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Special Feature

FORGOTTEN PEOPLE—HEALTH OF THE MIGRANTS

Boris Velimirovic [1]

"Few social phenomena exert such a permanent and so profound an influence in international relations as does population pressure. It is this which dictates that the political orientations in the field of immigration of states be liberal or restrictive." Prof. Ch. de Visscher (1953) (1).

Introduction

Migration has taken place throughout history but has been a dramatic phenomenon since the Second World War because of qualitative differences in the economic, social, and political development of many regions of the world. Industrialization, for instance, has accelerated the movement of peoples from rural areas to towns and industrial regions. Population pressures have resulted in large international population movements on a global scale. According to Schumacher (2) the spatial movement of populations is a consequence of a dual economy: a traditional, agricultural, and manual sector versus a technical nonmanual sector of production and industry. The result has been dissolution of the traditional rural sector followed by unemployment and mass migration.

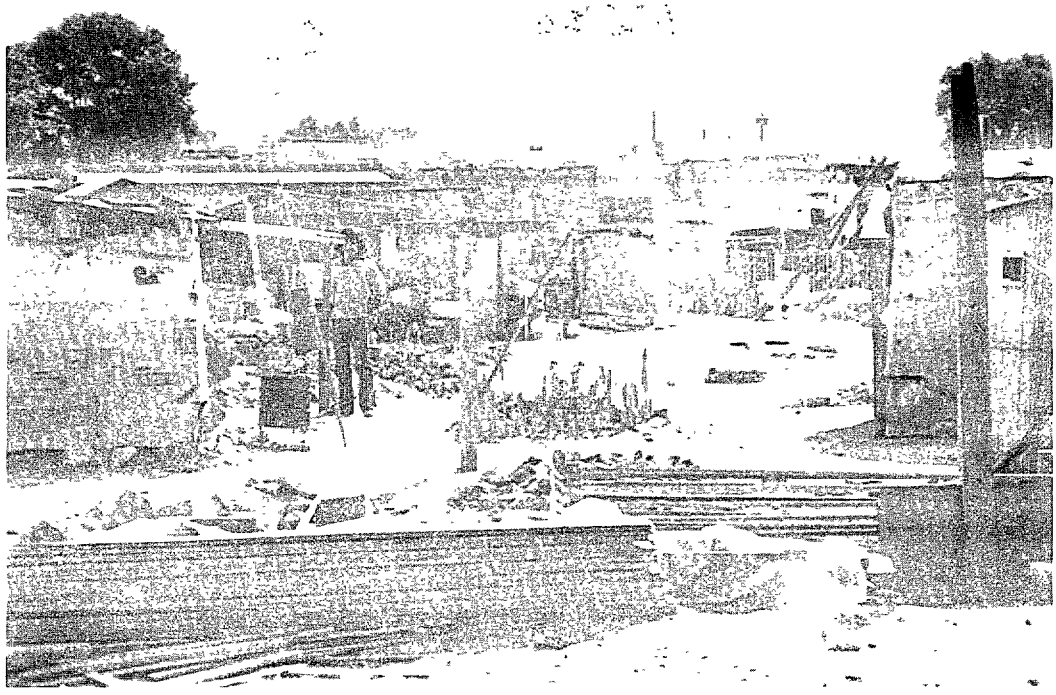
Migration raises issues of a health nature, the most important being the extension of health care coverage to the migrant workers. Migrants are, unfortunately, a forgotten people, a part of the population without adequate or suffficient access to health care services. Foreign migrant workers are even more disadvantaged, even when they enjoy the same conditions as domestic migrants. The International Labor Organization (ILO) Convention (No. 97 of 1 July 1949, Int. 6.1) stipulates that: "Each member state for which this Convention is in force undertakes to apply without discrimination, to immigrants lawfully within its territory, treatment no less favorable than that which it applies to its own nationals" (3). While such regulations are more or less respected for lawful foreign immigrants, the increasing phenomenon of illegal immigration has created a new underprivileged class of persons whose legal, medical, and social needs are almost entirely unmet, and this in spite of the fact that they may be exposed to increased health risks. This has been recognized in Europe and it is now being recognized in the Americas. [2]

Thus, with the tremendous increase in national and international mobility, encompassing millions of people in the Americas, public health officers should be knowledgeable about migration, even though it is a subject that does not appear to fall *prima vista* into the medical field.

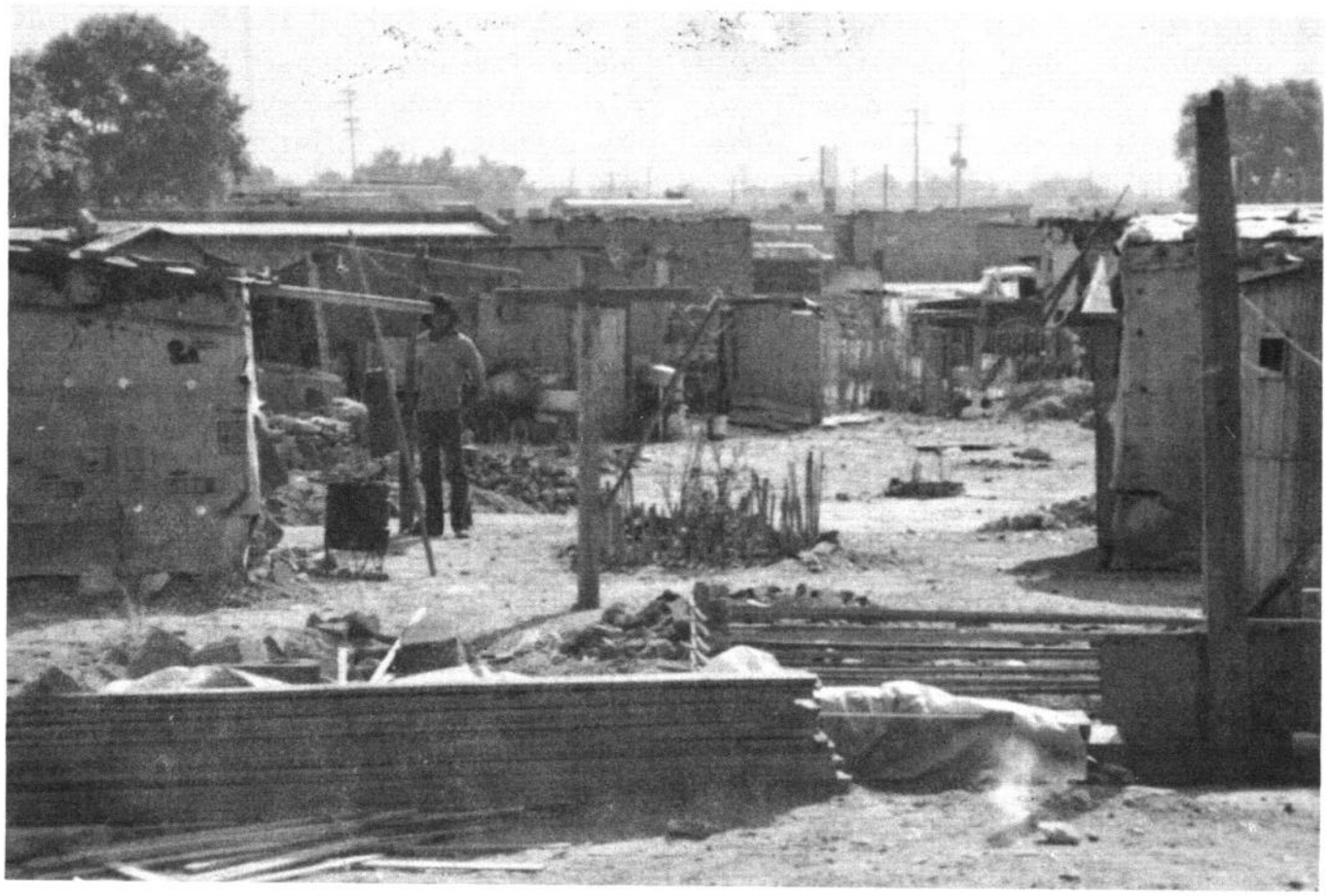
In this presentation economic migration from Latin America will be dealt with in connection with the principles adopted at the 1977 Special Meeting of Ministers of

[1]Chief, PAHO Field Office, 509 U.S. Court House, El Paso, Texas 79901.

[2]The WHO Regional Office for Europe held a Working Group to deal with Health Aspects of Migration; a Joint ILO/WHO Committee on Occupational Health, 7th Session, was also held in Geneva, 5-11 August 1975.



Makeshift shelters of temporary materials with scant provision for sanitation or social facilities (photos: courtesy of the author).



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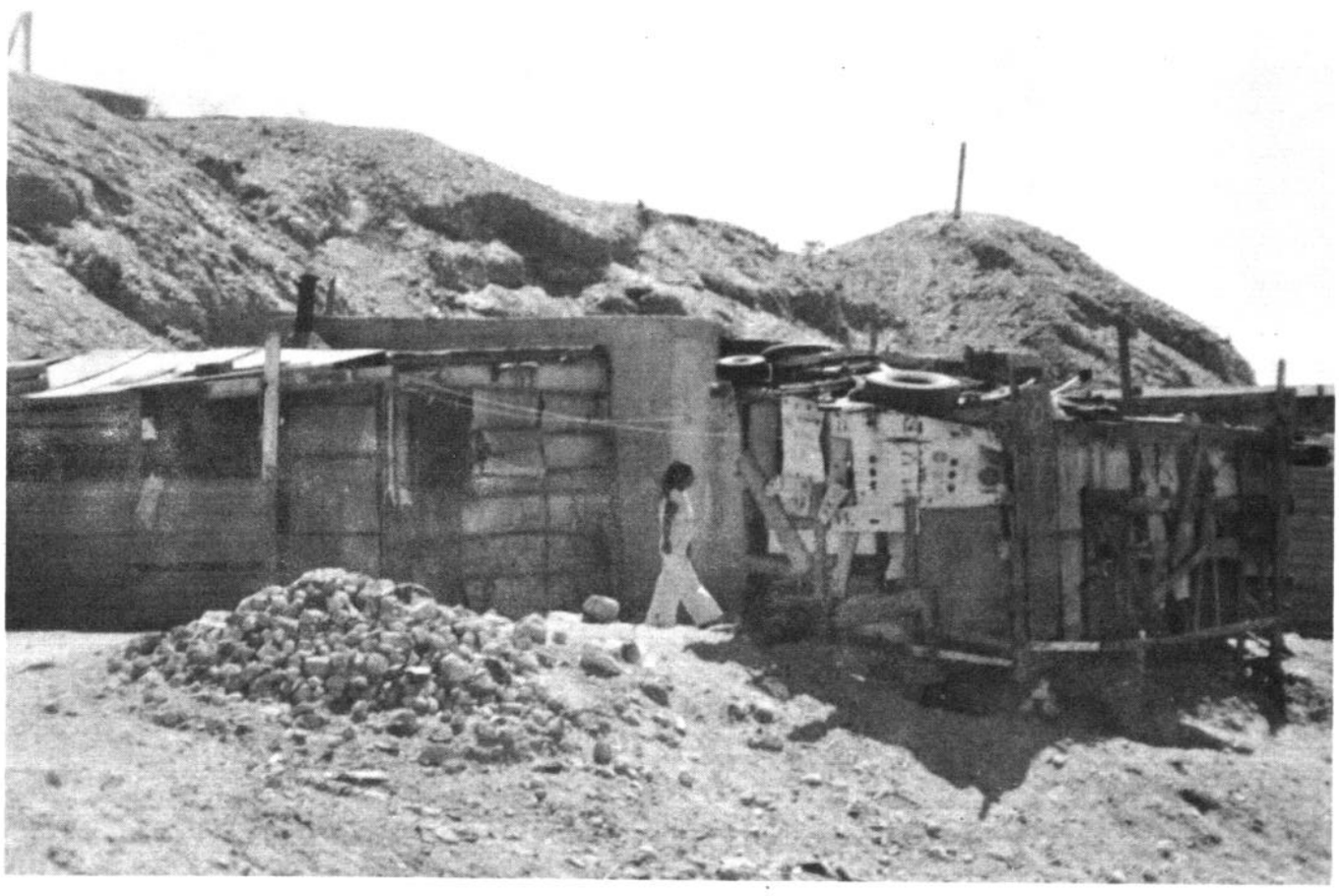


the Mexico City metropolitan area. It is estimated that 3 million people moved from rural to urban centers from 1960 to 1970. Ten of the larger cities attracted 82 per cent of the migration flow; Mexico City alone attracted 1.5 million persons. Immigration accounted for 32.6 per cent of urban population growth, but this figure does not include the migrants' further contribution to the urban natural growth rate once they were settled in the cities. The situation intensifies with every passing year. As long as high natural growth rates persist and agricultural development remains inadequate, the exodus of the rural population will continue. It is probable that by 1980, 52.8 per cent of the country's total population will live in urban centers. Mexico City's metropolitan area should attract 2.5 million migrants in the decade 1970-1980 and 3.3 million in 1980-1990. (A conservative estimate for metropolitan Mexico City's 1990 population is 20 million.) Population estimates for the whole country (according to various birth/death rates) are 81-84 million in 1985 and 123-147 million in the year 2000 (*6*).

International Migration

Trans-national migrations are essentially the continuation of internal migrations. They can be organized (Bracero Program) or spontaneous. The latter are often illegal with the usual consequences of discrimination in the labor market; lack of social security and health care; lack of legal protection; and political, economic, ecological, social, and cultural marginality. When there is an economic boom, the issues posed by immigrants are essentially social. When social problems (discrimination, low income) arise, health problems are concomitant. If the economic situation deteriorates, producing widespread unemployment, the social and health problems are further compounded by society's increasing pressure to expel the migrants.

Migrants often consider their stay in a foreign country temporary, but just as often they remain in the host country. The decision to stay entails the arduous task of social integration: health care, training and retraining, education of children, and so on. Many stay in the new country illegally, with the result that they are vulnerable to exploitation by their employers and have even less access to health facilities and benefits. The migrants who return to their former homes produce a sudden strain on the health and social services in communities in border areas, which are often not prepared to cope with a large group of returning migrants. Both variants create a delicate political situation.

Data on the magnitude and direction of migration in Latin America are recognized as the most neglected part of the continent's demographic material (*7*). Conventional census data are insufficient since the date of arrival in the country of the foreign-born population is not asked. Without this information it is impossible to relate the health situation of the foreign-born to economic and social parameters. Information on numbers of migrants is notoriously unrealiable for intercensus periods, and migrants are not always included as a recognizable group in census data, since they usually are counted as local population. Specific details such as those regarding health are often masked because immigrants, afraid that such information will be prejudicial to the permanence of their stay, deliberately conceal the information. Thus, telephone inquiries, house-to-house surveys, and other administrative fact-finding operations are of doubtful value.

National and trans-national migration increased following the Second World War. For example, in Canada the post-war boom and the low birthrates of the 1930's resulted in a labor shortage which led to the admission of 300,000 immigrants from various countries. The U.S. admitted 491,000 im-

migrants between 1945-1950, and 2,515,479 between 1951-1966. Entangled in these statistics are the 500,000 migrant workers from Mexico and Canada recruited by the Bracero Programs of 1942-1947 and 1952-1965. Since the Bracero Programs ended, the yearly immigration to the U.S. has been around 400,000, but it was also at the end of the Bracero Programs that large-scale nonofficial migration set in. There are an estimated 3 million migrants in Latin America, and 6-12 million in the U.S. and Canada. In host industrial countries, migrants are often regarded as a reserve labor force, useful in times of economic prosperity and a "cushion" for unemployment during periods of economic slump.

While there has been a drastic decrease in European migration to the Americas since the 1950's, inter-American migrations have continued to increase. Large migrations occur from countries with high population growth rates (Figure 1), for example, Colombia, Dominican Republic, El Salvador, and Puerto Rico. Guadeloupe and Martinique together sent 150,000 migrants to France, while large numbers of people went from Suriname to the Netherlands, and from the English-speaking islands of the Caribbean to the United Kingdom. Table 1 gives the approximate number of known immigrants to several countries of Latin America.

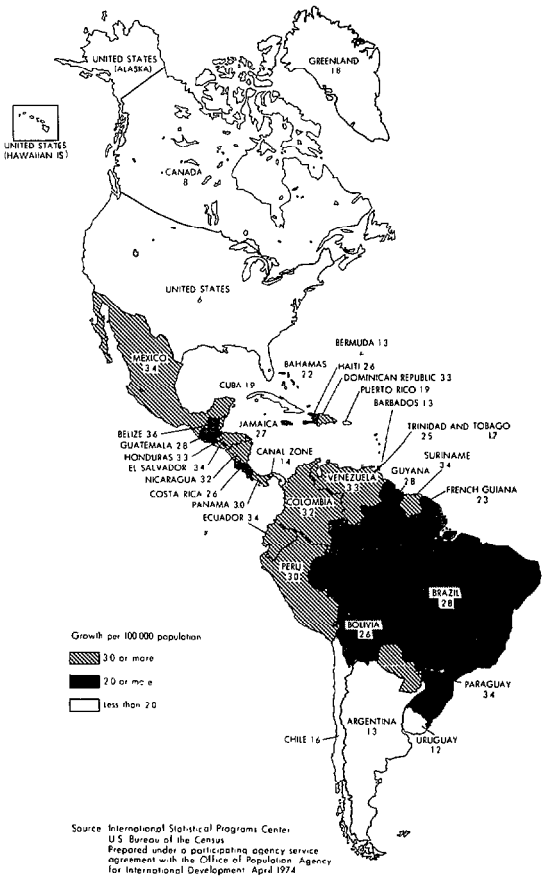
Colombian emigrants to Venezuela include approximately 100,000 professionals, technicians, and highly skilled workers attracted by expanding industry in Venezuela. They entered legally (selective migrants) and enjoy equal treatment with other residents. There are also 300,000-700,000 illegal immigrants from the poorest strata (*8*).

The United Nations (*9*) divides immigrants in two classes:

(1) Permanent immigrants who intend to remain for a period exceeding one year;

(2) Temporary immigrants who (bring-

Figure 1. Population growth patterns, in the Americas, 1972.



ing their dependents) intend to exercise, for a period of one year or less, an occupation remunerated from within the host country.

Temporary immigrants can be further divided:

(1) Border-crossing workers who return daily to their established homes;

(2) Seasonal workers in agriculture,[3] construction, or other seasonal activity;

[3]The definition, for the purposes of this article, of rural migrant is: an individual working or available for work primarily in agricultural or related industry on a seasonal or temporary basis, and residing away from his usual home or residence, who moves one or more times from one place to another for the purpose of such employment or availability for seasonal or temporary employment.

Table 1. Latin America: migration by country (1974)[1]

Country of employment (host country)	Total Latin American migrants	Country of origin		
Argentina	1,500,000	From	Paraguay	600,000
			Bolivia	500,000
			Chile	350,000
			Uruguay	80,000
			Brazil	70,000
Bolivia	45,000	From	Peru	35,000
			Chile	5,000
			Brazil	2,000
Brazil	140,000	From	Paraguay	70,000
			Bolivia	45,000
			Uruguay	3,000
Chile	135,000	From	Bolivia	70,000
			Peru	40,000
			Ecuador	8,000
			Colombia	7,000
			Venezuela	5,000
			Argentina	3,000
Colombia	120,000	From	Ecuador	60,000
			Venezuela	33,000
			Chile	5,000
			Brazil	5,000
			Peru	4,000
			Bolivia	4,000
Ecuador	85,000	From	Colombia	50,000
			Brazil	20,000
			Peru	5,000
			Bolivia	4,000
Paraguay	50,000	From	Brazil	30,000
			Argentina	18,000
Peru	120,000	From	Bolivia	60,000
			Ecuador	20,000
			Chile	10,000
			Colombia	5,000
			Brazil	5,000
Uruguay	50,000	From	Argentina	25,000
			Brazil	20,000
			Miscellaneous (Paraguay)	5,000
Venezuela	750,000	From	Colombia	600,000
			Trinidad and Tobago	30,000
			Argentina	20,000
			Chile	20,000
			Ecuador	20,000
			Brazil	20,000
			Peru	20,000
			Bolivia	10,000
			Miscellaneous (Paraguay)	10,000
Total	2,995,000			

[1] Estimates (not including dependents) by ILO.

Source: Report of the Joint ILO/WHO Committee on Occupational Health, Occupational Safety and Health Series, No. 34, International Labor Office, Geneva, 1977.

(3) Semipermanent migrant workers remaining for a period of years, some of whom may eventually seek citizenship.

Clandestine migrants are an additional subdivision of each group.

Some Legalities of Migration

In Europe, as stipulated in the Treaties of Rome and Paris,[4] the free movement of persons (Art. 48, Tr. of Rome), freedom of establishment, and freedom of supply and services have been goals of the Common Market. As of March 1969 the Treaties also included entitlement to social security benefits by nationals, but maintained limitations that were based on public policy. Under the Migration for Employment Convention (Revised) of 1949 (*10*) all parties undertook to provide suitable medical services and to be responsible for the health of employable migrants and their dependents at the time of departure and on arrival. The nature of the medical examinations that migrants are required to undergo is agreed upon between the receiving country and country of emigration. At the 1961 ILO International Migration Conference in Naples, recommendations regarding diseases and physical defects that would constitute disabilities for employment in certain occupations were made. Paragraph 10 of the recommendations recognized the right of the receiving state to make a comprehensive selective examination. The WHO International Health (formerly Sanitary) Regulations (*11*) Article 37, 1) state that "the health authority for a port, an airport, or a frontier station may subject to medical examination on arrival any ship, aircraft, train, road vehicle, other means of transport, or container, as well as any person on an international voyage." However, these regulations apply only to cholera, plague, smallpox, and yellow fever. On the American continent only yellow fever has any bearing on mass population movement. (Cholera and smallpox are not present in the Americas, and plague is limited to defined focal areas not in the mainstream of migration currents.) There is a provision under Article 91, specifying that migrants, nomads, seasonal workers, or persons taking part in periodic mass congregations "may be subjected to additional health measures conforming with the laws and regulations of each State concerned, and with any agreement concluded between any such States." Malaria is one disease for which cooperative measures, especially in frontier zones, have been established.

Most countries insist on some kind of medical examination for migrants, usually before departure from the home country by national doctors, or sometimes by doctors from the host countries. Exceptionally, medical examination takes place at the frontier. These examinations include a chest X-ray, a serological test for syphilis, a general physical examination (to eliminate would-be migrants with gross disabilities), and a vaccination certificate. Sometimes an examination for malaria or intestinal parasites is requested. In some countries, for instance, the U.S., it has long been the function of overseas consuls to ensure that prospective immigrants undergo a thorough medical examination in their countries of origin (*12*). Even so, further, but limited, medical examinations may be required on their arrival in a new country.

An alien is usually prohibited from immigrating if he is afflicted with a dangerous contagious disease; if he is a chronic alcoholic or narcotic drug addict; if he has a physical defect, disease, or disability that is determined by the consular or immigration officer to affect his ability to earn a living, unless it has been established that he will not have to earn a living (*12*); or if he is blind, deaf, or mute. Some countries emphasize in their selection process "progressive disease," serious mental deficiency,

[4]European Common Market, on the basis of which the European Migration Commission has been established.

dementia, insanity, epilepsy, leprosy, trachoma, cancer, extensive paralysis, organic disease of the nervous system, tuberculosis, leukemia, contagious or infectious diseases, or any disease which may become dangerous to public health, or what is often referred to as a "loathsome disease." Some countries specify psychopathic personalities, among prohibited immigrants (the immigration authorities have discretionary power to decide who falls in this group). Exceptionally there are no express provisions to render a person inadmissible because of illness, except mental illness.

Migrant Health Care in the United States and Mexico

Migrant Workers in the U.S.

Health service programs specifically for migratory farm workers were established in the United States under the Department of Agriculture between 1930 and the mid-1940's. Some 150,000 persons from migratory families at 250 locations where seasonal labor was concentrated used those services, in addition to over 600,000 persons from poor farm families (*13*) .

At the end of World War II, responsibility was returned to the local health services, states and counties, and welfare programs. Since migrants were officially nonresidents, they were ineligible for services in the areas in which they worked. By 1965, however, there were some 60 projects operating in 29 states and Puerto Rico that served several thousand migrant families (an estimated 2 million people), but as Roemer has stated, "by almost any criterion, this program's impact must be small. The drop in the bucket that it offers is less important than its value in keeping alive social concern for the migrant family" (*14*). Since the mid-1960's the emphasis has been on various specialized welfare health programs in rural areas as a whole. In 1972, the Federal Migrant Health Act reestablished health care services for migrant workers and families through Public Health Service (P.H.S) grants to local health departments.

In the U.S. roughly 55 million people live in rural areas; 8 million of these live on farms and about 4 million of the farm dwellers are estimated to work for wages. Approximately 400,000 are migratory farm workers accompanied by as many as 1,500,000 nonworking family members. At least 22 states in the U.S. depend on this labor force, made up primarily of native-born Americans (*15*), to harvest perishable fruits and vegetables. The majority of these people have turned to migratory farm labor because of occupational displacement, racial discrimination, illiteracy, poor health, or accidents (*16*).

Over 300,000 migrants, including family dependents, spend a major part of each year in Texas, New Mexico, and Oklahoma. The four counties in the Lower Rio Grande Valley of Texas alone serve as home for more than 100,000 of this population. These areas that serve as the home base do not have the capacity to deliver adequate primary health care to this migrant population, and the public health service-supported projects offer service to only approximately 40 per cent of the population (*15*). Purchasing private health services is not an option for most migrant workers: In 1972 the average migrant worked 141 days (*17*) (in some states as many as 224 days); his earnings were subject to large levies for transportation, wage deduction by crew leaders, rents for lodging, etc. (*18*).

Illegal Aliens in the U.S.

The number of people residing illegally in the United States is estimated at between 2 and 12 million. The U.S. Immigration and Naturalization Service estimates that at least 1 million Mexicans entered the U.S. illegally in 1976, not counting those

who were returned (about 806,000 in the same year as against 335,000 in 1970), and that almost 400,000 live in Texas, New Mexico, and Oklahoma. Citizens of other countries also cross the U.S.-Mexico border. According to press reports, US$8 million was spent in transportation expenses for repatriation of aliens from Ecuador, El Salvador, Guatemala.

The poor in the U.S. lack adequate health care, and the problem for poor illegal aliens is made even more difficult by their hesitation to seek health care for fear of deportation and the economic hardship it brings. There are very little data on how many illegal aliens benefit from health care services, but some evidence exists to show that they are not even immunized for vaccine-preventable diseases. Their low income ($2.00 to $4.50 an hour for piecework, on which they pay social security and taxes but for which they receive no social benefits) and their marginal employment status limits their ability to pay for health care, and indeed their desire to seek it except in emergencies (*15*).

Health Care Services

Under existing legislation, the Department of Health, Education, and Welfare can make grants to public and nonprofit private groups to plan, develop, and operate migrant health centers in high-impact areas (those where not less than 6,000 migratory and seasonal agricultural workers and their families reside for more than two months in any calendar year) and migrant health projects in low-impact areas (fewer than 6,000 migratory workers). These centers handle:

- Emergency care, primary health care, supplemental services, and referral services, including hospitalization;
- Environmental health services, including detection and alleviation of unhygienic conditions associated with water supply, sewage treatment, solid waste disposal, rodent and parasitic infestation, field sanitation, housing, and other environmental factors related to health;
- Infectious and parasitic disease screening and control;
- Accident prevention programs, including prevention of excessive pesticide exposure;
- Information on the availability and proper use of health care services.

In 1976, about 400,000 migrants and seasonal farm workers benefitted from some kind of health services, most of it primary care provided in clinics receiving funds ($22,172,500 in 1975) from the Migrant Health Program under the P.H.S. Act. But for 1977-1981 the funds are not sufficient to provide necesary hospital care; except for emergencies, hospital care is provided only to a selected group under a few special programs. The migrant health programs overlap rural health programs. In response, recent legislation proposes that 11 P.H.S. programs be consolidated into three authorities uniting migrant health with primary care, community health centers, and health in underserved rural areas (*19*). Implementation of the legislative package will increase the number of persons receiving primary care through P.H.S. grants programs from the present 6 million to 20 million by fiscal year 1982. While domestic migrants will benefit from those programs,[5] the problems of most clandestine immigrants remain unresolved.

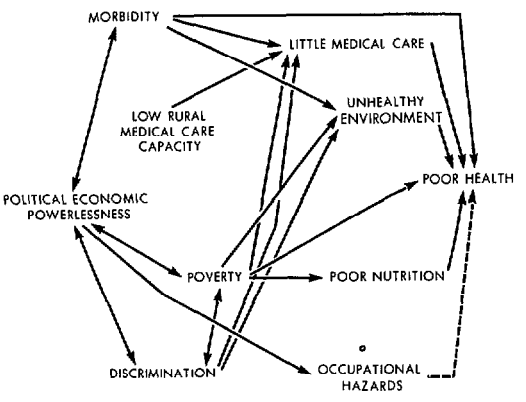
Health Problems of Migrants (*Sensu Stricto*)

Migrants cannot be viewed as a constituency. Since they are in constant movement

[5]The Rural Clinics Bill (HR 8422) was passed by Congress in 1977. In 1965 the appropriation was $3 million and it was estimated that $100 million would have been needed to provide an average level of medical health services U.S. Senate Committee on Labor and Public Welfare. Interim Report U.S.P.H. Services, Washington, D.C., 1969, U.S. Government Printing Office, cit. Roemer M. 1976.

Cooperation and organization can gradually transform living conditions through the introduction of streets, electricity, sanitation (photos: courtesy of the author).

Figure 2. Causal scheme of poor health among migrants.



Source B N Shenkin, Health Care for Migrant Workers Policies and Politics Ballinger Publ Co, Cambridge, Mass, 1974, p 27

and are not a politically organized group, they are indeed forgotten or at most simply a marginal segment of the population. In consequence there has been a dearth of studies, particularly epidemiologic studies, regarding the morbidity of migrants. The existing data are not standardized for age, sex, or occupation, and therefore, comparison with local populations is often misleading. This state of affairs has produced a lack of appreciation of the magnitude of the problem in epidemiologic terms and even much less awareness of socially conditioned health situations (Figure 2). Health problems of migrants include:

- Importation of diseases endemic to their country of origin, but absent in the host country;
- Importation of diseases existing also in the host country;
- Acquisition of diseases in the host country;
- Adaptational stress;
- Integration and assimilation in the host country;
- Occupational risks and accidents;
- Lack of preventive care for family members; and
- Provision of health care to both worker and family.

Lack of access to medical services, in particular to primary health care, exacerbates all of these problems. It must also be kept in mind that discontinuity in cultural values and roles puts migrants "not only in unfamiliar situations, but also in familiar situations demanding unfamiliar responses" (*20*). Migrants generally have high rates of acute and chronic infectious and parasitic diseases, malnutrition, skin diseases, dental caries, and impairment and diseases of the nervous system. Table 2, which shows leading causes of hospitalization among migrants in Texas, reflects this. Conditions in the family and in the personal environment of the migrant are believed to increase the inflow to hospitals.

Nevertheless, migrants use medical services far less (66 per cent of the national average) than the rest of the population (*15*).

In Michigan, for example, migrants used medical facilities five times less and dental facilities 25 times less than the average citizen (*21*). Metropolitan areas contain 75 per cent of the population and 87 per cent of the doctors, which is further disadvantageous to migrants who spend the majority of each year in rural areas without adequate medical service (*22*).

Utah provides statistics for the kinds of health care migrants do use: 44 and 51 per cent of health care (in clinics and with private physicians, respectively) was for acute illness and 13-15 per cent for chronic illness; 20 per cent of preventive care was provided by clinics, 13 per cent by private physicians. The four most common diagnoses were pharyngitis and upper respiratory infections, minor trauma, dermatitis and other skin infections, and diarrhea. Infectious diseases made up one-third of the diagnoses. Only 1 per cent required hospitalization (*23*).

Laurell et al. (*24*) found in Mexico that certain socioeconomic characteristics, e.g., internal migration patterns, income, underemployment (but not literacy), more clearly define groups of high and low morbidity

Table 2. Ten most important disorders for which migrants sought health and hospital care—Texas, 1967-1969.

Hospitalization 1 July 1968-31 December 1968	%	Migrant health services Reported 1969	%	Referrals 1 July 1967-1 July 1968	%
1. Diseases of the digestive system	19.0	1. Special conditions and examination without sickness	47.3	1. Infective and parasitic diseases	62.7
2. Injuries and adverse effects of chemical substances and other external injuries	14.8	2. Diseases of the respiratory system	15.1	2. Special conditions and examination without sickness	20.5
3. Delivery	12.0	3. Infective and parasitic diseases	5.8	3. Diseases of the digestive system	2.2
4. Diseases of the respiratory system	8.4	4. Diseases of the nervous system and sense organs	4.5	4. Diseases of the circulatory system	2.0
5. Diseases of genitourinary system	6.0	5. Diseases of the digestive system	4.5	5. Allergic, endocrine, metabolic and nutritional diseases	1.8
6. Neoplasms	5.7	6. Allergic, endocrine, metabolic and nutritional diseases	3.5	6. Diseases of the bones and organs of movement	1.6
7. Diseases of the circulatory system	4.9	7. Diseases of the skin and subcutaneous tissue	3.2	7. Diseases of the skin and subcutaneous tissue	1.5
8. Infective and parasitic diseases	4.7	8. Diseases of the circulatory system	2.7	8. Diseases of the nervous system and sense organs	1.3
9. Allergic, endocrine, metabolic and nutritional diseases	4.1	9. Diseases of the genitourinary system	2.6	9. Neoplasms	1.1
10. Diseases of the nervous system and sense organs	2.7	10. Symptoms and ill-defined conditions	2.2	10. Diseases of the genitourinary system	.9
Total	82.3	Total	91.4	Total	95.6

Source: Migrant Health Program, *Annual Report, 1969*. Texas Department of Health, Austin, p. 128.

than do sanitary conditions or access to health care. The authors are careful to stress that the relationships are not simple, not directly causal, but that they exert a significant influence on the biological phenomena.

Tuberculosis

Tuberculosis was long ago recognized as one of the most important health problems in immigration. In the U.S., since the late 1970's, there has been an increase in the prevalence of tuberculosis among immigrants. This change is the result of shifting patterns in legal immigrations as well as an influx of illegal aliens. For example, from 1970 to 1976, there was a 10 per cent increase in reported tuberculosis cases in Los Angeles County, California. Over 60 per cent of patients admitted to hospitals with TB were foreign-born, and of those with Spanish surnames, approximately 50-60 per cent were illegal aliens. While there was a decrease in TB of about 23 per cent among whites and about 10 per cent among blacks in the years 1970-1975, there was an 85 per cent increase among those with Spanish surnames, and a 110 per cent increase among Asians (Chinese, Filipino, and Korean) (*26*).

Often the emigration country has a higher rate of TB than the receiving country, and certainly some cases are imported. A great number of immigrants might have an inactive infection, which could become reactivated. However, the opposite situation is also possible: Tubercu-

losis in migrants could be, as European experience suggests (*27*), a disease acquired in the host country.

Since immigrants have extremely limited access to any kind of health service, they consult *curanderos* (those who use incantations and herbs, etc. to cure disease) or other such healers, and/or go to health center in an advanced stage of disease. Unless specifically instructed to the contrary, many epidemiologically aware health officers are careful not to ask about the legal status of the patient, and give antituberculosis and preventive treatment as required, considering the untreated patient a source of infection to the community. The cooperation of the patient, difficult in any case in a population characterized by constant or frequent mobility, may thus be enhanced, although it is well known that the TB-treatment default rate, even in a stable population, is very high.

The Working Group on Health Aspects of Labor Migration (*9*) has rightly pointed out that the migrant is typically obsessed with the desire to make and save money quickly and often takes multiple employment. Constant fatigue, scrimping on food, and often sharing quarters in overcrowded lodgings, along with the loneliness, insecurity, social distance, and xenophobia are all factors that reactivate latent infections or predispose toward new ones.

Malaria and Parasitic Diseases

Migration is recognized as one of the greatest obstacles to the success of malaria eradication programs in Latin America (*28*). Experience with migrants in these programs has been disheartening, even when the problems were anticipated and preventive measures taken. It is not easy to detect asymptomatic carriers, even in massive surveys. Underestimating the importance of human factors has been considered one of the main causes for disappointing results in the antimalaria war (*29*), and problems are well known since the pioneering works of Prothero (*30, 31*).

Mental Health

Any transplantation to a foreign country entails a radical change in the social milieu, often isolation from traditional family and friendship ties as well, and often language barriers. In addition, the transition from rural to industrial work requires stressful adaptation. The unsettled status of migrants—both in legal and labor terms—continues in some cases for years; cultural ambiguity often persists until the next generation. In Europe, it was found that the separation of families causes up to 10 times more divorces and a higher morbidity rate in women left at home than in a comparable group with families where the husband was present (*32*). The same has been observed in children of migrants. On the other hand, employed migrants have less absenteeism because of illness. This is not only the result of their physical health selection, but probably is primarily due to fear of losing their work and possibly restrictions to the use of health services.

The breakdown of family functions is caused by socioeconomic factors—income level, status, and stability of employment (*33*)—and the interruption of existing, often supportive, social arrangements, particularly if the migrant went from an agrarian to an urban setting, that are relatively ineffectual in the new setting.

All this affects mental health. Puerto Ricans in New York City, for example, are significantly overrepresented in state mental institutions (*34*), as are Mexican-Americans in Colorado (*35*). It should be noted that such groups receive less mental health care, which, when available, is of lower quality. In addition, institutional policies discourage self-referral; there are few alternatives to conventional treatment methods; and such services are often not availa-

ble in rural areas. Different languages and cultures erect other barriers to treatment as well as to diagnosis. Behavior that is normal among immigrants might be differently judged by those in the receiving culture. Identifying such behavior will minimize diagnostic errors by mental health professionals.

It is hardly necessary to discuss the absurdity of using the so-called tests of intelligence. Such tests, made by specialists from one culture, are not applicable without severe reservation even in the same culture and are much less applicable for members of another culture. Yet they have been and are all too often used, although they cannot account for urban-rural background, levels of motivation, biligualism, educational experience, importance attached to various mental skills or social class, and so on (*36*).

The relationship between mental diseases and migration was first studied by Odegaard (*37*), who observed that Norwegian-born immigrants in Minnesota had high rates of admission to mental hospitals when compared with rates in Norway itself and with those of native-born Minnesotans. It was assumed that migrants were a self-selected group with a higher number of prepsychotic individuals who, additionally, were exposed to more stress because of their immigration. Providing confirmation was the fact that immigrants from rural Norway to Oslo had higher rates than native residents of Oslo. Studies in Israel show that foreign-born and native migrants had higher hospitalization rates than non-migrants (*37, 38*). Studies in Canada, on the other hand, show that this is not universally true. For example, Chinese living in a "Chinatown" in British Columbia had low hospitalization rates compared with Chinese scattered in the country, who had the highest rate of all ethnic minorities (*39*). A review of the literature including the problems of appraising mental disease among migrants has been published by DHEW (*36*); there have been several studies on rural to urban migration (*40, 41*), and on foreign-born migrants (*42*).

Epidemiologic studies (*42*) of mental disorders indicate that schizophrenia and phenomena of social disorganization, such as alcoholism and juvenile delinquency, are particularly frequent in crowded slums, the areas where migrants usually live. Data indicate that the solution is not simply the clearance of slum areas or the provision of health facilities but also the implementation of a comprehensive social/health policy.

Nutrition

Migration is an attempt to improve one's standard of living, and its success parallels reduction or elimination of malnutrition (*43*). Yet poverty and lack of education are associated with deterioration of the physical and social conditions that maintain adequate nutrition. Logically, nutrition among migrants depends on their cultural attitudes, education, and financial situation, in that order. Avitaminoses and malnutrition and their ramifications—severe protein or calorie deprivation associated with damage to the central nervous system, for one—are found among all poverty stricken populations. Migrant workers, whose wages are about half those of unskilled workers in other industries (*28*), tend to predominate in these populations.

High morbidity due to nutritional or metabolic-related diseases among Mexican-Americans awaits interpretation in regard to nutritional and genetic factors.

Drug Abuse

Illegal immigrants are often exploited to transport drugs; however, although they might occasionally be temporarily attracted to the drug subculture, in general they are not especially good candidates for drug abuse. Richman (*44*), in examining the factors influencing the concentration of narcotic addiction in certain places and

particular social groups among migrants and mobile persons, found highly significant correlations with poverty. Population mobility was not statistically significant and was the least important of the 15 variables listed.

Environmental Health

Living conditions for migrant farm workers are still extraordinarily "poor despite much publicity about their situation, and some effort to effect improvement" (*23*). Table 3 shows the major defects in 681 migrant labor camps studied by the Texas Migrant Program (1969) (*45*). Ample descriptions of poor migrant housing (nearly 96 per cent are without flush toilets, baths, or showers) have been documented (*46*).

In recent years it has been recognized that pesticides are a hazard of particular importance to migrant laborers. One-sixth of all California farm workers suffer from their effects (*47*), although the number of officially reported cases of residue-related illness is possibly no more than 1-2 per cent (*48*).

Migration—A Research Opportunity

Migrations present a unique opportunity for medical research into the causality of diseases, particularly for distinguishing among infectious, genetic, and environmental factors. For instance, studies of multiple sclerosis suggest that some degree of protection is provided to migrants who have lived in low-prevalence areas (occurrence seems to increase with distance from the equator) either early or later in life; and that genetic factors seem to protect Japanese and Chinese (*49*). Epidemiologic approaches using migrants in the study of cancer have shown that among first-generation Japanese migrants to the U.S., the mortality rates from cancer of the colon (excluding rectum) were closer to those of the host country than to those of the country of birth. By the second generation there was a further trend toward the U.S. risk levels. The Japanese case is consistent with that of other migrant populations. It has been suggested that the difference is due to diet and the presence of indigenous intestinal microflora. However, first-generation migrants retain risk levels closer to the country of origin for gastric cancer (*50*). Similarly, foreign-born groups and interstate migrants in the U.S. retain the stomach cancer rates characteristic of their places of origin (*51*). Low rates for breast cancer in second-generation Japanese persist in spite of social and cultural practices of the host country, which points to genetic or indigenous factors (*52*). Rural-to-urban migrants in the U.S. seem to suffer from lung cancer more than the residents of the cities to which they have migrated (*53*).

Studies of migrants have been tremendously useful for evaluating the genetic and environmental factors which predispose to cardiovascular diseases. For example, Japanese in Japan have a lower rate of coronary heart disease than Japanese living in Hawaii, while the highest incidence is seen in Japanese in California (*54*). Similar observations have been made of recent Yemenite immigrants to Israel, who had a very low mortality rate from arteriosclerotic degenerative heart disease compared

Table 3. Defects in migrant labor camps in Texas (1969).

	Camp %	Home %
Structure	65	50-60
Water supply	60	50-60
Sewage disposal	80	80-90
Garbage collection, storage, and disposal	80	80-90
Insect and rodent control	90	90
Fire protection	90	90
Other (recreation, transportation, child care)	95	95

Source: Migrant Health Program, *Annual Report, 1969*. Texas State Department of Health, Austin.

with immigrants of 70 years before (*55*). Cardiovascular disease among urbanized populations and the health consequences of culture change have been discussed by Tyroler (*56*), and chronic diseases among European immigrants to the U.S. by Reid et al. (*57*).

Institutional Arrangements

Migrant health, both rural and urban, is a tangle of unmet needs. Different countries give the problem a different priority, but with millions of people lacking sufficient access to health care, it is obvious that shifting populations will be the last group to be accommodated by health care institutions. Even in highly developed countries that are attempting to do something about the problem, there is a maze of jurisdictional barriers precluding adequate delivery of health care to migrant populations. In the international context some solutions could be reached under conditions of agreed migration through binational arrangements, but even then the problem of hospitalization is not always satisfactorily solved.

The financial burden, especially when migration assumes massive proportions, is often an argument against extending health care to the nonresident population. The County of Los Angeles, California, estimated that the total nonresident cost of health care for 1976 was between US$53 and 79 million—10-16 per cent of the health department's budget. Of this, 40-67 million was spent for undocumented aliens or aliens with temporary visas. Although this study has severe limitations—it includes all direct and indirect support costs, such as building maintenance, depreciation, and administration—its conclusion is important: savings would be marginal if services were not extended to nonresidents, particularly undocumented aliens, because most of the costs that health departments incur are for activities that continue (fixed costs) even when the workload in those facilities is reduced (*58*).

Assuming that there were no financial drawbacks, the question remains whether the institutions for health and social welfare, etc. would be responsive and ready to deal effectively with a different clientele. Xenophobia arises almost spontaneously when migrants reach a proportion regarded by the host community as surpassing its capacity to absorb any group (*59*). Urgently needed in the Pan American context is the establishment of immigration policies that specify the migrants' status in the receiving countries. These should deal with their job opportunities as well as their prospects for full social integration.

Little research has been devoted to the area of migrants' health, with the result that medical and other professional bodies are almost totally ignorant of the magnitude of the health problems [6] of migrants, of the general sociomedical trends affecting them, or of the positive or negative effects of migration on the migrant and on the community. This ignorance engenders indifference or antagonism, resulting from fear of difficulties inherent in the needs of a new and different population. Parallel to this is the migrants' ignorance of the new community.

Once the decision has been made to provide health services for migrants, the question of the best method arises: clinics, health centers, private physicians, or a combination. In Utah it was found that the migrant council clinics offered a more comprehensive service than private physicians and were also able to concentrate on preventive medicine. This instance indicates that success in treating chronic diseases is more likely in a setting that focuses primarily on mi-

[6] European studies show the risk of occupational accidents to be two to three times that of the national workers, and the temporary disability rate 84-137 per cent higher, while permanent disability is 62-112 per cent higher (*4*).

grants. But the clinics were more expensive ($19.15 per clinic visit against $11.54 per private physician visit), and the operation carried a much heavier administrative load (*23*). Clinics also cannot solve the problems of the seasonally transient migrant's discontinuous treatment.

In rural high-impact areas special health centers and clinics have certain psychological and technical advantages (opening hours, interpreter availability). However, the whole migration picture is changing—migration is no longer a seasonal rural event, but a process in which urban migration is increasing. Alternative measures, that deal effectively with the new urban orientation are necessary.

The basic dilemma revolves around the issue of whether the migrant is perceived as a temporary or as a future resident, defines the problems and measures. There seem, however, to be only two approaches that are consistent with the basic principles of welfare and health:

- The migrant is declared to be strictly temporary but, in recognition of his contribution to society, he receives health care benefits, acceptable wages, decent housing, and the right to social services at the time of departure.
- The migrant will settle permanently, in which case he is treated as one of the stable population in the interest of the community itself.

There are many problems of immigration and of migrants and each must be studied separately. But they are part of a wider issue, that of primary health care and of who is to receive it. By studying migrant health care problems, better plans can be devised for primary health care coverage.

Conclusion

Migration is a phenomenon that points up disparity in development, but the effort to provide health services to migrants is basically a question of each country's level of health coverage. The Ministers of Health of the Americas decided in 1972 to institute specific machinery during the decade to make it feasible to attain total health care coverage of the population in all countries of the Region (*60*). This goal was more forcefully restated in 1977: "Coverage is the result of an effective and organized supply of basic health services that meet the needs of the entire population, are provided on a continuous basis in accessible places, and in a form acceptable to the population and afford requisite access to the various care levels of the health services system."

While such universal coverage poses a real challenge even for a static population, the problem of migration increases the complexity and strain put on development plans, as people shift and large numbers stream from rural communities to urban areas. In addition to geographic accessibility there are problems concerning cultural and functional accessibility. The solution obviously requires a proper information system on the flow and magnitude of migration. There should be identification of the demographic, socioeconomic, cultural, and environmental characteristics of health problems and available resources, including potential manpower.

The approach will be different for the rural-to-rural and for rural-to-urban migration, but the solution must ensure that in all countries comprehensive health benefits prevail. Migrants must be entitled to services equal to those of the rest of the community, instead of being dependent on special migrant programs if and when they exist. The latter are parallel to health care systems existing for the rest of the population and are essentially curative, crisis intervention-oriented, categorized, vertical, nonintegrative structures that remain operative only as long as funding is forthcoming. All gains are likely to be transient.

The integration of migrant health pro-

grams and community health resources is the only durable solution, even though it may bring initial overtaxing of existing services. It will be, on the other hand, a stimulus to health services to expand the range of care offered, to adapt technologies and manpower development, and to restructure health care systems on the basis of functional levels of care. "As a logical consequence of the acceptance of health as a basic right and responsibility of individuals and communities, the concept of universal coverage demands that efforts to attain it be made on a nationwide basis" (*61*). Primary health care is a workable principle, but it cannot succeed without a unified concept of development that incorporates economic, agricultural, and educational, as well as health aspects.

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GUSTAVO MOLINA GUZMAN

Gustavo Molina Guzmán, a Chilean physician and devoted public health worker, died in Medellín, Colombia, on 5 August 1978.

Early in his career, he witnessed the creation of the Ministry of Health in 1924, which was to be combined in 1952 with other institutions into a single National Health Service (NHS), one of Latin America's finest. With the establishment of the School of Public Health in 1944 countless health workers were trained who provided the NHS from the outset with qualified professional teams required for the work it was to perform.

Gustavo Molina had been president of the Chilean Students' Federation at 23 and from that time he constantly defended the causes of the NHS and its predescessor agencies. He began his career as chief of the Antofagasta Health Unit; studied public health in the United States; and upon his return to Chile he became Director of the Quinta Normal Sanitary Unit in Santiago, where he devoted all his knowledge and talents to furthering the concept that health is indivisible and cannot be served on a piecemeal basis. But, above all, his profound social and political convictions made him a champion of community participation as an indispensable component of action to improve the levels of health, convictions which marked his work for the rest of his life.

Around 1950 Dr. Molina was appointed Professor of Health Administration at the University of Chile School of Public Health. As a professor, he gave special meaning to the teaching of this important subject. He made his students understand that all the teachings of the School of Medicine were idle academic theory unless they were put into practice. His tenacious will to translate thought into action prompted him to write his "Principles of Health Administration. Theory and Practice of Public Health in Latin America," which has since served as the bible of an entire generation of health administrators.

Never content to just teach or write, he looked for ways of acting on what he taught and believed in. A tour of duty with the Pan American Health Organization and a stay in Puerto Rico enriched his experience of the world. He returned to Chile with a keen desire to revolutionize the teaching of preventive and social medicine. A chair at a clinical hospital in Santiago gave him this opportunity.

The last years of his life were passed in Colombia, where he was warmly welcomed by devoted friends and students of the National School of Public Health of Medellín. But then he was not content to rest. Hardly an issue of the school's *Revista* failed to include one of his contributions. The pervading subject of his thoughts was the young people, the seed he was to leave behind. His last writing, in 1977, was an admirable summing up entitled "Introduction to Public Health," which he dedicated to the professionals and students of medicine and allied fields in Latin America.