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Human Resources
Division

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DECEMBER 30, 1980

The Honorable Edward M. Kennedy
Chairman, Subcommittee on Health
and Scientific Research
Committee on Labor and Human
Resources
United States Senate



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Dear Mr. Chairman:

Subject: [Research Planning and Evaluation at the
National Institutes of Health and Aspects
of Advisory Council Operations] (HRD-81-18)

This is the second of three reports we agreed to provide you regarding certain aspects of research management at the National Institutes of Health (NIH). Our first report (HRD-80-53, Feb. 28, 1980) dealt with certain activities of the National Cancer Institute's Division of Cancer Treatment. A third report--dealing with NIH's contract monitoring activities--should be issued by February 1981.

B

[This report discusses NIH's (1) research planning, funding, and evaluation process and the roles of its advisory councils in this process and (2) selection of advisory council members.] We briefed your office on June 26, 1980, on the results of our work. This report summarizes the matters we discussed during the briefing.

Enclosures I to III contain information on:

--The objectives, scope, and methodology of our review. (See enc. I.)

--[How four institutes--the National Cancer Institute; the National Heart, Lung, and Blood Institute; the National Institute of Arthritis, Metabolism, and Digestive Diseases; and the National Eye Institute--plan, fund, and evaluate research activities.]
Basically, we found that (1) while the institutes establish their own planning processes, the methods used, the criteria considered, and the groups involved are basically similar, (2) priority research



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program areas are generally being funded as planned, (3) the institutes are using several groups, including NIH staff and contractors, to perform evaluations of their research activities, and (4) the advisory councils are actively involved in planning, funding, and evaluating research activities. } (See enc. II.)

B { NIH's selection of advisory council members. } ^{fc} [We found that (1) other council members believe lay members make significant contributions in many areas of council activities and (2) the councils had experienced delays in replacing many of their members when their terms had expired; however, changes have recently been made in the appointment process which appear to have corrected this problem.] (See enc. III.)

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As agreed with your office, we did not obtain written comments on this report from the Department of Health and Human Services (HHS). We did, however, discuss the contents with HHS and NIH officials.

Unless you publicly announce its contents earlier, we plan no further distribution of this report for 30 days. At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

Edward A. Hensmore

for Gregory J. Ahart
Director

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ABBREVIATIONS

ASH	Assistant Secretary for Health
ASPE	Assistant Secretary for Planning and Evaluation
HHS	Department of Health and Human Services
IRG	Initial Review Group
NCI	National Cancer Institute
NEI	National Eye Institute
NHLBI	National Heart, Lung, and Blood Institute
NIAMDD	National Institute of Arthritis, Metabolism, and Digestive Diseases
NIH	National Institutes of Health
NIH/OD	National Institutes of Health/Office of the Director
PHS	Public Health Service
RFA	Request For Applications

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our review were to (1) assess the nature of the process for planning, implementing, and evaluating research at the National Institutes of Health (NIH) and (2) determine the roles of the advisory councils at NIH and the process for selecting council members.

We conducted our review at 4 of NIH's 11 research institutes--the National Cancer Institute (NCI); the National Heart, Lung, and Blood Institute (NHLBI); the National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD); and the National Eye Institute (NEI). These institutes account for about 58 percent of the NIH budget and represent both large and small research institutes. Their respective obligations for fiscal year 1979 are shown below:

	<u>Obligations</u> (millions)	<u>Percent of</u> <u>total NIH</u>
NCI	\$ 937	29.4
NHLBI	510	16.0
NIAMDD	303	9.5
NEI	<u>105</u>	3.3
Total	<u>\$1,855</u>	58.2
Total NIH	<u>\$3,185</u>	

NIH research is done by grantees, the institutes' staffs, or contractors. In fiscal year 1979, research grant support accounted for \$1.9 billion, or 65 percent of NIH's total research budget. We therefore concentrated our efforts on research grant support.

We contacted officials within the institutes; the NIH directorate; the Offices of the Assistant Secretary for Health and for Planning and Evaluation, Department of Health and

Human Services (HHS); 1/ and the Office of the Secretary, HHS. We also interviewed members of several NIH advisory councils. We reviewed policies, procedures, and legislation concerning the planning for and evaluation of research activities and the functioning of the advisory councils. We obtained documents concerning evaluations of individual research projects, and the individual results of advisory councils' reviews. We also had institutes' officials prepare detailed documentation of their research planning processes.

1/On May 4, 1980, a separate Department of Education commenced operating. Before that date, activities discussed in this report were the responsibility of the Department of Health, Education, and Welfare.

PLANNING, FUNDING, AND EVALUATINGRESEARCH ACTIVITIES

To assure that research is relevant to defined needs and goals and is scientifically sound, NIH has developed mechanisms for planning the research to be conducted, funding research as planned, and evaluating research to assess the relevance and quality of the work.

PLANNING

Each of the four institutes we reviewed has developed formal, long-range research plans for some or all of its research programs. For the most part, such plans were mandated in specific legislation directed to certain areas of research.

All four institutes use their long-range planning as a base for their annual planning process--accompanied by budget estimates--as do some NIH committees which deal with issues that affect more than one institute (trans-NIH issues).

NIH, drawing on annual plans developed by the individual institutes and the trans-NIH committees, develops an overall annual Research Plan.

Development of institutes'
formal, long-range research plans

While the reasons for developing long-range plans differ between institutes, the types of individuals involved and the criteria used are similar.

The National Cancer Act of 1971 (42 U.S.C. 286e(b)) directs NCI to develop a 5-year National Cancer Plan that encompasses related programs of other research institutes and other Federal and non-Federal programs.

The National Heart, Blood Vessel, Lung, and Blood Act of 1972 (42 U.S.C. 287(b)(2)) directs NHLBI to develop a 5-year national plan.

NEI, although not required by legislation, develops 5-year plans for vision research.

The plans for NCI, NHLBI, and NEI are developed by staff from the respective institutes and by select groups 1/ and advisory councils. The select groups and the advisory councils are comprised of scientists from outside NIH, representatives of other Federal agencies, and private citizens with an interest in the institutes' areas of research.

NIAMDD's long-range planning has evolved primarily from specific legislative requirements for research initiatives relating to 3 of its 10 disease areas--diabetes, arthritis, and digestive diseases. These plans are developed independently by three national commissions comprised of members of the scientific community and lay people representing private disease-oriented groups.

In developing long-range plans, the four institutes consider for their various program areas:

- National significance of the individual health problems researched by the institutes, including prevalence and incidence.
- Research goals and objectives of the institutes, Public Health Service (PHS), Department of Health and Human Services, and congressional mandates.
- Program progress, state-of-the-science, and scientific opportunities for further research investigation.
- Prior funding levels and current fiscal environment, including the amount of support being received from other government and nongovernment organizations.
- Current research trends indicated by the number of grant applications being received, estimates of new and renewal applications expected, and availability of qualified researchers.

In general, each long-range plan discusses research needs, recommends goals and objectives, and evaluates ongoing research in terms of its relevancy to goals and objectives and level of effort necessary to meet them. Each institute's plan is discussed with and reviewed by its advisory council.

1/Select groups provide advice on specific disease areas within an institute, while advisory councils provide advice on all an institute's disease areas.

NCI and NHLBI are required by legislation to present to the Congress an updated national plan that discusses activities of each program during the prior fiscal year and the next 5 fiscal years. NEI intends to make changes to its 5-year plans for vision research every 3 years. No action is planned to formally update NIAMDD's three disease-specific plans.

Development of institutes'
annual research plans

Using its national plan (or, in NIAMDD's case, its three disease area plans) as a base, each institute is required by the National Institutes of Health/Office of the Director (NIH/OD) to annually prepare a research plan discussing its proposed activities for the following year. The criteria considered in developing the annual plans are similar to those used in developing the long-range national plans. Each institute's process includes a sequence of steps that allows for input from the institute's staff and other groups. The NHLBI four-step planning process described below is representative of how the institutes develop their annual plans.

1. NHLBI staff, select groups, and advisory councils meet in workshops, seminars, and other gatherings to develop preliminary lists of recommended program initiatives.
2. After the recommended initiatives are ranked by the select groups, highly ranked initiatives are further evaluated by NHLBI staff, which consider such factors as progress in the initiative areas, potential impact of ongoing efforts, and fiscal constraints. These initiatives are then reviewed by the select groups and advisory councils.
3. Considering the recommended initiatives, existing commitments' impact on future years, and resources needed to sustain research grants at various priority levels, the staff prepares program implementation plans. These are adjusted by the institute director to reflect such factors as available resources, effect on future commitments and resource flexibility, and congressional mandates. The adjustments are reviewed and negotiated with each of the institute's five programming divisions.

4. Adjusted program implementation plans are reviewed by and receive recommendations from NHLBI's advisory council and NIH/OD. Once approved by NIH/OD, these program implementation plans become NHLBI's annual Research Plan.

Development of trans-NIH annual plans

Those issues that involve more than one institute are called trans-NIH activities (such as genetic diseases, nutrition, cystic fibrosis, diabetes, and epidemiology). Committees comprised of staff from the involved institutes develop annual trans-NIH research plans at the same time and in a similar manner as the institutes do for processing their individual plans through NIH/OD. Review of trans-NIH activities by the committees and NIH/OD focuses on the current status of planning in trans-NIH areas, responsiveness to legislative requirements, and direction of future activities.

Development of NIH's overall annual Research Plan

Each November, following NIH/OD guidelines, the institutes and the trans-NIH committees send NIH/OD highlights of their annual plans to be used in developing the annual NIH Research Plan. Between November and April of each year, the following process takes place:

1. After reviewing the institutes' and the trans-NIH plans, the Director of NIH and his senior staff meet with the directors and senior staffs of the institutes and the representatives of the trans-NIH committees. Considering the same criteria used in developing long-range plans, they discuss research progress, proposed allocation of resources, legislative proposals, and major program issues. The Director of NIH establishes tentative funding levels for each institute, which become the basis for the NIH budget submitted to PHS. Changes may be made by PHS, HHS, the Office of Management and Budget, and/or the Congress.
2. Participating throughout the development of the overall annual NIH Research Plan, the NIH/OD Division of Financial Management comments on each institute's annual plan, takes part in--and comments on summaries of--the NIH Director's review sessions, and

establishes preliminary budget requests. To assure that the concerns of the Congress and the President are reflected, NIH/OD reviews the distribution of funds by program areas and budget mechanism.

A summary of the annual NIH Research Plan goes to the Assistant Secretary for Health, HHS, who considers it in preparing the 3-year PHS program plan.

RELATING FUNDING TO PLANNED RESEARCH

NIH reviews incoming grant applications to assess their scientific merit and relevance to program plans. Where shortages of quality applications occur, the institutes use several methods to solve the problem. Our review of fiscal year 1979 research allocations at the four institutes showed that research usually was funded as planned.

Reviewing and ranking grant applications

A continuing goal of the institutes and NIH/OD is the appropriate match of desired research projects with available funds. This matching process begins when research grant applications arrive at NIH.

An incoming grant application is reviewed for scientific merit by one of NIH's many Initial Review Groups (IRGs). An IRG, comprised of scientists with expertise in the application's research area, recommends approval or disapproval of the application. If approved, it is given a numerical priority ranking based on scientific merit. Sometimes an IRG makes recommendations for changes (1) in the amount of funds requested by the applicant and/or (2) the length of time requested to perform the research.

After reviewing an application and approving or disapproving it, the IRG sends it to the appropriate institute's staff. The staff reviews the application and may, if it disagrees with the IRG recommendation, suggest alternatives when forwarding the application to the institute's advisory council for its review.

An advisory council reviews applications for relevance to the institute's goals and needs. This review is conducted in three stages:

1. Summaries of all applications are reviewed by at least one council member before council meetings.
2. Subcommittees, comprised of council members, review applications in their area of specialization.
3. The whole council reviews applications for which questions were raised by the IRG, staff, or council members--other applications are approved as a group without further council review.

For each application, the council will either concur with the IRG recommendation or take one or more of the following actions:

- Raise or lower the application's priority ranking.
- Modify the amount of money and/or grant period allotted to the grantee.
- Refer the application back to the IRG for reconsideration of scientific merit.
- Reverse the IRG's recommended approval or disapproval on policy matters.

The following table shows the extent to which the councils of the four institutes did not concur with IRG recommendations on grant applications reviewed in 1978. It also highlights the number of applications for which the councils changed priority rankings.

Grant Applications Reviewed by
Advisory Councils in Calendar Year 1978

<u>Institute of advisory council</u>	<u>Appli- cations reviewed</u>	<u>Applications changed</u>			
		<u>Total</u>	<u>Percent</u>	<u>Priority ranking</u>	<u>Percent</u>
NEI	745	63	8.5	41	5.5
NIAMDD	2,477	28	1.1	8	.3
NHLBI	2,522	29	1.1	10	.4
NCI	3,533	40	1.1	23	.7

As indicated, the NEI council made substantially more changes than any of the other three. The difference was due largely to a greater percentage of changes affecting priority

ranking based on council determinations of program relevance. Through our discussions with council representatives, however, we could not determine what factors would account for such a difference.

Also, about one-third of the changes made by the councils were in response to staff suggestions. When the institute staffs disagreed with IRG recommendations, the councils generally accepted the suggestions of the staffs.

Methods used to respond to a shortage
of quality grant applications

Sometimes in specific program areas more funds are available than grant applications deemed worthy of funding. Three actions are usually taken to overcome this problem.

1. To encourage submission of additional grant applications in a specified area, institutes can organize scientific workshops, seminars, conferences, and/or task forces made up of institute and private scientists. As a way of publicizing interest in an area of research, an institute may issue to the scientific community Requests For Applications (RFAs) or Program Announcements. (NIH officials told us that, when issuing RFAs, money is set aside to ensure that high quality grant applications received in response to requests stand a better chance of being funded.)
2. Sometimes institutes will fund grant applications that are closely related to--but not classified in--the area for which more research is wanted. For example, a congressional mandate caused NIAMDD to enlarge its diabetes program from \$19.3 million in fiscal year 1976 to \$67.2 million in fiscal year 1979. NIAMDD officials told us they sought to comply with the mandate by spending a portion of the increased budget to fund grants for diabetes-related research in such areas as nutrition, endocrinology, and metabolism.
3. Institutes usually fund approved grant applications in the order of their priority score rankings, which are based on the scientific merit of the proposed research. Sometimes institutes will meet demands for more research in a specific area by funding applications out of their priority score order. This

is done by the institutes' advisory councils identifying certain applications as having high program relevance. Such applications are moved ahead of other applications having higher priority scores so that they will be sure to be funded.

An indication that programs usually are funded as planned

The institutes' fiscal year 1979 obligations usually were in accord with the appropriations approved by the Congress for each program activity identified in the annual NIH Research Plan. Of 20 program or division budget areas in the four institutes, only 1 area varied from the amount available for obligations by more than 10 percent.

This occurred in the smallest of the four institutes' programs, the NEI cataract program where actual obligations ran about 17 percent or \$1.6 million less than approved appropriations. On the average, obligations for each program area varied from amounts available for obligations by 4.3 percent.

EVALUATION OF NIH RESEARCH

Evaluations of the institutes' research activities are conducted primarily by the institutes and NIH/OD, with NIH/OD concentrating on issues that affect more than one institute. Two components of the HHS Secretary's Office--the Assistant Secretary for Health (ASH) and the Assistant Secretary for Planning and Evaluation (ASPE)--also evaluate a few research activities related to NIH. ASH and ASPE, however, are primarily concerned with reviewing NIH's proposed evaluations of the institutes' research activities submitted to them for approval.

The Hospital and Medical Facilities Construction and Modernization Amendments of 1970 (42 U.S.C. 229b) amended the PHS Act by identifying specific funds for program evaluation. The Senate Committee on Labor and Public Welfare report (91-657), issued February 5, 1970, addressed the amendment and encouraged HHS "* * *" to embark on a systematic and thorough evaluation of all health programs." The Committee report said: "* * * if judicious decisions are to be made in regard to the future direction of health programs, we must learn which programs are successful, which are not, and why."

Under the 1970 amendments to the PHS Act, the Secretary of HHS can use for evaluation purposes up to 1 percent of the funds appropriated to any program authorized by the PHS Act or several related acts. The Secretary of HHS established a set-aside fund limit of 0.25 percent for evaluation projects to be conducted under the direction of ASPE. In 1975, this was amended to include an additional 0.25 percent for ASH. The other 0.5 percent is available to each PHS institute or agency in proportion to its appropriation. ASPE officials noted that actual funds available under the act are substantially less than the 1 percent allowable because of congressional ceilings placed on funds for consultant services. For example, in fiscal year 1980 the 1-percent limit would have provided about \$30 million from NIH appropriations. Because of the ceiling, however, evaluation funds were limited to \$5 million.

In addition to the PHS Act (1-percent funds), the institutes also use direct operations funds for studies that do not meet ASH's and ASPE's definition of an evaluation. ^{1/} About \$1.4 million of the \$5.7 million spent for evaluations by all the NIH institutes in fiscal year 1979 was from direct operating funds.

The four institutes'
evaluation activities

To evaluate the relevance and quality of research activities, the institutes conduct

- studies on program effectiveness, cost analysis, compliance with government policy, and the current status of research in various disease areas and
- reviews of program progress and problems based on presentations by program directors and their staffs.

An institute employs private contractors and uses its staff and committees (including its advisory council) to perform these evaluations.

^{1/}HHS' fiscal year 1980 Evaluation Guidance defines evaluation as: "* * * the measurement of program performance (efficiency, effectiveness, responsiveness), the making of comparisons based on those measurements, and the use of the resulting information in policy-making and program management."

Under the institutes' broad interpretation of evaluation, NHLBI and NEI review all their programs every 5 years, while NCI reviews all its programs every 2 to 3 years. NHLBI and NEI conduct studies of specific programs or program segments during each year. Once every 5 years, these institutes perform an institutewide review that considers all their programs to determine their current status, progress achieved, and identify future needs. During the 4-year period ended in fiscal year 1980, NIAMDD will have reviewed all its programs. In performing these reviews, the results of grants and contracts that comprise specific programs are considered.

HHS' Fiscal Year 1980 Guidance for Evaluation, Research, and Statistical Activities requires each institute to indicate the date by which it will have measured each program's actual performance by objectives and other performance indicators. This type of analysis will be more in agreement with ASH's and ASPE's definition of evaluation.

To get an indication of the types of evaluations conducted, we analyzed the studies (conducted primarily by contractors) in the NIH Evaluation Plans for fiscal years 1978 and 1979 for the four institutes. Based on the institutes' abstracts, we categorized these studies as follows:

- Impact:** Assessment of how effectively a program's objectives have been met, such as the Sickle Cell Education Program's success in increasing public awareness and understanding of the disease.
- Financial:** Obtaining the current costs of various aspects of health research, such as the cost of treatment regimens for cancer care and the costs of operating clinical trials.
- Compliance:** Evaluating the impact of new laws and regulations and recommending procedures that will allow compliance without adversely affecting research.
- State of science:** Obtaining information on the current status of research in various disease areas.

Our analysis of the studies shows, as represented in the following table, that at least 50 percent of the studies--for each institute--concerned program impact.

Evaluation Studies in Process
During Fiscal Years 1978 and 1979

<u>Type of evaluation study</u>	<u>NCI</u>	<u>NHLBI</u>	<u>NEI</u>	<u>NIAMDD</u>
Impact	4	10	2	4
Financial	1	1	0	0
Compliance	1	1	0	0
State of science	<u>2</u>	<u>6</u>	<u>2</u>	<u>4</u>
Total	<u>8</u>	<u>18</u>	<u>4</u>	<u>8</u>

The results of these evaluations are used by the respective program directors for administering research in their disease areas. For example, NIAMDD conducted a study that resulted in program policy changes in its Nephrology and Urology research program. Among other findings, the study determined that support of individual investigator-initiated research was more productive and cost effective than equivalent support of a few large research centers. NIAMDD, therefore, has placed primary emphasis on supporting investigator-initiated basic research.

NIH/OD evaluation activities

NIH/OD evaluates issues affecting more than one institute. Examples include the effect of Federal research policies on institutions, uses of research funding by the institutes, and trans-NIH issues, such as diabetes and nutrition.

The Director of NIH appoints oversight committees comprised of NIH/OD and institutes' staff, which review past and ongoing efforts, and recommend to and discuss with him subjects for future evaluations. The committees have recommended evaluations in such areas as sources of research support and effect of training on research careers and performance.

To overcome a staff shortage problem, NIH/OD has established coordinating committees to review the trans-NIH issues (see p. 6). These committees are comprised of (1)

senior staff from each of the institutes with an interest in the specific trans-NIH issue and (2) representatives from other Federal agencies. The committees have prepared reports that identify progress made in specific disease areas, identify research areas for priority attention, describe research projects in specified areas, and make recommendations on information to be maintained on specified disease areas. For example, the NIH Diabetes Coordinating Committee issues annual reports summarizing the progress made in implementing the long-range plan to combat diabetes. Also, the Genetics Coordinating Committee developed a compendium of Federal activities ongoing in the area of genetic diseases.

ASH and ASPE evaluation activities

An ASPE official said ASH and ASPE usually perform "cross-cutting" evaluations; i.e., studies concerning matters that relate to several PHS agencies. An example cited was a study of the impact of demonstration programs in HHS. The study was to consider how demonstration as a program concept was working rather than how a particular agency program was being conducted. Some of these evaluations would address NIH activities. ASH and ASPE prefer, however, that NIH conduct evaluations that directly relate to its activities.

ASH and ASPE review proposed evaluations

ASH and ASPE guidelines require proposed evaluations to be submitted by the institutes and NIH/OD for review. The guidelines include the definition of an evaluation and information it must contain. ASH and ASPE simultaneously review proposed evaluations to assure they (1) give sufficient attention to HHS priority areas, (2) meet HHS evaluation criteria, (3) do not duplicate evaluations proposed by other HHS agencies, (4) contain appropriate methodologies, and (5) are assessed from an independent point of view. If disapproved, proposed evaluations are returned for revision. In fiscal year 1980 ASH and ASPE disapproved 8 percent of the institutes' proposed evaluations.

SELECTION OF ADVISORY COUNCIL MEMBERS

Legislative requirements and HHS review levels assure the membership of advisory councils is properly balanced between scientists, physicians, and lay members. Although there have been delays in filling advisory councils' vacancies, recently increased coordination between the HHS Secretary's Office and the institutes' officials has reduced the time required to fill these vacancies.

CRITERIA FOR SELECTING
ADVISORY COUNCIL MEMBERS

The Federal Advisory Committee Act (5 U.S.C. App. I) requires advisory council membership "to be fairly balanced in terms of the points of views represented." The Secretary of HHS interprets the act to mean membership equitably distributed by medical discipline, race, sex, geographic representation, and community type (such as urban or rural).

Criteria for membership (including number of scientists, physicians, and lay members) are set in each institute's enabling legislation and each council's charter. All nominees must be familiar with the functions of the particular institute, NIH procedures, and the diverse institutions in biomedical research. Scientists and physicians must be outstanding leaders and experts in their fields. Lay members must be leaders in such fields as medical science, education, law, social sciences, public health, or community affairs, and should have an interest or background in programs relevant to the institute for which they are being considered for membership in an advisory council.

The Subcommittee expressed concern regarding lay members' contributions to the councils. NIH officials and scientists and physician members of the councils say lay members contribute significantly to plan review, policymaking, and budgeting. Scientific members say most lay members lack expertise to analyze grant applications' technical merit but are helpful in providing the general population's view of the subject, emphasizing the patient's problem, and keeping the medical community from functioning in a vacuum.

The following table shows the composition of advisory councils. 1/

1/NCI's council is called a board.

	<u>NEI</u>	<u>NIAMDD</u>	<u>NHLBI</u>	<u>NCI</u>
Total members	<u>13</u>	<u>20</u>	<u>23</u>	<u>29</u>
Ex-officio (note a)	1	2	5	11
Appointed by the Secretary of HHS:	12	18	18	<u>b/18</u>
Scientists/ physicians	8	14	13	10-12
Lay members	4	4	5	6-8

a/Federal officials, such as the Secretary of HHS, whose membership is established by law.

b/Appointed by the President.

SELECTION OF ADVISORY COUNCIL MEMBERS

Council nominations come primarily from institute directors, and are reviewed by NIH's Committee Management Office, and successively at five HHS levels: the Office of ASH, the Department Committee Management Office, the Special Assistant to the Secretary for Advisory Committees, the Under Secretary of HHS, and the Secretary of HHS. The Secretary appoints members to the councils--except in the case of NCI where members are appointed by the President.

Nominees for the President's Cancer Panel are suggested by the Board and directors of NCI and by NIH to the Secretary of HHS, who reviews and recommends nominees to the President, who appoints members.

The executive secretaries of the four advisory councils said that frequently the councils had to function with less than full membership. We noted that, during 1978, about half of the appointments to these councils were not made until after the expiration of a member's term. The average delay was about 3 months. The delays were primarily attributable to additional time taken at the Department level for reviewing nominees.

During the past year, some changes have been made in the nomination process to help reduce the delays in making appointments. The Acting Special Assistant for Advisory Committees told us that increased contact with institutes' officials before their submission of nominations has resulted in fewer rejections at the Department level and thus reduced the average review time. As of November 1980, none of the advisory councils had vacancies.