Pre-existing policy and opinion have suggested that the maldistribution of specialists should be addressed by greatly increasing the number of trainees. Current projections suggest that a substantial excess of cardiologists will develop over the next few decades. Presently, in several sectors of the U.S., a surplus of cardiologists exists. It is our consensus that the training of practitioners will become excessive, and yet, maldistribution will not be eliminated. Thus, the overall training of future cardiologists should be reduced.

A second challenge to manpower needs relates to the significant fall in the number of cardiologists involved in research. Concomitantly, a dramatic rise in the relative number of Ph.D.s in cardiovascular research is evident. Thus, despite decreasing projected manpower needs in the private sector, a continued need in the academic sector will persist.

The impact of failing to recognize changing manpower needs will prove a burden on society in several ways. Increased health care costs to government will result. Similarly, health care costs to patients and third party carriers will increase, perhaps dramatically. Increased competition within and between specialties will result, affecting real earnings, as well as potentially depriving academic centers of patients needed for physician training and research. Ethical considerations may become problematic regarding the application of technology. Lastly, basic and clinical research is likely to decline as the involvement of the M.D. wanes. A direct result may be fewer medical advances in future decades.

In responding to changing manpower needs, the following recommendations are presented:

1) A decrease in the relative number of cardiologists will be needed. This decrease should be primarily in the private sector, among practitioners. The point of easiest regulation is at the Fellowship level. Thus, a decrease in the actual number of Fellowship trainees appears to be appropriate. Institution of three-year training programs with increased emphasis on academic training (including a significant emphasis on research beginning in the first year) should encourage an academic orientation. Training programs without academic potential should be eliminated and new programs prevented.

2) To provide necessary clinical and teaching resources in academic centers, increased involvement of the private sector is encouraged. Such arrangements should be mutually beneficial. Increased flexibility within the universities and active courting of appropriate individuals in the private sector will be necessary.

3) Increased inducements must be provided to obtain and retain young academic faculty. Financial return for young academic faculty members must be improved and more professional business management practices instituted. Increased institutional support must be provided for the young academician, so that secretarial, technical, space, equipment and time needs are met. Improved career planning and guidance by senior faculty are a must. A concentrated effort must be made to provide ready access to and support by the various funding agencies.

Craig January, M.D., Ph.D.

Cardiology Fellowship Training Programs

Chairman: Edward Murphy, M.D., Portland, OR
Secretary: Paul J. Troup, M.D., Milwaukee
Participants: Edward D. Folland, M.D., West Roxbury, MA; Thomas A. Ports, M.D., F.C.C.P., San Francisco; Edward L. C. Pritchett, M.D., Durham, NC; Rodolphe Ruffy, M.D., St. Louis

In our study section we were concerned about an excessive number of cardiologists, an excessive number of training programs, and about changes in the cardiology training programs. We were also concerned about the loss of the clinician-academician in teaching centers.

Our recommendations were to consider reducing and centralizing the cardiovascular training program with the development of accreditation perhaps through the American Board of Internal Medicine. Also, we want to reemphasize that the goal of cardiology training programs is to develop a consultant in cardiovascular disease. These consultants require a broad range of experience, as well as the opportunity to pursue specialized areas of interest including research training.

There was great concern about a one-track or two-track training system and no definitive recommendation was made. The advantages of going into research early on was widely accepted, but concern about a second inferior track was raised and the necessity for a great deal of overlap and interchange and cross fertilization in these two areas was emphasized.

The clinician-academician must be supported, promoted, and maintained within teaching institutions in training programs. We would hope that some professional societies would identify and honor these individuals even if they could not financially support them (American College of Cardiology, American College of Chest Physicians, American Heart Association). Of course, financial support would be welcomed.
No clear recommendation was developed regarding funding for cardiovascular trainees. Major concerns were related to utilization of trainees for clinical work with a loss of academic and research pursuits. The technical or paramedic personnel would relieve the fellows of some burden, but would not necessarily relieve some of the financial burden.

Edward Murphy, M.D.

Reprint requests: Dr. Murphy, VA Medical Center, 3710 SW US Vets Road, Portland, Oregon 97201

The Uncontrolled Proliferation of Technology

Chairman: Michael D. Ezekowitz, M.D., Ph.D., Oklahoma City
Secretary: Frank C. P. Yin, M.D., Baltimore
Participants: James H. Caldwell, M.D., Seattle; David E. Hoekenga, M.D., Albuquerque; Richard M. Steinbert, M.D., New York, NY; Donald A. Weiner, M.D., F.C.C.P., Boston; James B. Young, M.D., F.C.C.P., Houston

The development of new technology in cardiology has generated the rapid and expansive proliferation of new diagnostic and therapeutic procedures that have not been fully tested. Physicians trained in a particular technique are often unwilling to address the potential of technologic obsolescence. The following problems currently exist in determining the effectiveness of new technology:

1) Initial reports suffer from the great pressure to produce and publish only positive results. Negative results often do not gain acceptance at national meetings and as publications.

2) Funding sources, particularly those from industry, may be end-serving, providing data which would only be beneficial to that particular industry.

3) Premature proliferation of poorly tested technology occurs when community hospitals, in an effort to be in the forefront of medical science, purchase equipment prematurely. The equipment then is unnecessarily utilized in order to justify its cost.

4) While it was agreed that controls on the proliferation of equipment should be instituted, it was equally important not to stifle initiative. It was thought that certain incentives should be provided to encourage researchers to pursue research ideas. These incentives might include tax incentives for private industry or federally funded non-goal directed research for academic institutions.

5) All assessments should be made by intellectually honest individuals who would gain sufficient rewards from presenting both positive and negative data.

6) It was generally felt that training facilities should be provided so that older practicing cardiologists could be updated on the new technology so that they would not be threatened by it and not be reluctant to give up using obsolete techniques.

Michael D. Ezekowitz, M.D.

Reprint requests: Dr. Ezekowitz, Cardiovacular Section/ Medicine, PO Box 20901 University of Oklahoma, Oklahoma City 73190

Interrelation of Federal Government and Research

Chairman: Paul S. Greenberg, M.D., Long Beach, CA
Secretary: C. Jeffrey Carlson, M.D., San Francisco
Participants: John S. Gottdiener, M.D., Washington, D.C.; Jeffrey M. Isner, M.D., Boston; John McAnulty, M.D., Portland, OR; J. Franklin Richeson, M.D., Rochester, NY; Bahram Zamanian, M.D., New Orleans

Quality of patient care is enhanced by basic and clinical research. Federal support of research is necessary, but is currently inadequate. The total federal funds allocated to cardio-vascular research should be increased. Mechanisms for obtaining research funds are complex and unwieldy. The grant process should be simplified. Multiple application to different federal agencies should not be required. Inter-agency coordination of distribution of funds is desirable. There needs to be direct investigator representation on federal funding agencies. This can be achieved through institutional or existing professional societies. Consideration should be given to formation of a new organizational body whose sole function is to represent clinical and basic researchers for those funds available.

The decisions on the allocation of available funds must continue to be made by individuals with appropriate scientific credentials. In addition, alternative sources for research support should be explored. Since research contributes to patient care, it is appropriate to reinvest a portion of patient care funds into research. The federal government can facilitate this by avoiding overly restrictive regulations that limit the use of federal and state funds in activities of academic institutions which combine patient care and research. Private third party carriers should also be encouraged to recognize the beneficial effects of this approach. Consideration should be given to changing the federal tax structure to encourage the donation of time and money.