Effects of Rural Poverty on the Health of California's Farmworkers

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THE RELATIONSHIPS between socioeconomic status and specific diseases have been examined from a variety of perspectives (*1–5*). Most relevant to our times is the current action-oriented exploration of new ways to improve the health of the poor (*6–8*). Dr. George James, former commissioner of health of New York City, has pointed out that in the nation's largest city, poverty (in association with the immediate condition) is the third leading cause of death—13,000 per year (*9*).

In California, studies have shown that (*a*) rural families experience poverty and deprivation almost twice as often as those who live in metropolitan areas and (*b*) metropolitan areas oriented toward agriculture have twice the incidence of poverty found in metropolitan communities with well-diversified or government-oriented economies (*10*). California's farmworkers are drawn largely from and are indistinguishable from the slum residents of the towns and cities scattered throughout the State's agricultural areas.

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California's farmworkers have been the subject of episodic national concern since the Great Depression of the 1930's. Striking grapepickers of Delano currently attract nationwide attention. These laborers recently achieved a major breakthrough in the long struggle to organize agricultural workers by negotiating contracts with several major corporate growers (*11*).

In the 1960's increasing attention has been focused on the persistence of poverty in a prosperous country. A crucial aspect of contemporary American poverty is its isolation and relative invisibility. Poverty is off the beaten track and usually a problem of Negroes, Indians, Spanish-speaking Americans, residents of Appalachia, the aged, and farmworkers. This paper reviews and discusses some of the attempts to overcome the health problems of California's farmworkers.

The Population

The term "farmworker" can include a skilled machine operator as well as an unskilled migratory fruitpicker. Therefore the exact size and characteristics of California's seasonal farm labor population are not clear, and data are difficult to interpret.

In 1959, 3⅓ percent of the State's births were in families which listed farm labor as an occupation. In 1960 the census showed 135,000 domestic farm laborers, also 3⅓ percent of California's civilian labor force. In 1964 a statewide immunization survey showed 2.6 percent of the

children under 5 years to be from families of unskilled farm laborers.

The ethnic breakdown probably includes 60 percent Mexican-Americans, 30 percent Anglo-Americans, and 10 percent Negroes. Nearly 65 percent of the dwellings in which these workers live are dilapidated or deteriorated, 10 percent have no water supply, and pit privies serve one-third of these families (*12*).

The average annual family income of the migrant farmworkers for the nation in 1961 was $1,432 (*13*). Average quarterly wages in California for farmworkers in 1963 ranged from $417 to $449 (*14*). In Kern County slightly more than half of the seasonal farmworker families, mostly nonmigrants, earned less than $2,000. Heads of households averaged 190 days of work during the year, and 70 percent had less than a ninth grade education (*15*).

Increased mechanization has had an important impact on California agriculture. In the cotton industry alone, the number of workers employed in Kern County at peak season decreased from 30,000 in 1949 to 6,000 in 1961. However, no decrease in demand for workers is expected in the next 4 or 5 years because of a predicted increase in total agricultural production and the termination of the widespread use of foreign labor.

Health Status

Data describing the health conditions of farmworkers are fragmentary, in part because the population is mobile and identifiable only as an occupation group (*16–18*). Most information about farm labor is collected by the Government and deals with employment, not conditions of life.

California's agricultural workers and their families have a low rate of hospital admissions and medically attended conditions, despite high rates of bacterial and parasitic infections, circulatory disease, and accidents. Among children under 3 years of age, only one-third have been found to be adequately immunized against diphtheria, smallpox, or tetanus. Untreated medical conditions commonly observed include skin infections, diarrhea, tonsillitis, iron deficiency anemia, and pregnancy without prenatal care (*19*).

Occupational disease rates in agriculture are the highest of any major industry in California, three times higher than average (*20*). Agriculture had the second highest rate of disabling work injuries in 1965, twice the average for other major industries in California.

A 1959 study of perinatal mortality (fetal deaths and liveborn infants who died within 28 days) confirmed the existence of serious health problems among California farm labor families (*21*).

1. The perinatal death rate for these families was 39.6 per 1,000 compared with 30.6 per 1,000 live births for the State.

2. Out-of-hospital births in these families were five times the expected rate.

3. Thirty-three percent of these mothers either had no prenatal care or obtained it only in the third trimester in contrast to similar lack of care in 6.6 percent of skilled workers' families.

For the years 1961–63 records of all post neonatal infant deaths due to diarrhea were matched with corresponding birth certificates to determine the occupation of the deceased infants' fathers. According to unpublished data of Dr. Gilbert, more than 20 percent of 222 California deaths due to diarrhea were in farmworkers' families, although farmworkers comprise only about 3 percent of the State's population.

A recent study of iron deficiency among 150 rural California children, predominantly the progeny of Mexican-American farmworkers, revealed that severe iron depletion and anemia were found in nearly all these children 6–25 months of age. Half the children 4–8 years of age had some degree of anemia, and more than 80 percent had iron depletion when determined by serum iron saturation (*22*).

Specific Health Problems

At the fourth annual conference on Families Who Follow the Crops a panel of farmworkers presented their perceptions of the health needs of their families (*23*). In addition to their desire for better housing and sanitation, the workers were also concerned about the following.

1. Accidents to children who accompany their parents to the fields because adequate supervision is not available at home.

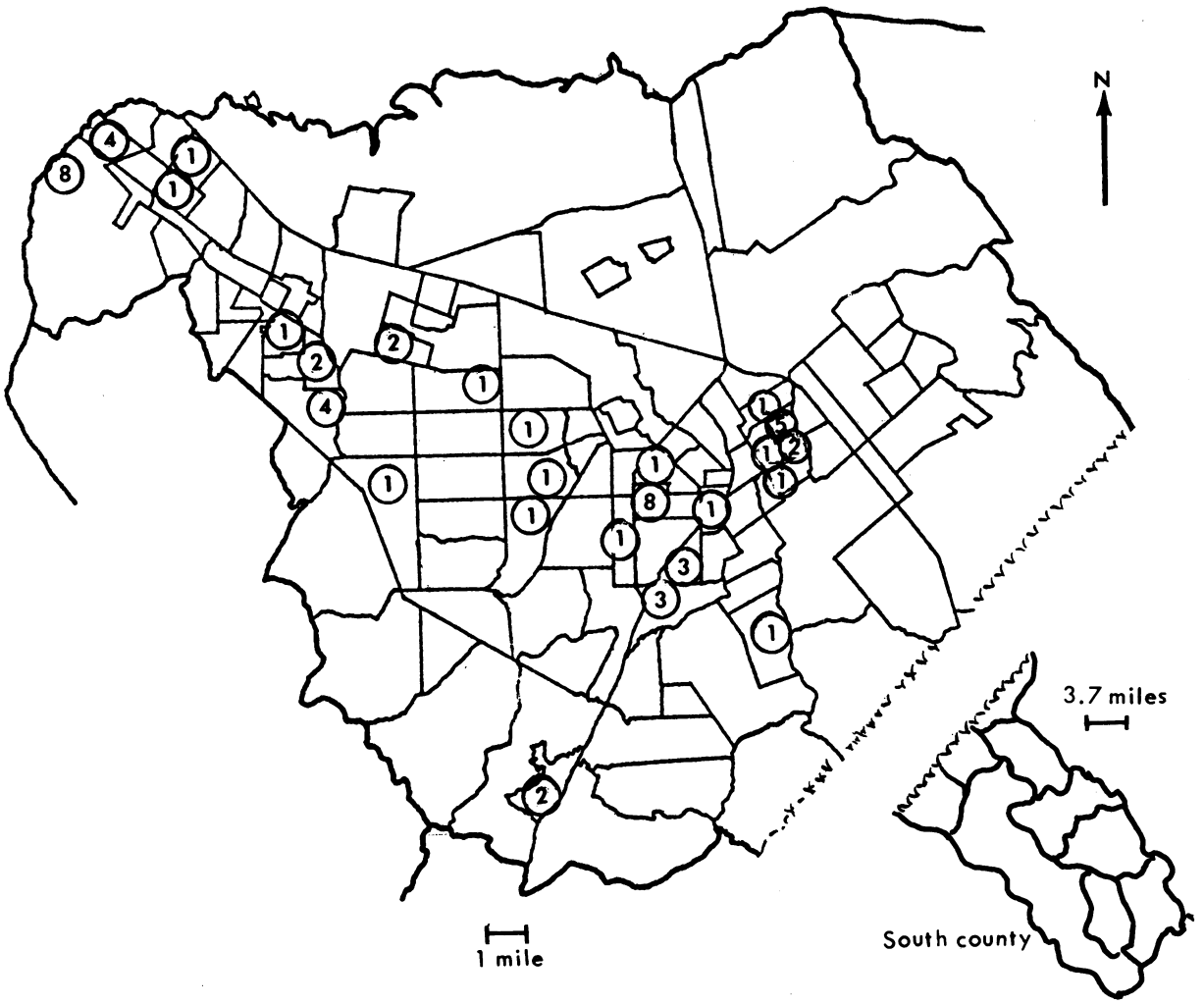


Figure 1. Number of obstetricians and gynecologists by census tract, Santa Clara County, 1965–66

SOURCE: Reference 30.

2. Inadequate day care services.
3. Being limited to emergency medical care and their ineligibility for long term care.
4. Lack of adequate diet during winter and during slack employment periods.
5. Lack of immunization.
6. Lack of health education services.
7. Lack of public transportation to medical services.
8. Language barrier when using medical services.

Cultural differences have been implicated as factors which decrease use of available health services by farmworkers. Anthropologists have focused on an underlying fatalism observed among Mexicans and Mexican-Americans, as well as their continued acceptance of "curanderismo." This term refers to a system of disease theory and curative techniques associated with a folk doctor, whose healing powers are believed to be a divine gift from God (*24*, *25*). The comparatively high cost of scientific medicine also has been cited as a reason for the Mexican farmworkers' preference for their traditional care (*26*).

Residency requirements for health care also prevent the use of county hospital services by nonresidents. Migrant farmworkers usually have a home base, but they often have acute medical problems while following the crops. Re-

ciprocal agreements exist between counties, but billing procedures for care given to nonresidents are cumbersome, time consuming, and avoided by health agencies when possible. Of the 35 counties which employed migratory farm labor in 1964, 15 offered health services to out-of-county residents; only nine counties gave service to out-of-State residents (*27*).

Lack of Physicians

The three greater metropolitan areas of Los Angeles, San Diego, and San Francisco, with a combined population in 1962 of 10,203,000, had a ratio of 243.5 physicians per 100,000 persons (*28*). In contrast, 10 representative agricultural counties with a combined population in 1962 of 2,438,000 had only 131.3 physicians per 100,000 persons (*29*).

The availability of obstetricians and pediatricians in 1964, based on currently available population data, was calculated for these same 10 representative agricultural counties (see table). Results of the calculations revealed a modest undersupply of pediatricians but a more substantial lack of obstetricians (*30*).

Countywide data may be misleading, however, as observed in the distribution of physicians in Santa Clara County, where Stanford University Medical Center is located. This county consists of two unequal areas. The northern area is urban and suburban with a relatively abundant supply of pediatricians and obstetricians; the southern area is rural and agricultural with comparatively few physicians and little or no specialist care (figs. 1 and 2). Based on 1960 census data, the agricultural "south county" area had a population of 26,000 or 3 percent of the county's population.

This rural area, with a large Mexican-American population and a high proportion of welfare recipients, is served by 1.2 percent of the practicing physicians, excluding from consideration interns and residents who are altogether absent from south county. In addition to the year-round population, there is an influx of approximately 7,500 farmworkers plus their families at the height of the summer crops.

In a personal communication dated October 1966, Dr. Mary Clark, of the Santa Clara County Health Department, disclosed that as of 1964 the south county had a tuberculosis and infant death rate more than double that of the rest of the county. The prematurity rate was also high (13 percent). Salmonellosis and hepatitis rates are higher than the rest of the county, and 25 percent of the county's shigellosis cases come from this rural area.

Residents of this area may have to travel more than 40 miles to the Stanford University Medical Center or 25 miles to the Santa Clara County Hospital. There is no local public transportation, only an hourly bus to San Jose City where the county hospital is located. This trip may take more than an hour, to which another 45 minutes must be added to reach the hospital.

If Santa Clara is eliminated from the list of counties for which pediatrician and obstetrician ratios are calculated, the ratios are closer to reality (see table). There are approximately one-third as many obstetricians and fewer than one half as many pediatricians per unit population serving the nine agricultural counties as there are serving the State as a whole. (The estimate does not correct for patterns of physician maldistribution within each county.)

Health Programs

The National Migrant Health Act of 1961 provided $3 million yearly for grants to State and local governments to improve the health of the migrants. The act was preceded in 1960 in California by a State appropriation of $75,000 annually for health programs for farmworkers.

A Federal appropriation of $811,000 and $75,000 in annual State funds now supports a State health department staff and 19 local projects in 17 counties. The State staff provides consultative services to ongoing programs, helps to develop direct medical care services for farmworkers, and works closely with State and local antipoverty programs to develop housing and child care programs for migrants at peak periods of need. The local projects vary in scope, nature, and period of operation. The projects' differences depend on the needs and mobility patterns of the workers in each community, on the availability of resources for health care, and on the desires of each community at the time the project is set up.

Of the 17 California counties with projects, 11 have medical clinics for workers and their

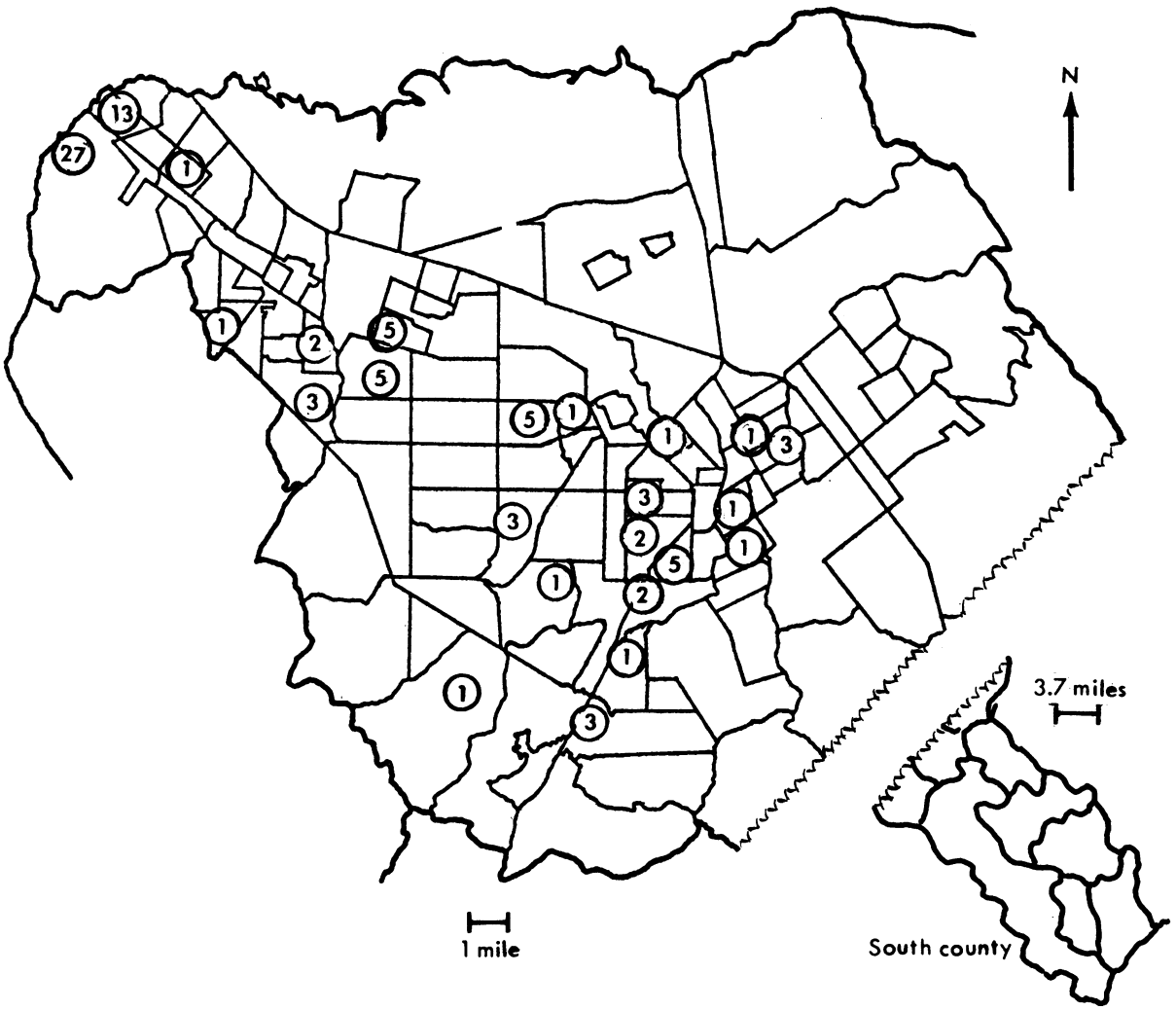


Figure 2. Number of pediatricians by census tract, Santa Clara County, 1965–66

SOURCE: Reference 30.

families. These operate at times of peak need, are readily accessible, and are organized and staffed to encourage maximum use. There is no fee, and most clinics are held during evening hours from one to five times weekly.

The clinics are staffed by local physicians on a rotating basis and by nurses and clerks from the local health department. Community volunteers and paid health aides drawn from the farmworker population assist Spanish-speaking patients. Clinics vary, but services include diagnosis, treatment of ambulatory patients, and distribution of drugs. Home visits by public health nurses permit evaluation of family problems and facilitate referral and followup care.

Between 1965 and 1966 the number of patients seen increased from 5,000 to 16,000, and the number of patient visits increased from 11,000 to 29,000. Nine projects provided environmental sanitation services. More than 8,000 visits were made for the correction of housing, sewage, and refuse problems.

There are also other significant health programs initiated by nongovernmental organizations. In 1965 the Santa Clara County Medical Society established a free medical clinic staffed by volunteers. Throughout the summer, clinics were held twice weekly and served 30–50 patients nightly for conditions ranging from iron deficiency anemia to trachoma. During 1966 this

project developed into a year-round medical clinic, supported by Federal funds.

In King City a private medical group, supported by the neighborhood health center program of the Office of Economic Opportunity, augmented its staff to provide improved care for farmworkers.

In San Joaquin County, physicians developed a project which provided medical services for migrants during the cherry harvest in the spring of 1965. This short term voluntary project also has been developed into a year-round medical outpatient service sponsored by the county medical society and supported by Federal funds.

The California Farm Bureau offers two health insurance programs to agricultural employers for coverage of workers who remain on the job for more than 60 days. Unfortunately, most farmworkers do not remain on one job for 60 days, and the most needy are the most mobile. Only $150,000 in claims were paid to farmworker families under these plans in 1966 (*31*).

Discussion

Continuing concern for the health of California's and the nation's farmworkers will remain a serious responsibility for medical educators, practicing physicians, and public health workers until agricultural workers become part of the mainstream of national economic and cultural life.

The well-being of farmworkers depends ultimately on many factors which are not related specifically to health, especially the following.

1. The outcome of attempts at union organization.
2. Proposed extension to agricultural workers of the fair labor relations standards guaranteed by the Taft-Hartley Act.
3. Attainment of coverage by minimum wage and unemployment insurance legislation equivalent to that now available for industrial workers.
4. The potential effects of Federal antipoverty programs.
5. The increasing consequences of mechanized harvesting.

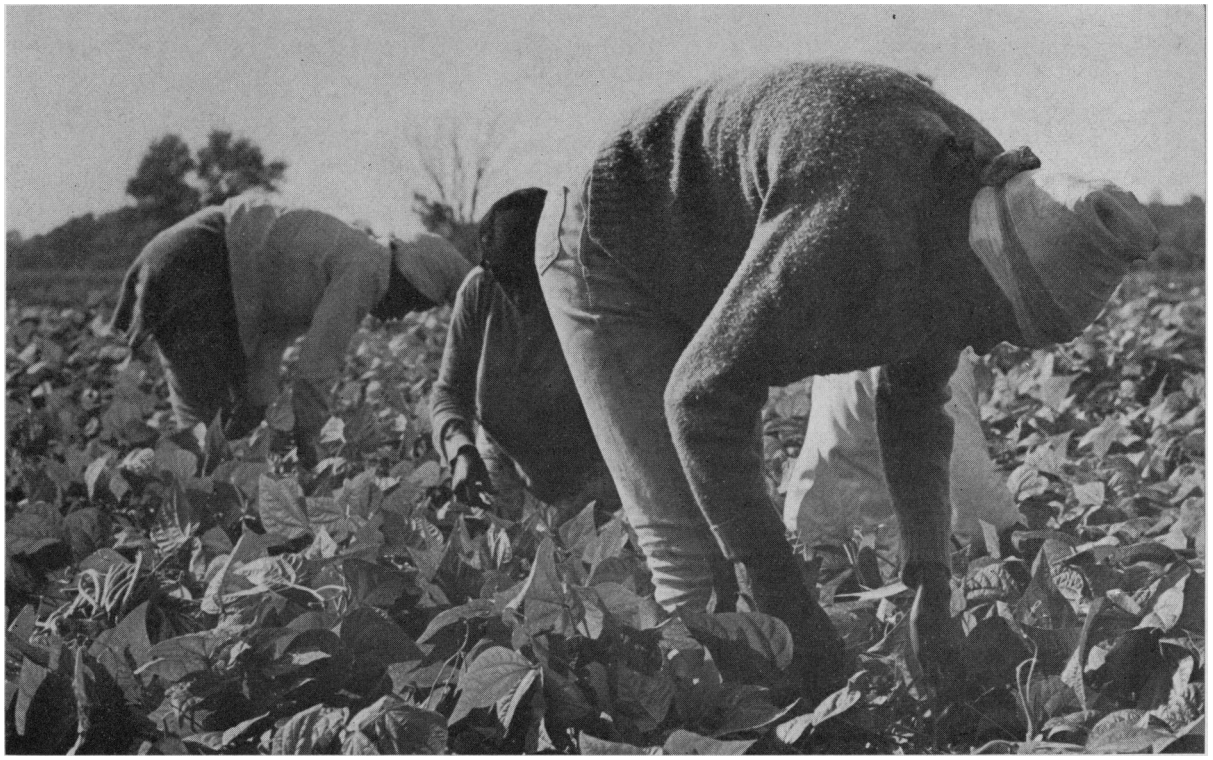
In the narrower sphere of improved medical care, there remain the financial barriers to medical care, which still confront the majority of agricultural workers, and the shortage of medical manpower and facilities in rural areas. Unfortunately, it is much easier to describe the problems than to propose solutions with any confidence that those solutions will be carried out (*32*).

Prospects for removing obstacles to medical

Ratio of obstetricians and pediatricians to population, California, 1964

Area	Estimated population	Obstetricians	Pediatricians	Population per obstetrician	Population per pediatrician
California	18, 234, 000	823	1, 052	22, 156	17, 333
San Francisco Bay area	3, 116, 900	195	278	15, 984	11, 212
Los Angeles Metropolitan area	7, 794, 200	373	458	20, 896	17, 018
Representative counties with migrant workers	2, 848, 900	93	149	30, 633	19, 120
Fresno	405, 300	8	13	50, 662	31, 177
Imperial	84, 100	1	1	84, 100	84, 100
Kern	320, 900	5	10	64, 180	32, 090
Kings	60, 500	1	0	60, 500	0
Merced	102, 100	1	0	102, 100	0
Riverside	402, 000	9	11	44, 667	36, 545
San Joaquin	265, 700	5	8	53, 140	33, 212
Santa Clara	853, 500	58	91	14, 716	9, 379
Stanislaus	172, 100	4	9	43, 025	19, 122
Tulare	182, 700	1	6	182, 700	30, 450
Total for 9 counties (excluding Santa Clara)	1, 995, 400	35	58	57, 011	34, 403
Remainder of State	4, 474, 000	162	167	27, 617	26, 790

SOURCES: State of California, Department of Finance: California population, 1964, and reference 30.



—*USDA photograph*

Migrant laborers picking snap beans

services depend largely on resolving current conflicts and trends. Achieving collective bargaining rights would enable farmworkers to bargain with their employers for health benefits as part of their contracts. At present only a handful of farmworkers have labor contracts which include health and welfare benefits.

Of great but as yet unpredictable significance is the impact of new health legislation which attempts to bring to welfare recipients and medically indigent patients the opportunity to use private medical care without economic hindrance.

Recently enacted health legislation in California (A.B. 5, 1965) permits certain welfare recipients to obtain extensive outpatient and inpatient medical services at hospitals and from physicians of their choice. Expansion of this program to include substantial numbers of persons who are not supported by public assistance but have comparably low income would have a significant effect on the provision of health services for farmworkers. Of the approximately 1,500,000 Californians with incomes at or below the level required for eligibility for public assistance medical care, only 560,000 were on welfare in 1960 (*33*).

Use of private medical care by farmworkers, even when it is available without regard to economic considerations, will depend on the capacity of existing private medical care resources to absorb an additional load of patients, probably with a heavy burden of uncared-for illness. Unless and until private practitioners are attracted to the economically depressed areas, it will be difficult or impossible for poor farmworkers to find the medical services they require. In the short run, at least an incongruity of needs and resources will continue. Improved private medical care for farmworkers will involve adjustments for physicians as well as patients, especially in regard to appointment hours and office locations.

Effective medical services for farmworkers depend on appropriate use of supporting health personnel, such as social workers, public health nurses, and nonprofessional aides, to augment scarce physician manpower. Although medical care at public clinics is almost invariably less personal than private medical care, a physician

in the clinic may see more patients who have a better chance of followup than would be possible in his office. Clinic services have the additional advantage of being easily integrated with nonmedical services developed for farmworkers, such as housing projects, day care centers, and adult education programs.

Fragmentation of scarce resources, such as the limitation of well baby clinics to provision of health services for children who are not sick, can hardly be justified when there is evidence that sick children get less than optimum care. The first priority for health services set by farmworker families is treatment for illness. The refinements of preventive medicine, such as immunization, health education, and prenatal care, are much more readily accepted in the context of satisfactory treatment. Combining preventive medicine and clinical service has proved effective in serving the health needs of migratory farmworkers in ongoing programs in California.

Improved use of paramedical personnel is an obvious direction for attempts to improve medical care for farmworkers. The use of nurses rather than physicians to supervise child health conferences has been undertaken in one rural area in California. Provision of prenatal care at home by nurses to healthy expectant mothers, who are initially examined and attended at delivery by physicians, is also being tried in rural California. A successful nurse midwifery project was operated for 3 years in a farm labor community in California (*34*).

Developing group practice in rural areas is a potential means of combining the benefits of

—USDA photograph

Harvesting cotton by hand

—National Council of the Churches of Christ photograph by Rev. Jack H. Alford

Hauling drinking water to farm laborers

personal medical care and efficiency of operation. The possibility of organizing public services, such as social work or public health nursing, within such a private practice setting offers physicians the potential for combining patient care with community service. Prepaid group practice serving farmworkers, developed as an aspect of health benefits attained by means of collective bargaining, might succeed in attracting medical manpower that is not ordinarily available in rural areas.

There can be no foreseeable solution to the lack of physicians available to the rural poor so long as relatively few physicians choose to live in a rural environment. In selected rural areas where there are serious health problems, the Federal Government could join with medical societies and local health departments to develop projects staffed by Public Health Service physicians assigned to and responsible to the local community. Development of such projects might effectively be combined with a system of scholarships for medical students who commit themselves to practice for specified periods in needy rural areas.

Organization of rural medical services on a regional basis would have significant impact on inpatient care and public health services. The President's National Advisory Commission on Rural Poverty (*35*) places substantial emphasis on the creation of multicounty districts that cut across traditional boundaries and specifically recommends ". . . that community health centers tied into a regional system of hospital and specialized services be developed in rural areas."

The increased efficiency and economy of operation made possible by combining understaffed, often underpaid, and sometimes inadequately equipped rural health departments and hospitals would permit them to expand and improve their services. If a system of regionali-

zation were combined with the assumption of responsibility by medical schools for services within geographic areas of a State, a new resource would be created. The skills available at the medical center would extend to areas that require, but lack, access to the most sophisticated services. Rural physicians would have definite channels for consultation with centers of research as well as with the local consultants. If this proposal for medical service to rural areas by urban medical centers were combined with swift transportation, using helicopters for instance, selected patients requiring the most specialized treatment facilities would have much improved access to them.

The educational value of a medical teaching program concerned with people who fail to seek or to obtain needed services could be enhanced in rural areas. Students could acquire knowledge of the existing medical resources and social structure and then assume responsibility for guiding patients to services they obviously need but do not get, in contrast to their traditional responsibility for identifying specific problems and suggesting care for them.

Medical students who served the rural poor would acquire firsthand experience in overcoming obstacles to the delivery of medical care (*36*). Training in rural areas would give students a chance to work in communities that are small enough to be comprehensible. Even in a short time the student and community could get to know each other.

Resident and intern rotations to rural hospitals as well as rural preceptor programs for undergraduate medical students would ease the isolation of rural medical practice and supplement scarce manpower. University personnel in residence in rural areas probably would have more effect on updating knowledge than brief postgraduate "circuit" courses.

The success of teaching programs for house staff and medical students that focus on the rural poor will depend on the commitment of educational institutions to them. Success requires acceptance of the idea that training of physicians is as closely allied to good service as to good research—that it is as much a failure to make a referral for care that is never obtained as to fail to identify the problem for which care was required. Success will depend also on recognition that rural communities offer unique opportunities for medical teaching.

The contributions of environment to disease are especially well illustrated in rural areas and exacerbated by the conditions of poverty and migrancy. There are still migrant workers who camp along ditchbanks and in fields or live under railway trestles without water and toilet facilities. The vicissitudes of farmworker life include inadequate and crowded shelters unprotected from heat, cold, vermin, and rodents; inadequate clothing; contaminated water; lack of refrigeration and sewage disposal; and physical isolation from health care.

In the early 1950's studies of diarrheal disease stimulated by a persistently high infant death rate from diarrhea and enteritis among children of agricultural workers in California revealed that shigellosis was an important disease in farm labor camp populations, probably responsible for 75 percent of the diarrhea cases (*37*, *38*). The most important mode of transmission was person-to-person contact. Prevalence of shigellosis was associated with insufficient water for personal hygiene, a problem that has not yet been solved for farmworkers in the 1960's and is likely a factor in the continuing excess infant mortality from diarrhea among farmworker families.

Establishing training programs in rural California for Peace Corps personnel before their assignment overseas was recognition of the educational potential of experience in farm labor communities. During this time of rising interest in the international responsibilities of American medicine, increased attention by medical educators to the problems of the rural poor could provide a unique training ground for fulfilling these responsibilities. The goal of improved health for the rural poor would be well served if time for community service were allocated as a regular part of the medical curriculum.

Summary

Poverty is nearly twice as prevalent in rural California as in metropolitan areas, and urban areas oriented toward agriculture have twice the poverty of economically diversified communities.

The ethnic breakdown of farm laborers in California probably includes 60 percent Mexi-

—National Council of the Churches of Christ photograph by Rev. Jack H. Alford

Selecting clothing in a farm labor camp

can-Americans, 30 percent Anglo-Americans, and 10 percent Negroes. Nearly 65 percent of their homes are substandard—10 percent have no water supply, and pit privies service one-third. Average quarterly wages in 1963 ranged from $417 to $449.

These workers have a low rate of hospital admissions and medically attended conditions, despite high rates of bacterial and parasitic infections, circulatory disease, and accidents. Agriculture has the highest occupational disease rates and the second highest rate of disabling work injuries of any major industry in California. In 1962, 10 representative agricultural counties with a combined population of 2,438,000 had only 131.3 physicians per 100,000 persons.

Despite continuing inadequacies of medical service delivery, clinics initiated under nongovernmental as well as governmental auspices are providing improved medical services for farmworkers in some counties. In 1966, 11 of 17 counties with migrant health projects had clinics for the workers.

Prospects for overcoming the financial barriers to medical care and the shortages of health manpower and facilities in rural areas depend largely on the achievement by the majority of farmworkers of collective bargaining with health benefits as part of their contracts with growers.

In the meantime the Federal Government could join with medical societies and local health departments in rural areas to develop projects staffed by Public Health Service physicians. Development of such projects might be combined with scholarships for medical students committed to practice for specified periods in rural areas, resident and intern rotations to rural hospitals, and rural preceptor programs for medical students. A crucial factor in the potential for success of such activities is the

willingness of medical schools to accept community service training as an integral part of their teaching responsibilities.

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Program Notes

Biomedical TV Channel

The State Legislature of Massachusetts has appropriated funds for television studios and a closed-circuit system for the new State health, welfare and education building in Boston. The studios are envisioned as the central control for four statewide instructional television fixed-service 2500-megacycle channels, including one for biomedical communication.

A demonstration over another 2500-megacycle system was held in Boston on May 22, 1968, to show the potential of such a system. Joseph Mingioli, assistant chief for television, Production Branch, National Medical Audiovisual Center, Public Health Service, described the uses of 2500–megacycle TV for biomedical communications. Continuing education of physicians, nurses, medical technologists, and other medical and hospital personnel would be among the many possible uses.

Comprehensive Health Planning

Fifty-two States were working under approved programs for comprehensive health planning as of June 26, 1968. (The term "States" includes U.S. possessions and so forth.) Forty-five of these States had appointed full-time or acting directors, who represented a number of different disciplines.

Staff size of the planning units ranged from three to 14, the majority of the staffs striking a balance between traditional public health workers (educators, sanitarians, nurses, analysts, and so forth) and representatives of other fields such as planning, economics, systems analysis, community organization, sociology, and political science.

Rural Health Pilot Projects

Three rural health pilot projects, the result of interdepartmental effort at the Federal level, have been established in the United States. Colorado was chosen for one project because of its large rural Spanish-American population with low incomes, Maine for the second project, because of its French-Canadian group, and South Carolina for the third because of its large rural Negro population.

The Colorado project was located in the San Luis Valley after residents there voted at a public meeting to accept it and named a steering committee. Functions of the San Luis Valley project are to determine health needs, seek resources to meet them, coordinate health-related efforts in order to avoid duplicate programs, and to consult with the existing agencies delivering health services.

Regional Differences in Death Rates

The highest death rate areas in the United States are along the East Coast, while the lowest are found west of the Mississippi River, particularly in the Great Plains. If the death rates of the nation's lowest rate areas could prevail throughout the United States, there would be 100,000 fewer deaths a year among persons under age 65 alone, according to estimates based on studies by the Heart Disease and Stroke Control Program of the National Center for Chronic Disease Control, Public Health Service.

As to the reasons for the differences between regions, the factors under study in respect to heart disease include diet, cigarette smoking, high cholesterol levels, obesity, physical inactivity, trace elements in the physical environment, and the stress and strain of cultural conflict.

Control of Aquatic Vegetation

Groups in industry, farmers, and sportsmen frequently use a variety of chemicals to control excessive aquatic vegetation. Improper application, however, can result in toxic effects on man, animals, and fish life. The chemicals may also impart a taste to drinking water, and they can kill land plants if they are carried to the land through irrigation. Moreover, many persons apply the chemicals at the wrong season or use a chemical which has no effect on the type of vegetation to be controlled.

To regulate use of the chemicals on aquatic vegetation, a committee of 10 State agencies in Pennsylvania which are involved in various aspects of water resources has developed a permit system. The State fish commission is to administer the system in consultation with the State health department.

Items for this page: Health departments, health agencies, and others are invited to share their program successes with others by contributing items for brief mention on this page. Flag them for "Program Notes" and address as indicated in masthead.

DHEW Staff Appointments

Dr. Stanley W. Olson, formerly director of the Tennessee Mid-South Regional Medical Program, is now director of the Division of Regional Medical Programs, Health Services and Mental Health Administration.

The Division of Regional Medical Programs was established in 1966 to encourage the rapid and widespread application of medical knowledge on heart disease, cancer, stroke, and related diseases through cooperative arrangements among medical schools, hospitals, professional groups, voluntary agencies, and the many health workers concerned with the delivery of personal health services.

A native of Chicago, Dr. Olson received his bachelor's degree (cum laude) in 1934 from Wheaton College, Wheaton, Ill., and his doctorate of medicine (magna cum laude) from the University of Illinois College of Medicine in 1938. He also earned the degree of master of science in internal medicine from the University of Minnesota in 1943 and is certified by the American Board of Internal Medicine.

Prior to his service in the Army Medical Corps from 1943 to 1946, and for 4 years after, Dr. Olsen was associated with the Mayo Foundation and Mayo Clinic in Rochester, Minn., first as a fellow in medicine and later as assistant director of the Mayo Foundation. He served 3 years as dean and professor of medicine at the University of Illinois College of Medicine and director of the University's research and educational hospitals in Chicago.

From 1953 to 1966, Dr. Olson was dean and professor of medicine at Baylor University College of Medicine in Houston, Tex. Until his appointment in the Department, he also served as professor of medicine at Vanderbilt University and Meharry Medical College in Nashville, Tenn.

Dr. Olson holds membership in numerous professional societies. He received an honorary LL.D. degree from Wheaton College in 1953, the outstanding achievement award of the University of Minnesota in 1964, and in 1965 he was named alumnus of the year by the University of Illinois Alumni Association. His publications in professional journals deal mainly with pernicious anemia, trichinosis, medical education for national defense, medical care, and Regional Medical Programs.

Dr. Robert van Hoek has been appointed director of the Division of Direct Health Services, Public Health Service, and promoted to the rank of Assistant Surgeon General. He succeeds Dr. John J. Walsh, who was recently named dean of the Tulane University School of Medicine.

Dr. van Hoek served as deputy director of the division during Dr. Walsh's tenure as director. He was formerly chief of the division's Office of Research and special assistant to the assistant chief of the former Division of Hospitals.

A native of New York City, and a graduate of the City College of New York, he took his M.D. degree at Columbia University College of Physicians and Surgeons in 1953. He interned at St. Luke's Hospital in New York City and completed a residency in internal medicine at the Veterans' Administration Hospital in the Bronx, New York, in 1957.

Dr. van Hoek served with the U.S. Air Force Medical Corps from 1955 to 1963. His initial assignment was as chief of the Medical and Chest Section, Medical Service, Wright-Patterson Air Force Base Hospital. He subsequently undertook a postgraduate course of study in radiobiology at Reed College under the sponsorship of the Defense Atomic Support Agency.

He was assigned to the Walter Reed Army Institute of Research, first as Nuclear Medicine Officer, and later as chief, Department of Biophysics. He was named head of the Metabolism Branch of the Radiation Physiology Division of the Armed Forces Radiobiology Research Institute.

Dr. van Hoek joined the Public Health Service in 1963 in the Grants Associates Program of the National Institutes of Health. He subsequently served as a program specialist in the Division of Research Facilities and Resources.

Dr. van Hoek is certified by the American Board of Internal Medicine, is a fellow of the American College of Physicians, and a member of the American Federation for Clinical Research and the Radiation Research Society.