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ABSTRACT

The purpose of this research study was to determine whether there was any evidence of a shortage of health care personnel in the southeastern Michigan area; and if there was, to make appropriate recommendations. A questionnaire was sent to 107 health organizations, 50 educational institutions, and 30 professional associations. Responses to the questionnaire, available statistical data, findings from other studies, and data supplied by consultants suggest that although the number of professional and ancillary health personnel have increased, they have not kept pace with the increasing population growth. Increasing specialization among physicians, high attrition and turnover rates among nurses, and excessive mobility stemming from discrepancies in job compensation are given as some reasons for the shortage. Recommendations are made that planning efforts to increase the capacity and offerings for health careers at educational institutions must be fostered; that measures to encourage more people to enter health professions must be stimulated; and that steps to retain persons presently employed, to encourage the return of inactive professionals to practice, and to effectively utilize existing personnel must be taken. (KP)

HEALTH MANPOWER
IN METROPOLITAN DETROIT

A study of needs and problems

UNITED COMMUNITY SERVICES OF METROPOLITAN DETROIT

HEALTH MANPOWER IN METROPOLITAN DETROIT

A Study of Needs and Problems

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November 1970

UNITED COMMUNITY SERVICES OF METROPOLITAN DETROIT

PLANNING
BUDGETING
EDUCATION
For Health & Welfare

UNITED COMMUNITY SERVICES
OF METROPOLITAN DETROIT

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October 9, 1970

Mr. Erwin S. Simon, Chairman
UCS General Planning Committee
Detroit, Michigan 48226

Dear Mr. Simon:

The committee appointed by United Community Services to evaluate the health manpower problem in the greater Detroit Metropolitan area has completed its assignment. We are pleased to submit the attached report on our findings, conclusions and recommendations for consideration by the General Planning Committee.

In its study, the committee was hampered by the lack of accurate data and the constantly changing nature of the problem. But it is evident that the shortage of professional, para-professional and supportive health manpower is acute and growing. The committee is convinced that the challenge can be met only by a continuous and cooperative effort among health manpower users and trainers to stimulate the entry of more people into health fields, to improve more effective utilization of personnel in the health manpower pool.

Central to the committee's recommendations is the belief that UCS should exercise leadership in bringing together those forces in the greater Detroit Metropolitan area which would create and maintain a coordinated health manpower program within the framework of policy and plans developed by the Comprehensive Health Planning Commission for Southeastern Michigan. All other recommendations are considered by the committee as interim actions which would ease but not solve the total problem.

The committee also recognized it has defined problems more than it has proposed solutions, but it has done so in keeping with the belief that the complexity of the challenge permits no simple solution. Again, the coordinated effort implicit in Recommendation I is seen as the only appropriate response to health manpower needs.

The committee is grateful for the generous assistance of its consultants and Technical Advisory Committee, and the dedicated efforts of UCS professional staff in aiding the committee in its work.

Sincerely yours,

Owen W. Bombard

Owen W. Bombard, Chairman
Health Manpower Committee

OWB

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I. INTRODUCTION

This study springs from the obvious need to meet the challenge of serious and increasing manpower shortages in health and allied fields.

It is clear that current efforts to expand the pool of talent available to health manpower users are failing to keep pace with rising demand. And the increase in demand will continue to rise at a rate substantially ahead of population growth as scientific and medical advances introduce new and complex delivery systems, as medical care is extended to increasing numbers of our population formerly excluded from treatment by poverty and as success in treating infectious and deficiency diseases increase longevity and the consequent need to provide treatment for the chronic debilitating illnesses of later life.

In face of the rising demand, the complexity of medical care made possible by scientific advances has lengthened the time span and increased the cost of health and medical education.

Obviously, this is not a local problem. The recruitment, training and retention of qualified personnel in sufficient numbers to provide adequate health services pose major problems in virtually every community in the country. As the gap between demand and available manpower widens, the continuation of vital health services is in jeopardy. The National Commission on Community Health Services recently stated that "the chronic shortage of health personnel in all categories is becoming a chronic health problem."

In recognition of this present and growing challenge, UCS in its role as a social planning force, appointed the Health Manpower Committee of the General Planning Committee to study the health manpower question in the metropolitan area, and to suggest ways in which the challenge could be met.

The Health Manpower Committee was organized and held its first meeting in December 1968. At that time, members of the committee recognized the gravity of the problem, but had no concept of its intensity or scope.

The first meetings were devoted to a review of all data available from prior studies and state and national statistics. It was evident that factual information on the specific needs of the Detroit metropolitan area was insufficient for the committee's purpose. Efforts to gather data were broadened to include a questionnaire for circulation to identified health manpower users and trainers in the metropolitan area.

To assist in developing appropriate questions, and to give lay members of the committee guidance on technical subjects, a Technical Advisory Committee was established in April 1969. (See Appendix A for a list of members.) At the same time, the committee organized four subcommittees to work on specific facets of the total problem--Education and Training; Recruitment and Counseling; Placement and Compensation; and Utilization. (See Appendix B for a list of subcommittee members.)

The questionnaire (Appendix C) was mailed at the end of August 1969 to 107 health organizations, 50 educational institutions and 30 professional associations in southeast Michigan--including metropolitan Detroit. Responses to the questionnaires,1/ available statistical data, the findings of other studies and data supplied by specialists and consultants were evaluated by the subcommittee for each of the four major areas of responsibility.

The findings, conclusions and recommendations of the subcommittees form the basis for this report.

II. FINDINGS

General Comments

The committee realizes that the entire nation has an acute shortage of skilled manpower. While there are exceptions, most fields utilizing highly trained personnel face problems not unlike the health professions. The need for a national program to provide increased educational opportunities, to upgrade the skills of trained personnel and to train the untrained is urgent, but clearly outside the scope of this committee. This fact is cited only to emphasize the competing pressures the health professions must face in recruiting and retaining personnel, and to place in perspective the health manpower problems in the Detroit metropolitan area.

The scope and urgency of manpower needs are further defined by a quick look at the problem on national and state levels.

National Manpower Needs

The American Medical Association estimates that without the foreign educated physicians now in practice, there would be a national shortage of 30-40,000 doctors. Nearly one-fifth of our practicing physicians are graduates of foreign medical schools. In Michigan alone, between 40 and 50 percent of physicians currently in hospital residency programs graduated from medical schools outside the U.S.

Even with the substantial number of foreign physicians in practice, the distribution of physicians is uneven with severe local shortages where the need is most acute--particularly in inner city and rural areas.

1/ Generally, there was a high percentage of response--public and private health agencies - 77%; professional associations - 90%; and educational institutions - 86%. Responses from health agencies include a sampling of 29 of the larger hospitals (obtained through personal interviews) as well as voluntary and public health organizations, mental hygiene and other specialized clinics, and some 11 industrial medical departments. Educational institutions include major universities, specialized health professional schools, and community colleges. No specific data was gathered from secondary or elementary schools.

The nursing profession, which employs nearly fifty percent of all health workers, had 700,000 registered nurses in 1969 with the need rising to an estimated 1,000,000 in 1975.

There are reported vacancies in 93,400 professional and technical positions budgeted by hospitals in the United States, with another 38,500 persons listed as needed but not provided for in approved budgets. The total deficit of 129,200 professional and technical personnel composes nearly five percent of the 2,858,500 employed by hospitals in the country.

Governmental, public and private health facilities and industry also report difficulties in securing adequate personnel.

Environmental health services, perhaps the fastest growing segment of the health professions, has increased its numbers from 54,500 in 1967 to 218,000 in 1970, with growth anticipated at even more rapid rate in the years ahead.

In total, there will be an estimated national deficit of 343,000 medical, dental, environmental and allied health personnel by 1975.

Attempts to improve utilization of professionals by the delegation of non-professional tasks have led to the development of para-professional and supportive positions in all disciplines. In addition, technical advances in medicine have added to the need for specialized and supportive skills.

The proliferation of occupations flowing from improved utilization and technical advances have further increased the need for manpower. Today, there are more than 125 identified health occupations, with some 250 secondary or specialty designations.

Michigan's Health Manpower Needs

On the state level, it is difficult to determine precise needs, but the Michigan League for Nursing estimates that in 1969 there was a shortage of 4,000 nurses and 2,000 LPNs. Graduations from schools of nursing and board registrations total less than half of the number needed each year. The Michigan Health Council and its doctor placement service estimates a shortage of more than 2,000 physicians in Michigan. Other needs have not been statistically determined, but the national pattern of personnel shortages is clearly repeated.

At this writing, the Task Force of the State Health Manpower Commission is attempting to obtain and up date detailed information on health personnel resources in Michigan.

The chart which follows lists the professionals licensed to practice in the state, but there is no comparable list of numbers actually in practice. It is estimated that 80 percent of the MDs, 60 percent of the RNs, and 74 percent of LPNs are active, but an unknown percentage of these are on part-time schedules.

Statistics from Michigan Department of Licensing and Regulation 1970

	Livingston	Macomb	Monroe	Oakland	St. Clair	Washtenaw	Wayne	7-County Total	State-Wide Total
M.D. 80%* Active	28	262	49	1235	85	916	2919	5494	12709*
D.O.	13	175	15	377	15	19	636	1250	2709
Dentists	24	256	25	593	50	263	1411	2622	5531
Dental Hygienists	2	86	12	269	14	91	362	836	1830
Trained Nursing Attendants	1	1	0	5	0	1	4	12	73
Licensed Psy. Attendant Nurses	1	4	4	129	0	59	318	515	1357
Licensed Practical Nurses 71%* Active	129	815	157	1443	227	423	5215	8409	20381*
Registered Nurses 59%* Active	230	2271	286	4603	518	2034	10604	20546	49967*
Pharmacists	28	287	38	993	77	184	1355	2962	6150
Podiatrists	2	20	3	32	2	4	102	162	301
Psychologists	2	13	3	128	2	72	150	370	624
Veterinarians	11	35	6	117	10	24	138	341	1262
Optometrists	6	51	6	109	9	16	228	425	932
Physical Therapists	2	25	6	73	4	68	99	277	573
Marriage Counselors	1	2	0	40	0	11	46	100	134
Totals	480	4303	610	20146	1013	4188	23587	44324	104173

and developing on-the-job competence. There is a higher separation rate for nonprofessional personnel, but less difficulty reported in replacing them (fewer outstanding vacancies).

Most agencies use traditional resources for obtaining personnel, without any cooperative planning, much exchange of information, or interagency referral of candidates who are not employed. The hospitals and clinics surveyed are less likely to reach outside the metropolitan area to obtain most of their staff, while the public and community health agencies are more apt to obtain a large share of their staff (primarily professional and executive) from outside the area and outside of Michigan.

Compensation data obtained by the committee is not very useful. It is already outdated, and was stated in ranges (minimum to maximum) and not as the current salary offered for each classification. Except for the hospitals which obtain comparative data collected for them by the Greater Detroit Area Hospital Council, no cooperative information system is presently available.

Only sporadic attention is given upward or lateral movement through career ladders or lattices. There is some lateral movement within classifications, but no planned advancement into higher professional categories. To provide motivation for advancement, jobs should be analyzed at every level, and special programs of education and equivalency testing developed to meet the requirements for advancement set by professional licensing bodies.

Utilization

In spite of high separation and vacancy rates shown in its survey, the committee uncovered little evidence of imaginative utilization of existing personnel. Job descriptions do not appear to be based on effective task analysis, and while a number of utilization studies have been undertaken--primarily by hospitals--these are limited to an examination of specific disciplines such as nursing, physical therapy, clerical and orderlies. There is also a need for communication among agencies on the findings of such utilization studies.

There are very few examples of cooperative projects between health agencies in the utilization of para-professional help, and the relationship of such persons to professionals is not adequately defined. In some instances, the nonprofessional worker is delegated certain tasks without being regarded as an essential member of the health team.

There is a need in most health agencies for innovative task analysis which would permit an evaluation of the effectiveness of nonprofessionals and volunteers in performing supportive functions. Often there are restrictive and outdated policies which pose barriers to such utilization. It is encouraging, however, that more than half of the agencies surveyed attributed improved use of personnel to recent changes in policy. While most agencies agree that interagency sharing of scarce personnel with special skills would increase utilization, the majority consider this impractical and feasible only for the small agencies.

Education and Training

Centralized information on all phases of education for health careers is badly needed. Funds also must be provided for publicity on educational courses and training programs already available. (The committee identified a minimum of 35 basic health occupations for which educational preparation is provided by universities, community colleges and hospitals in the Detroit metropolitan area.) Remedial programs are still needed to make up for deficits in elementary and secondary education, and the licensure regulations need review and change to make them more equitable and relevant to performance and position.

Educational programs structured in relationship to needs of hospitals, universities and health agencies will allow different levels of ability to relate to new roles in health care.

Eight out of every ten health agencies surveyed have an ongoing inservice training program, but only three out of ten have taken advantage of continuing education opportunities provided by outside resources.

Nearly 90% of the agencies believe that inservice and continuing education programs must be strengthened and increased, especially in the areas of middle management and supervision.

There is a need for cooperative planning among educational institutions, health agencies, and professional associations at state and local levels on educational preparation for health careers. There also is a need to define responsibility for inservice and continuing education for individuals already in the health field.

Education must be sufficiently decentralized so that academic credits can be accumulated in work-study programs and through inservice training, thus creating new methods of entry into professions and establishing additional criteria for upgrading and implementation of established career lattices. Uniformity of educational content must be developed to promote the establishment of core curricula and facilitate the transfer of technological credits from community colleges to universities.

The financing of education must be simplified and made more equitable. The proliferation of influencing groups and funding sources in the development of health career curricula creates a delay in the establishment of such programs.

III. CONCLUSIONS

The study revealed that numerous organizations are concerned about the health manpower shortage, and many of them are involved in some efforts to alleviate the problem. However, most of these activities are directed toward staffing their own organizations. Few contribute to the total health manpower pool from which private, public, and voluntary agencies may draw.

It is apparent, on the basis of questionnaire responses as well as personal interviews, that present efforts to recruit and train professional and allied

health manpower are not sufficient to keep up with the ever increasing demand for delivery of health services to all segments of our population. While the number of professionals and ancillary personnel in our metropolitan area has increased in the last ten years, this increase has not kept pace with the growth of population. Consequently, the ratio of physicians, dentists and others to our urban population has actually decreased. Shortages are even more pronounced in the inner city and in other areas inhabited by the poor.

Added to these handicaps must be such factors as increasing specialization among physicians, high attrition and turnover rates among nurses, and excessive mobility stemming from discrepancies in compensation.

Current efforts to extend health services to the poor through "Model Cities" programs, O.E.O. clinics, comprehensive neighborhood health centers and community mental health resources are sharply increasing the demand for personnel. Many of these groups are now competing with each other and with already existing public and voluntary health agencies for available manpower.

Planning efforts have been initiated, on the state level, to increase the capacity and offerings for health careers at educational institutions. However, it appears unlikely that sufficient manpower can be developed fast enough in the foreseeable future to meet present demands, particularly in the densely populated areas. Consequently, it is imperative that major health planning bodies and other planning organizations concentrate their efforts and develop a cooperative plan to solve the current problems.

Such a plan must give attention not only to recruitment and education. It must move for effective utilization of existing personnel. It must lead to redistribution of tasks among professional and ancillary health workers. It must encourage changes in the health care system which can result in serving more people better with a given number of workers. It must stimulate cooperative efforts toward the establishment of community priorities on how the available manpower pool can be best utilized.

The State Board of Education is considering a plan for the development of health career curricula and calling for cooperation among the public institutions of higher education. Success in the implementation of such a plan will greatly depend upon cooperative efforts on a regional basis, with some agency or group of agencies taking the initiative in the Detroit metropolitan area.

The intensity of the health manpower problem and its enormous importance to the public dictate that specific steps be taken to develop area-wide cooperation in dealing with health manpower problems.

These factors are fundamental immediately and in the near future to our evaluation of the role of UCS and its member agencies. During the last 15 months, the committee has studied the health manpower needs in the Detroit area and has examined the various agencies concerned with meeting such needs as well as their relationship to each other. It is our conclusion that these groups can and must be brought together in a common plan for action, that the UCS can and should be a focal point or catalyst for developing such a plan and stimulating the mechanism for its implementation. The specific recommendations contained in this report are designed to achieve these ends.

In framing its recommendations, the committee recognized that there are several ways to increase the health manpower pool.

1. Stimulate measures that will encourage more people to enter the health field in one of many available careers.

2. Take steps to retain persons presently employed in the health occupations and encourage inactive professionals to return to practice.

3. Promote more effective utilization of existing personnel and encourage professionals to extend their skills to more people.

The committee is also aware that several factors are emerging which will have profound effect on our manpower needs and development of resources. These are:

1. The development of a comprehensive health planning agency in the southeastern region of the state.

2. The application of newer delivery systems of health care.

3. Growing acceptance of the concept of national health insurance which if implemented without prior preparation could produce a health manpower crisis.

It is with these factors in mind that the Health Manpower Committee submits the following recommendations.

A. ENCOURAGE RECRUITMENT BY:

1. ORGANIZING WITH THE MICHIGAN HEALTH COUNCIL A METROPOLITAN AREA HEALTH CAREERS OFFICE TO COORDINATE RECRUITMENT AND COUNSELING ACTIVITIES AND PROVIDE A FOCUS FOR PUBLIC INFORMATION ON HEALTH CAREERS.

The Health Careers Office should specifically:

a. coordinate recruitment efforts including mass media publicity;

b. provide centralized information on health career opportunities, educational programs, grants, stipends, and scholarships;

c. establish an inter-professional speakers bureau;

d. develop opportunities for tours, observation, voluntary placement, part-time and summer employment in health agencies;

e. stimulate the development of work-study programs with local school districts and health agencies;

f. help establish health careers clubs at junior and high school levels;

g. develop and distribute informative materials on health careers;

h. establish a comprehensive health careers counseling service staffed with specialized counselors.

2. PENDING THE ESTABLISHMENT OF SUCH AN OFFICE, UCS SHOULD:

a. involve and collaborate with other agencies to achieve some of the above;

b. if necessary, make a one-year financial contribution, not to exceed $3,000, to the Detroit Public Schools Counseling Program for Nurses for the school year 1970-71.

B. PROMOTE BETTER UTILIZATION BY:

1. PRESSING FOR THE REDEFINITION OF ROLES OF PROFESSIONALS IN HEALTH

AND MENTAL HEALTH FIELDS AND SERVING AS A FOCAL POINT FOR SUCH EFFORTS PRESENTLY UNDER WAY AMONG A NUMBER OF MENTAL HEALTH AGENCIES.

SPECIFICALLY, UCS SHOULD:

a. assist in the implementation of a "new careers model" for health disciplines in voluntary and public agencies where these do not already exist;

b. stimulate and give support, financial and otherwise, to those programs which will facilitate the flow of minority groups into professional levels, and those which provide a coordinated approach to the training and employment of nonprofessionals in the health field;

c. seek funds through such organizations as RMP for selected pilot programs to demonstrate:

- utilization of personnel (specifically roles of professionals) in newer delivery systems of health care (such as group practice, neighborhood health centers, etc.) and with full application of technological developments;
- uses of shared professionals and part-time personnel and nonprofessionals or volunteer workers;
- application of computer technology to personnel utilization.
- which factors favorably affect job expectations and satisfaction of health workers.

2. MOBILIZING PROFESSIONAL ASSOCIATIONS, INTERESTED HEALTH AGENCIES AND OTHER GROUPS CONCERNED IN SOUTHEASTERN MICHIGAN TO REVIEW EXISTING LICENSURE REGULATIONS AND PRESS FOR THE REMOVAL OF UNREASONABLE RESTRICTIVE PROVISIONS WHICH IMPOSE BARRIERS TO INCREASING THE HEALTH MANPOWER POOL.

3. ESTABLISHING WITH SEMCOG OR OTHER APPROPRIATE AGENCIES AN INFORMATION SYSTEM ON INNOVATIVE USES OF HEALTH PERSONNEL.

4. INCREASING UCS CAPACITY TO OFFER CONSULTATION AIMED AT IDENTIFICATION OF HEALTH MANPOWER PROBLEMS AND ASSISTING AGENCIES TO OBTAIN CONSULTATION SERVICE FROM COMPETENT SPECIALISTS OR ORGANIZATIONS.

C. IMPROVE PLACEMENT AND COMPENSATION BY:

1. SUPPORTING EFFORTS TO ATTRACT AND RETAIN HEALTH PERSONNEL.

Specifically, UCS should encourage:

a. equitable compensation and personnel policies for all disciplines by development of comparative data on compensation and benefits available in the geographic area;

b. opportunities for career advancement.

2. PARTICIPATING WITH MESC OR OTHER APPROPRIATE AGENCY IN THE DEVELOPMENT OF A JOB PLACEMENT - VACANCY REGISTRY EXCHANGE SYSTEM FOR SOUTHEASTERN MICHIGAN.

The system should:

a. establish a clearinghouse for employment opportunities in the health field;

b. clarify job descriptions, specifications, and eligibility for intra-agency use;

c. promote the development of interchangeable job descriptions between public and private agencies.

3. STIMULATING THE RETURN OF INACTIVE PROFESSIONALS AND OTHER TRAINED PERSONNEL TO PRACTICE.

Specifically, UCS should:

a. lead in planning for meeting child care needs of health workers;

b. urge removal of restrictive policies relating to age, citizenship, marital status, etc.;

c. promote the increased use of part-time and volunteer personnel by health agencies.

D. ENCOURAGE IMPROVED AND INCREASED EDUCATIONAL OPPORTUNITIES BY:

1. SPONSORING, IN COLLABORATION WITH RMP, UF, AND OTHER APPROPRIATE GROUPS, A REGIONAL CONFERENCE TO FOCUS ON HEALTH MANPOWER PROBLEMS WITH SPECIAL EMPHASIS ON PRE-SERVICE, IN-SERVICE, AND CONTINUING EDUCATION NEEDS AND RESOURCES. This conference would also serve to publicize the findings of the UCS Health Manpower Study.

2. BRINGING TOGETHER THE PROFESSIONAL ASSOCIATIONS, EDUCATIONAL INSTITUTIONS AND HEALTH AGENCIES INTO A CONTINUING ALLIANCE FOR BETTER COMMUNICATION, JOINT PLANNING, AND UNIFIED APPROACHES TO STATE-WIDE PLANNING AGENCIES.

This should provide a regional mechanism to deal with:

a. the development of new roles for professional personnel;

b. the development of health careers curricula and simplification of financing and accreditation procedures for these;

c. increasing the number of qualified teachers for the health careers field;

d. multiple methods of entry into the professions such as the development of proficiency examinations for para-professional personnel;

e. the development of increased slots for necessary clinical training or field experience;

f. provisions for continuous remedial education as well as accreditation of in-service and work-study programs;

g. a coordinated approach to continuing education offerings within and outside of educational institutions, specifically as related to application of recent research findings and developments.

V. SPECIFIC DATA FROM HEALTH MANPOWER QUESTIONNAIRE

RECRUITMENT AND COUNSELING

The objectives of the Recruitment and Counseling Subcommittee were to:

1. Gather information about existing programs.
2. Determine to what extent these programs were operative and accessible.
3. Identify methods commonly used to recruit.
4. Determine to which segments of society the majority of programs were directed.

The committee's concern was with general recruitment of individuals into various professions or disciplines in the health field. The data indicates that out of 188 responding organizations, 103 have recruitment programs (Table R-1) and educational institutions have the highest percentage (70%) of these. But, it should be noted that recruitment to most of the educational institutions means more than drawing persons into the health field. It means providing a sufficient complement of students to fill established courses or programs of study. Of the professional associations, 61% have recruitment activities. The extent of these is determined by the professionals assigned to career guidance for that year. Since this is a voluntary responsibility, programs usually vary in intensity and scope from year to year.

Included with professional associations are planning organizations such as the Michigan League for Nursing which promotes the development of community resources for nursing service and education. This agency provides continuous recruitment and counseling opportunities through a paid professional staff. Michigan Health Council is the only full-time organization devoted to health career recruitment, but its responsibility extends across the entire state. Recruitment activities are reported by 46% of health agencies including hospitals. Hospitals are involved in general recruitment programs through participation in "Career Day" efforts of local school districts, but many of their programs are directed toward staffing.

Work-experience programs are the most effective form of all recruitment methods for they offer the individual a working experience in the health field. Such programs also meet the school's need for vocational training and the hospital's need for additional staffing.

Recruitment Mechanisms. Of the responding organizations, 86% have specific individuals assigned to carry out recruitment programs. Educational institutions and professional associations have the highest percentage of assigned personnel (Table R-6).

Methods of recruitment most frequently used are listed below.

Table R-5
Methods Used in Recruitment Programs

Recruitment methods	Type of organization		
	Education	Health	Professional
Career days	30	23	16
Speakers	31	27	17
Media	36	26	23
Audio visual films	10	8	10
Work-experience programs	11	26	5
Conducted tours	25	25	11
Literature	30	26	13
Other	7	11	1
Agencies reporting 101	35	47	19

Note: The figures may exceed the number of agencies reporting because three method categories were combined to form the "media" category.

Mass media recruitment includes radio, TV, and newspaper advertisements. It must be noted here that recruitment in the context for the health agencies may mean obtaining staff persons for employment. Opinions expressed by those individuals responding to the questionnaire indicate that there is insufficient use of mass media for recruitment purposes. Upon investigation, it was determined that primarily national organizations such as the Nursing Associations, Blue Cross-Blue Shield, and the US Department of Health Education and Welfare are responsible for the majority of spot announcements on the radio and in TV media. Although recent months have seen increased use of more radio and TV stations for recruitment purposes, mass media recruitment should be further expanded.

Another growing technique is the work-experience program in local hospitals. These programs meet the needs for part-time staffing of the hospitals and introduce young people to the hospital atmosphere and the many disciplines which operate within this agency. Some health agencies are also reporting success with summer work-experience programs.

Most frequently mentioned was the "Careers Unlimited" program which is jointly sponsored by the Detroit Public Schools and the Institute for Economic Education. This program allows 11th grade students to visit agencies and observe careers of their choice in action. However, the program has been terminated since the study began and it is expected that the Hospital Personnel Directors Association will assume a continuous recruitment program in its place.

The majority of recruitment programs among health agencies and professional associations are directed toward a specific age group and educational level, which can be identified as the high school graduate 18 years of age and above.

Educational institutions make the greatest efforts in drawing experienced persons back into the health field; and while most (95%) of the professional associations are primarily concerned with the return of the inactive professional, 59% of these associations direct some effort toward recruiting persons new to the health field (Table R-3).

It appears that a majority of federal funding is going into the education of older and less experienced individuals through continuing education programs, MDTA, WIN, etc., while local moneys are directed primarily toward the young and educationally prepared. The major source or contacts used to recruit individuals for working purposes are listed below.

Table R-8
Sources or Contacts Used for Recruitment

Sources of contacts	Type of organization			
	Health		Professional	
	Number	Percent	Number	Percent
Community or junior colleges....	14	29.8	9	47.4
Universities.....	22	46.8	6	31.6
Secondary schools.....	30	63.8	16	84.2
Volunteer groups.....	10	21.3	3	15.8
Youth-serving agencies.....	4	8.5	2	10.5
Conventions, professional conferences or meetings.....	15	31.9	8	42.1
Other sources or contacts.....	4	8.5	1	5.3

Plans for expanding recruitment programs in the immediate future find educational institutions leading with 63% which are planning to increase their activity, while 38% of health agencies and 44% of professional associations are planning on increased activity in this area (Table R-7).

Counseling. The committee was concerned with the comprehensiveness of existing counseling programs, the background of individuals who are counseling, and the accessibility of such services to the general public.

Our data (Table C-1) indicates that the major responsibility for counseling is being assumed by educational institutions (66%) which usually have a staff of professional counselors. But these counselors are not highly specialized in the health field. A major portion of time is spent setting up class schedules and arranging prescribed courses. Faculty department heads and staff provide more specialized counseling within the educational setting (Table C-3). Counseling service is publicized by 72% of these institutions primarily through college bulletins and on-campus communications.

Usually on a request basis, 40% of professional associations provide some counseling. But planning agencies, such as the Michigan League for Nursing, provide the most consistent effort both in recruitment and counseling programs. Seven out of a possible twelve professional associations plan to increase counseling activity between 1970 and 1972.

Health agencies do counsel their employees, but on an individual basis. In hospitals such advising is usually done either by department heads or members of the personnel department (Table C-2).

Of 114 agencies which do not now have counseling programs, only 8 are planning to develop this service, while 61% of those agencies which do have counseling programs are planning on increasing their activities, and the remaining (37%) will be continuing at least on the same level (Table C-6).

Such data seems to indicate that organizations actively involved in counseling are confronted with the tremendous demand for this kind of service and are attempting to respond to the need.

Usually, educational counseling is more accessible than vocational or career counseling. A major portion is provided by the secondary schools and at the college and university level.

Health career counseling activities are carried out by guidance counselors in high schools and faculty counselors at the college level who in general have limited background and inadequate experience in the health field. There are currently over 100 specialties in the health field and traditional sources of vocational counseling such as school systems and employment agencies, etc. are not equipped to cover all facets of this growing field.

A distinction must be drawn here between educational counseling and career counseling. Ideally, they should be contingent. However, educational counseling directs its attention primarily to courses or credits needed to attain a specific degree or certification, while career counseling is more heavily weighted in the skill requirements and benefits of the position to be filled. Existing counseling programs do not closely relate educational counseling with vocational counseling since persons can achieve a degree, but may find themselves unprepared to assume the responsibilities of a specific position. Most programs provide information on careers but do not provide any guidance or assistance in the decision-making process of the client. A remedy for this condition is more extensive dialogue between educational institutions and employing agencies at the curricula planning level.

Opinions solicited through the questionnaires indicated that the health field suffers from:

1. Poor public image of overworked and low-paid personnel and a low social and economic status for the para-professional.

2. Poor communication about what is available in the area of jobs, preparation, scholarships, etc.

3. Inadequate counseling and recruitment programs. (Most start too late and are directed at high school graduates only.)

Remedies which were suggested were:

1. A mass media compaign to stress attractive features of health careers.

2. Cooperative efforts between health agencies to communicate, coordinate, and compromise.

3. Earlier recruitment at elementary level.

4. Sufficient in-depth counseling opportunities.

PLACEMENT AND COMPENSATION

The objectives of the Placement and Compensation Subcommittee were to:

1. Gather data on placement services, job descriptions for non-certified personnel.

2. Investigate compensation ranges and fringe benefits available.

3. Compare compensation with like positions in industry and in other metropolitan areas.

The committee also wished to determine whether there was a need for the establishment of a central clearing house for employment opportunities and/or the development of a system to maintain up-to-date information on vacancies, salaries, and job descriptions for health personnel.

Turnover. Hospitals and clinics encounter greater difficulties in obtaining and holding staff than industrial clinics or other health agencies. Several factors play a part in this trend of mobility. Professional personnel currently are in demand. It is understandable that the professional will look for ideal working conditions and salary coupled with opportunity for advancement. Salaries unfortunately do not always relate to the amount of skill required for the position or the educational level or experience attained. Rather, salaries offered to professionals and para-professionals alike are related more toward competing with other institutions in the locality and are dependent upon the general economy of the geographic area. Other factors which play a part are nearness to living quarters and accessible public transportation.

Our data indicated that rates of turnover among professional staff were higher in hospitals and clinics than in industry and other health agencies (50% of the hospitals and clinics responding indicated professional turnover rates between 30 and 59%). The same was true for para-professional staff (42%of hospitals report from 30 to 59% turnover). (Tables P-1 to P-4)

Less difficulty is encountered in replacing para-professionals than professionals which seems to indicate that current training programs are producing sufficient numbers of supportive personnel and that the acute shortage is at the highly technical or professional level.

Factors Influencing Turnover. Shortages of personnel which are severe enough to curtail services (e.g., temporary closing of a hospital ward for lack of nurses) seem to occur primarily in inner-city hospitals. These same facilities have a noticeably lower salary range for professional and para-professional positions, and shortages of personnel occur in shifts where personal security in coming and going to work play a decided role.

Salary Ranges. Data collected on salary ranges was limited. However, information was compiled on minimum and maximum ranges with no indication of current salary being offered. A review of this information reveals that no two facilities have the same minimum or maximum figure for a given position. Variations range from a few cents to a dollar or more per hour. Starting salaries for similar positions may vary as much as 50 cents per hour from one facility to another.

There is an average of four classifications within each discipline with a period of four years to move from a minimum entry salary to the maximum. Top level executive and professional salaries were noticeably higher in industry when compared with public health or other health agencies. However, professional staff salaries between industry and health agencies were in a comparable range. Facilities run by the city and certain metropolitan counties have higher salary ranges generally than state facilities or voluntary health agencies.

The majority of hospitals receive comparative data on salaries circulated by the American Hospital Association and base their current offerings on the going rate for that locale. The Greater Detroit Area Hospital Council also collects salary data but does not disclose this information locally. This facility has apparent advantages for hospitals. Although the cost of medical care was not a subject for this study, it should be noted that approximately 73% of hospital budgets go into salaries for personnel.

Fringe Benefits. An assessment of fringe benefits offered to employees is shown below.

Table P-5
Fringe Benefits Offered Employees

Benefits	Total all agencies with benefits		Hospitals and clinics		Industrial clinics		Other health agencies	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hospitalization...	98	93.3	40	93.0	10	90.9	48	92.3
Group life.....	96	91.4	39	90.7	11	100.0	46	88.5
Retirement plan...	95	90.5	38	88.4	11	100.0	46	88.5
Other insurance...	44	41.9	23	53.5	9	81.8	12	23.1
Vacation.....	103	98.1	42	97.7	11	100.0	50	96.2
Sick leave.....	101	96.2	41	95.3	11	100.0	49	94.2
Other benefits....	48	45.7	26	60.5	5	45.5	17	32.7
Agencies reporting	106		43		11		52	

Variations in salary ranges may be partly dependent upon the kinds and costs of fringe benefits offered to employees by individual agencies.

Unions. Collective bargaining units or unions are comparatively few among health organizations - 40% of hospital and clinics, 18% of industrial clinics, and 21% of other health agencies have unions. Few of these unions include professional personnel. Those hospitals which do have unions do so to compete with local industry on a salary basis for maintenance personnel (Table P-6).

Methods of Promotion. Increased salary was considered the primary method of upgrading staff members. Second was a new classification or promotion; third, additional training on the job; and fourth, scholarships to pursue further education. Other methods of upgrading included increased benefits.

Table P-8
Methods of Upgrading Staff Members

Upgrading methods	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
New classification or promotion.....	83	79.8	40	93.0	5	50.0	38	74.5
Increased benefits...	41	39.4	25	58.1	3	30.0	13	25.5
Scholarship to pursue additional training	45	43.3	20	46.5	4	40.0	21	41.2
Increased salary.....	91	87.5	39	90.7	9	90.0	43	84.3
Additional training on job.....	78	75.0	34	79.1	7	70.0	37	72.5
Other methods.....	20	19.2	9	20.9	1	10.0	10	19.6
Agencies responding..	104		43		10		51	

Careers Ladders or Lattices. Of the organizations surveyed, 41% said that they had some form of career ladder to enable personnel to progress within the organization (Table P-9). Many health agencies and hospitals interpreted this question to mean classifications within a given position.

Through interview it was determined that upgrading from entry level positions does progress to the level where certification is required. Lateral movement occurs at lower levels between departments.

Industrial clinics report no mechanisms of this kind and only 34% of other health agencies provide some method of mobility. Although most organizations admit to advancing individuals through the ranks by completion of inservice training or outside studies, there is no formal program established to facilitate this process to any considerable degree.

Sources of Personnel. Hospitals and industrial clinics draw their staff primarily from individuals living in the metropolitan area. Some inner-city hospitals employ a large percentage of foreign personnel (primarily from Canada) and also have medical staffs containing a high proportion of foreign MD's in residency from a variety of countries.

Health agencies draw a large complement of persons from outside the state, particularly at the executive or administrative levels. The resources used to obtain staff are listed below.

Table P-11
Resources Generally Used to Obtain Professional Staff

Resources	Total		Hospitals and clinics		Other health agencies	
	Number	Percent	Number	Percent	Number	Percent
College or university contracts	62	65.3	24	55.8	38	73.1
Professional association placement bureaus	52	54.7	26	60.5	26	50.0
Employment agencies	48	50.5	25	58.1	23	44.2
Newspaper advertising	53	55.8	28	65.1	25	48.1
Professional conventions or meetings	49	51.6	18	41.9	31	59.6
Professional journal advertisements	56	58.9	30	69.8	26	50.0
Other resources[1]	(114)	-	(53)	-	(61)	-

[1] Other resources included inter-agency referrals, intra-agency referrals, civil service circulars, personal contacts, and hospitals with their own schools for registered nurses.

Professional association placement bureaus are used more frequently by professionals than commercial employment agencies or other placement services.

Business Practices. Methods of communication used give some indication of the business practices adhered to by health agencies. Regular staff meetings, mimeo releases which are circulated through departments or posted on bulletin boards, and the printed personnel manual are commonly used by all organizations surveyed. It was surprising to note, however, that printed personnel manuals are not available in all organizations.

Table P-7
Methods of Communicating with Staff Members

Methods of communication	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Regular staff meetings...	85	81.7	40	93.0	5	45.5	40	80.0
Staff committees.....	57	54.8	36	83.7	1	9.1	20	40.0
Periodic printed or mimeo releases.....	69	66.3	33	76.7	3	27.3	32	64.0
Printed personnel manual.	68	65.4	36	83.7	4	36.4	28	56.0
Other methods.....	34	32.7	17	39.5	6	54.5	11	22.0
Agencies responding	104		43		11		50	

Some health agencies surveyed were too small to have little more than word-of-mouth communication. Regular staff meetings of department heads, and intra-departmental meetings provided the most frequently used methods of communication.

The extremely low percentage of personnel manuals used by industry was subject to question. But it was evident that most industrial clinics have a highly developed procedure manual which supplants the personnel manual.

UTILIZATION

Effect of Technology on Manpower Needs. The Utilization Subcommittee was concerned with the extent to which application of technology influences the need for personnel (under consideration was disposable equipment such as syringes and mechanized laboratory testing such as the auto analyzer). Practically 80% of those surveyed said that application of technology increased their need for additional personnel; 16% said that technology did not affect their personnel needs; and only 4% stated that it decreased their needs (Table U-14). But 70% admitted that technology helped them to more efficient use of personnel (Table U-15).

Through interview it was learned that auto analyzers, for example, enable a facility to handle a greater volume of tests over a given period of time, but persons of minor technical skills are still needed to oversee equipment. The installation of computers necessitates additional clerical staff and sometimes a whole new department to handle increased activity. The greatest use of computers is in the area of billing and payroll in most hospitals and clinics.

Uses of Computers in Personnel Utilization. The data indicates that approximately 16% of agencies questioned used computer services in analysis and control of personnel utilization; 10% of other health agencies and 25% of the hospitals and clinics indicated this application of computerization (Table U-17). Affirmative responses to this question include

those who were considering application, as well as those who had already started to apply this technique. Between 29% and 35% of the agencies questioned did not consider such application to personnel utilization either feasible or desirable (Table U-18).

One of the illustrations used in interview was the computerized scheduling of employees. Very few organizations felt this would be of much assistance because of the numerous changes that occur in scheduling as a result of illnesses, absences, etc.

Policy Changes and Utilization. What is remarkable is that 63% of those surveyed attribute improved utilization of personnel to recent changes in policy. For example, it has been legal for some time for LPN's to dispense medication to patients. However, it was mentioned that this practice occurs only in hospitals or facilities where there is an acute shortage of RN's (Table U-16).

Effectiveness of Utilization. Effective utilization of personnel has been widely accepted as a method of reducing the manpower shortage. The committee wished to know to what extent local agencies were examining job descriptions and evaluating the responsibilities of professional, technical, and supportive positions.

Of 107 agencies asked if they had conducted studies on staff utilization, 62 responded affirmatively. A breakdown reveals that 69% of these had been conducted in hospitals and clinics, 73% in industrial clinics, and 50% in other health agencies (Table U-13).

A follow-up questionnaire to those agencies having done studies evoked responses from only eight. These organizations stated that studies conducted were on specific disciplines or in selected departments and were not based on a systems analysis approach or sufficiently comprehensive to include the entire staff.

Some of the disciplines subjected to study were those of orderlies, nurses, nurses aides, medical-clerical staff, and physical therapists. There was no evidence of continuous or concerted efforts to make an analysis of tasks by professional persons, or to fill positions with part-time workers or volunteers.

Personal comments indicate that part-time workers felt the cost of maintaining the position was out of proportion to the remuneration offered. Some administrators felt that part-time employees would be given more incentive if they received some consideration for additional expenses incurred in going back to work, such as a special income tax deduction.

Although some innovative utilization studies have been conducted, the results of these are not widely publicized or even implemented in the metropolitan area. Attention is just now being given to the development of positions which relieve the professionals of routine or administrative tasks, such as unit managers in hospitals, psychiatric assistants, pediatric assistants, etc. There is a need to press for the development of medical assistant positions with state and local medical societies.

More recent efforts to alleviate the manpower shortage have resulted in a fractionization of professional positions through the development of assistant or supportive positions. Often the scope of these duties are too narrow to maintain the interest of the para-professional, and coupled with the inability to move up in responsibility due to lack of certification result in a high rate of attrition by these workers from the health field.

To the professional, licensure regulations are a protection for the recipient of health care services guaranteeing the patient the right to be attended to by highly skilled personnel. Licensure also provides a mechanism to maintain high standards of health care for the community. Viewed by the para-professional, licensure regulations represent a barrier to career advancement unless he is able to stop working and acquire a formal education to provide sufficient credits for certification. Too often supportive personnel have financial responsibilities which would prevent them from giving up full-time positions and returning to school. There are only a few local agencies which allow a part-time work-study arrangement to facilitate this move up the career ladder.

The Sharing of Professional Skills. Another method of increasing utilization of professional persons might be through sharing arrangements of individuals with special skills among health agencies.

This method, 87% of the hospitals agreed, would be effective for certain disciplines such as pathologists or radiologists, but indicate that this device could be implemented only by small facilities. Larger hospitals would need such skills on a full-time basis. Use of dietitians and pharmacists on a part-time basis is common among nursing home facilities and other small units.

Communication on innovative use of personnel is greatly needed. However, it is doubtful that effective utilization of personnel under current health care delivery systems will effect any great changes in the manpower supply. Some consideration must be given to the implementation of new systems of health care delivery which would broaden the use of personnel promoting interchangeable utilization and sharing of professional skills.

EDUCATION AND TRAINING

The objectives of the Education and Training Subcommittee were to:

1. Gather data on the number and kinds of educational programs available in the metropolitan area, the educational floors of acceptance in the professional and para-professional health fields, the grants in aid available for educational purposes.

2. Determine which groups or agencies were presently engaged in health manpower training efforts.

3. Determine which agencies were providing or were responsible for inservice and continuing education programs.

The study identifies a minimum of 35 basic health occupations for which educational preparation is provided by universities and community colleges in the area. Universities and four-year colleges educate primarily for the professional level, while community colleges carry the major load of technical courses and two-year associate degree programs. Hospital based schools of nursing are rapidly giving way to two-year associate degree programs in community colleges. Supportive personnel have additional courses available through M.D.T.A. programs and commercial schools as well as community colleges.

Relationship Between Schools and Agencies. The committee wished to determine the degree and nature of relationships between the educational institutions and the agencies for whom they prepare trained personnel. These relationships appear to fall into two classifications: (1) those between schools and agencies regarding clinical training of students enrolled in college health career courses (Table E-6), and (2) agreements regarding initial curriculum development for certification or licensure (Table E-7). All agreements between the educational institutions and agencies result from individual contacts initiated either by the school or agencies with respect to the development of specific programs, and there appears to be no central organization assigned to develop opportunities in the community for clinical training of health personnel generally.

Approximately 70% of the educational institutions report agreements with public health agencies and/or professional associations regarding curricula preparation. Paradoxically, 77% of professional associations claim such contacts. The 30% of educational institutions which do not have such arrangements should be investigated further. It is possible that lack of relationships here can result in inadequate or unrealistic educational preparation for positions to be filled in the health field even though the school meets accreditation standards.

Relationships between health agencies and educational institutions appear even weaker with 66% of the agencies reporting some dialogue concerning training programs. Hospitals and clinics (85%) have the largest number of training program agreements with educational institutions. Training affiliations are reported by 56% of other health agencies and only 10% of industrial clinics. It is difficult to determine how much of the purported dialogue concerns the development of continuing education courses or in-service training programs.

Continuing Education. Continuing education program offerings of local educational resources are much in demand. Of all the agencies questioned, 85% reported that continuing education needed to be increased and strengthened (Table E-5). The greatest needs being expressed by hospitals and clinics (92%) and other health agencies (86%). The need for strengthening continuing education in the metropolitan area was expressed by 50% of industrial clinics.

While requests for continuing education are numerous, our data shows that only 29% of all agencies utilize existing continuing education programs; 47% of hospitals and clinics indicate that their staff enroll in such programs, while 27% of health agencies report staff involvement. Industrial clinics report no use of continuing education programs, although through interview it was determined that staff RN's are given time and compensation for attending such programs cooperatively sponsored by nursing associations, etc.

The greatest demand for continuing education programs centered around the needs of the para-professional. Those questioned felt that local community colleges should carry the major load of continuing education for the para-professionals providing specific short courses at convenient locations. Most frequently requested were courses in supervision and middle management and most of these came from hospitals where the administrators concurred that there was an insufficient number of persons trained in this area.

Specifically needed were programs for dietary supervision. The next most frequently requested courses were in the mental health field and ranged from Ph.D. programs for psychologists to mental health courses for social workers, community aides, and general hospital staff.

Additional courses were also requested in the technical field for LPN's, RN's, lab and X-ray technicians, physical and inhalation therapists. The rehabilitation field was singled out for special attention with requests for courses in teaching, orientation, research, and placement of selected disability groups.

A review of local continuing education offerings revealed several short courses available in management, but further investigation showed that these courses are poorly attended by hospital personnel. This phenomenon is generally manifest unless the health agency sets up such courses cooperatively with the educational institution and directs the course content toward the health field.

There is general disagreement between certain factions in the health field as to whether or not business management principles can effectively be applied in the health care institution. But if current offerings in management were titled "Hospital Management" they would undoubtedly draw a larger complement of persons from the health field.

Inservice Education. Of all surveyed, 87% saw a need for strengthening inservice training (Table E-3) for both professionals and para-professionals with many stating that inservice education should be made obligatory. A need for increased inservice education was expressed by 83% of hospitals and clinics and 88% of other health agencies. But, one-half of the health agencies did not respond to this question. Professional associations (79%) also felt that inservice education should be strengthened (Table E-3). The need for programs to train supervisors, administrators, and middle managers was stressed again.

A look at the data reveals 95% of hospitals and clinics and 72% of other health agencies already have inservice training programs, while only 40% of industrial clinics have such programs making an average of 78% of all organizations with inservice training (Table E-2).

Inservice Education Resources. Of the responding agencies, 25 used extension programs of local and state universities for inservice education. University of Michigan programs were mentioned more frequently than others. Special management programs developed by universities outside the state were also used. Health agencies develop their own programs of inservice education or rely heavily upon their national association for this kind of material.

Hospitals most frequently mentioned the American Hospital Association and M.D.T.A. Social Development and Upgrading program guidelines as sources.

Department heads or supervisors of training programs appear to have complete authority for selecting inservice training programs for hospital staff and use either the American Hospital Association guidelines or those

developed by their own professional associations. Few hospital administrators knew what programs actually had been selected.

While federal monies have subsidized hospital training programs, especially for the supportive disciplines, hospitals still feel the need to develop cooperative training programs among themselves to cut down on their share of expenses.

All health agencies questioned (100%) wished to collaborate with other agencies in the development of training programs to make existing staff more efficient and to train additional new staff (Table E-1a). This agreement has undoubtedly occurred as a result of pressure on hospitals to relieve the patient of the costs of training health personnel.

Remedial Education. Those agencies involved in the training of hard-core or economically and culturally deprived persons pointed to the need for remedial education prior to enrollment in established technical courses or training programs noting that basic communications skills are often lacking and that some young people need training in comportment, behavior, grooming, etc.

Instructors in New Careers programs concur, stating that remedial education is needed continually at all levels including the college level to compensate for the inadequacies of elementary and secondary education.

Proficiency Examinations. Health agencies were asked if they thought that proficiency type examinations could be substituted for a prescribed course of study as entry into that profession. Only 25% of the health agencies responded "yes." They cited the existence of licensure or certification regulations as barriers to such a progression.

Fourteen health agencies commented that they would consider an examination as entry into internship or training programs only. Areas where examinations could be used are: hospital maintenance, technical areas such as EKG technician, X-ray and lab technicians, inhalation therapist and orderly. Examinations were considered ideal as an entry screening device for high school technical trainees.

As entry into jobs, 22 health agencies would use examinations (at the paraprofessional level). Listed were nurses aide, community health worker, teachers aide, TVN testing, social worker, vocational counselor, attendant, clerical, medical records, medical corpsmen, and central surgical room unit members.

Five health agencies would use examinations as a method of upgrading into new professions. Examples given were LPN's upgrading to RN registration, bacteriologist or chemistry graduates into laboratory technicians, industrial engineers into environmental engineers and housekeeping personnel into food service work.

Proposed Health Career Programs. There are 55 new technical courses proposed for establishment between 1970-73 by eight community colleges in the seven-county region surrounding Detroit. These same institutions have approximately 25 active programs now in existence.

Procedure for Development of Health Career Educational Program. A community college must research its community and determine whether such courses will be well attended before submitting a plan to establish such a course to the internal mechanism of the college itself.

The following list in priority order of important does not include the power structure resting within the educational institution. Readers must be cognizant, however, that this power structure must be considered when a school carries an idea for a program from planning to operation.

1. State legislature
2. Senate and House committees on education
3. Joint subcommittees on state aid for community colleges. (Presently handled by George Montgomery, Jr., Detroit, Democrat)
4. Bureau of the Budget (General)
5. State Board of Education
6. State Community College Advisory Board
7. Division of Vocational Education and/or Bureau of Higher Education, Department of Education
8. Michigan Municipal Finance Commission
9. Planning Division, Bureau of Higher Education
10. National association or society
11. State Licensing or Registry Board when applicable.
12. Local association or society
13. Senior Institution from which community college wishes cooperation.
14. Individuals within a profession (Doctor or Dentist)
15. Federal Government agency that is appropriate

The above structure is essentially the result of multiple funding and proliferating professional associations. Such a process considerably slows the establishment of new health career educational programs needed to provide the community with sufficient trained manpower. There should be a simplification of the entire procedure.

Until recently, each community college made application to the State Board of Education individually without consulting with other community colleges. Recent months have seen the development of collaborative efforts among this group to prevent requests which would represent duplication of educational offerings. Health agencies are requesting one-year courses to provide only basic technical skills and speed the flow of manpower into the health field. Community colleges are considering a second year of study which would provide the underlying principle or theory necessary for broader understanding and accreditation.

Publicity on Available Programs. While there are many health career educational opportunities available, college bulletins appear to be the main method of publicizing these educational programs and careers. Funds should be accessible for mass media publicity on educational offerings available in the metropolitan area. There is no central information center in existence on health careers generally known to the public.

Teachers of Professionals. The greatest shortage incurred by the health field is that of qualified teachers of professionals. While an employee of a health facility such as an X-ray technician may supervise the clinical training of students registered in a community college program, the same technician may be unqualified to become a faculty member of a college or

university since he may lack the post-graduate degree required by that institution for status as an educator.

The need grows daily for educationally prepared teachers of professionals. As new technical programs are created, the shortage of qualified teachers becomes more acute. The teacher shortage is further aggravated by the insistence of some professional associations that only persons of specific professional background be permitted to teach such courses as anatomy, physiology, etc. This argument has constituted the major opposition to the establishment of core curricula which could alleviate the shortage of teachers in the allied health field and reduce the cost of the courses for the educational institution and the student.

Educational institutions are defeated in their efforts to make efficient use of existing faculty and equipment because of restrictions and requirements of state and federal programs. For example, full-time professional coordinators are required for some allied health programs even though the enrollment may be minimal (12-14 students). MDTA equipment may be used only by those students even though the college could make valuable use of it with the remaining student body at other times.

Mental Health Field. Our data indicates that an orderly development of new careers is necessary especially in the field of mental health. The use of psychiatric aides, technicians, mental health community aides requires the study and development of these new disciplines into established careers with universal job specifications, identity, adequate compensation, and an educational career progression with accreditation.

LICENSURE REGULATIONS

There are 16 health occupations in Michigan with licensure regulations. Twelve of these occupations are involved with dispensing health services directly to human patients. All are compulsory (requiring a license to practice) except the following: psychologists, sanitarians, licensed practical nurses and physical therapists. Licensure for the above mentioned disciplines means that those persons holding a license are authorized to use these titles or designations. Unlicensed persons may work in the field, but may not use the protected title.

Methods of Entry into Professions. A further study of these four disciplines indicates that all require a written examination as a method of entry. The psychologist, in addition, has two more methods of professional entry open to him. Educational preparation for these disciplines varies and does not necessarily relate to the voluntary type of accreditation.

The most recent disciplines to be licensed are: nursing home administrators - 1969, physical therapists - 1965, and sanitarian - 1963. None of the above offer multiple methods of entry to the profession now being recommended by national and state educational authorities, although citizenship restrictions have not been placed on these newer disciplines.

Citizenship Restriction. Citizenship restrictions are not uniform for all professions, thus seem unfair to certain professions where citizenship is required and act as a deterrent in achieving better health care through additional manpower.

Licensure Boards. Most licensure boards are composed entirely of professionals. There are variations in the number of the members on the boards and the lengths of terms of office. For example, dentists have seven board members with seven-year terms which indicates that one member leaves and one new member is appointed each year achieving a complete turnover of membership within a seven-year period. But, chiropractors have only three members serving four-year terms each, which might account for an unsatisfactory shift in membership. Lack of consistency is noted here which could lead to undue control of licensure boards by a few individuals. There also appears to be no restriction to reinstatement of members for a second term of office. Licensure regulations themselves need review and updating. Some regulations have not been reexamined since adoption.

Reciprocity. It is noticeable that the dental profession is the only discipline without reciprocity endorsement with all other states. After clarification from our consultant on the dental profession, I find that Michigan dentists would like reciprocal agreements with all states, but certain states such as Florida and Texas prohibit such action as a deterrent to professionals retiring in their states and then setting up practices.

GLOSSARY

CAMPS	-	Cooperative Area Manpower System
CHP	-	Comprehensive Health Planning Agency
GDAHC	-	Greater Detroit Area Hospital Council
MCHRD	-	Mayor's Committee for Human Resources Development
MDTA	-	Manpower Development Training Act
MESC	-	Michigan Employment Security Commission
NAB	-	National Alliance of Businessmen
OEO	-	Office of Economic Opportunity
RMP	-	Regional Medical Program for Heart, Cancer, Stroke and Related Diseases
SEMCOG	-	Southeast Michigan Council of Governments
UCS	-	United Community Services of Metropolitan Detroit
UF	-	United Foundation
WIN	-	Work Incentive Program

APPENDIX A

UCS HEALTH MANPOWER TECHNICAL ADVISORY COMMITTEE

APPENDIX A

UCS HEALTH MANPOWER TECHNICAL ADVISORY COMMITTEE

Owen W. Bombard (CHAIRMAN)
Field & Divisional Relations Manager
Public Relations Staff
Ford Motor Company

Abraham Brickner
Executive Director
Michigan Heart Association

Carl T. Crabb
Executive Director
National Multiple Sclerosis Society
(Michigan Chapter)

John A. Doherty
Executive Director
Michigan Health Council

Karl Girshman
Detroit-Wayne County Community
Mental Health Services Board

Orville G. Griswold
Personnel Director
Michigan Cancer Foundation

William F. Harsen
Executive Director
Detroit Dental Aid

John Hyde
Michigan Health Council

Frank H. Jakes, Ph.D.
Michigan Cancer Foundation

J. Ralph Jenkins
American Red Cross
Southeastern Division

Frances Levine
Executive Director
Planned Parenthood League

Barbara Lofquist
Michigan Diabetes Association

Marguerite Murray
Executive Director
Michigan League for Nursing

Gordon Robers
Executive Director
Detroit District Dental Society

Mrs. Margaret Schilling
Executive Director
United Cerebral Palsy Association

Frank Smith
Assistant Personnel Officer
Detroit Health Department

William Welke, Ph.D.
WSU Regional Medical Program

Mrs. Elsa Williams
Medical Service Consultant
Dept. of Vocational Rehabilitation

Floyd Wylie
Detroit-Wayne County Community
Mental Health Services Board

APPENDIX B

HEALTH MANPOWER SUBCOMMITTEES

APPENDIX B

HEALTH MANPOWER SUBCOMMITTEES

Recruitment and Counseling

Mrs. Elizabeth Pingree (CHAIRMAN)
Michigan Association for
Community Health Services, Inc.

Carl T. Crabb
Executive Director
National Multiple Sclerosis Society
(Michigan Chapter)

Orville G. Griswold
Personnel Director
Michigan Cancer Foundation

John Hyde
Michigan Health Council

Gilbert A. Maddox, Director
Area Training & Technical
Assistance Center

William McNary
Executive Director
Greater Detroit Area
Hospital Council

Education and Training

Dr. Lyle Robertson (CHAIRMAN)
Dean, South Campus
Macomb County Community College

John A. Doherty
Executive Director
Michigan Health Council

Mrs. Charlotte Failing
Member UCS General Planning Committee
President, Hutzel Hospital

Ernest Gardner, M.D.
Dean, WSU School of Medicine

Frank Jakes, Ph.D.
Michigan Cancer Foundation

Lillian Kelmenson
Oakland County Community College

Ernest W. Retzlaff, Ph.D.
Professor of Physiology
Michigan College of
Osteopathic Medicine

Mrs. Margaret Schilling
Executive Director
United Cerebral Palsy Ass'n

Frank Smith
Assistant Personnel Officer
Detroit Health Department

Placement and Compensation

Dr. Arthur Templeton (CHAIRMAN)
Director, Federal Vocational Programs
Detroit Public Schools

William Bresler, Director
Information & Recruitment
Michigan Health Council

Francis P. Finnegan, Administrator
Marian Manor Nursing Home

Jules E. Guillaumin
Wage & Salary Administrator
Detroit Edison Company

William E. Harsen
Executive Director
Detroit Dental Aid

Max Horton, Deputy Director
Michigan Employment
Security Commission

Miss Nan Milliken, R.N.
Director of Nursing
Wyandotte General Hospital

Utilization

C. P. Anderson, M.D. (CHAIRMAN)
Medical Director
Wayne County Department of
Social Services

Andrew Dempster
National Sanitation Foundation

Robert Fortney
Employer's Association

J. Ralph Jenkins
American Red Cross
(Southeastern Division)

Charles E. Morgan

Gordon Robers, D.D.S.
Executive Director
Detroit District Dental Society

Mrs. Elsa Williams
Medical Services Consultant
Detroit Vocational Rehabilitation

Joseph Cabot, D.D.S.
Detroit District Dental Society

APPENDIX C

UNITED COMMUNITY SERVICES
HEALTH MANPOWER QUESTIONNAIRE

UNITED COMMUNITY SERVICES
HEALTH MANPOWER QUESTIONNAIRE P
(For Professional Associations)

A. Recruitment of Health Manpower

1. Does your association or agency have a specific program of recruitment to augment the health manpower of the metropolitan region*? Yes___ No___

2. If your answer to #1 is no, do you plan to develop such a program in the near future? Yes___ No___

3. If your answer to #1 or #2 is yes, please answer the following:

a) Is your program directed towards:

1. a specific age group? Yes___ No___ (If yes, specify_____
2. individuals of a given experience level? Yes___ No___
3. individuals of a given educational attainment? Yes___ No___
4. recruiting individuals NEW to the health field? Yes___ No___
5. drawing experienced individuals back into the health field? Yes___ No___

b) Please estimate the number of individuals that were exposed to your recruitment program in 1968. _____

c) Do you use any of the following methods in your program? (Please check)

Career Days	___	Conducted Tours	___
Speakers	___	News Releases	___
Literature	___	Radio	___
Audio Visual-Films	___	Television	___
Work Experience Programs	___		

Other, describe_____

d) Are individuals assigned to carry out your program of recruitment? Yes___ No___
If yes, please list with title_____

_____ _____

e) What are your plans for the coming year's program in recruitment?
Increase activity___ Continue at present level___ Reduce activity___

f) What sources or contacts do you use for recruitment?

Community or junior colleges	___	Youth serving agencies	___
Universities	___	Conventions, professional conferences,	
Secondary schools	___	or meetings	___
Volunteer groups	___	Other	_____

B. Counseling

1. Does your association provide a specific program of counseling individuals as to health career opportunities? Yes___ No___

2. If your answer to #1 is no, do you plan to develop such a program? Yes___ No___

3. If your answer to #1 is yes, please answer the following questions:

a) Do you publicize your counseling service? Yes___ No___ If yes, how?_____

_____

b) Who in your association is assigned for counseling? (Give name, title or position)

_____ _____

_____ _____

*Includes: Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw and Wayne Counties

c) How many individuals do you estimate your association counseled in 1968 regarding entering the health service field? _____

d) What are your program plans for counseling in 1970-72?
Increase activity___ Continue at present level___ Reduce activity___

C. Education and Training

1. Do you think there are careers in health services where qualifications could be obtained by examinations as a substitute for completing a prescribed course of study?
Yes___ No___ If yes, list_____

2. Should programs of in-service training* be strengthened and increased for certain careers? Yes___ No___ If yes, list_____

3. Should programs of continuing education** for career advancement be strengthened and increased? Yes___ No___ If yes, list_____

4. Do you have a contact with a college or university regarding training? Yes___ No___
If yes, list_____

D. Future Planning

1. What would you like to see done to draw more people into the health service field?

2. Is your association willing to participate in developing and executing joint health manpower projects with other health organizations? Yes___ No___ If yes, please check:

Recruitment ___ Utilization ___
Placement ___ Training ___

3. Please indicate your reactions to major problems in increasing the health manpower supply or give concepts on what could be done to improve the situation:

Name and Title _____ Organization _____

rvice training - provided internally by the agency's own efforts

nuing education - more formalized long or short-term courses provided in conjunction with an educational institution

UNITED COMMUNITY SERVICES
HEALTH MANPOWER QUESTIONNAIRE H

A. Utilization of Manpower

1. How many budgeted health positions do you have? (Enter number)

   a) Professional ___ c) Office ___
   b) Para-professional* ___ d) Maintenance ___

2. How many vacancies did you have in the following categories in 1968?

   a) Professional ___ c) Office ___
   b) Para-professional ___ d) Maintenance ___

3. What was the annual number of separations in the following categories for the year 1968?

   a) Professional ___ c) Office ___
   b) Para-professional ___ d) Maintenance ___

4. Please attach a list of job classifications for professional and para-professional positions with an indication of salary ranges.

5. What kinds of fringe benefits are offered your employees? (Please check all that apply)

   a) Hospitalization ___ e) Vacation ___
   b) Group Life ___ f) Sick Leave ___
   c) Retirement Plan ___ g) Other, specify _____
   d) Other Insurance _____

6. Do you have a collective bargaining unit or union? Yes___ No___

7. Check the methods of communication which you use with your staff:

   a) Regular staff meetings ___ d) Periodic printed or mimeo releases ___
   b) Staff committees ___ e) Printed personnel mannual ___
   c) Other, specify _____

8. Do you use any of the following methods to up-grade individuals in your organization?

   a) New classification or promotion ___ d) Increased salary ___
   b) Increased benefits ___ e) Additional training on job ___
   c) Scholarships to pursue additional training ___ f) Other _____
   _____

9. Does your organization have a career ladder that enables a staff member to progress from one health career to another? Yes___ No___ If yes, amplify _____
   _____

10. What percentage of your present professional staff has come to you from:

    a) Outside the Metropolitan region** ___% b) Outside Michigan ___%

11. What resources do you generally use to obtain professional staff?

    a) College or university contacts ___ f) Employment Agencies ___
    b) Intra-agency referral ___ g) Newspaper Advertising ___
    c) Inter-agency referral ___ h) Professional Conventions - Meetings ___
    d) Professional Assoc. Placement Bureaus ___ i) Professional Journal Ads ___
    e) Other _____

*professional - requiring special preparation or training, but no college degree

**Includes: Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw and Wayne Counties

12. Do you have difficulty in obtaining individuals to maintain adequate professional staff?

Yes___ No___ Para-professional: Yes___ No___ Office: Yes___ No___
Maintenance: Yes___ No___ If yes, comment_____

_____

13. Have you conducted any studies or analysis of staff utilization? Yes___ No___

14. Has technological advancement in the health field increased ___ or decreased ___ your need for personnel?

15. Has application of technological advancements in the health field helped to utilize available personnel more efficiently? Yes___ No___

16. Have any recent changes in policy improved utilization of personnel? Yes___ No___

17. Do you use computer services in the analysis and control of personnel utilization? Yes___ No___

18. If your answer to #17 is no, do you consider this feasible? Yes___ No___
Desirable? Yes___ No___

19. Do you think that the sharing of individuals with special skills among health agencies would increase utilization of health manpower? Yes___ No___

Recruitment

1. Does your agency or organization have a specific program of recruitment to draw individuals into the health field? Yes___ No___

2. If your answer to #1 is no, do you plan to develop such a program in 1970-72? Yes___ No___

3. If your answer to #1 is yes, please answer the following:

a) Is your recruitment program directed towards:

1. a specific age group? Yes___ No___ (If yes, specify_____)
2. individuals of a given experience level? Yes___ No___
3. individuals of a given education attainment? Yes___ No___
4. drawing experienced individuals back into the health field? Yes___ No___
5. recruiting individuals NEW to the health field? Yes___ No___

b) Do you use any of the following methods in your recruitment program? (Please check all that apply)

Career Days	___	Conducted Tours	___
Speakers	___	News Releases	___
Literature	___	Radio	___
Audio Visual-Films	___	Television	___
Work Experience Programs	___		

Other, describe_____

c) Please estimate the number of individuals exposed to your recruitment program in 1968. _____

d) Are specific individuals assigned to carry out your program of recruitment? Yes___ No___ If yes, please list with title_____

_____ _____

_____ _____

What are your recruitment plans for 1970?
Increase activity___ Continue at present level___ Reduce activity___

f) What sources or contacts do you use for recruitment?

Community or jr. colleges ___
Universities ___
Secondary schools ___
Volunteer groups ___
Youth serving agencies ___
Conventions, professional conferences, or meetings ___
Other ___

C. Counseling

1. Does your agency or organization provide a specific program of counseling individuals as to health career opportunities? Yes___ No___

2. If your answer to #1 is no, do you plan to develop such a program? Yes___ No___

3. If your answer to #1 is yes, please answer the following questions:

a) Do you publicize your counseling service? Yes___ No___ If yes, how?___

b) If someone in your agency or organization is specifically assigned for counseling, give name, title or position:___

c) How many individuals do you estimate your agency or organization counseled in your last fiscal year regarding entering the health service field? ___

d) What are your plans for counseling in 1970?
Increase activity___ Continue at present level___ Reduce activity___

D. Education and Training

1. Are there careers in health services where entry could be obtained by examination as a substitute for completing a prescribed course of study? Yes___ No___ If yes, list:

2. Do you have an in-service training* program? Yes___ No___

3. Do you utilize existing programs such as the National Health Council Continuing Educatio Series? Yes___ No___ If yes, list___

4. Should programs of continuing education** in career advancement be strengthened and increased? Yes___ No___ If yes, list___

5. Should programs of in-service training be strengthened and increased for certain careers Yes___ No___ If yes, list___

6. Do you have a working relationship regarding training with:

a) University undergraduate program ___
b) University graduate program ___
c) Jr. or community college ___
d) Other ___

Yes___ No___ If yes, please give name of institution___

---

ervice training - provided internally by the agency's own efforts

inuing education - more formalized long or short-term courses provided in conjunction with an educational institution

E. Future Planning

1. Is your agency willing to participate in developing and executing joint health manpower projects with other health organizations? Yes___ No___ If yes, in which of the following areas:

Recruitment ___	Utilization ___
Placement ___	Training ___

Other, describe_____

2. What would you like to see done to draw more people into the health service field?

_____

_____

3. Please indicate your reactions to major problems in increasing the health manpower supply or give concepts on what could be done to improve the situation:

UNITED COMMUNITY SERVICES
HEALTH MANPOWER QUESTIONNAIRE E

A. Education and Training*

1. What educational opportunities does your institution offer for preparation in various health careers? (Please attach list of occupations for which you have curricula.)

2. What plans do you have to include new curricula in the health field? _____

3. How many students in the health field did you admit in the year 1968-69? _____ (List by occupation) _____

4. How many graduated in 1968-69? _____ (List by occupation) _____

5. What percentage of those trained in health careers in your institution do you estimate remain in practice in the Detroit Metropolitan region? _____% (Includes Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw and Wayne Counties.)

6. Do you have any agreements or cooperative arrangements with public health agencies and/or professional associations regarding curricula or preparation? Yes___ No___ If yes, indicate organization _____

B. Counseling

1. Does your institution provide a specific program of counseling individuals as to health career and job opportunities? Yes___ No___

2. If your answer to #1 is no, do you plan to develop such a program? Yes___ No___
   a) What deters development of such a program? _____

3. If your answer to #1 is yes, please answer the following questions:
   a) Do you publicize your counseling service? Yes___ No___ If yes, how? _____
   b) Who in your institution is assigned for health career counseling? (Give name, title and position) _____
   c) How many individuals do you estimate your institution counseled during 1968-69 regarding entering the health service field? _____
   d) What are your plans for counseling in 1970-72?
      Increase activity___ Continue at present level___ Reduce activity___

*Please use additional sheets if spaces provided below are not sufficient.

C. Recruitment of Health Manpower

1. Does your institution undertake a specific program of recruitment to attract students for academic preparation in the health field? Yes___ No___

2. If your answer to #1 is no, do you plan to develop such a program in 1970-72? Yes___ No___

   a) What deters development of such a program? _____

3. If your answer to #1 is yes, please answer the following:

   a) Is your program directed towards:

      1. recruiting individuals NEW to the health field? Yes___ No___
      2. drawing experienced individuals into the health field? Yes___ No___

   b) How many individuals do you estimate were exposed to your recruitment program in 1968-69? _____

   c) Do you use any of the following methods in your recruitment program? (Please check all that apply.)

Career Days	___	Conducted Tours	___
Speakers	___	News Releases	___
Literature	___	Radio	___
Audio Visual-Films	___	Television	___
Work Experience Programs	___		

   Other, describe _____

   d) Are individuals assigned to carry out your program of recruitment? Yes___ No___
   If yes, please list with title _____

   e) What are your recruitment plans for 1970-71?
   Increase activity___ Continue at present level___ Reduce activity___

D. Future Planning

1. What would you like to see done to draw more people into the health service field?

2. Is your institution willing to participate in developing and executing joint health manpower projects with other health organizations and/or institutions? Yes___ No___
   If yes, please check:

Recruitment	___	Utilization	___
Placement	___	Training	___

   Other, describe _____

3. Please indicate your reactions to major problems in increasing the health manpower supply or give concepts on what could be done to improve the situation:

APPENDIX D

PROFESSIONAL RESOURCES IN SOUTH EAST MICHIGAN

Health Manpower Resources[1]

Number of Practicing Physicians[2]

1966 Est. Population	County	M. D.	D. O.	Total	No. Physician per 1,000 Pop.
45,000	Livingston	20	8	28	.622
550,000	Macomb	237	157	394	.716
119,000	Monroe	44	18	62	.521
830,000	Oakland	759	213	972	1.171
114,000	St. Clair[3]	88	8	97	.851
211,000	Washtenaw	499	15	514	2.436
2,768,000	Wayne	3082	591	3673	1.327
4,637,000	Total	4729	1011	5740	1.238
1,640,000	(Detroit)	2235	308	2543	1.238
1,128,000	(Bal. of Wayne)	847	283	1130	1.002

1 Source: Greater Detroit Area Hospital Council
1966 Patient Discharge Survey
2 Excludes those in Research and Administration
3 Source: Michigan State Medical Society

SPECIALITY LISTING ALL PHYSICIANS[1]

(M.D.'s & D.O.'s)

SPECIALITY	Number	Percent
ALLERGY	13	.2
ANESTHESIOLOGY	179	3.2
DERMATOLOGY	82	1.5
GENERAL PRACTICE	1600	28.4 [2]
INTERNAL MEDICINE	847	15.1
NEUROLOGICAL SURGERY	35	.6
OBSTETRICS AND GYNECOLOGY	474	8.4
OPHTHALMOLOGY	147	2.6
ORTHOPEDIC SURGERY	111	2.0
OTOLARYNGOLOGY	98	1.7
PATHOLOGY	139	2.5
PEDIATRICS	318	5.7
PHYSICAL MEDICINE AND REHABILITATION	25	.4
PLASTIC SURGERY	28	.5
PREVENTIVE MEDICINE	23	.4
PROCTOLOGY	23	.4
PSYCHIATRY AND NEUROLOGY	357	6.3
RADIOLOGY	228	4.1
SURGERY	670	11.9
THORACIC SURGERY	39	.7
UNKNOWN	93	1.7
UROLOGY	95	1.7
TOTAL	5624	100.0

1 Six Counties only plus 12 physicians outside the six-county region

2 M.D.'s have 961 or 20.8% of membership in General Practice
D.O.'s have 639 or 63.8% of their membership in General Practice

Source: Greater Detroit Area Hospital Council

Number of R. N.'s by County*

1969 Est. (1) No. of Population	County	No. of R. N.'s	No. R. N.'s per 1,000 Population
52,000	Livingston	222	4.3
630,000	Macomb	2390	3.8
127,000	Monroe	310	2.4
920,000	Oakland	4745	5.2
121,000	St. Clair	546	4.5
246,000	Washtenaw	2373	9.6
2,697,000	Wayne	11688	4.3
4,793,000	Total	22274	4.6

*Source: Michigan State Board of Nursing. There figures were accumulated between 1964 and 1969 (Number licensed and renewed during that period). These figures may over estimate the actual supply of nurses since licenses that are not renewed are not deleted from the record.

(1) Source of Population Estimates: Detroit Regional Transportation and Land Use Study (TALUS), a special project of the Planning Division of the Southeast Michigan Council of Governments.

Number of Dentists by County*

County	No. of Dentists	Dentists per 1,000 Population
Livingston	24	.461
Macomb	191	.303
Monroe	26	.204
Oakland	438	.476
St. Clair	47	.388
Washtenaw	229	.930
Wayne	1493	.553
Total	2448	.510

* Source: Michigan Dental Association

Hospital Employees*

Profession	No. full time Equiv. in SEM	Vacancies in SEM	Vacancy Rate per 1,000 in SEM	Vacancy Rate per 1,000 in State
Registered Nurse	4,910	923	118	128
Employed Physician	894	65	73	64
Clinical Lab Technician	876.5	131	149	122
Physical Therapists	98	32	327	328
Practical Vocational Nurses	3,142	380	121	100
Inhalation Therapist Aides	311.5	24	77	75
Dietitians	178.5	27	151	118

*Source: Michigan Hospital Association 1969 Health Manpower Study. For purposes of this study Southeastern Michigan represents 73 hospitals reporting from the counties of Wayne, Washtenaw, Oakland, Macomb, and Livingston.

Analysis of this data yields interesting conclusions. First, the vacancy rates in SEM exceed the state average in almost every category. Secondly, the back-up data reflects a severe shortage of manpower in Wayne and Oakland Counties, while minimal shortages appear in the remaining counties. For instance, of the 923 vacancies in registered nursing, 496 and 422 result from Wayne and Oakland respectively. Of a shortage of 185 ward clerks, 184 result from Wayne and Oakland combined.

Public Health Personnel

The Michigan Department of Public Health reports the following number of registered public health sanitarians working in the Southeastern region.

Public Health Personnel

Number of Environmental Health Personnel

County	Number	County	Number
Livingston	2	Oakland	27
Macomb	17	St. Clair	4
Monroe	6	Washtenaw	9
		Wayne	21

Public Health Nursing Personnel

County	Number	County	Number
Washtenaw County		Monroe County	
Registered Nurse	37	Registered Nurse	15
Licensed Practical Nurse	5	Licensed Practical Nurse	1
Other	8	Other	2
St. Clair County		Macomb County	
Registered Nurse	17	Registered Nurse	50
Licensed Practical Nurse	1	Licensed Practical Nurse	4
Other	5	Other	9
Livingston County		Oakland County	
Registered Nurse	7	Registered Nurse	130
Licensed Practical Nurse	2	Licensed Practical Nurse	23
Other	1	Other	4
		Wayne County	
		Registered Nurse	326
		Licensed Practical Nurse	53
		Other	79

A P P E N D I X E

TABLES FROM THE HEZLTH MANPOWER QUESTIONNAIRS

Table R-1

Organizations Having a Specific Program of Recruitment in Health Field

Recruitment Program	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	188	100.0	50	100.0	107	100.0	31	100.0
With recruitment program	103	54.8	35	70.0	49	45.8	19	61.3
Without recruitment program ...	85	45.2	15	30.0	58	54.2	12	38.7
Not reported	...	...	...	...	...	...	...	...

Table R-2
Plans for Developing Specific Program of
Recruitment in the Health Field

Programs Plans	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	85	100.0	15	100.0	58	100.0	12	100.0
Planning to develop program ...	12	16.7	2	20.0	9	18.0	1	8.3
Not planning to develop program	60	83.3	8	80.0	41	82.0	11	91.7
Does not apply	2		2		...		...	
Not reported	11		3		8		...	

Table R-3
Direction of Recruitment Program

Program direction	[illegible]		Type of Organization					
			Education		Health		Professional	
			No.	%	No.	%	No.	%
Specific age group	...		...	...	49	100.0	19	100.0
Yes	...		...	...	29	60.4	12	63.2
No	...		...	...	19	39.6	7	36.8
Not reported	...		...	...	1	...	...	...
Given experience level	...		...	...	49	100.0	19	100.0
Yes	...		...	...	19	42.2	6	40.0
No	...		...	...	26	57.8	9	60.0
Not reported	...		...	...	4	...	4	...
Given educational level	...		...	...	49	100.0	19	100.0
Yes	...		...	...	43	87.8	14	87.5
No	...		...		6	12.2	2	12.5
Not reported	...		...	...	...	...	3	...
Drawing experienced persons back into the health field			35	100.0	49	100.0	19	100.0
Yes			33	100.0	18	40.0	18	94.7
No			...	...	27	60.0	1	5.3
Not reported			2	...	4	...	...	...
Recruiting persons new to health field			35	100.0	49	100.0	19	100.0
Yes			20	87.0	43	95.6	10	58.8
No			3	13.0	2	4.4	7	41.2
Not reported			12	...	4	...	2	...

Table R-6
Assignment of Specific Individuals to Carry Out Recruitment Program

Assignment	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations.....	103	100.0	35	100.0	49	100.0	19	100.0
Individuals are assigned.....	84	85.7	32	94.1	38	79.2	14	87.5
Individuals are not assigned...	14	14.3	2	5.9	10	20.8	2	12.5
Not reported.....	5		1		1		3	

Table R-5
Methods Used in Recruitment Program

Recruitment Methods	Total	Type of Organization		
		Education	Health	Professional
Career days.....	66	30	23	16
Speakers.....	72	31	27	17
Media.....	85	36	26	23
Audio visual films.....	27	10	8	10
Work experience programs.....	41	11	26	5
Conducted tours.....	59	25	25	11
Literature.....	69	30	26	13
Other.....	20	7	11	1
Agencies reporting	101	35	47	19

Note: The figures may exceed the number of agencies reporting because three methods categories were combined to form the "media" category.

Table R-7
Recruitment Plans for 1970

Recruitment plans	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	103	100.0	35	100.0	49	100.0	19	100.0
Increase activity	46	47.4	20	62.5	18	38.3	8	44.4
Continue at present level	48	49.5	11	34.4	27	57.4	10	55.6
Reduce activity	3	3.1	1	3.1	2	4.3	...	...
Not reported	6		3		2		1	

Table R-8
Sources or Contacts Used for Recruitment

Sources of Contacts	Type of Organization			
	Health		Professional	
	No.	%	No.	%
Community or junior colleges...	14	29.8	9	47.4
Universities.....	22	46.8	6	31.6
Secondary schools.....	30	63.8	16	84.2
Volunteer groups.....	10	21.3	3	15.8
Youth serving agencies.....	4	8.5	2	10.5
Conventions, professional conferences or meetings.....	15	31.9	8	42.1
Other sources or contacts.....	4	8.5	1	5.3

Table C-1
Provision of Specific Program of Counseling Individuals
on Health Career Opportunities

Provision of Counseling	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	188	100.0	50	100.0	107	100.0	31	100.0
Provides counseling program ...	57	33.3	33	66.0	12	13.2	12	40.0
Does not provide counseling program	114	66.7	17	34.0	79	86.8	18	60.0
Not reported	17		...		16		1	

Table C-2
Plans for Developing Specific Programs of Counseling Individuals
on Health Career Opportunities

Programs plans	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	114	100.0	17	100.0	79	100.0	18	100.0
Planning to develop program ...	8	8.9	...	...	6	10.2	2	12.5
Not planning to develop program	82	91.1	15	100.0	53	89.8	14	87.5
Not reported	24		2		20		2	

Table C-3
Publicizing Counseling Service Programs

Program Publicizing	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	57	100.0	33	100.0	12	100.0	12	100.0
Publicizes counseling service ...	35	68.6	23	71.9	3	37.5	9	81.8
Does not publicze counseling service	16	31.4	9	28.1	5	62.5	2	18.2
Not reported	6		1		4		1	

Note: Based on data from 57 organizations that do provide a specific program of counseling individuals on health career opportunities.

Table C-6
Plans for Counseling for 1970-1972

Plans for Counseling	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	57	100.0	33	100.0	12	100.0	12	100.0
Increased activity	30	61.2	20	62.5	3	42.9	7	70.0
Continue at present level	18	36.7	11	34.4	4	57.1	3	30.0
Reduce activity	1	2.1	1	3.1	...	...	...	...
Not reported	8		1		5		2	

Note: Based on date from 57 organizations that do provide a specific program of counseling individuals on health career opportunities.

Table P-1-4
Rate of Turnover Among Professional Staff

Percent Turnover	Hospitals and Clinics		Industrial Clinics		Other Health Agencies	
	No.	%	No.	%	No.	%
Total	30	100.0	11	100.0	40	100.0
None	2	6.7	6	54.5	18	45.0
Under 30 percent	11	36.6	5	45.5	17	42.5
30 to 59 percent	15	50.0	...	...	5	12.5
60 percent and over ..	2	6.7	...	...	...	...

Rate of Turnover Among Para-Professional Staff

Percent Turnover	Hospitals and Clinics		Industrial Clinics		Other Health Agencies	
	No.	%	No.	%	No.	%
Total	26	100.0	7	100.0	23	100.0
None	6	23.1	5	100.0	6	26.1
Under 30 percent	5	19.2	...	...	12	52.2
30 to 59 percent	11	42.3	...	...	4	17.4
60 percent and over ..	4	15.4	...	...	1	4.3

Table P-5
Benefits Offered Employees

Benefits	Total all agencies with benefits		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Hospitalization	98	93.3	40	93.0	10	90.9	48	92.3
Group life	96	91.4	39	90.7	11	100.0	46	88.5
Retirement plan	95	90.5	38	88.4	11	100.0	46	88.5
Other insurance	44	41.9	23	53.5	9	81.8	12	23.1
Vacation	103	98.1	42	97.7	11	100.0	50	96.2
Sick leave	101	96.2	41	95.3	11	100.0	49	94.2
Other benefits	48	45.7	26	60.5	5	45.5	17	32.7
No. Agencies Responding	106		43		11		52	

Table P-6
Collective Bargaining Units or Unions

Collective bargaining unit	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total organizations	107	100.0	44	100.0	11	100.0	52	100.0
With unit	30	28.3	17	39.5	2	18.2	11	21.2
Without unit	76	71.7	26	60.5	9	81.8	41	78.8
Not reported	1		1		...		...	

Table P-7
Methods of Communicating with Staff Members

Methods of communication	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Regular staff meetings	85	81.7	40	93.0	5	45.5	40	80.0
Staff committees	57	54.8	36	83.7	1	9.1	20	40.0
Periodic printed or mimeo releases	69	66.3	33	76.7	3	27.3	32	64.0
Printed personnel manual	68	65.4	36	83.7	4	36.4	28	56.0
Other methods	34	32.7	17	39.5	6	54.5	11	22.0
No. Agencies Responding	104		43		11		50	

Table P-8
Methods of Upgrading Staff Members

Upgrading methods	Total		Hospitals and clinics		Indus. clinics		other health agencies	
	No.	%	No.	%	No.	%	No.	%
New classification or promotion ..	83	79.8	40	93.0	5	50.0	38	74.5
Increased benefits	41	39.4	25	58.1	3	30.0	13	25.5
Scholarship to pursue additional training	45	43.3	20	46.5	4	40.0	21	41.2
Increased salary	91	87.5	39	90.7	9	90.0	43	84.3
Additional training on job	78	75.0	34	79.1	7	70.0	37	72.5
Other methods	20	19.2	9	20.9	1	10.0	10	19.6
No. Agencies Responding	104		43		10		51	

Table P-9
Career Ladder to Enable Staff Member
to Progress from One Health Career to Another

Career Ladder	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total organizations	107	100.0	44	100.0	11	100.0	52	100.0
With career ladder.....	40	40.8	23	60.5	...	...	17	34.0
Without career ladder.....	58	59.2	15	39.5	10	100.0	33	66.0
Not reported.....	9		6		1		2	

Table P-10
Professional Staff From Outside Metropolitan Region
And Outside Michigan

Percent of Staff	Hospitals & Clinics		Industrial Clinics		Other Health Agencies	
	Outside Metro. Region	Outside Michigan	Outside Metro. Region	Outside Michigan	Outside Metro. Region	Outside Michigan
Total Organizations ...	44	44	11	11	52	52
None	10	7	9	8	15	14
Under 50 percent	7	17	1	1	17	18
Over 50 percent	2	1	...	...	9	5
Not reported	25	19	1	2	11	15

Table P-11
Resources Generally Used to Obtain Professional Staff

Resources	Total		Hospitals and Clinics		Other Health Agencies	
	No.	%	No.	%	No.	%
College or university contacts.....	62	65.3	24	55.8	38	73.1
Professional association placement bureaus	52	54.7	26	60.5	26	50.0
Employment agencies	48	50.5	25	58.1	23	44.2
Newspaper advertising	53	55.8	28	65.1	25	48.1
Professional conventions or meetings	49	51.6	18	41.9	31	59.6
Professional journal advertisements	56	58.9	30	69.8	26	50.0
Other resources[1]	(114)	-	(53)	-	(61)	-

[1] Other resources included inter-agency referrals, intra-agency referrals, civil service circulars, personal contacts, and hospitals with their own schools for registered nurses.

Table P-12
Percent of Organizations
Encounting Difficuties in Obtaining Staff

	Hospitals and Clinics	Industrial Clinics	Other Health Agencies
Position	Percent	Percent	Percent
Professional	68.3	36.4	62.0
Para-professional	50.0	0.0	42.9
Office	59.5	0.0	29.5
Maintenance	48.3	0.0	17.9

Table U-13
Studies or Analysis Conducted
on Staff Utilization

Studies	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total organizations	107	100.0	44	100.0	11	100.0	52	100.0
Have conducted studies	62	60.2	29	69.0	8	72.7	25	50.0
Have not conducted studies	41	39.8	13	31.0	3	27.3	25	50.0
Not reported	4		2		...		2	

Table U-14
Technological Advancement Influencing
Need for Personnel

Need	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total organizations	107	100.0	44	100.0	11	100.0	52	100.0
Increased need	72	80.0	35	89.8	6	60.0	31	75.6
Unchanged need	14	15.6	2	5.1	4	40.0	8	19.5
Decreased need	4	4.4	2	5.1	...	...	2	4.9
Not reported	17		5		1		11	

Table U-15
More Efficient Utilization of Available Personnel
Through Application of Technological Advancements

Utilization of Personnel	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total organizations	107	100.0	44	100.0	11	100.0	52	100.0
Helped	64	69.6	29	70.7	8	80.0	27	65.8
Did not help	22	23.9	8	19.5	2	20.0	12	29.3
Both helped and did not help ...	6	6.5	4	9.8	...	...	2	4.9
Not reported	15		3		1		11	

Table U-16
Improvement of Utilization of Personnel
Through Recent Changes in Policy

Utilization of Personnel	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total organizations	107	100.0	44	100.0	11	100.0	52	100.0
Improvement in utilization	62	62.6	28	68.3	5	50.0	27	58.7
No improvement in utilization ..	37	37.4	13	31.7	5	50.0	19	41.3
Not reported	10		3		1		6	

Table U-17
Use of Computer Services in the Analysis and Control of Personnel Utilization

Computer Use	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total organizations	107	100.0	44	100.0	11	100.0	52	100.0
Use computer services	16	15.2	11	25.0	...	...	5	10.0
Do not use computer services	89	84.8	33	75.0	11	100.0	45	90.0
Not reported	2		...		...		2	

Table U-18
Feasibility and Desirability of Computer Use [1]

Feasibility and Desirability	Total	Hospitals and clinics	Indus. clinics	Other health agencies
Total organizations	89	33	11	45
Feasible	29	12	3	14
Not feasible	39	8	6	25
Not reported	21	13	2	6
Total organizations	89	33	11	45
Desirable	29	11	3	15
Not desirable	35	12	6	17
Not reported	25	10	2	13

[1] Based on data from 89 health agencies reporting they do not use computer services in the analysis and control of personnel utilization.

Table U-19
Increasing Utilization of Health Manpower
Through Sharing of Individuals with Special Skills Among Health Agencies

	Total		Hospitals and clinics		Indus. clinics		Other health agencies	
Utilization of manpower	No.	%	No.	%	No.	%	No.	%
Total organizations.....	107	100.0	44	100.0	11	100.0	52	100.0
Would increase utilization	79	84.0	32	86.5	6	60.0	41	87.2
Would not increase utilization ...	15	16.0	5	13.5	4	40.0	6	12.8
Not reported	13		7		1		5	

E-6

Agency Relationship with Educational Institutions Regarding Training

Realtionships	Total agencies		Health agencies								Prof. agencies	
			Total		Hospitals and clinics		Indus. agencies		Other health agencies			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total agencies	140	100.0	112	100.0	44	100.0	11	100.0	57	100.0	28	100.0
With relationships	83	66.4	63	63.6	35	85.4	1	10.0	27	56.3	20	76.9
Without relationships ...	42	33.6	36	36.4	6	14.6	9	90.0	21	43.7	6	23.1
Not reported	15		13		3		1		9		2	

E-1

Use of Examination as a Means of Entry Into or Advancement Within a Profession

	Total agencies		Health agencies								Prof. agencies	
			Total		Hospitals and clinics		Indus. agencies		Other health agencies			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total agencies	140	100.0	112	100.0	44	100.0	11	100.0	57	100.0	28	100.0
Yes	27	24.5	23	27.1	13	37.1	...	...	10	25.0	4	16.0
No	83	75.5	62	72.9	22	62.9	10	100.0	30	75.0	21	84.0
Not reported	30		27		9		1		17		3	

E-2
In-Service Training Programs

Subject	Health agencies: Total		Hospitals and clinics		Indus. agencies		Other health agencies	
	No.	%	No.	%	No.	%	No.	%
Total agencies.....	112	100.0	44	100.0	11	100.0	57	100.0
With program.....	82	78.1	40	95.2	4	40.0	38	71.7
Without program.....	23	21.9	2	4.8	6	60.0	15	28.3
Not reported.....	7		2		1		4	

E-3
Need for Strengthening In-Service Training

Strengthen Program	Total agencies		Health agencies: Total		Hospitals and clinics		Indus. agencies		Other health agencies		Prof. agencies	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total agencies.....	140	100.0	112	100.0	44	100.0	11	100.0	57	100.0	28	100.0
Should be strenthened.....	83	80.6	64	81.0	33	82.5	3	42.9	28	87.5	19	79.2
Should not be strengthened..	20	19.4	15	19.0	7	17.5	4	57.1	4	12.5	5	20.8
Not reported.....	37		33		4		4		25		4	

E-5

Need for Strengthening Education
for Career Programs - Advancements

	Total agencies		Health agencies								Prof. agencies	
			Total		Hospitals and clinics		Indus. agencies		Other health agencies			
Strengthen Program	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total agencies.....	140	100.0	112	100.0	44	100.0	11	100.0	57	100.0	28	100.0
ıould be strenthened.....	89	87.3	68	86.1	35	92.1	3	50.0	30	85.7	21	91.3
ıould not be strengthened.	13	12.7	11	13.9	3	7.9	3	50.0	5	14.3	2	8.7
ɔt reported.....	38		33		6		5		22		5	

E-4

Use Established Continuing Education Programs

	Health agencies							
	Total		Hospitals and clinics		Indus. agencies		Other health agencies	
Utilization	No.	%	No.	%	No.	%	No.	%
Total agencies.....	112	100.0	44	100.0	11	100.0	57	100.0
Programs utilized.....	28	28.9	17	47.2	...	...	11	21.6
Programs not utilized ...	69	71.1	19	52.8	10	100.0	40	78.4
Not reported.....	15		8		1		6	

Table E-7

Do You Have Any Agreements or Cooperative Arrangements with Public Health Agencies and/or Professional Assoc. Regarding Curricular Preparation

Subject	Educational Agencies	Percent
Total	53	100.0
Yes	36	70.6
No	15	29.4
Not reported ...	2	...

E-5

Need for Strengthening Education
for Career Programs - Advancements

	Total agencies		Health agencies								Prof. agencies	
			Total		Hospitals and clinics		Indus. agencies		Other health agencies			
Strengthen Program	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total agencies.....	140	100.0	112	100.0	44	100.0	11	100.0	57	100.0	28	100.0
ıould be strenthened.....	89	87.3	68	86.1	35	92.1	3	50.0	30	85.7	21	91.3
ıould not be strengthened.	13	12.7	11	13.9	3	7.9	3	50.0	5	14.3	2	8.7
ɔt reported.....	38		33		6		5		22		5	

E-4

Use Established Continuing Education Programs

	Health agencies							
	Total		Hospitals and clinics		Indus. agencies		Other health agencies	
Utilization	No.	%	No.	%	No.	%	No.	%
Total agencies.....	112	100.0	44	100.0	11	100.0	57	100.0
Programs utilized.....	28	28.9	17	47.2	...	...	11	21.6
Programs not utilized ...	69	71.1	19	52.8	10	100.0	40	78.4
Not reported.....	15		8		1		6	

Table E-7

Do You Have Any Agreements or Cooperative Arrangements with Public Health Agencies and/or Professional Assoc. Regarding Curricular Preparation

Subject	Educational Agencies	Percent
Total	53	100.0
Yes	36	70.6
No	15	29.4
Not reported ...	2	...

Table F-1
Participation in Developing and Executing Joint Health Manpower Projects with Other Health Organizations

Participation	Total		Type of Organization: Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Total organizations	188	100.0	50	100.0	107	100.0	31	100.0
Willing to participate	143	87.7	40	93.0	76	82.8	27	96.4
Not willing to participate ...	20	12.3	3	7.0	16	17.2	1	3.6
Not reported	25		7		15		3	

Table P-1a

Areas of Participation in Developing and Enacting Joint Health Manpower Projects with Other Health Organizations

Areas of Participation	Total		Type of Organization					
			Education		Health		Professional	
	No.	%	No.	%	No.	%	No.	%
Recruitment	92	82.1	33	89.2	39	78.0	20	80.0
Placement	57	50.9	20	54.1	27	54.0	10	40.0
Utilization	54	48.2	12	32.4	31	62.0	11	44.0
Training	89	79.5	23	62.2	50	100.0	16	64.0
Other areas	5	4.5	4	10.8	1	2.0	...	...