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ABSTRACT

This document summarizes the proceedings of the National Student Conference on Health Manpower, Chicago, March 1972. Following a staff report on the conference proceedings, student research papers on workshop topics are presented. These papers concern health profession recruitment and retention with consideration of general minority and sex-biased problems, the consumer-community relationship and provider responsibility, regulations and restrictions as health manpower barriers, health team alternative practice models, a summary of interdisciplinary student health projects, health manpower 1967-1972, health professions mobility, technologic change and medicine, health professions education, and maintaining quality of care in the health professions. Student workshop recommendations and conference caucus statements are included. (MJM)

Proceedings of the

NATIONAL STUDENT CONFERENCE on HEALTH MANPOWER

March 11 - 12, 1972
Chicago, Illinois

NATIONAL STUDENT CONFERENCE

ON

HEALTH MANPOWER

A summary of the proceedings of a conference administered by the Student American Pharmaceutical Association in cooperation with other major health science student organizations for the purpose of examining health manpower problems from an interdisciplinary perspective.

March 11 & 12, 1972

Chicago, Illinois

The conference was presented pursuant to contract #72-4072 from the Bureau of Health Manpower Education, National Institutes of Health. The opinions expressed in the proceedings are those of the individuals and should not be construed as representing the opinions or policy of the Department of Health Education and Welfare.

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PART 1

STAFF REPORT ON STUDENT CONFERENCE ON HEALTH MANPOWER

During the past decade, health manpower has become an issue of increasing concern to health science students. Realizing that the health manpower problem has many facets, students have responded by engaging in an unusually broad spectrum of activities. Students have been involved in efforts to revise education and career mobility patterns, to develop projects in manpower shortage areas, to initiate recruitment programs and to experiment with more effective and efficient modes of health care delivery.

As student projects increased in diversity and number, health science students recognized the need for a national conference that would bring students from various health disciplines together to examine the health manpower crisis, to evaluate their past efforts in the area and to develop more unified strategies for future student activity. The conference was unique in that it was conceived, planned and administered by an interdisciplinary group of students who were convinced that only by combining the resources of the various health professions could any significant solutions to the health manpower problem be developed.

DEFINITION OF HEALTH MANPOWER

Students responsible for planning the conference agreed that health manpower should be defined in the broad sense of the term. The problem of simply increasing numbers in the health professions is only one small aspect of a larger issue. The larger issue is the question of how the health professions can meet the ever growing demand for meaningful health care--care that best utilizes the talents of the various health workers and that best serves the unique needs of diverse patient populations. With this broad perspective in mind, students structured workshop sessions to study such topics as health professions education, health delivery systems, career mobility, licensure, under and over utilization of health care personnel, recruitment and viability of the health team approach to health care.

GOALS OF THE CONFERENCE

The conference was designed to encourage maximum involvement of each conference participant through small group discussion sessions (10-15 students). The goals of the discussion groups were two-fold:

(1) to foster an interprofessional awareness among health science students by using a team approach in addressing health manpower problems

(2) to develop recommendations concerning health manpower issues

SPONSORSHIP OF CONFERENCE

Members of the Student Advisory Committee to the Bureau of Health Manpower Education, National Institutes of Health initiated the idea of sponsoring a conference on health manpower. Each student representative on the Bureau Advisory Committee was invited to appoint a student from his organization to serve as a member on the planning committee to the conference. Organizations invited to serve on the planning committee included the following:

American Optometric Student Association
American Student Dental Association
National Conference of Student Chapters
American Veterinary Medical Association
National Student Nurses' Association, Inc.
Student American Medical Association
Student American Pharmaceutical Association
Student American Podiatry Association
Student National Medical Association
Student Osteopathic Medical Association

Student American Pharmaceutical Association was designated to administer the contract. At their initial meeting, the planning committee members decided to broaden representation at the conference to include additional student health groups not currently serving on the Bureau of Health Manpower Education committee. The following groups were contacted during the six weeks prior to the conference:

American Association of Indian Physicians
American Public Health Organization
Association of Schools of Allied Health
National Boricua Health Organization
National Chicano Health Organization

With the exception of American Public Health Association these groups were not represented on the planning committee to the conference. As a result of objections raised by these groups during the conference, student representatives were invited to participate in post-conference planning committee meetings. It was agreed that in the future, interdisciplinary projects would incorporate representatives from these organizations from the beginning stages of project development.

PLANNING THE CONFERENCE

The planning committee members drew from their own experience of interacting and problem solving to develop a model for the conference structure. As a small interdisciplinary working group, the planning committee members were able to become sensitized to one another's roles and needs. Because they shared a common task, it was possible to foster a strong team effort as the basis for their working relationship.

Planning committee members decided that, by structuring the conference into small task-oriented workshops, conference participants could move beyond the superficial level of simply exchanging information with one another and explore the potential of developing interdisciplinary team relationships to resolve a common problem. In order to facilitate the development of team efforts and group decision-making, it was agreed that group process techniques should be utilized. Student "facilitators" were trained to assist workshop groups in the dynamics of their interaction in the decision making process. Student "recorders" were designated to externalize on large sheets of newsprint the ideas of the workshop participants, providing the group with a visual record of its interaction.

It as also agreed that resource people - persons possessing expertise in the workshop issue areas - could offer valuable assistance to workshop groups and should be invited to attend the conference. A major effort was undertaken to encourage health professionals and educators from both the public and private sector to participate in the conference.

APPLICATION PROCESS

Applications were distributed to students through student health professional organizations. Within six weeks over 600 applications were submitted to the national staff. The planning committee screened the applications on the basis of present interest and past involvement in health manpower activities. Two hundred and fifty four students were invited to attend.

ANALYSIS OF CONFERENCE

The conference was held in Chicago on March 10, 11 and 12. The student participants far surpassed conference organizers' expectations in terms of their openness to one another and their determined efforts to fully explore discussion topics. Students worked to develop their final statements and recommendations late into Saturday evening, foregoing time set aside for relaxation and amusement. The recommendations they developed represent hours of intense discussion during which time the issues were thoroughly analyzed.

Student participants were overwhelmingly enthusiastic about the experience for learning and growth that the conference provided them. In an evaluation questionnaire, students responded that they has increased their knowledge and understanding of the various health professions, of health manpower issues and of the value of the health team approach to health care. When asked about the most valuable aspect of the conference, students responded almost unanimously that it was the opportunity for interdisciplinary interaction - interaction which made possible the development of common recommendations on health manpower issues. The full questionnaire is included as an Appendix to this section.

It is impossible to adequately assess the full impact of the conference. The results that are most significant - the changes in attitudes and committment among the participants - are also the most intangible. Conference results will appear more tangible as these changed attitudes are translated into various forms of action. Some signs are already apparent. Conference participants from California and Minnesota are working to develop interdisciplinary projects in their respective areas. Many other participants are planning to work on organizing regional and local conferences for the fall.

The conference is significant for another reason: it marks a new era of greater co-operation and interchange with the federal government. For many of the students involved, the conference was their first experience of participating in a federally funded project. Because of the co-operation and support of National Institutes of Health throughout the entire process, this first experience was an extremely positive one. Health science students are encouraged by the efforts being made by federal agencies, particularly National Institutes of Health, to actively support their activities. It is hoped that the spirit of co-operation and understanding developed through the conference will continue to grow in the future.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #_____

CONFERENCE QUESTIONNAIRE

The conference staff and planning committee are interested in determining participant reactions to the conference. Please fill this form out and return it to the registration desk before leaving on Sunday. Please circle the appropriate number on the scale #1 - #7.

1. Did the conference enable you to develop an understanding of the roles of other health professions in health care delivery?

	to a great extent						not at all
	1	2	3	4	5	6	7
responses	54	70	27	9	4	4	0

2. Did the interdisciplinary nature of the workshops and the conference itself further your understanding of the value of the "health team" approach?

	to a great extent						not at all
	1	2	3	4	5	6	7
responses	66	59	31	9	3	6	1

3. Did the conference change your opinion regarding the following health disciplines?

	opinion much higher						opinion much lower
Allied Health							
	1	2	3	4	5	6	7
responses	21	46	30	61	0	1	0
Dentistry							
	1	2	3	4	5	6	7
responses	19	34	43	70	3	1	0

opinion much higher — opinion much lower

Medicine

	1	2	3	4	5	6	7
responses	15	25	42	72	13	1	0

Nursing

	1	2	3	4	5	6	7
responses	31	33	45	53	5	0	0

Optometry

	1	2	3	4	5	6	7
responses	29	51	35	47	2	1	0

Osteopathy

	1	2	3	4	5	6	7
responses	48	54	25	35	1	1	0

Pharmacy

	1	2	3	4	5	6	7
responses	45	56	34	30	0	1	0

Podiatry

	1	2	3	4	5	6	7
responses	54	60	31	12	9	2	2

Public Health

	1	2	3	4	5	6	7
responses	29	41	27	58	0	0	0

Veterinary

	1	2	3	4	5	6	7
responses	28	38	44	42	4	1	2

4. Do you think that the workshop activity of developing recommendations and mandates was a worthwhile exercise?

very worthwhile — not worthwhile

	1	2	3	4	5	6	7
responses	75	44	30	6	6	6	2

5. Did workshop discussion serve to increase your store of knowledge (facts, data, concepts) in the area of the workshop topic?

much increase — no increase

	1	2	3	4	5	6	7
responses	61	48	36	6	9	6	4

6. Were you able to increase your knowledge about other topic areas?

much increase — no increase

	1	2	3	4	5	6	7
responses	29	44	51	25	16	5	1

7. As a result of this meeting have you become familiar with and interested in any ongoing projects in which you may participate in the future?

	yes	no
responses	157	11

8. What is your reaction to the following aspects of the conference design?

a. Emphasis on small group discussion

favorable reaction — unfavorable reaction

	1	2	3	4	5	6	7
responses	105	55	7	0	1		1

b. Emphasis on participation in single workshop group

favorable reaction — unfavorable reaction

	1	2	3	4	5	6	7
responses	67	48	19	12	17	6	3

c. Lack of big name speakers

favorable reaction — unfavorable reaction

	1	2	3	4	5	6	7
responses	75	42	16	27	3	3	6

d. Use of workshop facilitators

favorable reaction — unfavorable reaction

	1	2	3	4	5	6	7
responses	70	54	21	13	2	6	7

9. What are your suggestions for changes in conference structure?
Most common responses: (1) make conference longer-57 responses (2) improve system for workshop shuffle-17 responses (3) develop better advance material on workshop topics-17 responses (4) invite a broader range of health disciplines-15 responses (5) include a general session-13 responses(6) improve utilization of resource people-11 responses (7) develop better interdisciplinary distribution within workshops-11 responses (8) increase involvement and respresentation of minorities and women-10 responses (9) change group process techniques-8 responses

10. Do you support the idea of holding national interdisciplinary conferences on an annual basis?

	strong support					no support
	1	2	3	4	5	6	7
responses	131	25	8	1	0	1	1

What was the most valuable aspect of the conference?

Most common responses: (1) opportunity of interdisciplinary interaction-147 responses (2) small workshop structure-7 responses (3) opportunity for increasing knowledge-7 responses (4) use of group process techniques-6 responses (5) unification of minority students into 3rd World Caucus-5 responses (6) development of recommendations-4 responses

What was the least valuable aspect of the conference?
Most common responses: (1) not enough time-19 responses (2) dissatisfied with shuffle-12 responses (3) resource people poorly utilized-6(4) poor hotel facilities-6 (5) insensitivity of whites to minority respresentation-5 (6) Friday night social-5 (7) restricted to a single workshop-5 (8) insufficient represenation of all health-related fields-4 (9) hotel too far from downtown Chicago-4 (10) use of facilitators-3 (11) emphasis on development of resolutions-3 (12) failure of adequately disseminated resolutions at the conference-2 (13) lack of general session-2

Name of delegate (optional)_____

Conference proceeding will include background papers, recommendations and mandates and student project description data. Would you be willing to pay $3.00 in order to receive a copy of conference proceedings?

	yes	no
responses	149	15

PART 2

BACKGROUND PAPERS

Research papers were developed by select student participants prior to the conference as reference material for workshop discussions.

HEALTH PROFESSION RECRUITMENT AND RETENTION WITH CONSIDERATION OF GENERAL, MINORITY, AND SEX BASED PROBLEMS

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> "Medical care in the U.S. is more a collection of bits and pieces with overlapping duplication, great gaps, high costs and wasted effort than an integrated system in which needs and efforts are closely related."[1]

The above comments made by the National Advisory Commission on Health Manpower in its voluminous 1967 report provided a succinct description of the non system, system of health care delivery which serves the people of one of the richest countries of the world. This contention persists despite the fact that we are spending far more on health care than ever before. Conservative estimates indicate that in 1971 approximately 9% of our Gross National Product (GNP) or $75 billion was related to health expenditures.

In the ensuing years since release of the Commission's report we have successfully drowned ourselves in the clamor produced by the experts and non experts, by all the conferences and Congresses, and by all the workshops and papers which have attempted to examine the problems inherent in our non system and to provide viable solutions. But alas even after the expenditure of innumerable man and woman hours, and even after an impressive financial outlay; the enactment of viable solutions continue to elude us, and we continue to expend our efforts reconvincing each other of the existence of the problem, and of the worthiness of our suggested approaches for its alleviation.

Thus it is with some temerity and sobriety that we should approach this student conference on health manpower. Temerity because it may be a characteristic of our youth in venturing into areas which have been well trampled as described above; sobriety expressed in the knowledge that we are in the dawn of our professional lives and perforce must choose whether we accept the patterns of the past with all their obvious and not so obvious limitations or define new patterns and new directions. It is my hope that the majority of participants present at this conference subscribe to the latter concept and with this in mind will continue with an examination of one of the more important aspects of the current crisis.

Health Professions Recruitment and Retention - General Considerations:

In the beginning of any discussion of a topic it is useful to provide a definition of terms. This would seem to be most appropriate here since in the past few years the term recruitment when applied to health professions has taken on added significance. It is now proper to use it only when coupled to the word retention as is done in this conference. One definition provided by workshop participants at the 1971 AMA sponsored Congress on Health Manpower may be particularly useful here.

> "Recruitment into health careers is a continuous process embracing (1) communicating to the general public information on the educational and employment opportunities in the health field, (2) motivating individuals to choose health careers, (3) identifying interested individuals, (4) continuous efforts with these individuals to counsel and place them in educational programs and jobs and, (5) continuous efforts to retain in educational programs and in health careers those who have been recruited."

Inherent in this definition is the concept that recruitment per se is multi-faceted and most importantly does not end when the individual so attracted enters the educational institutions. Recruitment continues in the form of efforts to minimize the individual's exit from the educational pathway.

Recruitment to the health field as defined above and as we know it is a haphazard process, frequently based on emotion only. This often results in the placement of trainees and later entering workers with interests and aptitudes poorly matched to job requirements. Too frequently also there is a serious lack of uniformity of credentials necessary for employment in various fields and coupled with this there is frequent inappropriateness of the requirements for these credentials. But despite this knowledge, we continue to actively recruit prospective health team members into a burgeoning bewildering array of health professions.

An extensive series of reports and special studies in recent years have projected shortages of health care personnel, especially physicians, dentists and nurses (3,4); and pronouncements have been made that today the United States needs about 50,000 more physicians, "a couple hundred thousand more nurses" and almost 150,000 more technicians". (5) At the same time it should be noted that civilian employment is projected to grow from roughly 80 million in 1968 to 99 million by 1980 or by 24% while health occupations are expected to show growth rates exceeding the average for the economy. (The largest increases are expected in the "allied health" group and the smallest increases expected for physicians, registered nurses and dentists). (6) Some observers however dispute the existence of a current or impending shortage. They argue that the real problem is the maldistribution and inefficient use of personnel. They support this position with the

fact that the ratio of doctors and dentists to other (new and established) health workers is rapidly increasing. However when one examines the uneven geographic distribution of personnel, the long waiting lines for emergency services and hospital clinics, and the fact that 15% of all physicians in the U.S. are graduates of foreign medical schools, there is no other conclusion possible but that - indeed there does exist an acute shortage of major health personnel.

One of the major problems in assessing this shortage is that our knowledge of it has lagged far behind its development. It is almost as though we are looking at health manpower for the first time and discovering that fully 85% of the workers in this industry are in the allied health occupations category. But the fact remains that we know much more about the 15% than about the 85%, and it becomes imperative that we develop a sound and continuing data base. (See references 7&8 for available data on allied health occupations).

Another problem which further complicates our assessments of the acute shortage and the role of recruitment as a potential solution is that of health professional education. Inadequacies in education for the health profession are but only a sampling of the inadequacies of all higher education in this country. Higher education has been a continuous rapid growth segment of the nation for more than three centuries. During that time it has experienced steady enrollment increases at a rate faster than the expansion of American society in general. Over the past century in particular enrollments in higher education have doubled regularly every 14-15 years. (9) Schools of the health professions have most definitely been a part of this trend. We are currently moving out of a period in which construction and basic improvement grants to health professional schools have been at an all time record high.

The Association of American Medical Colleges reports 108 medical schools with a total enrollment of 44,000 students as opposed to 86 schools in 1960 with an enrollment of 30,000 students. This enrollment increase is indicative not only of the opening of new schools, but also of the expansion of class size at most others. (10) There has been a concomitant accelerated increase in dental school places in recent years, and estimates provided by the council on Dental Education of the American Dental Association project an increase from 4,430 dental school entrants in 1970-71 to 5,400 in 1980-81. (11) Similar data for the nursing profession reveals that "while the number of employed registered nurses has grown at a faster rate than the general population for the past 5 years, a smaller percentage of high school graduates have selected nursing as a career". (12) Without any further elaboration on the data for nursing above, we should use it to stimulate the need for a word of caution. Increased manpower production has been highly touted as an effective means of relieving our "acute shortage", and so far this increase has proceeded as a result of a direct linkage to the federal monetary pipeline. But this pipeline has produced at best an erratic supply and is apparently showing signs of becoming even more erratic. What next?

In a similar vein, what about our predictions of future enrollments. The Carnegie Commission Report "New Students and New Places" (9) cautions us to be skeptical of our predictions and to become aware of the many prevailing uncertainties eg. Financial stringency: will there be new places created for the additional prospective student? Labor market conditions: what will happen when the labor market no longer generally absorbs college graduates at the level of training they have acquired (as is already occuring in some fields?); The Cultural Revolution: many young people now seek vocations outside the Horatio Alger syndrome than ever before; The birth rate: what will be the effects of zero population growth? Public Policy: now reassessing its support for higher education; The New Educational Technology: soft ware and hard ware which can permit every living room to become a classroom.

However, at least for the present, our predictions are fulfilled. The number of persons in the college age group actually enrolled in higher educational institutions is showing signs of plateauing at 40%. Total enrollment for 1970-71 showed an increase of 2-4%, while total graduate enrollment increased by 5%. In the undergraduate colleges, while teaching showed the largest dip in enrollment, social work, nursing and biological sciences recorded the greatest increases. At the same time medical schools reported a record 35,000 applicants competing for 13,000 spaces in next year's freshman class. Within this group of applicants there has been a substantial increase in M.A. and Ph.D. degree holders, as well as persons who entered engineering fields after graduation from college. One school, the University of Southern California, reports 5% M.A. and Ph.D. applicants compared to zero two years ago. No similar burgeoning of interest has been evidenced in dental and allied health schools.

It is thus evident that new alignments are already beginning to take shape within our enrollment patterns. However, our ability to cope with these is inexplicably connected to our ability to restructure the educational process itself as it relates to training our many different types of health professionals. There are many questions related to this restructuring which require answers and I shall merely pose a few of them here, leaving the answers to the conference participants. (1) Can quality nursing education continue to flourish while the internecine cannibalism continues within its ranks and thereby perpetuates the existence of three mutually exclusive types of training programs? (2) Can dental schools continue their elitist training programs which train only dental students and cast off their assistants and dental hygenists to be trained at proprietary schools away from the parent University? (3) Can pharmacists successfully overcome professional group hostility and establish themselves as direct participants in patient care as opposed to their current role as mere obligatory observers? (4) Can medical schools become responsive to the individual human needs of their students and permit them the freedom, with guidance, to plot and define their pathways without having to subscribe to the "herd" concept of medical education? Only when we have answers to these and to the other questions regarding relevancy

of training to community expectancies and needs can we begin to clearly define possible alternatives to which all health professionals and students could subscribe. Maybe then we could have recruitment programs related to broadly based health career training programs with education based on a "core" experience.(13) Specific career choice and specialty training would be delayed until the student knows what he is choosing and the teachers know enough about the students interests and attitudes to counsel wisely. We could also hope that these training programs be based upon specific curricular objectives which are planned to effectively build upon existing skill and knowledge and thereby avoid unnecessary repetition.

Health Professions Recruitment and Retention-Considerations of Minority Groups

It is exceedingly rare today to review any publication which presents information regarding health, (particularly health manpower training) and not find some reference if not an entire article, devoted to minorities. However, it is distressing to also note that the majority of those references are specific to medicine. This fact is not too unexpected for if one were to trace the involvement of the non minority health professional in minority affairs, it would become immediately apparent that the Association of American Medical Colleges arrived first on the scene to corner the market of available funds. This Association then presumed to address itself to the problems of minorities in all of the health professions. The thought has been expressed by some that this and subsequent events have represented the "coming of age" of the minority in the health professions.

Indeed, it has been a coming of age, for it occurred at the same time that the so called minority peoples of this country began to cast off the shackles that had been placed on them for centuries by our genetically inferior pale skin brothers. However despite this announced "coming" of four years duration full realization of its potential has not yet been attained and we must perforce struggle through many personal, local campaigns in order to carve out relatively small gains. Much data has been brandished concerning minority representation in higher education and without some detailed analysis, one can be pardoned for reaching the conclusion that the friends of increased minority representation should declare a victory. But this would be nothing other than a hollow victory.

A study performed by the U.S. Office of Education in collaboration with the Office of Civil Rights reported the data shown in Table I (14) for minority enrollment for the academic year 1970-71.

A comparision with similar data, specific for medical schools (15) reveals that in 1968-69 9.1% of all students (undergraduates-graduates) enrolled in institutions of higher education belonged to minority groups, whereas only 3.5% of the total medical school classes were so classified. Data for the academic year 1970-71 further

reveals a 10.1% minority enrollment but only 5.7% medical school enrollment. Similar data for 1970-71 reveals that minority enrollment in schools of law and dentistry were 5.8% and 5.3% respectively (16); while minority students composed 7.4% of all graduate and professional students.

Preliminary data for 1971-72 indicate a 5% increase in total graduate and professional enrollment with minority students showing a 30% increase within this grouping. AAMC data for medical schools indicate an (total) enrollment of 7.05% minority students.

Basic assumptions (15,22) indicate a 6% medical career interest among Black college freshmen as compared to 4-6% for non minority college freshmen; a 25% probability of a minority college freshman interested in a medical career actually becoming an applicant to medical school as compared to a 35% probability for non minority students; and a 75% probability of a minority applicant being accepted to medical school as compared to a 45% probability for his non minority counterpart. With these assumptions kept in mind, an analysis of the previous data should lay to rest any misconceptions currently held in regard to the availability of an adequate pool of "qualified" minority applicants to health professions schools.

As with most undertakings of this kind, the campaign to increase minority representation has had many beneficial spin offs, the majority of which appear to have more direct implications for the non minority student. These spin offs in themselves may have been the factors which guaranteed the limited success achieved to date. The campaign itself has other significance for this interdisciplinary student conference for it did indeed receive its initial impetus and direction from a similiar interdisciplinary student group operating under the aegis of the now defunct Student Health Organizations.(17)

The spin offs referred to are as bountiful as they are meaningful. First, despite the fact that the struggle was initially engaged on the turf of medical schools, it did not remain there for long, for the injustices which necessitated its being were apparent in all schools of the health professions. Next, one could not address oneself to the idea of increased minority representation without thoroughly examining the entire process of admission to these institutions. This examination includes the factors preceeding admission i.e. recruitment, the admission process itself, and finally the consequences of admissions i.e. retention and eventual graduation. Because of this we can now point to changes in admission criteria used for all students in which the "human aspect" of the application has begun to receive a status equal to the coldly statistical aspects.

Retention itself has been redefined, changing from the negative concept of being measured as attrition rate, to the inherently more positive concept of doing all possible to maintain a student in the educational pathway of this choice. This in itself should do much to reduce to a theoretical zero the absymal rates reported for

several professions. For example, of every 150 students who enter American colleges, 40 fail to graduate (18); of every 100 nursing students who enter collegiate schools of nursing in this country, 44 fail to graduate (19); of every 100 students who enter the accredited American law schools, 43 fail to graduate (20); while for every 100 entering medical students only 7 fail to graduate. (21) The data for dental students is assumed to be similar to that for medical schools, as suggested by figures by Parkin . (22)

Nelson et al in a task force report produced for the Association of American Medical Colleges related to minority representation in medical schools defined an "Educational Pathway Analysis Systems" approach for analyzing the educational pathway leading to the attainment of the professional degree. (23) In this analysis (Appendix I) the student educational flow process for medical educational is delineated into the various stages through which a student usually passes in becoming a physician. The transition from one stage to another is then investigated to determine the reasons for student exit from the educational pathway. "Action Elements" defined as individuals, organizations and institutions which have a responsibility for or an interest in the educational process are shown together with the main actions each group can take in response to specific reasons for student exit from the pathway. Through this approach any of the professions represented at this conference (or any other for that matter) could conduct an evaluation of its educational process, and by identifying its specific exit points could begin to develop data under each action element to neutralize this exit factor.

As an example of how this system works, let us take the recent announcement by the Ford Foundation that it plans to devote 75% of its budget for higher education over the next 6 years ($100 million) to promoting an expansion of minority opportunity in colleges and universities by increasing scholarships and fellowships support and through developmental grants to the black colleges. Putting this under the appropriate action element Foundations on Appendix I, we can see how this would have a direct effect of minimizing the chances that a student will exit form the educational flow particularly at stages II and III. In similar fashion we may also plot the commitment made by the Sloan Foundation to expend the majority of its resources for a five year period to secure minority interests in the field of medicine as well as the previous and continuing commitments of the Josiah Macy Foundation and the National Fund for Medical Education in this regard.

Under the appropriate Action Elements we can also plot at the earliest stages of the educational flow, the efforts such as the National Medical Association's Project 75 (24) which, by establishing contact with students, their parents and counselors as far back as high school, hopes to achieve its goal of implementation of the AAMC Task Force Report (25) of achieving a 12% nationwide enrollment of minority students by 1975. Similar efforts are also being

conducted by components of the National Health Council, most notably the Indiana Health Careers Association and the Texas Health Careers Association. The latter are more locally oriented; their recruitment efforts are not limited exclusively to minorities, and their approach is toward interdisciplinary recruiting. There are many other programs of these types, with several addressing the needs of specific minority groups, as well as specific professions. The AAMC published booklet entitled "33 Programs to Increase Educational Opportunity for Minorities in the Health Professions" (26) is an excellent source book in this regard.

Despite all of the token advances delineated above, Enemy #1 still persists in the form of the pattern of Institutional Racism which more often than not currently supersedes and encompasses personal expressions of racism. This enemy rears its ugly head in many places of our health institutions. It can be found in the offices of many deans, department chairmen, faculty members and even among fellow students. It can manifest itself subtly in the form of intense psychological pressures on the isolated minority student, or as differences in the grading of exam papers. It is even more obvious in the disbursement of financial assistance, or as the failure to recruit minority faculty and administrators. It is manifested as fearful curiosity when groups of more than 2 or 3 minority students are seen rapping on the campus. But it is present and it must be rooted out.

Health Professions Recruitment and Retention - Considerations of Sex Based Problems

In the past decade and a half, Americans have been forced to accept several bitter experiences as facts basic to their existence. Many of these have destroyed the sanctity of the old order of things and through much questioning and self examination we are beginning to define a new order. But let us not forget that a new order is merely the representation of a realignment of old forces around a new equilibrium. Thus we should perceive the Racial Identity Crisis, The Womens Liberation Movement, The Peace Movement and all such groups as forces seeking definition of self and position within the new realignment.

With a new order being created around us it would seem that it would be a gross affront to our sensibilities to accept the fact that women , who comprise over 50% of the total population, and comprise over 4/5 of all persons employed in health services, only represent 7% of all physicians and 2% of all dentists. But maybe as a nation we are immune to such things. We have condoned by our silence the equally visible data of a majority of our low level workers being minority persons with only an occasional one present in the higher levels.

The problem which emerges is thus one which relates directly to the representation of women in the upper level of health workers. Our remarks which follow in this portion of the paper will be thus directed specifically to medicine and to a lesser extent dentistry. This however does not deny the fact that some problems to be discussed for women in medicine are also applicable to women in other health careers. Registered nurses provide a most worthy example. Present data indicates a total of 1,200,000 RN's in the country, but perhaps as many as 500,000 are not employed in their professions, so that at any given time approximately 1 out of every 3 professional nurses is inactive. The reasons for this are varied, with major ones being conflicts between personal and professional roles coupled with inflexible scheduling, as well as a poor income growth rate compared to other skilled female employees both within and without the health industry.

Basic to the problems of sex based recruiting and admissions for medicine and other professional disciplines is the attitudes implicit in the full import of the old saying that a woman's place is in the home. A recent study of Radcliffe graduates who entered medicine (27) describes the oldest of these graduates as "stalwarts who were typified by a singleness of purpose, a kind of doggedness or blind determination because all except one had no doubts related to any potential problem areas except a general worry about finances." This study continues to state that not only were finances a problem to this college's graduates, but also doubts that were centered in two other areas; the long term commitment required, and the most prevalent of all, the combining of medicine with marriage and family responsibilities.

The latter constitutes an ongoing dilemma for some women and it frequently develops to critical proportions. According to available research most women doctors do marry (more than three quarters; of these, more than one half to other doctors), do have children and do devote long hours to the practice of medicine. Subjective evidence provided by Lopate in her book "Women in Medicine" (28) indicates that 2/3 of all women MD's had experienced one or more situations designated as critical during which they were seriously tempted to withdraw from medicine. In the study of Radcliffe women, these data were again corraborated, and the most frequent problem cited was difficulties revolving around marriage-career conflicts.

Among the possible kinds of viable crisis resolution, the most frequent action by the Radcliffe group and by other groups of women, was to reduce career demands either by decreasing the number of hours worked or by changing to a less time consuming specialty. Next in frequency, was withdrawing temporarily from all medical activity and then resuming the career when the difficulties were solved. The above methods of crisis resolution have however until recently only been viable primarily for women already in practice. The woman still in training was and with few exceptions (29) is still bound by inflexible schedules and unsatisfactory child care facilities as she

attempts to progress in programs which were designed for the young male who was either single or whose wife provided child care. Part time internships and residencies have been made available only in recent years, the AMA House of Delegates authorizing such internships in 1965, and residencies in 1969.

To return to the problems specific to recruitment of women, I would offer a few comments from a Report on Physician Manpower on Medical Education (30) which was adopted by the June 1971 AMA House of Delegates.

> "It is important to note that women doctors tend to select areas of medicine in which shortages are particularly acute. While women are found in every branch of medicine, most are interested in psychiatry, pediatrics, obstetrics-gynecology, internal medicine, family medicine and public health. The AMA believes there is a need for more women physicians.
>
> Only remnants of past discrimination still remain. Every medical school in the United States and Canada now admits women. Claims are occasionally made of medical schools adhering to quotas on the number of women admitted, but these complaints cannot be substantiated. Nationally, the ratio of women admitted to those applying has been about equivalent to male enrollment figures during the last decade. Any discrepancies generally favor women.
>
> Many more young girls will need to be given a different set of goals for their adult lives. They must be encouraged to prepare themselves for medicine and to apply to medical schools.
>
> Available data suggest that because of the multiple demands on the married woman physician, average productivity of the female doctor is 10 to 30 per cent less than the male, and only partially compensated by the female's longer life expectancy. Enthusiastic general support for women in medical schools is greatly increased and the demands for more medical services are less urgent."

The eloquence of the above statements in elucidating many specific problem areas which need our immediate attention, is unrivaled in recent communication. Data provided by independent researchers funded by the National Institute of Mental Health (31) and that compiled by the AAMC are merely ammunition with which to engage the struggle.

TABLE I

MINORITY ENROLLMENT 1970 - 71

Undergrad.	Total #	Black	Spanish Surnamed	Orienta	American Indian
Year 1	2,078,376	171,969	53,714	21,022	12,519
Year 2	1,354,751	91,837	27,846	14,687	6,803
Year 3	896,565	48,493	12,928	10,046	4,161
Year 4	857,715	44,537	10,382	8,808	4,178
Totals	5 187,407	356,836	104,870	4,563	27,661
Graduate and Professional	543,150	22,302	6,297	9,662	1,608
Combined Enrollments					
Fall 1970	5,730,557	379,138	111,167	64,225	29,269
%	100%	6.6%	1.9%	1.1%	0.5%
Fall 1968	5,354,653	303,397	95,200	55,025	31,458
%	100%	5.7%	1.8%	1.0%	0.6%

APPENDIX I

EDUCATIONAL PATHWAY ANALYSIS
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EDUCATIONAL FLOW	REASONS FOR EXIT FROM FLOW	STUDENT	STUDENT GROUPS	EDUCATIONAL INSTITUTIONS	MINORITY COMMUNITY GROUPS
	Insufficient financial resources during high school	Work		Expand work-study programs	
	Career/financial opportunities incorrectly perceived		Support high school career days	Expand work-study programs, improve counseling	
	Inadequacy of available education		Provide tutoring	Improve education	
	Incompatibility of student & his environment			Recognize problem & initiate changes	
QUALIFIED COLLEGE APPLICANT					
	Insufficient financial resources/aid to attend college	Work		Increase grant/loan programs	
VI	Career/financial opportunities incorrectly perceived			Improve counseling	
	Selection procedure prejudice & admissions bias			Reevaluate & modify selection procedures	
COLLEGE STUDENT					
	Insufficient financial resources/aid in college	Work		Expand work-study programs	
III	Career/financial opportunities incorrectly perceived		Support career clubs	Improve counseling	
	Insufficient financial resources/aid at later stages				
	Inadequate educational programs		Provide tutoring	Recognize educational objectives & modify programs	
QUALIFIED MEDICAL SCHOOL APPLICANT					
	Inadequate academic preparation	Study		Improve educational program, post-baccalaureate programs	
	MCAT bias & cultural differences			Assess MCAT & recommend changes	
IV	Selection procedure prejudice & admissions bias			Reevaluate & modify selection procedures	
	Inadequate matching of applicants to med. school openings			Jointly initiate cooperative matching program	
	Limited class size in med. schools			Expand class size, modify curriculum	
MEDICAL STUDENT					
	Insufficient financial resources/aid			Expand aid or work-study programs	
	[illegible]	Prov. for attrition	Aid of student associations	Promote relevance of minority study programs	
	[illegible]		Increase tutoring	Identify problems early, employ counseling at all stages	
V [illegible]					

Expand community involvement programs

ACTION ELEMENTS

[illegible]TICING MEDICAL PROFESSION	OTHER PRIVATE ORGANIZATIONS AND INDUSTRY	AHA, AMA, AAMC, NMA (NATIONAL OR REGIONAL BASIS)	FEDERAL, STATE, LOCAL GOVERNMENT	FINANCIAL INSTITUTIONS (BANKS)	FOUNDATIONS
			Expand existing aid programs		Fund [illegible]-study programs
[illegible]vide counseling	Support health career programs	Disseminate information (publications, films)			
			Fund educational improvement		Fund educational innovation programs
			Support programs		Support programs
			Expand grant/loan programs (general educational problem)		
	Provide college placement service for non-applicants	Disseminate information	Disseminate information		Support community group programs
	Encourage evaluation of selection procedures				
			Expand grant/loan programs (general educational problem)		
Provi[illegible]		Disseminate information			
			Expand grant/loan programs (medical school level)		
			Fund educational improvement		Fund educational innovation programs
		Match unsuccessful applicants to post-baccalaureate programs	Fund educational programs		Fund educational programs
		Assess MCAT & recommend changes			Fund studies
		Encourage evaluation of selection procedures			
		Operate matching program			Fund matching program
Enc[illegible] of [illegible]		Encourage expansion of class size	Fund medical [illegible]		
Expa[illegible] assi[illegible]	[illegible]	Expand grant/loan programs			
Con[illegible]	[illegible]	Fund [illegible]ship programs			
					[illegible]

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CONSUMER SELF-HEALTH: CONSUMER-COMMUNITY INVOLVEMENT AND PROVIDER RESPONSIBILITY

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Introduction

Before any presentation can begin, the topic to be discussed must be defined and limited, especially one so broad as consumer affairs. Yet the best way to present a broad subject that is to be used as a spring board for discussion, not for a finite commentary, should be to apply as flexible a definition as possible, allowing the discussion group to eliminate any extraneous matter and take its own direction. By accepting this premise, there appears a set of questions that must be answered for any work on the subject: (1) What can the consumer do to help keep himself in a state of health?; (2) What is the health professional's role in helping the consumer to keep healthy; and (3) What may the consumer and the provider do together to accomplish the goal? Admittedly, the last question is almost a universal--what any two groups can do to best accomplish any goal is full cooperation with each other. But since the ideal situation does not exist, means to approach full cooperation may take many forms.

Keeping the questions in mind, we will go first into the past history of the subject and work our way to the present, then look at pertinent student work. In a sense it is looking at the etiology and pathogenesis of the matter to point us to a "cure". We should wind up with a further set of questions meant to spark workable solutions.

Etiology and Pathogenesis

The awakening consumer giant is finding its way into many formerly untouched facets of life, and health affairs seems to be one of its latest discoveries. The consumer giant has served to move the health care institution from the private to its rightful place in the public domain. Every person, as a consumer of health care services, has an interest in its delivery, a role which indeed puts it in the public arena.

Not so long ago, the consumer's role in health care did not really exist. The consumer was an object. It only required that he submit to treatment, whatever form it might have been. That was in the days of total crisis-or "sick" - oriented health care, where one only sought care in emergency situations. The consumer's role was purely that of patient. It was assumed the patient acted only in a passive role, following directions as ordered by the health professional.

Today, the whole concept of health care is changing to an orientation towards prevention and maintenance of health, in addition to cure for the sick. "Cure" and "sick" will always be with us, but hopefully to an ever-decreasing degree as preventive health care gains sufficient acceptance and practice.

It is this new form of health care--prevention--that places much of the burden of maintaining health on the patient-consumer. The whole concept of consumer self-health is perhaps analagous to the situation of a new car buyer. He receives a warranty guaranteeing his automobile for a certain period of time, but it stipulates that the owner must meet certain obligations of normal maintenance in order to keep the warranty valid. In our case, the patient must take care of himself in order that his health services will be effective.

But just as today's picture of health care is changing, so is today's patient profile. Typically, today's patient has a higher health I.Q. than his parents and knows to look toward the health establishment for care. With the practical elimination of many epidemic diseases by public health measures, the public awareness is now beginning to be focused on those diseases of a progressive or chronic nature, hence the attitude shift toward preventive and maintenance care to arrest the process. The patient's role in disease states of this nature is one of active rather than the passive participation that characterized the past. But with the increasing health awareness comes confusion, too. The individual is under constant bombardment of a commerical nature: non prescription drugs; vitamins; do-it-yourself treatment; and the use of unqualified practitioners, all increase the necessity of the professional to educate the patient to its correct use.

While the previous description of the "health sophisticate" may characterize some of the country's population, namely the middle and upper classes, another segment of the population has a different health profile. Our disadvantaged minorities, inner-city and rural residents are not so sophisticated, and can seldom find available even adequate emergency care, much less preventive care. They are forced to take what they can get, and usually enter the health care market only on an emergency basis. This leaves the health professional with two levels at which he must approach consumer self-health. He must undertake the basic health education of the health under or non-sophisticate, and he must foster further consumer participation from the level of the relatively sophisticated. But these two levels are not very far apart, and interlock at many points.

To begin, everyone must be brought to a certain level of basic health knowledge, upon which attitudes toward health are formed. We admittedly do have some people that have good health knowledge backgrounds, how did they get that way? Education is the answer.

The original consumer health education project began with mandatory public education. An important part of the curriculum was health education for the school children. Basic cleanliness and personal hygiene, protection against disease-inducing situations, and nutrition were among the first widely-taught subjects, things now taken for granted by our health "sophisticate". Vision and hearing testing, and vaccination and immunization programs, as well as provision for emergency care in the school became almost universal. Little of this had real consumer involvement, except at the highest administrative levels. But it did bring that generation into a relative familiarity with health matters. When the basic knowledge of health necessities has been gained, more complicated procedures and practices may be imparted to the patient-consumer, with the trust that he will "keep his part of the bargain." The community itself may help with this, and therein lies the real goal--full cooperation between health personnel and the consumer, both as individuals or as a whole, working together to help achieve a state of health for everyone. This is a prime example of the "bootstrap" phenomenon, where the consumer-community actively works to bring its members to a higher health I.Q. so that it may be able to involve itself in further ventures to an even greater extent.

Although community involvement in health has been broad and is ever-increasing, little research has been done beyond that in teaching methods, public communication, and behavior and attitude changing. Most published works are of the "show-and-tell" variety, and many of those are so similar that a few summaries would suffice: (1) In order to reach the community-at-large with an effective message of health education, various well-known community personalities or organizations are enlisted to voice their support for the measure. In that way the community accepts the new information because it comes with the endorsement of a familiar and trusted figure. (2) In order to see that the needs and desires of the community-at-large are represented, membership of this health planning group or that health advisory body will consist partially of members of the lay public. (3) Reciprocal training is demonstrated or advocated. Either you have the health professional or team enlisting and training members of the community to help them carry out their job, or community figures instructing the health provider on special ways of dealing with the community or its members. This last subject has been in considerable use of late with regard to the aforementioned health "non-sophisticate", particularly so with minority groups whose special problems, language barriers, poor education, and lack of financial resources present barriers to the effectiveness of the health professional.

I feel these activities have been true to some degree of all health disciplines, although some more than others. The principles are simple, and would need only minor change for any discipline to use them. Where the most striking differences appear between disciplines is in the area of the development of new provider-patient (consumer) relationships, with an eye towards preventive and maintenance care and the character of the care itself.

What does each discipline do to help the consumer keep himself healthy? I begin with dentistry only because I am most familiar with it. I see dentistry as one of the disciplines that is almost completely dependent on home care by the patient, save for public health measures like water fluoridation. Think of the epidemic of dental disease that would occur if everyone stopped brushing their teeth. The thought is frightening in terms of dental caries and periodontal disease. Both are progressive diseases, and quite arrestable in their early phases by a combined program of professional care and home care. But almost nothing a dentist can do will save the teeth of an individual who cannot or will not practice oral hygiene. The dentist's role then would consist of patching the holes in the patient's teeth until they became so "bombed out" that they had to be extracted or fell out of their own accord through loss of the supporting structures.

Thus the dentist usually finds himself in the role of patient-educator in order for his own work to have any effect. Out of necessity he has had to develop methodologies of consumer involvement to meet his needs. He works on the individual patient; the profession, in conjunction with public health authorities and the community, works through the schools to teach the children good oral hygiene habits at an early age meant to stay with them throughout life.

Prevention as a method of practice is making great inroads on the bulk of dental practices, which still are "repair" oriented, but are changing rapidly. There are even those dentists who base their whole practice on the philosophy of prevention -- and guarantee results if proper home care is followed.

Needless to say, medicine is in a state which roughly parallels dentistry. Although they were somewhat quicker to realize the need for preventive measures in medicine and institute beginnings, they have progressed at a slower rate. Long ago the value of personal hygiene, immunization, isolation of infection, and regular check-ups were recognized. Beyond this, the basis for medical care has yet to really shift to a preventive stance. The medical profession is still too busy trying to catch up with the backlog of care needed to be administered, as well as with advancing medical knowledge. It has yet to make the major push to make available large-scale practical methods that bring preventive medicine to the great mass of our population.

Nursing is a profession I comprehend as having twofold operation: (1) assisting the physician in his care for the patient; and (2) trying to help the patient help himself. The very nature of nursing is not prevention-oriented, but it is education-oriented -helping the sick patient care for himself.

Pharmacy is often overlooked in discussions on this subject, because it doesn't occur to most people that the pharmacist "treats" patients. But what isn't realized is that the pharmacist is an important link between the treatment service-rendering professional and the

patient in that he is often called on to translate the prescribing practitioner's orders to the patient's level of comprehension. He also can provide a check and balance for health care, helping the patient from honest or even intentional mistakes, by both other professionals as well as by the patient himself.

Many of the allied health fields exist solely to help the patient help himself: for instance the physical and speech therapist. Others have no duties in the area except the performance of certain tasks on and for the patient; for example, the radiologic technician and the medical technologist. I think more insight into their utilization as consumer-community involvement vehicles should be explored by the group.

I am sorry to note that I have been unable to locate sufficient information on the consumer-community activities of optometry, podiatry and veterinary medicine to do them justice. It is my feeling that group members from those fields can better enlighten us on the subject.

Student Activity:

If there seemed to be a scarcity of literature beyond the "show-and-tell" type dealing with activities of the professions in this area, the amount of literature on student activities is close to non-existent. It is a well-documented fact that a large portion of the educational process of the student professional means limited practice of the profession under supervision. Much of this is begun with patient education. Techniques of patient education are a solid part of the education, as well as material to be presented itself.

On the other hand, actual field experience is somewhat limited to students by the fact that they are just that--students, and are not recognized as practicing professionals (outside school walls unless supervised) by most State Practice Acts of the various professions. Another obstacle to total student participation in rendering care is the resistance of the consumer who feels that he is receiving "second rate" care, a feeling seldom justified in light of the supervision involved.

There are student projects all over the country, separate and interdisciplinary, school-sponsored, profession-sponsored or student-sponsored, and one of the aims of this Conference is to spread the wealth of information gathered by the various participants in projects among all the student professionals, so they can better mount their efforts, separate and together, in the future. But one concern to all of the projects has been acceptance by the community. What each group has found to gain that end is one of the important items to be brought out for the benefit of all concerned, and should be one of the major topics of discussion.

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REGULATIONS AND RESTRICTIONS AS HEALTH MANPOWER BARRIERS
A Discussion of Some Factors Involved

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Rather than attempt the arduous task of analyzing requirements of each state for licensure of various health professionals, the purpose of this brief paper will be to consider two major points. Included will be the question of licensure versus certification of allied health professionals and the perhaps more universally emotional issue of State versus National regulation of health professionals, including physicians.

In the United States, statewide regulation of medical practice was established prior to 1800 in many of the States then in existence. Local and State medical societies had been concerned with the training and conduct of practitioners and had appealed to the States for legal control over the increasing numbers of people in the professions. They enforced standards early in the 19th century and then relaxed their endeavors.

By the middle of the 19th century, standards of professional competence were in need of reform and the authority to examine and license was largely withdrawn from the medical societies. States began to assume responsibility for regulating the professional as a means of affording greater protection to the public.[1]

Thus, the question of regulation of health professionals has been open to marked debate at intervals in the history of American health care delivery. Prior to the Flexner report of the early 20th century, all a physician need do was obtain his M.D. degree from any one of approximately 155 then-existing medical schools, ranging from the relatively good to the grossly imcompetent "diploma mill." Furthermore, other health professions did not even require this piece of paper in many instances. However, following Flexner's report condemning the quality of education of physicians, there came an era of stringent regulation of health professionals. This, of course, served to limit manpower in the area, and has continued to do so up until the present time, thus giving licensing boards of the various professions virtual monopoly over the health care delivery field. Now, once again we see many people of this country returning to the idea of limitation of regulation of some health professions. Arguments proposed in support of this theory include the allegation that proper health care could be delivered to all people in this country if only everyone who wanted to practice a given health profession could be granted a license to do so. This is countered by the proposition that such a move would result in more quantity, to be sure, but far less quality.

It will be one purpose of this paper and of the associated discussion groups at the conference to analyze the logic behind these two differing points of view, and any others considered, to discuss the various ramifications of them, to consider views of the conference participants, and to possibly arrive at some sort of evaluation of the situation.

The second major point to be discussed here involves the basic question of States' rights involved with licensure of health professionals within the respective states, as opposed to allowing some licensing body at a national level to decide on a professional's qualifications, thus in essence allowing the health professional to be licensed theoretically in any state, resulting in realization of unlimited geographic mobility in his choice of practice area.

Basic introductory arguments against this approach include the aforementioned States' rights theory which maintains that each of the states has the inviolate right to rule over the practice of a given profession within its borders and that no national government can force the State to allow practitioners who the State does not desire. The further argument is put forth that no nationally based board of this type could realistically be expected to be able to efficiently administer this type of program and would not be able to recognize and respect the individual needs of the local areas, states, and even regions of a country as large as the United States.

All determinations as to the relative worth of any given approach to the above-stated problems must be tempered by a consideration of the public interest. After all, it is that interest which must ultimately be satisfied by any conclusions reached by legislative process in this country, at least in principle, if not in fact.

So, it is the task of this discussion group to consider some of the problems, some of the suggested solutions, and their own personal viewpoints, and to attempt to reach some accord as to possible student activity on a meaningful level in the area. Toward this end, a few definitions are needed, which are as follows:

> Accreditation - The process by which an agency or organization evaluates and recognizes an institution or program of study as meeting certain predetermined criteria or standards.
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> Licensure - The process by which an agency of government grants permission to persons to engage in a given profession or occupation by certifying that those licensed have attained the minimal degree of competency necessary to ensure that the public health, safety, and welfare willl be reasonably well protected.

Certification or Registration - The process by which a nongovernmental agency or association grants recognition to an individual who has met certain predetermined qualifications specified by that agency or association. Such qualifications may include: (a) graduation from an accredited or approved program; (b) acceptable performance on a qualifying examination or series of examination and/or (c) completion of a given amount of work experience.[2]

Compulsory versus voluntary State licensing acts - the nature of licensing statutes currently in force has been classified as compulsory or voluntary according to the following definitions:

Compulsory - Only persons holding a license are permitted to practice the occupation, and unlicensed persons are prohibited from working in the field.

Voluntary - Only persons holding a license are authorized to use a particular title or official designation; unlicensed persons are not prohibited from working in this field but they may not use the protexted title.

It should be noted that some laws and regulations include exceptions that may invalidate compulsory provisions.[3]

Proficiency and equivalency testing - has been recommended in many quarters as a means of alleviating the critical shortage of qualified health manpower. A recent state-of-the-art study, sponsored by the National Institutes of Health, offered the following definitions:

Equivalency testing refers to examinations used to equate nonformal learning with learning achieved in academic courses or training programs. Such tests may be designed to enable colleges and universities to grant academic credit for off-campus learning. The also may be used by employers or certifying bodies to qualify individuals whose non-formal study and on-the-job learning is deemed equivalent to that expected from a formal program.

Proficiency testing refers to the measurement of an individual's competency to perform at a certain job level - a competency made up of knowledge and skills, and related to the requirements of the specified job. Such testing is therefore not only a measure of the knowledge gained through didactic instruction but also an assessment of job capabilities.[4]

With these definitions in mind, we shall enumerate only a few of the arguments, pro and con, considered by those active in this area. However, we must realize that this paper will attempt only to touch on a few arguments concerning only two of many issues involved in the overall question of regulation of the health professions.

The tendency in occupational licensing has been to move toward compulsory licensing acts, thus prohibiting by statute the practice of the particular occupation to anyone who is not properly licensed. Medical practice legislation is typical of the compulsory licensing statute. All states and the District of Columbia have enacted such restrictive legislation, embodying the principle that no person may practice the profession of medicine unless he has complied with certain conditions and then applied for and received a license. State regulation of chiropractors, dental hygienists, dentists, opticians, optometrists, osteopaths, pharmacists, podiatrists and veterinarians is also mandatory.[5]

In favor of compulsory licensure is the proposition that such a mechanism creates m[illegible]-status for a profession and its individual members. Such a move thereby attempts to define a minimal required body of knowledge to be acquired by a licensee, thus attempting legislation of quality. This theoretically allows closer state control of the effected profession.

Against compulsory licensure of new allied health professions is the initial realization that such people still operate under a physician's liability in most cases, thus they are in the position of receiving greater professional benefits without taking any added risks of practice.

A critical factor in additional licensure legislation is that such laws limit practic[illegible] in the area to licensees, even though the new professions' roles might be amply filled at present by doctors' office nurses, dental assistants, and non-specialized R.N.'s. Thus, where one assistant in an office might now be doing everything required by an M.D. or D.O., for example, further licensure might require that several specialists be hired, each performing one specific task. Legislation to this effect has been a recent innovation in California, and it is bitterly opposed by physicians in that State. This present legislation requires several hundred hours of classroom education for a nurse to be able to take a simple x-ray. even though such functions have been responsibly carried out by less formally trained office nurses for many years.

I am sure other arguments concerning this issue will come to mind during the course of the discussion group. Additional viewpoints and opinions should be considered, such as the statement that, "One of the greatest barriers to mobility and career advancement, particularly for the allied health professions, is the lack of recognition among the various disciplines of training and experience in related fields. Technological changes also intensify problems of recruitment and retention. Recognition of equivalency and proficiency would open new avenues of advancement and opportunities and would shorten the training time required by these individuals for the more highly skilled professions."[6]

Concerning the question of State versus National regulation of professions, arguments become even more heated.

The classical argument in favor of State regulation of professions within its state borders is the Constitutional right of the State to regulate intrastate activity; thus health professions are included. So, it is argued that the State must have the prerogative to decide who can practice a health profession inside the State. In this way, the State can insure that its interests are being protected to the greatest extent possible. Coupling this with the almost universal perception of centralized governmental regulatory bodies as being inefficient and often virtually unmanageable, arguments in favor of continued state control over its professionals remains strong.

However, there exists a widening movement to place licensure of health professionals under control of national licensure provisions. It is argued that this approach would increase effectiveness of health care delivery by forcing everyone to adhere to the same standards of quality, thus offering health care consumers the same high quality of care all across the country. Also such national licensure would increase geographic mobility. At the present time, for example, Florida and Hawaii do not give reciprocity for medical licensing by other states, and several additional states are most stringent in their licensing requirements. National licensing would abolish such restrictions. I personally believe this would be a mistake, but other reasonable minds might differ.

It is argued that even with national licensure, states should retain some discretion in granting of licenses to practice. Although testing and certification that general licensure requirements have been met could be done on the national level, discretion on the part of the State would be advisable for determination of such matters as the applicant's desirability and possession of such knowledge as is necessary for practice in the particular State, including matters pertaining to medical jurisprudence. Again, there is disagreement among the "experts" so disagreement here is reasonable to expect.

The final point to be touched upon is that of internship requirements. Most states today require at least one year of post-M.D. study before granting a license to practice medicine. Texas is one exception, granting license upon completion of medical school. Several states which have specifically required in their medical practice acts that this year be a rotating internship have had to modify or re-interpret these acts, since many specialty programs no longer require internship and residence, in fact there will be no more internships after 1975. Thus the new M.D. or D.O. will go directly into specialty training whether this is really the type of post-graduate education he requires or not. Even the desirability of this move is open to debate all through the medical field at present, so it is no wonder that licensure laws are often unclear on the matter. With medical schools pressing in many instances toward three-year curricula, there are some who believe that a license to practice medicine should not be granted until after completion of two or more years of postgraduate training. Some have gone so far as to suggest that no license be granted until completion of a formal residency training program. There are obviously various arguments for and against this theory.

The above has been merely an attempt to stimulate discussion in the general area of consideration of licensure and regulation as barriers to health manpower. Only a few health professions have been mentioned, only a few quotations have been cited, only a few points concerning each issue have been emphasized. However, I feel that this information should be sufficient to stimulate discussion and to hopefully generate enough enthusiasm on the part of the students involved to have them progess from here, either reaching decisions here as to desirable projects, or leaving the conference resolved to delve more deeply into the subject being able to initially utilize the attached brief bibliography.

Already students are active in some parts of the country concerning these issues. Students are testifying before State medical society legislative committees, State legislatures, and Congressional committees. It would be worthwhile for someone to undertake to prepare general educational programs on these topics for health professionals and students. We are the members of the health care team who will be most vitally affected by legislation and evolving policy determinations in these areas. It is not too early to begin educating ourselves, our peers, our faculties, and ultimately, our lawmakers, as to our views on these matters which will have so profound an effect on future careers in health care delivery in the United States.

FOOTNOTES

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HEALTH TEAM-ALTERNATIVE PRACTICE MODELS

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With all the trends towards change today, it is not surprising that the health team has also been affected. Unlike some other areas, however, the health team has no choice; it must change. Not only have the advances in science and technology created such impossible amounts of knowledge for single individuals to attain, but the health problems themselves have been altered. Where yesterday doctors were combating infectious diseases, today there are the results of air pollution and overcrowding. The diabetics and women in childbirth who were saved with new treatments have now come back to fill health care centers with their problems of aging. Good health has been demanded as a right by so many citizens that persons no longer wait until they are ill to seek it; thus, prevention has become the cry of the consumer. The implications these changes have for the health science student about to take his place on the team, and various ways of meeting these changes shall be the focus of this paper. However, prior to such a discussion it is first necessary to understand what is meant by "team".

A simple definition is that of "a number of persons doing anything conjointly".[1] Its success depends on many factors. First, since a team is composed of individuals, each member must utilize to the greatest extent his or her own capabilities and talents. The individual's potential must be allowed to be reached through participation on the team. Secondly, since several to many individuals form a team, their interactions must also be of the highest quality for the greatest success. An atmosphere must be established to promote the exchange of knowledge and ideas in such a way that the presence of each individual can readily be felt by the other members. Finally, the communication and co-operation resulting should aptly meet the needs for which the team was initially intended. For the health team, this means meeting the patient's needs as wholly as possible while restoring or maintaining an optimum level of well-being. When duplication of services occur, or when one member performs a function which detracts from his unique offering to the group, thus causing inefficient use of his person, the possibilities of the team's success are decreased.

The physician has long been held as the traditional "head" of the health team. However, as implied earlier, the knowledge needed for such a position has become immense. In the near future one person might no longer be able to provide the services now expected of him. What are the alternatives available, such that the physician can be used for his special contribution to health while still providing the safest care for his clients?

Within the medical discipline itself one alternative is that of group practice. Already well established by World War II, the advent of peace released a great number of military physicians to whom it greatly appealed. Ideally, group practice refers to six to ten physicians who form a cooperative arrangement and are housed in a single working unit. Patients can be referred to that member who has best knowledge of a given pathology, or can be maintained by one physician who uses the other members as consultants. This arrangement has also been widely used in dentistry and veterinary medicine. It allows each individual to specialize in his own area without the stress of being responsible for provisions of care made outside his specialty. For the patient, this model means more complete and qualified care.

Lately, however, group practice has taken on another dimension. The "group" has changed from a number of physicians to a number of various health personnel. A good example of this approach is demonstrated by the New York Montifiore Medical Group. In the initial project one hundred and fifty families were randomly selected from the Health Insurance Plan to receive from a consolidated team the services a general practitioner would normally provide. Each team member made an initial assessment of the family's needs, then met with the other group members to share this information. After this sharing either one member who could best meet the needs of the family was selected to do so, or several members would continue providing care. The "team operates by dividing responsibility, delineating individual roles and accepting each other's professional competence."[2]

The Montifiore program has produced much more thorough and complete results than a general practitioner could ever provide. A reason for this is the delegation of traditional medical functions to paramedical personnel. Through such delegation the final medical responsibility, formerly placed so heavily upon the physician, now becomes a shared responsibility. Also, the physician has not given up duties which only he could have provided; instead he now has more time to perform his unique health functions. This transference has, in the meantime, increased the potential of other health workers' talent. Finally, since all health workers were placed on salary, the economic motive which often tends to inhibit transfer of functions was removed, creating an easier transition.

Another alternative is the better use of personnel who make specific areas of health their profession. The pharmacist is a good example. The pharmacist possesses expert knowledge of drug usage, -- knowledge which is vital to the performance of the physician and other health workers. The pharmacist is much better equipped than other health team members to provide consultation on all aspect of drug utilization, but too often is not fully utilized in this role.

For those health professions in which roles are defined as relatively independent of the physician, such as optometry, pharmacy, dentistry or veterinary medicine, this delegation of power is not as important as to those who do rely more heavily on the physician's role for defining their own. Because of this, more alternatives can be seen in the latter as a result of change in the ohysician's role.

For instance, in the introduction of a joint report issued in 1969 it was stated:

> The American Nurse Association and the American Academy of Pediatrics recognize that collaborative efforts are essential to increase the quality, availability and accessibility of child health care in the United States. In order to meet the health care needs of children, it is essential that the skills inherent in the nursing and medical professions be utilized more efficiently in the delivery of child health care.[3]

As a result, graduate nurses are specially trained to perform physicial examinations and take medical histories of young children. From standing medical orders the nurse can then take therapeutic steps in handling her findings. A physician is always available for consultation, and of course patients requiring his skills and knowledge are referred to him immediately.

Faith in the nurse's ability to take on some of the physician's functions was established in a study by the University of Kansas. From a local medical clinic, 66 chronic ambulatory patients were evaluated as being "in a relatively stable phase of their illness".[4] They were then divided into two equal groups, stratified according to diagnosis, age, sex and race. One group continued coming to the clinic and being treated as usual by physicians. The other group was seen by clinical nurse specialists who, again from standing medical orders and daily consultations, worked to meet the patient's needs. After a year both groups were re-evaluated. None of the patients' conditions were adversely affected by their participation in the project. The control group appeared the same as before. However, those patients seen by the nurses were noted to have more closely followed their appointment schedules, complained less frequently on the whole, and made fewer minor complaints to physicians. It was felt that these changes were brought about because of a nurse's training in supporting patients, which appears appropriate for handling the chronically ill. On the other hand, the physician who, rightly so, concentrates on the biological and technical aspects of the illness could not provide such support. From the theoretical viewpoint, then, this study and the pediatric nurse practitioner program are excellent examples of how each member can be used to the fullest potential: the nurse focusing on the unique aspects of her training, and the physician having more time to use his particular education. Not only did this yield a more efficient use of time, but patient cost was also decreased and a new approach to the rising number of ambulatory patients was established while maintaining the heightened communication needed by a good team.

As for the patients attitudes towards the change in role function: "After a brief transitional period patients were not concerned with differentiating between a nurse 'playing doctor' and one providing some new and more scientific type of nursing care. Instead, they accepted her as a primary source of the kind of care that they wanted (and needed) at this particular phase of their illness."[5] In short, the goal of the health team had been better met.

Meeting the patient's needs is a vital area governing the change in health team models. Because patients are not isolated beings, the value of seeing and treating them in the context of family and community has perhaps most greatly influenced the new health team models.

More so than in the clinic or hospital setting, community teams demand a much broader range of interdisciplinary participants. The reliance on workers from the social services increases. Community members are sought to help their own neighbors through formal or informal participation on the team.

To briefly summarize, the best health team takes an early inventory of what health problems it will address itself to, examines the resources it has within itself, and then forms its team in such a way that the two can yield the most desirous results. Whether alternative practice models to the traditional approach will be necessary depends on the decision of each team. But before such a decision can be made, each member must be aware and understand the values of the other, and only then can the best choice be made.

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A BRIEF SUMMARY OF INTERDISCIPLINARY STUDENT HEALTH PROJECTS

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The decade of the nineteen-sixties was one hallmarked by social involvement of the United States as a whole and in particular, of that of its youth. It was a time for re-examination of this nation's conscience and a redirection in national philosophy and priorities.

The beginnings of this ethical upheaval had its birth in the civil rights movement of the early sixties. Heeding the call of President John F. Kennedy, the youth sought to right the wrongs of previous generations by giving of themselves to the cause of social justice. Students spearheaded these efforts both with heroic individual efforts and through organized associations, such as S.N.C.C. (Student National Coordinating Committee).

It was not until approximately five years later, though, that health science students also became involved. In 1964, the Medical Committee for Human Rights (MCHR) was established to provide emergency aid to injured civil rights workers in the South.

During the 1964-65 school year, students from eighteen schools of medicine, dentistry, and nursing in the Greater Los Angeles area founded the Student Medical Conference of Los Angeles. Their purpose was to provide "leadership through education, community service, and research."

This group was to create the first nationally recognized interdisciplinary student health project. In the summer of 1965, thirteen SMC students (10 nursing, 2 medical, 1 dental student) worked in five locations in the San Joaquin Valley in California providing health services to the migrant worker population of the valley.

On April 23, 1965, the Medical Committee for Human Rights was formalized and consolidated at a meeting in Washington, D.C. Letters of invitation had been sent to fifteen Eastern medical schools and forty-five students from Howard, Tufts, Boston University, Harvard, Albert Einstein, and USC met in caucus and clarified the role of students in community activities.

This group formed the nucleus of a group that later met in the fall of 1965 at the University of Chicago Medical School and founded the Student Health Organization (SHO). This was a loosely organized interdisciplinary student group which sought to keep member schools informed of local group activities.

During the academic year 1965-66, the local groups began to organize efforts in community health including speaker forums, group discussions, and planning for summer activities. The University of Southern California acted as the sponsoring agency for the SMC in obtaining a $204,000 demonstration grant from the Office of Economic Opportunity for a student project in Community Health Resources for the Poor.

The summer program provided fellowships for 90 medical, dental, and social work students from forty institutions in eleven states. The students worked in poverty areas in 9 counties throughout California coordinating their efforts with the agencies in the area. They provided actual service and learned first hand about the problems in delivery of health services.

At the conclusion of the project, the students were generally enthusiastic and carried this enthusiasm back with them to their own schools. In 1967, SHO chapters had sprung up in thirty schools.

In the summer of 1967, the SHO conducted three major projects, one in New York, Chicago, and California. The projects placed 260 health science students from medicine, nursing, dentistry, social work, law, osteopathy, medical technology, medical sociology, and dental technology in these communities.

In New York the students acted primarily as "patient advocates", greeting the patients in the clinics and emergency rooms and trying to expedite their passage through the medical mazework. The students had some impact in the alteration of the design of many clinic operations.

In Chicago the students tried primarily to organize the communities in which they were placed to define their needs and develop mechanisms to meet those needs. These were not necessarily directly health-connected but often involved such problems as sanitiation, urban renewal projects, etc.

The California program essentially expanded upon the program of the previous year and placed students in urban areas as well as rural The health students also worked with high school students in an attempt to interest them in pursuing health careers.

The third National Assembly of the Student Health Organization was held in Detroit from February 22-25, 1968. The nature of the third Assembly was distinctly different from those previous to it. Over 500 students from 40 states were present, representing a wide spectrum of opinions and various levels of community health experience. Though considerable time was spent discussing the summer programs, a large part of the time was spent debating the political nature of SHO, what tactics should be employed in creating community and social change, and the development of a national organization. There was a growing feeling among many SHO members that community health projects were not an appropriate mechanism for change for SHO.

By April of 1968, the tide of student activism began to involve the largest, but heretofore inactive, health student group, the Student American Medical Association. Its House of Delegates and National Convention of 1968 had 800 medical students in attendance, representing 76 schools. Through resolutions adopted by its House and through its new dynamic leadership, SAMA became committed to action in community health.

In April of 1968, 10 SHO groups were carrying out local community health projects and 7 SAMA chapters were involved in community health activities. In that year, the concept of year-round, locally-funded projects was put into application in Kansas City. The Conference of Student Professional Organizations in Kansas City represented fifteen health science schools working together throughout the year in community service projects. Similar programs were developed in Detroit, New Orleans, and Cleveland.

During the summer of 1968, the most ambitious program ever to be undertaken through student auspices up to that time was initiated. Through grants amounting to over a million dollars supplied largely by the Regional Medical Programs to SHO, 400 health students were placed in communities throughout the country for ten weeks in the summer. The students were to facilitate the provision of health science services to the communities and document the health problems in those communities.

The summer of 1968 was one marked by tremendous strain and conflict. The assassination of Martin Luther King and Robert Kennedy and the devastating riots that rocked this nation had a profound effect upon the student projects. Racial confrontation exacerbated the already precarious provider-consumer relationships in the communities. Many students found themselves aligned with militant political-action groups which sought to change very basic problems in economics and political power. The complexity and intimate relationship between health problems and the enormous social problems proved very frustrating to the students.

These feelings of frustration and anxiety led to the growth of negativism and nihilism among many of the student participants. At the fourth Annual Assembly of the Student Health Organization held in Philadelphia in November, 1968, these feelings were expressed by students as a desire to resign from active community service programs. It was felt that such programs were not valid approaches to the solution of more basic problems. Attention was focused on the burning political issues of the time and on more revolutionary tactics in attaining change.

The Fourth Annual SHO Assembly marked the end of the first era in health student involvement. SHO became a splintered group, turning to radical analysis of the social structure in the nation and abdicating its role as a leader in student activism and participation.

What the SHO had accomplished was an awakening of the sense of committment on the part of health students to the communities they were to serve. It uncovered the underlying sepsis infecting the American health care system and exposed the serious nature of the sickness in American medical care. We were, indeed, in the midst of a health care crisis.

1968-69 saw the development of extensive local and national student health projects primarily sponsored by the Student American Medical Association. The basic alterations between the SAMA projects and the SHO projects involved the goals. Students were no longer viewed as providers of health care to the communities. The role of provider, though extremely ego-satisfying, had produced deleterious effects on the communities in which health programs had been conducted. Primarily, the students were not fully trained professionals; thus the care they provided, though sincerely motivated, was inferior care. This only promulgated the two-class system of health care. Secondly, the care provided by students was discontinuous, lasting only the ten weeks of the summer. The expectations of the community were raised, only to be dashed with reopening of the schools in the fall.

The positive aspects of the SHO programs were preserved in the SAMA program. First, it exposed students to the deficiencies inherent in our present health care delivery system. This realization that all is not well was something new to many students who had been exposed only to selected models through their university curricula. Secondly, it offered students alternative models of health care delivery other than those traditionally taught in schools. It emphasized the need to be responsive to the real needs of the patient served, both as an individual and in relation to his family and community. It impressed upon students the other important factors involved in good health care; namely, socioeconomic and political factors, cultural factors, the importance of preventive health maintanence, manpower utilization and efficiency, and maldistribution of health manpower and resources. Finally, the projects offered the students the ability to work with students of the other health disciplines as a health team, enabling them to learn how the other disciplines contribute to the better care of the patient.

The first major project developed with these criteria in mind was the Appalachian Student Health Project. This health manpower recruitment program was designed to help correct the problem of maldistribution plaguing the Appalachian region. One hundred and twenty medical, nursing, dental, and pharmacy students spent nine weeks in the summer of 1969 in the Appalachian states. Rather than providing services, the students worked directly with professional preceptors observing the delivery of health care in rural America. In addition, over half of their time was spent outside their preceptor's office or hospital, working in the community, observing the problems of isolated rural areas. Each student worked on a project of his own related to one observed problem. These projects often evolved into sophisticated programs perpetuated by the community after the students had left.

A similar program in which health science students were placed within Job Corps camps was also initiated. Another program, the Medical Education and Community Orientation Program (MECO) was started in Illinois but was restricted to medical students in their preclinical years based in a community hospital.

At the same time as these national projects were developing, local community health projects were also sprouting up throughout the country. By the late spring of 1969, there were over 40 local community health projects, 32 of which were conducted by local Student American Medical Association chapters. These differed from the national projects in that they were usually narrower in scope, continued year-round, and were more service-oriented.

On March 14-15, the First National Student Conference on Community Health was held in Kansas City, sponsored by the four student health associations (Student American Medical Association, National Student Nurses Association, Student American Dental Association, and Student American Pharmaceutical Association) and administered by the Student American Medical Association Standing Committee on Community Health. 480 health science students from 114 schools attended the conference participating in numerous workshops on community health topics. The issues of interdisciplinary approaches and the paramount importance of consumer participation were stressed.

In the summer of 1970, the American Indian Health Project complemented the Appalachian program. This provided an additional dimension of cross-cultural exposure for the students. The Indian Project was particularly innovative in that the students were invited by their respective Indian tribal council and were directly responsible to these Indian consumer groups. Additionally, the students worked with adolescents from the Neighborhood Youth Corps in interesting them in pursuing health careers.

In the late summer of 1970, the SAMA Standing Committee on Community Health formed a subcommittee on Local Projects designed to deal specifically with the increasing number of local community health projects. The subcommittee was composed of students from the disciplines of medicine, nursing, pharmacy, and dentistry. They developed a set of guidelines which would be utilized by local groups in developing local projects in a more sophisticated manner. These stressed the importance of interdisciplinary teams, provision of services in response to defined and accepted needs, continuity of care, consumer respresentation, and proper auditing and evaluation of the projects. The subcommittee offered small "seeding grants" to local groups to develop these projects as demonstration models, which, if successful, would hopefully receive additional support from other sources. Many of these local experimental projects became successful operations, some even expanding into multi-million dollar comprehensive community health clinics.

In October, 1970, the Subcommittee on Local Projects conducted a National Conference on Local Community Health Projects funded through a grant by the Office of Economic Opportunity. One hundred and twenty student leaders from nearly fifty local community projects assembled

together in Kansas City to share experiences, discuss various topics of interest, and plan strategies to better deal with local projects. The proceedings of the meeting were collected into a booklet which was then sent to each local student group interested in developing community health programs.

The summer of 1971 saw the Appalachian program in its third year, the Indian project in its second, and a third was added: the Migrant Worker Student Health Project. The latter proved not as successful as the first two due to a lack of adequate time to develop the program and properly prepare the communities. However, much was learned from that experience, and plans fo. the following year's program were appropriately modified.

A new dimension has been added from the spring of 1971 to the present signifying the beginning of the third era in community health. At a meeting of the National Student Health Project Coordinating Subcommittee in Atlanta in March, it was decided that in order to have significant impact on the total health manpower development picture in the areas in which students were working it would be necessary to involve health science schools and other health provider agencies and institutions in a much more meaningful manner. Thus, the goal of student projects would be primarily catalytic, acting to facilitate a coordinated and cooperative approach to fulfilling health manpower and service needs in a community by the community residents themselves, health providers, students, and the agencies and institutions concerned with those matters.

Thus, the National Student Health Project sought to involve the health science schools in the development and operation of the programs. An effort was made to persuade the schools to grant academic creditfor the student participants. Involvement with local agencies such as Regional Medical Program was established to make the programs locally administered and year-round. Program objectives included the establishment of local health education centers in the communities in which the students worked which would then become the focus of future program development and health manpower programs.

A new program developed by SAMA is the Community Health Orientation Program for Students (CHOPS) which seeks to establish an interdisciplinary educational and service experience for students within a comprehensive community health clinic as a part of their formal curricula. This is being conducted as a demonstration model for new curricula in community health through a grant from the Office of Economic Opportunity.

Local projects continue to develop through the Subcommittee on Local Projects which is presently negotiating with a number of agencies to develop projects within their interest area, such as the March of Dimes, Squibb Pharmaceutical Company, Sickle Cell Foundation, etc.

Other local projects are being developed through the Head Start program to place health students with local Head Start Councils and help mothers deal with the health and development needs of their children.

The Student American Pharmaceutical Association is conducting a drug education program through local interdisciplinary student groups who will work with high school students.

In total, at the time of this Health Manpower Conference, approximately 5,000 to 8,000 health science students are annually involved in student-initiated community health projects. These projects represent a wide spectrum of activities, some more ambitious and sophisticated than others, yet all significantly contributing to the improvement of health care provided to all Americans.

Though still faced with problems such as relationship with communities, academic value of the projects, ability to form functioning health teams, and recruitment of student and professional manpower, these projects have been able to reorient the health student to again relate primarily to that which is most important: the care of the patient. It will be years before any rigorous evaluation can possibly be made of the impact of these student efforts on their future practice as professionals. However, few can doubt that these projects have exposed the deficiencies of our existing system and have challenged all those responsible to decisively meet those responsibilities.

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HEALTH MANPOWER CAUSE CELEBRE 1967 - 1972

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Introduction

The National Advisory Commission on Health Manpower opened its report in 1967 with the following approach to United States' "health crisis." "The crisis, however, is not simply one of numbers. It is true that substantially increased numbers of health manpower will be needed over time. But if additional personnel are employed in the present manner and within the present patterns and 'systems' of care, they will not avert, or even perhaps alleviate, the crisis. Unless we improve the system through which health care is provided, care will continue to become less satisfactory, even though there are massive increases in cost and in numbers of health personnel!"

It is appropriate, therefore, that this paper on health manpower look at the topic in the context of entire health system. To do so, it is necessary to identify the elements of our health care system and describe the environmental and political forces which will influence its evolution.

Though the title and opening reference of this paper mark 1967 as the beginning of a pentad of increasing interest in health manpower, the Economic Opportunity Act and health legislation of 1965 brought the first significant changes in our health system in over fifty years.* From the 1965 legislation sprung OEO neighborhood health centers and the Medicare-Medicaid programs which extended health services to a large number of citizens who were previously disenfranchised. Through its guidelines for model neighborhood health centers, the Office of Economic Opportunity (OEO) sought to create new patterns for manpower utilization and provide community employment by training indigenous personnel in a variety of outreach and primary care roles. The significant increase in demand for health care brought about by Titles 18 and 19 (Medicare and Medicaid) generated several new political and economic forces that have and will continue to effect the course of manpower development.

Elements of the Health System

(1) The lowest common denominator in the operation of any such system is financing. Money is certainly a precursor of facilities, trained providers and even knowledge. Since these subjects warrant individual consideration, this brief exploration of financing will take a more general perspective.

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*1910, the date of the Flexner Report on Medical Education, is used for comparison because of the improved quality of health care attributed to the adoption of the Flexnerian model.

The concept of financing is inseparably linked to the finite limitation of available resources. Unlimited options for the use of these resources force an individual, or the government, in the case of a large complex society, to set priorities. Recently our government has been severely maligned for the apparent lack of attention it has given to health issues. These criticisms have been spawned mainly by federal and state limitations placed on expenditures for direct medical services. Without defending government's position, it should be pointed out this criticism is only partially valid. Health professionals must recognize that just as there are alternative ways of utilizing health manpower for any given level of financing, there is also a variety of ways for meeting basic health needs. Providing the services of health professionals is only one of these. The United States presently spends approximately seven per cent (7%) of its gross national product on health care. This is contrasted with many large countries of similar health standards which spend only five per cent (5%). The first issue then is not spending more for direct services but scrutinizing what we are getting for our money. As Paul Elwood M.D. says in writing about Health Maintenance Organizations, "The U.S. spends enough, but just doesn't spend it well." The second issue is whether we are spending enough on complementary social services which promote health rather than providing care. Appropriate education, rewarding employment, and high quality housing are examples of services seldom looked upon as health matters but which may demand significantly increased portions of our national resources before the health of Americans can be greatly improved.

(2) Facilities are important from the standpoint that their location is a significant factor in the distribution of manpower. Also, the expense of their construction and operation is an option which competes with manpower training and support as a use of available funds.

It is not surprising that variety and specialization in facilities have increased in a pattern similar to that of professional disciplines. As a consequence, some decisions related to making health care equally available to all users must treat facilities and personnel as a single package (e.g. nuclear medicine). In other instances limitations or abundance of facilities will prompt the development of new forms of manpower or replace those that are obsolete.

A planned approach to the distribution of facilities first became available nation-wide as a result of the Hill-Harris Amendments in 1964 and has been continued through subsequent Hill-Burton bills. The resultant linkages between facilities construction and Comprehensive Health Planning (CHP) and Regional Medical Programs (RMP) must be viewed as influences or even determinants in manpower planning.

(3) Manpower, as this conference reflects, is an issue which offers a myriad of approaches. It is indeed a game of numbers, but as the National Commission pointed out "more of the same" is no solution to our health problems. As the employer of nearly one in every fifty Americans, a major problem in the health industry is equal access to careers as measured on racial, ethnic or sexual lines. The importance of equal opportunity employment in hea'th goes beyond the interest of the worker; it strongly determines the quantity and character

of care received by populations underrepresented in health professions. As a service which society appears to have decided is a right for all, either a conscientious professional community or a responsive government must soon provide a mechanism for distributing manpower equitably. Equal vocational and career access seems to be a partial answer.

The answers to the What, Where, When and How? questions about manpower are dealt with throughout this paper and should not be repeated here.

(4) Operational design is the least tangible of all elements which functionally relates all of them one to another. This intellectual resource is as much a product of our technologic age as computers and telecommunications. The challenge is to provide a design for the system that will enable it to, a) utilize each worker in a role consistent with his most productive skill and, b) guarantee comprehensiveness by training new personnel or broadening the qualifications of those already available. As we realize the true complexity of health, its promotion, maintenance and restoration, the need for applying the skills of numerous practitioners becomes more evident. In order to maximize the quality of health care, linkages of the sort implied by the team concept will have to form across disciplines, between professionals and with consumers. Unfortunately the health team is a concept treated to date with an unjust preponderance of words and a paucity of action.

(5) Techno-science in addition to operational methodology has yielded valuable machinery which has aided in the delivery of health services. These utensils have generally expanded manpower productivity by both speeding the rate at which each handles his necessary information and widening the scope of services he can competently provide. Examples (in order) would be the use of computerized data storage and retrieval and the administration of automated health histories by allied professionals. It seems almost certain that an improvement in quality can also be expected due to the increased, rapid sharing of data between practitioners. This would include the emergency transmission of medical records across great distances, building composite health profiles from the contributions of each team member, and even peer review.

In areas where manpower tasks have tended to be mechanistic, full "responsibility" may be turned over to software with a gain in both competence and efficiency. Such an area could well be the monitoring of pharmaceutical therapy by computer.

(6) Reimbursement mechanisms for providers and institutions is one specific variant of the financing element. Some suggested changes in the present largely fee-for-service system seem to frighten certain providers to the verge of "dropping out" when in fact their expressed purpose is to improve the consumer's relationship to the system. This aspect of the system should encourage health care recipients to seek services early, maintain effective contact with the system and rigorously carry out instructions for self-care. Any ideal mechanism would also remove the responsibility for reimbursement from the person or family of one who is ill.

(7) The acquisition and transmission of knowledge constitutes the last major element of the health care system. The explosive growth of the pure sciences over the last two decades has been a major force in the trend toward specialization. No longer can one practitioner be all things to all people. Unfortunately it seems that our deficit in know-how for applying all the knowledge that is available seems to be increasing. Health care systems that can channel all resources to the personal and public benefit is one of our most needed areas of research and experimentation.

Homeostasis and growth of the health system are both accomplished through the education of new health professionals. For the educational institution to function appropriately it must be a repository of knowledge in both the pure and applied sciences. That our universitites and colleges are lacking in the applied sciences is evident by the inefficient, irrational role models they present to student professionals.

Two additional points about our educational institutions and health manpower need to be mentioned. As new careers are created based on the task requirements of the health system, it may become the responsibility of training centers to create and implement appropriate curricula. Some equivocation about their participation seems justified because of their inability to date to translate job descriptions and task analyses into educational programs. Because educational institutions are the entry-ways to health careers, they are additionally important factors in bringing about equal representation of all segments of the public. This, and certain geographical considerations mentioned later, have significant effects on the distribution of health manpower.

Political Forces

(1) Public demand for services has increased beyond the limits of fulfillment by the present system. This has occurred because of increased numbers of purchasers seeking care and as a result of the average consumer being aware of ever increasing types of available services. The inflationary prices, which can be expected in any market which offers inadequate competition between providers, have prompted great public displeasure over the diminishing value of its health dollar.

(2) Consumer organizations which participate in the development of health policy have become a potent force at the local and regional level. Their concerns about availability, accessibility and acceptability have made these issues to be dealt with in the planning of all manpower programs.

(3) Third parties-conglomerate intermediaries-have become the direct payers of a major portion of the nation's health bills. In order to compete for private subscribers these companies have tried to install economic ceilings on provider costs. These regulatory actions have a definite impact on the delivery system and the new patterns of care that will be evolved.

(4) As the spender and sometimes guardian of public tax dollars, the federal government is placing more and more attention on the maintenance of health. It will most certainly be joined by the country's industrial complex in its presumption that early intervention is the least costly form of care measured both in terms of direct services provided and in the loss of net productivity due to illness.

(5) There has been a general increase in the expected performance level of health professionals. Irrational insurance codes and a flood of legal actions predicated on malpractice have tended to make government actions on licensure and certification very conservative. Further solidification of professional boundaries can only impede the development of fluid manpower roles that are capable of responding to the needs of a dynamic environment in an efficient and comprehensive fashion. Until no-fault insurance, designed to give the consumer just protection, is enacted across the country it seems unlikely that the health system will benefit from the level of interprofessional cooperation that is possible.

Environmental Factors

(1) Improved control of infectious disease and elevated nutritional standards have brought a change in the type of illness demanding the most services. Chronic and degenerative diseases are more prevalent today and can be expected to require even larger portions of our health resources in the future.

(2) Population pressures have adversely affected social stability and physical health at both the individual and community level. "Social engineering" is the recently coined discipline for dealing with this problem. Overpopulation is already modifying the type of problem presented to health professionals. As we seek and find ways of responding to these new needs we will become practitioners of this new discipline.

(3) Technology has made available numerous new methods for delivering care. Such factors as transportation and computerized information have brought about not only new models for delivery (e.g. centralization of highly sophisticated or expensive services) but increased options for future resource allocation between manpower and "machine power."

(4) Severe contrasts in U.S. demography influence how the health system deploys its manpower. In order to provide each person with reasonably equivalent care, rural areas, for example, may have to utilize generalists more extensively because there is insufficient population to support a full complement of specialists. The highly mobile nature of our population also demands a system fluid enough to keep up with large increases, decreases or changes in nature of a local community. The basic premise here is that manpower reflects the unique needs of the community and that these needs are frequently enough reviewed to keep the health system up-to-date.

Discussion

The manpower issues that have been raised in this paper can be categorized in the following way:

1) increasing the numbers of practicing health professionals
2) achieving equitable representation of subpopulations (racial, ethnic etc.) in the professions
3) increasing the efficiency, and thereby economy, of practice patterns
4) designing manpower systems which provide quality, comprehensive (including promotive and preventive) care

5) redistributing services to benefit geographically and economically isolated populations
6) adopting regulatory legislation that protects health care recipients but is also flexible enough to meet changing health needs

Many events have occurred during the last two years which treat these manpower issues in the context of the entire health system. Though most are quite recent, it is the author's opinion that most owe their genesis to the 1967 Report of the National Advisory Commission on Health Manpower and the analysis, experimentation and public discussion during the ensuing years. By looking now at some specific examples of these actions it may be possible to predict the future of health manpower.

Most recently, the President's budget request for 1972-73 gives an indication of how financial incentives will be used to stimulate new modes of health care. A 533 million dollar request for manpower programs in the area of education and demonstration projects shows a high priority compared with other developmental spending. Mr. Nixon has asked that monies for educational facilities construction be cut from the budget for 1973. Analysis of these economic facts suggests that the administration's strategy will be to increase the efficiency of our educational system as a method of producing greater numbers of professionals. The President's request also seeks more funds to bring economically disadvantaged people into the health fields. Other line items which reflect new or increased government interest include 149 million dollars for family planning, research and services, 15 million dollars for sickle cell programs and 247 million dollars for maternal and child health.

The Health Maintenance Organization concept, first proposed in Section 239 of the Social Security Amendments of 1969 (H.R. 17550) will receive direct support for the first time under the proposed Presidential budget. It is expected that 36 million dollars will be distributed amongst approximately 348 potential HMO sponsors. The possible enrollment under the programs receiving this funding would be 10.4 million subscribers. The HMO guidelines embrace a wide variety of administrative mechanisms all intended to stimulate more preventive health care and improve linkages between all segments of the delivery system. As pointed out earlier, the government's purpose for promoting early intervention is purely a dollars and cents matter of obtaining equal or better health levels without as much expensive curative and rehabilitative care. Whether it be through an expanded group practice such as Kaiser Foundation-Permanente Medical or through financial actuaries such as the San Joaquin Foundation, HMO's will bring the full expanse of necessary services (from pharmaceuticals to hospital care to home nursing) under a single administrative umbrella financed on a prepaid basis. It is apparent that HMO's will address certain manpower issues (numbers three and four on the list) but the concept offers no solution to the maldistribution of resources nor does it present a means for delivering care to those who can not afford membership. If HMO's are to ever serve rural and dispersed populations it seems they will have been given an incentive, probably economic, for establishing new facilities and

recruiting or training personnel. At least two major questions stand in the way of rapid development. One, why should successful providers undertake the burden of restructuring their operations to create or join an HMO? Two, in the absence of public financing for HMO "start up" costs, will the proprietary sector be the lone adventurer in this field and if so will further corporate profit be an accepted influence in the health industry.

Until 1971 the federal appropriations for health professions education came under the title of "Health Professions Education Assistance Act." A House and Senate Conference Committee changed that to the "Comprehensive Health Manpower Training Act of 1971." Coming as amendments to Title VII of the Public Health Service Act this bill shows Congress' strategy on health manpower to be similar to the administration's. This bill offers schools bonuses for student retention by giving larger capitation grants for each student in his year of graduation and includes incentives for increasing first year class size. It also authorizes more support than ever before to new schools in their "start-up" phase and institutions in financial distress.

There are four notable sections of the Manpower Training Act which relate directly to needed changes in the health delivery system. Though these are minor portions of the bill carrying very little of the authorized funding, they are significant indicators of what to expect in the future.

To qualify for capitation grants to meet educational costs (Section 770), any school not having received money during the 1971-72 fiscal year will have to carry out projects in any three of nine possible areas. These include:

A) Projects to effect significant improvements in curriculum
B) Projects to establish cooperative interdisciplinary training
C) Projects to train for new roles, types or levels of health personnel
D) Projects to make innovative modifications of existing programs in education of health professions (e.g. courses on organization and financing of health care)
E) Projects to assist in significantly increasing the supply of personnel
F) Projects to establish increased emphasis on clinical pharmacology, drug abuse and nutritution
G) Projects to provide at schools of pharmacy increased emphasis on clinical pharmacy
H) Projects to increase admission and retention of socioeconomically disadvantaged
I) Projects to train and educate primary health professionals particularly in family medicine

Over half of these initiatives deal directly with improving the number, nature or distribution of providers.

A special section of the legislation is entitled "Health Manpower Education Initiative Awards (sect. 774)". This carries the stated purpose of improving the distribution, supply, quality, utilization and efficiency of health personnel and the health delivery system. It authorizes grants or contracts to public or nonprofit private health or education entities for projects in the following categories:

A) Redistribution of manpower by area or specialty to favor areas designated as having shortages
B) Improving efficiency of personnel utilization
C) Evolving better patterns of training and education
D) Achieving more effective organization and delivery of health services through the use of the team approach
E) Fostering geographic organizational arrangements serving the general purpose of Section 774
F) Providing health professions education to individuals who it is "reasonable to assume" will practice in areas having manpower shortages.

The last new category of institutional support is devoted to training in family medicine (Section 767). One hundred million dollars was authorized be be spent over a three year period to support programs and give financial aid through traineeships and fellowships to those in the programs.

The Physician Shortage Area Scholarship Program (Sect. 784) seeks to improve the medical care of persons in two categories. These are residents of areas having a physician shortage and migratory agricultural workers and their families. The scholarships have a maximum award of 5,000 dollars per academic year per medical student. In return for this educational support the student agrees to engage in primary care in an area prescribed by the Secretary of HEW as fitting either of the categories described above. One year of such practice is required in exchange for each year of scholarship support.

In a move unrelated to the Manpower Act, the Regional Medical Program Services may soon be supporting a new conceptin education designed to improve the geographical distribution of personnel. The concept, which is called Area Health Education Centers (AHEC's) and was the only near revelationary product of the Carnegie Commission's report on Higher Education and the Nation's Health, seeks to decentralize the education and training process. In contrast to the Carnegie Commission, the RMPS sees AHEC's as "independent community based consortia or providers of health services and providers of education and training." It has been found that there is a correlation between the site of education and a health practitioner's eventual location of residence. For the medical profession this correlation is with his or her location of postgraduate specialty education. AHEC's will be established in conjuction with health providers in areas typically demanding additional manpower. They will not, however, be just mini medical centers because they will be encouraged to relate their manpower programs to the service needs of the surrounding population. Linkages with area-wide health planning agencies should make possible this translation of health service priorities into manpower needs. Such an approach might, for example, cause some AHEC's to concentrate on the training and upgrading of allied personnel whereas other's activities will reflect a need for more professionals such as physicians and dentists.

By having academic programs more widely available the needs for continuing education can be more adequately served. Though the group practice model can improve the quality of health care by promoting peer review and peer education, the resources of AHEC's will be a useful and necessary adjunct.

A third potential for AHEC's seems to have been overlooked by most planners. The regionalization of health services as described by Weinerman and others assigns medical centers the responsibility for highly specialized tertiary care. These are the medical centers which presently educate most of our professional manpower. The guidelines which RMPS may adopt call for AHEC's to be developed in cooperation with already existing health care programs. If area health planning efforts indicate a specific need for tertiary care it may be necessary to develop an AHEC in conjunction with a new referral center. This center would then engage in training but still on a scale more limited than those institutions called "medical centers," and thereby meet the area's need for specialty manpower.

Through the Emergency Health Personnel Act of 1970 (P.L. 91-623) Congress amended the Public Health Service Act to create the National Health Service Corp (NHSC). The short range goal of the NHSC is to bring needed health care to areas which can certify a manpower shortage. The mechanism provided by this legislation is assignment of two year commissioned officers or civil service employees to such areas. The one potential hitch in this scheme is the necessity of getting acceptance from local professional groups who have in some cases been unwilling to admit that their membership is unequal to the task of meeting all of the population's health needs. In gaining adoption of the Emergency Health Personnel Act it was argued that a long term benefit would be the permanent redistribution of manpower to areas where they served their brief two year experiences. The administrative staff of the NHSC is also attempting to identify more efficient manpower utilization patterns by using a health team approach in making their personnel placements. Though it is too soon to tell, it is hoped that both of these long range goals will be realized.

The National Health Insurance plans alluded to earlier as financing mechanisms have a direct effect only on the relationship between consumers and the health system. By providing universal coverage through any mechanism at least 20 million additional people would be given access to what is euphemistically called "mainstream medicine." Insurance that provides complete coverage with reference to both expenses incurred and the nature of services rendered would also encourage increased use of health services by those who are already consumers. Increased use by this population is certainly warranted but not in the area of professional services which Medicare and Medicaid have proven to be the present bottleneck in our system. Two pragmatic constraints dictate reorganization for efficiency and comprehensiveness. First, to create the supply of providers sufficient to extend the present system to all potential users would require a lag period of at least a decade. This time would be required not simply to build educational facilities, for this investment is probably not necessary, but to graduate enough classes that have increased enrollment. Second, expansion of the present system would increase the nation's expenditure for direct health services by ten to twenty per cent (based on a per capita calculation of cost). This is a figure the public probably would not, and definitely should not tolerate.

The only Natio ' Health Insurance proposal which would devote any resources to the inner functioning of the system itself is the Health Security Act sponsored by Senator Edward M. Kennedy. His bill includes a Resources Development Fund which uses 5% of the trust fund for programs "to improve the health system, especially in areas like manpower and innovative services and facilities." The trust fund would be like that of the Social Securities Administration which is the recipient of all social security taxes and payer of all benefits.

Conclusion

Systems analysis is a discipline recently proposed as a method of confronting the problems of our health system and manpower planning. The first step in the "systems approach" is identification of the problems to be solved and articulation of objectives that would bring about such a resolution. Those who state the crisis we face in terms of the delivery of service err as a result of a narrow perspective. Our crisis is health! The investment of 7% of the GNP is ineffective if the equally needed resources for housing, education, economic and social equality are not provided.

Systems analysis was introduced only in part to get the reader to recognize that an improper statement of the problem jeopardizes the success of any attempted solutions. It is also presented because Wilbur Hoff Dr. P.H. has offered a methodology for its application to health manpower planning. He makes an appropriately broad statement of the problem in Step One and then follows one of many available courses by advancing to manpower issues in Step Two.

Step One	Determine what must get done to the people or to the environment for optimum survival.
Step Two	Identify what workers have to do (tasks)
Step Three	Analyze tasks in functional terms in order to yield:
	A) Performance standards
	B) Workers functions dealing with data, people, objects
	C) General education development (GED) as the minimal preparation for any workers entering training
	D) Worker instructions
	E) Training required (beyond GED) to acquire specific job-related skills, attitudes, etc.
Step Four	(re) structure the tasks into (new) career ladders.

From step one similar progressions could deal with the relationship of the political system or education of the public for self care. The issue of the political system is one that must be confronted simultaneously because it controls needed resources and confers legitimacy.

This sample outline is presented so that the reader who has reached his own definition of the problem can work toward a possible solution. It is probable that the reader's answers will be similar to those covered in the Discussion section. But, it is also likely that the actions taken by government, the foundations, health science schools and the professional community will appear very imcomplete!

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HEALTH PROFESSIONS MOBILITY

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Career mobility can be likened unto Mark Twain's obervations about the weather, much talked about, little done about.

What is talked about? Career ladders, vertical mobility, horizontal mobility, and lattices are all concepts mentioned.

A visual concept of the "ladder" is obvious in some health professions. For example, in nursing it extends from nurse aide, to practical nurse, to associated degree or diploma, to baccalaureate degree, to masters degree, etc. This concept of a ladder, also referred to as vertical mobility, allows for an individual in a given profession to upgrade the level of his educational and task-oriented capabilities according to his motivation, performance, and level of achievement.

By adding a second level of mobility, horizontal, our concept becomes one of a lattice or more tangibly, a checkerboard on which the player can move vertically (up the ladder), horizontally (to another profession at an equivalent level), or diagonally (to a new profession on a higher level).

One author went so far as to compare mobility to a "jungle gym" allowing for various modes of entry, transfer, and ascendance into the health professions.[2]

Why consider mobility? How does it relate to health manpower? We are constantly hearing of health manpower shortages to be filled by increased utilization of allied health personnel with specialized technical skills. Leaders in education and professional practice have realized that most, if not all of these allied health professions lead to dead ends or terminal positions where one becomes locked into the system. The only alternative for betterment is to start again, at the bottom. Road blocks to career mobility can tie up resources invested through education and training in these individuals as well as stifle their personal motivation and initiative to perform at the highest level of service within their competency.

How does career morbidity become career mobility? This requires a coordination and collaboration of education, training, licensure, and practice on a regional as well as national basis. The remainder of this paper will be concerned with roles of education and training, roles of licensure and practice, and mechanisms for coordination of career mobility efforts.

Roles of Education and Training

Barriers are created as a result of values, attitudes and belie s of the public, health professionals, educators, and administrators. These may result in partial or complete blocks to entry into health manpower categories or to mobility within them.[2]

One of the traditional barriers in all of education is the utilization of grades as the sole criteria for admissions. This problem is being overcome in most junior and community colleges, but still exists in most four year colleges and in virtually all levels of graduate study. The latter programs, as a result, are still having a hard time in finding disadvantaged students who can meet their entrance requirements. A concern for lowering of standards may be questioned here, but often minority students, when admitted on such criteria as commitment to community service, initiative and motivation, can with a minimum of additional help compete equally with their scholastically admitted colleagues.

Similar problems exist in admission of rurally oriented students, women, and older people. Admission requirements for the various health science programs must be adapted to facilitate entrance of members from each of these under-represented groups.

After entrance into the health field, one also encounters barriers to attempts at vertical and horizontal mobility. To conserve health resources, the various levels of health programs must begin giving credit for abilities already possessed by individuals seeking admission. Experience through previous education or job experiences may have already developed certain competency levels in an individual, therefore wasting time and resources when requiring that individual to repeat work. For ease in mobility and maximum health manpower output, educational programs must develop and use equivalency exams and other means for granting credit at the college level in order to prevent duplication of work by students.

The concept of continuous progress education will aid in mobility. Often extensive lock-step curricula for professional health programs will frighten away capable and qualified students, especially the minorities and underprivileged. These students are disenchanted by the length and rigidity of programs for financial reasons or by the apparent difficulty for scholastic reasons. This is where continuous progress education can aid in career mobility. From entry level to the top of the ladder in a given profession, the educational sequence should be structured so as to allow a student to exit at his level of competency or satisfaction or to allow him to work at one level long enough to financially complete his ascent. This student should be able to re-enter at the same level from which he exited without penalty for having done so. This is not to say that the education should be so structured that all technicians, for instance, were previously trained as aides, but that all aides with the capacity for functioning at the technician level should have the opportunity to

ascend to that level. Educational structure would then be such that the student who knows his capabilities and goals can enter and ascend directly to the level he desires, while the student not yet certain of what level he is capable of attaining can begin and progress through each level of that profession at his own capacity without loss of previous credit and training until he reaches his level of competency or satisfaction.

Another major step in the development of career mobility will be the establishment of core curricula at all levels in the educational process. The development of a common educational base for allied health personnel would seem to encourage increased vertical and horizontal mobility by offering alternatives that previously would have required re-entry at lower levels or even at the bottom. Just as importantly, if the health care teams of the future are to be effective, members of these teams will have to be trained together sometime in the course of their educational experiences. Such training should occur early enough, perhaps, in the careers of each to stifle prejudice and foster an appreciation of and respect for each others roles.[3] Also this commonality of educational experience can be extended to a sharing of faculties, facilities, and financial resources. Students of various disciplines taking the same courses at the same time could be taught by one professor and by staggering labs could increase utilization of such facilities, therefore conserving educational resources.

Most programs in health fields today are using clinical experiences or on the job training as a part of the educational process. This practical experience is valid and very useful as an educational tool, but caution must be used in these programs. Always relating this experience back to some form of college or academic credit will avoid needless frustration due to lack of acceptance of such experiences when attempting vertical or horizontal mobility.

A balance of educational preparation with on the job training experiences must be achieved to produce the highest quality of health personnel available. The following example points out the dissatisfactions and frustrations of an imbalance in education and training: "A student who has achieved well in all of his general education, professional skills courses, and in his clinical training arrives on the scene for services. What happens? He has been taught how to accept responsiblity, how to plan his laboratory time or treatment program -- and what does he find? Too often he is in a position where his job seems only related to how well he takes orders and performs mechanical technical skills. His educational experience has prepared him for assuming a role on the health care team that he doesn't get to assume; what disenchants him even more is that not only do other members of the team appear unwilling to accept his potential for a high level of performance, but to his dismay he finds that members of his own profession have learned to accept such a subordinate role.

On the other hand nothing can be more detrimental to vocational morale than for an individual to be given a task or responsibility for which he has received too little formal training."[4]

Roles of Licensure and Practice

A major obstacle to increased career mobility comes from professional organizations that place a premium on selectivity and high standards required for membership. Licensure, certification, and accreditation are thus viewed in some quarters as symptomatic -- in the context of career mobility -- of the professionalism that has become a primary value in health occupations, almost preempting such values as practitioner's skills and competence in job performance.[5] When a certified lab assistant with seven years of competent service is required to take a full year of elementary bacteriology, the criteria for credentialing health professionals is obviously inappropriate. As Light states, "Surely there must be ways in addition to formal education and the acquisition of a piece of paper to prove the value and competence of a person on the job."[6]

In 1969, California made a move in this direction by recognizing the training of medical corpsmen seeking to become registered nurses, recognizing equivalent education or experience of candidates for vocational nursing, and allowance of some credit for vocational nurse training to facilitate upward mobility to the level of registered nursing. To better facilitate career mobility, states and licensing bodies must begin to recognize that the learning of skills and competency can occur in settings other than that of formal education.

One means of evaluating these acquired skills is proficiency testing, which refers to a measurement of an individual's competency to perform at a certain job level -- a competency made up of knowledge and skills, and related to the specified job. Such testings is therefore, not only a measurement of the knowledge gained through didactic instruction, but also an assessment of job capabilities.

Related very closely to the concepts of career mobility and proficiency testing is the increasing interest in task analysis that utilizes techniques for identifying and classifying jobs. "The essential elements of task analysis are to: (a) identify each task, (b) indicate the skill involved, (c) state the purpose of the task, and (d) indicate the knowledge necessary to perform that task. The Department of Health, Education, and Welfare is currently sponsoring a number of projects dealing with task analysis that are designed to facilitate the upgrading of certain categories of health personnel. Data obtained from task analysis can be used to: (1) evaluate the adequacy of an existing curriculum, (2) establish a new curriculum, (3) restructure jobs in order to make opportunties available at other levels, (4) determine pay scales, and (5) determine hiring requirements are realistic. Job analysis in the health field is recognized as an important factor in determining the redistribution of duties, functions, and responsiblities to effect an improvement in the health care delivery system. However, the method for accomplishing job analysis in a service-oriented, rather than product oriented, industry is still in the experimental stage."[7]

On the level of the practitioners, associations, and agencies, barriers must be broken down if career mobility is to become a reality. The allied health professionals must begin to consider their relationships to each other by first relating themselves to present systems of health care delivery and ultimately to the patient. After this has been accomplished, indifferences and suspicion of intent will be turned to similarities of background, education and patient care functions.[8] This new outlook of cooperation among the health professions will facilitate each of the other concepts in developing mobility, i.e. core curricula, on the job training, equivalency and proficiency testing, etc.

Mechanisms for Coordination of Career Mobility Efforts

Implied within the concept of mobility is a system of standards for education, licensure, the practice that is transferable throughout the entire nation, hence geographical mobility as well as career mobility.

Nationally there exists marked overlap of activities, duplication of efforts, and fragmentation of programs in allied health training and manpower development activities. There is confusion not only as to a commonly accepted definition of allied health manpower; but, also, as to curricula, licensure or certification, and a rational basis for determining functional roles of the various categories of the allied health personnel. Because of this state of affairs in allied health training and manpower development, vertical, horizontal, and geographical mobility become difficult, if not impossible, for a large number of allied health personnel.

In view of the multiplicity of training and educational institutions, health care agencies, professional associations, accrediting bodies, and government agencies involved in allied health training, university based regional centers must be developed to subserve a very broad functional role in these areas. The roles and responsibilities of these regional centers in allied health training should include providing leadership in educational programs, providing technical assistance to other training institutions, and working in a collaborative manner with all training institutions or agencies, in a complimentary fashion.[9] In order to make such regionally based programs compatible on the national level, studies such as the one proposed by Senator James B. Pearson of Kansas should be carried out. The study referred to is Senate Bill 1354 introduced March 24, 1971. The title is "Model State Code" and the bill is an amendment to the Public Health Service Act. The purpose of this amendment is:

"(1) to expand the role of the allied health professions in meeting the health care needs of the Nation; and

(2) more effectively to utilize the services of individuals engaged in such professions; the Secretary shall prepare, and distribute to the States, a model code on licensure and certification of persons engaged in the allied health professions.

The model shall:

(a) define the various occupations and specialties in the allied health professions;

(b) set forth educational and other qualifications (training on the job) required for licensure or certification in each of such occupations and specialties;

(c) describe the duties and responsiblities of each such occupations and specialties and specify the type of supervision (if any) required in the performance of such duties and responsibilities."[10]

As stated by Perry, "One avenue is certain: action is required."[11] In order to make career mobility a visible and accepted part of meeting our health manpower needs, each of the points in this article must be acted upon and ultimately coordinated by programs such as the regionally based university centers and the model state codes. Making realities of these concepts is the responsibility of practicing professionals, educators, and students.

FOOTNOTES

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TECHNOLOGIC CHANGE AND MEDICINE

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New technology produces change. The entire social and economic fabric of a nation was changed by the invention of the automobile. The direction and degree of such change have generally escaped prediction. Witness the turn of the century observer who cheered the advent of motor vehicles because they would soon end the terrible noise and odor of horse-filled streets.

I do not pretend to be better able to predict the future results of medical technology. Rather, I hope to point out the circuitous path that a technologic innovation may follow to its ultimate results. In addition, I will describe in some detail the technologic innovations now changing the face of medicine and those that lay on the horizon with particular reference to their impact on manpower needs.

One can view medicine as a fairly well defined subsystem within the larger social system of the nation state. Technologic changes within medicine have effects which interact variously with the subsystem, the entire system or both. In particular most medical innovations will have three levels of effects. The first of these are the planned biologic effects or purpose of the innovation. As an example, consider Thalidomide. The drug was developed to serve as a tranquilizer for pregnant women. At the second level are those biologic or physical effects which were not planned and only appear at the leisurely pace of biology, i.e. the malformed limbs of thalidomide babies. The third level contains the social effects, the social response to the biologic effects. In the case of our example, public outcry and the creation of a stronger FDA -- which in turn has impact on the very technologic system which spawned it. From this point the chain of effects continues: drug development is impeded or the cost of drugs goes up reducing their accessability to perhaps the opposite: more useful drugs uncovered by careful attention to animal experiments.

Thus, we find ourselves less and less able to predict the ultimate consequences of an innovation the further we get from its inception. One could not even guess the ultimate consequence of a longevity pill: a society of the very old who eventaully die out because they slip beyond their reproductive years or perhaps the opposite: the ultimate population crush.

Let us look at the effects of technology on medical manpower. New technology may increase manpower needs in two ways: (1) by, generating new job slots for those who are to operate and maintain the machinery of the new technology, i.e. external respirators spawned the respiratorycare technician and (2) by increasing consumption of products (or services) as a result of increased quality, better availability or decreased prices made possible by the introduction of new technology. Today whole batteries of chemistry tests are ordered as routine admission procedures because of their low cost, and blood counts are ordered much more frequently because the new counting machines provide the results in a matter of seconds.

Forces also work in the opposite direction to reduce manpower needs. First, new technology often allows fewer people to produce more. A single technician with an automatic cell counter can do the work of ten using microscopes and pipettes. Second, positions are eliminated. Convenience food distributors have eliminated the dietary kitchen in some hospitals. Pre-cooked frozen meals are delivered to the hospital daily at a cost which the hospital often can't match.

A Look at the Technology of Medicine

Medical technology can be divided into two broad categories. The first we will call diagnostic and the second therapeutic technology. Computer technology, which we discuss separately, applies to both. We look at them in the order stated.

Diagnostic technology can be further divided into that which involves the creation of images -- diagnostic radiology, radioisotope scanning, ultra sound scanning -- and into that which involves the identification or quantification of a molecular, serologic, microbial or tissue species -- including the traditional departments of clinical chemistry, serology, hematology, and microbiology.

The major advances in radiology have been in the technology of contrast studies. Such studies provide x-ray visualization of bodily structures by filling them with contrast media, i.e. iodinated dye or air. Examples abound: Cerebral sulci and ventricles all clearly outlined by insufflated air, the chambers of the heart sequentially lighting up as radio-opaque dye makes its passage from the venous to the arterial side, the digestive system solidly opacified by ingested barium. The advances have been made possible by the development of image intensifiers, improved photographic emulsions and x-ray sensitive phosphors without which the dose of radiation and dye for most contrast studies would be prohibitive.

Radioisotope scanning provides still another method of imaging body parts. The great potential of such scanning is based on two simple facts, 1) for every organ there is a biologically active material which seeks out that organ exclusively; 2) almost any compound can be tagged with a radio-active emitter. When the appropriate tagged compound is injected, the target organ is visualized by means of a scanning scintillater counter. However, despite the

theoretic simplicity of such a scheme its application has been limited to the thyroid gland until very recently. The thyroid was an easy mark because of its ability to highly concentrate a safe and available isotope (I^{131}) and because it is a readily accessible surface organ. The development of much more sensitive scintillation tubes and special isotopes were required to bring the field to its present day flowering. At present very useful but unstable isotopes can be generated on site from their more stable but less useful forebearers. Brain, lung, liver and heart scans have become routine hospital studies -- they provide a non-invasive means of detecting tumors of the brain, embolic blood clots in the lung and fluid accumulations around the heart, respectively. On the horizon is an every broadening field of target organs and isotopes. The speed of scanning is now such that dynamic studies are practical. In particular, one can study the flow of cerebral spinal fluid through the cerebral ventricles and of air through the bronchial trees.

Ultra sound (sonar) imaging techniques have not made the impact predicted five years ago. Such techniques are based on reflective nature of organ interfaces to sound waves and possess three wonderous assets: 1) The ability to provide images of soft tissue organs; 2) The potential for three dimensional visualization; 3) No tissue damaging effects in contrast to radiation. Sadly, Nirvana has not arrived nor has ultra sound fulfilled its promise. There have been two main technical problems: The echo from the skin surface dominates and obscures the internal echoes being sought. There are intrinsic resolution problems with the relatively long wave lengths of the present sound generators. However, there is hope, particularly from developments in the study of surface waves and optical holography. The meager successes include the visualization of the fetal head position -- but a very rough image indeed, determination of the position of the brain's midline and characterization of mitral valve movement. The latter two applications, however, yield a graphical pattern rather than a true image. One additional application of ultra sound has great promise because of its simplicity and the common plague to which it has been applied, that of deep vein thrombosis of the leg. A sonar wave is bounced off the deep vein of the calf while a tournequette squeezes the leg to produce blood flow. The amount of flow in the vein is measured by the doppler effect on the sonar echo. Decreased flow implies an occluded vein. In at least one study the accuracy of this simple bed-side method was quite good.

For the non pictorial diagnostic services automation of existing measurements has been much more important than the development of new measurements. The clinical chemistry and hematology departments have carried automation the farthest. It all began with the development of continuous flow analytic devices about twenty years ago. Such devices operate like an assembly line. The consist of an interconnected network of glass and plastic tubing along the length of which travel samples of serum separated by segments of diluent. At each of a series of stations the sample is mixed with reagent. The

final station is a reader - colorimeter, which quantitates a serum constituent acc[illegible] a color generated by the previously added reagents. [illegible]cent development has been that of the multichannel analyz[illegible] ic[illegible] consists of interconnected groups of analytic machines. Drastic cost reductions have resulted since twelve channel machines require no more manpower than the old single channel device. Sixteen dollars [illegible] an average price for a battery of twelve tests, though some ma[illegible] labs charge as little as six dollars. Such prices compar[illegible] sixty to eighty dollars for the same tests done singly. A Swe[illegible]ompany builds a twenty-four channel instrument which will process 120 samples per hour -- a total of 2880 test results in an hour. An Oregon based laboratory sells this battery for around eight dollars. A British firm is marketing a similar high capacity machine for only half the price. Obviously the trend will continue toward higher volume and lower priced tests.

Entirely new technologies are also being applied to automatic chemical analysis. The most promising has evolved from the AEC's interest in centrifuges. Centrifugal force, rather than pumps or pipettes moves and mixes specimen and reagent. Clever design of centrifuge heads has also allowed for filtering, dialyzing, and sedimenting the specimen. Transparent chambers line the periphery of the centrifuge head where a fixed colorimeter or spectrophotometer takes its measurements as these chambers spin by. Commercial models are available but require more development to reach their full potential. Such devices have great promise however, because of their very high speed and their potential for multichannel development.

In hematology, a 35,000 dollar device drinks an unprepared specimen of whole blood. Twenty seconds later it prints the white count, the red count, hemoglobin, hematocrit and red cel[illegible]ndices. Each of the measurements is done in triplicate with a voting circuit which discards a value if it does not agree with the other two. The economics of such a machine are obvious. If kept busy around the clock such a machine could do blood counts for nickels. In practice commerical labs charge a few dollars, but this compares with fifteen to twenty dollar charges when manual methods were used. There are machines for automatically differentiating between and counting the common species of white cells and for automatically determining the prothombin and partial thromboplastin times. The most clever of these latter machines makes use of a powdered magnetically active iron compound to achieve extraordinarily precise endpoints. The powdered material is dispersed in a drop of plasma situated on a strip of clear plastic. A magnet spins beneath where a photosensor awaits the passage of a light beam, blocked by the translucent slurry. Clotting is initiated by a drop of calcium solution and the timer is started. Fibrinogen is a long molecule along which the magnetic particles align themselves. The fibrinogen molecules are thus acted upon by the spinning magnet -- and they too spin in harmony. These diverishes polymerize very rapidly as a result of their mad waltzing through the serum. Their movement traps all of the remaining magnetic

particles, forming a tight knot of fibrin and iron compound. The light beam passes through the now clear serum, registers on the photo cell below, and thereby marks the endpoint of the clotting process.

As is obvious these machines have reduced the manpower needs of the clinical laboratories. However, they have not dramatically influenced total laboratory staffing nor have they yet exerted their full influence on manpower needs and costs. The reasons for their minimal effect on laboratory staffing are many fold. The labor force freed by the new technology has been used to provide additional services or to undertake developmental work. But most important is the fact that in most hospital labs a disparity exists between the capacity of these machines and the available work load. They are largely under-utilized. The greatest impact of these machines will show when hospital labs are forced to merge or share facilities in order to maximize the economic advantages of such machines and to meet the competition from commerical labs some of which already enjoy economically large work loads.

Of different consequence from the above developments are the emerging techniques for measurements of microgram quantities. Their first application has been to hormone analysis. A known amount of tagged hormone is added to a binding substance with high specificity. A specimen with unknown hormone content is added. The amount of radioactivity displaced from the binder is proportional by the law of mass action to the quantity of hormone in the unknown. Even more elaborate versions involve the use of specific antibodies as binding agents. In clinical research laboratories such technology have been applied to the pituitary gland hormones and all of their hypothalmic releasing factors. The workings of the pituitary, the master endocrine gland, are shining with a new clarity. From this work alone, new disease entities and standard clinical uses of the assays are sure to be defined. A whole host of biologic compounds clothed in obscurity have suddenly become susceptible to precise analysis. The potential of these techniques has only begun to be tapped. As was the case for radiologic contrast studies, these assays will generate new work and increase manpower requirements.

Therapeutics

Therapeutic innovations can have either positive or negative effects on the medical work load and secondarily on manpower needs. Certainly, the development of vaccines and antibiotics has reduced that work load -- at least in the short run. The polio vaccine in a single swipe eliminated the years of nursing care and rehabilitation required by victims of paralytic polio. In the long run, however, net utilization of medical resources may not have been reduced bacause illness has not been conquered by the development of vaccines; it has merely been transformed. Whereas acute infectious diseases were the killers, now chronic diseases such as kidney failure, cancer and vascular disease have taken their place.

There is no need to recount all of the pharmacologic advances in the past two decades. The development of antibiotics, blood component therapy, hormone replacement and new immunizations have been the most important. However, we have reached a point of diminishing

returns. There are few known infectious diseases for which a vaccine will have significant impact on the utilization of medical care in the USA. Hepatitis is the one exception since it has relatively high incidence, forty to sixty thousand per year, with a significant morbidity and mortality. We can expect a hepatitis vaccine in the next few years. Development of bacterial antibiotics has only kept even with the emergence of resistant strains for the past ten years. That balance of power is unlikely to shift.

However, we can imagine pharmacologic developments which would have dramatic impact. One such would be the development of a safe broadly effective anti-rival compound. The seeds for such a development exists. IUD is effective against Herpes virus infections of the cornea and Amantidine is effective against influenza virus if given before the symptoms develop. Drugs have been reported to ameliorate generalized vaccinie and small pox. For appropriate therapy virus isolation and identification would be necessary. An explosive growth in viral culture labs with their requisite staffing would be a certain consequence of such a development. A dramatic reduction in acute hospital care could be expected.

Though the veritable cream of the vaccine crop has already been skimmed there are remarkable possibilities yet available for vaccine. Our definition of infectious disease may be all too narrow. There are bacterial organisms which can't be cultured by routine methods. Many viruses can't be cultured at all. Strange sounding animal diseases such as Scrapie and Jagziekte are caused by viruses and resemble multiple sclerosis and alveolar cell cancer, respectively. Mycoplasma bacteria cause an arthritis in animals that is similar to rheumatoid arthritis. Recently it has been shown that a slowly progressive neurologic diease of children is actually a peculiar form of measles infection. Viruses are likely to be the cause of many forms of cancer. If only some of these links between infectious agents and chronic disease can be established then vaccines would take on renewed importance.

Electrical and Mechanical Devices

Electrical and mechanical devices are for the most part important only in chronic disease in additon they usually are palliative rather than curative and tend to extend the life interval during which a patient needs close medical supervision. In general they increase the comsumption of medical resources and increase the requisite medical work force. Among such devices are: Extra corporeal renal dialysis, respiratory assist devices, portable liquid oxygen dispensers for constant ambulatory oxygen therapy, cardiac pacemakers, cardiac assist machines to carry on a portion of the pump work of the heart. The machine which has raised the greated ethical-social questions has been that used in renal dialysis. The cost and manpower requirements for dialyses programs are enormous. Medicine has been forced to choose between the candidates for dialysis; it decides those to live and those to die. Emotional and economic resources of the family are drained by such protracted treatments which often require constant

supervision by family members. Respiratory assist devices have also raised new questions. A brainless body with a pulse can be maintained for weeks by artifical respiration while the pysician and family wince at the folly of their efforts but hesitate to admit the man's death by turning off the machine.

Under development at the present are: Permanently implantable hearts, lungs and kidneys. But the obstacles to their use are high particularly the inexorable tendency for blood to clot on any foreign surface. Furthermore, the lung and kidney have roles aside from the physical functions for which these implants are being designed. More useful may be the work on sonar object detection for the blind, the limb equivalents for the maimed.

Surgery

Manpower consumption and news worthiness seem to be partners in the more remarkable surgical developments. The prince of these is the heart transplant. However, despite technical successes, effective heart transplants await the unravelling of the complex immunologic apparatus which destroys the transplanted heart. A great success story can be told about corneal transplants -- probably as a result of the isolation and bloodless state of the cornea. Kidney transplants have been relatively successful -- often providing five or more years of happy and productive life. The lung, liver, pancrease have been transplanted, but they have been short lived.

Plastic components have served the cardiovascular system well, Dacron aortas and Teflon heart valves quite effectively serve their respective roles. The coronary artery by-pass may become a very important operation. Twenty-five percent of our population dies of disease of the heart vessels. By-pass surgery provides a route around obstructed portions of the coronary vessel. Unfortunately, 20,000 of these procedures have been done before the evidence is in that this operation does fulfill its promise. The capacity for "make work" can be infinite in the field of medicine.

Computer Application

The most important fact to know about computer applications to medicine is that with few exceptions they have not been blessed with success, and most exist only at the mercy of government granting agencies. Enthusiasm and promise hover around every computer project. They have generally underestimated the complexity of their targets and of the costs of development.

Most of the large computer-medicine projects now in operation are remarkably inflexible. This is so because a large system may require two to three years of programming. Most changes in the systems environment require re-programming or additional programs. Programming and de-bugging is always a slow process and it can be even slower if a new program must mesh tightly and interact with a complex set of extant programs -- especially if service and functions must be maintained while the programming and de-bugging goes on.

The promise of reduced personnel costs is rarely kept. One of the intensive care monitoring systems requires additional staff -- specialists to run the monitoring terminal. What is gained in computational efficiency is often lost in data entry errors. Whereas a human clerk would not enter Smith's data into Jone's chart just because they were accidentally given the same number, a computer could do this without compunction and create man-days of work to uncover the foul-up.

As implied above few medical computer systems can be economically justified. The standard business applications such as billing, payroll and inventory control are excepted. Clinical laboratory computers come very close to justifying themselves. Indeed the two largest commercial laboratories, with only economic incentives, both employ computer data collection and reporting. Four companies have developed computer systems tailored to the clinical laboratory. These perform such functions as direct data collections from instruments, the calculation of the final results on the bases of standards and scale factors, the printing of the various work lists necessary for laboratory operation and the printing of daily reports, cumulative patient summaries and quality control statistics.

The interpretation of EKGs is another application close to being economic. Costs are still somewhat high and there is a significant rate of rejection of tracings because of technical factors such as base line movement or line noise or because the complexity of the findings baffle the machine. However, at least one commercial enterprise has begun to market a computer EKG reading service.

Computer diagnosis has occupied medical attention since at least 1964. Congenital heart disease, thyroid disorders, liver disease, surgical pelvic disorders and epigastric pain have all been successful subjects of computer diagnosis. However, no practical fruits have been born of these efforts. Of special interest has been the direct computer interpretation of x-ray images. Computer methods are now able to recognize the cardiac silhouette and from its silhouette alone, classify heart disease more accurately than radiologists with the same information. The technical problems of automatically recognizing x-ray shadows are fearful. The heart which happens to be sharply outlined by air filled lungs is by far the easiest shadow to examine.

Total hospital information systems have been another target of computer enthusiasts. The economic incentive to such developments lies with the operating costs of communications and paper work in the average hospital, up to 30% of the total. Numerous such systems have been developed. ISM, CDC and Univac have involved themselves in such developments, but, both the added expenses and the operating restrictions imposed by such systems limit their acceptability. However, as computer equipment becomes cheaper and programming languages become more efficient the hospital information system is sure to become a reality. A different tack has been taken by Ampex. They have developed a hospital information system based on video-

tape. All of the paper records of the hospital are stored as high resolution TV images on video tape, where they can be indexed, retrieved and duplicated electronically. Access to any hospital record is immediately available by means of a TV set.

In the intensive care unit computers are being used to monitor patients, the idea being that the computer would read physiologic signals, predict trends and respond to those that appear dangerous. The application was modeled after the success of computer process-control in the petro-chemical industry. Unfortunately the important physiologic variables (i.e. skin hue, behavior, blood pressure) are difficult to automate as compared to the control variables (i.e. temperature, viscosity) of the industrial applications. For the industrial application a deviant trend can be automatically corrected by automatic value or temperature adjustments. In the medical environment no comparable solutions exist. The computer can only suggest to the nurse or physician that an action should be taken. As a result the effectiveness of such systems is minimal.

Despite much promise significant computer usefulness in medical practice is some years off and the effect on manpower needs will be nil until then.

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HEALTH PROFESSIONS EDUCATION

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In his discourse, Kirkland described the medical student as a loner. (1) He believed that the doctor to be, can no longer be educated in a vacuum isolated from the other professionals with whom he must eventually practice. Interestingly enough, the medical student is by no means a loner in this aspect of his training. The pharmacist, the nurse, the dentist, the social worker and most of the other so called allied health personnel are also educated in a similar vacuum isolated from their peers without the benefit of the team approach to the delivery of health care services. Competition is learned rather than the badly need cooperation.

The coining and use of the phrase "The American Health Care Crisis" and the development of new health manpower catagories - The Physician Assistant, the Pediatric Nurse Practitioner, Nurse Midwives, etc., helped to change the focus of many funding sources from biomedical research to research in health care delivery, health professional education, and the utilization of health manpower. Studies are beginning to show the gross inefficiency of medical practice as well as the reluctance of many practitioners to delegate responsibilities to "lesser trained individuals." (2) Although some studies indicate the willingness of physicians to employ assistants, their lack of knowledge on how to do so efficiently and effectively is well based in their training as a loner.(3)

Another interesting spot light is being cast on health professional education. At almost every commencement exercise, the key note speaker emphasizes that even though graduation is about to take place, the educational experience is not ending, but just beginning. Federal legislators reinforced this attitude by passage of laws establishing the Regional Medical Programs designed to increase the physician's awareness of advances in the field of the four most major ailments of our populace. Only recently have these programs encouraged participation by non-physician health professionals. Why is this the case? Don't nurses need to be kept aware of the advances in the treatment of stroke? Don't pharmacists need to be kept aware of the advances in the chemotherapy of cancer?

Medical societies quickly moved to the establishment of self-achievement awards and now to membership requirements of 150 hours of approved continuing education participation during each three year period of membership. Do nursing associations have the same requirements? Do the dentists; the pharmacists, etc.? And what would be the value if they did? George Miller, M.D. at The Center For Educational Development at The University of Illinois, Clemet Brown, M.D. at Chestnut Hill Hospital in Pennsylvania, The Postgraduate Medical Institute of the Massachusetts Medical Society and many others have questioned the value of routine continuing education programs. What are the goals of these programs? The commonly accepted goal is to improve patient care, the quality of which has, in fact,

never been determined or universally accepted. Currently many programs are being linked to patient care evaluations and attempt to improve patient care on a pre-and post program evaluation basis.

Education programs themselves are coming under fire. Students of all ages in all health professions will no longer tolerate passively sitting in lecture rooms for hours on end listening to outdated trivial material that is "important". Few health educators are trained in educational methods. The effect of poorly trained teachers on a student's ability to learn is well described in Postman and Weingartner's book, "Teaching As A Subversive Activity". (4)

Teaching and learning can not be equated. Learning is an active process in which the learner must actively be involved in the planning, implementation, and evaluation of the educational experience. This statement although widely accepted by modern trained educators, is one of the most ego threatening changes faced by the modern health educator. Learning has been defined as a change in behavior, yet no one is sure exactly how the human mind learns. Experimenters are now pursuing a better understanding of learning and conferences are being devoted to the methods of education and the ability to change participant attitudes rather than simply facts. Studies of terminal behavior as determined by observation of patient received services are being carried out and may help to determine the methods and content of future training programs. (6) Health professional education is beginning to lean away from the aloofness of the ivory towered institution toward a more community oriented "on the job training" type of education.

The concept of a horizontal and vertical ladder of success is beginning to demonstrate the need for equivalency testing and general switch from a time oriented education to a competence oriented education. This is complicated, on the one hand, by the shortening of the physician's formal training and, on the other hand, by the lengthening of the formal training of other allied health personnel. Degree granting nursing programs increase a nurses training from 3 to 4 years. Masters programs may prolong this by 2 more years. Pharmacy students now must take 2 years of liberal arts training before they start their actual pharmacy training. What effects will these various time factors have on our current manpower problems?

As physicians are being urged to enter general or family practice, specialty nursing programs have been designed to train nurses for intensive and coronary care units, dialysis units, etc. Pharmacy students are no longer content to work in corner drug stores with soda fountains. Programs to train clinical pharmacists are beginning to prepare the pharmacist to deal with the complexities of drug use and drug interactions. Residencies are offered to the graduate in the use and interactions of steroids, of antibiotics and of anticoagulants. Increasing generalization on one hand and increasing specialization on the other--what effect will this have on the health manpower problem?

Although these innovations seem interesting, enough time to determine their true value has not elapsed. Yet, present day students have taken another approach to the problems of health professional education. The Jessee Report documents at length the deficiencies of medical education from the students' viewpoint. (7) The report expresses that medical students feel they are learning medicine in spite of and not because of their medical schools and their medical faculties. If this devastating statement is accepted, then how and what are students learning? For the past five years due to a lack of community orientation and a lack of truly satisfactory interdisciplinary educational programs, students of all health professions have joined together in interdisciplinary community health projects. With adequate supervision, students are actively involved in planning the delivery of health care, in the problems of economics, of accessability, of availability, and of the accountability of health care. More important then these is the experience of working with their peers as a health care team where the doctor no longer perceives himself as the almighty captain of the team. The interactions of the team members coupled with their relationship with family units as influenced by various socio-economic and environmental factors is beginning to influence the attitudes of these self-educating health professionals.

The light of hope burns brighter but not bright enough for the health educators and the legislators to see. The messages of the need for the team approach to the delivery of health care, the need for learner appreciated relevance in training programs, the need for faculty who are better trained in the methods of education, has been answered by Federal incentives to increase the enrollment of health professional students. As tuitions continue to rise, capitation funding will not alter the method of education nor will it alter the product of the education. Bigger schools with more students will only decrease the quality of education. Manpower will increase and the distribution may improve through the law of supply and demand, but is it appropriate and efficient to increase the number of health professionals without having them learn how to work together.

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MAINTAINING QUALITY OF CARE IN THE HEALTH PROFESSIONS

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"The logarithmic growth of scientific knowledge makes possible the estimate that the half-life of modern health information may be as little as five years. The physician or health professional who goes longer than that without exercising positive efforts to continue his education falls almost hopelessly behind his colleagues in practice."(1)

Continuing education and quality of health care go hand-in-hand. "The highest quality of health care depends on the integrity, education, and motivation of the individual rendering such care."(2) Anyone seeking the highest quality of care for the patient recognizes this to be fact. Therefore, even though involved parties may not be specifically mentioned, it is to be implied throughout this paper that everything discussed may exist in or be applicable to any health professions.

It is recognized that the present system for continuing education is not flexible enough for tomorrow's professional. Today the health professional cannot protect himself by claiming "local" ignorance as an excuse for negligence. The courts have ruled against geographic standards in malpractice cases. Government, recipients of health care, and third party payers financing health care may demand changes in attitude toward continuing medical education, but the law necessitates these changes.

Until recently groups such as professional societies and industrial concerns attempted to fill an educational void with rare success. They were handicapped by the lack of environment or atmosphere. Rather than having the best teaching techniques and facilities, they relied upon illustrated lecture techniques without the personal contact so important to education. The health professional who attended informal gatherings was intellectually stimulated, but after returning from the meeting lost much of the impetus for continuing the learning process.

Continuing medical education (CME) can be defined as anything from exposure to periodicals, news media, professional interaction groups, etc., to the definition used in a report of the Interprofessional Task Force which was "...an educational process by which the practitioner---learner is provided with knowledge, skills, attitudes and insights that will continue to increase his capabilities and improve his professional competence."(3) There are many approaches to fulfilling this latter definition: utilizing patient care as a course of CME; formal CME courses; and Regional Medical Programs (RMP).

Regardless of the definition applied, continuing education should be a continuous, uninterrupted process. Weed suggests a systematic medical record system be used to facilitate medical audit, thereby motivating the practitioner to update knowledge and improve skills so that better care is rendered to patients. The physician can then utilize his work time dealing with patient problems as the primary source of his education. Thus a physician recognizing what his patient's problem is can utilize all available sources to solve the problem. This type of system requires that the physician record in an orderly fashion the four phases (data base i.e. history, physical, laboratory data, a complete list of problems, plans developed for each problem, and the follow-up) of medical action as they relate to his patient. Not only is the evaluation of quality of care possible through this system of medical audit, but the practitioner is encouraged to seek out answers to questions which may have been overlooked or forgotten.

The medical audit system discourages the practitioner from using his memory in fulfilling the four phases of medical action. Just as the practitioner cannot be expected to remember all pertinent data, it is also logical that he may not know all the answers to questions raised in the case of one patient. Taking this point of view it can be stated that "...provision for proper care to all the people in the country will require much more intelligent use of paramedical personnel and modern data acquisition and retrieval systems, and recognition of the fundamental fact that 'proper care' and a meaningful and just audit will require a definite minimum of structured input of data at the historical physical, and laboratory levels."(4)

Another system relating continuing education directly to patient care is suggested by Brown et al. The Bi-Cycle Concept can be visualized as two circles: an outer circle representing patient care and an inner circle representing education. Both cycles start with the patient and his interaction with the physician-learner. On the basis of data collected, rational decisions can be made effecting changes in patient care which are then measured to determine if improvements have occurred. Feedback necessary for constant change is provided as patients' needs are met, new needs arise, or new educational approaches become necessary. Success of the program can be determined by focusing on the patient and learner and observing whether the patient's needs are met.

On a more formal level continuing education requires controls governing the type, distribution, and the quality of programs offered. The Millis Commission recommended that "...a newly created Commission on Graduate Medical Education be established specifically for the purpose of planning, coordinating, and periodically reviewing standards for graduate medical education..."(5) In this more formal program the university or medical complex becomes the instrument through which the practitioner reaches his goal of patient's health care needs.

Today there are thousands of courses offered by hundreds of institutions ranging in topics from A to Z. Many of the courses offered meet the requirements for accreditation specified by various accrediting agencies. Needed now is the motivation on a self-imposed, voluntary basis, encouraging the professional to take advantage of these courses. Proposals have ranged from periodic relicensing of professionals over a period of years with requirements for relicensing being completion of a specific number of credit hours in continuing education courses, to governmental laws requiring participation in programs. Governmental regulation, however, might interject political influence into the relicensing process.

An approach instituted by the American Medical Association is the Physician Recognition Award which is given to a physician who has acquired a total of one hundred and fifty credit hours of continuing eudcation over a continuous three year period. On the state level the Physician of the Year Award has been established.

Many state professional societies have established programs requiring renewal of licenses. As previously mentioned, over a specified period of time a health professional must have acquired a certain number of credit hours in formal, accredited, postgraduate programs to be eligible for relicensing. Part of this postgraduate requirement may be filled by seminars provided by teams of teachers from the state university who go to the rural areas to put on programs. It has been suggested that interns, residents, preceptors, etc. be allowed to trade places with the health professional for the period of the course enabling the latter to take time off and giving the former practical experience.

The RMP is another system being employed today to fulfill the needs of continuing education. The RMP individualizes the process of education, disseminating information from the medical complex to the clinician in the field.

The Network for Continuing Medical Education (NCME) is a service to medical schools and hospitals in the United States and Canada. It is a television journal of videotapes sent to various institutions every two weeks. The tapes are played many times during this period just as a television broadcast. The health professional is able to view a program of interest to him in a time slot that fits his schedule. A T.V. guide is sent to the institutions in advance to be distributed to the physicians associated with the institution. The NCME serves as a professional journal keeping the physician abreast of new as well as standard practice.

Another experimental project is being tried making current, pertinent, and authoritative information available to the health professional. The Dial Access Library is now in the experimental phase. Toll-free phone calls are made and tapes on various topics are played at the request of the caller. The service, however, is very expensive.

The single concept film is now in the experimental stages. It is a cassette type film which fits a projector with a built-in viewing screen. The films are six to twenty minutes long with sound. They self-rewind after playing to enable them to be reused.

Also being tried are lectures and discussions with university faculty on a regular basis. The lecture from the university is transmitted to the nospital and listened to over a loudspeaker. A telephone headset is used to communicate with the other end. There are thirty minute lectures with question--answer periods at the conclusion.

Plans for the future include slow-scan television with lectures in the classroom being viewed by health professionals in the hospital or at home. One advantage is that the cost of audio-tape per hour is five dollars as opposed to video-tape which costs sixty dollars per hour.

One of the latest innovations being used by the pharmacist is the computer programmed course. The pharmacist goes to a computer terminal located in a medical complex and identifies the name of the program he wishes to study. The computer presents blocks of information and asks questions pertaining to the subject. If the answer is correct, the computer goes on to another subject. If the answer is incorrect, the proper answer is supplied.

The new systems being developed and tested are indeed the backbone of the continuing education process. It must be recognized, however, that education is a very personal process, dependent upon motivation, habits of self-discipline, time available, etc. What are the needs of a full-time professional that have impact on education ? When a health professional is confronted with a situation which he desires to learn more about, he is strongly motivated by the current interest. As time lapses between the motivation and access to the material which he can utilize to teach himself, his motivation has dissipated and the benefits have lessened. Secondly, the professional would like to learn in most instances while at home. He cannot always take time off from a busy schedule to travel. Third, the professional needs some free time to relax in a quiet atmosphere. "Continuing education should not be classified as an inconvenient, non-controllable nuisance." (6)

The facts indicate that a need exists for all types of continuing education in order to maintain a high quality of care. Questions such as which type is utilized and when, how the programs are financed, and what agency sets standards and regulations have yet to be answered. With reference to the setting of standards and regulations, the Bennett Amendment to the 1967 Medicare Act is presently before Congress. This legislation as presented would establish at the local level Professional Standard Review Organization (PSRO) to improve and coordinate "professionally recognized standards of health care." The PSRO is highly endorsed by all professions, but not in its presently proposed form. It must be the duty and obligation of each profession to set standards within that particular profession.

It is situations such as mentioned above which gave rise to the Interdisciplinary Student Conference on Health Manpower. We must decide how existing and future programs can be integrated utilizing interdisciplinary health manpower efficiently and effectively to achieve the highest quality of care.

It warrants mentioning that three events during this century have helped to mold the future of medicine: (1) The Flexner report in 1910 which established medical education in the university, (2) the advent of third party, prepayment medical services with the Blue Cross in 1929 and the Social Security Act in 1935, and finally (3) the 1965 amendments to the Social Security Act known popularly as Medicare." (7) In each case medicine and the allied health professions played a small role in their evolution. Now the challenge is before us to provide quality health care. Will we, the health team, meet this challenge or will we succumb to forced imposition from without?

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PART 3

CONFERENCE RECOMMENDATIONS

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #1 GROUP A HEALTH PROFESSION RECRUITMENT AND RETENTION

It is the consensus of this group that the main objective of this conference, of fostering an interprofessional AWARENESS among health science students by using the team approach for minority recruitment and retention, has been reached, as 'ave the following mandates and resolutions:

1) Minority as well as non-minority groups have developed a more total awareness of the total cultural and educational problems that are encountered by minority groups in pre-professional and professional education.
2) The problems of (minority) recruitment and retention cannot be solved by a group that is not made up of a "MAJORITY OF MINORITY STUDENTS" (all minority groups represented).
3) A problem of this complexity cannot be solved in a period of two days.
4) There is a definite need for a "special conference for minority group recruitment and retention" including:

   A. Discussion of problems concerning minority group recruitment and retention; minority groups must be represented more fully
   B. Specific minority caucuses must be provided for at this convention
   C. General sessions combining all results from minority caucuses.
   D. Inclusion of all health related scientific fields
   E. Increased duration; a minimum of one week
   F. Better timing of said conference when educational committments will not interfere - i.e. Christmas, Easter or Summer
   G. More advanced notification and dissemination of pertinent material to conference participants
   H. Usage of resource people at inception of conference (thus avoiding duplication of work already completed
   I. Follow-up to include dissemination of information to (1) present conference participants; (2) future participants; and (3) to appropriate journals, publications and agencies
   J. Usage of same participants at follow-up conferences, especially of minority group people

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #1 GROUP B HEALTH PROFESSION RECRUITMENT AND RETENTION

The resource from which the health professional pool will be drawn is the general population. A large segment of the pool will be self-selected. This self-selection will leave underrepresented certain segments of American Society which can be rectified by specific recruitment measures.

This recruitment effort should be a joint effort of the entire health professional community.

The workshop recommends the following mechanisms for the accomplishment of this task of recruitment:

1. The goal of this workshop is to increase the recruitment and retention of minority group students in all health professions.

This workshop feels this goal may be best achieved by an expansion and modification of the existing "Project 75" program or the creation of a project of similar intent and action to include all health professions. We feel that the specific merits of this type of project are:

a) Collection of information about and analysis of the needs of the individual.
b) An information service made available to the student in areas such as course selection, admission procedures, costs, and sources of financial aid.
c) Educational, vocational and personal counseling services to help the student adjust to college at his optimum level.
d) Programs of tutoring and help in developing study skills for academic reinforcement.
e) Placement and referral to applicable graduate programs and/or referral to employing health agencies.
f) Semi yearly or yearly follow-up sessions to monitor students progress on the undergraduate and/or graduate level.

This project should be expanded to include the recruitment of all ethnic minority groups into all health professions. Funds for such programs should be made available through Bureau of Health Manpower and administered through a "National Interdisciplinary Health Council" composed of representatives of both student and parent professional health organizations.

2. It is the strong recommendation of this workshop that, when related exclusively to ethnic minorities, the control and guidance of the recruitment efforts will be in the hands of those minorities.

3. This workshop stresses the need for the creation or expansion of committees on minority group recruitment and retention at each of the health science schools.

These committees must include representation of the minority group consumers and minority group health professionals and, where possible, should be interdisciplinary.

These committees should coordinate their activities with and draw upon the resources of the expanded national project referred to above and any other applicable programs.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #2 GROUP A CONSUMER SELF-HEALTH

Definition of Consumer Self Health: Responsibility of consumer to understand, seek, and maintain personal and family health with an emphasis on prevention.

I. Consumer Health Education

A. The media should be used to convey general health principles and the available services with the realization that continuous reinforcement is necessary for success. In order to create new enthusiasm, health programs should be given a new image (e.g. new math, utilization of "sesame street" type format).

Follow up and Implementation:
- --Public Broadcasting Institute
- --Federal Communications Commission
- --Health Professional Associations - Public relations and/or advertising

B. School Systems should initiate the following:
1. Utilization of peer teaching methods with continuous reinforcement; eg. 12th graders teaching 6th graders
2. Reinforcement of teachers by other teachers
3. Utilization of the present system allowing for re-evaluation and expansion of health roles, ie. school, public, and county nurses.
4. Utilization of trained health personnel who are presently not in practice, eg. part-time volunteers.

Follow up and Implementation:
- --Stimultaneous approach to the State education and health departments, local school boards, and PTA's
- --Local and community action groups (ie. Head Start, Self Help)
- --County extension offices

C. Emphasis should be placed on educating the consumer concerning his health rights.

The consumer should be informed about his health rights including the following: false advertising in "Over The Counter" drugs, lack of uniformity in labeling laws, price of treatment including fee schedules, the right to question the health professional.

Follow-up and Implementation:
- --Federal Trade Commission
- --Federal Communications Commission
- --Ralph Nader
- --Feedback from consumer

II. Education of Health Practitioners

A. Interdisciplinary Health Team Approach

1. Health professionals should be made aware of each others' roles through the following changes in the educational system:

a. Common courses for health professionals emphasizing interdisciplinary interaction.

b. Courses designed to increase students knowledge of the professions for better utilization of skills eg. utilization of podiatrist for lower extremities, utilization of pharmacist for drug reactions, utilization of veterinarian for zoonatic disease, ie. trichinosis, toxoplasmosis.

c. Sharing of clinical experience

(1) physician, nurse, pharmacist team (maintenance of patient care)

(2) nurse, dietary, social worker (maternal and child care)

(3) podiatrist, pharmacist, and physician team (care of diabetic patient)

d. Inservice education on regular basis at the state, regional and local level

Follow up and Implementation:

--Legislation
--Educational Institutions
--Professional Associations
--Consumer action groups
--Community outreach through health student teams

B. Education through Consumer Input

1. Health practitioners can gain the best understanding of the consumer point of view by seeking consumer input in the following:

a. Educational institutions

(1) curriculum determinations

(2) student action programs

b. Licensing bodies (eg. state examining boards)

c. Legislation (see III)

Follow up and Implementation:

--Legislation
--Educational Institutions
--Professional Associations
--Consumer action groups

C. Health science schools should place greater emphasis on the role of the practitioner as educator by:

1. Emphasizing the philosophy of prevention
2. Including education courses in curricula (ie. educational psychology, and methodology)
3. Making continuing education mandatory

Follow up and Implemenation
--Educational Institutions
--Professional Associations
--Consumer action groups
--State examining boards

III. Politics of Consumer Self Health
A. Health professionals should have an impact upon the political process to ensure that health needs are met through:
1. Election of health officials and board members
2. Exerting pressure on present health lobbies
a. Question present emphasis (eg. is emphasis consumer oriented)
b. Increase student and consumer involvement
c. Emphasize changing health care delivery
3. Votes

Follow up and Implemenation:
--Ralph Nader
--Professional and Student Associations
--Consumer Interest groups

IV. Special Consumer Health Problems
A. Health Care to isolated groups
1. Geographical and cross-cultural isolation
Consumer input can be generated through the following:
a. Satellite health centers
b. Local community organizations
c. Expanded duties and use of para professionals
d. More minority professionals and para professionals
B. Occupational health education
1. Management should be questioned concerning occupational health hazards, insurance, and health benefits.
2. Students should be involved in health education of workers.

C. Maternal and child care

D. Consumer input into special patient treatment
1. Consumers should have input on policies relating to organ transplants, dialysis and other special treatments.

E. Consumers should have input in determining health and expenditure priorities (eg. Heart transplant vs maternal and child care)

Follow up and Implementation:
--Consumer input into regional planning boards
--Available private funding ie. foundations and voluntary agencies

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP # 2 GROUP B CONSUMER SELF-HEALTH

Introduction:

The paramount issue today in health care is that it is inadequate as a whole, and unequal or totally lacking among minority sectors of the population. For example, the time lag between need and delivery of health care is increasing. The U.S. infant mortality rate in 1969 was 1.88% for whites and 3.21% in the minority races. The national debate between public, private and professional sectors proceeds at a snails pace toward an eventual health care delivery system. What can be done in the meantime to upgrade the quality and quantity of health care in the country? There are many potential solutions to the problem. The purpose of this workshop is to consider the consumer's role in improving health care.

The most important point to establish is that the consumer of health care services should have a definite voice in health care delivery. No longer is the patient an inanimate object. Today's health care professionals must interact with the consumer. A major barrier to consumer interaction is basic consumer ignorance of the present system. The consumer in need of health care doesn't have the "key to the city". That key is education. The consumer must not only know basic hygiene and health care procedures but he must know how to tap the system of health care delivery.

I. CONSUMER EDUCATION

A. Governmental Considerations

Problem #1 Advertising is detrimental or misleading in some cases.

Recommendation: That legislation be enacted to protect consumers by ensuring that advertising for health projects is not irresponsible and misleading.

Problem #2 Control of labeling is done on a limited basis.

Recommendations: Legislation should be enacted:

1. To ensure that health products are labeled properly and in such a manner that the consumer can realize proper use of the product.
2. To ensure precautions are included on marketed health products.
3. To remove the "Grandfather clause" in over the counter drugs from existing laws so that health products will be labeled as to content.

Problem #3 Special interest lobbies inhibit progressive governmental action in public awareness. (eg. tobacco lobby)

Recommendation : That equalization of outlay of funds by each lobby be required by government. This would require disclosure expenses on the part of each special interest group.

Problem #4 Several governmental agencies administer programs for consumer health and protection (eg. HEW, Environmental Protection Agency, and Price and Pay Boards). From the consumer point of view this system is fragmented in its attempt to educate and protect the consumer.

Recommendation: Greater coordination and leadership within existing programs would facilitate implementation of educational objectives. A central coordinator of public health education is needed.

Problem #5 Consumer rights upon treatment or entrance to a hospital are almost always never stated.

Recommendation: A statement of patient rights should be required by law prior to treatment or admission to a hospital. (eg. patient has right to refuse treatment)

B. Mass Media Influence

Problem #1 Mass media can be the most effective means to educate the consumer about health care. The advertising by the media is now misleading about health products and should not be tolerated. Advertising practices are harmful to the consumer when normal feelings of people are distorted to appear abnormal in order to expand the markets for health products (ie. economic concern versus patient concern).

Recommendations:

1. Extend public service announcements to include drugs, cancer, abortion, VD, fluoridation , foot health care, pregnancy, ie. total health care.
2. Ensure that public service announcements are rotated.
3. Federally sponsored TV programs about all aspects of consumer health care should be funded.
4. Make federal funds available for private, professional and other interested groups to use the TV media for consumer education
5. Ensure that media is made available to both factions of any health-related issue , even though the issue or faction is controversial.
6. Ensure that freedom of the press is maintained to help the consumer influence the health care delivery system.

C. Consumer Education by Health Care Professionals

Definition of "professionals": persons trained or being trained to deliver health care

Problem #1 The professional is inadequate in educating the consumer because of professional economic interest, impersonal approach, an unwillingness to answer questions, and lack of interest in the preventive approach to health problems.

Recommendations:

1. Delivery systems should emphasize health maintenance rather than fee-for-service as represented by health Maintenance Organization.
2. The professional should be responsible for broadening the consumer's participation in "informed consent" in all contacts (office diagnosis and management as well as in-hospital procedures) by using understandable terminology, outlining choices of treatment, etc. All experimental drugs and procedures must be presented as such so that there is no deliberate misrepresentation of facts given to patients (e.g. Chicano women requesting birth control pills were used as a control group and given placebos causing approximately twenty unwanted pregnancies. The doctor received funds for his "research"; the women and their families received no reparation).
3. More use should be made of "guides" or patient advocates in clinics and hospitals to explain the structure of the system, health team roles, etc.

Problem #2 Professional parent organizations and quasi-professional groups (American Cancer Society, National Clearinghouse, leukemia foundations) do not provide sufficient education services.

Recommendations:

1. The present programs are adequate in relating certain health problems to consumers, but could be broadened in scope.
2. Professional organizations should take initiative in consumer health education by participating in interdisciplinary health fairs, making available services and expertise to schools and communities and directing more attention to professional students.
3. Present policies of professional organizations that are not in step with the times should become more relevant to existing conditions. In order to do this these organizations should make greater use of student professional organizations which exist to break down barriers between patient and professional. Funds should be allocated for this purpose.

Problem #3 Lack of interdisciplinary awareness and co-operation in consumer education compounds the inability of health professionals to provide total health care in a community.

Recommendations:

1. More interdisciplinary meetings such as this conference should be sponsored, not only on a national level, but on regional and international levels. Also, the number of participants at the conference should be increased in number. This would result in a exchange of ideas in comparing advantages and disadvantages of different health systems.
2. An interdisciplinary meeting of established professionals should be organized and perhaps could be facilitated by student representatives who have participated in these groups.

Problem #4 Lack of culturally-aware health professionals and especially the lack of minority health professionals limit the quality and amount of health care education available to minority consumers. These problems are manifested in cultural and language differences.

Recommendation: Greater efforts should be made to recruit and maintain minority and disadvantaged students in health professions schools. There should be a greater effort made to educate all health professional students as to the cultures and problems of minority populations.

D. Consumer Education - Self Education

Definition of consumer: those who need health care regardless of the ability to pay.

Problem #1 Consumer discontent with health care exists; however, the focus of this discontent is either sporadic or non-existent due to the mistrust and in some cases the lack of leadership.

Recommendations:

1. Increase admission and encourage enrollment of qualified minority students.
2. Scholarships should be made available by business in community and health care. In addition, professional organizations such as American Pharmaceutical Association, American Optometric Association, American Medical Association, American Dental Association, American Podiatry Association, American Osteopathic Medical Association, etc. should provide scholarships to urban and rural community people, especially for minorities. Scholarships should require a pledge for return service to that community for a specified number of years or include a work-study program that would keep the student-professional in close community contact during her/his years of education.
3. Health care professionals should make an attempt to draw community people into their practices, thereby leading to a greater interest and a greater awareness of their community's health problems. It also promotes dissemination of knowledge and understanding needed to implement self-health.
4. Some health care professionals should recognize the need to relinquish their present dominance of the health-care team so that other health care professionals can provide their services to a full extent with possible monetary savings; improved service, and better communication to consumers.

Problem #2 Consumer-initiated education and service in health care is a vital part of total health awareness and can lead to imaginative innovations which professionals may be more hesitant to undertake. (Women's self-abortion projects using vacuum aspiration, etc.)

Recommendations:

1. When community programs develop there should be encouragement by professional health organizations, business and government rather than the harrassment which frequently occurs.
2. In addition, these organizations should encourage the community to develop these programs by making available public health vaccines, lab test kits, etc., especially in areas where health care is unavailable.

Problem #3 Inequities in health care are universal. There are, however, some groups -- Chicano, Indian, Black, Asian-American, the rural and urban poor, etc.--who receive inadequate care or no care at all.

Recommendation:

1. The awareness that there is health discrimination according to color, sex, or even ability to pay for education should lead us to a greater effort in these areas, in order to achieve an equitable solution. Because of this group's composition any further recommendations to solve this problem would be inadequate but we note the existence of the problem.*

Problem #4 Lack of consumers' awareness of their legal rights is seriously affecting their ability to receive good health care.

Recommendation: Consumers should be informed as a matter of practice what their rights are in the hospital, office, pharmacy, etc. so that they can receive better health care. Health rights include such rights as the right to read charts, to refuse treatment, to receive complete knowledge of a problem and its treatment options before treatment is started, and to have experimental drugs and procedures labeled as such.

II. COMMUNITY ORIENTED EDUCATION OF THE HEALTH CARE PROFESSIONAL

A. Governmental Consideration

Problem #1 Public Health Service programs are for the most part depersonalizing for the consumer. This situation perpetuates itself.

Recommendations:

1. Impetus should be given to the development of public health service programs, emphasizing treatment of the consumer as a whole person without regard to the economics of health care practice.
2. Foreign health systems have successfully eliminated the fee for service system. The government should publish reports for health professionals regarding advantages and disadvantages of this system.

*Note: a definite inadequacy of this conference workshop is that no minority groups or consumers were present.

Problem #2 In the past there has been insufficient cooperation between government and health care professions. This conference is an example of government cooperation with health care professionals to study possible delivery systems.

Recommendation: This cooperation between the government and the professions should be encouraged and increased in the form of more conferences.

B. Formal Education and Community Education —

Problem #1 Formal education of the professional stresses the scientific and non-personal and the profit motive, and only rarely includes the social and cultural aspects of medicine and patients as people. Increased emphasis on specialization has tended to ignore treatment of the patient as a whole person.

Recommendations:

1. Para-professional personnel should be used to bridge the gap and provide awareness of consumer problems and cultural differences by communicating directly to the professional in creating a patient profile.
2. Existing courses in socio-economic awareness of the consumer should not be isolated from application to the technique curriculum.
3. Course material in socio-economic awareness should be incorporated within other courses throughout the educational sequence of training.
4. Professionals' obligation to under-served areas should be emphasized through a more strongly enforced national service committment.

C. Consumer Education of Professionals

Problem #1 There is no formal education of the health care professional by the consumers regarding consumer needs. This education is left to the individual interest and curiosity of the health care professional.

Recommendations:

1. On-th-job trained health workers from the community should be used to facilitate communication between consumers and health care professionals.
2. Consumer advocacy groups are beginning to force health care professionals to recognize their responsibilities to the consumer by pointing out present inadequacies. These groups should be represented in health professional organizations, the proposed government umbrella, health agencies and interdisciplinary health planning organizations.

D. Special Health Programs

Special health programs can play an integral part in realizing the goal of increasing the education and awareness of the health professional to the health care needs of the community. An interdisciplinary approach, as well as the removal of the profit motive from the delivery of health care to the consumer can be very important in achieving this goal.

Interdisciplinary education, seminars and projects do exist, but to a very limited extent. Health professional students, rather than the health professionals themselves, have been in the forefront of these programs. It is the duty of the health professionals to eliminate misunderstanding or ignorance concerning what all the health professions can do together to help the consumer. In this interdisciplinary approach to health all the members of our professional health team can gain a more complete insight into the needs of the community. Programs stressing the interdisciplinary approach to health care (i.e. Student Health Manpower Conference) should be encouraged on a national, regional and local level.

The health professional can also learn alot about the community's health needs as well as the consumer's needs when the profit motive is removed from health care delivery. The free clinic concept is a different mode of consumer-professional interaction in health care delivery which tries to eliminate the profit motive. Free clinics, especially interdisciplinary free clinics, should be encouraged and supported by the health professional organizations.

Journalistic pressures help point out shortages in manpower and inefficiencies in the health delivery systems. These pressures, in turn help to make the health professions more aware of the consumer and the absolute need for an "ideal" consumer-provider relationship (i.e. an interdisciplinary approach to health care).

Minority enrollment in the health professional institutions brings a new sense of awareness to the students, as well as the professionals. Minority recruitment should be encouraged so that the health care delivery system can receive the most complete input from all community and consumer groups.

In many instances, the recommendations that have been made are not unique to what presently exists. What is needed is a redirection of energies which expand upon these activities.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #3 GROUP A INCREASING HEALTH PROFESSIONALS' ROLE AWARENESS

Statement of endorsement for a Student Interdisciplinary Group:

The workshop on Increasing Interdisciplinary Role Awareness urges the establishment of a national student health group whose committment to improving health will transend the parochial interests of the constituent professional groups. The Association should foster interdisciplinary cooperation in the delivery of health care and health education, and conduct research on the organization and financing of care and methods of translating the concerns of the patient community into effective health care. It is imperative that every group concerned with the delivery of health care be included in such an association.

Statement of Problem:

The following are barriers to role awareness that we, as an interdisciplinary group, have identified as common to all professions:

1. Overlapping of roles by all professions which leads to antagonistic feelings
2. Lack of understanding about functional roles of each profession by professions, students and consumers
3. Lack of understanding about current educational preparation for health roles by professional practitioners, students in health sciences and the consumer
4. Historically, the fact of substandard education leads to stereotyping
5. Lack of continuing education
6. Physicians fail to accept that other professions have skills (expertise) that they don't have
7. Ethical, political, legal and economic barriers
8. Lack of means to evaluate/validate educational programs -- lack of current standardization within professions
9. General sense of frustration from lack of public understanding about functional roles in each profession (except medicine)
10. General sense of underutilization of all professions
11. All roles are sex-oriented/biased
12. Lack of development of primary health care team; inadequate comprehensive health care models

Recommendations:

Proposed mechanisms to overcome barriers to stereotyping of health roles:

1. Publish an interdisciplinary information booklet
2. Hold more interdisciplinary conferences
3. Pressure government
4. Develop an interdisciplinary student group with membership open to practicing professionals

5. Exchange guest lecturers
6. Better use of educational journals
7. Integration of education among professionals
8. Make available as much interdisciplinary clincial training as possible during the period of professional education
9. Educate the public to:
   A. higher expectations of quality care from interdisciplinary teams
   B. accurate knowledge of the services, and their value, which the members of the health profession can render
10. Bring students and practitioners together
11. Attempt to change attitudes of old practioners
12. Interprofessional support of legislation
13. Attempt to reach minority groups - encourage/recruit excluded groups
14. Initiate interdisciplinary clinical training
15. Remove economic barriers and economic incentives to competition
16. Removal of legal barriers
17. Development of true comprehensive health team care
18. Standardization of quality education within professions
19. Service rather than product payment orientation
20. Less influence from outside economic interest - (big business)

Criteria for success:

1. Decreased disease
2. Optimal utilization
3. Optimal communication
4. Stabilization of health costs
5. Universal availability of services
6. Better educated public
7. Better referral system
8. Increased interprofessional awareness
9. More legislative cooperation
10. Existence of interprofessional information booklet
11. Existence of interdisciplinary student-professional groups

Proposed mechanisms for overcoming barriers to role awareness:

1. Publication of interprofessional information booklet. Purpose of booklet would be to increase interprofessional awareness of the total health team for optimal utilization.
   A. WHO
      1. Federal government to publish and research
      2. Students, practitioners and educators to write
   B. WHAT
      The interprofessional information booklet should include the following:
      1. Present status of the health professions
         - education available
         - post graduate education and research
         - facts on different professions
         - range of services provided by each profession
         - distribution and manpower needs
         - present and projected roles
      2. Results of this conference
      3. Editorials from interdisciplinary groups on relationship of health care professional fields

C. HOW
1. Form interdisciplinary editorial group
2. Seek funding from federal or private sources both as recruitment material and public information. No advertising for funding.
3. Although student initiated, professional parent organizations can be involved in the publication. It should however, be student-directed.
4. Distribution should include:
   - all students and professionals
   - career counselors
   - educators of professional schools
   - minority groups
   - consumer health groups

D. WHEN
1. Planning to develop the booklet should begin as soon as possible
2. Target date for publication - Jan. 1973
3. The booklet should be revised annually

E. TREND INDICATORS
1. Existence of publication
2. Is it distributed? (check with distributors)
3. Is it read and by whom? (check by responses, positive and negative)
4. It is fairly reflecting the content it pretends to represent
5. Is it producing any changes; if so, in what direction?

Proposed Mechanisms for establishment of a Health Education Center:

A. WHO
1. Existing university health centers--administration, faculty and students
2. Joint interdisciplinary organization
3. Consumer input
4. Federal, state and local governments

B. WHAT
The health education center should include the following elements:
1. Patient-centered health education via the team approach
2. A shared committment to the team approach to the delivery of health care
3. Recognition and respect for the education and functions of each profession
4. Retention of the particular skills and philosophies of each profession
5. Team-based education utilizing some of the same faculties, facilities, etc. (less duplication of costly resources)

C. HOW
1. Incorporate existing schools into University complexes
2. Plan new health science centers with interdisciplinary involvement
3. Break down traditional concepts and restrictions

D. WHEN
1. Health education centers are presently being developed; more financial support is needed for such projects as soon possible.

E. TREND INDICATORS

1. Existence of interdisciplinary clinical facilities for clinical education
2. Existence of more University Health Centers
3. Less duplication of services to patient
4. Setting up interdisciplinary health practices.
5. Less antagonism and competition between professionals
6. Centralization of complexes of health care facilities for the benefit of the patient
7. Maximum utilization of each individual's education
8. Greater role satisfaction-less role identity crises
9. Less wasted effort between health professions and the government
10. Increased quality in health education

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #3 GROUP B INCREASING HEALTH PROFESSIONALS' ROLE AWARENESS

Introduction:

Our group did not feel the need to describe in detail each others respective professions. The group moved into immediate discussion on areas to work on to increase role awareness among the professions. These areas were listed as: communications, finances, increasing public health delviery, allowing professionals to serve more people, joint health professional housing in hospitals and clinics, programs to increase educational awareness early in formal education, joint health science classes, and increasing awareness of health teams. After discussing the barriers to role awareness, students developed a list of mechanisms which can serve to increase role awareness among health professions:

1. Course open to all disciplines orienting them to health care delivery systems. Such a course should be oriented toward the role of each health care member.
2. Interprofessional social seminars
3. Expanded interdisciplinary projects
4. Central gathering lounges
5. Faculty awareness projects
6. Combined clinical experience
7. Multiprofession student organization
8. Propaganda

The workshop makes the following recommendations:

I. Curriculum changes should be initiated to integrate interdisciplinary role awareness in our formal education, including the following:
   1. Combined interdisciplinary clinical experience
   2. Courses open to all disciplines orienting them to health care delivery systems
   3. Sessions drawing on speakers from related health and social sciences

II. Expanded interdisciplinary projects should be created to include all health and social disciplines, i.e. Appalachia, model cities

III. Faculty awareness should be increased through the following mechanisms:
   1. Faculty Health Manpower Conference
   2. More active participation in and response to existing programs of health education
   3. Dissemination of information from student groups and existing projects involved with interdisciplinary role awareness

IV. Investigation should begin to find the best means of establishing a national student interdisciplinary organization

It is the opinion of workshop participants that a Student Health Manpower Conference is essential in order to increase role awareness of health science students. We therefore strongly recommend that conferences of this nature be repeated on an annual basis. In future conferences, we suggest the utilization of faculty members as additional resource people. We also suggest more interaction with all resource people, to enhance role awareness.

Regional interdisciplinary conferences structured in a similar fashion are a vital follow up for the national conference and shall further serve to implement role awareness.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #4 GROUP A REGULATIONS AND RESTRICTIONS
PRACTICE ACTS, LICENSURE AND INTERNSHIP

The following recommendations apply to each of the health professions.

I. Uniform Minimal Standards

1. National Boards of Examiners should be established to develop and administer National Examinations and to devel UNIFORM MINIMUM STANDARDS. (UMS).
   Background: National examination and UMS would establish uniformity of minimum requirements for the practice of a given health profession throughout the nation. (UMS are to be defined by the National Board and should include such elements as a minimum passing score on the national exam, degree requirements, age, etc.)
2. State Licensure Boards should accept the UMS, as well as additional requirements which shall be limited to state law exams and continuing education as the basis for licensure.
   Background: Acceptance of UMS by all states would facilitate reciprocity of licensure between states, therefore enhancing freedom of geographic mobility.
3. A health professional holding a valid license in any state and meeting the UMS should be granted a temporary license in any other state immediately upon request. Such a temporary license would be valid for one year during which time the applicant shall be given the opportunity to meet the additional state requirements.
   Background: This procedure will facilitate a more efficient utilization of manpower by eliminating unproductive lag time.

II. Equivalency Credit

All health professions schools should adopt reasonable and uniform procedures of examination for equivalency credit.
Background: Equivalency credit should apply to experience and/or course work received in another institution and/or program. This credit should help eliminate the duplication of many plateaus in furthering education and thus increasing the efficiency of manpower development through increased mobility.

III. Practice Acts

Federal legislation should be proposed to remove state practice acts' restrictions on professional roles in interdisciplinary demonstration projects.
Background: Many interdisciplinary practice models have evolved from student projects, but have not generally been tested by or in health professional schools or in the private sector. It is felt that one major barrier

to experimentation in ESTABLISHMENT-oriented programs is a medical-legal HANG-UP. Therefore, removal of legal restrictions would allow manpower utilization models to be tested more freely.

IV. Continuing Education

Mandatory continuing education should be a prerequiste for relicensure.

Background: Only through continuing education of health professionals can their full potential be realized. It is felt that personal initiative has not affected all professionals equally and there is a general "I don't give a damn" or "I don't see time so I won't make time" attitude. Only through regulations, can the continuing education needs of professionals be met.

V. Internship Programs

All health professions that require internship (or equivalent experience) should re-examine the goals of such programs. The internship program should then be objectively evaluated in terms of those goals that appear to remain valid.

Background: Many health professions adopted the internship requirement as a hold over from the apprenticeship system of education. Throughout the evolution of the educational process many out-moded programs (i.e. internship) have remained. Through re-examination of goals and actual programs it is felt that many changes could occur which would affect both the quality and availability of manpower.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP # 4 GROUP B REGULATIONS AND RESTRICTIONS
PRACTICE ACTS, LICENSURE AND INTERNSHIP

Recommendations:

I. All health professions should be re-evaluated and practice acts should be continually updated.
   1. The licensing body of each profession should recognize professional qualifications and abilities.
   2. Upon recognition of qualifications and abilities, new roles and responsibilities should be delegated to the existing health professions.
   3. There should be maximum utilization of existing qualifications and abilities.
   4. Where new roles and responsiblities cannot be delegated to existing health professions, new health disciplines should be developed.

II. All practice acts should be nationally uniform.
   1. A National Health Manpower Practice Acts Board should be developed.
   2. The function of this board will be to design model practice acts, to be distributed to respective states for suggested incorporation into state statutes.
   3. This Board should include two levels:
      --An interdisciplinary Practice Acts Board - this board shall be comprised of representatives of each health profession and the public; public representation should be equal to that of one health profession.
      --Individual Professional Practice Acts Boards - these Boards should be comprised of licensed members of that profession.

III. Accredited professional schools should be given the authority to grant students licenses to practice in their respective professions upon satisfactory completion of required programs.
   1. The authority to grant license and/or accreditation should be removed as a function of existing state boards.
   2. A National Health Manpower Accreditation Board - This Board should be comprised of representatives of each health profession and the public. Public representation should be equal to that of one health profession. The function of this board should be to oversee accreditation of health professional schools so as to provide optimal health care for all.

3. An Individual Professional Accreditation Board for each profession comprised of members from that profession should be created. The function of each board would be to accredit their respective professional schools.
4. Continuing education should be accredited by the Individual Professional Accreditation Board.

IV. Continuing education programs should be mandatory for maintenance of health profession licenses.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #5 GROUP A HEALTH TEAM-ALTERNATIVE PRACTICE MODELS

Introduction:

The workshop on health teams-alternative practice models consisted of students of dentistry, medicine, nursing, optometry, osteopathic medicine, pharmacy, and podiatry. Although this represents a broad cross-section of health team, the group was inevitably limited by the exclusion of other health related professions. Discussions concerning the health team might also include social workers, nutritionists, health administrators, lawyers, clergy, physical and occupational therapists, among others.

A major part of our discussion centered upon defining our professional roles. We were amazed at our lack of knowledge concerning each other's professional roles and their places in the health team. The consensus was that underutilization of professional manpower resulted from interdisciplinary ignorance. This was especially true of podiatry and optometry. The expanding roles of the pharmacist and nurses need further development and clarification, and the similarity between the osteopathic physician and the MD needs amplification.

Our next goal was to develop a definition of the health team. Following a protracted debate we decided it is impossible to establish a rigid team model. The composition of the health team must be determined by the needs of the specific patient population. Age, location, ethnic profiles, and endemic diseases are among the factors which determine these population needs. The insoluble problem of delineating a health team model led us to a general definition: "A health team is a group of health workers organized to deliver services to a specific patient population". It seems ridiculous to structure a health team until the needs of the patient population are assessed.

Since the components of the health team cannot be determined outside the context of the population to be served, our educational experience must be correspondingly flexible. Each discipline should develop an awareness of its own role and limitations, other disciplines' roles and limitations, and their mutual interactions. To accomplish this, health professions education must be interdisciplinary.

Recommendations:

Our recommendations for facilitating interdisciplinary education include the following:

1. The interdisciplinary approach should be utilized for the study of patient management problems. An interdisciplinary team of students should work together to develop a health care plan based on an examination of the patient's specific and multiple needs.
2. A system for exchanging clerkships at other discipline's clinical facilities should be developed.

3. Conferences for health related professions should be developed. These conferences could be local, regional, or national; group process techniques such as simulation, problem-solving, role playing, and film presentations should be utilized.
4. Greater efforts should be made to draw on lecturers from different health professions. For example, a podiatrist may lecture about the anatomy and function of the foot or he may speak to the relationships between podiatry and the other health disciplines. This is an important means of breaking down interdisciplinary barriers.
5. Mutual classes or seminars should be developed around subjects of general interest such as nutrition or medico-legal problems. Mutual classes based on the traditional lecture format are of little value.
6. A health sciences orientation assembly should be held early in the school year so that the initial orientation of physicians, nurses, pharmacists and others will be based upon the team concept.
7. Interdisciplinary student projects should be developed. The greatest benefit of the conference has been our interaction with the other disciplines conferring in us an awareness of our professional roles on the health team.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #5 GROUP B HEALTH TEAM - ALTERNATIVE PRACTICE MODELS

Direction of Approach - Definition of Health Delivery System

A health delivery system can be defined as inclusive of the following four broad areas:

1. Environmental
2. Health Maintenance/Disease Prevention
3. Acute Care
4. Restorative and Extended Care

These individual aspects are representative of current, past, and future delivery systems. In our analysis, the current system within these areas is fragmented and misdirected. An alternate model would include the following functional aspects, defined and mandated under flexible assumptions dependent upon administrative protocol.

RECOMMENDED ELEMENTS OF A MODEL HEALTH DELIVERY SYSTEM

I. Environmental Health Recommendations:
   1. Current public health service should be broadened to include all environmental problems.
   2. This inclusive service should utilize all health professions and related allied disciplines.
   3. There should be a circular feedback mechanism to facilitate interdisciplinary utilization within the total delivery model.

II. Health Maintenance/Disease Prevention Recommendations:
   1. In the area of health maintenance:
      a) Central interdisciplinary patient records should be available to all professions.
      b) Total patient care should be mandatory in each profession.
      c) Interdisciplinary referrals are needed for total and continuing patient care
   2. In the area of disease prevention
      a) Consumer education and interdisciplinary awareness should be developed on a national scale.
      b) Health professionals should be educated concerning their role in a continuum of consumer awareness, education, and confidence.

III. Acute Health Care Recommendations:

At present, patient needs for acute care are met mainly in the bio-physio-chemical area and are lacking in the psycho-socio educational area. All acute care should have equal emphasis in the two areas; the interdisciplinary relationships should reflect this equality of emphasis. Each group should rely on the resources of the other's in the same way that physician specialists utilize one another's scope for consultation. The continuum of scope and individual emphasis is diagrammed as follows:

DIAGRAM

*This diagram shows the relative utilization of each profession with respect to two major categories of health care - the Psycho/Socio/Educational and the Bio/Physio/Chemical

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Psycho/Socio/Educational Continuum:

100% . . . . . 75% . . . . . 50% . . . . . 25% 0%

Bio/Physio/Chemical Continuum:

0% . . . . . 25% . . . . . 50% . . . . . 75% 100%

Primary Ambulatory Care:
(curative and preventative)

--Psychologists
--Medical Social Workers
--Indigenous Health Workers
--General Paramedics
--Nurses
--Public Health Nurses
--Physicians
--Technical Paramedics
--Auxiliaries

Ambulatory Specialty Care

--Podiatrists
--Optometrists
--Pharmacists
--Physicians
--Specialty Parameds
--Nurses and Auxiliaries

Secondary Specialty Care

--Psychologists
--Medical Social Workers
--Indigeous Health Workers
--Pharmacists
--Podiatrists
--Physicians
--Specialty Nurses
--Specialty Parameds

IV. Restorative and Extended Care Recommendations:

Inherent within the given model is the assumption that areas #I, II, III serve primarily as portals of entry for essential diagnostic and evaluative services. Upon determination of the necessity for restorative and/or extended care, patient needs and model response to these needs can be facilitated through the position of a "liaison" source. The "liaison" source would provide:

1. A centralized source for appropriate level of care
2. Assignment of personnel to efficiently meet the need
3. Selection of effective setting for provision of care
4. Follow-up, review, and evaluation of patient need and dynamic feedback generated through liaison source and areas of care #I, II, and III

The liaison component of the model serves as a buffer designed to determine the needs, desires, and requirements of the specific population and to facilitate the model's response to these factors. The liaison source would be responsible for the following:

1. Cognizance of scope and limitations of the respective disciplines and the overall model's scope and limitations
2. Incorporation of indigenous persons as sources reflecting community needs
3. Enhanced emphasis on psycho/socio/ educational needs in providing extensive and comprehensive patient care within the defined needs

RECOMMENDATIONS:

I. Interdisciplinary Respect

1. There is a primary need for interdisciplinary health orientation at the most basic level, namely undergraduate professional education. We recommend three phases:

Curriculum/Education. Required course material and problem solving projects should be constructed to enable several disciplines to study and work together at the clinical level of their respective educational programs.

Conferences. Continued conferences such as this one should be held to deal with specific problems in medical care. In this way the alternative care plans can be established and developed on a continuing basis with nationwide interdisciplinary student organizations. More psycho-sociological personnel should be included in future conferences to broaden the scope of the discussion.

Health Planning. Community populations should be represented as instruments of planning for interdisciplinary education. Any alternative health system needs to be tailored to a particular population-ghetto, migrant worker, Indians, etc. Exposure to the community professional team concept should be established early in professional education.

2. There is also a primary need to expand the team approach idea to emphasize that all members of the team be permitted and encouraged to work to their highest level of competence. In this conceptual framework, educational and experimental manpower resources are more fully and efficiently utilized. This means that functions traditionally assumed by certain professionals must be allocated to paraprofessionals and professionals who are equally or more qualified through specific training to carry them out.

In addition, more respect is needed between professionals and paraprofessionals. It should be fostered at an early level and continually strengthened through such projects as an interdisciplinary journal, conferences, classwork, etc.

II. Finances

1. Capitation and health insurance which pays for social services, preventive medicine, diagnostic medicine and out patient services should be adopted in opposition to the existing system which only pays for existing illnesses and inpatient services.

III. Legal Requirements

1. The legal definition of customary and expected medical care should be expanded so that an individual or organization can be sued if appropriate preventive, restorative and psycho-social aspects of acute care are not provided or are provided inadequately.

2. Consumer boards with the power to determine the extent of services provided and the type and nature of interprofessional relationships should be instituted so that service and interprofessional arrangements will meet the needs of patients.

3. Acute care peer review should be instituted. The peer review group should have legal powers and be constituted on an interdisciplinary basis, with equal emphasis on psycho/socio/educational and bio/physio/chemical professional areas.

IV. Regulations

1. The scope of our present public health system should be enlarged to encompass an environmental health system utilizing the health team, especially veterinarians, nurses, physicians, social workers and environmental engineers, with the understanding that the interdisciplinary roles most qualified to address the specific problem take the lead and responsibility.

2. Existing government and non-government agencies should be formed into an umbrella group to facilitate team delivery in an interdisciplinary fashion.

3. A liaison source as defined under the restorative and extended care section of recommended elements of a model health delivery system should be required before funding can be granted for such a system.

4. All phases of the health team as described in the model above provide minimal standards in social and psychological services necessary for a project to receive funding.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #6 GROUP A HEALTH TEAM-INTERDISCIPLINARY STUDENT PROJECTS

Recommendations:

I. Some mechanism should be created for the development of guidelines on student project development into a comprehensive compendium of information, which could be used by any groups interested in initiating or continuing interdisciplinary student projects. We envision this "cook book" to include a delineation of many of the problems and goals of student interdisciplinary projects of various types, as well as a very detailed text, including possible solutions and approaches. For example, a general problem of student projects is evaluation. In this compendium, types of evaluation could be discussed and the funding sources for various project-types could be explained.

II. Some mechanism should be established for the dissemination of this information, that is, a National Clearinghouse. As a result of our collective experiences, we feel that the existing mechanisms of information dissemination are restrictive and inadequate. A limited "core" of people representing each health field receive information, while the majority of students are not aware (for example, in large part people who are considered to be "core" individuals, received applications to this conference). The general "private ownership" of information which is characteristic of health professions also exists in their student organizations.

We envision that the Clearinghouse would perform the following functions:

1. Serve as a distributor of relevant information, with mechanisms developed to identify and contact potentially interested groups and individuals eg. student government of each health professional school, all ongoing student health projects, etc.
2. Act as a repository by actively collecting and compiling information which would be of use to those interested in planning or improving projects eg. funding sources, interested participants, guidelines and advisory material, etc.

Outline For Proposed Compedium of Information

I. An Approach for Student Interdisciplinary Projects - General
   A. Goals
      1. Interaction of interdisciplinary student groups
      2. Bringing professional students together
      3. Satisfying definite community and patient needs

4. Making the community aware of their health needs
5. Providing an educational experience for the student
6. Creating an incentive for alternative practice modes after graduation
7. Developing a methodology for working together

B. Potential Problems encountered by students administering projects
1. Legal aspects of student-service oriented projects engaged in health care delivery ie. non-licensed students assuming professional roles
2. Quality control of health care delivery
3. Community reaction to student projects
4. Student apathy on campus
5. Continuity of projects - maintaining student interest from year to year
6. Planning and initiating projects
7. Obtaining funding for projects

C. Implementation
1. Reorient intra or uniprofessional health projects into interprofessional projects
2. Incorporate voluntary projects into the curriculum
3. Use students in capacities other than delivery of t the health service for which they've been trained eg. counseling, administering
4. Insure actual patient contact as a means of maintaining student interest
5. Use health crisis and non-health crisis situations as an impetus for assembling and forming interdisciplinary teams eg. disaster area and peace rally first aid teams
6. Demonstrate the need for the project by stimulating and documenting student interest and community demands

II. List of Different Types of Projects for Compedium
A. Service Projects
1. Community clinics
types: voluntary, non-salary; voluntary, salary; curriculum
2. Non-clinic activities
types: health screening ie. pre-natal, well-baby, Head Start and grade school, camp physicals, health fairs, geriatic and nursing home projects, crisis projects and first aid

B. Community Health Education and Recruitment
types: health careers day, drug abuse and V.D. counseling, American Indian Health project, general health education activities

C. Education of the Health Professional

types: exchange of service programs between professional schools
role of each discipline in treating a patient with multiple problems
interdisciplinary workshops
interdisciplinary periodicals
clearinghouse
joint curriculum

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #6 GROUP B HEALTH TEAM-INTERDISCIPLINARY STUDENT PROJECTS

Introduction

The workshop group, consisting of ten health science students representing different health professions, examined the rationale behind the health team by asking the fundamental question : Why should the health professions get together?" The answer which prevailed was that the health team is needed in order to provide the best possible care for the health and welfare of the patient. Students then educated one another concerning their professions, discussing such areas as curriculum, entrance requirements and caliber of students.

Model Development

Student participants agreed that the goal of their workshop should be to create a model interdisciplinary student project. Utilizing the experience of their own meagre beginning, the group decided that the most important problem, interdisciplinary communication and education, must be solved first. As a consequence of this realization the group investigated several solutions but committed themselves to one--the creation of local interdisciplinary organizations wherever possible. The consensus was that such groups would serve the dual purpose of communication-education as well as pave the way for a host of interdisciplinary student projects such as Inter-Clinic exchange programs. Using the successful interdisciplinary project Operation Venus from the University of Kentucky as a guide, the group sought to develop the best methods for creating a local interdisciplinary organization. The result was the following:

1. Selection of a common goal such as V.D. education or interdisciplinary student newspaper.
2. Unification of a small nucleus of interested students.
3. Seek moral support from the community and health professional institutions.
4. Seek out any groups or organizations interested in same goal and unite efforts.
5. Begin with small basic service to create credibility and good public relations.
6. Recruit volunteers.
7. Avoid too much diversification.

Two basic problems in developing viable interdisciplinary projects are the following:

1. Obtaining funding
2. Acquisition of volunteers

Suggested Solutions:

1. Problem of Volunteers
   a. Utilize local media in advertising for volunteers
   b. Merge with other interested groups
2. Significant factors in obtaining government funds:
   a. The project should demonstate a more economical way of providing health services.
   b. The project should demonstrate a new approach to the problem, serving as a model for others (eg. interdisciplinary approach)

Essentially a local interdisciplinary organization is founded on the need for a project; hence it is a goal within a goal. From the structure created by the local interdisciplinary groups, a strong national organization can evolve. And as a result of this, the future of interdisciplinary health care will be secure for the benefit of both the professionals and their patients.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #6 GROUP C HEALTH TEAM-INTERDISCIPLINARY STUDENT PROJECTS

Operational definition of Student Interdisciplinary Health Projects (SIHP):
A SIHP should offer health education to the masses and at the same time allow performance of traditional services offered by the various specialties. Furthermore, these projects must facilitate role awareness (inter-intra or up-front awareness) as well as promote students' awareness of "faculty/establishment" roles as well as the roles of non-health disciplines that effect health delivery and SIHPs. In addition SIHPs should set guidelines for future health care delivery and insure that up to date and avant garde methods are developed for the future takeover of the Health Delivery System by students.

Statement of Purpose

We, a group of concerned student health professionals, feel that an interdisciplinary approach to health care is a superior mode of delivery of service to the people. Moving from this assumption, we feel that student projects, capitalizing on student idealism will provide experimental models which maximize utilization of limited manpower resources; foster interprofessional interaction dissolving traditional role barriers; and reduce fragmentation of health care delivery, therefore emphasizing care to the total patient.

This is the direction we feel health care should and must move in order to meet the increasing demands being placed upon the health care delivery system. We believe that by exposing health workers of the future to the alternatives, prior to their entry into the system as we know it today, their resistance to change will be minimal. Thus by a slow evolutionary process the total health milieu may be gradually redirected.

Goals of Student Projects

In order to develop an effective student health project, we feel that the goals for the project should be: (1) to increase the student awareness of the role of the other health professionals, (2) to provide a service to the community involved, and (3) to provide an adjunct to the student's educational experience. It is important to increase the student's awareness of the role of the other health professions in order to encourage interprofessional interaction and thus facilitate the team approach to health care delivery. It is necessary that the project provide a service to the public in order to utilize the energy, talents, and time of the students involved. It is desirable that the project be an educational experience for the student to stimulate his interest in participation.

Accomplishment of Goals

1. Increasing Role Awareness

Recommendation: In order to increase awareness of roles of other professions, we recommend that the following projects be initiated:

a. a descriptive non-recruitment booklet covering all health professions to be published by the various student health professions

b. an orientation program utilizing specific techniques in order to facilitate open interactions within the group, including sensitivity and encounter groups, role playing, and group conferences. Conferences should be developed according to the following guidelines: (1) an orientation conference prior to the program, (2) an intermediate conference and (3) a final evaluation conference

2. Service to Community

Recommendation: In order to supplement existing health care, unique methods of delivery should be developed. The purposes of these programs would be to provide primary and preventative health care patient referral when needed and consumer education. Suggested methods to achievement of these ends would include mobile clinics which will reach the consumer in his own geographic area. Permanent store front establishments would be necessary where mobile units are impractical.

3. Education

Recommendation: Student projects should constitute an educational experience for all students participating. This experience, although divergent from more traditional academic coursework, will none the less prove to be invaluable to the project member. This value will be difficult to assess initially, but despite this apparent obscurity, real worth is subtly felt by all preparing this paper. Expansion of role awareness and broadening the scope of one's educational experience are difficult to ascertain on an examination but nonetheless valuable ideals to be pursued.

Suggested Student Interdisciplinary Health Projects

One aim of our group was to delineate possible Student Interdisciplinary Health Projects which could be utilized by groups interested in developing such activities. We developed ideas on projects in three categories: consumer education, aid to legislative bodies, and a national clearinghouse for student health manpower.

Consumer Education - The basic aim of consumer education is to bring the various student health professionals together to provide a service to the community; i.e., educating consumers to be interested in their own health problems and motivating them to seek solutions to their specific problems. Among the projects considered as valuable were:

A. Drug Use
B. Oral Care
C. Medical Economics Advisory Service (to increase consumer awareness of insurance and governmental health programs, such as Blue Shield and Medicare).
D. Problems of the Aged
E. Nutrition
F. Visual Care
G. Preventative Medicine

The composition of the health team would differ from project to project. For example, in a project on Problems of the Aged, the primary health personnel could include pharmacy, nursing, optometry, medical, podiatry, dental, social work, and nutrition students. As supporting personnel, physical therapists and audiologists could be utilized.

An advantage of such educational projects is that student groups are freed from the necessity of working under the supervision of licensed personnel since, generally, actual medical procedures would not be involved. Students undertaking such consumer education activities should be made aware of well established information materials and technical expertise necessary for public education available from such nation-wide groups as Planned Parenthood, the American Cancer Society and the American Heart Association. This information could easily be collected and effectively disseminated through a National Clearinghouse.

Aid to Legislative Bodies Health professional students are an invaluable resource for law makers when considering legislation that has bearing on the total health care delivery system; eg. education, insurance, or research. The legislators on all levels should be made aware of the abilities students possess to aid them in research on pending health bills and testimony before committees. Students and their organizations should become involved in lobbying for orderly reform of laws governing health care delivery so that they may serve as the guidelines necessary for us to practice the type of health care we envision for the years ahead.

National Clearinghouse A National Clearinghouse for student interdisciplinary health projects is proposed. The office would serve as the hub of activity involving all facets of student involvement in the health professions. It would receive requests for aid by students in rural areas lacking effective health coverage, process these requests and act as a dispatch office for students or their organizations which are ready and able to respond to such requests for aid. Further, the office would be charged with the total development of new SIHPs. It would assemble all information necessary for this development and communicate with those governmental, student, educator, and post graduate related groups which would be involved in the actual implementation of a given project. Realized to its fullest this office would serve as a primary source for the rapid mobilization of health manpower teams in the event of natural emergencies such as the recent West Virginia flooding tragedy.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP # 7 GROUP A HEALTH DELIVERY SYSTEMS

We believe that health care is the right of every citizen and that the act of providing this care is the privilege of every member of the health team. We submit the following recommendations for the revision of health delivery systems.

Problem #1 Poor access to service and poor distribution of manpower

Recommendation: Provision should be made for equal and easy access to all facilities and services at all times when needed with one equal level of care for all

Problem #2 Inadequate portal of entry

Recommendations:
1. Develop a definite source of primary care for all
2. Designate one person of the health care team as primary contact
3. Centralize patient health records
4. Ensure that there exists continuity of care and follow up with health patients

Problem #3 Lack of consumer education

Recommendations:
1. Establish self-health education classes (use of mass media)
2. Increase consumer awareness of health needs
3. A professional "health advisor" should be trained appropriately in the area of consumer education
4. All consumers should have a clear understanding of the various medical fields and the types of therapy they provide
5. The consumer should be fully informed about the care he is receiving

Problem #4 Cost as a barrier to health care

Recommendation: Cost should not be a factor in determining access to preventative and continuing care

Problem #5 Lack of consumer input into the health planning processes and continuing care

Recommendations:
1. The consumer must be involved in local, regional and national health planning
2. The consumer involved in planning should be a representative of the community who has no conflicts of interest in health care concerns

Problem #6 Lack of total professional input into health planning

Recommendations:
1. A strategy for local regional and national planning should be developed
2. All members on the health team should be involved in the planning processes

Problem #7 Present medical research efforts are disjointed and focus almost exclusively on biomedical problems

Recommendations:
1. A method for coordination of research efforts should be developed
2. Attention should be given to research in health manpower delivery

Problem #8 Crisis treatment orientation v.s. preventative medicine

Recommendations:
1. A reimbursement mechanism should be developed to encourage preventative medicine
2. Prevention should be incorporated as a part of primary health care

Problem #9 Poor consumer response to the present health care system (see problem #14)

Recommendations:
1. The patient should be treated in his own social environment with recognition of his attitudes and life style
2. Minority recruitment into health professions should be increased

Problem #10 Professions are free to reject patients on an economic basis

Recommendations:
1. The patient should have freedom of choice for health services
2. Reimbursement mechanisms should not permit multiple classes of care or denial of service to the patient

Problem #11 Lack of guarantees to ensure quality of care--lack of responsibility and accountability

Recommendations:
1. Continuing education should be mandatory
2. National standards for relicensure should be related to expected performance
3. A peer review system should be developed which is inter-disciplinary and which involves consumers

Problem #12 Inadequacies of care to special groups, including prisons, nursing homes, mental institutions, migrant workers, minority groups

Recommendations:
1. Equal care should be administered to all persons
2. No experimentation should be undertaken without the informed consent and full understanding of the patient

Problem #13 Lack of interdisciplinary health services, repetition of services, and a high degree of professional segregation

Recommendations: The following activities should be supported to encourage interdisciplinary interaction:
1. A core health curriculum for all health professions
2. Joint education and degrees
3. Interdisciplinary health professions journal
4. Interdisciplinary health professions conferences
5. Further development of team approach to health delivery

Problem #14 Inappropriate recruitment practices

Recommendations:
1. Local health needs should be the basis of recruitment
2. Preprofessional training should be supported and improved

Problem #15 Inadequate recruitment and retention programs

Recommendation :
Economic barriers to health training should be removed

Problem #16 Inadequate study of the health care problem and inadequate legislation at the national level

Recommendations:
1. Develop a new "Flexner Report" (interdisciplinary)
2. Develop national standards of licensure
3. Establish comprehensive national health insurance
4. Redefine the health professions and their respective functions

Problem #17 Overeducation of professionals and lack of field mobility

Recommendation: Greater recognition of all areas of acquired knowledge is needed among the various health professions

Problem #18 Inadequate coordination among health care groups at the national level

Recommendation: A national organization should be developed as an umbrella for the following groups: student health organizations, professional health organizations, governmental health authorities, law associations and consumer associations

Problem #19 Certain health professions are excluded from legislation on reimbursement

Recommendation: National Health Insurance should provide for comprehensive coverage of professional services

Final Recommendation: A National Interdisciplinary Health Student Organization should be developed to promote the objectives of this conference. The first priority of this organization should be to seek national legislation that will meet the needs identified in this document.".

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #7 GROUP B HEALTH DELIVERY SYSTEMS

GENERAL MANDATES:

1. Government intervention into health care delivery systems is necessary, with input from professionals and consumers, because health delivery systems have failed to change themselves.
2. Some form of national licensure, based perhaps on professional school accreditation, is necessary rather than the inefficient system of state licensure which now exists. Considerations must be given to mandatory continuing education for relicensure.
3. The health care delivery system must be defined by the consumer.
4. The 9 a.m. - 5 p.m., weekday health care delivery system which now exists must be abolished in favor of community defined care.
5. All health care groups must be involved in the delivery of health care, including medical and non-medical personnel.
6. Student groups must be involved in the formation of health care legislation. An effort should be made to inform all health students of pending legislation.
7. Schools must begin to teach the interdisciplinary health team approach to facilitate a total health care delivery system.
8. Open hospital staff privileges for all health care professionals must be provided, based on accreditation of the professional school.
9. In addition to health care provisions, the entity of public health must be recognized as essential to total health care, and effectively incorporated into the health care delivery system.
10. Protection for the health care provider must be established and maintained through the following mechanisms:
    A. Peer review
    B. Licensure
    C. Continuing education
    D. In-House liability
    E. No mandatory membership requirements in national organizations for malpractice insurance allowance

SPECIFIC MANDATES:

Specific health care delivery systems mandates have been arbitrarily divided into these divisions by the workshop:

--National
--Regional (administrative)
--Local

NATIONAL

1. Health care should be financed by a broad-based tax structure on a sliding scale.

2. Health care costs should be quantified through cost accounting and detailed budgeting.

3. Categorical financial aid (ie. Medicaid, Medicare, ADC, etc.) with regard to health care should be eliminated.

4. A national institution should be established to coordinate health care delivery, with possible use of the existing HEW structure. This institution should serve to eliminate administrative overlap.

5. A National Review Board should be established with non-government appointed consumer representatives. The board should be established to include representatives of the health care delivery team and the administering organization.

The primary goal of health care should be prevention-oriented, incorporating education of the consumer and provider through mass screening, communications media, etc. to facilitate goal redirection from crisis-intervention medicine to preventive medicine.

6. The consumer should be educated to proper utilization of the total health care system.

REGIONAL

1. The orientation of the regional health care delivery system should be purely administrative in nature, serving as an intermediary between the national government and the community or local level.

LOCAL

Definition: the local health care delivery system refers to the actual health care delivery from office, health center, community, and referral area.

1. The dignity of the consumer and the provider must be maintained throughout delivery of health care by establishing one primary provider (practitioner) for each patient, thus avoiding fragmented health care.

2. An equitable, accessible, and readily available system of delivery must be provided. The system should include the following elements:

a. Rapid delivery of services
b. Removal of transportation barriers
c. Development and effective use of a referral system
d. Establishment of centralized interdisciplinary health care
e. Adequate emergency care service with trained emergency care personnel

3. The definition and control of local health care service should be in the hands of the consumer.

4. Quality care should be insured through the following mechanisms: (1) effective peer review, (2) review boards, (3) continuing education.

5. Extended care facilities and home health care services should be developed in addition to acute care and out patient services.

6. Comprehensive mental health facilities should be included in health care delivery systems.

STATEMENT: Implicit in the above mandates/proposals is the understanding that the health professional will be required to relinquish certain freedoms in order to provide total comprehensive health care to the people.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP # 8 GROUP A HEALTH PROFESSION MOBILITY

Introduction

The workshop group concerned with mobility discussed many of the barriers to and mechanisms for advancement within the health careers system and concluded this discussion with the following suggestions, recommendations, and mandates that express student concern and suggestions for ways to facilitate mobility.

Recommendations:

I. Course credit transfer, on the basis of a pass-fail system or a letter stating completion should be established among health professions for comparable curriculum material. This facilitates mobility by eliminating unnecessary duplicationwhen moving from one health career to another or within one health career.

II. Health education should be revised to include the following:

1. Incorporation of all health professions under one roof. (The idea of the university health science center should be a high priority consideration.)
2. Establishment of a core curriculum especially in the basic sciences and also in the clinical years.
3. Greater emphasis upon curricular reforms, including a greater integration of clinical and abstract didactic materials and a shortening of the length of professional education.
4. Establishment of regional health centers in areas where medical care is inadequate.

Health science schools should seriously consider the recommendations made by the Carnegie Commission on Higher Education.

III. Since education credit hours do not always reflect ability, equitable challenge examinations, written, oral, and practical, should be established. This would give recognition to skills and knowledge gained in both formal and informal educational experiences and would maximize utilization of health manpower in the shortest possible time.

IV. Education of existing high school and college counselors is imperative to increase awareness of the diverse opportunities in the health professions and allied health careers. Special emphasis should be given to the potential for vertical, horizontal, and diagonal mobility. Further, it is essential to develop training programs for pre-health advisors to function at both high school and college levels where this service is currently unavailable.

V. Admission policies and practices should be re-evaluated and revamped to facilitate mobility for health personnel in their respective careers.
It is the consensus of this committee that too much emphasis is placed on grades and formal education without regard to experience, skill or knowledge acquired outside the systems of institutional education.

VI. The present licensure system should be made more flexible. In order to facilitate mobility, implementation of the following proposals is recommended:
1. Re-emphasize that specific educational programs should not be a pre-requisite for licensure.
2. Establish proficiency examinations to demonstrate already existing skills and abilities.
3. Eliminate state boards as a requirement for licensure of graduates of accredited schools.

VII. We recommend that a new student health professional organization be created. This national body would be guided by local and regional branches. Functions of such an organization should include increasing health professional mobility and improving counselling and recruitment services. Licensed professional people and allied health personnel may participate in the organization but policy-making powers should remain in the hands of students.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #9 GROUP A TECHNOLOGY

PRIMARY STATEMENT:

The goal in improving health manpower efficiency can best be achieved by applying technological advances at the primary health care level with emphasis on the recipient and/or consumer not the provider. This primary care must be preventative as well as curative.

CRITERIA:

These technological advances and applications should create these elements of health care:

1. Availability--both facilities and personnel should exist for every recipient and/or consumer.
2. Accessability--if facilities and personnel exist the recipient and/or consumer must be able to gain entrance to them.
3. Acceptability--even if facilities and personnel are available and accessible to provide health care, the recipient and/or consumer must be a willing participant.
4. Continuity--even if the above three elements are present, the health care delivery cannot be episodic but must be maintained.

RECOMMENDATIONS:

I. Availability of Technology for Primary Health Care
   1. Technology and instrumentation utilization should be increased to help offset the shortage of manpower for health care delivery. (e.g. increase the use of computers for patient screening)
   2. Provide new types of health care delivery systems. (e.g. mobile automated roving clinics)
   3. Improve the technical training of technicians to include preventative, as well as diagnostic and curative techniques.
   4. Increase research in Biotechnology.

II. Accessability of Technology for Primary Health Care
   1. Remove prejudicial barriers allowing entrance to health care services.
   2. Remove financial barriers, eg. through national health insuranc
   3. Use computers to maintain health monitoring for more people at lower cost.
   4. Use good management to avoid duplication of services and facilities.

III. Acceptability of Technology for Primary Health Care
1. The consumer should be educated as to the advantages of technology derived health care versus the use of more highly trained professional personnel.
2. The dehumanizing qualities of automated health care should be minimized.
3. The different responses of separate socio-economic classes to automated health care delivery should be noted and appropriate re-education undertaken.
4. All the medical and allied medical professions should be utilized in communicating to the health care consumer the idea of automated health care delivery.

IV. Continuity of Care Under a Technology Derived Health Care System
1. Long term contact and rapport should be established with the recipient-consumer.
2. An equilibrium should be established between short range and long range goals.
3. Utilization of technology for prevention should be established. (e.g. use of computers to detect small changes over extended periods of time)
4. Increase the inter-professional communication of new technological knowledge.

Position on the Development of Technology in Relation to Genetics:

A. Majority (5) As long as there can be no assurance against possible misuse either by government or others, the development of technology necessary for genetic manipulation (ie. the modification of the human genotype, in vivo) should be strictly regulated (e.g. through grant restrictions) toward the end of forestalling the development of genetic engineering techniques which man is not yet morally equipped to command.
Minority (4) The government at this time, should not in any way restrict scientific research.

B. Majority (6) As long as there can be no assurance against misuse, the power to enforce genetic selection within the human population should be denied to the government. The individual must retain all rights of selection.
Minority (3) It is not possible at this time to make a decision on the government's role in genetic selection within the human population.

C. Unanimous However, in order to minimize individual suffering, all possible effort should be put into development of genetic counseling and genetic treatment. (i.e. the elimination of the symptoms of a genetic disease.)

Unanimous Mandate

Whenever possible, the use of auxiliary personnel is preferable to the use of computers, e.g. the use of professional assistants instead of computers in taking medical histories. This is necessary to retard the continuing depersonalization of health care delivery. People should be used especially if their services are more efficient and economical. However, this should not be considered a mandate to increase the number of health roles without bounds. The number of people the patient comes in contact with should be minimized again to maintain personal health care services. Auxiliary personnel should be trained to do as many different but related tasks as possible.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #10 GROUP A HEALTH PROFESSIONS EDUCATION

We the people of the allied health professions--dentistry, medicine, nursing, optometry, osteopathy, pharmacy, podiatry, public health, and veterinary medicine--make the following mandates:

It is mandatory that:

I. A national health organization be established and funded to improve health services to the American people by re-organization of education processes, both theoretical and practical.

II. The student health organizations unite in a common front to exert political pressure in order to ensure that adequate health care is available to all people. This is a priority to program change into the educational process.

III. A similar conference be sponsored in the future in order to allow more students of the allied health professions to reconvene and to stimulate new ideas to bring about change in the health educational process.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #10 GROUP B HEALTH PROFESSIONS EDUCATION

The workshop on Health Professions Education of the 1972 Student Health Manpower Conference would like to propose eight mandates dealing with health professional education.

I. We feel that adequate student funding is unavailable to health professional students. The inadequacy of funds is due to various factors. These include:
   1. Basic lack of funding from government and private sources
   2. Governmental cutbacks of previously available funds
   3. Lack of uniformity in distribution and availability of funds
   4. Placement of submaximal ceilings on loan amounts
   5. Parental success hindering independent students' opportunities for financial aid
   6. Financial counselors unaware of all available resources
   7. Individual funding unrealistic in relation to need

Proposed solutions to above problems include:
   -- Student participation in dissemination of funds
   -- Student involvement in lobbying for increased government support
   -- Joint student-faculty committees to determine financial needs

II. The workshop feels a need for a National Interdisciplinary Organization which would facilitate intercommunication among health professional students. Objectives of this organization should include:
   1. Increased appreciation of roles of allied health professions
   2. Correlation of lobbying activites
   3. Development of core curriculum for all related health fields to prevent duplication of services, facilities, etc.

III. Because the need exists for cooperation of faculty in facilitating curriculum change we feel that the health professional student could gain this cooperation through the following mechanisms:
   1. Increased socialization between faculty and students
   2. Involvement of interdisciplinary faculty in teaching role
   3. Interdisciplinary student exchange and externship programs
   4. Formation of speakers bureaus
   5. Involvement of faculty in student planning at the grass roots level

IV. The workshop feels that more emphasis should be placed on teaching methods and abilities of health profession instructors. Some problems with the current system include:
   1. Learning in spite of inadequate teaching ability makes the student's role more difficult
   2. Too much emphasis is placed on research and not enough on the teaching role.

3. No formal educational training
4. Misuse of available personnel

Proposed solutions to the above problems might include:

-- Increased use of student teaching assistants
-- Valid student evaluation of faculties
-- Faculty recognition of student evaluations
-- Abolition of tenure to be replaced by renewable contracts
-- Requirement of periods spent in field work and continuing education
-- Use of experts in the field of education for inservice evaluation and training

V. Lack of counseling is a basic deficiency in health professions education. Many counselors are lacking in a complete understanding of the total health science picture. In the area of minority counseling there is a lack of uniformity in counseling practices and an insufficient number of counseling personnel. To better utilize existing counselors, health professions should provide any needed information, and attempts should be made to involve students in counseling. Their activities should include inter and intra-disciplinary activities.

VI. The workshop in education proposes that all professional health care schools should maintain only pass-fail or a similar system of permanent records. By eliminating grade competition we may instill a better professional attitude toward fellow practitioners. Class rank has little correlation with the health professionals' effectiveness. The object of evaluating a student is to ensure that the student has reached an adequate competency level; there is no value in providing a gradient between students. The term "grading system" should be dropped and "competency levels" should replace it.

VII. Preventive medicine is rapidly becoming an important concept in total health care. We feel that courses related to this should be incorporated into the curricula and that government support be solicited.

VIII. Continuing education should be required for all health professionals after graduation.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #11 GROUP A QUALITY OF CARE

Goal: Maintenance of Quality Health Care

Recommendation: Many types of checks and balances should be built into the health care system in order to maintain high quality of care, including such controls as (1) continuing education, (2) review boards and relicensure and (3) health team approach

Primary Statement: The interdisciplinary health team serves as a viable check and balance system ensuring quality care and in addition constitutes the most economical and effective mode of health care delivery.

The interdisciplinary health team incorporates the following control mechanisms:

1. Interprofessional consultation resulting in interdisciplinary interaction and accountability. Definite areas of responsibility must be designated for the various health professionals working together as a health delivery unit. Individual health professionals will be held accountable for the professional services rendered by the other members of the health delivery unit.
2. Preceptorships which provide mutual learning experiences to health professionals and students.
3. Consumer input into and participation in the system
4. Motivation and/or profit incentive:
   a. Monetary--private facilities
   b. Service gratification
   c. Self-help and community ownership

MODEL DEVELOPMENT - Interdisciplinary Health Team

The group developed four team models, some based on theory, others based on actual projects and examined them in terms of their quality controls and feasibility for funding.

The models which follow are four examples of health delivery units involving various interdisciplinary teams modified to meet local conditions. Financial support for these units varies with the specific areas. The model is designed to provide the most efficient and the most economical form of health care to the respective populations.

MODEL #1 URBAN-OUTPATIENT CARE

I. Services Provided
   A. Minimal Clinical Services
      1. Family practitioner
      2. Psychiatrist
      3. Internal medicine
      4. Pediatrics
      5. Optometry
      6. OB-GYN
      7. Dentistry
      8. Pharmacy
      9. Minor diagnostic lab
      10. Clinical record maintenance
   B. Referral Services (medical records should be returned to the center after treatment)
      1. Crisis care
      2. Clinical care
      3. Geriatrics

II. Funding Sources
   A. Third party payment
   B. Private individuals

III. Care and Counsel
   A. Patient is assigned to a nurse liaison
      1. Follows patient through center
      2. Provides explanation of services
   B. Counsel
      1. Patient is assigned case worker for follow-up care

An existing urban-out-patient care model is Laborers Voluntary Health Institute in St. Louis.

MODEL #2 MOBILE HEALTH UNIT

Target: Rural area
Goal: Quality comprehensive health care to rural citizens

I. Services:
   1. Multiphasic diagnostic screening, ie., minimal x-ray; hearing and vision; blood and urine testing, etc.
   2. Referrals to area practitioners, local medical facilities, medical center complex
   3. Expectant parents classes
   4. Diabetic teaching
   5. Well-baby clinics
   6. Immunization programs
   7. Consumer-planned health programs
   8. Clinical records
   9. Educational programs to area health workers

II. Staffing:
   1. Full-time driver/lab technician or driver/medical records secretary
   2. Public health nurses
   3. Students and their instructors from all health disciplines
   4. Area volunteers
   5. Area health officer or general practitioners

III. Funding Sources:
1. Department of Health, Education and Welfare: pay for implementation of Mobile Health Unit
2. Local funds: operating expenses
3. Schools using Mobile Health Unit for educational facility. provide instructors' salary.

IV. Quality Controls:
1. Consumer involvement in planning, implementation, evaluation
2. Interdisciplinary action and quality review
3. Service-oriented (non-profit)
4. Student exposure to rural health problems
5. Preceptorships

MODEL #3 WILDERNESS MOBILE UNIT

Goal: Health care delivery to Eastern Washington state, predominantly Caucasian and Indian populations, including reservations; specifically, an outreach model designed to fulfill community needs.

I. Services provided:
1. Education of consumers: health habits, preventive medicine, immunization programs
2. Retraining of local health paraprofessionals for:
   a. Feedback and communication between consumer and deliverer in health care system
   b. Continuing and interim care
   c. Coordination of periodic clinics
3. Periodic clinics from various disciplines i.e. dentistry, optometry, surgery, counselling, psychiatry, pediatrics, OB, Gyn, home nursing, occupational, therapy, physical therapy, pharmacy, etc.
4. Acute care, particularly in response to consumer or local paraprofessional input
5. X-ray, minor laboratory, examining facilities in the mobile unit, staffed by physician, physician assistant, health team
6. Diagnostic and referral privileges at local medical facilities in Seattle and Spokane where it is possible to utilize the resources of interdisciplinary health teams
7. Communication center for coordination among community health paraprofessionals, mobile unit, and local medical center, etc.

II. Funding Source:
Public Health Service, local donations

III. Quality Controls:
1. Consumer education
2. Local health paraprofessionals providing consumer input
3. Interdisciplinary consultation and review

Mobile units delivering health care, podiatry, and dentistry services currently exist as Public Health Service projects and University-affiliated units involving student preceptorships. There are several private foundations in Washington State reviewing proposals for health care delivery systems. Many counties in Eastern Washington are advertising need for local medical care.

Definition of Terms:

1) Paraprofessional - individual within the specific community within Eastern Washington who serves as outlined in services item I-2. This may be an individual who is already trained in some aspect of health professions and would require minimal retraining (some such people do live in the area now) or someone who has had no previous training but is willing to undergo some form of training and could then function at a level commensurate with the training.
2) Health team - members from the interdisciplinary force needed for the particular clinic who can serve the needs of the community at the time of the visit.

MODEL #4 NEIGHBORHOOD/RURAL CLINIC

I. Clinic Structure and Services
   - A. Major operating facility
     1. Ambulatory out-patient clinic
   - B. Satellite operating facilities
     1. Rehabilitation center
     2. Acute care facility
     3. Custodial care facility
     4. Minimal care facilities
     5. Mobile urban/rural unit
   - C. Input facilities
     1. Consultants, including the following health personnel: psychiatrist, neuro surgeon, orthopedic surgeon, podiatrist, cardiologist, veterinarian, public health worker
     2. Medical centers
     3. Telephone lecture systems to outlying areas
     4. Telephone computer systems to hospitals, medical centers, research units and other health facilities
     5. Computer consultant systems to other research centers throughout the U.S.

II. Funding Sources
   - A. Local
   - B. State
   - C. Regional Medical Program - Comprehensive Health Planning
   - D. Department of Health, Education and Welfare

III. Quality Controls
   - A. Interdisciplinary executive boards
   - B. Daily patient health record reviews in each facility

C. Weekly morbidity-mortality
D. J.C.A. required committier
   1. Transfusion
   2. Tissue
   3. Infection
   4. Therapeutic agents committee
E. Sponsorship of inservice programs
F. Sponsorship of continuing education with required participation--(points/credit hours)
G. Funding for meeting attendance
H. Inspection and review by health workers with feedback
I. Intern-extern programs

IV. Population Served
   A. Neighborhood catchment area
   B. County catchment area
   C. State catchment area
   D. City catchment area

V. Programs already proposed or implemented
   A. Health Maintenance Organization plan
   B. State mental facilities
   C. Visting Nurses Associations
   D. Regional Medical Program-Comprehensive Health Planning
   E. Public Health facilities

Summary: This model represents a multiphasic interdisciplinary, open ended operation for total health care provided by salaried/contracted personnel through federal, state, or local funding. It is also applicable to group practice or Health Maintenance Organization-Comprehensive Health Planning programs which can be fee-for-service or pre-paid.

STUDENT HEALTH MANPOWER CONFERENCE

WORKSHOP #11 GROUP B QUALITY OF CARE

Recommendations:

I. A health care congress should be established with representatives of all health oriented professions.
Functions of the health care congress:
1. National level: --clearinghouse for health related materials
--coordination of national health policies
--influence legislation
2. State level: --coordinate state health policies
--establish and administer state programs and projects
3. Local level: --implement all projects
--initiate peer review and sensitization

II. Health education content in school curricula should be increased.

III. National health insurance should be further researched and supported.

IV. Legislation should be proposed which requires health professionals to show evidence of continuing medical education.

V. Associations that have existing interdisciplinary projects should be encouraged to broaden their present scope to include all health professions. All health professions regardless of scope of practice or recognition have a right to be heard and recognized.

VI Hospitals should be re-evaluated to serve as more completely staffed health facilities, to include such health personnel as podiatrists, optometrists, doctors of osteopathy, etc. In particular, the following areas of hospital administration need to be examined:
1. Inter-hospital communications and utilization of all health services
2. Controls which are placed upon the various health professions
3. Discrimination in hospital privileges for the various health professions

VII. The roles of the different health professions should be redefined. Efforts to evaluate present limits on the scope and practice of the health professions should be undertaken at the national level.

STATEMENT OF THE CAUCUS of the THIRD WORLD* HEALTH PROFESSIONALS Presented at the STUDENT HEALTH MANPOWER CONFERENCE

This caucus believes that indeed there does exist a health manpower crisis. However, contrary to widely held opinion this crisis exists not for most non "minority" persons, but it exists as a daily fact of life for third world persons in the United States. Supportive data for this statement is manifest by the fact that only 20% of the problems related to health manpower are to be encountered in rural white communities, while the remaining 80% are evidenced in the barrios, the ghettos and on the reservations.

This student health manpower conference has chosen to ignore the real 80% of the manpower problem, relegating consideration of these problems as a sub-topic under only one discussion group. By this relegation, the planning committee for this conference has demonstrated its insensitivity and racial bias with regard to these issues. This insensitivity is futher manifest in the mediocre attempts made by the planning group to solicit and involve minority input into the planning and actual participation in the conference.

We deplore the systemacic exclusion by the planning committee of Asian, Black, Boricua, Native American and Chicano students from real participation in the Student Health Manpower Conference.

At the same time we recognize that this exclusion occurred because white people cannot recognize their own blatant and overt Pavlovian racism and oppressive methods.

The problems delineated above are but also manifestations of the much greater manipulations perpetrated on minority health professional student organizations. These manipulations being evident in the fact that the Bureau of Health Manpower knowingly funded this conference with its above racist exclusions, and has attempted to justify this by manipulating their consideration of the request for annual conference funding by one ethnic minority student health organization-the Student National Medical Association, and attempting to make this conference into one which perforce involvesall minority student health organizations.

We deplore the fact that the Bureau of Health Manpower Education and the Health Services Mental Health Administration has allowed and perpetuated consistent manipulation of minority people in the health professions by institutions and organizations receiving federal funds. We expect the new Office of Health Manpower Opportunity to lead the Bureau in making decisions affecting minority people.

*Third World - Men and Women who are Asian, Black, Boricua, Chicano and Native American

We will no longer accept this racism, this oppression, this paternalism, this control-all of which lead directly to continuation of no or poor health care delivery in our communities.

White people who think they are liberal CANNOT solve the health problems of minority people. They cannot solve the problems of minority health science students. Minorities alone, when they gain control of their own communities, and resources, can solve their problems. We will gain control and we will solve our own problems.

The inclusion of non-third world persons in our efforts is purely on an ancillary basis; to aid us in the achievement of our goals as defined by us and to assist these non-third world persons to eradicate the racism which is their natural state.

It is to the fulfillment of these ends that this caucus of third world people gathered at this meeting. While sharing the common bonds of oppression, this group of Asian, Black, Boricua, Chicano and Native American health science students, together with young professional[1] resource persons from these groups, resisted all internal and external derisive methods of manipulation and achieved solidarity. For the first time, we as third world health professionals closed ranks and determined that the time has indeed come for a unified attack against our common oppressor and by so doing begin to direct and rebuild our health care system for our people.

Our resolve is stated in the recommendations which follow:

1. That these recommendations be included as a separate section in the proceedings of this conference. To ensure that these recommendations be included without alteration, that provisions be made by the planning committee to have representatives of the minority caucus be present at all deliberations relative to the proceedings.

   In order to ensure rapid action on these recommendations, this caucus has assumed the responsiblity for distributing this statement in advance of the conference proceedings directly to the following individuals and organizations.

   a. Dr. Kenneth Endicott, Director, Bureau of Health Manpower, NIH
   b. Dr. Vernon Wilson, Administrator, H.S.M.H.A.
   c. Mr. Stanley Thomas, Deputy Assistant Secretary for Student and Youth Affairs, Department of Health, Education and Welfare

2. That this caucus strongly recommend to the Bureau of Health Manpower that they desist from attempts of manipulating funding requests made by minority student health organizations. That these requests be considered only for the scope of work as defined by the requesting organization - e.g. request to fund an annual education conference, remain as such.

[1] Representatives from the Office of Health Manpower Opportunity; National Chicano Health Organization; Urban Coalition Health Manpower Program; National Medical Association - Project 75 and the National Boricua Health Organization.

3. That representatives of this minority caucus be defined as a planning committee for a third world health manpower conference. That this planning committee be provided with funding (through the grants to be made by the Bureau of Health Manpower) to attend and meet at the planned Student National Medical Association annual conference in two weeks, to discuss plans for implementation of the recommendations of this caucus and to discuss organizational plans for this conference, and the preparation of a grant proposal to be presented to the Bureau of Health Manpower for funding.

Preliminary work for such a conference has begun at this Student Health Manpower Conference. Contact has been established with the Bureau of Health Manpower officials; the SNMA has agreed to consider to include in the scope of work of its annual conference provisions for a meeting of the planning committee; tentative program ideas have been formulated for a potential July conference.

STUDENT HEALTH MANPOWER CONFERENCE

WOMEN'S CAUCUS, SUNDAY

Minority Group Consensus

The Women's Caucus at the conference calls to the attention of all participants that this was in fact a health MANpower conference. Inherent in this was the fact that the conference failed to address itself to ALL substantive issues relating to women in health, as consumers, health students, and health practitioners. Women continue to be victimized by the present systems of education and health care delivery.. Further, at this conference, no due consideration was given to the vital need of increasing recruitment of women of ALL ethnic groups, minority and majority, into those health professions now deficient of adequate female participation. It is IMPERATIVE that future health conferences address themselves to ALL HUMAN needs.