

U.S. HEALTH PROFESSIONALS IN INTERNATIONAL HEALTH  
NEEDS AND OPPORTUNITIES

Johns Hopkins University  
Department of International Health  
in Cooperation With  
National Council for International Health

Timothy D. Baker, Professor  
Department of International Health

Carol Weisman, Associate Professor  
Department of Behavioral Sciences

Ellen Piwoz, Research Assistant  
Department of International Health

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## I. INTRODUCTION

If the United States is to maintain a position of leadership in the world, we must undertake international projects and participate in international organizations. A vital area of U.S. involvement abroad is health. United States health professionals have played important roles in international health for over seven decades. Programs for control of yellow fever throughout the Americas, control of malaria in most of the world, eradication of smallpox, medical education in China in 1920-1949, public health training in many nations, family planning in Pakistan and Indonesia have all had leadership from U.S. health professionals. To set appropriate policy for the U.S. international health endeavor, we must identify organizations which employ U.S. health professionals overseas and estimate their future staffing needs.

Documentation of numbers of U.S. personnel now engaged in international health is fragmentary and outdated. The Department of International Health, Johns Hopkins University School of Hygiene and Public Health, developed and carried out a survey of international health agencies in 1968-1969. The results of the survey were presented in a mimeographed report<sup>(1)</sup> at the annual meeting of The Association of Schools of Public Health, Washington, D. C., April 6-8, 1970. The report was not widely distributed due to inadequate funding. Twelve years have elapsed since this report. There is an obvious need for a new survey, compilation and analysis of results, and dissemination of the information to interested

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(1) International Health -- United States Involvement. Gorosh, M.E., Baker, T.D., Conyngham, R.B. Annual Meeting Association of Schools of Public Health, Washington, D.C., April 6-8, 1970.

organizations and agencies and to persons considering careers in international health. The benefits of an up-to-date study would be a list of current potential employers for American health professionals interested in working abroad, a census of the health professionals in international health and a listing of current training opportunities.

Our definition of international health is simple and comprehensive: Any health activity undertaken between two or more nations. Thus, it includes such widely differing types of work as: clinical services provided by medical missions, research by U.S. Naval Medical Research Units overseas and World Health Organization (WHO) Expert Committees. It is based on the Development Coordinating Committee (DCC)<sup>( 2)</sup> definition appropriately expanded to include non-governmental activity. Like the DCC definition, it includes population and nutrition.

Our objectives for the current study were to estimate the present and future supply and demand for U.S. health professionals in international health and to analyze the implications of these estimates for institutional recruitment and training, policies, and individual job opportunities in international health.

## II. CRITICAL ISSUES

### A. Demand

The demand for U.S. health professionals in international health depends on: 1) the "pull" from receptor nations and 2) the "push" from

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( 2 ) International Health Report FY 1979-81, p. 4. Development Coordinating Committee, International Health Subcommittee. Dr. John Bryant, Dr. Stephen Joseph, Co-chairmen, Bethesda, Maryland, 1980.

the U.S. to meet individual and institutional goals.

The "pull" from receptor nations comes from various sources. The first source is the need for additional hands to provide direct services. This need is due to drastic shortages of local health practitioners, as is the case in some African nations<sup>(3)</sup>, or to sudden increases in demand resulting from the increased ability to pay for all desired health services. The latter situation is common to most oil-rich countries.

The second source of pull is the desire in certain countries to acquire the benefits of new technologies. Examples of this type of "pull" range from the recruitment of experts in new laboratory techniques to the enticement of surgeons skilled in newly developed operative procedures. Often external administrators are desired to institute structural reforms in the recipient health system.

Demand from within the U.S., the "push" factors, comes from a variety of sources. Governmental involvement in international health programs is a means for establishing better diplomatic relations. Improved levels of health, it is hoped, will ultimately result in increased social and political stability. United States universities are frequently motivated by the desire to increase research opportunities in areas such as tropical medicine. Church-related international health activities are often geared to the overall church evangelical program. Commercial firms see the opportunity to make a profit through international work.

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(3) Statistical Analysis of Interdependence of Country Health Resource Variables, with Special Regard to Manpower Related Ones. T. Fulop and W.A. Reinke. Bulletin of World Health Organization 59 (1), 1981.

Individual U.S. health professionals similarly have a variety of forces that push them into international health work. These include idealism, opportunities for adventure, special research opportunities, chances for learning new cultures, travelling and, in infrequent cases, higher earning than would be possible in the United States. How will these demand factors affect the future demands over the next decade?

B. Factors Influencing Future Demand

As less developed countries develop, their training institutions start meeting their needs for health professionals. As more and more countries develop adequate capacities for training indigenous health professionals, the need for U.S. health professionals (particularly for clinical care) rapidly decreases. In addition, developing countries wish to avoid any semblance of dependence on foreign experts.<sup>(4)</sup> This causes a reduction of the demand for even collegial or cooperative ventures involving U.S. health professionals.

At the same time (as is currently the case) in the United States, government, business, universities and voluntary organizations are all feeling the bite of the current recession and the current inward direction of U.S. priorities. The resultant lack of funds also tends to decrease the market for U.S. health professionals.

Foreign assistance passes through phases where emphasis is placed on capital development projects in one period, subsistence agriculture in another and human services in yet another period. If the U.S.

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(4) National Policies and National Experts: Basic Requirements in Developing Countries. B. Stocking, C.E. Gordon-Smith. The Lancet, January 17, 1981.

government were to place major stress on human services including health, there could be a major increase in the demand for U.S. health professionals overseas.

In addition to the U.S. governmental activities, there is a demand for U.S. health professionals from international agencies and, to a smaller extent, from other developed country institutions. Although some experts<sup>(5)</sup> feel that there are major opportunities for support for health programs involving U.S. personnel from international agencies, other authorities have expressed skepticism as to the magnitude of funding likely to be available from other countries for U.S. health professional projects. Our experience at Hopkins with the Dutch Government has shown that the promise of hiring U.S. health professionals is unlikely to be matched by performance.

Although international agencies have a quota for hiring from their member nations, the U.S. quota is rarely filled as the level of expertise called for is, in general, not commensurate with the salaries paid by the international agencies in comparison to salaries that U.S. experts could expect domestically. Our experience at Hopkins in trying to find employment for new graduates in international (multilateral) agencies has been that there are very few real job opportunities for U.S. citizens without extensive experience in WHO, Pan American Health Organization (PAHO), and The World Bank.

In summary, as the U.S. government moves away from international involvement in health and recipient countries are less interested in using expatriate health professionals, the job market seems likely to level off

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(5) Personal communication

from the period of expansion of the last decade.

C. Supply

The supply of U.S. health professionals in international health is difficult to measure, other than conducting a census of persons employed. The pool of job-seekers is difficult to measure. The potential supply is also hard to ascertain as: U.S. health professionals move in and out of international health and there is no set requirement of training, and the field is so diverse. Some of the major international health, health manpower supply issues discussed in this report are as follows.

How many U.S. health professionals are engaged in international health in comparison to the total U.S. health manpower pool? Does international involvement constitute an appreciable drain on U.S. resources of trained health manpower? Are the U.S. training resources adequate to supply the number of future international health experts needed? These salient issues are discussed in the concluding section of this report.

III. STUDY DESIGN AND METHODOLOGY

The study consisted of four major components: 1) A survey of organizations potentially employing U.S. health professionals in international health; 2) A survey of key informants knowledgeable about the present and future international job market for U.S. health personnel; 3) A review of career patterns of U.S. health professionals; and , 4) A survey of training capacity in U.S. Schools of Public Health. Each major component is described following.

A. Organizational Survey

The survey of organizations consisted of a self-administered, four-page questionnaire mailed to 1,257 U.S. and International Organizations with possible international health activities and personnel. The list of organizations was compiled from several sources. 1) The National Council for International Health (NCIH) mailing list of U.S.-based organizations involved in international health listed in their Directory (NCIH, 1981) and other organizations who have written to NCIH or attended its conferences. 2) A list of U.S. Government and International Agencies was expanded from the 1969 survey. 3) A list of all Schools of Public Health. 4) A list of 354 U.S. companies with international interests was screened for companies most likely to employ U.S. health professionals. The resulting combined list of organizations thus includes private for-profit and non-profit, church, university, U.S. government and international organizations.

Producing the comprehensive list was difficult, since no complete and up-to-date listing of U.S. organizations utilizing U.S. personnel in international health activities exists. The following agencies were consulted in order to ascertain the existence of any other listings as well as checking the comprehensiveness of our final list: The U.S. Agency for International Development, The Pan American Health Organization, and The World Health Organization. In addition, a "snowball" technique was used to identify additional organizations: several respondents to the organizational questionnaire mentioned other agencies in their responses, and these other organizations were subsequently mailed questionnaires.

The original and follow-up mailing to all organizations on the NCIH list was carried out by NCIH. All supplemental mailings were made by Johns Hopkins University. All questionnaires were given to Johns Hospital University for checking, coding and punching for future tabulations.

The four page questionnaire is presented in Appendix A. Questionnaire items are all closed-format and include two branching points. First, agencies that do not "currently implement or provide technical assistance to any health programs (including population, nutrition and sanitation) or health-related efforts outside of the United States" are identified and excused from completing the remainder of the questionnaire. Second, those agencies that do report having international health activities are asked to indicate which activities they participate in and in which countries; they are then asked whether they have "U.S. citizens working directly in the management or implementation of international health programs, either abroad or in the United States." Those agencies that report having such personnel are then asked to report numbers and types of personnel used or needed as well as to answer several questions about recruitment techniques. The categories of professional and type of employment (long-term, short-term, volunteer) were decided in consultation between NCIH and JHU.

Several items which we had originally anticipated including in the questionnaire were dropped as we felt that it would greatly hinder return rates. These items included language capabilities and personal skills. Information on these items were collected in the interviews with key informants. Information on the number of non-U.S. personnel, other than general information from WHO, was not collected. The collection and analysis of this extensive body of information would require a study much

greater in magnitude than this current U.S. Health Professional Study and the results would have only peripheral value. Information was collected on the major countries in which organizations were involved. Preliminary analysis of this information indicated that it would not be of major use in planning and policy-making. The basic country information is available with the NCIH file of forms, should special inquiry be required.

A pre-test was made of the basic questionnaire before the project started. A university, government agency, foundation and corporation gave suggestions for revising the questionnaire which were incorporated into the final design.

The following figures show the response rate to the organizational survey as well as the numbers of responding organizations reporting international activities and personnel:

Total number of questionnaires mailed:	1,257
Total number returned (%):	688 (55%)
Number of respondents reporting international health activities (%):	381 (55% of returns)
Number of respondents utilizing U.S. personnel (%):	288 (42% of returns)

The response rate of 55% after a follow-up wave to non-respondents, is a typical response rate for a survey of organizations. Of interest, however, is the finding that among respondents, only 55% report that they have international health activities and 42% report that they utilize U.S. personnel in these activities. (Of those reporting international health activities, 76% use U.S. personnel.) The original mailing list, therefore, included 307 responding organizations with no current involvement in international health. Among the non-respondents we predicted an even greater proportion of current non-involvement.

Given the non-response rate of 45% and the apparently large proportion of organizations with no involvement in international health, a sub-study of the non-respondents was conducted to ascertain the degree of response bias and to determine specifically whether non-respondents were less likely than respondents to be involved in international health work and employ U.S. health professionals. A simple random sample of approximately 10% of the 569 non-respondents was selected and contacted. (The procedure used is described in Appendix B.) Of the 55 organizations selected, six no longer were in existence, four could not be contacted by telephone, and one was a very late respondent to the original survey and therefore not included as a non-respondent. Of the 44 remaining organizations, 15 (or 27% of 55) reported international health activities, and 13 of these reported using U.S. health professionals.

Comparing the sample of non-responding organizations with the respondents, we find that respondents to the original survey were twice as likely to report having international health activities and almost twice as likely to report using U.S. personnel in such activities. Further, respondents reported larger numbers of personnel per organization. In addition, 11% of the non-respondents were found to have ceased to exist as distinct agencies. We conclude that the majority of non-respondents to the survey have no international health involvement and few personnel in such activities. However, we have corrected the total figures in tables to include our estimate of number of U.S. health professionals working for non-respondent organizations.

The detailed findings reported are based on responses to the questionnaire by the agencies reporting international health activities or

by the subset of those agencies reporting utilizing U.S. personnel, as indicated (excluding agencies in the sample of non-respondents).

B. Survey of Key Informants

A list of key informants in institutions hiring U.S. health professionals for international health and institutions training U.S. health professionals overseas was compiled. A standard interview form was developed and pilot tested with individuals in AID and a University. The interview form dealt with the informant's best estimates of the overall climate for employment of U.S. health professionals in international health and the factors of importance in hiring U.S. health professionals. The interview form is Appendix C of this report.

The institutions contacted were those with major training programs in international health - UCLA, Hawaii, Tulane, Loma Linda, Harvard, Johns Hopkins and Texas. The agencies contacted were The Agency for International Development, The World Bank, The Pan American Health Organization, Management Sciences for Health, John Snow, Inc., three major health care corporations, the U.S. Army and Navy and The Peace Corps. Most interviews were made at the 1981 American Public Health Association meeting which many of the key informants attended in October, 1981. The additional sources were contacted by telephone by Hopkins project staff. The results of the interviews were compiled and identification of individuals responding removed to protect confidentiality. The compilation of the interviews is presented in the Reports Section.

C. Career Patterns in International Health

To estimate U.S. international health manpower training needs, we estimated the average number of years a U.S. health professional spends in international health. To make this estimate we reviewed all 66 students

graduating from The Department of International Health at Johns Hopkins University School of Hygiene and Public Health during the first ten years of its existence (1962-1971). (More recent years of graduates were not studied as they had not had enough years of experience.) Estimates were made of each student's age at graduation (33 years) and years of work in their professional careers in international and domestic health.

D. Survey of Training Capacity in U.S. Schools of Public Health

To our knowledge, there are no specific training programs dedicated exclusively to preparing health professionals for careers in international health in U.S. Medical, Nursing, Hospital Administration or Dental Schools. Therefore, we concentrated our attention on Schools of Public Health.

We carried out indepth discussions with responsible faculty at all of the U.S. Schools of Public Health with major training programs in international health. In addition, a review was undertaken of all schools of public health catalogues to determine courses, programs and, where available, numbers of students and graduates specializing in international health.

This information was supplemented by data collected by The Association of Schools of Public Health (previously by APHA) for presentation in a time series indicating approximate numbers of persons trained in international health.

E. Analysis

All forms were checked for apparent errors or omissions. Calls were made to approximately 50 organizations to check the apparent errors and omissions and corrections were made. Forms were then coded, punched for automatic data processing and verified.

An SPSS data file was created for computer analyses. Initial tabulations were made by organization for guidance in condensing the various types of organizations.

#### IV. RESULTS

We estimate that there are at least 8,700 U.S. health professionals working in international health (3,800 long-term, 1,700 short-term, and 3,200 volunteers). This section first describes the organizations hiring U.S. health professionals, then describes the health professionals by type and organization. NOTE: Corrected grand totals include estimates based on the sample of non-respondents. Detailed tables do not reflect the numbers of health professionals working for non-respondent organizations.

##### A. Organizations

Table 1 shows all types of organizations (not aggregated) responding to the organizational survey and reporting involvement in international health activities.

TABLE 1

Types of Organizations with  
Any International Health Involvement\*

<u>Type of Organization</u>	<u>Number**</u>	<u>Percent</u>
Private Voluntary Organizations (PVOs)	117	29.5%
Church-related Organizations (including Missions)	112	28.3
Universities (Public or Private)	84	21.1
Small businesses/Consulting agencies	29	7.3
Corporations	14	3.5
Endowed Foundations	14	3.5
Governmental Agencies	14	3.5
Professional/Trade Associations	9	2.3
Civic Groups	<u>3</u>	<u>0.8</u>
TOTAL	396	99.8%

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\* These organizations responded "yes" to the following question: "Does your organization currently implement or provide technical assistance to any health programs (including population, nutrition, and sanitation) or health-related efforts outside of the United States?"

\*\* Includes 15 agencies among the contacted "non-respondents" who reported international health activities. These include 4 PVOs, 4 church-related organizations, 6 universities, and 1 endowed foundation.

The largest group of respondents - 30% - are private voluntary organizations (PVOs), followed by church-related organizations (including missions), and universities. Small businesses, consulting agencies, and corporations constitute about 11% of the number of responding organizations. Governmental and quasi-governmental agencies are about 4% of respondents. The number of organizations is not proportional to the number of health professionals employed.

Table 2 displays the types of international health activities in which these organizations are involved and the extent of their involvement (i.e. no involvement in a particular activity, programs in the field, technical support provided, or both programs and technical support.)

Table 2

Types of International Health Activities\*

Type of Activity	% of agencies reporting:				Number of Agencies
	Any Involvement	Programs in Field Only	Technical Support Only	Both	
Hospital Care	42	15	13	14	160
Ambulatory Care	44	17	12	15	171
Communicable Disease Services	40	17	11	12	148
Disaster Relief Services	32	12	11	9	122
Community Health Education	64	27	16	21	239
Health Planning, etc.**	44	13	15	16	167
Health Manpower Training	61	21	18	22	232
Maternal & Child Health	60	25	16	19	224
Nutrition	56	22	17	17	209
Population/Family Planning	38	13	12	13	144
Health Program Administration	45	13	16	16	175
Research	28	9	9	10	106
Environmental Health Services	34	12	11	11	125

\* Based on 380 organizations responding to original survey and reporting involvement in international health activities, excluding WHO.

\*\* Includes health statistics, information systems, and program evaluation.

The most frequently reported activities include: community health education, health manpower training and education, maternal and child health services, and nutrition services. The least frequently reported activities include: research (laboratory, clinical, or operational), disaster relief services (including services for refugees and migrants), environmental health services and population or family planning services. Of these organizations reporting involvement in activities of any given type, more report having programs in the field than report providing technical support only. The notable exceptions occur for health planning and administration, in which more organizations report providing technical support only than report field programs only.

Of the 381 organizations reporting involvement in international health activities, 76% (288 organizations) report that they have U.S. citizens working directly in the management or implementation of international health programs, either abroad or in the United States. Of the 288 organizations, 281 were able to report on the questionnaires the actual or estimated numbers of personnel working or needed in international health activities for the organization. One organization, WHO, reported total numbers, but did not give breakdown by professional categories. Therefore, WHO personnel are excluded from detailed tables.

Table 3 shows the total numbers of U.S. personnel, by occupational category, currently working as either long-term employees, short-term employees, or volunteers for the 281 organizations. Table 3 also shows corrected totals including estimates of non-respondents from non-respondent sample and WHO uncategorized workers. NOTE: Corrected grand totals include estimates based on the sample of non-respondents. Detailed tables do not reflect the numbers of health professionals working for non-respondent organizations.

Table 3

Total Numbers of U.S. Personnel Working in  
International Health Activities\*

Currently Working As:

Occupational Type	Long-term Employees	Short-term Employees	Volunteers	Total	%
Physicians	637	309	471	1,417	22
Nurses	649	193	646	1,488	23
Dentists	131	31	218	380	6
Social Workers	53	25	100	178	3
Health Educators	108	97	43	248	4
Pharmacists	43	8	33	84	1
Nutritionists	48	72	60	180	3
Technicians (lab., X-ray, etc)	86	9	54	149	2
Allied Health Personnel (dental assistants, P.T.s, P.A.s)	38	8	79	125	2
Environmental Health Specialists (sanitarians, engineers)	115	72	50	237	4
Health and Hospital administrators/managers/ planners (excluding MDs, RNs and other above listed professions)	481	265	135	881	14
Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)	156	137	137	430	7
Other	435	82	125	642	10
<b>Total</b>	<b>2,980 (46%)</b>	<b>1,308 (20%)</b>	<b>2,151 (33%)</b>	<b>6,439</b>	
<b>Corrected Totals</b>	<b>3,800</b>	<b>1,700</b>	<b>3,200</b>	<b>8,700</b>	

\*Personnel currently working for 281 organizations responding to survey. All are U.S. citizens working abroad or in the U.S. on international health activities. For definitions of types of workers, see text.

The definitions of work status employed in this study are as follows:

Long-term employee: A salaried person who is employed either full-or part-time for a period of one year or more.

Short-term employee: A salaried person who is employed either full-or part-time for less than one year. (e.g., most consultants.) Full-time employees who spend less than 50% of their time in international health work are coded as short-term employees.

Volunteer: A non-salaried person working for the organization, who may be receiving either a stipend, transportation costs, subsistence or living allowance.

In reporting the numbers of persons in each of these statuses and occupational categories, organizations were requested to classify people according to their major job function only.

#### B. All Professionals

In total, 8,700 U.S. health professionals were estimated to work in international health activities. Two thousand one hundred of these were estimated to work for the non-respondent organizations based on the sample of non-respondents.\* For reporting organizations, a total of 6,439 professionals were reported.

Forty-six percent of reported personnel work as long-term employees, 33% as volunteers, and 20% as short-term employees. The largest category of personnel is nurses, 23%. The second largest personnel category is physicians, 22%, of whom 46% work as clinical physicians. About 45% of both physicians and nurses are classified as long-term employees. Together, physicians and nurses are 45% of all U.S. health personnel

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\* See Appendix B

reported. The third largest group of personnel are health and hospital administrators, managers and planners (14%), of whom 54% are long-term employees. (Note that this group of personnel excludes persons who are also doctors, nurses, etc.) Pharmacists (1%), Allied Health Personnel (2%), Social Workers and Nutritionists (3%) are the smallest categories of personnel. The "other" category, comprising 10% of all personnel reported, consist of public health advisors, social scientists, researchers, and students. Approximately one-half of the long-term "other" employees were reported by AID.

C. Physicians

Physicians, as the most expensive component of health manpower are described in some detail. Table 4 shows that over half of the long-term physicians are engaged in clinical practices. The majority of these clinical practitioners work for church projects or profit-making corporations. (From telephone follow-up and not reflected in Table D-4, Appendix D.) Almost one-third of all physicians work in public health, reflecting the high priority given to this area by international agencies and organizations.

Table 4

Physicians in International Health

Currently Working As:

	<u>Long-term Employees</u>	<u>Short-term Employees</u>	<u>Volunteers</u>	<u>Total</u>
Clinical	340	66	253	659
Public Health	172	187	58	417
Other	125	56	160	341
	<u>637 (45%)</u>	<u>309 (22%)</u>	<u>471 (33%)</u>	<u>1,417</u>

Physicians volunteer their services at the same rate as other health professionals (one-third volunteers). The majority of volunteer physicians are clinical, reflecting the church-related organization's emphasis on clinical service and the relative ease of finding short-term, unpaid, clinical assignments.

To check an independent source, we reviewed the numbers of U.S. physicians in the AMA Directory<sup>(6)</sup> with foreign, or APO addresses. Since the directory contains all physicians, not just AMA members, we assumed 1% underreporting in the directory. The largest estimate of underreporting in U.S. studies of completeness<sup>(7)</sup> of the AMA physician directory is 3%. The smallest is 0.1%.<sup>(8)</sup>

Our validation estimations checked with the AMA Directory showed 1,450 U.S. MDs overseas and 370 Armed Forces physicians with APO/FPO addresses for a total of 1,820 plus 1% underreported or 1,840, which compares with our estimated survey figures of 1,880 (actual number reported and estimated number of MDs from non-reported).

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- (6) AMA Directory, 27th ed., Part IV. Geographical Register of Physicians, Chicago, 1979.
- (7) Committee to Evaluate the National Center for Health Statistics, Subcommittee on Statistical Methodology. Report on AMA Physician Masterfile Study (SR-16), Washington, D. C., 1972.
- (8) Cherkin, Dan and Lawrence, D., An Evaluation of the American Medical Association's Physician Masterfile as a Data Source - One State's Experience Medical Care XV (9): 767-779, Washington, 1977.

D. Nurses

Nurses, the largest category of U.S. health professionals overseas are actually underrepresented in comparison to doctors, dentists and health administrators in terms of percent of total numbers in the U.S. As shown in Table 5, there are smaller percentages of nurses in clinical work than in public health and "other" types of work. (This may be distorted by the large number of Peace Corps volunteers stated to be working in public health nursing.) We believe that many of these may be nurses without additional public health training. Table 5 may include Licensed Practical Nurses as our questionnaire did not specify registered nurses.

Table 5

Nurses in International Health

	Currently Working As:			Total
	Long-term Employees	Short-term Employees	Volunteers	
Clinical	223	47	173	443
Public Health	161	98	272	531
Other	265	48	201	514
	<hr/>	<hr/>	<hr/>	<hr/>
	649 (44%)	193 (13%)	646 (43%)	1,488

E. Workers by Type of Organization

Table 6 summarizes findings for the groups of responding organizations. Church-related organizations reported a total of 2,199 personnel. This is the largest number for the five types of responding organizations and accounts for 34% of all personnel. An average of 27 personnel are working per church organization. PVOs, etc., reported a total of 1,668 personnel or 26% of all personnel reported (an average of 18/PVO). Universities, as expected, have a small number of volunteers. Corporations show distribution of long-term, short-term and volunteer workers similar to universities. Although Table 6 shows only 878 health professionals working for corporations, we estimate at least 300 workers were not reported, based on phone follow-up. Government agencies have the smallest number of employees, but the highest number of personnel per organization (87 without PAHO; 96 including PAHO).

One-third of all personnel reported are classified as "volunteers," and Table 6 shows that PVOs and church-related organizations report the greatest number of volunteers. Only 20% of all personnel reported are "short-term employees." Finally, 46% of all personnel are reported as long-term employees, and church-related organizations, businesses, and universities report relatively high proportions of these personnel. PVOs employ the smallest proportion of long-term employees.

Table 6

Types of Workers Utilized by Five Types  
of Organizations Studied\*

Type of Organization (No. of Organizations)	Types of Workers (%)			Total Number of Personnel**	
	Long-term Employees	Short-term Employees	Volunteers		
PVOs, etc. (92)	29%	21%	50%	1,668	25%
Church-related (82)	56	4	41	2,199	33%
Universities (67)	51	39	10	985	15%
Corporations, Businesses (31)	52	47	1	878	13%
Government Agencies (8)	46	10	44	709	
Government Agencies (including WHO) (9)***				867	13%
All Organizations (280)	46	20	33	6,439	
All Organizations (including WHO ) (281)				6,597	99%

\* Personnel currently working for 281 organizations. Definitions of categories of organizations and personnel are in text.

\*\* The average numbers of personnel per organization of each type are, respectively, 18, 27, 15, 28, and 87. (96 if WHO included).

\*\*\* WHO personnel uncategorized.

Our definition of foundation includes endowed foundations only. Foundation status was determined by inclusion in the 1981 Foundation Directory.<sup>(9)</sup> All organizations classifying themselves as foundations, but not appearing in this directory, were coded as private voluntary organizations.

Endowed foundations represent only 3.5% (n=14) of all organizations reporting international health activities. Of those 14 with international health involvement, nine, or 65% report employing a total of 38 U.S. health professionals. The average number of U.S. health personnel per foundation is 4.2, a figure significantly lower than the survey average of 22.9.

The endowed foundations reporting international health activities employing U.S. personnel include the Rockefeller Foundation (9), The Ford Foundation (6), The Kellogg Foundation (1), The China Medical Board of New York (1), and five other Foundations (21). Thus, it may be seen that endowed foundations no longer have a major role as employers of U.S. health professionals in international health. For this reason, we have combined them with PVOs in our detailed analyses.

The five types of organizations may also be compared with respect to the specific occupational groups they utilize. (Refer to tables in Appendix D.) Overall, physicians and nurses account for 45% of all personnel reported, but their proportional representation varies by type of organization. Physicians and nurses comprise 65% of the personnel reported by church-related organizations. However, 38% of those reported

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(9) The Foundation Directory, 8th ed. Eds. M. O. Lewis and A. T. Gersumky. Foundation Center, New York. 1981.

are classified as volunteers. In contrast, physicians and nurses are only 19% of the personnel reported by corporations and businesses; nurses are only 8% of personnel reported by universities; and physicians are only 10% of personnel reported by governmental agencies.

The third largest occupational group reported overall is health and hospital administrators, managers and planners (14% of all personnel reported). Corporations and businesses report proportionately more such personnel (44% of those reported by this type of organization); church-related organizations, universities and governmental agencies report relatively low proportions of such administrative personnel. However, many of the "other" personnel in AID might be classified as "administrative" by other organizations.

Only 125 allied health personnel are reported overall. Seventy-two of them (58%) work for church-related organizations. Seventy percent of the 237 environmental health specialists reported work either for PVOs or for corporations and businesses. The largest number of educators and training personnel (excluding physicians, nurses and other health professionals) work for PVOs and related organizations.

Table 7 shows the numbers of budgeted vacancies reported by all 281 organizations utilizing international health personnel. Caution should be used in drawing conclusions from these results, as follow-up discussions indicate that vacancies are underreported.

Table 7

Numbers of Budgeted Vacancies for U.S. Health Personnel\*

Occupational Type	Type of Vacancy:			Total	%
	Long-term Employees	Short-term Employees	Volunteers		
<b>Physicians</b>					
Clinical	63	17	25	105	
Public Health	20	14	1	35	
Other	5	4	102	111	37%
<b>Nurses</b>					
Clinical	57	19	53	129	
Public Health	41	3	14	58	
Other	11	6	2	19	30%
<b>Dentists</b>					
Clinical	37	4	2	43	
Other	1	0	1	2	7%
Social Workers	25	2	1	28	4%
Health Educators	9	2	4	15	
Pharmacists	9	4	3	16	
Nutritionists	1	2	4	7	
Technicians (lab., X-ray, etc)	9	1	12	22	
Allied Health Personnel (dental assistants, P.T.s, P.A.s)	5	2	18	25	
Environmental Health Specialists (sanitarians, engineers)	3	3	6	12	
Health and Hospital administrators/managers/ planners (excluding MDs, RNs and other above listed professions)	17	8	3	28	4%
Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)	2	5	3	10	
Other	6	2	7	15	
<b>Total</b>	<b>321 (47%)</b>	<b>98 (14%)</b>	<b>261 (38%)</b>	<b>680</b>	

\*Reported by 251 organizations responding to survey and currently utilizing U.S. health personnel in international health activities. For definitions of types of workers, see text.

Six hundred eighty budgeted vacant positions are reported, an average of 2.4 per organization. Of these, 47% are for long-term employees, 38% are for volunteers, and 14% are for short-term employees. The occupational categories in greatest demand are physicians (37% of all vacancies) and nurses (30% of all vacancies). Positions for dentists comprise the third largest occupational group (7% of all reported vacancies). Vacancies for all other groups comprise less than 5% of all reported budgeted vacant positions.

Most of the budgeted vacancies (73%) are reported by church-related organizations; an additional 15% is reported by PVOs. Only one vacancy is reported by governmental agencies, and only six by universities.

The organizations that use U.S. health personnel were also questioned about difficulties in recruitment. Six percent of organizations report having particular difficulty recruiting clinical and public health physicians. Only three percent or less of organizations report difficulty recruiting other types of personnel. Thus, agencies report twice as much difficulty recruiting physicians as other types of health personnel, but relatively few agencies reported any difficulty at all. The organizations surveyed reported that they use the following recruitment techniques to meet personnel needs:

referrals by word-of-mouth	58%
referrals from other organizations	44%
advertisements in agency's own publication	32%
advertisements in other U.S. publications	31%
advertisements in other foreign publications	11%

In addition, 39% of the organizations report that they maintain an in-house listing or registry of personnel available for international health work and half of these organizations report that they share this listing with other agencies. Finally, 68% of the organizations report being interested in a registry of available U.S. health personnel if one were made available.

From these data, it is apparent that much recruitment of U.S. health personnel for international health work is by word-of-mouth or referral, and the majority of organizations see a need for a centralized registry of available personnel.

#### F. Survey of Key Informants

The majority of informants felt that the period of expansion of opportunities for U.S. health professionals in international health that has occurred over the past decade would not continue over the next decade. Opinions range from guarded optimism that the present levels of employment would continue for the next five years, followed by a swing in the cycle of employment with improved opportunities over the following five years; to pessimism that present job opportunities would actually decline.

When questioned about their own organizations, the majority of informants felt that there would be some decrease over the next five year period, followed by stabilization; whereas some informants felt there would be drastic decrease in their own organization's work over the next five years.

The main reason informants gave for their projected trends, were that the major sources of federal support for international health seem to

be drying up under the present budget reduction policies of the current administration.

No informants expressed any difficulty in recruitment of health professionals with the exception that public health physicians were somewhat harder to find than any other health professionals. A number of informants stated that language capability was an essential factor in hiring for many positions with their organizations. The majority of informants felt that special training in international health was a major asset.

There was concensus that the first job assignment overseas was the most difficult one to secure. Most informants felt that it would be necessary for U.S. health professionals to take a volunteer or almost-volunteer position for the first assignment and that low paid positions on a semi-volunteer basis would be far more likely to be available over the next five year period than high-level, full-time, consultant positions.

Almost uniformly the key informants from training institutions said that they had more students than they could admit to the classes and that they had difficulty in finding positions for students.

In summary, it would appear that the concensus is one of moderate pessimism in terms of expansion of employment opportunities for U.S. health professionals and guarded optimism that the same rates of employment would persist over the next five year period and gradually increase over the subsequent five years.

Table 8 indicates the approximate numbers of persons trained in international health in schools of public health in the U.S. over the past decade.

Table 8

Applicants, Students and Graduates in International Health  
in U.S. Schools of Public Health\*

<u>International Health</u>	<u>1976 - 1977</u>	<u>1977 - 1978</u>	<u>1978 - 1979</u>
<u>Applicants</u>			
U.S.**	101 (0.9%)	170 (1.6%)	161 (1.5%)
Total including foreign***	157 (1.3%)	232 (2%)	205 (1.6%)
<u>Students***</u>			
Total U.S. including foreign	51 (0.8%)	145 (2.2%)	245 (3.4%)
<u>Graduates</u>			
U.S.**	36 (1.45%)	38 (1.54%)	55 (2.1%)
Total including foreign***	55 (1.98%)	63 (2.23%)	67 (2.3%)

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\* Compiled from International Reports and Executive Summaries (1976-1979),  
Association of Schools of Public Health

\*\* Percent of all U.S. applicants or graduates

\*\*\* Percent calculated on total students responding

These figures are not firm because of differing definitions of "concentration in international health" from school to school and over time within the same school. At best, the information represents an approximate measure of the increase of supply of international health experts trained in the U.S. Caution should be used interpreting these figures as many persons now working in international health have not had formal training or have not been identified as students concentrating in international health. The scope of international health is so broad and the number of persons in any one category are so small, that a detailed, standard manpower analysis is not appropriate to this field.

The number of applicants to international health programs in schools of public health has increased since 1976. (Figures in Table 8 plus information from key informants.) The number of graduates each year is also increasing. There are almost three times as many applicants as graduates, indicating an excess demand for training in international health. It is difficult to draw any conclusions about the increase in the number of international health students, as length of study varies by school and degree program. There does appear to be a real increase in the number of students, (U.S. and foreign) applying and completing formal training in international health. There was a total of 29 faculty members in international health in schools of public health in 1978 (1.7% of all faculty).

The only schools of public health with named departments of international health are UCLA, Hawaii, and Johns Hopkins. UCLA's department includes Population and Family Health. All of the schools with international health departments have extensive teaching, research, and international health services activities.

Tulane University has a Department of Tropical Medicine and an interdepartmental program in international health. Loma Linda University has a program in international health as a part of their Department of Health Sciences, and a program in Tropical Health as a part of the Department of Environmental and Tropical Health. They also offer a course in international nutrition in the Nutrition Department. Harvard has had major emphasis in international health in the past and is actively rebuilding their international health programs. They have an Office of International Programs and offer international health courses to foreign and U.S. students with international health interests.

Several schools of public health offer international health courses in other departments. The University of Michigan has a health planning and economic development program, primarily for foreign administrators and planners in their Department of Health Planning and Administration. The University of Texas has teaching and research modules in international and rural health, including health and economic development and planning. The University of Illinois has course offerings in international health, nutrition, and population. The University of Pittsburgh offers courses in international health program administration and management and population studies. The University of North Carolina, Columbia University and Yale have limited course offerings, but maintain strong faculty and institutional interests in international health. The University of North Carolina has the Center for Population Studies. Columbia offers courses and is engaged in research in tropical medicine and population studies. Yale does some work in infectious disease and medical entomology with some

relevance to international health. The University of Minnesota and the University of California at Berkeley have a few international health course offerings. Several schools, however, are decreasing their international health teaching involvement. The University of Washington's interests have greatly diminished. The University of South Carolina's initial dean had international interests, but at present, only minor interest is apparent. The major faculty resource in international health at the University of Massachusetts is leaving and both the University of Alabama and the University of Oklahoma have little international health teaching activity. (See Appendix E for a selection of international health course offerings.)

G. Career Patterns in International Health

The survey of 66 graduates from Johns Hopkins University Department of International Health from the first ten years of operation 1962-1971 showed the following findings. The average age of students graduating in this time period was 33. Calculations, based on this figure and on an assumed retirement age of 65, indicate that each trainee, on the average, will spend 11.55 years in international health.

Care must be taken in interpreting these findings as three clear patterns emerge in the professional life of the international health worker. Of the 66 graduates, nine, or 14% followed lifetime careers in international health, 18% chose not to enter the field, and 42% spent five years or less in international health activities. An additional 27% left international health for U.S. work, but later returned to the international health field. These calculations are based on estimations, but the information is the best available at this time. It is also necessary

to note that these calculations are based on a sample which is not representative of the universe of U.S. health professionals in international health. Johns Hopkins University School of Hygiene and Public Health graduates (1962-1971) tend to be older than current graduates, and graduates from other schools of public health. There is a larger proportion of physicians than in the universe of U.S. health professionals in international health. Some of the Johns Hopkins MPHs (1962-1971) already had experience in international work before matriculation. However, the calculated average work life of the international health professionals of 11.55 years is the best estimate available for planning future international health training programs.

## V. DISCUSSION

### A. Training Implications

At present, the major source of training for international health workers is schools of public health. Although a number of medical colleges had interest in training for international health work in the late 1960s and early 1970s, most of these training programs have been terminated. The Association of American Medical Colleges (AAMC) program with international health coordinators from the medical schools was a victim of budgetary constraints. Currently, there is very little training activity in most medical colleges. (A few medical colleges still carry out international health research projects.) To our knowledge, there are no

independent training programs in international health in nursing, hospital administration or dental schools. In schools of public health there are six independent programs. However, there is a divergence between the level of international health knowledge required for some professionals and the training currently available in schools of public health.

The main thrust of our findings in implications for training is that the large number of short-term workers (over 1,300) and clinical workers (almost 1,700) and volunteers (over 3,200), indicate a major need for short courses, probably primarily self-instructional, available at any time of the year, preferably in several different geographic locations. It is unrealistic to expect short-term workers, mostly clinicians, and most volunteers to take a full academic year of international health work to prepare for an assignment that is either short in duration or primarily clinical in nature. This need was noted in the first Hopkins study of U.S. Health Professionals in 1969. Unfortunately, neither Hopkins nor any other educational institutions has taken up the challenge. The Council of Churches has made some effort to meet this need, at least for protestant missionary personnel. Also, the NCIH and Peace Corps conduct short training courses.

The relatively large number of long-term, non-clinical U.S. health professionals working in international health (over 3,000) point up the need for long-term training, such as would be available under the present programs in schools of public health. Since the majority of U.S. health professionals in international health do not follow lifetime careers, we may assume an effective work life of 11.6 years, based on analysis of working careers of 66 international health graduates from the Johns Hopkins

program. With an average work life of 11.6 years, approximately 260 U.S. health professionals each year would need specialized international health training to ensure replacement for attrition. (3,060 long-term, non-clinical health professionals divided by 11.6 average working years.)

It appears from Table 8 that the total numbers of U.S. graduates in international health in 1977, 1978 and 1979 (36, 38 and 55) would not be adequate to fill the 260 estimated job openings requiring new or replacement personnel yearly. Not all full-time U.S. health professionals in international health, however, have received formal training. The 260 estimated replacement vacancies, and opportunities created by new projects and programs are in a wide variety of the health professions. The existing programs in international health in schools of public health have adequate facilities to expand to meet proven demand for international training. It is not advisable to create new degree programs specifically for international health workers.

In conclusion: 1) There is an unmet need for short (3 days to 2 weeks) orientation courses in international health. 2) There is an appreciable demand for training replacements for the existing work force of U.S. health professionals in long-term, non-clinical positions, but current training programs should be able to meet this demand.

B. Changes 1969-1981

In terms of total numbers of U.S. health professionals currently working in international health, our survey shows an increase of 63% over the last survey undertaken 12 years ago. Although we believe the increase is a real one, we cannot prove conclusively that it is not merely the results of a better funded, more extensive, survey. Since we do not have numbers available by institution from the initial survey, we cannot make

the necessary cross-check to make sure that there are actually more institutions working in international health with a larger number of U.S. health professionals employed. However, all key informants in the field whom we consulted agreed that the increase in numbers in the past 12 years is not only expected, but is also real.

Another interesting difference between the 1969 survey and the results reported here is that short-term and volunteer workers are identified in this current report.

The large number of clinical, short-term, and volunteer workers (over 5,000) points up the need already referred to for short-term training available at any time of the year at several U.S. locations, probably on a self-instructional basis.

Although the current study indicates a major increase in the number of U.S. health professionals working overseas, we believe this increase has been far surpassed by the increase in numbers of health professionals from the European Economic Community and the Commonwealth nations.<sup>(10)</sup> We believe that the U.S. is dropping into a second position in the international health field. Further international studies are needed to test this assumption.

Also Cuba, with less than one-twentieth of the population of the United States provides almost one-fourth as many health professionals as the United States.<sup>(11)</sup> The political ramifications of this imbalance are obvious.

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(10) Third World at the Door: Australia's Obligation. Med. J. Aust. 1980 Dec. 13.

(11) The Distribution and Supply of Cuban Medical Personnel in Third World Countries. P.H. Grundy, P.P. Budetti. AJPH, July 1980, Vol. 70, No. 7.

Support for international health activity does not seem to be forthcoming from U.S. industry, from private contributions, or from endowed foundations. Therefore, unless the U.S. government chooses to act to increase by a modest investment, the U.S. international health programs, the U.S. will lose initiative in this highly acceptable and visible area of international cooperation.

C. Types of Organizations

Although church-related organizations still employ the largest number of full-time employees, PVOs, businesses and universities have rapidly caught up in the past decade. Governmental and quasi-governmental agencies have decreased in relative and absolute importance compared to a decade ago. Each of the other groups employs roughly one-half the number employed by churches.

The reasons for the apparent shift of corporations and PVOs to greater importance as employers of U.S. health professionals in international health are twofold. First, the development of a new and growing market in the Arabian Gulf Nations for U.S. health professions and second, the rapid increase in numbers of small consulting firms. The second area of growth appears to have come to a close. Several firms have made mergers, others are leaving the health field.

Both churches and governments have relatively few short-term positions, while business, universities and private voluntary organizations have almost as many short-term as long-term employees. We were surprised to find fewer short-term than long-term positions as we believed, before the survey, that short-term positions were more available.

Another unexpected finding was that there were fewer positions filled by volunteers than by long-term paid workers. As expected, churches and private voluntary organizations employed the majority of volunteers.

D. Types of Personnel and Percent of all U.S. Health Professionals

As expected, there were more physicians and nurses working in international health than any other health professions. However, there are appreciable numbers working in virtually all categories surveyed, a fact that should give encouragement to any U.S. health professional who has determination to work overseas.

One of the criticisms of U.S. involvement in international health activity in the past has been that it might cause a drain on the U.S. health professional supply. To investigate this criticism, we calculated the numbers of U.S. health professionals in international health as a percentage of the total work force of major health professions in the U.S. We calculated the percentage of U.S. health professionals in long-term international health jobs as well as the total professionals, including volunteers and short-term workers. Since the percentages even for the total of volunteers, short-term and long-term assignments are less than 1% (Table 9), it can readily be seen that international health activities constitute no appreciable drain on the U.S. health professional supply.

Although it is interesting to compare the percentage participation in international health of the various health professional groups, the small numbers involved do not warrant any conclusions on the reasons for greater or lesser participation by the various groups. The salient fact of this analysis is that participation in international health activities does not constitute a drain on the U.S. total health professional pool.

TABLE 9

U. S. HEALTH PERSONNEL IN INTERNATIONAL HEALTH  
AS A PERCENTAGE OF ALL U.S. PERSONNEL ACTIVE IN THE HEALTH FIELD (1981)  
BY PROFESSION

	IH # Long-term	# in IH Total	Total # US* Professionals	% Total IH Long-term Emp.	% of Total (All IH Employees)
Physicians	637	1,417	450,000	.14	.32
Nurses	649	1,488	1,300,000	.05	.12
Dentists	131	380	150,000	.09	.25
Nutritionists	48	180	94,390	.05	.19
Technicians	86	149	730,000	.01	.02
Social Workers	53	178	50,115	.12	.36
Allied Health	38	125	131,140	.03	.10
Environmental Workers	115	237	25,970	.44	.91
Administrators	481	881	190,000	.25	.46
Health Educators	108	248	29,540	.37	.84
Pharmacists	43	84	140,000	.03	.06

Health U.S. 1980 DHHS Publ. No. PHS 81 - 1232, Hyattsville 1980. (Based on Census and NCHS Services)

\*Projected to 1981.

Of course, one factor to consider in connection with the U.S. health professionals who work in less developed countries (LDCs) is that the LDCs supply the U.S. every year with approximately double the total number of U.S. doctors and nurses in international health.<sup>(12)</sup> The economic value of the trained health professionals supplied to the U.S. by LDCs is an order of magnitude greater than all U.S. health assistance.

E. Preventive versus Palliative/Curative

The large number of professionals in clinical practice means that the U.S. effort in international health is still, to a large extent, a short-term, "bandaid" approach to the health problems of the world. However, the fact that there are now a larger number of health professionals working in public health and institutional development, gives some hope that the U.S. is not responding with expedient solutions only, but has given some priority to the more important, long-term projects that will release the U.S. from responsibilities of assistance in future years. Even the Peace Corps is stressing public health services such as pure water, nutrition education, etc.<sup>(13)</sup>

Despite some recent emphasis on preventive and public health, the church-related institutions are still heavily weighted toward clinical care (76%) whereas government, universities, consulting firms, and PVO programs supported by government are more balanced toward the longer term, higher payoff public health and institutional development activities. Thus, it would appear that any increases in governmental

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(12) Physician and Nurse Migration Analysis and Policy Implication. A. Mejia, H. Pizurki, E. Royston. WHO, Geneva, 1979.

(13) The Role of the Skill-Trained Volunteer in International Public Health: Peace Corps Health Programming and Health Policy in Developing Countries. M.E. King, AJPH, Vol. 71, No. 4.

international health activity would have a greater long-term impact in freeing nations from dependency on the U.S. than either church-related or private business input.

F. Work Opportunities in International Health for U.S. Health Professionals

There will continue to be work opportunities for U.S. health professionals in international health although these positions will be more limited in number and specific in job focus. Government and other organizations will continue to require replacement personnel at least, and major shifts in U.S. development policy may increase the demand for U.S. personnel in all government funded international health activities.

Major shifts in recipient government policies on use of foreign professionals is likely to decrease the demand for long-term U.S. clinicians and other professionals involved directly in the provision of health services. There may be increased opportunities for individuals involved in institution building, training, and management information system development. Personnel demanded will be experienced professionals with extensive international field experience.

Areas of future need will include the transfer of skills in management, training and administration. These positions will require individuals with international training and field experience; in general, individuals not demanding high salaries.

Government positions in international health are unlikely to increase in the present climate of budget reduction. Church organizations, funded primarily by private contributors, may channel additional funds to domestic activities. Foundations which now employ only a small number

of U.S. professionals directly, may continue their current practice of sponsoring indigenous organizations. The PVOs have expanded in the last ten years, but their level of employment may well recede over the next decade if government funding decreases. Universities will be effected by limited international research. Large corporations with international operations may require more U.S. health professional employees over the next five years, but the demand may decrease as oil producing countries' training institutions come "on-stream."

At present, there are a number of sources of information available to the U.S. health professional seeking overseas employment. The NCIH publishes a directory yearly of U.S.-based agencies involved in international health assistance. The directory provides names, addresses, and contact telephone numbers for all organizations listed. It also supplies information on field activities and countries of involvement. The NCIH has a job placement service which informs individuals of member organizations' needs; a newsletter, which lists requests for professionals is also put out by NCIH.

The Technical Assistance Information Clearing House Directory (TAICH) has extensive listings of organizations involved in many types of overseas activities, including health. The directory is published every ten years and does not list available positions. Persons interested in specific field assignments are advised to contact organizations directly to get on mailing lists and in active placement files.

Persons interested in keeping abreast of new job openings should consider getting job bulletins from the New Transcentury Foundation and Project Concern's job publication "Option." The New Transcentury

Recruitment Center provides short-term consultant locator services and also provides a position-wanted section of the bulletin.

"Options," the publication of Project Concern's Amdoc/Option Agency is a non-profit personnel service which lists vacancies in "areas of need." In addition, several of the schools of public health have and circulate job information bulletins. The Johns Hopkins University Job Opportunities in Public Health Bulletin costs \$12 for 2 issues per month for 6 months. Columbia, Illinois, Michigan, Oklahoma, Texas, Yale and the Harvard Schools of Public Health also publish regular job bulletins, primarily through their offices of Student Affairs. While there is no complete listing of all organizations involved in international health work, many organizations and umbrella organizations list available positions. Even the Washington Post includes health jobs in their special International Opportunities Supplement.

In summary, there are numerous sources of information for international job seekers. Serious lookers are advised to contact more than one of the listed resources.

#### G. Future Investigations Required

The major changes between the 1969 survey and the current survey indicate the need for regular reappraisals, in the future, of U.S. health professionals working in international health. Probably five year surveys would be helpful for policy planning than allowing a decade to pass before reappraising the needs for expanding, curtailing or changing training programs. More current information would also be useful for persons seeking job opportunities in international health and for agencies requiring U.S. health professionals to carry out their programs. Therefore, we

recommend that a survey be carried out in 1987, with the collaboration of The National Council for International Health and international health training institutions.

A survey of OECD and Commonwealth country health professionals in international health would furnish useful information for U.S. policy decisions.

Another area of future study should be a detailed survey of a random sample of international health workers to determine their background training, career patterns, job satisfaction, needs for further training, etc. Such a study would be difficult in terms of drawing an unbiased sample which was large enough to reflect the many varied activities in the field of international health. It would also be difficult from the standpoint of securing an adequate response rate from persons overseas who cannot be conveniently reached by phone for reminders and positive checking of a sample of non-respondents from the initial inquiries. There would be major advantages of building such a survey on the data base established by this current study.

The work currently underway by NCIH in providing guidance in job seeking for U.S. health professionals interested in international health work should be continued and expanded. Member agencies of NCIH and governmental agencies have a major interest in this particular service.

APPENDIX A

QUESTIONNAIRE

ORGANIZATIONAL PROFILE AND  
HEALTH PERSONNEL SURVEY

SEP 25 1981  
Please complete by August 31

Please PRINT or TYPE all answers.

1.0 Name of Organization \_\_\_\_\_

Acronym (if any) \_\_\_\_\_

2.0 Organization's U.S. Address \_\_\_\_\_

Street

City

State

Zipcode

Organization's Telephone Number ( ) \_\_\_\_\_

Area  
Code

3.0 Person in the organization who can be contacted about the information reported in this questionnaire:

Name

Title

Telephone No.

4.0 Please classify your organization into one of the following categories:

- |  |   |
|--|---|
| <input type="checkbox"/> Civic Group               | <input type="checkbox"/> Private and Voluntary Organization |
| <input type="checkbox"/> Foundation                | <input type="checkbox"/> Professional or Trade Association  |
| <input type="checkbox"/> Government Agency         | <input type="checkbox"/> Small Business/Consulting Agency   |
| <input type="checkbox"/> Labor Union               | <input type="checkbox"/> University (public or private)     |
| <input type="checkbox"/> Multinational Corporation | <input type="checkbox"/> Other (Specify: _____)             |

5.0 Does your organization currently implement or provide technical assistance to any health programs (including population, nutrition and sanitation) or health-related efforts outside of the United States?

Yes

No (If NO, please do not complete the rest of the questionnaire; simply return the questionnaire to NCIH in the enclosed envelope.)

6.0 In what types of international health activities is your organization currently involved? Please check the appropriate box(es) for each of the following types of activities. (For this questionnaire international health is defined as any health activity between two or more nations.)

Activities	No Involvement	Programs in the field	Technical support provided*
Clinical activities:			
Hospital care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ambulatory care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communicable disease services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disaster relief health services (including refugees, migrants)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental health services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community health education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health planning/health statistics/ information systems/program evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health manpower training/education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maternal and child health services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Population/family planning services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health program administration and management/financial management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research (laboratory, clinical, operational)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify: _____)			

\* (e.g. professional consultation, provision of medical equipment and supplies)

7.0 In the following list please check all foreign countries in which you currently have health-related programs.

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> Afghanistan                            | <input type="checkbox"/> Ecuador                            | <input type="checkbox"/> Libyan Arab Jamahurriya          | <input type="checkbox"/> Seychelles   |
| <input type="checkbox"/> Albania                                | <input type="checkbox"/> Egypt                              | <input type="checkbox"/> Luxembourg                       | <input type="checkbox"/> Sierra Leone   |
| <input type="checkbox"/> Algeria                                | <input type="checkbox"/> El Salvador                        | <input type="checkbox"/> Madagascar                       | <input type="checkbox"/> Singapore  |
| <input type="checkbox"/> Angola                                 | <input type="checkbox"/> Equatorial Guinea                  | <input type="checkbox"/> Malawi                           | <input type="checkbox"/> Solomon Islands                                      |
| <input type="checkbox"/> Argentina                              | <input type="checkbox"/> Ethiopia                           | <input type="checkbox"/> Malaysia                         | <input type="checkbox"/> Somalia  |
| <input type="checkbox"/> Australia                              | <input type="checkbox"/> Fiji                               | <input type="checkbox"/> Maldives                         | <input type="checkbox"/> South Africa   |
| <input type="checkbox"/> Austria                                | <input type="checkbox"/> Finland                            | <input type="checkbox"/> Mali                             | <input type="checkbox"/> Spain  |
| <input type="checkbox"/> Bahamas                                | <input type="checkbox"/> France                             | <input type="checkbox"/> Malta                            | <input type="checkbox"/> Sri Lanka  |
| <input type="checkbox"/> Bahrain                                | <input type="checkbox"/> Gabon                              | <input type="checkbox"/> Mauritania                       | <input type="checkbox"/> Sudan  |
| <input type="checkbox"/> Bangladesh                             | <input type="checkbox"/> Gambia                             | <input type="checkbox"/> Mauritius                        | <input type="checkbox"/> Suriname   |
| <input type="checkbox"/> Barbados                               | <input type="checkbox"/> German Democratic Republic         | <input type="checkbox"/> Mexico                           | <input type="checkbox"/> Swaziland  |
| <input type="checkbox"/> Belgium                                | <input type="checkbox"/> Germany, Federal Republic of Ghana | <input type="checkbox"/> Mongolia                         | <input type="checkbox"/> Switzerland  |
| <input type="checkbox"/> Benin                                  | <input type="checkbox"/> Greece                             | <input type="checkbox"/> Morocco                          | <input type="checkbox"/> Sweden   |
| <input type="checkbox"/> Bhutan                                 | <input type="checkbox"/> Grenada                            | <input type="checkbox"/> Mozambique                       | <input type="checkbox"/> Syrian Arab Republic                                 |
| <input type="checkbox"/> Bolivia                                | <input type="checkbox"/> Guatemala                          | <input type="checkbox"/> Nepal                            | <input type="checkbox"/> Thailand   |
| <input type="checkbox"/> Botswana                               | <input type="checkbox"/> Guinea                             | <input type="checkbox"/> Netherlands                      | <input type="checkbox"/> Togo   |
| <input type="checkbox"/> Brazil                                 | <input type="checkbox"/> Guinea-Bissau                      | <input type="checkbox"/> New Zealand                      | <input type="checkbox"/> Trinidad and Tobago                                  |
| <input type="checkbox"/> Bulgaria                               | <input type="checkbox"/> Guyana                             | <input type="checkbox"/> Nicaragua                        | <input type="checkbox"/> Tunisia  |
| <input type="checkbox"/> Burundi                                | <input type="checkbox"/> Haiti                              | <input type="checkbox"/> Niger                            | <input type="checkbox"/> Turkey   |
| <input type="checkbox"/> Byelorussian Soviet Socialist Republic | <input type="checkbox"/> Honduras                           | <input type="checkbox"/> Nigeria                          | <input type="checkbox"/> Uganda   |
| <input type="checkbox"/> Canada                                 | <input type="checkbox"/> Hungary                            | <input type="checkbox"/> Norway                           | <input type="checkbox"/> Ukrainian Soviet Socialist Republic                  |
| <input type="checkbox"/> Cape Verde                             | <input type="checkbox"/> Iceland                            | <input type="checkbox"/> Oman                             | <input type="checkbox"/> Union of Soviet Socialist Republics                  |
| <input type="checkbox"/> Central African Republic               | <input type="checkbox"/> India                              | <input type="checkbox"/> Pakistan                         | <input type="checkbox"/> United Arab Emirates                                 |
| <input type="checkbox"/> Chad                                   | <input type="checkbox"/> Indonesia                          | <input type="checkbox"/> Panama                           | <input type="checkbox"/> United Kingdom of Great Britain and Northern Ireland |
| <input type="checkbox"/> Chile                                  | <input type="checkbox"/> Iran                               | <input type="checkbox"/> Papua New Guinea                 | <input type="checkbox"/> United Republic of Cameroon                          |
| <input type="checkbox"/> China                                  | <input type="checkbox"/> Iraq                               | <input type="checkbox"/> Paraguay                         | <input type="checkbox"/> United Republic of Tanzania                          |
| <input type="checkbox"/> Colombia                               | <input type="checkbox"/> Ireland                            | <input type="checkbox"/> Peru                             | <input type="checkbox"/> Upper Volta  |
| <input type="checkbox"/> Comoros                                | <input type="checkbox"/> Israel                             | <input type="checkbox"/> Philippines                      | <input type="checkbox"/> Uruguay  |
| <input type="checkbox"/> Congo                                  | <input type="checkbox"/> Italy                              | <input type="checkbox"/> Poland                           | <input type="checkbox"/> Venezuela  |
| <input type="checkbox"/> Costa Rica                             | <input type="checkbox"/> Ivory Coast                        | <input type="checkbox"/> Portugal                         | <input type="checkbox"/> Viet Nam   |
| <input type="checkbox"/> Cuba                                   | <input type="checkbox"/> Jamaica                            | <input type="checkbox"/> Qatar                            | <input type="checkbox"/> Yemen  |
| <input type="checkbox"/> Cyprus                                 | <input type="checkbox"/> Japan                              | <input type="checkbox"/> Romania                          | <input type="checkbox"/> Yugoslavia   |
| <input type="checkbox"/> Czechoslovakia                         | <input type="checkbox"/> Jordan                             | <input type="checkbox"/> Rwanda                           | <input type="checkbox"/> Zaire  |
| <input type="checkbox"/> Democratic Kampuchea                   | <input type="checkbox"/> Kenya                              | <input type="checkbox"/> Saint Lucia                      | <input type="checkbox"/> Zambia   |
| <input type="checkbox"/> Democratic Yemen                       | <input type="checkbox"/> Kuwait                             | <input type="checkbox"/> Saint Vincent and the Grenadines | <input type="checkbox"/> Zimbabwe   |
| <input type="checkbox"/> Denmark                                | <input type="checkbox"/> Lao People's Democratic Republic   | <input type="checkbox"/> Samoa                            |   |
| <input type="checkbox"/> Djibouti                               | <input type="checkbox"/> Lebanon                            | <input type="checkbox"/> Sao Tome and Principe            |   |
| <input type="checkbox"/> Dominica                               | <input type="checkbox"/> Lesotho                            | <input type="checkbox"/> Saudi Arabia                     |   |
| <input type="checkbox"/> Dominican Republic                     | <input type="checkbox"/> Liberia                            | <input type="checkbox"/> Senegal                          |   |

**NOTE: The following questions apply to U.S. citizens (excluding resident aliens) who are involved in the international health programs or health-related efforts of your organization, including individuals based in the United States as well as those working in foreign countries. Non-U.S. personnel are excluded from consideration in these questions. If your organization uses only non-U.S. personnel, question #8.0 should be answered with NO.**

8.0 Does your organization have U.S. citizens working directly in the management or implementation of international health programs, either abroad or in the United States?

Yes

No (If NO, please skip to question #11.)

9.0 We would like to know what types of U.S. health personnel (including consultants) participate in your organization's international health programs, including population, nutrition and sanitation, and what types of health personnel are currently needed. The following definitions should be used in completing the items:

Long-term employees: A salaried person who is employed either full or part-time for a period of one year or more.

Short-term employees: A salaried person who is employed either full time or part-time for less than one year (e.g. most consultants). For a full-time employee who spends less than 50% of time in international health work mark as short-term employee.

Volunteer: A non-salaried person working for the organization, who may be receiving either a stipend, transportation costs, subsistence or living allowance.

9.0 Please fill in the approximate number of your organization's U.S. health professionals in the appropriate spaces. Make estimates where precise data are difficult to obtain. Include U.S. citizens working in the U.S. and abroad in international health, including population, nutrition, and sanitation projects. Classify people according to their major job function only.

Type of Personnel		Currently Working			Additional Needed (budgeted vacancies)			Check those categories in which you have particular difficulty recruiting
		Long term	Short term	Volunteer	Long term	Short term	Volunteer	
Physicians	Clinical							
	Public Health							
	Other							
Nurses	Clinical							
	Public Health							
	Other							
Dentists	Clinical							
	Other							
Social Workers								
Health Educators								
Pharmacists								
Nutritionists								
Technicians (lab., X-ray, etc.)								
Allied Health personnel (dental assistants, P.T.s, P.A.s)								
Environmental health specialists (sanitarians, engineers)								
Health and hospital administrators/managers/planners (excluding MDs, RNs and other above listed professions)								
Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)								
Other (list all types):								

10.0 Please rank the following recruitment techniques according to how often your organization uses them. (1 = most often used)

Referral by word of mouth

Referrals from other organizations

Advertisements in your own publication (U.S., foreign, etc.)

Advertisements in other U.S. publications (e.g. newspapers, journals)

Advertisements in other foreign publications

Other (specify: \_\_\_\_\_)

11.0 Does your organization maintain an in-house listing or registry of personnel available for international health work?

Yes If yes, does this include: full-time employees  
part-time employees/consultants  
volunteers

No (if NO, skip to question #13.0)

12.0 Does your organization ever share this listing or registry with other organizations or agencies?

Yes

No

13.0 Would your organization be interested in using a listing of U.S. health personnel available for employment with organizations in international health, if one were made available?

Yes

No

14.0 Do you wish to be listed in the Directory?

Yes

No

THANK YOU VERY MUCH FOR YOUR COOPERATION. PLEASE  
RETURN THE QUESTIONNAIRE TO NCIH BY AUGUST 31, 1981  
IN THE ENCLOSED ENVELOPE.



NATIONAL COUNCIL FOR INTERNATIONAL HEALTH  
2121 Virginia Avenue, N.W., Suite 303  
Washington, D.C. 20037

APPENDIX B  
NON-RESPONDENT SURVEY

The purpose of the non-respondent survey was to find out if those organizations that did not return our questionnaire differed from respondents in any respect meaningful to our investigation. We decided, in view of the level of accuracy desired, that a sample size of 55 would adequately reflect the population characteristics of interest. An alphabetical listing of all questionnaire non-respondents was compiled, the sample was randomly selected, and organizations were contacted by telephone to ascertain organization type, international health activities, and U.S. personnel employed. (See Appendix A, 4-9).

The sample of non-respondents was chosen with the use of a random number table. A three-digit number was randomly chosen for the starting point. The non-respondent list was numbered, and selection began at number 322. Using the last digit in each random number table column, moving vertically down the list, selections were made for inclusion in the sample to be surveyed.

The random assignment process yielded a sample of 110 potential non-respondents. The sample of 110 was divided into 55 "first contact" organizations, each of which was paired with a back-up organization should the first contact organization (1) not be listed in directory assistance or (2) be unable to locate due to misspelling or incomplete recording of organization name. If either of these conditions existed, the alternate was contacted. Data was recorded on survey questionnaires for all organizations contacted.

Organizations contacted in the non-respondent sample survey reported a total of 210 U.S. health professionals working in international health. Of those professionals reported, 64 were currently working long-term, 39 currently short-term and 107 volunteers. An analysis of the distribution of these workers by profession indicated that the sample was too small for special conclusions on types of personnel working for specific types of non-responding organizations. Therefore, numbers of personnel from non-respondent organizations were expanded to 100% of employment status and a total of 2,100 was added to all estimations of the universe of U.S. health professionals working in international health (640 long-term, 390 short-term, and 1,070 volunteer).

APPENDIX C

KEY INFORMANT INTERVIEW GUIDE

KEY INFORMANT INTERVIEW GUIDE

1. What is the overall climate for U.S. Health Professionals in International Health?  
next 5 years? \_\_\_\_\_ in your organization? 5 years \_\_\_\_\_  
next 10 years? \_\_\_\_\_ 10 years \_\_\_\_\_
2. Reasons for your projected trends?
3. Have you difficulties in recruiting U.S. Health Professionals?  
- Which Professionals are most difficult to recruit?
4. Rate factors of importance in your decision to hire U.S. Health Professionals.  
- Basic professional training? \_\_\_\_\_  
- Special training in international health? \_\_\_\_\_  
- Language capability? \_\_\_\_\_  
- Others? \_\_\_\_\_
5. Would your organization consider hiring in apprentice positions?

APPENDIX D  
CURRENTLY WORKING PERSONNEL  
BY TYPE OF ORGANIZATION

Table D-1

Numbers of U.S. Health Personnel Working in  
Church-Related Organizations\*

Occupational Type	Currently Working As:			Total	%
	Long-term Employees	Short-term Employees	Volunteers		
Physicians					
Clinical	238	14	94	346	
Public Health	31	1	11	43	
Other	46	9	140	195	26%
Nurses					
Clinical	176	15	131	322	
Public Health	100	0	44	144	
Other	233	27	135	395	39%
Dentists					
Clinical	109	1	74	184	
Other	3	1	82	86	12%
Social Workers	17	3	16	36	
Health Educators	29	1	20	50	
Pharmacists	19	1	11	31	
Nutritionists	13	1	11	25	
Technicians (lab., X-ray, etc)	62	2	14	78	
Allied Health Personnel (dental assistants, P.T.s, P.A.s)	20	2	50	72	
Environmental Health Specialists (sanitarians, engineers)	4	0	1	5	
Health and Hospital administrators/managers/ planners (excluding MDs, RNs and other above listed professions)	89	2	22	113	5%
Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)	24	1	14	39	
Other	8	0	27	35	2%
<b>Total</b>	<b>1,221 (56%)</b>	<b>81 (4%)</b>	<b>897 (41%)</b>	<b>2,199</b>	

\*Personnel currently working for 82 organizations responding to survey. All are U.S. citizens working abroad or in the U.S. on international health activities. For definitions of types of workers, see text.

Table D-2

Private Voluntary Organizations, Civic Groups, Foundations, & Professional  
& Trade Associations\*

## Currently Working As:

Occupational Type	Long-term Employees	Short-term Employees	Volunteers	Total	%
Physicians					
Clinical	11	4	138	153	
Public Health	30	58	44	132	
Other	9	1	17	27	19%
Nurses					
Clinical	29	1	38	68	
Public Health	23	46	67	136	
Other	23	9	66	98	18%
Dentists					
Clinical	9	2	53	64	
Other	1	7	4	12	4%
Social Workers	30	6	34	70	
Health Educators	26	49	12	87	
Pharmacists	5	2	22	29	
Nutritionists	15	23	27	65	
Technicians (lab., X-ray, etc)	5	0	10	15	
Allied Health Personnel (dental assistants, P.T.s, P.A.s)	2	3	24	29	
Environmental Health Specialists (sanitarians, engineers)	33	42	19	94	
Health and Hospital administrators/managers/ planners (excluding MDs, RNs and other above listed professions)	101	48	108	257	15%
Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)	52	33	116	201	12%
Other	74	23	34	131	8%
<b>Total</b>	<b>478 (29%)</b>	<b>357 (21%)</b>	<b>833 (50%)</b>	<b>1,668</b>	

\*Personnel currently working for 92 organizations responding to survey. All are U.S. citizens working abroad or in the U.S. on international health activities. For definitions of types of workers, see text.

Table D-3

## Numbers of U.S. Health Personnel Working in Universities\*

Occupational Type	Currently Working As:			Total	%
	Long-term Employees	Short-term Employees	Volunteers		
Physicians					
Clinical	57	43	18	118	
Public Health	59	70	2	131	
Other	66	46	3	115	37%
Nurses					
Clinical	16	31	2	49	
Public Health	15	4	0	19	
Other	4	11	0	15	8%
Dentists					
Clinical	0	18	3	21	
Other	3	0	0	3	2%
Social Workers	0	0	0	0	
Health Educators	25	25	3	53	
Pharmacists	18	3	0	21	
Nutritionists	7	12	1	20	
Technicians (lab., X-ray, etc)	15	3	0	18	
Allied Health Personnel (dental assistants, P.T.s, P.A.s)	10	3	4	17	
Environmental Health Specialists (sanitarians, engineers)	24	4	0	28	
Health and Hospital administrators/managers/ planners (excluding MDs, RNs and other above listed professions)	50	30	2	82	8%
Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)	38	39	4	81	8%
Other	93	45	56	194	20%
<b>Total</b>	<b>500 (51%)</b>	<b>387 (39%)</b>	<b>98 (10%)</b>	<b>985</b>	

\*Personnel currently working for 67 organizations responding to survey. All are U.S. citizens working abroad or in the U.S. on international health activities. For definitions of types of workers, see text.

Table D

Numbers of U.S. Health Personnel Working in  
Corporations and Small Businesses\*

Occupational Type	Long-term Employees	Currently Working As:		Total	%
		Short-term Employees	Volunteers		
Physicians					
Clinical	25	4	3	32	
Public Health	21	28	1	50	
Other	2	0	0	2	10%
Nurses					
Clinical	2	0	0	2	
Public Health	21	48	1	70	
Other	5	1	0	6	9%
Dentists					
Clinical	3	0	0	3	
Other	2	2	0	4	
Social Workers	6	16	0	22	
Health Educators	27	22	2	51	
Pharmacists	0	2	0	2	
Nutritionists	11	23	1	35	
Technicians (lab., X-ray, etc)	0	4	0	4	
Allied Health Personnel (dental assistants, P.T.s, P.A.s)	6	0	0	6	
Environmental Health Specialists (sanitarians, engineers)	47	26	0	73	
Health and Hospital administrators/managers/ planners (excluding MDs, RNs and other above listed professions)	212	168	2	382	44%
Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)	41	65	3	109	12%
Other	24	1	0	25	3%
<b>Total</b>	<b>455 (50%)</b>	<b>410 (47%)</b>	<b>13 (1%)</b>	<b>878</b>	

\*Personnel currently working for 31 organizations responding to survey. All are U.S. citizens working abroad or in the U.S. on international health activities. For definitions of types of workers, see text.

Table D-5

Numbers of U.S. Health Personnel Working in  
Governmental Agencies\*

Occupational Type	Currently Working As:			Total	%
	Long-term Employees	Short-term Employees	Volunteers		
<b>Physicians</b>					
Clinical	9	1	0	10	
Public Health	31	30	0	61	
Other	2	0	0	2	10%
<b>Nurses</b>					
Clinical	0	0	2	2	
Public Health	2	0	160	162	
Other	0	0	0	0	23%
<b>Dentists</b>					
Clinical	0	0	2	2	
Other	1	0	0	1	
Social Workers	0	0	50	50	
Health Educators	1	0	6	7	
Pharmacists	1	0	1	2	
Nutritionists	2	13	20	35	
Technicians (lab., X-ray, etc)	4	0	30	34	
<b>Allied Health Personnel (dental assistants, P.T.s, P.A.s)</b>					
	0	0	0	0	
<b>Environmental Health Specialists (sanitarians, engineers)</b>					
	7	0	30	37	
<b>Health and Hospital administrators/managers/ planners (excluding MDs, RNs and other above listed professions)</b>					
	29	17	1	47	7%
<b>Health Manpower trainers/educators (excluding MDs, RNs, and other above listed professions)</b>					
	1	9	0	10	
Other	236	3	8	247	35%
<hr/>					
<b>Total</b>	<b>326 (46%)</b>	<b>73 (10%)</b>	<b>310 (44%)</b>	<b>709</b>	
<hr/>					
<b>Total including WHO</b>	<b>584</b>			<b>857</b>	

\*Personnel currently working for 8 organizations responding to survey. All are U.S. citizens working abroad or in the U.S. on international health activities. For definitions of types of workers, see text. (WHO only included in corrected total)

APPENDIX E  
SELECTED INTERNATIONAL HEALTH  
COURSE OFFERINGS IN  
U.S. SCHOOLS OF PUBLIC HEALTH

## BERKELEY

252. **International Maternal and Child Health.** (2) One 2-hour lecture per week. Prerequisite: graduate standing in public health or consent of instructor. Maternal and Child Health programs outside of the United States. May be repeated for credit. The Staff (W, Sp)

## UCLA

185. **The World's Population and Food.** Lecture, three hours. Prerequisites: Econ 1 and 2, or 100. Upper division or graduate standing. World food sources; major food groups; human food requirements and consumption; food in developing economics; international movement of foods; interrelations of foods, population, and economic progress. Rada

414. **Applied Epidemiology In Latin America.** (½ course) Lecture and discussion, two hours. Prerequisites: PH 100A, 112, 174E or equivalent and consent of instructor. Application of epidemiologic methods to health problems in Latin America. Armijo

214. **Infectious and Tropical Disease Epidemiology.** Lecture, three hours; discussion, three hours. Prerequisites: PH 100A, 112, 113 or equivalent, and consent of instructor. Epidemiology of major infectious and tropical diseases in developing countries including those with direct or contact mode of spread and those vector borne. Schacher, Work

## POPULATION, FAMILY AND INTERNATIONAL HEALTH

151. **Nutrition and Health.** (½ course) Lecture, two hours. Prerequisites: PH 110 or 150 or equivalent, and consent of instructor. Basic and clinical nutrition theory and practice for students in health science curricula. Alfin Slater, D. Jelliffe

170. **Family Health and Biosocial Development.** Lecture, two hours; discussion, two hours. Prerequisite: Psych 130 or Physiol 100 or equivalent, and consent of instructor. Biosocial factors related to normal human physical, intellectual and emotional growth and development from family and public health perspective. C. Neumann, Katz

479. **Nutrition Programs and Policies for Families in the Third World.** Lecture, two hours; discussion, two hours. Prerequisites: PH 472 or equivalent and consent of instructor. Programs and policies to improve the nutrition of families in Third World countries are considered with special reference to mothers and young children. P. Jelliffe

479D. **Nutrition Education and Training: Third World Consideration.** (½ course) Lecture, one hour; student participation, one hour. Prerequisites: PH 270 or equivalent or consent of instructor. Problems and priorities in nutrition education and training for families and health workers in Third World countries developed over recent decades are revised, including new concepts in Primary Health Care Services, mass media, communications and Governmental and International interventions. P. Jelliffe

174E. **Health, Disease and Health Services in Latin America.** Lecture, four hours. Prerequisites: One upper division course in Latin American Studies or PH 110. Introduction to health, disease and health services in Latin America with emphasis on epidemiology, health administration, medical anthropology and nutrition. Scrimshaw

174H. **Public Health In the People's Republic of China.** (½ course) Lecture, four hours. Prerequisites: PH 130 or equivalent or two upper division or graduate courses in social or behavioral sciences or medical sciences and consent of instructor. Historical overview of policies and implementation of public health in the People's Republic of China from 1949 to the present. Attention will be given to relevance for public health in other developing countries. Chung

179A. **Health Problems and Programs in Africa.** (½ course) Lecture, one hour; discussion, one hour. Prerequisites: One of the following or equivalent and consent of instructor: PH 110, Hist 175 (A-Z), 175 (A-B), 177, 178 (A or B), 179 (A or B), 275, 278 (A or B), Anthro 107 (A or B), 113, M153, 254, 269U, P.S. 165 (A, B, or C), 250E, Geog 122, 189, 189, 283. Consideration of traditional beliefs about illness and treatment, factors affecting health status in Africa, major health problems and some programs proposed as remedies. Nicholas

179B. **African Health Sector Analysis Seminar.** (½ course) Seminar, two hours. Prerequisites: PH 179A (prior or concurrently). Approach is that of a multi-disciplinary team analyzing the health sector of a representative African country to determine needs and priorities for external aid. Nicholas

472A. **Maternal and Child Health in Developing Areas.** Lecture, 4 hours. Prerequisites: PH 270, 470A or equivalent, and consent of instructor. Major health problems of mothers and children in developing areas stressing causation, management and prevention. Particular reference to adapting programs to limited resources in cross-cultural milieu. Jelliffe, Neumann

472B. **Recent Advances in Maternal and Child Health in Developing Countries.** (½ course) Seminar, two hours. Prerequisites: PH 170, 473D, 270, 472 or equivalent and consent of instructor. Analytic in-depth consideration of recent advances in the field of international maternal and child health with special reference to developing countries. D. Jelliffe and The Staff

472D. **Overseas Refugee Health Programs.** (½ course) Lecture, one hour; discussion, one hour. Prerequisites: PH 110 or 111, 112, 270 or 472 or equivalent and consent of instructor. Comprehensive overview of the health problems of overseas refugee situations and of programs designed to deal with these special circumstances. D. Jelliffe

275. **Human Lactation: Biological and Public Health Significance.** (½ course) Lecture, two hours. Prerequisites: PH 112, 270 or equivalent, and consent of instructor. Biological and economic aspects of human lactation in industrialized and developing countries. D. Jelliffe

470A. **International Health Agencies and Programs.** Lecture, four hours. Prerequisite: Three upper division or graduate courses in health science, social or behavioral science, and consent of instructor. Historical development and functions of international health organizations. Key problems and trends in international health. Bilateral programs, medical-religious missions, private foundations, and others disseminating information, money and services. A. Neumann

470B. **Advanced Issues in International Health.** Lecture, two hours; discussion, two hours. Prerequisites: PH 173, 175, 270, 470A or 472 or 475. In depth focus on major health care issues confronting recipient less-developed countries and donors of technical and financial assistance. A. Neumann

271. **Medical Anthropology.** Lecture, four hours. Prerequisites: PH 110, 112, one upper division course in psychology, sociology, or anthropology or equivalent, and consent of instructor. Cross-cultural aspects of human behavior as they relate to perception, treatment, incidence and prevalence of disease and illness. Scrimshaw

240. **Health Care Issues in International Perspective.** Lecture, four hours. Prerequisites: Two courses in Health Administration, two upper division courses in Social Sciences, or equivalent and consent of instructor. Analysis of crucial issues in health care: manpower policy, economic support, health facilities, patterns of health service delivery, regulation, planning and other aspects of health care systems as presented in the settings of European welfare states, developing nations, and socialist countries. Roemer, M

## COLUMBIA

**Public Health P6604. Cross-cultural perspectives on human reproduction**

**3 hours a week. 3 points.**

The social and cultural correlates of the human reproductive life cycle; patterns of marriage, natality, child care, and family growth in a cross-cultural context.

**Public Health P9605. Issues in population and socioeconomic development**

**2 hours a week. 2 points.**

Short-term and long-term interrelationships between population change and social and economic development, from the perspective of providing for the basic needs (minimum income, food, employment, health) of those living in absolute poverty, especially in Third World countries. A simple yet sophisticated computer program for population projections is explained and empirically-minded students have an opportunity to use it. Examination or term paper required.

**Public Health P8692. International health: independent studies**

**Hours to be arranged. 1 to 3 points.**

Prerequisite: the instructor's permission.

Principles of independent studies are followed, with the student taking the lead and faculty serving as consultants. Together, learning objectives are developed, educational resources identified, methods of study and evaluation techniques selected. The faculty represent expertise in the areas of international health generally, nutrition and food policy, population and related issues, and maternal and child health. Faculty serve to convene initial and end-of-course seminars, to help students map out areas of interest, to assign faculty consultants, and to explore resources and methods of student-faculty interaction.

## Tropical Medicine

**Public Health P6806. Introduction to medical entomology**

**2 half-days a week. 3 points.**

Prerequisite: the instructor's permission.

Required of all candidates for the degree of Master of Science in parasitology. Arthropod vectors of human disease. Detailed study of taxonomy. Emphasis on biology, control of disease vectors, and the relationship of the pathogenic organisms to the vectors. Lectures, demonstrations, and laboratory studies. Examinations.

**Public Health P6808. Arthropod morphology**

**2 half-days a week. 2 points.**

External and internal morphology of arthropods, with special reference to those of medical importance, indicating relation of structure and function to the development and transmission of pathogenic organisms, and to arthropod control and taxonomy. Periodic examinations, final examination.

**Public Health P6809. Identification of mosquitoes**

**1 to 3 half-days a week. 1 to 3 points.**

Prerequisite: the instructor's permission.

Intensive study of the taxonomy of adult and larval mosquitoes. Lectures, conferences, and laboratory.

**Public Health P6815. Parasitic diseases and international health**

**3 hours a week. 3 points.**

Prerequisite: the instructor's permission.

Parasitic diseases caused by protozoa and helminths and of arthropod vectors of human diseases, especially those in tropical and subtropical areas of the world. Emphasis placed on their epidemiology, the various social, economic, and political factors that affect their control and spread, and their importance to international health. Lectures and class discussions. Final examination and term paper.

## HARVARD

TPH 203d. *Perspectives in Tropical Health: The Background for Decision Analysis* Lectures, conferences. *One 2-hour session each week. 1 unit.* Guest Lecturers. Not given 1981-82.

Provides background information on environmental, social, economic, and political factors that influence health programs in the tropics. At each session a distinguished guest lecturer covers an assigned topic, including subjects such as the development of professional education, problems of agriculture, nutrition, and water supply, and the political background of international cooperation. Each presentation followed by informal student discussion. Enrollment open to all students.

TPH 210d. *Current Problems in Malaria* Seminars, laboratory exercises. *One 3-1 hour session each week. 2 units.* Dr. Chernin, Dr. Spielman, Dr. Weller, Members of the Department. To be given 1982-83; alternates yearly with TPH 203d.

Supplements the subject material on malaria offered in TPH 201a and TPH 204c. Particular attention is given to problems now encountered in eradication and control programs. In the laboratory, experience is provided with procedures essential to the epidemiologic investigation of malaria.

Prereq. TPH 201a and permission of the instructors.

ID 209a,b. *Health Services in Developing Countries*

Seminars. *One 2-hour session each week. 2.5 units.* Dr. Cash, Dr. Koch-Weser.

Provides a broad overview of health and health care problems in developing countries. Central issues include: ecologic, environmental, and other characteristics of developing countries affecting health; analysis of their health problems, the alternative approaches to solving them, the policy and planning issues in applying solutions, and the organizational alternatives for utilizing health resources; the nature, composition, and training of the health team for use at the local and district levels; and the relation of health to development and the position of health in national planning priorities. Preference given to students who have previously been involved in international health activities.

MCHA 206c,d. *Maternal and Child Health in Developing Countries*

Seminars. *One 2-hour session each week. 2.5 units.* Dr. Veladian.

Using readings, discussions, and case presentations, considers issues of high priority in the health of mothers and children in developing countries, placing particular emphasis on the interactions between health and poverty in societies in rapid social and cultural transition. Complements, but is not a substitute for, the issues raised in ID 209a,b. Considerable reading is required to fulfill the course objectives.

## UNIVERSITY OF HAWAII

- 616 **Basic Concepts of International Health (3) I, II** Voulgaropoulos  
World development, resultant interdependent global health problems; development of international health and related technical assistance agencies, their methodologies and effectiveness; special emphasis on health problems of Asia and the Pacific.
- 617 **Comparative Public Health Systems (3) II** Voulgaropoulos  
Health systems in selected countries and communities of Asia and Pacific. Historical development and relevant socio-cultural, economic, political factors influencing development. Pre: consent.
- 618 **Cross-cultural Perspectives in International Health (3) I** Matsumoto  
Discussion of international health activities in cross-cultural perspective; exchange of technologies information, values, attitudes.
- 619 **International Health Programming (2) II** Izutsu  
Studies in health programming, emphasizing practical aspects of developing health programs and projects. Students assigned to ongoing international program for in-depth study and field training. Pre: consent.
- 620 **Introduction to International Health (3) I, II** Staff  
Global health problems, emphasizing the major attempts to deal with health problems resulting from rapid change, new technologies, population change, confrontation of cultures; the role of international and other health agencies.
- 621 **PH Nutrition Problems in Asia and Pacific (3) II** Hankin/Asatson  
Biological, sociocultural, and economic factors related to nutrition problems and applied programs in developing countries. Methods of identifying measurable problems and designing practical programs. Pre: consent.

JOHNS HOPKINS UNIVERSITY

**22A01 International Health 1: Introduction to International Health.** (4 units) First quarter. Drs. Parker, Taylor and staff.

This introductory course helps the student understand the approaches used by various countries in solving their health and medical care problems; become familiar with the role of major international health organizations; and analyze some of the current important issues in international health.

**22A02 International Health 2. Program Planning and Project Development in International Health.** (4 units) Third quarter. Drs. Parker, Taylor and staff.

This course provides opportunity for indepth concentration on a subject of particular interest to the student and practical experience in the methodology of planning research and operational projects. Students will design, develop written proposal for, present and critique a self-selected research project or operational program in the field of international health.

Prerequisite: Consent of instructor

**14A03 Biostatistics 3-International Health 3-Health Care Organization 228. Quantitative Decision Procedures.** (4 units) Third quarter. Drs. Reinke and DeSweemer. For course description, see Department of Biostatistics.

**16A04 Behavioral Sciences 4-International Health 4. Social and Behavioral Aspects of Planning and Program Initiation.** (4 units) Fourth quarter. Dr. White. For course description, see Department of Behavioral Sciences.

**55A15 International Health 5-Public Health Administration 5. Comprehensive Health Planning.** (6 units) Fourth quarter. Drs. Reinke, Studnicki and staff.

The course stresses the importance of the group process in the application of multidisciplinary methods of planning covered in other courses of the School, most notably in Basic Techniques for Health Planning (55A16). This course is organized as a workshop in which groups proceed through the various stages of actual development of a health plan. Areas for which such plans are prepared include states or metropolitan areas of the U.S., as well as other states or countries at various levels of development.

**32(A,B)07 Population Dynamics 7-International Health 7. Family Planning Administration** (4 units per quarter) Third and fourth quarters: lectures and lab. Drs. Chow, Rider, Taylor and Thorne. For course description, see Department of Population Dynamics.

**22A09 International Health 9-Health Care Organization 229. The Teaching and Learning of Community Health.** (4 units) Third quarter: lectures and lab. Drs. Golden, Parker, Williamson, Schor and Taylor.

This course teaches "how to teach." It is intended for present and future teachers of medical, nursing, and other health practitioner students. Emphasis is on the learning process, including the setting of educational objectives, instructional methods, and evaluation. Teams of students prepare and present mini-courses to professional students and community groups. Content is selected from community health topics.

Course objectives are: To have the learner exhibit skills in educational planning and evaluation, demonstrate teaching skills and become familiar with the scope of community health and its place in health professional curricula. The course is taught through seminars, with considerable small group work. Enrollment is limited to 25.

Prerequisite: Consent of instructor.

**22A10 International Health 10-Health Care Organization 211. Economics of Health.** (3 units) Third quarter. Drs. Sorkin and Salkever.

The purpose of this course is to acquaint students with those principles and techniques of economics that are helpful in developing and evaluating public health programs. The economic implications of some leading issues and problems in health services are explored. Lecture topics focus on issues relevant to both developed and developing countries.

**26A26 Pathobiology 26-Epidemiology 21-International Health 11. Clinical Aspects of Tropical Diseases.** (4 units) Fourth quarter. Drs. Simpson, Hillis, Baker, Szklo and guest lecturers; in collaboration with the Department of Medicine. For course description, see Department of Pathobiology.

**22A12 International Health 12-Population Dynamics 8. Elements of Economics.** (4 units) Second quarter. Drs. Sorkin and Sirageldin.

This course provides a basic understanding of micro- and macro-economics. Major topics include the elements of supply and demand, fundamentals of national income accounting, equilibrium of the firm and economic growth and development. Illustrations of some fundamental concepts will be drawn from health and population economics.

**55A16 International Health 13. Basic Techniques for Health Planning.** (4 units) Fourth quarter. Drs. Reinke, Baker and staff.

This course reviews the role of the following quantitative disciplines as a basis for health planning: statistics, demography, epidemiology, economics, administration and management, and operations research and systems analysis. In addition, it introduces the student to special considerations and

methods of manpower and facilities planning, the role of financing and insurance mechanisms in planning, and the relation between planning and evaluation.

**22A16 International Health 16. Analytical Models in Health Practice Research and Planning.** (3 units) Third quarter. Dr. Reinke.

The role of field research and evaluation in relation to planning is considered. The course first identifies basic tools of quantitative analysis applicable to complex problems involving multiple variables not readily controlled experimentally. The tools are then applied to illustrative models developed to represent problems encountered in health planning and field research. Finally, translation of evaluative research findings into realistic plans for action is stressed.

**30A96 Operations Research 96-International Health 18-Behavioral Sciences 32. Socioeconomic Environment of Health.** (3 units) Fourth quarter. Dr. Brenner. For course description, see Division of Operations Research.

**22A19 International Health 19. Planning Educational Programs for Primary Care Practitioner.** (4 units) Fourth quarter. Dr. Golden and Staff.

This course prepares students to take the necessary steps in planning educational programs and courses, with emphasis on primary ambulatory care. Attention is given to development of political and financial supports, coordination of educational objectives with health services needs, recruitment and selection of students, faculty development, students and program evaluation, enhancement of career development, and continuing education activities.

Case studies from developed and developing societies form the basic methodology for learning basic principles and approaches.

**16A11 Behavioral Sciences 11-International Health 21. Anthropological Perspectives in Health and Illness.** (2 units) Third quarter. Dr. Unschuld and staff. For course description, see Department of Behavioral Sciences.

**16A30 Behavioral Sciences 30-International Health 22. Western Medicine in Societies with Traditional Healing Systems.** (3 units) Third quarter. Dr. Unschuld. For course description, see Department of Behavioral Sciences.

**18A26 Environmental Health Sciences 26-International Health 23. Tropical Environmental Health.** (2 units) Third quarter. Dr. Kawata. For course description, see Department of Environmental Health Sciences.

**30A224 Health Care Organization 224-International Health 24. National, Regional and Urban Health Policy and Planning.** (4 units) Fourth quarter. Dr. Navarro and staff. For course description, see Division of Health Care Organization.

**International Health Seminar.** First, third and fourth quarters. Dr. Taylor and staff.

Topics of current interest in international health will be presented by faculty, visiting experts, and students.

**22(A,B,C,D)30 International Health 30. Readings in Nutrition.** (2 units per quarter) Four quarters. Drs. Graham, MacLean and Trowbridge.

This course will survey pertinent nutrition literature of the past 25 years in the first quarter and review critically current literature for the remaining three quarters. Objective is to familiarize students in either the Nutrition Program or in the Nutrition Planning Course with sources of information pertinent to nutrition and to develop a critical attitude to the nutrition literature. This will be assessed through discussion of assigned articles. Course will be graded pass/fail. It is designed for students in the Nutrition Program or the Course in Nutrition in Health Planning, others by consent of instructor. Class is limited to 15 students.

**22A32 International Health 32. Nutrient Requirements.** (2 units) First quarter. Drs. Graham, MacLean and Trowbridge.

The course will examine in depth the manner in which requirements of energy, protein, specific amino acids, vitamins, and minerals have been estimated for different populations and age groups, and the way in which these estimates have been translated into recommended intakes. It will explore the alternatives for satisfying these requirements with foods commonly available in different parts of the world and the possible shortcomings of various alternatives. The long-range potential for traditional and unconventional sources of nutrients will be assessed. Achievement of objectives will

be assessed through class discussion and short answer and brief essay examinations. Class is limited to 15 students.

**Prerequisite:** Nutrition Program student, advanced degree in Medicine, Dentistry, Veterinary Medicine, Nursing, Nutrition or Biochemistry, or by consent of instructor.

**22A33 International Health 33. Physiology and Pathology of Human Nutrition. (3 units) Second quarter.** Drs. MacLean, Graham and Trowbridge.

This course will cover gastrointestinal physiology as it relates to intake and assimilation of food. The clinical derangements of protein calorie malnutrition and of specific nutrient deficiencies (e.g., anemia, vitamin A deficiency, pellagra, rickets) will be examined with emphasis on how age, nutritional status, nutrient requirements, and environment interact to produce disease. The causes and implications of obesity will be examined as will long-term implications of malnutrition for normal growth and mental development.

The student should be able to demonstrate an understanding of the way in which human beings of different ages utilize food, of the way alteration in needs and utilization produce and interact with disease states, and of the common clinical syndromes of both under and overnutrition. This will be assessed through short answer and brief essay types of examinations.

**Prerequisite:** Nutrition Program student, special student in Nutrition, advanced degree in Medicine, Dentistry, Veterinary Medicine, Nursing, Nutrition or Biochemistry, or by consent of instructor.

**22A37 International Health 37-Epidemiology 32. Nutrition Surveys and Surveillance. (3 units) Third quarter.** Dr. Trowbridge.

The course will examine the quantitative techniques used in gathering information about the nutritional status of populations, the interpretation of nutritional data and the application of the data to nutrition planning and program evaluation. The field survey methods reviewed will include dietary, biochemical and demographic techniques but with emphasis on anthropometry. The sources of routinely reported health data relevant to nutrition status surveillance will be reviewed. The interpretation of both survey and surveillance data will be presented and exercises in data interpretation will be carried out using data from developing countries. The course will conclude with an examination of the strengths and limitations of quantitative data in guiding nutrition planning.

**22(A,B)38 International Health 38. Management Issues in Primary Health Care in Developing Countries. (4 units per quarter) Second and third quarters.** Drs. DeSweemer, Parker and Huffman. These courses must be taken in sequence.

This course attempts to increase understanding of the complex issues of management appropriate to primary health care in developing countries. The objective of improving management skills for health service delivery is focused at the local and district levels. The course will concentrate on a systematic, critical and practical approach to service delivery. The major topics covered include: basic management, team building, community participation, manuals, job descriptions, standing orders, supervision, drug management and evaluation of service. Enrollment limited to 20 students.

**Prerequisite:** International Health 22A01 and consent of instructor.

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### SPECIAL STUDIES AND RESEARCH

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**22A20 International Health 20. Special Studies and Research.**

In addition to the course in program planning, suitable students will be encouraged to undertake other special studies, in some cases leading to doctoral research.

UNIVERSITY OF ILLINOIS

INTERNATIONAL HEALTH SCIENCES

HP300\* Introduction to International Health (3 gh) F,Sp

Introduction to the history, philosophy, goals, and achievements of international health. The various governments and agencies committed to international health. Problems of introducing change to communities, comprehensive health planning, health economic, and training of health professionals around the world. Study of population and family planning in international focus. Discussion of the commitments of the United States to programs of international health.

Prerequisites: Enrollment in School of Public Health or consent of instructor.

Faculty: Dr. Hennain

HP320\* History of Public Health (2 gh) F

History of health knowledge, practice and programs from the times of ancient Egypt, Greece and Alexandria, Rome, Arab and European Middle Ages, and the Renaissance up to our present time.

Prerequisites: Enrollment in the School of Public Health or consent of instructor.

Faculty: Dr. Hennain

HP331\* Family Studies for Health Professionals (2 gh)

Cross-cultural studies of the family, focusing on application of theory and research findings to family therapy and communication.  
NOT OFFERED IN 1979-80.

Prerequisites: Enrollment in the School of Public Health or consent of instructor.

Faculty: Dr. Hennain

HP340\* Readings on Population and Health (HP333)\*\* (3 gh) F

Survey, critical analysis, and synthesis of literature focusing on the interrelationship of population dynamics with curative and preventive approaches to health.

Prerequisites: None

Faculty: Dr. Hennain

INTERNATIONAL HEALTH SCIENCES - continued

HP350\* Introduction to Demography (2 qh) W

Presents basic concepts of demography; sources and evaluation of demographic data; demographic descriptions of human population and changes over time; interrelationships among changes in structure, migration, and vital rates. Various uses of life tables in demographic analysis.

Prerequisites: HB300 or equivalent with consent of instructor.  
Faculty: To be appointed

HP361\* Public Health Nutrition (2 qh) F

Fundamentals of human nutrition and assessment of nutritional status of population groups. Nutritional problems of the industrialized countries as well as developing areas of the world.

Prerequisites: HP300 and a fundamental course in nutrition or biochemistry, or equivalent with consent of instructor.

Faculty: Dr. Ozerol

+HP371 Nutritional Assessment (3 qh) W

Principles and practice of nutritional assessment (survey, evaluation, and surveillance) are presented in detail. Various techniques and procedures used in dietary, clinical, anthropometric and laboratory assessment are reviewed and discussed, with consideration given to variations applicable to the different age/sex groups.

Prerequisites: HP361, or equivalent with consent of instructor.  
Faculty: Dr. Ozerol

HP410\* International Health Studies (2 qh) W

Studies of global patterns of health problems. Analysis of variations between nations and regions with respect to multiple causation of disease; critical review of comparative studies of specific health problems.

Prerequisites: HB300 or equivalent with consent of instructor.  
Faculty: To be appointed

INTERNATIONAL HEALTH SCIENCES - continued

HP411\* International Health Programs (2 qh) Sp

Critical review of international health agencies and programs by individual analysis of: 1) international health agencies--their development, organization, administration, and achievements; and 2) selected international health programs--their planning, implementation, effectiveness, and impact on population served.

Prerequisites: HP300 or equivalent with consent of instructor.  
Faculty: Dr. Kamel and staff

HP420\* Family Planning Programs (2 qh) Su

Critical review of various types of family planning programs, domestic and international, with attention directed to administrative, organizational, fiscal, and social aspects. Selected technical and administrative practices adopted by family planning agencies will be discussed.

Prerequisites: HP300, HP331 and HP350, or equivalent with consent of instructor.  
Faculty: Dr. Hennein

HP430\* Family Planning: The Health Aspects (4 qh) W

Biomedical aspects of human reproduction, contraceptive devices and methods, abortion, and sterilization considered from applied community perspective.

Prerequisites: HP300 and HP331, or equivalent with consent of instructor.  
Faculty: To be appointed

HP431\* Family Planning: The Socioeconomic Aspects (4 qh) Sp

Social and economic determinants of population and family planning and the behavioral aspects of human sexuality in both advanced and developing communities.

Prerequisites: HP300 and HP430, or equivalent with consent of instructor.  
Faculty: Dr. Hennein

HP450\* Advanced Demographic Studies (2 qh) Sp

In-depth study of demographic problems such as construction and uses of multiple decrement life tables, evaluation of the quality of demographic data, estimation of the sizes and composition of various populations.

Prerequisites: HP350 or equivalent with consent of instructor.  
Faculty: To be appointed

INTERNATIONAL HEALTH SCIENCES -- continued

HP461\* Advanced Public Health Nutrition (4 gh) Sp

In-depth study of contemporary problems of human nutrition affecting communities in the United States and overseas such as specific nutritional diseases, nutritional problems of special groups, food and nutrition policies and programs.

Prerequisites: HP361 or equivalent with consent of instructor.  
Faculty: Dr. Ozerol

HP463\* Food and Nutrition Planning (4 gh) Su

World food and nutrition problems are briefly reviewed. The role of nutrition in national development is emphasized, and the problems are discussed. The planning process, the food chain and its analysis are presented. The potential interventions of local, national, and international importance are reviewed and case studies are evaluated.

Prerequisites: HM300, or equivalent with consent of instructor.  
Faculty: Dr. Ozerol

## LOMA LINDA

### INTERNATIONAL HEALTH

#### INTH 504 Concepts in International Health (3)

Overview of current world health programs in the developing world; focus on the ecologic, demographic, developmental, and sociocultural determinants of health and health care delivery, particularly as they apply to health care needs at the village level.

Hart, Staff.

#### INTH 505 Dynamics of Planned Sociocultural Change (3)

Study of concepts and strategies for planned sociocultural change, with emphasis on understanding and coping with sociocultural variables in health behavior change programs. Analysis of selected readings, case studies, and films illustrating the practical problems faced by change agents in crosscultural situations. Identical to HLED 505.

Elick, R. E. Ford.

#### INTH 514 Comparative Health Care Systems (3)

Comparative analysis of the influence of political/economic systems on the delivery of health care. Discussion and research on various administrative, socioeconomic, political, and ethical issues involved in the organization of world health care systems.

Dysinger, Staff.

#### INTH 524 Health Concepts among Mexican-Americans (3)

Designed to provide basic understanding of the culturally designed factors responsible for the lack of acceptance of health care services by this minority. Medical folklore and its cultural significance in providing meaningful and effective health care. Utilization of the cultural specifics unique to the aforementioned population.

Fuentes.

#### INTH 544 Church and Government Regional Health Planning (3)

The organization and administration of church and government health programs at national, regional, and local levels. Review of international health agencies and their work. Study and application of health status assessment and survey techniques useful in implementation of rural health programs.

Dysinger.

#### INTH 545 Integrated Rural Development (3)

Multidisciplinary analysis of issues, problems, resources, and strategies of implementing integrated rural development projects. Demonstration of focus of health projects on basic developmental needs of rural and other disadvantaged communities. Taught from perspectives of developmental anthropology, agriculture, cultural ecology, economic development, and environmental management.

Prerequisite: Consent of instructor.

R. E. Ford.

#### INTH 546 Integrated Rural Development Field Laboratory (2)

Observation of selected integrated rural development projects. Application of skills and concepts learned in basic international health courses. Conducting "under-five-clinics"; assessing community nutritional status; diagnosing tropical diseases; applying principles of tropical housing and sanitation; practicing agricultural skills. Field notebook preparation; demonstration of skills.

Prerequisite: INTH 545.

R. E. Ford.

## UNIVERSITY OF MICHIGAN

### *Health Planning and Economic Development (M.P.H.)*

This is a special sequence designed specifically for senior administrative officers and health planners from developing countries. Students are required to have a minimum of three years of responsible experience in their own countries and English language proficiency. Occasionally students from the United States who have the appropriate professional background and experience are admitted to the program. Courses in this program emphasize health and disease in developing countries, international and comparative health systems, as well as work in economics of development and resource allocation.

### COURSES

*Regional Health Planning*  
*Applied Policy Analysis*  
*Community and Professional Relations*  
*Community Health Services: Their Activities & Administration*  
*Seminar in Public Health Administrative Practice*  
*Seminar on Public Budgeting*  
*Seminar on Issues in Health Personnel Management*  
*Program Evaluation in Public Health*  
*Health Politics and the U.S. Legislative Process*  
*Legal Aspects of Health Planning and Administration*  
*Legal Aspects of Environmental Health Management*  
*International Health Programs*  
*International Comparative Health Care Systems*  
*Environmental Health Planning in Less Developed Countries*  
*Comparative Studies in the Political Economy of Health Care*  
*Seminar in Health and Socio-Economic Development*  
*The Role of Health Workers in Other Cultures (LDC's) or Sub-Cultures*  
*Readings and Research in Health Planning & Administration*  
*Readings and Research in International Health*  
*Seminar on International Relations & Health Planning*  
*National Health and Health Manpower Planning in Developing Countries*  
*Integrative Seminar in International Health*  
*Seminar in Health Planning and Administration*  
*Integrative Seminar in Health Planning and Administration*  
*Readings in Public Health Administration*  
*Research in Public Health Administration*

## UNIVERSITY OF MINNESOTA

5624. INTERNATIONAL HEALTH. (Cr. cr. 5Ped 5525; prereq #) Venters, McKay, Cress  
Major health care problems in developing countries, political and economic constraints involved, and realistic possibilities for solution. Nutritional disturbances, tropical diseases, socioeconomic factors of family health, the role of folk medicine as a health resource, the use of health auxiliaries and the role of the physician in training them, factors that play a crucial role in patient acceptance.

## UNIVERSITY OF NORTH CAROLINA

- HEED 230, 231, 232 **Cross-Cultural Consultation (1-3).** Permission of instructor. Enrollment required in total series. The process and content of cross-cultural and international consultation in technical assistance to developing country health programs with special reference to planned social and behavioral change. *Two or more lecture hours per week, fall, spring and summer.* Stuart.
- HADM 202 **International and Comparative Health Administration (3).** Prerequisites HADM 105, 209, and 210. Analytical descriptions of (1) national health systems of selected countries, developed and developing, and (2) U.S. and international efforts in promoting health development in the less developed countries. *Three lecture hours per week, spring.* Schaefer, Freymann.

### Carolina Population Center

Director—J. Richard Udry

The Carolina Population Center provides coordination for a University-wide interdisciplinary program in population research and research training. Its efforts span the social, behavioral and health sciences. In addition to the School of Public Health departments (epidemiology, biostatistics, maternal and child health, and health administration), primary populations courses are offered in anthropology, economics, geography, political science, psychology and sociology. These courses are chosen by the Population Training Committee of the Population Center to form a basic concentration of studies on population dynamics, policy, demography, and methodology.

The Department of Biostatistics provides courses in methods of demographic measurement, analysis, and modeling. The Department of Epidemiology deals with population dynamics and family planning, as well as methodology. In the Department of Health Administration, concentration is in population policy and administration. The Department of Maternal and Child Health is concerned with family planning and human reproduction.

Additional information concerning opportunities for special study in this field may be obtained from the heads of the departments listed above, or from the Academic Programs Office of the Carolina Population Center.

UNIVERSITY OF PITTSBURGH

HS Adm 255 ADMINISTRATION AND PROGRAMMING IN INTERNATIONAL HEALTH

Two hours weekly, third session, 1 credit

Provides introduction to planning and administration of international programs of both multilateral (WHO and PAHO) and bilateral operations as well as of voluntary agencies, religious groups, and industrial programs.

HS Adm 256 SEMINAR IN PROGRAM MANAGEMENT IN INTERNATIONAL HEALTH

Two hours weekly, fourth session, 1 credit

Prerequisite: HS Adm 260

Case studies of actual international health programs will be analyzed for basic principles and generalizations in program management, with input from faculty and students who have had international health experience.

HS Adm 257 INTERNATIONAL HEALTH PRACTICUM

Hours and credits to be arranged

(Admission by permission of instructor)

Students will be assigned to international health projects for experience abroad or on campus. Assignments will be arranged according to student goals and capabilities and coinciding program availability and appropriateness.

UNIVERSITY OF TEXAS

INTERNATIONAL AND RURAL HEALTH

*The Problem:* Health and disease conditions, and the resources available to deal with health problems and the maintenance of healthful conditions, differ significantly in various parts of the world and under differing community circumstances. The contrasts are especially stark between the developed and underdeveloped parts of the world. The contrast may also be evident within developed and undeveloped nations between rural and urban areas or between the affluent and poverty-stricken. Preventable diseases such as malaria and schistosomiasis currently abound in poor nations while environmentally-related conditions such as heart disease, cancer, stroke and various forms of pollution are associated primarily with wealthy nations and regions. Yet environmentally-related diseases are seen more commonly today in developing economies. This module examines these and other questions in a search for appropriate and effective methods to deal with general and specific questions of health and disease. The organization and activities of international health agencies, selected national health systems, regional and local systems, and other public and private agencies in the field are examined. Specific diseases and/or programs may be studied, and attention is given to problems of language and cultural barriers and the use of appropriate technology.

Members of the International and Rural Health Module are Morton Hawkins, Maarten Immink, William Mueller, Howard Pritchard, John Scanlon, Beatrice Selwyn, David Smith, Gerald Sussman, Francisco Szekely, and George Walker.

Other faculty who participate in the teaching or research programs in International and Rural Health include George Kerr, Ernesto Pollitt, Stanley Pier, and Janet Schreiber.

*Major Research Topics:*

- Economic Development and Environmental Pollution
- Health Economics and Health Development
- Health Service Systems in Different Cultural Settings
- Migrant Labor Health Problems
- Migration, Stress, and Disease
- Political Economy and Health Development
- Regional Development Approaches
- Rural Health Problems and Systems
- Transcultural Communication
- Transnational Health Planning
- Transnational Health Services Systems
- Utilization and Non-utilization of Health Services

TULANE UNIVERSITY

**INTERDEPARTMENTAL PROGRAMS IN INTERNATIONAL HEALTH**

The International Health Programs are based on the philosophy that individuals who are preparing to work in developing countries or in international health agencies should have their education and training in an interdisciplinary milieu which draws on the knowledge and expertise of a truly multidisciplinary faculty. An innovative approach to curriculum planning provides for the acquisition of knowledge in the general areas of public health and public health practice, the development of basic operational and managerial skills, and the flexibility to plan a program of studies unique to individual students.

Curricula are oriented to satisfy the academic requirements for the award of the M.P.H. or Dr.P.H. degree. The M.P.H. in International Health is designed to meet the needs of professional and preprofessional students. No less than 36 hours nor more than 60 hours of academic credit are required for the M.P.H. degree. Curriculum plans are individualized according to the needs, backgrounds, and career plans of the students.

Graduates will have general knowledge in public health, health problems in developing countries, the processes of development and their interrelationships with health services. In addition, they will have basic operational skills in planning, organizing, delivering, managing, and evaluating health services and programs.

The Dr.P.H. program is available to individuals who meet the school requirements for admission to doctoral studies and who have well defined career objectives which are appropriate to further preparation in international health. A program of studies will be designed based on the backgrounds and objectives of the students.

**M.P.H. in International Health**

*Requirements*

Core (9 hours)	Credit Hours
PHP 601 Introduction to Health Service Service Systems .....	2
BIOS 601 or 603 Introduction to Biostatistics .....	3
LHS 651 or 652 Survey of Environmental Health .....	2
EPID 601 Principles of Epidemiology .....	2
<b>Program (14 hours)</b>	
IH 602 Introduction to International Health .....	1
IH 604 Health and Economic Development .....	2
IH 606 Health Services for Developing Countries .....	2

IH 612 Cultural Aspects of Health Programs .....	1
IH 704 Comparative Health Systems .....	2
PS 611 Introduction to Population Studies .....	3
MCH 610 Methodology for Designing and Operating Health/Family Planning Services .....	2
<b>Skill — Required at the discretion of the faculty.</b>	
IH 607 Principles of Education .....	3
PS 621 Survey Methodology .....	3
HSM 672 Introduction to Decision Models .....	3
HSM 633 Human Resources Planning I .....	3
HSD 702 Problems in Public Health .....	3
**PH Budget Planning and Management .....	2
HSD 603 Health Education .....	2
PHP 603 Introduction to Human Health and Disease .....	2
*New Course to be developed.	
<b>Areas of Concentration — Students will complete one of the following areas:</b>	
<b>Planning and Evaluation</b>	
HSD 623 Introduction to Health Planning .....	2
HSD 627 Community Organization .....	2
EPID 624 Monitoring and Evaluating Health Systems .....	3
PS 622 Demographic Methods .....	2
PS 714 Population Policy .....	2
<b>Human Resources Development</b>	
HSM 613 Managerial Concepts .....	3
HSM 635 Human Resources Development .....	3
HSM 670 Survey of Decision Making Methods ..	2
HSM 732 Human Resources Management .....	3
IH 609 Educational Programs .....	1
<b>Operations Research</b>	
BIOS 621 Introduction to Computers I .....	2
BIOS 622 Introduction to Computers II .....	2
HSM 771 Quantitative Decision Models .....	3
<b>Fiscal Management</b>	
ACCT 601 Financial Accounting .....	3
ACCT 602 Cost Accounting .....	3
FIN 652 Financial Management .....	3
HSM 753 Financial Management .....	3
<b>Maternal and Child Health and Family Planning</b>	
MCH 601 Introduction to Maternal and Child Health .....	2
MCH 604 Nursing in Family Health and Family Planning Programs .....	2
MCH 603 Growth and Development .....	2-3
MCH 609 Reproductive Physiology and Contraceptive Technology .....	2
CHN 624 Community Health Nursing: Nursing Administration .....	3
<b>Nutrition</b>	
NUTR 631 Basic Principles of Nutrition Science .....	2
NUTR 632 Applied Nutrition in Public Health .....	3
NUTR 731-732 Clinical Nutrition .....	2,2
NUTR 737-733 Seminar in Nutrition .....	2,2
<b>Tropical Medicine</b>	
EPID 621 Introduction to Infectious Diseases .....	2
TM (PAR) 705 Medical Entomology .....	3
TM 701 Medical Helminthology .....	3
TM 703 Medical Protozoology .....	3
TD 732 Preventative Tropical Medicine .....	2
<b>Environmental Health</b>	
EHS 655 Environmental Health Services Management .....	2
EHS 657 Environmental Health and Safety .....	2
EHS 757 Water Quality Management .....	2
EHS 653 Environmental Chemistry .....	2
EHS 654 Air Pollution .....	2
EHS 656 Environmental Microbiology .....	2

UNIVERSITY OF WASHINGTON

ENVI 448 ENVIRONMENTAL HEALTH IN THE THIRD WORLD (3) W  
Faijenblum

Appropriate technology for water supply, excreta disposal and pollution control for urban and rural communities. Program implementation, economic and institutional requirements and health issues related to development. Prerequisites: graduate standing and permission of instructor.

ENVI 531 PROBLEMS IN INTERNATIONAL HEALTH (3) A  
Cale

Survey of the relationship of the sociocultural, political, economic and demographic characteristics of developing countries to disease occurrence and to the solution of health problems. Prerequisite: graduate or medical student standing, or permission.

YALE UNIVERSITY

HSA 541b, *Introduction to International Health*. Seminar discussions outlining the nature of disease processes internationally, infectious and noninfectious; the relation of these processes to economic and political factors; distribution of medical care resources and the relationship of social and environmental factors to disease causation and prevention. Medical care organization in developed and developing countries is examined. Since it is a survey course, the treatment of each aspect of the subject is necessarily limited. Students are encouraged to read and report on their interests and own experiences. Two credits. G. A. Silver.