

**A BRIEF HISTORY OF USOM SUPPORT TO
PUBLIC HEALTH PROGRAMS
IN THAILAND**

USOM / THAILAND

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PUBLIC HEALTH PROGRAMS
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— One of a series of reports
on U.S.A.I.D's participation in
Thailand's development —

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Introduction

By the end of 1969, the United States Government will have completed nearly twenty years of assistance to Thailand's health activities. Under five U.S. foreign aid agencies, nine Mission Directors and eight Public Health Chiefs,* there have been more than thirty projects of support to Thai health institutions, of which nine or ten can be considered major.

To this effort, the U.S. has contributed about \$47 million over the period 1950-1969. This has been matched by about \$62 million baht equivalent input from the Royal Thai Government (RTG).

The health projects in which USOM has played a supporting role can be grouped into five categories as follows: disease control; environmental health; institutional development; local health services; food and nutrition; and population. Tables II through VI in the Appendix list the projects by categories, giving the time span of the projects and the magnitude of U.S. and Thai inputs.

In the early 50's U.S. assistance focused on control of communicable diseases, extension of hospital services to the provinces and creation of health training institutions. In the late 50's and early 60's more attention was given to village sanitation and the focus has been on the poorer, politically sensitive areas, particularly in the Northeast; local health services have also been broadened to include medical care, family planning and nutrition programs. Since inception of U.S. support to the program, emphasis has been given to the development of Thai staff, and provision for out-of-country training as well as improved training in-country has been woven throughout the projects. This will be discussed later as a separate topic.

The Ministry of Public Health (MOPH) is composed of the Office of the Under-Secretary, the Department of Medical Services with responsibility for the operation of all government hospitals, the

* Names of Public Health Chiefs are listed in the Appendix.

Department of Health which conducts the preventive medicine and public health programs, and the Department of Medical Sciences, whose role includes diagnostic laboratories, medical research, food and drug control and a medical depot. The Minister of Public Health, General Prasert Ruchirawongse, is concurrently the Director-General of the Thailand National Police Department. The Deputy Minister, Dr. Sombun Phong-Aksara, formerly served as Under-Secretary of State for Public Health, and is responsible for the day-to-day operations of the Ministry, as well as for the setting of professional policy.

Disease control programs

Of the \$20.2 million U.S. contribution to disease control programs, \$19.6 million has been for malaria control and eradication (see Table I). The only other substantial assistance has been for control of intestinal parasites and venereal diseases, and none of these projects continued beyond 1955.

Except for malaria control, the U.S. aid program has given little recent support to the direct control of communicable diseases. The main sources of foreign assistance in this area have been the World Health Organization (WHO) and the United Nations Children's Emergency Fund (UNICEF), who have given substantial long-term assistance to the control of tuberculosis, yaws, trachoma, venereal diseases and leprosy. WHO has also made a contribution to the Thai malaria eradication program. Southeast Asia Treaty Organization (SEATO) has contributed considerably to the indirect control of intestinal and filth-borne diseases by various programs in village health and sanitation. These will be discussed later.

Malaria eradication as a concept in Thailand evolved about 1957, two years after WHO and UNICEF--and the U.S.--endorsed the principle of world-wide malaria eradication. Thailand had already conducted, with WHO/UNICEF assistance, a successful pilot project of malaria control with DDT in 1949-51 in the Saraphi District of Chiang Mai Province. U.S. assistance to a nation-wide program began in 1951. A full-scale malaria eradication program did not begin, however, until 1962, and

nation-wide coverage, with acceptable standards, was attained in 1965. The evolution of the Malaria Eradication Program, and RTG, WHO and U. S. inputs, is summarized in Table I.

Accomplishments of the Malaria Eradication Program must be measured against the conditions that existed at its onset. Following World War II, malaria was widespread throughout Thailand. During the late 40's, 4,000,000 cases, including about 47,000 deaths, were attributed annually to malaria. The 1950 mortality statistics of the Ministry of Public Health showed malaria as the leading cause of death. A Food and Agriculture Organization (FAO) survey in 1949 estimated that over 15,000,000 working days were being lost each year due to malaria in Thai agricultural communities. Many areas of the country, including fertile territory, were virtually uninhabitable because of malaria.

By 1958, after seven years of control programs, 1,000,000 cases were occurring annually, with approximately 10,000 deaths. Twelve million people still lived in highly malarious areas. Malaria had dropped to fifth place as a cause of death. By 1968, malaria cases per year had dropped much lower, to about 89,500. Deaths from malaria had decreased to about 5,000. Malaria had become the eighth most common cause of death. In spite of these gains, however, the National Malaria Eradication Program is behind its schedule, and the outlook for eradication in the near future is doubtful. Basically, this is because transmission has not been interrupted in certain areas. The present situation is indicated by the map on page 5. Malaria eradication is hindered by the following factors: considerable population movement to and from malarious areas; difficulties in interrupting transmission in wooded areas, particularly where anopheles balabacensis is the principle vector; suspected outdoor transmission in some areas, whereas transmission elsewhere is usually indoors; use of unsprayed field shelters during planting and harvest seasons; and resistance of malaria parasites, particularly P. Falciparum, to standard drug treatment. These technical deterrents to effective eradication are further complicated by difficulties in providing coverage to politically sensitive sectors, lack of control measures in adjacent countries and increasing refusal by householders to permit spraying. Similar problems are occurring in other Southeast Asia countries.

TABLE I

EVOLUTION OF MALARIA ERADICATION PROGRAM

SOURCE OF FUNDS 1949-1969

PERIOD	TYPE OF PROGRAM	SOURCE OF FUNDS	APPROX. EXPENDITURES IN MILLIONS U.S. \$
1949-51	Pilot Studies; Control in selected areas	RTG WHO/UNICEF	Unknown .045
1951-57	Control Program	RTG U.S. WHO	2.78 2.81 .038
1958-62	Eradication Program-- Preparatory Period	RTG U.S. WHO	5.56 2.49 .035
1963-65	Eradication Program. Extension to Nationwide Program	RTG U.S. WHO	8.21 4.77 .179
1966-69	Nationwide Eradication Program	RTG U.S. WHO	17.01 9.58 .657
TOTALS 1949-69 IN MILLIONS		RTG	33.56
U.S. DOLLARS:		U.S.	19.65
		WHO	<u>.954</u>
TOTAL ALL SOURCES:			62.75

The practicability of eradication is being reassessed here and elsewhere. In the meantime, the U.S. is phasing out its support to the operational program by 1970, but will continue to assist Southeast Asian countries through research aimed at solving the problems mentioned. The bulk of this research will probably be done in Thailand, which has a wide range of common problems in areas which are accessible for study.

Environmental health programs

As the incidence of malaria declined in the late 50's, the gastro-enteric and diarrheal diseases emerged as the greatest health problem in rural Thailand. By 1960, they accounted for about 40% of the mortality and 80% of the morbidity. These diseases were, of course, caused by poor sanitation.

Although scattered efforts had been made towards sanitary improvement in the rural villages during the 50's, the first major U.S. assistance in this field began with the institution of the Village Health and Sanitation (VHS) Project in 1960. The objectives of this project were the following: to provide at least one source of safe water in each village; to provide a sanitary privy for each household; to improve premise sanitation; to promote health education; to provide training for a corps of environmental sanitation personnel; and to carry out research for activities related to sanitation programming.

This project, under the auspices of the Ministry of Public Health, was organized on three levels: national, regional and village. The national headquarters, originally operating under the Division of Rural Health Development, soon became a separate division, the Division of Community Health Development. Regional headquarters were located at Korat in the Northeast, Songkhla in the South, Lampang in the North, and Saraburi in the Central Plains. Fifty Thai sanitarian supervisors were assigned to the provinces on VHS activities.

The U.S. supplied technical advisors at various times at Korat, Songkhla and Lampang, and at the Ubon sub-headquarters, as well as about \$1,000,000 of commodities, including pumps, pipe, tools, projectors, generators, motorcycles, bicycles and pick-up trucks.

By the end of FY 65, the VHS project had been operating for five years and had accomplished the following: 5,000 sanitary wells had been completed; 220,000 sanitary privies had been installed; 61 village water systems had been constructed in the Northeast and South; 6,000 villages had active village health committees and VHS self-help activities; 48 provincial workshops of two weeks each had been conducted for 1,187 rural sanitation personnel; orientation in village sanitation had been given to 542 other officials, including CD workers, education personnel and public works officers; and two training centers for sanitation workers had been established, one at Chon Buri, the other at Khon Kaen. Together, these centers are capable of training 50 additional junior sanitarians per year.

In spite of these successes, there were a number of problems. Health education activities lagged behind physical improvements; the fundamental outlook and understanding of the rural villager, therefore, remained unchanged. It became virtually impossible for the Government to repair the numerous well pumps, and the villager was neither instructed in pump repair, nor did he have tools to carry out the work. The VHS was not integrated with the provincial health organization, and administration, logistics and supervision were therefore autonomous, producing a schism within the rural health service system.

In September, 1963, responsibility within USOM for the support and monitoring of the VHS project was shifted from the Public Health Division to the newly created Office of Rural Affairs. The rationale for this internal readjustment was that USOM efforts in support of rural sanitation would thereby be better coordinated with support to other area development activities, particularly in the Northeast.

Shortly thereafter, emphasis in the VHS Project shifted from aided self-help towards direct government execution of projects, and the Mission began to focus more on public works engineering activities. The Mission's health technical staff was curtailed, in line with a general phase-down of U.S. technical assistance activities in Thailand. USOM support to the VHS Project ended in 1965.

In 1966, the Mission renewed its support in rural health as part of a generally increased concern for the well-being of villagers and the effectiveness of governmental presence in the Northeast, where insurgency was spreading in the more remote, neglected areas. Many elements of the village health and sanitation program were incorporated into the new Comprehensive Rural Health Project, which will be discussed later under the heading "Local health services." In 1966, however, the Ministry of Public Health lost most of its budget for village wells when the allocation was transferred to the Ministry of Interior. Subsequently, VHS retained responsibility and budget support only for school water supplies, and much of its capability was incompletely utilized.

The cholera epidemic of 1958-59 underscored the critical need for safe piped water in Thailand's municipalities. The U. S. assisted an Emergency Water Supply Program in 1959 which increased the supply of piped water in Bangkok and Thonburi by one-third. In addition, in 1961, the Thai Government drew up a preliminary 15-year plan for the development of piped water supplies in 412 communities of rural Thailand, and requested the help of a U. S. consultant. The Potable Water Project, which started in 1962, is an outgrowth of this initial request. In this project, the original plan has been adjusted to focus more on the politically sensitive areas of the Northeast.

The locus of USOM assistance to this project was shifted to the Capital Projects Division in 1966, and in 1969 to the Office of Field Operations. There was considerable controversy in 1966 regarding the suitability of this project for the rural Northeast. The financial ability of smaller towns to support rather sophisticated water treatment plants with piped water systems was open to question. The majority of the northeast-villages have less than 1,000 people, and the finding of suitable sites promised to be difficult. The alternative of broadening USOM support to project implementation to include municipalities and district towns outside politically dissident areas was rejected as not compatible with U.S. assistance policy to Thailand. The final decision was that USOM support would focus on sensitive areas, but that the scope of the project would be reduced, with only

those sites included where there was a sufficiently concentrated population that financial self-sufficiency in operating the systems was a reasonable possibility. In general, this was taken to mean 2,000 or more people.

The Potable Water Project has been well executed, and has brought safe water to many smaller communities that would not have enjoyed it otherwise. The question of meeting costs of operation and maintenance has, however, continued to be the limiting factor in the extension of community water systems.

Furthermore, as throughout the lesser developed countries, the maintenance of hand pumps on village wells continues to be a nearly impossible problem. There is no ready solution of this difficulty, unfortunately. Probably the best solution is to revert to wells designed and constructed with concrete aprons, and operated by buckets, rather than to continue reliance upon hand pumps that generally will not be maintained.

Institutional development

Early in the 50's the antecedent agencies of AID assisted the Bangkok-based medical schools and health training units under the Medical Education Project. This project was started in 1950, when the Washington University (WU) Medical School of St. Louis, responding to a Government of Thailand request to the Economic Cooperation Administration (ECA) for "Visiting Professors for Thai Medical Schools," expressed an interest in "adopting" the two medical schools and the nursing schools in Thailand.

A two-year contract between ECA and Washington University to "improve medical and nurse teaching programs and medical and nursing schools" in Thailand was signed on March 8, 1951. The first twelve visiting professors arrived in June, 1951, and until the program was discontinued on June 30, 1954, a total of twenty-three U.S. doctors, nurses and technicians served periods in Thailand ranging from two months to two years.

On June 22, 1954, Manson Meads, M.D., who served with the Washington University contract, gave his personal evaluation of the accomplishments and problems of the program.* Although he felt that the USOM/WU Contract had produced tangible benefits, Dr. Meads said, "There is good evidence that the program did not achieve its maximum potential because of lack of clearly defined aims and objectives, difficulties in recruiting personnel, and as a result of important defects in the contract itself." As an example of the drawbacks to the project's administration, he pointed out that the Thai deans, directors of the schools and faculty had had practically no part in the planning of the project. Furthermore, although the principle of "adoption" had some merit, it became evident quickly that a single U. S. medical school could not supply the diversity of personnel required for the program. Also, the assignment of U. S. personnel to Bangkok for less than one year was costly and relatively unproductive.

In 1957, the Medical Education Project was redirected towards the specific objective of aiding in the establishment of a new medical and nursing school in Chiang Mai. Prior to this, in addition to the Washington University Contract, the U. S. Mission had also helped to establish departments of preventive medicine at Siriraj and Chulalongkorn Medical Schools, as well as two schools of medical technology at the same institutions. Through the Hospital Improvement Project, discussed later under "Local health services," USOM had also assisted in the creation of several schools of nursing, both in Bangkok and in the provinces.

The Faculty of Medicine at Chiang Mai Hospital was established in 1960, and the first class of 63 students, who had enrolled temporarily in Bangkok, were moved to Chiang Mai in January, 1961. As of September 1960, 62 staff members were appointed to the Chiang Mai Hospital Faculty of Medicine. Fifty-seven of these had completed, or were then undergoing, two or more years of graduate study in the U. S. A. under USOM-RTG joint grants. The original Chiang Mai facilities included only the 170-bed provincial hospital, with classrooms and limited quarters for faculty and students.

* Appended to Robert L. Zobel's Completion of Assignment Report, "Assistance to Public Health in Thailand," July 1958.

On August 2, 1962, USOM signed a contract with the University of Illinois to provide technical and other assistance for three years to the newly created Chiang Mai Medical School. The objectives of the contract were threefold: to help the Faculty at Chiang Mai create a modern medical school capable of graduating fifty doctors per year, with a course of training suitable for the needs of Thailand; to help create a nursing school capable of graduating fifty well-trained nurses a year; and to develop sections within the Medical School for training medical technologists and other paramedical personnel needed to meet the health needs of provincial Thailand.

The main goal, both explicit and implicit, was the creation of a modern medical school with an associated nursing school that, while meeting the most modern medical education standards, would turn out doctors and nurses suitably prepared to meet the health and medical needs of Thailand's rural areas. Considerable stress was placed on the need for a strong orientation in preventive medicine and community health.

In addition to the anticipated problems concerning site, buildings, housekeeping and administration associated with the birth of a new medical school of this scope, two general problems emerged early in the project's life.* First, the University of Illinois found it difficult to procure a suitable long-term technical advisor in preventive medicine. This post for several years was therefore filled by short-term consultants. A closely related problem was that the Thai faculty had at first little interest in public health or community medicine. Without a strong Thai public health leader on the faculty, and without the continuity of a capable long-term preventive medicine consultant, the concepts of social medicine and public health were not built into the curriculum at an early stage. Second, because of the separation of the medical and nursing schools at the University of Illinois, and due to certain bureaucratic problems between the two institutions at the time that could not readily be resolved, the U. S. nurse education advisor at Chiang Mai was not a part of the contract with the University of Illinois, but was a direct-hire employee of USOM/Thailand.

* Robert L. Cherry, M. D., "End-of-Tour Report."

In spite of these problems, the project as a whole has been an outstanding success. The fifty doctors and fifty nurses graduating from Chiang Mai each year are said to be among the best in Thailand. Since late 1967, the University of Illinois has intensified its interest and support in social science, preventive medicine and community health.

A field area for teaching and research in community medicine was established in early 1968, in Saraphi District of Chiang Mai Province. Located near the school itself, the area is being used as a most useful adjunct to the on-campus teaching facilities. The new, modern teaching medical center at the school has just been completed and the complex promises to be one of the outstanding medical centers in this part of the world.

University of Illinois assistance to Chiang Mai Medical School will terminate in August of 1970. Much remains to be done during the last year of the contract, particularly in ensuring that curriculum and Thai faculty interest are oriented to the health needs of the countryside. The University of Illinois is searching for a means for continuing a sister school relationship with Chiang Mai Medical School after AID support terminates, perhaps by a system of faculty-student exchange.

In response to the need to train workers in all the related fields of population and family planning, USOM in 1969 is embarking on a new program of technical assistance to the Faculty of Medical Sciences. The purpose of the program is to strengthen the School of Public Health at Bangkok, and the Associated Center for Social and Population Research. Negotiations are currently underway for a contract with an appropriate school of public health.

Local health services

Early AID efforts contributing toward the development and expansion of local health services commenced in 1953. During the five year period 1953-57, \$1,803,000 was spent by the U.S., and \$9,036,000 by the Thai, in improving and expanding provincial

hospitals. The results of the U. S. and Thai efforts were substantial. In 1950, there were only twenty provincial and district hospitals in Thailand. By 1958, there were 73, and at the present time, there are 87.

In 1957, during the tenure of Dr. Robert L. Zobel, Chief of the Public Health Division, four on-going programs of assistance to Thai health institutions were grouped into one, which became the Local Health Development Project. From 1957 to 1960, USOM assisted the Ministry of Public Health through this project to "demonstrate techniques for extending and improving health services throughout the Kingdom in years to come." Emphasis was on health education and village sanitation.

As malaria dropped out of first place and filth-borne diseases moved up to become the chief cause of death and illness in Thailand, MOPH and USOM emphasis shifted to village sanitation, and the Village Health and Sanitation Project was born in 1960. This emphasis was retained in the programming of USOM assistance until 1966, when a new look at health needs prompted a broadening of perspective. The VHS project became the Comprehensive Rural Health (CRH) Project. The new focus was on the broad scope of health services, including not only the building of water-seal privies and village well promotion, but also maternal and child health, nutrition, public health and hospital administration. Extension of services through a system of provincial health offices, first and second class health centers and midwifery centers was given priority. Training of health personnel was rapidly expanded as new centers were established for the instruction of junior health workers and midwives.

While health needs have always been more acute in the poorer northeast region of Thailand, the middle 60's saw new emphasis focused on the northeast provinces by the RTG and USOM because of the growing insurgency. The CRH project followed the trend by adding the Mobile Medical Team sub-project. This is an impact program designed to extend health and medical services to remote areas not served by the regular health facilities, through the use of specially equipped mobile teams.

While the teams are ideally staffed by a doctor, two nurses and several paramedics, the shortages of doctors, and the difficulty of getting the doctors that are available in Thailand to work for extended periods in remote areas, have proved a problem. This project is supported also by the Office of Accelerated Rural Development,* and thus gives priority to the provinces that have been designated ARD provinces. The CRH program also continues limited assistance to provinces of South Thailand which were previously served by the old VHS project.

Food and nutrition

Nutrition as a science and public health discipline has been recognized for the past twenty years, and is well established in Thailand. Numerous research studies have been conducted, and a moderate corps of professional people are well trained in the nutritional sciences. Local universities and the Mahidol School of Public Health in Bangkok offer degrees in nutrition.

In 1960, the first major inter-disciplinary nutrition study in Thailand was conducted by the Interdepartmental Committee on Nutrition for National Defense (ICNND) of the U. S. Department of Defense, as part of a world-wide survey. This work has served as a basis for the study of nutritional disorders in Thailand for the past nine years.

Several agencies are presently helping to improve nutrition in Thailand. The main efforts have been by UNICEF and FAO, with participation from the U. S. Peace Corps. Most of the assistance has been through education programs, field demonstrations and the provision of surplus U. S. foodstuffs.

USOM, too, has supported a variety of activities in the nutrition field. Among these have been nutrition workshops for health workers, participant training in the U. S. and third countries, and the training of education officials in the concept of nutrition. Considerable effort has been made to strengthen

* See "A Brief History of USOM Support to the Office of Accelerated Rural Development," USOM/Thailand, September 1969.

the health infrastructure in ARD areas, with particular emphasis on programs of maternal and child health. Furthermore, the U. S. Department of Defense and the U. S. National Institutes of Health have given substantial assistance in the development of field rations for Thai troops.

Overall progress in improving nutrition has been slow, and coordination has been insufficient between the various interested agencies and departments of the Thai Government. The RTG has recently placed high priority on developing inexpensive high protein foods from available food sources for infants and weanlings. Specific USOM project assistance to help the Thais develop a family of marketable protein foods started in FY 69. This is a modest, three-year project which hopefully will set the stage for substantial improvements in the nutritional status of the rural Thai population.

Population

The population of Thailand is growing at an annual rate of over three percent. Whereas Thailand had less than 10 million people at the turn of this century, at the present rate it will have more than 100 million in the year 2000. To examine the problems posed by this rapid growth, and to inquire into effective means of dealing with it, the National Research Council (NRC) has been authorized to conduct family health research projects in cooperation with the Ministry of Public Health over a period of three years. The RTG sanctioned the MOPH to begin its Family Health Project in 1968, the intent being that a three-year "tooling-up" period would be required before family health services could be extended nation-wide.

The goals during this initial stage are to extend family health services to all 71 provinces, train existing health personnel such as doctors, nurses and midwives in family planning, and equip all hospitals and health centers with the necessary supplies.

Family health services were available in 20 provinces in 1968, and will be extended to an additional 24 provinces in 1969. It is projected that the remaining 27 provinces will be reached in

1970. All doctors, nurses and midwives who work in health centers, and at least one doctor and one nurse from each provincial hospital, will be trained in the field. Twelve hundred health personnel were trained in this area in 1968, and it is planned that 2,250 will be trained in 1969 and 1970. Furthermore, as of August 1969, the Ministry of Public Health had equipped 134 family health clinics. By 1971, a total of 372 clinics should be so equipped. The MOPH plan for the number of provinces reached, health personnel trained and clinics equipped is as originally scheduled.

The number of initial acceptors of contraceptive devices for the period 1965-1968 as reported by 88% of the family health clinics was 185,395, according to a survey made in December 1968. While the number of acceptors was about equally divided between MOPH and non-MOPH clinics, more than 70% of these acceptors received services in the central region of Thailand, primarily at four of the hospitals located in the municipalities of Bangkok and Thonburi.

A percentage comparison of initial acceptors for the 1965-1968 period with the first quarter of 1969 shows that the percent of oral contraceptive acceptors increased three-fold; that 66% of all acceptors were serviced by the MOPH; and that 54% of the acceptors were from the provinces, especially the Northeast. These figures clearly demonstrate that the number of acceptors per month is increasing, that family planning services are reaching into rural areas, and that the number of new acceptors, based on first quarter figures for 1969, should reach at least 100,000 in 1969. Although there are no specific program targets in terms of numbers of acceptors, the total deemed necessary in 1969 (108,000) to reduce the present population growth rate by one-third by 1985, appears within reach.

About 75% of USOM commodity assistance to the Family Health Project directly supports the provision of family planning services. The other 25% supports family health training, supervision, health education, and research and evaluation activities. USOM assistance to the Family Health Project

totaled \$649,000 in FY 1968, and \$775,162 in FY 1969, not including the cost of a contract with a school of public health. The RTG counterpart funds for this project totaled \$15,000 in FY 1968 and \$47,000 in FY 1969.

The present 'tooling-up period' is progressing well, and should provide a countrywide base upon which to build and implement an effective family planning system by 1971.

Whether the RTG can carry out the Family Health Project beyond 1970 so that it will have a direct and meaningful part in the reduction of the population growth rate will, however, depend on its willingness to take certain major steps. These will require that it commit itself nationally to the principle of reducing the rate of population growth, that it create civil service positions for family planning personnel, and that sufficient regular budget support be provided for all population/family planning activities. Furthermore, population control/family planning will need high priority status. Adequate publicity of family planning services will need to be made available. Effective use of non-physician personnel will be required. Finally, a more effective system for the overall provision of health care, especially in rural areas, will need to be developed concomitantly. Essential to all these steps, of course, is the decision of the RTG to adopt family planning as a national policy.

Participant training *

During the past twenty years, approximately 1,000 Thai health personnel have been trained abroad under the various health projects. Except for retirements, deaths and a few resignations, practically all are still employed in the public health and medical services of the RTG.

Between 1950 and 1960, priority for participant training was given to medical educators, nurse educators and disease control

* See table in Appendix.

specialists, mostly malaria workers. Beginning in 1966, priorities shifted toward the training of MOPH personnel in planning, directing and evaluating rural health service activities from the national to the village level. Priority was also given to training the faculty of the School of Public Health who have the primary task of training the middle level professional health personnel still urgently required by the health services.

With the establishment of regional health training institutions during the last ten years and rapid improvement and expansion of the School of Public Health, participant training levels are being reduced. It is presently proposed by USOM, the MOPH and WHO that a health manpower study be instituted to establish priorities and directions for future participant training.

Conclusions and outlook

During the last twenty years, with substantial assistance from the United States, as well as the United Nations and its specialized agencies, the Rockefeller Foundation, and other nations and agencies, Thailand has established a sound base for health services. Most of the acute epidemic diseases have been brought under reasonable control, and an infrastructure has been created for both curative and preventive health programs throughout the country. Four modern medical schools are in existence, producing between them 350 well qualified doctors per year. Each province has at least one hospital, modern by Asian standards, and a network of health centers is gradually extending outward to the village people. A large corps of health workers have had foreign training. Nearly 1,000 of them were sent under U. S. --MOPH sponsorship.

U. S. assistance over the years has, on the whole, been in phase with Thai priorities and progress in health development. The early concentration on control of infectious diseases and the creation of health training units in Thailand was wise and fruitful. The extension of services to the provinces with U. S.

support, first through the major hospital expansion program of the 50's, and later through the network of health centers, was orderly and schematic. On the whole, U.S. assistance seems to have been well-utilized.

Most of the health programs and the development of Thai health staff have been carried out without much overall planning. Each project or group of activities was justified, planned and executed separately. Priorities for the use of staff and other resources were based mainly on acute and rather obvious needs: mass disease control, epidemic control, development of special category workers,* schools to produce well-trained doctors and nurses, expansion of hospitals to save lives and relieve suffering, and so on. The health projections of the Five-Year Plans have, in general, been little more than a compilation of individual projects, each planned at the level of a technical division. The development of health staff below the level of doctors and fully trained nurses has been largely in response to project needs. Special category workers have been trained and employed with little relationship to overall health needs. Hospital services and preventive services have evolved separately, and are administered by separate departments. This is all understandable and quite normal in a developing country during the early period of modernization.

However, Thailand has reached a point now where considerable thought must be given to its future plans for health development. The overall doctor-population ratio is about 1 per 7,000. The ratio in Bangkok is in the area of 1:800, while for the provinces it is about one doctor for 20,000 people. This skewed distribution will not be corrected by simply increasing the production of doctors. It is doubtful in fact that rural Thailand can expect adequate doctor-level health care at all in the foreseeable future. Thailand will need to re-examine its whole system for the training and utilization of health manpower. It appears inevitable that more responsibility will need to be assigned to paramedical and auxiliary personnel. The organization of the Ministry, and the provincial health structure, will eventually

* Trained in malaria eradication, TB, leprosy control, or yaws, and so on.

have to be realigned, in order to provide a more coordinated approach to health problems. Workers from specialized disease control programs, and the programs themselves, will have to be integrated. More and more, the emphasis will be on creating general health services at the local level.

Thailand's population is expanding at over 3 percent per year, and at the present rate will double in the next twenty years. Unless this excessive population growth is checked, the country will be unable to respond to the health needs of its people. Little gain can be expected in rural education and in the general welfare of the people if this trend keeps up. If Thailand faces up to this problem realistically in the near future, as it must for its own welfare and security, the health services must be capable of responding effectively to this challenge.

In dealing effectively with these problems and opportunities, Thailand will need to utilize more effectively its large numbers of well trained professional health manpower. Deployment of larger numbers of such personnel to programs and geographic areas of highest priority will help greatly. It is likely, however, that in its efforts to handle its problems, many of which will become more urgent as the population gains access to modern modes of communication--and therefore becomes increasingly aware of its opportunities--Thailand may require continued help from abroad, perhaps through short-term advisors with high competence and wide experience.

APPENDICES

TABLE II

RTG HEALTH PROJECTS RECEIVING USOM SUPPORT,
BY FIELD OF ASSISTANCE, 1950-1969

A. DISEASE CONTROL PROGRAMS

Project No.	Title	U.S. Input (In \$000)	RTG ₱ Input (In U.S. \$000 Equiv.)	Period of Project
017	Malaria Control)	\$ 19,600.0	\$ 33,560.0	1952-61
107	Malaria Eradication)			1962-69
052	Intestinal Parasites	248.5	390.0	1952-55
213	Venereal Diseases	284.4	222.2	1953
222	Plague	60.8	96.2	1953
223	Skin Diseases	42.3	28.6	1953
224	Foreign Quarantine	24.3	27.4	1953
219	Vaccine and Drugs (Emergency Aid for Cholera Epidemic)	8.0	-	1958
TOTALS:		\$ 20,268.3*	\$ 34,324.4*	

* This figure represents total commitments. Actual expenditures of the RTG are estimated at around \$ 27 million and U.S. expenditure at around \$ 17.5 million.

TABLE III

RTG HEALTH PROJECTS RECEIVING USOM SUPPORT,
BY FIELD OF ASSISTANCE, 1950-1969

B. ENVIRONMENTAL HEALTH PROGRAMS

Project No.	Title	U.S. Input* (In \$000)	RTG \$ Input* (In U.S. \$000 Equiv.)	Period of Project
022	Sanitary Engineering	\$ 868.8	\$ 488.2	1953-54
201	Water Supply	29.5	233.0	1953-55
202	Water Systems	685.0	-	1954-57
192	Village Health)	1,816.0	1,047.5	1960-65
109	and Sanitation)			
226	Potable Water	<u>3,137.9</u>	<u>4,710.0</u>	1962-69
	TOTALS:	\$ 6,537.2	\$ 6,478.7	

* Obligations from Program Agreements. On average, expenditures are 15 to 20% less than obligations.

TABLE IV

RTG HEALTH PROJECTS RECEIVING USOM SUPPORT,
BY FIELD OF ASSISTANCE, 1950-1969

G. INSTITUTIONAL DEVELOPMENT

(Medical Education and Health Training)

Project No.	Title	U.S. Input* (In \$000)	RTG \$ Input* (In U.S. \$000 Equiv.)	Period of Project
016	Medical Education	\$ 1,825.6)	\$ 3,526.7	1951-62
108	Medical Education	642.6)		1963-64
174	Medical Education	5,921.0)		1965-69
072	Chon Buri Training Center	585.0	603.4	1952-55
209.1	School of Public Health	491.5	not yet determined	1969-74
TOTALS:		\$ 9,465.7	\$ 4,130.1	

* See note, Appendix B.

TABLE V

RTG HEALTH PROJECTS RECEIVING USOM SUPPORT,
BY FIELD OF ASSISTANCE, 1950-1969

D. LOCAL HEALTH SERVICES

(Includes Both Curative and Preventive Services)

Project No.	Title	U.S. Input* (In \$000)	RTG \bar{X} Input* (In U.S. \$000 Equiv.)	Period of Project
055	Hospital Improvements	\$ 1,803.0	\$ 9,035.9	1953-57
053	Rural Health	1,017.4	2,901.3	1953-59
297	Local Health Development	447.0	270.0	1957-60
233	School Health	273.4	170.0	1953
054	Health Education	268.4	236.0	1954-56
170	Drugs & Pharmaceuticals	98.0	-	1966-67
179	Comprehensive Rural Health	3,759.0	3,067.0	1966-69
179.1	Mobile Medical Teams	<u>990.5</u>	<u>1,329.0</u>	1966-69
	TOTALS:	\$ 8,656.7	\$ 17,009.2	

* See note, Appendix B.

TABLE VI

RTG HEALTH PROJECTS RECEIVING USOM SUPPORT,
BY FIELD OF ASSISTANCE, 1950-1969

E. FOOD, NUTRITION AND POPULATION

Project No.	Title	U.S. Input* (In \$000)	RTG \$ Input* (In U.S. \$000 Equiv.)	Period of Project
225	Vital Statistics	\$ 61.0	\$ 40.0	1953
218	Nutritional Disease Control	128.8	185.0	1952-54
179.2	Protein Food Development	108.0	97.8	1968-69
209	Family Health (Population Control)	<u>1,457.0</u>	<u>50.0</u>	1968-69
	TOTALS:	\$ 1,754.8	\$ 372.8	

* See note, Appendix B.

APPENDIX F

PARTICIPANT TRAINING IN HEALTH AND MEDICAL EDUCATION

FOR USOM-SUPPORTED RTG HEALTH PROJECTS

1950-1968

<u>PROJECT TITLE</u>	<u>PERIOD OF PROJECT</u>	<u>NUMBER OF PARTICIPANTS</u>
Medical Education	1950-1962	233
	1963-1964	8
	1965-1968	28
Control of Specific Diseases	1952-1961	33
Sanitary Engineering	1953-1954	10
Public Health	1952-1959	50
Health Education	1954-1956	11
Hospitals	1953-1957	53
Chon Buri Training Center	1952-1955	9
Malaria Eradication	1962-1968	199
Drug and Pharmaceuticals	1966	6
Village Health and Sanitation	1960-1965	74
Comprehensive Rural Health	1966-1968	179
Family Planning	1968	32
Military Doctors	1960-1962	13
Potable Water	1962-1968	<u>31</u>
	TOTAL FELLOWSHIPS	969

PARTICIPANTS TRAINED*

PUBLIC HEALTH

Fiscal Year	Total	U.S.		3rd Country	
		**Long-Term	Short-Term	Long-Term	Short-Term
1951	61	53	8	-	-
1952	8	5	3	-	-
1953	41	38	3	-	-
1954	79	71	8	-	-
1955	59	54	5	-	-
1956	33	23	8	-	2
1957	38	31	4	-	3
1958	25	21	3	-	1
1959	24	18	1	-	5
1960	25	15	-	-	10
1961	32	18	6	-	8
1962	26	12	1	-	13
1963	29	8	2	-	19
1964	54	4	4	-	46
1965	93	5	1	-	87
1966	129	35	23	-	71
1967	88	22	13	-	53
1968	120	26	10	-	84
1969	102	19	12	-	71
TOTAL	1,066	478	115	-	473

* Figures include participants sent under regional funding.
 ** Long-term is defined as six months or more.

THAI OFFICIALS CONCERNED WITH RTG HEALTH PROGRAMS
THAT USOM IS SUPPORTING

MINISTRY OF PUBLIC HEALTH

Lt. General Prasert Ruchirawongse
Minister

Dr. Sombun Phong-Aksara
Deputy Minister

OFFICE OF THE UNDER-SECRETARY

Dr. Sombun Phong-Aksara
Under-Secretary of State

Dr. Chitt Hemachudha
Deputy Under-Secretary

Dr. Manasvi Unhanand
Inspector General

Mr. Sirwat Visehsiri
Central Division

Miss Pien Ponsuwan
Division of Nursing

Mr. Siri Vejajiva
International Health Division

Dr. Vimol Nontananda (Acting)
Division of Malaria Eradication

Dr. Prayoon Saibamroeng
Deputy Director and Chief Epidemiologist
Division of Malaria Eradication

DEPARTMENT OF MEDICAL SERVICES

Dr. Choed Tonavanik
Director-General

Dr. Cholvit Chutikorn
Deputy Director

Dr. Kong Suwanarat
Director of the Division of Provincial Hospitals

Dr. Nibhond Suvattana
Chief Medical Officer

DEPARTMENT OF HEALTH

Dr. Erb Na-Bangxang
Director-General

Dr. Mali Thaineau
Deputy Director-General

Dr. Prachoom Indrambarya
Deputy Director-General

Dr. Amorn Nondasuta
Division of Nutrition

Dr. Somphong Kutranon
Division of Community Health Development

Dr. Winich Asavasena
Division of Maternal Child Health

Dr. Pirote Ningsanonda
Division of Health Training

Dr. Somwang Somchai
Division of Health Education

Dr. Ouab Ratnavanija
Division of Rural Health

Dr. Preecha Desanadi
Project Manager, Rural Health Research
Project, Saraphi

OFFICE OF THE PRIME MINISTER

General Netr Khemayodhin
Under-Secretary

OFFICE OF ACCELERATED RURAL DEVELOPMENT

Mr. Prasong Sukhum
Secretary-General

Mr. Somkasem Visetkul
Technical Services Division

CHIANG MAI UNIVERSITY MEDICAL SCHOOL

Dr. Bunsom Martin
Dean, Chiang Mai Medical School

Miss Prieb Panyavanija
Director, School of Nursing

Dr. Hacha Na Bangxang
Chief, Department of Preventive Medicine

MAHIDOL UNIVERSITY

Dr. Jajaval Osathanondh
Rector

FACULTY OF PUBLIC HEALTH

Dean Charas Yamarat
Dean, Faculty of Public Health

Dr. Sa-ngad Plengvanich
Population and Social Research Center

FACULTY OF MEDICINE, SIRIRAJ HOSPITAL

Dr. Sud Sangvichiean
Dean

Dr. M. R. Songsri Katusing
Director, OB/GYN Department

FACULTY OF MEDICINE, RAMATHIBODI HOSPITAL

Dr. Aree Valyasavee
Dean

FACULTY OF MEDICINE, CHULALONGKORN HOSPITAL

Prof. Dhavi Tumrasvin
Dean

Dr. M. L. Kasetra Snidvongs
Chief, OB/GYN Department

Dr. Aree Somboonsuk
Chief, Family Planning Research Unit

CHULALONGKORN UNIVERSITY

Dr. Visid Prachuabmoh
Population Research and Training Center

Mr. Amara Bhumiratana
Institute of Food Research and Product Development

BANGKOK MUNICIPALITY

Dr. Chek Dhanasiri
Director, Bureau of Public Health

APPENDIX I

PUBLIC HEALTH DIVISION CHIEFS -- USOM/THAILAND

1951-53	Dr. Erval C. Coffey
1953-55	Dr. Alonzo F. Brand
1955-58	Dr. Robert L. Zobel
1958-61	Dr. Andrew P. Haynal
1961-63	Dr. Ross E. Jenny
1963-64	Dr. Robert L. Cherry
1964-66	Dr. Edward O'Rourke
1966-Present	Dr. John E. Kennedy

APPENDIX J

OFFICE OF PUBLIC HEALTH
(STAFFING AS OF SEPTEMBER 1969)

OFFICE OF ASSISTANT DIRECTOR

Assistant Director
Deputy Assistant Director

John E. Kennedy, M.D.
William S. Smith, M.D.

UNIVERSITY OF ILLINOIS/CHIANG MAI
MEDICAL SCHOOL CONTRACT

Chief of Party
Hospital Adm. Advisor and
Administrative Officer
Assoc. Prof., Preventive and
Social Medicine
Asst. Prof., Microbiology
Anthropologist
Medical Technologist

*Charles E. Richards, M.D.
*Harold L. Autrey
*Theodore C. Doege, M.D.
*C. Evans Roberts, Jr., M.D.
*Dr. Clark E. Cunningham
*Thelma M. Garvin

RURAL HEALTH DIVISION

Chief

Francis J. Murphy, Jr.

POPULATION/FAMILY HEALTH BRANCH

Population/Family Health Advisor

Bruce D. Carlson

HEALTH EDUCATION & TRAINING BRANCH

Health Education Advisor

Samuel Taylor (ETA Oct. 10)

MEDICAL LOGISTICS BRANCH

Medical Supply Advisor

Frederick W. Michael

NURSING BRANCH

Public Health Nurse Advisor
Public Health Nurse Advisor

Norma B. Brainard
*Winifred Evans

MEDICAL COUNTERINSURGENCY BRANCH

Chief of Operations
Med. Tech. /Sanitarian

Theodore Wilson
*Harold G. Lierly

MALARIA ERADICATION DIVISION

Acting Chief

Dr. George J. Stein

OPERATIONS BRANCH

Advisor, Administration
Malaria Specialist

Donald Scheer
James H. Sellers

RESEARCH UNIT (TMORU)

Chief of Unit
Jr. Entomologist
Sr. Epidemiologist
Epidemiologist

William Chin, M.D.
Carl A. Vickery, Jr.
Vacant
Vacant

SUMMARY

Direct Hire:

On Board 10
Vacant 0
10

*Upcountry Personnel 8
Bangkok 15
23

Contract:

On Board 6

PASA:

On Board 5
Vacant 2
7

TOTAL 23

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