was applied without considering local cultural or political factors. It failed as a result.

A further, perhaps more basic, assumption in international health development has been that the provision of health care will improve the health of the recipients. Although there have been successes in international health work—the most frequently cited being the eradication of smallpox during the 1970s—many projects have failed to improve health, and some have worsened the health of the people they were trying to help. Furthermore, in Europe, the major improvements in infectious diseases (especially tuberculosis) occurred before the development of sophisticated health care technologies like antibiotics, vaccines, or modern medicine (Dubos 1959; Ratcliffe 1985).

T. McKeown (1976b) describes how the social movements of the nineteenth century in England led to the provision of clean water and improvements in nutrition and housing, which were responsible for the reduction in infectious disease. The resulting decrease in mortality rates, especially among infants and children, happened before the advent of antibiotics. Thus, health care alone may not be the best method of improving the health of people internationally, particularly when their health problems stem directly from poverty.

International health bureaucracies encompass four distinct types of organizations (Foster 1987a, 1987b):

1. *International (multilateral) organizations,* such as WHO, UNICEF, the Food and Agriculture Organization (FAO), the United Nations Fund for Population Assistance (UNFPA), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Bank, and many others. It is at conferences funded and organized by these agencies that major policy directions are charted. One of the most famous such meetings was the 1978 Alma Ata Conference, which officially inaugurated primary health care (WHO 1978a). Following ratification of each new policy direction, the multilateral organizations, often in cooperation with bilateral and private organizations, fund projects in individual countries.

2. *Governmental (bilateral) organizations,* in which one country directly extends aid to a second country, usually through the ministry of health in the recipient country. The United States channels this assistance through the USAID. Although this aid is officially for health projects, it also serves the needs of U.S. foreign policy and is used as an incentive to encourage others to act in accord with U.S. interests. Furthermore, USAID assistance often reflects U.S. concerns more than those of the recipient countries. For example, during the Reagan administration, USAID withdrew its support from UNFPA because of right-wing pressure against funding abortion services. The conservative trend toward privatization has influenced USAID funding as well. Although the bulk of USAID's support still goes to ministries of health, an increasing portion supports the health projects of private organizations and for-profit health services (Montague and Lamstein 1988).

3. *Private and voluntary organizations (PVOs) or nongovernmental organizations* (NGOs), which may be secular (for example, Save the Children Foundation and CARE) or religious (for example, Catholic Relief Services and the American Friends Service Committee). They may also be international, where the headquarters are located in the United States or Europe with local offices in recipient countries, or they may be indigenous. In India, for example, indigenous voluntary organizations are particularly strong. In many other countries, however, government control of indigenous organizations precludes their development of effective programs. In general, NGOs provide direct assistance to particular groups, such as refugees, children, or disaster victims. Since they often serve fairly small groups, NGOs may quite successfully improve the health of their target populations. When the same programs are attempted with a larger population with no increase in funding (for example, when a ministry of health attempts to replicate a successful pilot project on a country-wide scale), the projects often fail. This effect, called *upscaling* in the development literature, is one of the main reasons that pilot projects are so difficult to translate into large-scale strategies (Sohoni 1988:25–28).

4. *Philanthropic foundations,* which were among the first bureaucracies to become involved in international health. These include the Rockefeller Foundation, the Ford Foundation, Hewlett, Mellon, the Packard Foundation, and many others. Although U.S.–based philanthropic foundations are private and not associated with the government, they have, especially in the past, been accused of serving the needs of American business and foreign policy. Indeed, an entire body of literature examines the Rockefeller Foundation's heavy-handed approach to international development (E. Brown 1976, 1980; Donaldson 1976; Franco-Agudelo 1983). More recently, however, many philanthropic agencies have revised their funding strategies. The Ford Foundation, for example, works primarily through indigenous institutions. It supports research, education, and action programs conceived of and conducted by local scholars to meet the needs of their own countries.

HEALTH PROBLEMS IN THE THIRD WORLD

Before discussing specific international health projects or the role of anthropologists in them, it is important to review the major health problems in the Third World that these projects are designed to address. Obviously the countries that make up the Third World are heterogeneous, as are the populations within those countries, so any overview that lumps them together does not do justice to their diversity. Nevertheless, sociopolitical and ecological similarities exist among Third World countries that affect the health of their people.

Third World populations are usually characterized by pyramidal age structures, with the bulk of the people under age fifteen. High infant death is reflected in the infant morality rates (Table 19.1)—for 1992, for example, 165 per 1,000 in Afghanistan and 122 per 1,000 in Mali, with 6 per 1,000 for Sweden and Finland and 9 per 1,000 for the United States (Grant 1988:64–65; International Bank for Reconstruction and Development 1988; Golladay and Liese 1980; Rohde 1983). The leading infectious causes of infant and childhood death are diarrhea, respiratory illnesses, malaria, measles, and neonatal tetanus. Childhood vaccines against polio, diphtheria, pertussis (whooping cough), tetanus (including tetanus immunization for pregnant women), measles, and tuberculosis are potential lifesaving interventions (World Bank 1993). Although immunizations are officially available in most countries, many children are unvaccinated, for reasons that span the cultural and political spectrum. There are, however, some encouraging accomplishments. Polio, targeted by the WHO and UNICEF for eradication by the year 2000, has been virtually eliminated in the Western Hemisphere (Grant 1994; Jamison et al. 1991).

Since the late 1970s the spread of HIV-AIDS has reached global pandemic proportions. The WHO estimates that by mid-1993 HIV had infected more than 14 million individuals worldwide, with approximately 1 million of these infections occurring in children, through vertical, or mother-to-child transmission (WHO 1993). Babies infected with the human immunodeficiency virus rarely survive to their fifth year. Hepatitis B infection, transmitted like HIV from mother to child as well as via contaminated blood and semen, may induce chronic hepatitis and, years later, liver cancer (Horn 1986a). Childhood immunization programs in a number of countries, where the infection is endemic, have begun to include vaccination against hepatitis B (Prince 1990).

The major parasitic diseases (malaria, schistosomiasis, onchocerciasis, trypanasomiasis, leischmaniasis, filiriasis, dracunculiasis, and the intestinal parasites) plague both children and adults with chronic infections that cause debility, loss of productivity, and shortened life spans (Katz, Despommier, and Gwadz 1982). Although much international health work has attempted to control these parasitic

Table 19.1
Child and Infant Mortality Rates and Adult Literacy Rates

Country	1992 under 5 Mortality	1992 IMR	% Adults Literate--1990 male/female
Afghanistan	257	165	44/14
Mali	220	122	41/24
Sierra Leone	249	144	31/11
Malawi	226	143	52/31*
Ethiopia	208	123	
Guinea	230	135	33/16
Somalia	211	125	36/14
Burkina Faso	150	101	28/9
Niger	320	191	40/17
Chad	209	123	42/18
Guinea-Bissau	239	141	50/24
Central African Republic	179	105	52/25
Senegal	145	90	52/25
Mauritania	206	118	47/21
Liberia	217	146	50/29
Rwanda	222	131	64/37
Yemen	177	107	53/26
Bhutan	201	131	51/25
Nepal	128	90	38/13
Burundi	179	108	61/40
Bangladesh	127	97	47/22
Benin	147	88	32/16
Sudan	166	100	43/12
Tanzania, U. Rep. of	176	111	93/88
Bolivia	118	80	87/71
Nigeria	191	114	62/40
Haiti	133	87	59/47
Gabon	158	95	74/49
Uganda	185	111	62/35
Pakistan	137	95	47/21
Zaire	188	121	84/61
Lao Dem. Rep.	145	98	92/76*
Oman	31	24	47/12*
Cameroon	117	74	67/43
Togo	137	86	56/31
India	124	83	62/34
Cote d'Ivoire	124	91	67/40
Ghana	170	103	70/51
Zambia	202	113	81/65
Eritrea	208	123	
Cambodia	184	117	48/22
Namibia	79	62	
Azerbaijan	53	37	
Kazakhstan	50	43	

*Indicates that the data are from prior to 1990.
Source: From Grant (1994:62).

Table 19.1 (Continued)

Country	1992 under 5 Mortality	1992 IMR	% Adults Literate--1990 male/female
Egypt	55	43	63/34
Peru	65	46	91/79
Libyan Arab Jamahiriya	104	70	75/50
Morocco	61	50	61/38
Indonesia	111	71	88/75
Congo	110	82	70/44
Kenya	74	51	80/59
Zimbabwe	86	60	74/60
Honduras	58	45	75/71
Algeria	72	60	70/46
Tunisia	38	32	74/56
Guatemala	76	55	63/47
Saudi Arabia	40	35	73/48
South Africa	70	53	78/75*
Nicaragua	76	54	
Turkey	87	70	90/71
Iraq	80	64	70/49
Botswana	58	45	84/65
Viet Nam	49	37	92/84
Madagascar	168	110	88/73
Ecuador	59	47	88/84
Papua New Guinea	77	54	65/38
Brazil	65	54	83/80
El Salvador	63	47	76/70
Dominican Republic	50	42	85/82
Philippines	60	46	90/89
Mexico	33	27	90/85
Colombia	20	17	87/86
Syrian Arab Republic	40	34	78/51
Paraguay	34	28	92/88
Mongolia	80	61	93/86*
Jordan	30	25	89/70
Lebanon	44	35	88/73
Thailand	33	27	96/90
Albania	34	28	
China	43	35	84/62
Sri Lanka	19	15	93/84
Venezuela	24	20	87/90
United Arab Emirates	22	18	58/38*
Argentina	24	22	95/95
Malaysia	19	14	86/70
Panama	20	18	88/88
Moldova	36	31	
Armenia	34	29	
Latvia	26	22	
Estonia	24	20	100/100*
Korea Dem. Rep.	33	25	

Table 19.1 (Continued)

Country	1992 under 5 Mortality	1992 IMR	% Adults Literate--1990 male/female
Korea, Republic of	9	8	99/94
Uruguay	22	20	97/96
Mauritius	24	20	89/77*
Romania	28	23	
Yugoslavia (former)	22	19	97/88
Russian Federation	32	28	
Chile	18	15	93/93
Trinidad and Tobago	22	19	97/93*
Jamaica	14	12	98/99
Kuwait	16	14	77/67
Costa Rica	17	14	93/93
Portugal	13	11	89/81
Bulgaria	20	16	
Hungary	16	15	99/99*
Poland	16	14	
Cuba	11	10	95/93
Greece	9	8	98/89
Czech Republic	12	11	
Israel	11	9	95/89*
New Zealand	10	8	
USA	10	9	
Austria	9	7	
Belgium	11	9	
Germany	8	7	
Italy	10	8	98/96
Singapore	7	6	92/74*
Ireland	6	5	
Spain	9	8	97/93
United Kingdom	9	7	
Australia	9	7	
Hong Kong	7	6	95/81*
France	9	7	
Canada	8	7	
Denmark	8	7	
Japan	6	4	
Netherlands	7	6	
Switzerland	9	7	
Norway	8	6	
Finland	7	6	
Sweden	7	6	

diseases, especially malaria, schistosomiasis, and trypanasomiasis, the failure of vector control measures and a number of other problems have contributed to the failure of these programs (Golladay and Liese 1980:18).

Emerging new and reemerging old diseases have proved that the once-assumed victory over infectious diseases was nothing but a temporary reprieve (Sommerfeld 1994). Overuse and inappropriate use of antimicrobial drugs have bred resistant strains of tuberculosis, *Streptococcus pneumoniae*, and *Staphylococcus aureus*. Decreased attention to public health prevention, including food safety and rodent and vector control, has led to epidemics of cholera, plague, and dengue (Bryan et al. 1994; Burns 1994). New and potentially fatal viruses—including HIV, hantavirus, Legionnaire's disease, and Ebola virus—have been identified since 1980 (Bryan et al. 1994).

Accidents, particularly motor vehicle accidents, are common in cities where the traffic congestion rivals that in the industrialized world (Fenner 1980). Burns are frequent in makeshift housing, where open fires or small kerosene stoves are used for cooking and heating. Inadequate or completely lacking emergency and fire vehicles, equipment, and personnel mean that people die who might otherwise be saved. Occupational exposures to such toxins as lead, pesticides, and other chemicals cause unknown amounts of disease, especially where safety equipment is inadequate or not even considered. For example, textile workers in Egypt frequently suffer from pneumoconiosis after years of inhaling fiber dust without any respiratory protective equipment (Lane 1985).

Illiteracy is often high, and in some countries a majority of women are illiterate (Grant 1988:76–77). Female literacy has a profound indirect effect on health. Illiterate mothers are unable to read directions on medicine containers and consequently may give the wrong medicine or wrong dose of medicine to a child (Lane 1987). Furthermore, increasing female literacy is associated with a decrease in the birthrate and decreased infant mortality rates (Herz and Measham 1987:35–37). In a remarkable study that examined data from thirty-three countries, a linear relationship was found between maternal education and child survival (Cochrane, O'Hara, and Leslie 1980). For every one-year increment in mothers' education there was a 7 to 9 percent decline in child mortality.

Unemployment and underemployment are large problems in the developing world, where the labor force may be unable to absorb those who receive an education (Kepel 1985:85). Frequently the brightest and the best young graduates emigrate to seek their fortunes in other countries, often in the West (Saleh 1979). This brain drain disproportionately affects the ranks of physicians and nurses, the loss of whom directly affects a country's health care. According to Mahler (1981:10) more than 75 percent of the world's migrant physicians now practice in five of the wealthiest Western countries: Australia, Canada, the Federal Republic of Germany, the United Kingdom, and the United States.

Poverty grew in many parts of the world during the 1980s. In 1990 the World Bank estimated that 1.1 billion people were living in poverty. In a worsening spiral, external debt and structural adjustment policies have severely limited the

amount that developing countries can afford to spend on essential health services, such as immunization and tuberculosis treatment (Grant 1994). According to James Grant, late director of UNICEF, the debt service alone for sub-Saharan African countries per month in 1993 came to $1 billion (Grant 1993). Due to poverty, the toll of AIDS infection in families, and civil conflict, the WHO estimates that by the year 2000 there will be 10 million abandoned or orphaned children living on their own in Africa (Grant 1994).

Sociopolitical conditions both cause some health problems and make a number of existing problems worse, including inadequate food, clean water, stress associated with migration, war, multinational business interests, and large-scale development projects.

Poor Access to Food

It is widely acknowledged that nutritional status is the most important determinant of health (Scrimshaw 1974). Nevertheless, due to lack of food, millions of children and adults in the developing world are malnourished. Dietary inadequacy often results from unequal distribution of food within a country and between countries, which occurs even when adequate food stores exist (Feder 1981). Susan George (1977) describes how price controls meant to increase profits result in planned scarcity, where millions starve while farmers in the United States are paid not to produce. Noting the unequal distribution of food internationally, the *Food and Nutrition Bulletin* commented:

> No doubt everyone realizes how preposterous it is that the two most protein-needy continents, Africa and South America, are the main suppliers of animal protein food moving in the world trade—and they supply those who already have plenty. (cited by *Xerophthalmia Club Bulletin* 1983)

In Egypt, for example, the rural delta has the highest density of animals per unit of land in the world (Horn 1986b); however, in many rural hamlets, the peasants can afford very little meat, which they eat mainly on religious holy days and when someone dies (Lane 1987). Nevertheless, a significant amount of acreage is devoted to fodder to fatten the livestock, which are then sold for cash (Adams 1986; Lane 1987).

In rural farming areas, the shift from subsistence agriculture to growing cash crops has worsened the diets of the farmers and their families (George 1977: 15–19). The change in crops, often from food to nonfood items such as cotton or coffee, began as an influence of European colonialism. For example, in 1832 Egypt began growing cotton, which is still its major cash crop (Owen 1969). The Sudan began cotton production in 1910, when it was then under British colonial rule. With the completion of the Sennar Dam in 1925, more than 2 million acres in the Gezira scheme were irrigated for the production of cotton and other crops (Gezira Board 1987). Since cash crops are grown to be exported

and are usually cultivated on the best land, farmers must then grow their families' food on smaller and poorer plots of land and purchase the remainder of the food they need. Further, farmers must purchase seeds, fertilizer, pesticides, and the like to grow the next year's cash crop. The families' diet, which may have been relatively abundant and varied during subsistence farming, suffers, and the most vulnerable members of each family, the children and childbearing women, suffer the most.

The "green revolution" was a development strategy based on the assumption that producing more food per unit of land would be the answer to the world's food shortages (George 1977). In an attempt to increase crop yield, new hybrid plants were developed that produced twice their former yields. However, the green revolution replaced the varied traditional agriculture with monocrops of cereals (Taussig 1978; Schertz 1972). This switch decreased the peasants' dietary diversity and replaced much of the leguminous proteins that were the peasants' main protein source. Furthermore, the genetic diversity of the crops was decreased, since the hybrids were developed in a few laboratories, such as the International Rice Research Institute in the Philippines (George 1977:88). The new hybrids needed enormous amounts of fertilizer and pesticides, which the developing countries were often forced to purchase from the West. The expense of these purchases forced many small farmers off their land, which was then bought by agribusinesses that used the green revolution technology to produce cash crops (World Agricultural Research Project 1980). In Colombia, for example, "the expansion of intensive large-scale farming has driven the bulk of the peasantry off the land in recent years; 50 percent of the children six years and under are said to be suffering from malnutrition" (Taussig 1978:101).

In many parts of the world, land tenure remains nearly feudal, with a small percentage of landlords owning the fields on which tenant farmers grow crops. P. J. Brown (1987) examined such a situation in Sardinia and found that the energy taken from the peasants in the form of payment to the landlords was a much greater burden on them than the chronic malaria from which they suffered. He had originally gone to Sardinia to study the effect of malaria on impeding development and concluded that the land tenure system that so favored the few owners presented a much larger obstacle. A similar situation exists in many parts of India. Sandra Lane interviewed landless farmworkers in Gujarat state and found that they were paid only half of the official minimum wage (6 rupees per day rather than 12 rupees). When large expenses, such as providing a dowry for a daughter, forced them to borrow from the landlord, they and their entire families entered into a form of indentured servitude.

In Third World cities, rural-to-urban migrants have swelled the squatter settlements. Many of these residents were farmers who lost their land due to poverty and must now purchase all of their food. With high unemployment and lack of literacy and job skills to survive in a city, they and their children may starve due to lack money. Charles Hughes and John Hunter (1970) describe this phenomenon as "urban malnutrition."

Even fuel for cooking of food is often scarce and expensive. In areas where women depend on wood for cooking, deforestation has complicated their lives enormously. In a village in Gujarat state, India, the women claimed to spend between two to four hours per day gathering sufficient firewood to cook the daily meal.

Lack of Clean Water

In many countries, piped water and sanitation are luxuries of the urban middle and upper classes. In rural areas and urban slums, residents may have to travel some distance to a crowded public tap or may have to drink from a stream polluted with human and animal waste. Between 1988 and 1991, for example, only 51 percent of people in Indonesia, 25 percent of people in Paraguay, and 22 percent of people in Mozambique had access to safe water (Grant 1994).

David Sanders (1985) describes three types of disease associated with inadequate water supplies: water-borne diseases, which occur when drinking water is contaminated with fecal organisms, such as cholera, typhoid, amoebiasis, hepatitis A, polio, and diarrhea; water-washed diseases, which increase when wash water is inadequate, such as skin and eye infections; and water-based diseases, in which the infectious agent is present in the water and penetrates the skin during washing, such as schistosomiasis. The most ubiquitous water-borne disease, diarrhea, is the leading cause of death in children under five in developing countries and results in between 5 and 18 million childhood deaths per year (Rohde and Northrup 1976:341). In addition to fatal dehydration, diarrhea contributes to malnutrition and weakened immunity in children who survive (Chen and Scrimshaw 1983). So detrimental is diarrhea to the child's nutritional status that it can cause malnutrition even when there is sufficient food available to the child (Chen and Scrimshaw 1983).

Increase in Disease Due to Refugee Flight, Forced Relocation, and Rural to Urban Migration

Migration, especially refugee flight from war and natural disasters, has been increasing every year. Since 1945, 60 million to 70 million people have fled from their homes because of political repression and war (Beyer 1981:26); more than 14 million of these refugees fled in 1974 alone (1974 World Refugee Report, cited by Jacobson 1977:516), and in 1995 alone, there were 23 million official refugees (Peterson 1995:9). In 1993, an increasing number of individuals fled their homes without crossing international borders; these internally displaced persons are harder to reach with emergency services and are frequently more vulnerable than officially recognized refugees (Frelick 1994). Forced relocation of entire communities is a consequence of the construction of such dams as the Kariba Dam (Zimbabwe), the Aswan High Dam (Egypt and the Sudan), and the Keban Dam (Turkey) (Scudder 1975). In most Third World countries, a large proportion of the population is rural, with farming as its main occupation. However, rural-to-urban migration is increasing; the World Bank estimates that by the year 2000 the worldwide urban population will be 45 percent of the total (Golladay and Liese 1980:21). Due to this migration, the large cities in the Third World have swelled and are surrounded by squatter settlements of poor people who live without basic sanitation in crowded, makeshift housing (Peattie 1968). In many Third World cities, estimates of the proportion of the population that lives in squatter settlements range from 20 percent to 50 percent (Abrams 1970).

Scudder and Colson (1982) attribute the health effects of migration to three types of stress: physiological, psychological, and sociocultural. Such physiological stresses as crowding, inadequate food, inadequate water, and inadequate sewage disposal can both lower the migrants' resistance to disease and expose them to such infectious diseases as tuberculosis, parasitism, diarrhea, and respiratory illnesses (Hull 1979:32; McNeill 1980). Such psychological stresses as grief, anxiety, and emotional trauma contribute to both physical and mental illness (Murphy 1961). Such sociocultural stresses as language barriers, resettlement in an area where the habits, attitudes, and beliefs are unfamiliar, and where xenophobia makes the host population negatively prejudiced toward the migrants, may lead to such economic, family, and social problems as alcoholism (Scudder and Colson 1982; Ablon 1965).

Political Repression, Violence, and War

Directly and indirectly political-economic struggles affect health. War and violence, as parts of contemporary political realities, are now much different from the conventional wars of other eras of human history. Now combat between opposing armies is infrequent. In its place, "war is focused on the Third World, and pits guerrilla insurgences against state governments and states against indigenous nations" (Nietschmann 1987:1). The direct killing and maiming of combatants is the unfortunate goal of war. A less obvious effect is the loss of this human power for the society—the loss of teachers, engineers, and manual workers to carry on the daily tasks of the society. After the war, the society must support and care for the disabled veterans and suffers the effects of angry men in its midst who have been trained to kill (Siegel, Baron, and Epstein 1985). It is not hyperbole to say, for example, that the young Israeli soldiers who are learning that it is acceptable to break the hands and skulls of West Bank Palestinians have become dehumanized. One soldier stated, "The more I break other people's bones, the more I am broken myself" (Greenberg 1988:1). Nor is it difficult to imagine the future problems this brutality will create for Israeli society (Physicians for Human Rights 1988).

War profoundly affects civilian health as well. The civilians need not be members of the enemy; war may provide an excuse for genocide of a national minority population. The examples of such genocide are numerous, from the

German Holocaust of European Jews to the Guatemalan extermination of the indigenous Indian peasants (Carmack 1988).[3] Before Rwanda's Hutu ethnic majority began its genocidal slaughter of the Tutsi minority in April 1994, the country's total population numbered 8 million. As a result of the tragedy, 500,000 people were killed, and nearly 5 million became refugees or internally displaced (Atwood 1994).

Direct health effects on civilian enemies are also numerous but are often ignored since the people killed are typically women, children, and elders. The My Lai massacre of an entire village by U.S. soldiers is one example (Nagel 1972). During the war of 1948, 250 Palestinians were killed in the village of Dier Yassin, to "liberate" the territory for the newly created state of Israel (Said 1979:44). And more recently, the use of poison gas by Iraq during its war with Iran is reported to have wiped out the entire population of a Kurdish village (Browne 1988; Physicians for Human Rights 1989).

A less obvious effect of war on civilian health is the disruption of food distribution and health care. In Sudan, the largest country in Africa, the effects of the brutal civil war between the Muslem north and non-Muslem south have resulted in significant losses in progress from past development efforts and in diminished prospects for development in the future (Ahmed et al. 1988). For example, for the south the war meant the near cessation of the drilling of boreholes for fresh water after 1985 (Dodge and Ibrahim 1988:48–49), an exceptionally high infant mortality rate of 180 per 1,000, prevalent malnutrition among children twelve and younger (Duku 1988:44), and the decimation of the infrastructure for primary and secondary health care in the region (Duku 1988: 37–41).

In Zimbabwe from 1978 to 1980 the military carried out Operation Turkey, destroying crops, livestock, and food supplies in order to starve the guerrillas (Sanders 1982). The unfortunate consequence of this strategy was widespread malnutrition of rural children and increased infant and childhood mortality.

In Nicaragua the contra forces explicitly targeted health workers and health institutions (Siegel, Baron, and Epstein 1985; Siegel, Baron, and Eitel 1985; Kreier and Baron 1987). From 1981 to 1985, thirty-eight health workers were killed and twenty-eight kidnapped while they were performing medical services; sixty-one health units were destroyed and thirty-seven others forced to close due to contra activity. Due to the decreased availability of health services, immunization, sanitation, nutrition and other health programs were curtailed and health, especially of the rural peasants, suffered.

In the Guatemalan village of San Pedro, for instance, the effect of the burden of military operations on the economy is conspicuous. Between 1977 and 1987 the cost of one pound of rice increased fivefold, from .15 quetzal to .75 quetzal. Although there was a rise in wages during the decade, it was nowhere as great as the rise in prices. This means that one pound of rice rose from representing .25 percent to .71 percent of a laborer's average monthly wage. Similar increases

Table 19.2
Prices in San Pedro, Guatemala, as a Percentage of Monthly Wages, 1977 and 1987

	1977				1987			
	Teacher	Laborer	Maid		Teacher	Laborer	Maid	
Wage*	240.00	60.00	12.00		372.00	105.00	40.00	
	Price	%	%	%	Price	%	%	%
Black beans/lb	.08	.03	.13	.67	.70	.19	.67	1.75
Corn/lb	.05	.02	.08	.42	.22	.06	.21	.55
Rice/lb	.15	.06	.25	1.25	.75	.20	.71	1.88
Soap/ea	.04	.02	.07	.33	.22	.06	.21	.55
Meat/lb	.75	.31	1.25	6.25	3.75	1.01	3.57	9.38
Chicken feed/100lbs	8.40	3.50	14.00	70.00	33.80	9.09	32.19	84.50
Milk/liter	.08	.03	.13	.67	.50	.13	.48	1.25
Salt	.03	.01	.05	.25	.20	.05	.19	.50
Chicken/lb	.29	.12	.48	2.42	1.80	.48	1.71	4.50
Sugar/lb	.08	.03	.13	.67	.30	.08	.29	.75
Bread/six	.05	.02	.08	.42	.24	.06	.23	.60
Carrots/doz.	.40	.17	.67	3.33	1.00	.27	.95	2.50
Shrimp/lb	1.20	.50	2.00	10.00	8.00	2.15	7.62	20.00
Tomato paste/each	.15	.06	.25	1.25	.75	.20	.71	1.88
Hot sauce/each	.10	.04	.17	.83	.50	.13	.48	1.25
Gasoline/gallon	.95	.40	1.58	7.92	2.95	.79	2.81	7.38
Electricity/kwh	.07	.03	.12	.58	.21	.06	.20	.53
Antacids/each	.05	.02	.08	.42	.15	.04	.14	.38
Private school/month	4.00	1.67	6.67	33.33	15.00	4.03	14.29	37.50
Bus to Quezaltenango	.50	.21	.83	4.17	1.50	.40	1.43	3.75

*Quetzals, laborer's wage based on daily wage estimate.
Source: From Ehlers (1987:27).

occurred in the cost of other staple commodities (Table 19.2). The nutritional consequences of this situation are remarkable:

> One impact of all this is that protein consumption dropped by at least 15 percent, caloric intake by 16 percent, and the per capita intake of eggs, meat and fat was reduced in 90 percent of the population. (Ehlers 1987:27)

That devoting a disproportionate share of a nation's economy to maintaining a military effort has a negative effect on human services and on social supports in that nation has been well documented (Melman 1965, 1988; Pinxten 1986). Further, devoting resources to the procurement of military resources has worldwide effects, especially in the case of the development of nuclear arsenals.

The threat of nuclear war and the scientific study of long-term effects of dropping the atomic bomb on Hiroshima and Nagasaki have focused attention on the medical aspects of nuclear war (Ishikawa and Swain 1981). This has inspired a number of speculative reports on the potential health effects of nuclear war. Owen Greene and associates (1982) describe the effects of several different kinds of nuclear attacks on London, England. In their analysis, they calculate that "a single one-megaton bomb can destroy by blast and fire an area 10 miles

across" (Greene et al. 1982:25), and they note that it would disrupt electrical and other utilities over a much wider area. As for casualties, they say that even in an attack,

> in which no bomb falls on Inner London, over one million die in seconds from blast injuries and more than 4 million from radiation over a period of up to two months after the attack. At least half a million people are injured by blast. (Greene et al. 1982:55)

More generally, in addition to deaths immediately attributable to the blast, Elizabeth Schueler and George Armelagos (1989:108; Armelagos and Schueler 1986) point out that the "short term health effects on the population will be further exacerbated by the destruction of an estimated 80 percent of the medical resources." Further, aside from radiation-induced illness, there will be an increase in morbidity due to vitamin, mineral, and food deficiencies. On the social and cultural levels, the possibility of nuclear war suggests the likely disruption of social life on a dramatic scale (Rubinstein 1988).

Multinational Business Interests

Businesses often place profits above other considerations, including the health of unsuspecting consumers. The infant formula scandal is perhaps the most well-known example of this phenomenon. Following World War II infant formula companies, such as Nestlé and Unigate, began increasingly intensive promotion of artificial milk as the healthiest choice for infant diets (George 1977:152–153; Jelliffe and Jelliffe 1977). This marketing involved not only print, radio, and television advertisements but also saleswomen dressed as nurses who demonstrated the products to new mothers in hospitals, frequently giving away the first tin for free (George 1977:153). For poor families, however, the formula was so expensive that one-quarter to one-third of the family's income might be required to purchase adequate amounts, forcing mothers to dilute the strength of the mixture (George 1977:153; Elling 1981). Furthermore, lack of refrigeration and contamination of the water used to mix the formula is the surest route to diarrhea. Finally, without the nipple stimulation of frequent suckling, the mother's breast milk dries up. Thus, the child is deprived of the immunoprotective factors intrinsic to human milk—factors that would protect it from infection—and if the parents lack money to purchase sufficient formula, the infant starves. The irony is how completely unnecessary artificial formula is for babies; breast milk is healthier than formula, and it is free and sterile.

A second example of multinational business interests' directly impairing health is the dumping of drugs in the Third World. M. Silverman, P. Lee, and M. Lydecker (1982) have conducted extensive investigations of the marketing of drugs in the developing world. Specifically they called attention to the inconsistencies in drug indications and descriptions of side effects in the promotional literature. Powerful antibiotics such as chloramphenocol are used

extensively in Latin America and the Middle East for childhood diarrhea, according to package directions. The package directions do not mention the potentially fatal side effect—aplastic anemia—which is the reason that chloramphenocol is reserved for only life-threatening infections in the United States. This inappropriate use of powerful antibiotics, moreover, encourages the development of resistant organisms, so that the drugs may then be ineffective when they are truly needed. Since in many parts of the developing world it is possible to purchase drugs directly from the pharmacy without a doctor's prescription or advice, there is great danger that such inappropriate drugs are given to children and adults every day.

The companies that make these drugs are well aware of their side effects. For example Ciba-Geigy produces an antidiarrhea medication marketed as Entero-Vioform. The active ingredient, clioquinol, was found to cause a nerve disease, subacute myeloopticoneuropathy (SMON), characterized by numbness in the extremities and in some cases blindness and paralysis. SMON litigation throughout the 1970s resulted in the Ciba-Geigy company's being forced to pay the Japanese victims of the drug 109,346,000,000 yen (approximately $490 million) in legal compensation (Silverman, Lee, and Lydecker 1982:51). In 1985, Ciba-Geigy was still marketing Entero-Vioform in Egypt, without any warning on the package insert (Lane 1985).

Large-Scale Development Projects

Development projects are meant to improve the standard of living in developing countries, so it is at first surprising that they are responsible for much disease themselves. However, as D. Heyneman (1983), Thayer Scudder (1973), and Charles Hughes and John Hunter (1970) point out, projects are often developed in the donor countries without considering the ecological cost of the endeavor. Indeed there has developed a culture of the development community that is heavily invested in providing technological solutions to the "problems of developing countries" (Pacey 1983:5–15). One result is that even when local planners are involved in projects, local information is not incorporated into project designs, as Justice's (1986) analysis of health development planning in Nepal shows.

We have already described the effects of forced relocation on migrants who must resettle to accommodate big dam projects. Heyneman (1983) also describes how the construction of each major dam in Africa was accompanied by an upsurge of parasitic diseases. For example, more than half of the 85,000 new residents in fishing villages around the newly created Lake Volta have become infected with *Schistosoma haematobium*. This chronic parasite spends part of its life cycle in snails that live in slow-moving water. Whenever the water flow is impeded, such as with a dam, the snails flourish and provide the perfect ecosphere for the *Schistosoma* parasite. In humans, chronic schistosomiasis or bilharziasis causes cirrhosis, enlarged spleen, and portal hypertension; infected

adults frequently bleed to death when the overdistended veins in their esophagi burst (Plorde 1980:907–911). In 1937, just twelve years after the completion of the Sennar Dam on the Blue Nile in the Sudan, these health problems were already apparent, and perceptively, if paternalistically, noted by Emil Ludwig (1937:37):

> For disease, in an uncanny way, followed the dam, the cotton and the gold to which it gave birth. Bilharziasis, a severe parasitic affliction, which had broken out before the completion of the dam in Dongola Province, and been carried to Sennar by western pilgrims, then ague, malaria, and smallpox—all spread, to the horror of the people, who saw their suspicions of machines confirmed by Allah's wrath. In 1930, many thousands of sick passed through the Sudanese hospitals. Science and medical practice advanced vigorously from Khartoum against the pests; the locusts, which lay their eggs in light sand, were attacked by an army of chemists, policemen, and Arabs, who by means of poison and rapidly dug trenches, endeavored to keep the insects away from the crops. But when an aeroplane circled overhead, bringing fresh medicines from England, the natives looked up angrily and said that all the evil came from aeroplanes.
>
> Here lies the terrible warning that will again thunder towards us in Egypt. It is true that the world crisis, rain, and sickness have upset a reckoning that at first seemed good and brought big profits. But what good is a new raw material to a country which, to export it, has to go without the bread which was its natural portion for thousands of years, and for the increase of which the dams and canals, the tractors and engineers' brains, would have been admirably employed.

Widespread clearing of the rain forests is another example of the destruction wrought by development. F. B. Livingstone (1958) first connected the cutting down of the rain forest with the increase in malaria because it gave the malaria vector—the mosquito—more open pools of stagnant water in which to breed. Commenting on how frequently the increase in malaria and other diseases are associated with changes in the ecosystem, J. R. Audy (1958) coined the term *man-made maladies*. R. H. Adams (1986) described the World Bank–supported Polonoreste project in northeastern Brazil that cleared the rain forest for agriculture. Unfortunately, the exposed soil is not rich enough to support agriculture, causing the project to fail. And the aboriginal populations who resided in these rain forests have witnessed the destruction of their homelands and suffered from exposure to many diseases brought in by the project laborers.

TRENDS AND ANTHROPOLOGICAL PROSPECTS IN INTERNATIONAL HEALTH

Many of the health problems of the developing world result from inequality. It follows that the greatest improvement in health would be accomplished by education, the provision of adequate food, clean water, sanitation, housing, employment, and freedom from bombs, guns, and torture. The major improvements in health in Europe did not result from medicines or other technological advances, or from the elaboration of health care per se, but from improved water supplies, sanitation, nutrition, and housing. Nonetheless, the major themes of health development work involve the exporting by the West to the developing world its concepts of medicine and health care.

There have been historic trends in international health work, and anthropologists have played roles in two opposing camps: those who worked on the projects and those who became the critics.

Control of Tropical Diseases

In the early years of the twentieth century, the Rockefeller Foundation and other agencies began national and international economic development projects. A major program rationale for these projects, which placed health development at their center, was that tropical diseases (especially hookworm, malaria and yellow fever) were obstacles to development (Brown 1976). According to E. Brown (1976:898), the Rockefeller hookworm eradication campaign began when Charles Stiles, a zoologist, convinced the foundation that the parasite was the cause of "some of the proverbial laziness of the poorer classes," following which the *New York Sun* proclaimed that they had found the "germ of laziness."

Significantly, health was defined as the capacity to work, and the program's successes were measured in increased productivity of workers. From Molina-Guzman's (1979) description of the projects, it appears that they employed many altruistic health professionals, unknowingly to serve economic and political ends with which they may not have agreed.

Medical Education and Population Programs

Following World War II two trends emerged in international health work: development of medical schools, hospitals, and clinics based on Western systems (Molina-Guzman 1979) and population programs. F. M. Mburu (1981) shows that the introduction of curative, hospital-centered care was particularly ill suited to African countries. Such health care is urban based, while the bulk of the population is rural; it is expensive, while the majority are poor; it is highly specialized and focused on esoteric diseases, while most of these people suffer from communicable diseases, deficiencies in sanitation, and malnutrition.

Toward the end of the 1950s, international awareness focused on two factors: the world's population was rapidly increasing, and developments in fertility control had reached the point where it was becoming possible to control population growth (Greep, Koblinsky, and Jaffe 1976:372–79). A 1962 United Nations resolution, "Population Growth and Economic Development," recognized that the poorest people in the least developed nations had the highest fertility. In recognition of the demographic transition that European populations experienced during industrialization, policymakers of this era thought that widespread adoption of population control measures could "jump-start" economic

and social progress. In other words, poverty could be overcome if only the poor would control their fertility.

The correlation of high fertility with poverty may not indicate direct causation, however. John Ratcliffe (1978, 1985) suggested that rather than being poor because they have many children, people may have many children because they are poor. He cites the example of Kerala state, India, where social justice reforms including land reform, increased education, and availability of health services were followed by decreases in infant and child mortality and only then by declining fertility. While not necessarily advocating social justice, others have claimed that economic development could be a better contraceptive than programs aimed specifically at population control.

Nevertheless, improvements in education and health services are exceedingly difficult if the population is increasing at a rapid pace. Such is the case with Egypt, where the population was 51 million in 1988 and is projected to reach 126 million before declines in fertility reach zero population growth (International Bank for Reconstruction and Development 1988:76). Egypt's schools are overcrowded, the health care system can barely cope with the demand, and housing in Cairo is in such demand that there is a waiting list of people seeking to live in mausoleums in the cemetery known as the City of the Dead (Schiffer 1988).

Underlying the altruistic concerns expressed by the West about the alleviation of poverty, however, was another more self-interested worry of Western governments derived from Malthusian notions of the tragic consequences of unchecked population growth (Malthus 1972). In 1965, for example, President Lyndon Johnson's State of the Union message called for funding to "seek new ways to use our knowledge to help deal with the explosion in world population and the growing scarcity in world resources" (Johnson 1965:16). The United States began funding population control activities through USAID in 1965, and in 1967 UNFPA was established to coordinate the growing international funding and transfer of contraceptive technology to developing country population programs (Conly, Speidel, and Camp 1991; UN Advisory Committee for the Coordination of Information Systems 1992).

Cold war fears about rapid birthrates' furthering the potential spread of communism also inspired the funding of overseas population activities by the United States. A 1974 memorandum drafted by Henry Kissinger, then secretary of state and director of the National Security Council, called for support for population control in countries of political interest to the United States: Bangladesh, Brazil, Colombia, Egypt, Ethiopia, India, Indonesia, Mexico, Nigeria, Pakistan, the Philippines, Thailand, and Turkey (Collins 1992; Sobo 1991). The United States' experience in Vietnam further aroused fears of communism's emerging in societies with large dissatisfied peasant populations.

Ecological factors continue to be the explicit concerns in current population debates. During the 1991 Earth Summit in Rio de Janeiro the United States stressed overpopulation as a cause of environmental degradation (Collins 1992),

and a recent issue of *Population Reports* calls for a "Decade for Action" on the environmental problems caused by population growth (Population Reports 1992). Without minimizing the environmental crisis facing our planet, it is critical to point out that as Malini Karkal, consultant to the World Health Organization, has said, "One birth in the United States is the 'ecological equivalent' of twenty-five [births] in India" in terms of consumption of valuable resources (Collins 1992:15).

Despite the self-interested motives of the industrialized donor nations, their support has contributed to slowing the world's population growth, which most observers agree is an important goal. Family planning programs have been established in most countries worldwide, and in many countries even poor rural women have access to modern contraceptives (Potts and Rosenfield 1990). Although the world's population has now reached 5.5 billion and increases at 90 million per year, recent studies indicate that independent of social and economic factors, family planning programs have significantly reduced fertility in developing countries (Bongaarts, Mauldin, and Phillips 1990; Robey, Rutstein, and Morris 1993). Since the mid-1960s social, political, and economic changes and access to modern contraception have caused a decline in the average number of children per woman in the developing world from six to four (Robey, Rutstein, and Morris 1993).

Unfortunately, many of the population programs of the 1960s through the 1980s concentrated on population control at the expense of human dignity and rights. Policies aimed at trying to control numbers of poor people convinced many in the Third World that such policies were a form of genocide. They found confirmation of these convictions too often in the use of medical technology in the service of project objectives. By the mid-1970s, one-third of Puerto Rican women of reproductive age had been sterilized, the highest recorded incidence in the world (Henderson 1975). Although Puerto Rican health officials claim that these sterilizations have been voluntary, critics argue that this represents a "form of cultural genocide or class warfare" (Henderson 1975: 252). Drugs and devices, such as Depo-Provera and the Dalkon Shield, have been used in the Third World even after their safety was seriously questioned in the United States (Elling 1981). And Norplant, the five-year subdermal contraceptive implant, has been used coercively in some programs. A recent volume addresses the safety, acceptability, and ethics of Norplant in several countries (Mintzes, Hardon, and Hanhart 1993). Two of the contributors to the Norplant book, writing about Indonesia and Egypt, describe numerous instances in which women have had great difficulty in getting Norplant removed before the five years had ended (Hanhart 1993; Morsy 1993b). Of course many women, and men, want permanent sterilization, and many women like the contraceptive benefits of Norplant. The problem is not with the methods themselves but with formal and informal policies that give the decision-making power to someone other than the individual in whom they are used. Clearly women and men need safe, reliable methods to control their fertility, and countries need to limit their

populations so that they may better serve their existing citizens. However, to succeed, such programs must respect the humanity and choice of the consumers of family planning technologies.

Primary Health Care

Primary health care emerged in the 1970s with a growing realization that the supposed benefits of all the money spent on sophisticated curative medicine was not reaching the poor, mostly rural, populations who had the most disease (Golladay and Liese 1980). Its ambitious goal, proclaimed by the Alma Ata declaration of 1978, was, "Health for All by the Year 2000" (Mahler 1981). The basic components of primary health care are community involvement, appropriate health technology, and reorientation of health services away from urban, hospital-based care toward country-wide health programs. It includes an emphasis on preventive medicine and employs community health workers to serve the needs of their communities. This model of primary health care has now been adopted worldwide but implemented with varying degrees of success. In highly motivated socialist societies, such as China (Mosley 1983) and Nicaragua (Donahue 1986b), great improvements in health indicators have been reported.

Elsewhere primary health care has been less impressive. Justice (1984) describes how the introduction of nurse-midwives failed because young women were stationed at health posts away from their home areas, without taking into account the social constraints that make it socially unacceptable for young Nepali women to travel or live alone.

David Werner (1983) argues that while Cuba has made great strides in health care, its system remains highly centralized and dependent on physicians. He also points out (1977) that in Mexico, primary health care was less successful when community health workers were appointed by the government rather than chosen by the village, and he argues that many programs fail because they only give lip-service to community involvement while remaining paternalistic and authoritarian.

In Bolivia, Libbett Crandon (1983) saw a USAID-sponsored primary health program disbanded by the government. It failed for the frequently cited reason that the imported model of health care was imposed on the local system without taking into account cultural or political realities (see, for example, Paul 1955). Moreover, many primary health care programs may never have had much chance to succeed, especially where governments lacked the political will for their support (Heggenhougen 1984b). In areas where physicians dominate the governments and ministries of health, their suspicion of nontraditional alternatives may have truncated the system before it began (Mosley 1983). In addition, the community involvement and thus the level of organization demanded by primary health care may have alarmed governments that feared losing control to a newly militant peasantry (Davis 1988:6–20).

Child Survival

By the early 1980s it had become clear that unless existing strategies were revised, health for all, especially for the world's children, would not be achieved by the year 2000 (International Conference on Population 1984). Political economists like Vicente Navarro (1984) claimed that major health improvements are not possible without changes in economic, social, and political structures. Nevertheless, many international health specialists felt that the introduction of specific, inexpensive technologies could have a major impact on child mortality (Walsh and Warren 1979).

With this in mind UNICEF outlined its child survival strategy *State of the World's Children* (Mandl 1983). Originally the program included strategies that became popularly known as GOBI-FFF: growth monitoring, oral rehydration therapy, breast feeding, immunization, food supplements, family planning, and female education (Wisner 1988). By the mid-1980s the program was formalized as the Child Survival Development Revolution (CSDR), focusing on Control of Diarrheal Disease (CDD), the Expanded Program on Immunization (EPI), Growth Monitoring (GM), and, later, Acute Respiratory Infection (ARI). Rather than targeting the community as did the Primary Health Care program, Child Survival emphasizes the mother and her children. It has influenced a great deal of research on the determinants of child health (see Mosley and Chen 1984). Anthropologists are increasingly being included in research teams investigating the question, "How can we change mothers' behavior?"

This initiative focused mainly on exporting simple, low-cost medical technologies—so-called appropriate technologies—to the developing countries. Massive investments, for example, were made in developing oral rehydration therapy—a simple solution (McQuestion 1983:ix) of 1 liter of water mixed with sodium chloride (3.5 grams), sodium bicarbonate (2.5 grams), potassium chloride (1.5 grams), and glucose (20 grams). So large was the investment that between 1980 and 1982 alone, at least 150 articles about ORT appeared in the scientific literature. Most of these focused on the technical aspects of ORT, like the proper composition of the rehydration solution, clinical trials, or the measurement of the impact on nutritional status of treatment with ORT under controlled circumstances (McQuestion 1983).

As an easy-to-use, inexpensive, and life-saving technology that could prevent death from dehydration and could replace costly hospital-based intravenous rehydration, the value of ORT was unquestionable in principle. But because its development had emphasized scientific questions to the exclusion of sociocultural information, attempts at implementing its widespread use were often unsuccessful and frustrating. For instance, WHO recommendations for the implementation of ORT, based on technical research, were often out of touch with the realities of people's lives. Richard Cash (1983:211) asserts that "the overall recommendation by WHO is that ORT be made with ordinary drinking water, and that prepared oral therapy should not be kept more than 24 hours.