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INSTITUTES OF HEALTH

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HEARING
BEFORE THE
SUBCOMMITTEE ON HEALTH
OF THE
COMMITTEE ON
LABOR AND PUBLIC WELFARE
UNITED STATES SENATE
EIGHTY-SEVENTH CONGRESS

SECOND SESSION

ON

S. 2269 and H.R. 11099

BILLS TO AMEND THE PUBLIC HEALTH SERVICE ACT TO
PROVIDE FOR THE ESTABLISHMENT OF AN INSTITUTE
OF CHILD HEALTH AND HUMAN DEVELOPMENT, AND FOR
OTHER PURPOSES

SEPTEMBER 13, 1962

Printed for the use of the
Committee on Labor and Public Welfare



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INSTITUTES OF HEALTH

THURSDAY, SEPTEMBER 13, 1962

U.S. SENATE,
SUBCOMMITTEE ON HEALTH OF THE
COMMITTEE ON LABOR AND PUBLIC WELFARE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:10 a.m., in room 4232, New Senate Office Building, Senator Ralph Yarborough, presiding.

Present: Senator Yarborough (presiding).

Committee staff members present: Stewart E. McClure, chief clerk; John S. Forsythe, general counsel; Robert W. Barclay, professional staff member of the Subcommittee on Health; and John D. Stringer, associate minority counsel.

Senator YARBOROUGH. The Subcommittee on Health of the Committee on Labor and Public Welfare will come to order.

This subcommittee is meeting this morning to receive testimony on two bills, S. 2269 and H.R. 11099, that would amend the Public Health Service Act to provide for the establishment of an Institute of Child Health and Human Development and an Institute of General Medical Sciences in the Department of Health, Education, and Welfare. These bills also authorize advisory councils to assist in the administration of the programs of the proposed Institutes.

At this point in the record I will order inserted a letter from the President, John F. Kennedy, to the Honorable Lyndon B. Johnson, dated July 18, 1961, recommending the proposal for the National Institute of Child Health and Human Development and a National Institute of General Medical Sciences.

Also, a letter from the Secretary of the Department of Health, Education, and Welfare, Mr. Abraham Ribicoff, dated July 12, 1961, addressed to the President at the White House.

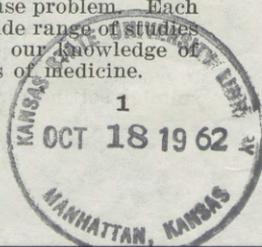
(The letters dated July 18 and July 12, 1961, follow:)

THE WHITE HOUSE,
Washington, July 18, 1961.

HON. LYNDON B. JOHNSON,
*President of the U.S. Senate,
Washington, D.C.*

DEAR MR. PRESIDENT: I am enclosing for consideration by the Congress a draft bill to authorize the Surgeon General to establish within the Public Health Service a National Institute of Child Health and Human Development and a National Institute of General Medical Sciences.

At present, there are seven separate Institutes within the Public Health Service. Each Institute focuses its attention on a major disease problem. Each Institute organizes, arranges for financing, and stimulates a wide range of studies in its field. They have all made important contributions to our knowledge of the dangers in crippling diseases and advanced the frontiers of medicine.



It is now both appropriate and timely to elevate two additional areas of medical research activity to the level of institutes. In this way, the kind of research effort that is needed to improve the health of the children and to stimulate basic studies in the biological sciences will be assured. One of these two Institutes will deal with child health and human development. It will include a Center for Research in Child Health, as well as other activities not now covered by the existing Institutes. It is my belief that this concentration of attention in this field will help us discover some of the secrets of the aging process. In time, it will help us live happier and more useful lives.

The other proposal will convert the Division of General Medical Sciences in the Public Health Service into an Institute, thus recognizing the importance of its program. This new Institute will be an important center for research in the general medical sciences.

The purposes and functions of both of the new Institutes are outlined in detail in the attached letter from the Secretary of Health, Education, and Welfare. I urge the favorable consideration of the proposal.

Sincerely yours,

JOHN F. KENNEDY.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington, D.C., July 12, 1961.

THE PRESIDENT,
The White House, Washington, D.C.

DEAR MR. PRESIDENT: I am enclosing for your consideration a draft bill to authorize the Surgeon General to establish within the Public Health Service a National Institute of Child Health and Human Development and a National Institute of General Medical Sciences. The proposed Institutes would be similar in organizational character and function to the seven Institutes which are presently contained within the National Institutes of Health.

The establishment of these two new Institutes would provide a sharper focus for research and training activities in two vital areas—first, the broad fields of research relating to child health and human development and, secondly, research in the general and basic medical sciences which underlie all fields of medical research. However, only the first area will require the establishment of a new program. At the present time the National Institutes of Health, through its Division of General Medical Sciences, is carrying out an extensive program of grants for research and research training in the general and basic medical sciences, and the draft bill would merely elevate an important ongoing program to institute status.

The legislative proposal for the establishment of a National Institute of Child Health and Human Development will implement the recommendation, in your health message to the Congress on February 9, “* * * that there be established in the National Institutes of Health a new National Institute of Child Health and Human Development, which will include a Center for Research in Child Health as well as other broad-ranging health research activities not now covered by the specialized work of the existing Institutes.”

This new Institute will provide a central focus and coordinating point in the fields of research relating to child health and human development similar to the focus which the existing institutes provide for their respective disease areas. In spite of the extensive research already supported by the National Institutes of Health which relates to the problems of children and youth and the process of human maturation, we believe that the importance of these problems deserves the emphasis of a special organization unit and the attention of special research and training programs. This Institute could provide the basis for a stepped-up program of research into such specific problems as congenital malformations, infant mortality, mental retardation, and maternal factors which relate to the health and development of the child. There is an equally great need for more research into the developmental and adaptive processes (both normal and abnormal), beginning with the reproductive system and then continuing logically through the perinatal period, infancy, and childhood and including the processes of maturation (physiological, physical, intellectual, social, and psychological development) through adolescence and into adulthood. This type of fundamental research is needed to provide the basis for specific advances in the health and well-being of our children, youth, and other age groups in the years to come. The research program of this Institute will also form a particularly suitable setting for an effective research effort in the aging process. The study

of aging is a logical extension of a program which is concerned with the processes of human development.

We do not propose that this new Institute take over from other Institutes the study of those childhood diseases which can best be undertaken in the context of a total disease category. For example, the study of leukemia in children would remain in the National Cancer Institute, and the National Institute of Mental Health would continue to be responsible for research into schizophrenia in children. We believe that there are great research opportunities in the areas described above which will occupy the total attentions of the proposed Institute and which can be undertaken without any harmful disruption of the current research programs of other Institutes.

Nor would this legislation impinge upon the authority of other agencies which have responsibilities in the sphere of child health and human development. The draft bill contains a specific provision which recognizes the existing authority of the Secretary to conduct related studies and investigations through the Children's Bureau, and we are submitting for your approval companion legislation to clarify and expand this authority of the Secretary. It is our intention to have a representative of the Children's Bureau serve as an ex-officio member of the advisory council which would be established to advise the Surgeon General on the activities of this new Institute.

In carrying out its functions the proposed Institute of Child Health and Human Development could utilize all of the mechanisms provided in section 301 of the Public Health Service Act, including grants for research projects and direct conduct of research. In addition, the Institute could support training activities related to child health and human development, including training grants, fellowships, and traineeships. Provision is also made in the draft bill for an advisory council, similar to the national advisory councils associated with the present Institutes.

As indicated above, the proposal for the conversion of the Division of General Medical Sciences into a National Institute of General Medical Sciences is made in recognition of the importance of the general and basic medical sciences to the progress of medical research. The conversion of this Division into an Institute was recommended by the group of expert consultants appointed by the Senate Appropriations Committee for the purpose of considering all aspects of the Federal support of research. The program of research and research training supported by the Division of General Medical Sciences has increased both in size and importance. The elevation of the Division to Institute status is a logical step in the evolution of this vital program.

The functions of the Institute of General Medical Sciences would be similar to those of the other Institutes at the National Institutes of Health and to the authorities of the Institute of Child Health and Human Development described above. The Surgeon General would also be authorized to establish an advisory council to advise on this program.

An amendment to section 301 (d) of the Public Health Service Act is proposed in this draft bill in order to clarify the general authority of the Surgeon General to make grants for research training projects. Additional provisions included in the draft bill would authorize the Surgeon General to appoint advisory committees to provide advice and consultation concerning any programs of the Public Health Service.

Also included is an amendment exempting members of councils and other advisory groups, existing or prospective, from certain conflict-of-interest laws, except for the prohibition against participation in the prosecution of any claim against the United States on any matter with respect to which he was directly connected as a member and except for a prohibition against receipt of salary from other than the member's employer at the time of his appointment.

We believe that the enactment of this legislation will provide the Public Health Service with new tools to be used in the expanding fight against human disease and disability. These proposed new Institutes would constitute a needed complement to the present significant efforts in this fight.

Faithfully yours,

ABRAHAM RIBICOFF, *Secretary.*

Senator YARBOROUGH. At this point in the record I will also order printed S. 2269, which is described in the letter from the Secretary of Health, Education and Welfare that I just placed in the record, and a committee print that reflects the amendments adopted in the House of Representatives in approving a companion measure to S. 2269.

(S. 2269 and the committee print of H.R. 11099 follow:)

A BILL To amend the Public Health Service Act to provide for the establishment of an institute of child health and human development, and for other purposes.

[S. 2269, 87th Cong., 1st sess.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That title IV of the Public Health Service Act (42 U.S.C. ch. 6A, subch. III) is amended by adding at the end thereof the following new part:

PART E—INSTITUTES OF CHILD HEALTH AND HUMAN DEVELOPMENTS AND OF GENERAL MEDICAL SCIENCES

“ESTABLISHMENT OF INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

“SEC. 441. The Surgeon General is authorized, with the approval of the Secretary, to establish in the Public Health Service an institute for the conduct and support of research and training relating to child health and human development, including research and training in the special health problems and requirements of children or aged persons and in the basic sciences relating to the processes of human growth and development.

“ESTABLISHMENT OF INSTITUTE OF GENERAL MEDICAL SCIENCES

“SEC. 442. The Surgeon General is authorized, with the approval of the Secretary, to establish in the Public Health Service an institute for the conduct and support of research and research training in the general or basic medical sciences and related sciences which have significance for two or more other institutes, or are outside the general area of responsibility of any other institute, established under or by this Act.

“ESTABLISHMENT OF ADVISORY COUNCILS

“SEC. 443. (a) The Surgeon General is authorized, with the approval of the Secretary, to establish an advisory council, to advise, consult with, and make recommendations to the Surgeon General on matters relating to the activities of the institute established under section 441. He may also, with such approval, establish such a council with respect to the activities of the institute established under section 442.

“(b) The provisions relating to the composition, terms of office of members, and reappointment of members of advisory councils under section 432(a) shall be applicable to any council established under this section, except that, in lieu of the requirement in such sections that six of the members be outstanding in the study, diagnosis, or treatment of a disease or diseases, six of such members shall be selected from leading medical or scientific authorities who are outstanding in the field of research or training with respect to which the council is being established, and except that the Surgeon General, with the approval of the Secretary, may include on any such council established under this section such additional ex officio members as he deems necessary in the light of the functions of the institute with respect to which it is established.

“(c) Upon appointment of any such council, it shall assume all or such part as the Surgeon General may, with the approval of the Secretary, specify of the duties, functions, and powers of the National Advisory Health Council relating to the research or training projects with which such council established under this part is concerned and such portion as the Surgeon General may specify (with such approval) of the duties, functions, and powers of any other advisory council established under this Act relating to such projects.

“FUNCTIONS

“SEC. 444. The Surgeon General shall, through an institute established under this part, carry out the purposes of section 301 with respect to the conduct and support of research which is a function of such institute, except that the Surgeon General shall, with the approval of the Secretary, determine the areas in which and the extent to which he will carry out such purposes of section 301 through such institute or an institute established by or under other provisions of this

Act, or both of them, when both such institutes have functions with respect to the same subject matter. The Surgeon General is also authorized to provide training and instruction and establish and maintain traineeship and fellowships, in the institute established under section 441 and elsewhere, in matters relating to diagnosis, prevention, and treatment of a disease or diseases or in other aspects of child health and human development, with such stipends and allowances (including travel and subsistence expenses) for trainees and fellows as he deems necessary, and, in addition, provide for such training, instruction, and traineeships and for such fellowships through grants to public or other nonprofit institutions. The provisions of section 431(b) (other than the first sentence thereof) shall be applicable with respect to any institute established under this part as if such institute had been established with respect to a disease or diseases pursuant to such first sentence.

“PRESERVATION OF EXISTING AUTHORITY

“SEC. 445. Nothing in this part shall be construed as affecting the authority of the Secretary under section 2 of the Act of April 9, 1912 (42 U.S.C. 192), or title V of the Social Security Act (42 U.S.C., ch. 7, subch. V), or as affecting the authority of the Surgeon General to utilize institutes established under other provisions of this Act for research or training activities relating to child health and human development or the general medical sciences and related sciences.”

SEC. 2. Section 301(d) of the Public Health Service Act is amended by striking out “research projects” and inserting in lieu thereof “research or research training projects”.

SEC. 3. Title III of the Public Health Service Act is amended by adding after section 315 the following new sections:

“ADVISORY COMMITTEES

“SEC. 316. (a) The Surgeon General may, with the approval of the Secretary but without regard to the civil service laws, from time to time appoint such advisory committees (in addition to those authorized to be established under other provisions of law), for such periods of time, as he deems desirable for the purpose of advising him in connection with any of his functions.

“(b) Members of any advisory committee appointed under this section who are not regular full-time employees of the United States shall, while attending meetings or conferences of such committee or otherwise engaged on business of such committee receive compensation and allowances as provided in section 208(c) for members of national advisory councils established under this Act.

“(c) Upon appointment of any such committee, the Surgeon General, with the approval of the Secretary, may transfer such of the functions of the National Advisory Health Council relating to grants-in-aid for research or training projects in the areas or fields with which such committee is concerned as he determines to be appropriate.

“EXEMPTION FROM CONFLICT-OF-INTEREST LAWS OF MEMBERS OF ADVISORY COUNCILS, BOARDS, COMMITTEES, AND GROUPS

“SEC. 317. (a) Any member of any advisory council, board, committee, or group appointed under this Act, or appointed under any other law to advise the Surgeon General in carrying out his responsibilities, who is not a regular full-time employee of the United States is hereby exempted, with respect to such appointment, from the operation of sections 281, 283, and 1914 of title 18 of the United States Code, and section 190 of the Revised Statutes (5 U.S.C. 99), except as otherwise specified in subsection (b) of this section.

“(b) The exemption granted by subsection (a) shall not extend—

“(1) to the receipt or payment of salary in connection with the appointee's Government service from any source other than the private employer of the appointee at the time of his appointment, or

“(2) during the period of such appointment, to the prosecution or participation in the prosecution by any person so appointed, of any claim against the Government involving any matter with which such person, during such period, is or was directly connected by reason of such appointment.”

[Committee print, September 10, 1962]

Comparison of H.R. 11099 as passed by the House of Representatives, and S. 2269. Identical matter is shown in roman. Matter that appears in H.R. 11099 but not in S. 2269 is shown in italic. Matter that does not appear in H.R. 11099 but is in S. 2269 is shown in linetype.

[H.R. 11099, 87TH CONG., 2D SESS.]

AN ACT To amend the Public Health Service Act to provide for the establishment of an Institute of Child Health and Human Development, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That title IV of the Public Health Service Act (42 U.S.C., ch. 6A, subch. III) is amended by adding at the end thereof the following new part:

“PART E—INSTITUTES OF CHILD HEALTH AND HUMAN DEVELOPMENT AND OF GENERAL MEDICAL SCIENCES

“ESTABLISHMENT OF INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

“SEC. 441. The Surgeon General is authorized, with the approval of the Secretary, to establish in the Public Health Service an institute for the conduct and support of research and training relating to *maternal health*, child health, and human development, including research and training in the special health problems and requirements of *mothers and children or aged persons* and in the basic sciences relating to the processes of human growth and development, *including prenatal development*.

“ESTABLISHMENT OF INSTITUTE OF GENERAL MEDICAL SCIENCES

“SEC. 442. The Surgeon General is authorized, with the approval of the Secretary, to establish in the Public Health Service an institute for the conduct and support of research and research training in the general or basic medical sciences and related *natural or behavioral* sciences which have significance for two or more other institutes, or are outside the general area of responsibility of any other institute, established under or by this Act.

“ESTABLISHMENT OF ADVISORY COUNCILS

“SEC. 443. (a) The Surgeon General is authorized, with the approval of the Secretary, to establish an advisory council to advise, consult with, and make recommendations to the Surgeon General on matters relating to the activities of the institute established under section 441. He may also, with such approval, establish such a council with respect to the activities of the institute established under section 442.

“(b) The provisions relating to the composition, terms of office of members, and reappointment of members of advisory councils under section 432(a) shall be applicable to any council established under this section, except that, in lieu of the requirement in such sections that six of the members be outstanding in the study, diagnosis, or treatment of a disease or diseases, six of such members shall be selected from leading medical or scientific authorities who are outstanding in the field of research or training with respect to which the council is being established and except that the Surgeon General, with the approval of the Secretary, may include on any such council established under this section such additional ex officio members as he deems necessary in the light of the functions of the institute with respect to which it is established.

“(c) Upon appointment of any such council, it shall assume all or such part as the Surgeon General may, with the approval of the Secretary, specify of the duties, functions, and powers of the National Advisory Health Council relating to the research or training projects with which such council established under this part is concerned and such portion as the Surgeon General may specify (with such approval) of the duties, functions, and powers of any other advisory council established under this Act relating to such projects.

"FUNCTIONS

"SEC. 444. The Surgeon General shall, through an institute established under this part, carry out the purposes of section 301 with respect to the conduct and support of research which is a function of such institute, except that the Surgeon General shall, with the approval of the Secretary, determine the areas in which and the extent to which he will carry out such purposes of section 301 through such institute or an institute established by or under other provisions of this Act, or both of them, when both such institutes have functions with respect to the same subject matter. The Surgeon General is also authorized to provide training and instruction and establish and maintain traineeships and fellowships, in the institute established under section 441 and elsewhere in matters relating to diagnosis, prevention, and treatment of a disease or diseases or in other aspects of *maternal health*, child health, and human development, with such stipends and allowances (including travel and subsistence expenses) for trainees and fellows as he deems necessary and, in addition, provide for such training, instruction, and traineeships and for such fellowships through grants to public or other nonprofit institutions. The provisions of section 431(b) (other than the first sentence thereof) shall be applicable with respect to any institute established under this part as if such institute had been established with respect to a disease or diseases pursuant to such first sentence.

"PRESERVATION OF EXISTING AUTHORITY

"SEC. 445. Nothing in this part shall be construed as affecting the authority of the Secretary under section 2 of the Act of April 9, 1912 (42 U.S.C. 192), or title V of the Social Security Act (42 U.S.C., ch. 7, subch. V), or as affecting the authority of the Surgeon General to utilize institutes established under other provisions of this Act for research or training activities relating to *maternal health*, child health, and human development or to the general medical sciences and related sciences."

SEC. 2. Section 301(d) of the Public Health Service Act is amended by striking out the words "research projects" wherever they appear therein and inserting in lieu thereof "research or research training projects".

SEC. 3. Title ~~III~~ II of the Public Health Service Act is amended by adding after section ~~315~~ 221 the following new sections section:

"ADVISORY COMMITTEES

"SEC. ~~316~~ 222. (a) The Surgeon General may, with the approval of the Secretary but without regard to the civil service laws, without regard to the civil service laws, and subject to the Secretary's approval in such cases as the Secretary may prescribe, from time to time appoint such advisory committees (in addition to those authorized to be established under other provisions of law), for such periods of time, as he deems desirable for the purpose of advising him in connection with any of his functions.

"(b) Members of any advisory committee appointed under this section who are not regular full-time employees of the United States shall, while attending meetings or conferences of such committee or otherwise engaged on business of such committee receive compensation and allowances as provided in section 208(c) for members of national advisory councils established under this Act.

"(c) Upon appointment of any such committee, the Surgeon General, with the approval of the Secretary, may transfer such of the functions of the National Advisory Health Council relating to grants-in-aid for research or training projects in the areas or fields with which such committee is concerned as he determines to be appropriate."

"EXEMPTION FROM CONFLICT OF INTEREST LAWS OF MEMBERS OF ADVISORY COUNCILS, BOARDS, COMMITTEES, AND GROUPS

"SEC. 317. (a) Any member of an advisory council, board, committee, or group appointed under this Act, or appointed under any other law to advise the Surgeon General in carrying out his responsibilities, who is not a regular full-time employee of the United States is hereby exempted, with respect to such appointment, from the operation of sections 281, 283, and 1014 of title 18 of the United States Code, and section 190 of the Revised Statutes (5 U.S.C. 90), except as otherwise specified in subsection (b) of this section.

“(b) The exemption granted by subsection (a) shall not extend—

“(1) to the receipt or payment of salary in connection with the appointee’s Government service from any source other than the private employer of the appointee at the time of his appointment; or

“(2) during the period of such appointment, to the prosecution or participation in the prosecution by any person so appointed, of any claim against the Government involving any matter with which such person, during such period, is or was directly connected by reason of such appointment.”

Passed the House of Representatives August 27, 1962.

Attest:

RALPH R. ROBERTS,

Clerk.

Senator YARBOROUGH. We will now hear the witnesses on this measure. The first witness is Mr. Jones, Assistant to the Secretary for Health and Medical Affairs, Department of Health, Education, and Welfare.

Mr. Jones, I will ask you please, to identify the personnel from the Department of Health, Education, and Welfare who have accompanied you and their particular positions with the Department of Health, Education, and Welfare, and then you may proceed in your own way.

STATEMENT OF BOISFEUILLET JONES, SPECIAL ASSISTANT TO THE SECRETARY (HEALTH AND MEDICAL AFFAIRS), ACCOMPANIED BY DR. DAVID E. PRICE, DEPUTY SURGEON, PUBLIC HEALTH SERVICE, AND DR. JAMES A. SHANNON, DIRECTOR, NATIONAL INSTITUTES OF HEALTH, PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Mr. JONES. Thank you, Mr. Chairman. I am accompanied by Dr. David E. Price, Deputy Surgeon General of the Public Health Service, and Dr. James A. Shannon, Director of the National Institutes of Health of the Public Health Service.

Mr. Chairman and members of the subcommittee, we appreciate this opportunity to appear before your committee in support of the bills under consideration this morning—bills which would provide for the establishment of a new Institute of Child Health and Human Development and for the elevation to full institute status of the present Division of General Medical Sciences.

Although the two bills, S. 2269 and H.R. 11099, are substantially identical in their key provisions, I shall direct my explanations and comments initially to the Senate bill. Later in this statement, however, I shall comment briefly on the changes incorporated in the House-passed bill.

Within the National Institutes of Health there are now seven categorical Institutes established by, or pursuant to, specific legislative enactments. For each of these Institutes there has also been established a separate national advisory council.

Included in the legislation which established the last two statutory Institutes were provisions authorizing the Surgeon General, by administrative action, to create such additional institutes and councils as he may find necessary for the conduct and support of research relating to other diseases. This authority is limited in one important respect, however. Any institute so established must be focused on research relating to a particular “disease or group of diseases.” It is

not possible, under present statutory language, to establish an institute for research relating to special health problems that are not definable in terms of disease categories.

This limitation applies only to the institute and council structure. It does not restrict the fields of health in which the Service may conduct or support research. As a consequence, the administrative structure of the National Institutes of Health can, and does, include other divisions and laboratories devoted to the conduct and support of research that is not directed toward any particular disease or group of diseases.

The most prominent of these other organizational units is the Division of General Medical Sciences—which is now comparable in the size and scope of its research and research training activities to many of the categorical Institutes. The primary focus of this Division's research program is on fundamental studies in the general and basic medical sciences which can provide a better understanding of the structure, organization, and functions of living organisms and of the life processes.

In addition, the Division of General Medical Sciences has been assigned some specific research missions in fields which require concentrated attention but which cannot be fitted into the disease context of any categorical Institute. For example, the Center for Aging Research, first established in 1959, is located in this Division. Very recently a somewhat parallel Center for Research in Child Health has been established in this Division.

Despite the breadth and size of its grant-in-aid programs, this Division does not have an advisory council of its own, as do the seven categorical Institutes. Instead, its project grants are reviewed and recommended for approval by the National Advisory Health Council which performs this function with respect to all research grants outside of the fields of the seven categorical Advisory Councils, and which also serves as a general advisory body to the Surgeon General on programs and policies of the Service.

The proposed National Institute of General Medical Sciences, except for name and status, would be essentially the same as the present Division of General Medical Sciences—minus the two special Centers for research in aging and in child health. The size and importance of this Division's program clearly warrant its elevation to institute status and parity with the other Institutes. In addition, they justify the appointment of a special advisory council devoted exclusively to this research program and selected specifically in terms of its objectives and requirements. The appointment of such a council will also lighten the burden of the National Advisory Health Council and enable it to serve more effectively as the general advisory body for the Surgeon General, in accordance with its broad statutory role.

The principal proposal in the bill, however, calls for the establishment of a truly new institute—the National Institute of Child Health and Human Development. In part, this Institute would consist of transferred functions or units—such as the Centers for Research in Aging and in Child Health now located within the Division of General Medical Sciences. But primarily this new Institute would represent a new focus of research efforts, employing an integrated approach to the study of the growth and development process

of man from conception throughout the life span. This would include attempts to relate various factors important to health at one stage of development to health and illness at later stages of childhood or maturity.

Our past experience has demonstrated the effectiveness of the institute and council mechanism in stimulating the development of new research in areas of great need. In this instance, it is our belief that the creation of the proposed Institute will not only provide an additional impetus to research in these fields, but in a setting and of a type particularly conducive to the discovery of new knowledge concerning the whole area of the reproduction and growth of the human being.

One way of explaining it perhaps is to describe a classification frequently used in identifying two processes of research, "analysis" and "synthesis." "Analytical" research tends to study a given problem by breaking it apart into its logical components and studying each component intensively. This usually involves detailed and thorough investigation of biological, chemical, or physical processes in the laboratory setting. Through this approach have come many of our major findings in respect to given diseases or disorders of children and adults at the present time. "Synthesis," on the other hand, refers to the regrouping of existing knowledge concerning a given area into new combinations and studying the whole rather than the disassociated parts. In this way it is possible to gain insight and understanding which would not be possible otherwise. It is this latter concept of research which this new Institute would emphasize.

While this new Institute would give special attention to research in maternal and child health, and the health of the aged, its interests would by no means be limited to these particular areas. In addition, it would be concerned with the whole continuum of progressive changes that characterize biological life and would seek to uncover more knowledge on these changes, their causes, and their significance, in both normal and abnormal conditions. Studies would begin at the reproductive and embryological levels and continue logically through the perinatal period, infancy, and childhood, and further into the processes of development, maturation, and aging.

Despite the deliberate emphasis on maternal and child health research and aging research as major elements in the role of this proposed new Institute, I should like to make it clear that we do not intend to transfer to this new Institute all such research activities of our Department. Even within the National Institutes of Health, the existing categorical Institutes would continue their primary responsibility for research in their particular disease categories with respect to mothers, children, and elderly people as well as other segments of the population. For example, the study of leukemia in children would remain in the National Cancer Institute, and the National Institute of Mental Health would continue to be responsible for research into schizophrenia in children.

Nor do we contemplate any curtailment or transfer of the research interests and functions of the Children's Bureau in the field of maternal and child health. On the contrary, we have developed a companion legislative proposal, now under consideration by other congressional committees, to strengthen and reinforce the present

research activities and programs of the Children's Bureau. To avoid any misunderstandings or overlapping of efforts, a fairly detailed agreement has been worked out within our Department delineating the respective areas of interest of the Public Health Service and the Children's Bureau in the field of child health research. As a further means of assuring necessary interprogram coordination, we plan to have a representative of the Children's Bureau serve as an ex-officio member of the Advisory Council for the new Institute of Child Health and Human Development.

In addition to its provisions for the establishment of the proposed new Institutes and Councils, S. 2269 includes three minor or technical amendments to the Public Health Service Act that I should like to identify and explain briefly.

Section 2 of the bill proposes a minor amendment to section 301(d) of the act to clarify the general authority of the Surgeon General to make project grants for research training as well as for research. Such language has already been incorporated in section 301(d) of the act with respect to institutional research grants; this proposed amendment would simply make a conforming amendment to the project grant authorization.

In addition, section 3 of the bill would add two new sections to the Public Health Service Act.

The first of these new sections would clarify the general authority of the Surgeon General to appoint advisory committees in connection with the administration of various functions of the Service, and make it possible for him to transfer to such committees certain of the project grant review and certification functions of the National Advisory Health Council. As you know, Mr. Chairman, we already have—outside of the National Institutes of Health—a number of expert advisory committees in such specialized fields as air pollution control, accident prevention, and radiological health. Some of these advisory committees would be admirably qualified to assist the Surgeon General in reviewing and approving research and research training project grants in their respective fields. This is not permissible under present statutory provisions, however, because, as I indicated earlier in this statement, this is a statutory responsibility of the National Advisory Health Council. The proposed new section would relieve this Council of grant review functions which are not essential to its primary advisory role, and would permit us to make more effective use of some of the expert advisory committees of the Service.

The second new section would provide for the exemption of members of Public Health Service advisory councils and committees, existing or prospective, from certain conflict-of-interest laws. Many of the highly competent professional and other personnel whom the Service would like to have serve on its advisory councils or committees have, because of their expertness or competency, interests which make it inadvisable for them to accept an appointment. The proposed new section, which is substantially the same as the exemption contained in the National Defense Education Act of 1958, would make practicable the acceptance of appointments by these experts.

Although the House-passed bill differs in several respects from the Senate bill, the key provisions of the two bills are essentially the same.

Apart from some technical and perfecting amendments proposed by our Department, the House made three principal changes in the bill:

(1) Language was inserted in several sections to make it clear that research and training relating to maternal health and to prenatal development are to be included within the scope of activities of the new Institute of Child Health and Human Development. These amendments are entirely acceptable from our standpoint, since they only make explicit what was already implied by more general language.

(2) The provision authorizing the new Institute of Child Health and Human Development was modified to delete specific reference to health problems and requirements of aged persons. Since this modification was made by a floor amendment not explained in the committee report, the intent and effect of this amendment are not entirely clear. If its effect is only to make it permissive, rather than mandatory, to include research on aging within the scope of the new Institute's program, the amendment would not be objectionable. If, on the other hand, the amended provision should be so construed as to preclude the assignment of any significant aging research functions to this new Institute, we would strongly urge enactment of the language of the Senate bill. Although some of the key health problems of the aged will continue to be studied through one or more of the categorical Institutes—such as those in the field of cancer and heart disease—there is also a need for an integrated approach to study of the phenomena and problems of aging in the continuum of human development. An Institute of Child Health and Human Development will, in our view, provide the logical and appropriate setting for such study.

(3) The proposed language relating to exemptions from conflict-of-interest laws were deleted from the bill in the House. It is our understanding that the purpose of this deletion was to defer any such changes in the Public Health Service Act pending the consideration by other congressional committees of broader legislative proposals relating to conflicts of interest. We believe such a deferral is entirely reasonable for the time being and would therefore not interpose any objection to this amendment.

In conclusion, we believe that the enactment of this proposed legislation will substantially improve and strengthen the research structure of the Public Health Service. With minor exceptions, it would not add to or expand existing program or appropriation authorizations of the Service, and we do not anticipate the need for redirecting more than \$500,000 for staff and supporting funds during the first year of operation as a result of the organizational changes covered by the bill. We do believe, however, that these organizational changes will return substantial dividends in the form of more effective leadership in a broad scientific attack on the diseases and impairments of man.

Before concluding this statement, Mr. Chairman, I should like very briefly to emphasize the vital importance to this proposed legislation of certain personnel legislation now under consideration by the Congress. I have particularly in mind the President's proposals for marked increases in the top salaries that may be paid for highly skilled Federal personnel—such as research scientists.

I am fully aware that these proposals are under consideration by other committees of Congress, and that your committee does not have the initial responsibility for action. I have two reasons, however, for

stressing the relationship between program legislation and pay legislation at this time.

First, while there are very good reasons for treating Federal pay legislation separately from program authorizations, it is essential that the program implications of such legislation be clearly recognized. Nearly everyone understands that program legislation cannot be effective unless and until it is implemented with the appropriation of operating funds. What is equally important—though less widely understood—is that the success of Federal programs often depends on the administering agency's ability to recruit and retain competent personnel. This is true in many fields, of course, but nowhere is it more obvious than in the field of health research, where the top salaries which the Public Health Service can pay, fall far short of the going rate for topflight research specialists in non-Federal laboratories and universities. As a consequence, the Service has been losing some of its outstanding research scientists, and the recruitment of competent replacements is virtually impossible within current salary limitations.

Second, while we urge the enactment of the legislation under consideration by your committee today, I must in all candor advise you that the full implementation of this legislation may be delayed or impaired unless there is an early and substantial breakthrough on the Federal salary front. This applies particularly to the establishment of the Institute of Child Health and Human Development. Because this would be a new administrative entity within the National Institutes of Health, some of its key personnel would undoubtedly have to be recruited from outside the Federal Government. Although we shall exert every effort to staff this new Institute with scientists who can command the full respect of their research colleagues in this country and abroad, present salary limitations will almost certainly delay this staffing operation. Full attainment of the objectives of this legislation probably cannot be anticipated, therefore, until it is reinforced by the enactment of realistic Federal pay legislation.

Senator YARBOROUGH. This is a very informative statement, Mr. Jones. I think that it is a very admirable statement for the subcommittee and the full committee and the Congress.

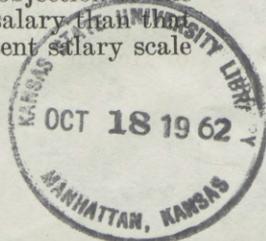
With reference to the last point that you raised, should this Institute of Child Health and Human Development be established within the National Institutes of Health, what are the top salaries you could pay now in the grades that the personnel would have?

Mr. JONES. \$19,000 is the present salary ceiling.

Senator YARBOROUGH. That is the salary ceiling, but would you allocate the positions in the Department of Health, Education, and Welfare as will enable you to pay that top salary?

Mr. JONES. We would be in position to allocate the positions, but our problem is being able to recruit the people with the sufficient competency that we would require at that salary ceiling.

Senator YARBOROUGH. Since I am on the Post Office and Civil Service Committee I have some knowledge of the hearings on the salary proposal. You doubtless know that there is strong objection to the paying of any scientific technical personnel a higher salary than that received by an assistant secretary. I believe the present salary scale for an assistant secretary is \$21,000, is it not?



Mr. JONES. \$20,000.

Senator YARBOROUGH. Yes, \$20,000. There is very strong objection on policy grounds to paying anyone serving under an assistant secretary a higher salary than the assistant secretary receives. Do you agree that the authority of the higher officer and his position would not be respected by those who were under him if they were drawing a higher salary? That thought has been expressed.

Mr. JONES. It is my personal opinion, which I hold very strongly, that the policy people in positions of responsibility—and I am one whose position is at the assistant secretary level—would feel very strongly that they could more effectively carry out the policy of the Congress and the administration through special consideration of salaries in the areas of scientific competence as indicated here, even though the salary levels are much beyond the levels of the policy people themselves. This is my personal opinion. I feel it very strongly.

Senator YARBOROUGH. Of course, I do not speak for the Congress, I do not speak for the Senate, I do not speak for the whole committee, but there is a grave doubt that the salaried personnel who serve in any capacity under an assistant secretary should be raised in salary above the level of the assistant secretary who is over them in the scale of authority. I can state that as a problem. I do not know what the salary raises will be. That has not been determined, but there have been a number of executive sessions on the matter. The committee will meet in another session tomorrow. Very fierce objection has been raised by people who do not per se oppose raises of the salaries for scientific personnel and professional personnel—they do not oppose paying more than is paid now—they do not oppose that—but they believe, as a matter of command and direction and function and administration that the administrator cannot successfully administer if he has under him a group of personnel paid by the Government at a much higher salary than he is receiving.

I just wanted you to know that is one of the impediments that we have.

Mr. JONES. I think one answer to that is that the policy people in the positions are not, generally, career employees of the Government. They come in as the administration brings them in for special policy positions. Many of them come in at financial sacrifice in order to participate at the policy level for a period of years indeterminate in number, but the scientists we are speaking of—the people who will staff the new Institute—are people who make this a career and devote their lives to this particular service on a continuing basis. Therefore, I think it is perfectly defensible to recognize the career nature of the service and the needs of the Government for those talents to compensate them at levels comparable to those of their colleagues in other parts of our society and at levels that will make it possible to recruit such personnel. The other factors which I am sure are quite relevant, I believe should not be taken into account in preference to staffing our career service at a proper competency.

Senator YARBOROUGH. I believe you stated, Mr. Jones, in your testimony that additional appropriations are not called for at this time—that this is for a regrouping of the work within the National Institutes of Health.

Of the appropriation contemplated in fiscal year 1963 for the National Institutes of Health, what part of that do you anticipate would be allocated to this Institute of General Medical Sciences—what part to the National Institute of Child Health and Human Development?

Mr. JONES. This group of general medical scientists would have a program operating at a level of about \$110 million.

Senator YARBOROUGH. What would that come off of?

Mr. JONES. This is now in the Division of General Medical Sciences and it would effectively stay at that particular point.

Senator YARBOROUGH. Mr. Jones, where is that coming from now? I am concerned with the budget we adopted.

Mr. JONES. Yes, Dr. Shannon has the specific figures in front of him and he can respond if you desire him to.

Dr. SHANNON. The activities of the new Institute of General Medical Sciences would be those now contained within the present Division of General Medical Sciences. We envisaged \$110.8 million as the level of the budget for this division during 1963. If we deduct the budgeted items for activities to be transferred to the Child Health Institute, which total approximately \$6.5 million, this would leave a budget for the proposed Institute of General Medical Sciences for the current year of approximately \$104.3 million.

The Institute of Child Health and Human Development total budget during the current year will await the selection of leadership for the institution and for program development. Meanwhile, however, we have made certain tentative estimates of the operational budget of that activity. This would be at the level of around \$25 million—approximately \$6.5 million transferred from the Division of General Medical Sciences, including \$500,000 for new administrative costs and about \$19 million from certain of the categorical Institutes.

Senator YARBOROUGH. Would you submit a memorandum on that for the record?

Dr. SHANNON. We would be glad to do so.

(The information follows:)

TABLE 1.—*Estimate of budget for proposed Institutes of General Medical Sciences and Child Health and Human Development, fiscal year 1963*

[In millions]

Budget item	Budget NIGMS			Budget NICHHD		
	Appor- tionment plan DGMS	Estimate of trans- fers to NICHHD	Esti- mated budget for NIGMS	Esti- mate of transfers from DGMS	Estimate of trans- fers from other in- stitutes	Estimated budget for NICHHD
Research grants.....	\$58.2	\$3.0	\$55.2	\$3.0	\$15.0	\$18.0
Fellowships.....	14.5	1.0	13.5	1.0	1.0	2.0
Training grants.....	35.4	2.0	33.4	2.0	3.0	5.0
Staff and supporting services.....	2.7	.5	2.2	.5	-----	.5
Total.....	110.8	6.5	104.3	6.5	19.0	25.5

Senator YARBOROUGH. All of the funds for these new divisions would come out of the \$808 million already appropriated for the National Institutes of Health for fiscal year 1963?

Mr. JONES. Yes.

Dr. SHANNON. Yes.

Senator YARBOROUGH. There now is a general research division that has grown up by departmental order and you want congressional authorization to create a separate Institute?

Mr. JONES. And make an Institute comparable in status to the categorical Institutes—that is quite correct. It is really an administrative adjustment which will greatly strengthen, we think, the program and the administration of the program.

Senator YARBOROUGH. That \$110 million, is that for the General Medical Sciences Institute?

Mr. JONES. Yes, sir.

Senator YARBOROUGH. Your "Child Health and Human Development"; how much is appropriated for that?

Dr. SHANNON. In round figures, the tentative figure at the moment is \$25 million. This will await firming up until we have acquired leadership for the Institute.

Senator YARBOROUGH. You anticipate that will come out of the \$110.8 million of the Division of General Medical Sciences or a part, perhaps, from some of the other Institutes?

Dr. SHANNON. It will come out in part from the present Division of General Medical Sciences budget and in part from certain of the categorical Institutes.

Senator YARBOROUGH. Where they are doing some of that type of work now in the other Institutes as an ancillary part of them?

Dr. SHANNON. Yes, sir.

Senator YARBOROUGH. Are there any questions by the staff? If not, thank you, unless you have some other statements that you desire to have made by either of your associates.

Mr. JONES. We have no further formal presentation.

Senator YARBOROUGH. Thank you again for being here.

The next witness is Dr. Nicholson J. Eastman, acting chairman of the Department of Obstetrics and Gynecology of the University of Minnesota Medical School and you have with you Dr. Lewis Hellman?

Dr. EASTMAN. Dr. Hellman, yes.

Senator YARBOROUGH. You may present your evidence and testimony, Dr. Eastman, in your own way, you and Dr. Hellman who, I understand, is from the State University of New York, Downstate Medical School, Department of Obstetrics and Gynecology.

Dr. HELLMAN. Yes.

STATEMENT OF DR. NICHOLSON J. EASTMAN, ACTING CHAIRMAN, DEPARTMENT OF OBSTETRICS AND GYNECOLOGY, UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, MINNEAPOLIS, MINN., ACCOMPANIED BY DR. LEWIS HELLMAN, PROFESSOR AND CHAIRMAN OF THE DEPARTMENT OF OBSTETRICS AND GYNECOLOGY, STATE UNIVERSITY OF NEW YORK, DOWNSTATE MEDICAL SCHOOL, BROOKLYN, N.Y.

Dr. EASTMAN. Mr. Chairman, my qualifications for testifying are as follows: I was professor of obstetrics at Johns Hopkins Univer-

sity School of Medicine for 25 years and am now professor emeritus of obstetrics in that institution. And during the current academic year I am serving as assistant professor and acting head of the Department of Obstetrics and Gynecology at the University of Minnesota School of Medicine. I have served as president of several of the national organization devoted to our specialty, and in 1957 was president of the American Academy for Cerebral Palsy. As you have indicated, I am accompanied by Dr. Lewis Hellman who is professor and chairman of the Department of Obstetrics and Gynecology of New York Downstate Medical School.

It is my privilege to represent the five national societies in the United States devoted to obstetrics and gynecology as follows: The American College of Obstetricians and Gynecologists, the American Gynecological Society, the American Association of Obstetricians and Gynecologists, the Society for Gynecologic Investigation, and the American Association of Maternal and Infant Health. The membership of these several organizations comprises some 7,000 obstetricians and gynecologists scattered throughout the United States and Canada.

Senator YARBOROUGH. I understand that we are entitled to receive your testimony as the official position of those organizations as well as your own?

Dr. EASTMAN. That is correct. It will be the main objective of my testimony to emphasize the fact that child health depends in major degree on circumstances attending the 9 months of life before birth and, by the same token, that child health is dependent upon, and inseparably associated with, the health of the mother in pregnancy. This intimate relationship between the health of the child and the health of the mother was succinctly stated in a telegram that President Kennedy graciously sent me on April 26, 1961, which reads in part as follows:

Healthy lives depend first of all on safe and healthy childbirth.

Year in and year out more than 10 percent of all deaths in this country, at all ages and from all causes, occur in babies in close association with the birth process, about 175,000 deaths a year. Of the 113,789 deaths of infants under 1 year that occurred in this country during 1958, 72,022—or well over one-half—took place in the first week of life and for the most part during the first day. Almost all these early deaths are the result of pathologic aberrations in pregnancy and labor, especially premature birth. The same or similar aberrations are common causes of cerebral palsy, mental retardation, and congenital malformations. But while it is well established that something goes wrong with the reproductive process in these cases, the exact nature of that “something” and how and when it acts, are obscure. It is clear, nevertheless, that these are obstetrical problems; and if child health is to be studied in broad perspective, the science of obstetrics must loom large in the overall endeavor.

When the original bill proposing a new national Institute of Child Health and Human Development was brought to the attention of the obstetricians of the country in the spring of 1961, they were seriously disturbed by the fact that that bill contained no mention of pregnancy or labor, no mention of the unborn child, and no mention, either directly or by implication, of the essentiality of good maternal health if the child is to be healthy. On February 14, 1962, these shortcomings in the original bill were pointed out by six representative

obstetricians in testimony given before the Subcommittee on Health and Safety of the Committee on Interstate and Foreign Commerce of the House of Representatives, under the chairmanship of Hon. Kenneth A. Roberts. It is gratifying to report that as the result of that testimony, and also as the result of testimony given by several pediatricians, the omissions in the original bill were corrected, and as the bill stands now ("clean" bill H.R. 11099), the several organizations that I represent are prepared to endorse it wholeheartedly.

Nevertheless, I should like to stress again the transcendent importance that should be assigned to obstetrics, and by the same token to motherhood, in the formulation of the new Institute. Worldwide attention has recently been focused on maternal factors in child health by the holocaust of deformed children which has followed the use of the drug thalidomide by pregnant women in Germany. It is estimated that the number of such malformed infants that have been born in Germany and are yet to be born exceeds 3,000, and, perhaps, 4,000.

Tragic as this experience with thalidomide has been, it is pertinent to recall that the number of malformed infants born in the United States each year is approximately 10 times that figure. Thanks to the good offices of the Food and Drug Administration, thalidomide was never introduced commercially into our country, and the 40,000 grievously malformed infants born each year in this country are not a result of that drug. They are, however, the result of factors equally noxious (working through the mother), but for the most part unknown. True, it is known that German measles in early pregnancy accounts for a certain number of congenital malformations, most of which cause blindness. But to what extent other diseases in pregnancy, such as influenza for instance, may cause congenital defects, is obscure. Likewise unknown are such maternal factors as malnutrition in early pregnancy, endocrine disturbances and genetic influences. Congenital malformations are the seventh most common cause of new-born death in the United States, accounting for about 15 percent of all such fatalities. But over and above this wastage, a much larger number of new-born are everlastingly handicapped by malformations which are comparable in their gravity to those that have been caused by thalidomide. This is but one example of the close relationship that exists between maternal health and child health and, at the same time, an example of a problem that merits major attention by the new Institute of Child Health and Human Development.

Senator YARBOROUGH. Just a moment. I would like to ask a question there. I thought of this during the testimony by Mr. Jones when he was giving his definition of synthesis as applied to the use of different groupings of knowledge in this particular field. I would assume that research in this field would encompass food and its effect. I presume it would since you mentioned malnutrition. In the morning paper, I presume you saw the article, about the children in Turkey who developed monkeylike characteristics, because of wheat that had been sent to them that had been treated with certain chemicals. I do not know whether you are familiar with that story in this morning's paper. It is the story about the hair that grew on the children.

Would this contemplated institute study foods and the deleterious effect of insecticides on fresh vegetables and fruits and chemicals used to preserve them? Is it intended that this area of research would be encompassed in the studies of the institute?

Dr. EASTMAN. I should think that the broad science of nutrition itself and the preservatives used and all agents that find their way into foods in one way or another, as you have indicated, would constitute an important phase of this work. Certainly, nutritionists feel that in this area, that is, congenital malformations, institutional deficiency is an important phase of the causation. I should think that in this particular field, the ingestion of foods and drugs by the mother would inevitably play a large part in the research program.

Senator YARBOROUGH. I realize that the Food and Drug Administration, probably, has the primary responsibility over foods and drugs that are sold and they work to keep dangerous things from being put on the market. But at the same time, it seems to me that the research of the proposed institute would also necessarily involve food for children and food for expectant mothers. I just raise that point.

Dr. EASTMAN. I think that it is a very good point, Senator YARBOROUGH, in the light of this experience in Turkey. It is a field that has been neglected, that is, the effect of such agents on pregnant mothers.

Senator YARBOROUGH. Thank you.

Dr. EASTMAN. Another example may be found in the 20,000 infants born each year, who are destined to develop cerebral palsy, half of whom are mentally retarded and a large proportion of whom are also blind or deaf.

Senator YARBOROUGH. Do you know about the research into cerebral palsy being done at the University of Maryland? Do they have some kind of research there on that subject or not?

Dr. EASTMAN. I am sorry, Senator, I am not acquainted with the program at the University of Maryland. As you well know, the most outstanding program in that area today is the program that is really a collaborative project on cerebral palsy under the sponsorship of the National Institute of Neurological Diseases and Blindness in which 15 medical schools throughout the United States are cooperating with results, of course, that have not yet become available, because more investigation has to be done. I am not aware of the Maryland study, I am sorry.

Senator YARBOROUGH. Is there some study being made as to the possible connection between the use of alcohol and cerebral palsy? Has there been a study of the consumption of alcoholic drinks by pregnant mothers? Has a report been printed? I have seen something in print and I wondered if it was just a speculative story or whether there had been any scientific research on that phase.

Dr. EASTMAN. A member of Dr. Hellman's department and myself have been engaged in the last 5 years in the study of cerebral palsy in the New York metropolitan area which represents an investigation of the obstetrical background of 750 cases with cerebral palsy compared with the obstetrical background of 750 presumably normal children. In this particular study it was not possible to get information about alcohol consumption by the mothers of the cerebral palsy infants, but a study of the social status, race, financial status, and other such aspects of the problem in that case make me feel a little bit skeptical about the specific role of alcohol as an etiological factor. I think it would be very difficult to document. We have been work-

ing on this for about 5 years and we do not have any evidence in support of that and we do not have any evidence to contradict it.

Senator YARBOROUGH. Either way?

Dr. EASTMAN. Yes.

Senator YARBOROUGH. Thank you.

Dr. EASTMAN. It has to be done in retrospective study, as I mentioned, by the National Neurological Society.

Senator YARBOROUGH. I am advised they are conducting studies along that line now.

Dr. EASTMAN. I am sure that they have data on cigarette smoking and alcohol consumption. But in retrospective analysis it was not possible for us to gather such data. I do not know what the evidence in regard to alcohol was based on.

These pitiful children are the source of daily heartache to hundreds of thousands of parents throughout our land. This is the great tragedy of cerebral palsy. But it is pertinent also to point out the fact that the education and rehabilitation (often ineffectual) of children with cerebral palsy costs the Nation more than a quarter of a billion dollars a year. The cause of cerebral palsy continues to be an enigma, but it is generally agreed that children so afflicted have suffered some kind of brain damage sometime between the time of conception and the first few days of life. Here again is a condition caused in some obscure way by events that transpire in the maternal organism during pregnancy and again an example of a condition that deserves intensive research in the Institute of Child Health and Human Development.

About one-third of cases of cerebral palsy and a large proportion of cases of mental retardation occur as a sequel to premature birth. In other words, premature birth is responsible not only for some 50,000 deaths in the early days of life each year, but is an important cause also of cerebral palsy and mental retardation. What is the cause of premature birth? The cause is known in less than one-half of the cases. Why does the uterus sometimes start to contract and expel the infant 2 months or even 3 months before the proper date for labor? If the answer to this question were known, it is probable that premature births could be prevented in some measure. There is no more pressing problem in medicine today and no more pressing problem for the new Institute of Child Health and Human Development to attack than this problem of the cause of premature birth.

Other examples might be cited to demonstrate the important ways in which maternal health affects child health, but enough has been said perhaps to show the attention that maternal health merits in the overall work of the proposed Institute. Indeed, in view of the magnitude of prenatal factors in child health, it would be the hope of the five organizations I represent that maternal health will receive intensive consideration in the activities of the new Institute and that obstetrics will have suitable representation on the Advisory Council of that Institute.

I did want to make it plain that the obstetricians of the country not only endorse the proposed Institute, but are enthusiastic about its vast potentiality. We stand ready to help in this development and general program in any way in which we can. I thank you for the courtesy of testifying this morning.

Senator YARBOROUGH. Thank you, Dr. Eastman. Dr. Hellman, do you have a statement?

Dr. HELLMAN. I have no statement. I would just like to say one word in support of part of Mr. Jones' testimony.

It seems to me that the directors of the Institute ought to be of a caliber equal to the professors of the leading scientific and medical schools in this country.

Being a State employee myself, I am very much cognizant of the validity of the argument which you used, but, nevertheless, the going price for such personnel in the United States today is far above the salaries which the National Institutes of Health can pay.

I think in forming this new Institute we have an opportunity to again look at these salary levels. And it would be my hope that we would be able to employ men at the director level, certainly, equal to the people who are in our State and private medical schools.

Senator YARBOROUGH. Pardon me, could you give us the compensation at the State level?

Dr. HELLMAN. I do not know anything about Dr. Eastman's or Dr. Cooke's salary. But I would think that in the medical school, the professor, the head of a clinical department, which is one that I occupy—and Dr. Cooke occupies such—get a salary of, approximately, \$25,000 a year. My own salary, which is published, is \$24,000. I am allowed to earn through the practice of medicine up to \$32,500 a year.

Senator YARBOROUGH. That is a difficult problem in many fields of Federal employment. There is a vacancy in the office of the Commissioner of Education. I understand that some public superintendents of education in the larger cities receive as high as \$50,000. Is that correct—does anyone in the room know if that is correct, that the superintendents of education in some cities are paid \$50,000 a year? I am told that that is too high, that Chicago pays \$40,000. Counsel for the committee says that they pay \$40,000 for the superintendent of public instruction. And we pay approximately one-half of that for the National Commissioner.

Dr. HELLMAN. Thank you.

Dr. EASTMAN. Thank you.

Senator YARBOROUGH. Thank you very much for your statement. I will at this time recess the hearing for 3 minutes. The Senate is in session and I must discuss an urgent matter over the telephone. I will be back in 3 minutes.

(A short recess.)

Senator YARBOROUGH. The subcommittee will come to order.

The next witness is Dr. Robert E. Cooke, professor and chairman of the Department of Pediatrics, Johns Hopkins University School of Medicine, Baltimore, Md. We shall be glad to hear from you now.

**STATEMENT OF DR. ROBERT E. COOKE, PROFESSOR AND CHAIRMAN
OF THE DEPARTMENT OF PEDIATRICS, JOHNS HOPKINS UNIVER-
SITY SCHOOL OF MEDICINE, BALTIMORE, MD.**

Dr. COOKE. Mr. Chairman, it is a great privilege and pleasure to appear before your subcommittee.

I am Dr. Robert E. Cooke, professor of pediatrics of the Johns Hopkins University School of Medicine and pediatrician in chief of

the Johns Hopkins Hospital. I am appearing in support of S. 2269 and H.R. 11099 as chairman of the Joint Committee on Pediatric Research Education and Practice, whose constituents are the American Academy of Pediatrics, the American Pediatric Society, the Society for Pediatric Research, the American Board of Pediatrics, and the Pediatric Section of the American Medical Association. I am chairman of the Medical Advisory Board of the Kennedy Foundation, a member of the President's Panel on Mental Retardation, as well as a member of various NIH special committees and study sections. I have a personal as well as professional interest in this legislation as a father of five children, two of whom are severely mentally retarded.

After the hearings of the Subcommittee on Health and Safety of the Committee on Interstate and Foreign Commerce under the chairmanship of Representative Kenneth A. Roberts of Alabama, I had the opportunity to prepare a booklet entitled, "Freedom From Handicap." This pamphlet presents an analysis of and arguments for legislation to create a National Institute of Child Health and Human Development and to elevate the Division of General Medical Sciences to Institute status. I should like permission for the booklet to be included in the record.

Senator YARBOROUGH. The booklet is received and it is ordered printed in the record as part of this hearing. I have examined the copy of the booklet.

(The booklet entitled "Freedom from Handicap" follows:)

FREEDOM FROM HANDICAP

Concerning the Establishment of the National Institute of Child Health and Human Development

The right of a child is to be born and to grow up without handicap

Now is already too late for the 200,000 children whose mothers are currently awaiting their birth. What of the children to be born in 1970 and 1980? Right now, time is running out for them.

Mrs. Elizabeth M. Boggs, mother, past president of the National Association for Retarded Children, and present chairman of its research committee, so aptly made these points in stating the importance and urgency for further research in child health and human development: "My son at 10 days of age manifested an acute infection which, as it now turns out, was the cause of very severe impairment. At 16 he has cerebral palsy, aphasic brain injury, and is severely mentally retarded. These are neurological impairments, but it would have been in the hands of the pediatrician and the obstetrician to have prevented these developments had they had the knowledge and the know-how at that time."

Legislation

The Congress of the United States is, at present, considering a bill which was introduced to amend the Public Health Service Act to provide for the establishment of an Institute of Child Health and Human Development and for the establishment of an Institute of General Medical Sciences, as well as for other purposes. This bill was introduced into the Congress on July 18, 1961, by Senators Lister Hill and Robert Kerr (S. 2269, referred to the Committee on Labor and Public Welfare) and on July 31, 1961, by Representative Oren Harris (H.R. 8398, referred to the Committee on Interstate and Foreign Commerce).

Public hearings were held on February 13 and 14, 1962, by the Subcommittee on Health and Safety of the Committee on Interstate and Foreign Commerce, under the chairmanship of Representative Kenneth A. Roberts, to consider H.R. 8398. This subcommittee reported favorably on the legislation April 4, 1962, and introduced a new bill, H.R. 11099, which incorporated their amendments to assure appropriate research emphasis on the problems of mothers as well as those of children.

The National Institutes of Health

There are at present seven categorical Institutes within the National Institutes of Health, established by, or pursuant to, specific legislative enactments, with a separate national advisory council established for each of these Institutes. In 1937 the National Cancer Institute and its Council were established. After World War II Institutes and Councils were established in the fields of mental health, heart diseases, dental diseases, arthritis and metabolic diseases, and neurological diseases and blindness.

As stated by Boisfeuillet Jones, Special Assistant to the Secretary (Health and Medical Affairs), Department of Health, Education, and Welfare: "Included in the 1950 legislation which established the last two statutory Institutes were provisions authorizing the Surgeon General, by administrative action, to create such additional institutes and councils as he may find necessary for the conduct and support of research relating to other diseases. Under this authority an additional Institute and Council were established in 1955 for research in the field of allergy and infectious diseases.

"It should be noted, however, that the language of this authority for the administrative establishment of new Institutes is limited in one important respect. Any Institute so established must be focused on research relating to a particular disease or group of diseases. It is not possible, under present statutory language, to establish an Institute for research relating to special health problems that are not definable in terms of disease categories."

The proposed National Institute of General Medical Sciences

Mr. Jones continued in his testimony: "The most prominent of these other organizational units is the Division of General Medical Sciences—which is now comparable in the size and scope of its research and research training activities to many of the categorical Institutes. Its current budget, for example, totals approximately \$122 million, including \$119 million in grants for research and research training projects. The primary focus of this Division's research program is on fundamental studies in the general and basic medical sciences which can provide a better understanding of the structure, organization, and functions of living organisms and of the life processes. This basic knowledge in a very real sense comprises the foundation structure on which most of the specialized studies in categorical disease areas are based.

"In addition, the Division of General Medical Sciences has been assigned some specific research missions in fields which require concentrated attention but which cannot be fitted into the disease context of any categorical institute. For example, the Center for Aging Research, first established in 1959, is located in this Division. Very recently a somewhat parallel Center for Research in Child Health has been established in this Division."

In elevating the Division of General Medical Sciences to Institute status, its content would be essentially the same as the present Division, minus the two special centers for research in aging and in child health. Mr. Jones pointed out: "The size and importance of this Division's program clearly warrant its elevation to Institute status and parity with the other Institutes. In addition, they justify the appointment of a special advisory council devoted exclusively to this research program and selected specifically in terms of its objectives and requirements."

The National Advisory Health Council itself unanimously recommended that this Division be made an Institute and be given its own Council.

The proposed National Institute of Child Health and Human Development

The principal proposal in the bill calls for the establishment of a new Institute, the National Institute of Child Health and Human Development. In Mr. Jones' testimony, he stated: "In part, this Institute would consist of transferred functions or units—such as the Centers for Research in Aging and in Child Health now located within the Division of General Medical Sciences. But this new Institute would represent far more than a rearrangement of present functions and units. Essentially it reflects a new focus of research efforts—both within and outside of the Public Health Service. Its primary purpose is not to reassign what is now being done, but rather to supplement and reinforce existing programs with an intensified program of research employing an integrated approach to the health status, needs, and problems of people in the various stages of human development. * * * A special advisory council would be appointed for this Institute, devoted to its research program and selected in terms of its objectives and requirements.

Background

In his health message, February 9, 1961, and again on February 27, 1962, the President recommended the establishment of a new Institute for Child Health and Human Development within the National Institutes of Health.

The National Institutes of Health with the personal participation of its Director, Dr James Shannon, and the Deputy Chief of the Children's Bureau, Dr. Katherine Bain, has conducted a series of planning sessions attended by obstetricians, pediatricians, psychologists, child psychiatrists, sociologists, anthropologists, geneticists, and embryologists. Program development has been the major concern of these sessions.

Scope

In President Kennedy's health message to Congress this year, he stated: "We look to such an Institute for a full-scale attack on the unsolved afflictions of childhood. It would explore prenatal influences, mental retardation, the effect of nutrition on growth, and other basic facts needed to equip a child for a healthy, happy life. It would, in addition, stimulate imaginative research into the health problems of the whole person throughout his entire lifespan—from infancy to the health problems of the aging."

Goals

The bill, H.R. 8398, states that this would be "an Institute for the conduct and support of research and training relating to child health and human development, including research and training in the special health problems and requirements of children or aged persons and in the basic sciences relating to the processes of human growth and development."

The goal of the new Institute would be a healthy infant, child, adult, and older persons, as attained through prevention of disease and based on further knowledge of normal growth and development. This would be accomplished through further research and training programs aimed toward a better understanding of the total growth and development process. Hence, more knowledge would be uncovered on these changes, their causes, and their significance in both normal and abnormal conditions. Studies would begin at the preconception level and continue through the prenatal period, infancy, childhood, maturation, and aging. There is great need to coordinate and organize such research specifically pointed toward growth and development.

Needs—Problems involved and disciplines contributing to solutions

Much of the testimony emphasized that the new Institute would need to call upon many scientific disciplines, including the behavioral sciences, the biological sciences, and the medical sciences, in order to accomplish the broad tasks proposed. The problems involved begin before conception, continue through all the growth and development phases to the aging process.

Preconception

The growth and development of a baby depends on the health and well-being of his mother before conception as well as during the 9 months of the pregnancy.

What is a normal pregnancy that permits a child to be born with full capability of development, emotionally, intellectually, and physically? To answer this, studies are needed of the genetic makeup of the family and of changing family attitudes and relationships.

Sterility and infertility

Ten percent of the married population of this country is involuntarily sterile. There are enormous gaps in knowledge of the physiology of reproduction. There is only about 30-percent success in the treatment of infertile couples. Even in these cases an actual cause and effect relationship cannot be provided between the treatment which has been given and the resultant pregnancy.

Conception to birth (prenatal)

The medical supervision of the motor while she carries her child is of great importance for his normal growth and development. Her diet must contain the proper nutrients to supply the building blocks for her child. Prevention of pregnancy complications must be attained. The baby's development may be affected by the emotional well-being of the mother during pregnancy, delivery and the early days of the infant's life. Growth and development of a baby is inseparable from the health and well-being of his mother prior to conception and during the 9 months of the pregnancy. An inherited disease, a chronic illness,

an acute infection or a complication of pregnancy may result in the death of the baby before birth, abnormalities of his organs, or his premature delivery.

Many witnesses at the hearings stated that the horizons of all of the biological sciences will remain restricted until the prenatal phase of human existence is better understood. Recent advances show evidence that birth injuries, cerebral palsy, mental retardation, and congenital malformations can be decreased. Much effort must be directed to understanding the biological processes that account for these irregularities, rather than merely taking care of the victims of nature's developmental mistakes, for the initial right of man is to be born without handicap.

Reproductive wastage

Reproductive wastage extends from the death of an unborn baby early in gestation to the surviving but handicapped infant who will be physically or intellectually inadequate and will require special care. The most critical phase of human development is in the first 20 weeks of pregnancy, and a great loss of human life occurs during this time. Prevention of this wastage depends upon knowledge of the normal events in the life of the baby before birth and during delivery and of irregularities in the processes. Since many defects are detected months to years after the damaging event, waiting until the evidence of damage to an infant is apparent makes it too late to investigate the cause of it. Research into the hazards of a baby's life before, during, and shortly after birth has suffered severely from lack of coordination in existing structures for organization and research support in this area.

Such factors as virus infection, ionizing radiation, maternal medication and dietary deficiency require far more investigation during the unborn baby's life than through other periods since minor events in the mother at these times may produce catastrophic defects in the baby, crippling him for his lifetime. Nevertheless, relatively only a handful of investigators is presently exploring exclusively some of these avenues, and there is no institute which considers prenatal developmental aspects a major focus of interest.

A specific example is the lack of concern and regulation that all medications to be released be evaluated for their effects on the baby when given to the pregnant woman. Many cases are now coming to light of maternal medications causing damage to the baby; a single example is the masculinization of girl babies by administration of excessive doses of certain hormones to mothers during pregnancy.

Newborn and infant period

The newborn and early infant period are of prime importance in the future growth and development of the child. As already mentioned, many of the occurrences during this time were, of course, precipitated by circumstances which took place during the prenatal period, but the evidence does not show until after birth.

Infant mortality

Although this Nation is the richest on earth and the most highly developed scientifically, it still ranks 10th in the world in terms of infant mortality. Despite great reduction in mortality in some areas, the mortality rate of infants in the first week of life has not declined proportionately. Inadequate progress in this field is being made. It is a complex problem, but the deaths could be reduced by a proper attack.

Prematurity

Prematurity is an important reason for the continuingly high mortality rate. In 1958, 113,000 babies died in the first week of life. Over 60 percent were the result of premature birth, although only 5 to 10 percent of all babies are born prematurely.

The magnitude of the problem of prematurity is astounding. Approximately 7 percent of our population is so born, and it is estimated that over \$300 million is annually spent for hospital care (which is more than all of the costs of medical education in the United States today). The average cost per case is approximately \$700, but it ranges up to several thousand dollars. The high incidence of crippling such as cerebral palsy, mental retardation, and other learning difficulties adds to the problem.

In 1961, the City Health Department of New York paid \$1.5 million for direct premature care in certain centers there. The actual cost of care ranged

up to 100 percent greater and must be absorbed by the institutions or parents. The impact that such a hospital bill may have on the private financial planning of a growing family's plans is self-evident.

A reduction of only 10 percent in the incidence of prematurity might reduce the cost care to this Nation by \$30 million—a sum almost equal to all the research programs in child health at the National Institutes of Health at the present time. Prevention of prematurity can be achieved only when basic knowledge of the causes of the onset of labor and their control are available. Through the new Institute the problems of conception and birth could be studied intensively by investigators from many disciplines. It would have the advantage of viewing the whole problem rather than its parts—it would be concerned with the genetic, physical, mental, emotional, and environmental background of the woman before conception as well as through the unborn baby's growth and development, labor, delivery, and the early infancy period.

Birth defects (congenital abnormalities)

There are an estimated 250,000 additional babies with birth defects (congenital abnormalities) born each year. In 1959 these defects caused 22,000 deaths and were the ninth cause of death in the population as a whole.

Through the cooperative research of the geneticist, obstetrician, and pediatrician, the eventual goal of decreasing the incidence of inherited and acquired birth defects will be attained.

Severe brain damage and mental retardation

The magnitude of mental retardation has now been recognized and is under study by a Presidential panel composed of members from the major fields of American life concerned with the retarded. More refined statistics than the approximation of 5 million retarded individuals (IQ less than 75) in this country are not needed to document the cost and loss to the Nation.

Since mental retardation is a symptom and not a single disease, it may result from many causes operating over the developmental months and years of the of the damage which results in the severely and moderately retarded is incurred unborn baby, the infant, and the child. Both biological and behavioral factors operating separately as well as together are responsible. One hope in this entire field is the prevention rather than the treatment of the condition. Since much in the prenatal, newborn, or infant periods of life, research during this period and application of findings from this research will prevent future cases.

Unless adequate research facilities, faculties, and interested students are available to study the early life of the unborn baby and infant, no progress can be made. The traditional clinical disciplines of neurology and psychiatry have great contributions to make in the later diagnosis and management of complications and secondary disorders. Research in the causes must, in large measure, reside in the fields concerned with prenatal and infant life since intellectual development is an integral part of the maturational process.

Knowledge of the abnormal necessitates full and complete understanding of the normal. The mechanisms of the retarded cannot be comprehended without complete awareness of the factors involved in normal human growth and development.

Other handicapping conditions

Sometimes abnormalities in pregnancy and childbirth do not kill the baby, but maim him instead. Many cases of cerebral palsy, of which there are from a quarter to a half a million in the United States, are the result of some unfavorable environmental factor between conception and delivery. This is another area that needs exploration.

There is an increasing recognition of the problem in the care of infants and children with defects involving almost every system of the human body. In the State of Maryland alone over 600 such complex cases are seen each year. The diagnosis and evaluation of such an infant costs several hundred dollars, and the treatment of one such case in hospitals has been estimated by the New York State Department of Health to exceed \$8,000. No categorical single system or disease approach is possible in researching such a problem. These cases represent multiple defects in development, and their study falls nowhere in the existing organization of the National Institutes of Health.

Projections suggest that by 1970 there will be nearly one-half million children under 21 with handicaps resulting from cerebral palsy, and nearly as many with epilepsy.

It is estimated that 1 out of 10 children now attending elementary schools will spend some part of his life in treatment for an emotional disorder.

One handicapped child who must be institutionalized and who lives 50 years costs society approximately \$150,000 without taking into account the human suffering or his loss of earning power.

Childhood

Many of the physical, mental, and emotional problems in our population have their start in childhood. Research leading to their prevention or control would have a tremendous impact on the health of the country.

The testimony brought out the hope that the proposed Institute would plan a wide enough spectrum so that all the facets of influence on the growth and development of the child could be studied and interpreted.

Accident prevention

Accidents are the greatest killer of the teenage group and a major hazard to the toddler. Why do parents permit situations to develop in which their children will succumb to accidents? The whole matter of parent education in this matter, as well as advice in child rearing, requires much more intensive research than it has received up to the present time. If answers could be found to this problem alone, it was stated in the testimony, the results would justify the establishment of this Institute.

Normal growth and development

Understanding of human development requires basic study of the process of maturation, with research into those forces which may favorably or otherwise modify maturation and its decline. These forces come from within the person and from the outside, the former of a general biological and psychological nature, the others of a behavioral and clinical nature. The interplay of forces begins with conception and proceeds most rapidly in the uterus and in very early life, then moves slowly but no less importantly through infancy, childhood, adolescence, and adulthood to aging.

Basic research and research training directed toward the dynamic processes of the total factors of change from prenatal origins to adulthood would be the concern of the Institute of Child Health and Human Development. Such problems require extensive, lengthy developmental studies.

The testimony brought out that a well-born child is a community asset; anything else is a liability. The meaning of well born is that the child is assured of being born as free as is humanly possible of hereditary impairment or birth defect. Well reared means that a child's inborn capacity can be realized to its optimum, based on a good biological foundation and an acceptable environmental rearing by bringing together knowingly and properly interpreted all the factors of the environment.

How does an individual grow up? What are the factors that make a healthy individual and how are these influenced? What is the nature of irregularities in the growth processes that result in defective adolescents and adults? What infant and childhood forces operate or fail to operate that affect the life and health pattern of old age? These questions cannot now be answered fully and are fertile fields for investigation.

Many witnesses testified to the fact that, as society grows in complexity, concern must be directed increasingly toward the intellectual, emotional, and social growth of children. At a time when much interest is directed toward helping children attain their greatest intellectual potentialities, and with fostering the development of creativity, resourcefulness, and emotional maturity, it would seem appropriate that an institute be established that would have as its primary objective the development of new knowledge to help achieve these goals.

Adolescence

The problems of the adolescent typify this area of research. This most difficult period of life for adults to comprehend is characterized by unique physiological activities—arrival at puberty and maturation of reproductive capacity intimately intermingled with alteration in growth rate, body habits, social, financial, and educational responsibilities. Psychiatric difficulties may occur as in other periods of life; however, the changes which usually occur are not due to disease and represent the impact of various biological and social forces upon the maturation process.

This area, as with many others of a maturational nature, has been neglected because it has been taken for granted as "growing up." The high incidence of delinquency and illegitimacy alone justifies an intensified study of such developmental processes.

Juvenile delinquency

The first step in attacking the problem of juvenile delinquency would be to understand the physical, mental, emotional, and social growth, and development of the average adolescent.

The formation of character and personality studies in terms of experiences of infancy and childhood and the importance of "growing up" processes to adult behavior is well recognized as a causative influence, but the incidence of juvenile delinquency, illegitimacy, and mental breakdowns in early adult life continues to rise.

Illegitimacy

Illegitimacy is an astonishingly increasing problem. Understanding of this problem requires more knowledge of the maturational processes, both physical and behavioral, than we now possess.

Adulthood

Many of the changes of the growth phase of human life merge into those of adulthood and later life. Progress in understanding and control over optimum human development in men as well as in women will depend upon direct observation and lengthy research of both children and adults of all ages.

Aging

It is evident that events within the developmental span of life certainly have a serious impact upon the aging or the declining years of life, and they cannot be totally disregarded for it is apparent that life is a continuum. The same factors, genetic or otherwise, that relate to the capabilities of the child also relate to the capabilities of the older individual. Imaginative total life studies are needed to meet the challenge of the increasing life span. Scientists must give increased emphasis to the unique aspects of the processes of deterioration, both biological and behavioral. Fundamental research in association with the clinical study of aging is required.

Urgency

"There is urgency," Mrs. Boggs stated in continuing her testimony referred to earlier. "When there is urgency, it is necessary to mount a variety of approaches to the problem. The National Institute of Child Health and Human Development represents a new kind of organization or mobilization of resources to attack a problem which is urgent. The establishment of this Institute will add impetus and materially accelerate the development of the new knowledge on which the welfare of the children of the future decades very materially depends."

The urgent need for developing more effective research is evidenced by the fact that the United States has dropped from 6th to 10th place among advanced nations in the saving of infant lives. Some 70,000 pregnancies each year result in stillbirths and over 100,000 American babies die before their first birthdays.

The child population has more than doubled since the turn of the century. Two out of five persons in the total population are under 21 years of age, that is, 75 million children now with an estimated number of over 90 million by 1970.

The number of persons reaching the age of 65 has risen from 3 million in 1900 to about 17 million. This is a jump of from 4 to over 9 percent of the total population. It is estimated that, by 1980, the number of children under 21 and older persons past 65 will be about half again as large as in 1960.

Research and research training

As President Kennedy pointed out in his health message, in the last year, "Medical research advanced at an accelerated pace. We are now better equipped than ever before to evaluate and deal with radiation perils. The incidence of polio has been reduced to the lowest levels ever recorded. We have engaged our most talented doctors and scientists in an intensified search for the cause and cure of cancer, heart disease, mental illness, mental retardation, environmental health problems, and other serious health hazards."

All research activities relating to child health and aging would not be transferred to the new Institute. The existing categorical institutes would continue

research in disease categories with respect to children and elderly people as well as other parts of the population.

Recent knowledge indicates that emphasis upon normal growth and development, the learning process, studies of the intellect, the total aging process from conception to the end of the lifespan, can contribute to the knowledge of man without which research for the answers to diseases and abnormalities cannot be effectively continued.

The first order of business in this field of child health and human development must be the correction of the serious shortage of research personnel as emphasized repeatedly by obstetricians, pediatricians, and the many other fields represented at the hearings. The greatest initial impact of the proposed Institute would be in helping to alleviate these shortages.

Many of the witnesses presented strong testimony to the subcommittee about the great need for coordinating research and research training. Under the influence of the proposed Institute, investigators who study development of body and behavior would join forces so that research in maternal and child health and human development would become an organic whole.

Administrative officials of medical schools agree that the National Institutes of Health have affected medical education. The support of research in disease areas has stimulated growth along these lines, while human developmental biology has been ignored. A focus centered within the proposed Institute should elevate the status of this area of research and facilitate the recruitment of investigators.

Flow of scientific communication

The hearings brought out a great need for improvement in the communication of research achievements from the investigator to those who can use it. This point, made by President Kennedy in his health message, emphasized that, "We must take steps to accelerate the flow of scientific communication. The accumulation of knowledge is of little avail if it is not brought within reach of those who can use it. Faster and more complete communication from scientist to scientist is needed, so that their research efforts reinforce and complement each other: from researcher to practicing physician, so that new knowledge can save lives as swiftly as possible; and from the health profession to the public, so that people may act to protect their own health."

Center for Research in Child Health and Center for Aging Research

The Center for Research in Child Health and the Center for Aging Research are staff offices that have an informational and synthetic responsibility. In addition to an awareness, they attempt to describe areas of deficits and to stimulate programs. They do not do work themselves. Intramural research is not done in these Centers nor are grant recommendations worked through them.

Relationship to the Children's Bureau

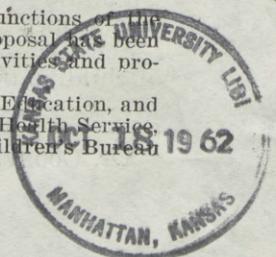
The overall goal of the Children's Bureau is that every child shall have an opportunity for healthy growth, for maximum development of his potential, and for a productive and satisfying living experience.

The purposes of the Children's Bureau today, as stated in its publication "Goals for Children, 1961," are: "To assemble facts that will keep the country informed about children and matters adversely affecting their well-being; to recommend measures that will be effective in advancing the wholesome development of children, and in preventing and treating the ill effects of adverse conditions; to give technical assistance to citizens and to voluntary and public agencies in improving the conditions of childhood; and to administer the financial aid that the Federal Government appropriates each year to aid the States in building the health and welfare of their children."

The efforts of the Children's Bureau are directed toward the application of existing knowledge through the delivery of services. Research on the optimal means of delivery of such services should be an essential part of the functions of the Children's Bureau.

No curtailment nor transfer of the research interests and functions of the Children's Bureau would be made. A companion legislative proposal has been developed to strengthen and reinforce the present research activities and programs of the Children's Bureau.

An agreement has been made within the Department of Health, Education, and Welfare concerning the respective areas of interest of the Public Health Service, of which the National Institutes of Health are a part, and the Children's Bureau



in child health research. The Children's Bureau will concentrate on research relating to the evaluation of programs and improving the development, management, and effectiveness of maternal, child health, and crippled children's services. The Public Health Service's research programs will point toward development of new knowledge of health problems and requirements of children and the phenomena of human growth and development.

To further assure interprogram coordination, a representative of the Children's Bureau will serve as an ex officio member of the advisory council for the new Institute.

International aspects

Two decades ago the United States looked to other lands for the primary training of its scientists. Now those countries look to the United States, whose prestige is now substantial as a result of its outstanding work in the medical sciences.

Mr. Leonard W. Mayo, Chairman, President's Panel on Mental Retardation and executive director of the Association for the Aid of Crippled Children, further emphasizes this point: "Quite other than the grants we happen to make abroad, there is tremendous leadership which the National Institutes of Health is giving to the entire world in emphasizing the importance of the salvage of human life. In Holland, England, Switzerland, and at the World Health Organization Board meeting with people from many other countries, great interest was expressed in these two proposals for these two Institutes. Great interest is always expressed in the kind of leadership the Children's Bureau is giving, and I think we cannot underestimate the kind of encouragement we give, particularly behind the Iron Curtain perhaps, to our leadership and our emphasis on things other than, and in addition to defense and outer space. Our emphasis upon the salvage of human life and the dignity of human beings is one of the great contributions which this country is able to make, and I think the proposals before us in this bill will make it possible for us to continue that contribution both on a scientific level and in terms of our leadership in the civilized world."

Present status

The decision as to the creation of this new Institute rests with the Congress. The members of the subcommittee who received testimony through the hearings, as well as the administrators of the National Institutes of Health and the Children's Bureau have demonstrated sincere interest in furthering research and training in the area of child health and human development. It is hoped that organizations and individuals concerned with these problems will interest themselves in this significant development.

Dr. COOKE. Dr. William Stewart of the U.S. Public Health Service has recently studied the medical manpower available for the care of children in the approaching decade. His study has shown that by 1975 the number of children in the United States will exceed 90 million and those under 21 years of age will make up more than 42 percent of the population. In other countries this figure may reach 60 or 70 percent. Although the absolute numbers are startling, the following relationships are even more catastrophic: By 1975 there will be half as many physicians for children—not just pediatricians but general practitioners as well—per 1,000 children. The increase in the numbers of chronically handicapped children is even more frightening. By 1975, at the rate we are now going, there will be in the United States one-half million epileptic children, over 500,000 cerebral palsied children, 700,000 children with hearing disabilities, 2.7 million mentally retarded children, and 3 million children with serious speech defects.

Senator YARBOROUGH. Do I understand from this that the number of children in these various categories with these defects that you have just given, that the percentage per thousand is increasing at this time?

Dr. COOKE. No. I am sorry, sir. These are absolute numbers.

Senator YARBOROUGH. These are absolute numbers?

Dr. COOKE. Yes.

Senator YARBOROUGH. You do not infer from that that the percentage of children born with these defects per thousand births is increasing?

Dr. COOKE. No, sir.

Senator YARBOROUGH. Is the percentage decreasing now?

Dr. COOKE. There is little evidence at the moment to indicate that there has been a significant decrease in the percentage of defective infants; that is, defects in infants and children.

In addition, there will be untold numbers of reading disorders and emotionally damaged and deprived children as well. Present evidence indicates that no less than 300,000 congenital malformations will occur annually among infants in this decade.

The impact of these statistics should be even greater to the taxpayer when converted to dollars and cents. The cost of care of a single premature infant ranges up to \$5,000 and averages approximately \$700 per case. The cost of care of prematures to the city of New York alone was approximately \$1.5 million. The actual cost of care was almost double this and was absorbed by parents or private institutions. The cost of care of prematures to the Nation is in excess of one-quarter of a billion dollars per year, plus the later costs from the high incidence of neurologic and behavioral residuals in this group. A reduction in the incidence of prematurity of only 15 percent—that is, a reduction from the present 7 percent to 6 percent of all births—would save the citizens of this country more money than all the present research expenditures for all the problems of children at the National Institutes of Health.

The world is unfortunately too aware of the recent tragedy resulting from the use of the drug thalidomide during pregnancy. It is not aware, however, that literally thousands of infants maimed almost as badly or even worse than those armless and legless babies are born each year from causes not only unknown but not even under investigation. When one realizes that thalidomide was kept out of use in this country because of its rare toxic effects in adults (polyneuritis) with no evidence of its toxicity on the fetus, I shudder to think that the thalidomide situation in a slightly different form could happen again tomorrow because we know so little of human development.

As a physician, educator, and research worker in the field of child health and disease for the past 18 years, I am convinced that the key to prevention is the understanding of the causation of disease, which requires fundamental knowledge gained through research in the basic medical sciences of chemistry, anatomy, biology, physiology, microbiology, and the like, as well as the intensive investigation of normal developmental processes of human beings.

This legislation wisely recommends the elevation of the Division of General Medical Sciences to the Institute of General Medical Sciences as well as the creation of a National Institute of Child Health and Human Development to complement through the existing body system and disease-oriented Institutes endeavors which will span the development of the individual from conception onward. By this action far more effective coordination and vigorous planning and stimulation of research and research programs will result. The scat-

tered support of research in several areas can thereby be consolidated.

The new Institute would need to call upon many scientific disciplines, including the behavioral and the biomedical sciences in order to accomplish the broad tasks proposed. The problems involved begin before conception and continue through all the phases of growth and development to maturity. The specific areas requiring intensified research program development and research training are enumerated below. These extend beyond the categorical limits of the existing Institutes and will complement rather than duplicate their areas of responsibility.

Human infertility or sterility: Ten percent of the married population of this country is involuntarily sterile, and there is only about a 30 percent success in the treatment of infertile couples. Even in these cases an actual cause and effect relationship cannot be provided between the treatment which has been given and the resultant pregnancy.

Dr. Lee Buxton, professor of obstetrics and gynecology at the Yale University School of Medicine, has written to me in detail on this subject. I should like permission to have material from his letter included in the record.

Although overpopulation has been the concern of many scientists, extensive demographic and medical population studies have disclosed that approximately 10 percent of the married population of this country is involuntarily sterile. Generally speaking, this is true, regardless of the socioeconomic or environmental status of the couple.

Such is the innate desire for family and progeny that the vast majority of these couples have sought medical investigation and care. The investigation and treatment of infertility is a comparatively recent aspect of medical care. There are such enormous gaps in our knowledge of the physiology and pathology of reproduction that even the most informed infertility clinic and specialist can hope for only about 30 percent success in treatment of the infertile couple; and even in these cases he is frequently at a loss to provide an actual cause and effect relationship between the treatment which has been provided and the resultant pregnancy. It can be demonstrated with reasonable statistical accuracy that many of these would have sooner or later become pregnant anyway. It also can be said that in the present state of our knowledge, about all infertility investigation and treatment can provide is that many of the "successful" couples may have produced a pregnancy sooner rather than later.

Research in the largely uncharted areas of the physiology and pathology of reproduction must be carried on at both clinical and preclinical levels. A few of the many frustrating areas of ignorance are worthy of mention.

It is possible with reasonable accuracy to identify the infertile or subfertile male, but there are no known consistent techniques for either increasing subfertile sperm counts or improving the physical qualities of the sperm cells themselves. Further knowledge within this area would be of immense value in the realm of animal husbandry as well as in the treatment of the human male.

Only a few million dollars spent in the study of the time of human female ovulation would almost undoubtedly provide a simple, practical, and almost uniformly usable technique for identifying this periodic phenomenon; a physiological process which at present is identified by cumbersome and indirect and frequently retrospective methods which are of minimal practical value. A simple and usable ovulation identification technique would not only be of inestimable value in the treatment of infertility, but might be even more valuable for the vast number of individuals who wish to physically, emotionally, and economically space their child producing by using rhythm contraception techniques.

Psychological, genetic, and immunological causes of infertility are almost completely unexplored; hormonal etiologies only partially so.

The infertile couple attempting without success to produce normal progeny is an appreciable and important segment of our population which is existing in a state of emotional frustration, frequent marital dissatisfaction, and even physical distress, leading all too frequently to divorce. In our present state of

knowledge we can be of medical assistance to only a small percentage of them. They are a group who are in serious and often desperate need of knowledge which can be provided by research alone.

Knowledge is so lacking in this field that studies ranging from timing of ovulation, human spermatozoal motility, sensitization of females by spermatozoa, immunological research of infertile couples, to mention a few, remain to be done.

The failure to develop intensive research programs in this area lies in the lack of a strong focus for training in the field as much as direct research support. Human reproduction, as essential as it is for the well-being of this Nation, has not enjoyed the status to attract competent young investigators. Likewise, medical schools have not supported such departments adequately and require stimulation which the new Institute of Child Health and Human Development can give through a training grant program.

Reproductive wastage: Reproductive wastage extends from the death of an unborn baby early in gestation to the surviving but handicapped infant who will be physically or intellectually inadequate and will require special care. The most critical phase of human development is in the first 20 weeks of pregnancy, and a great loss of human life occurs during this time. Prevention of this wastage depends upon knowledge of the normal events in the life of the baby before birth and during delivery and of irregularities in the processes. Since many defects are detected months to years after the damaging event, waiting until the evidence of damage to an infant is apparent makes it too late to investigate the cause.

Such factors as virus infection, ionizing radiation, maternal medication, and dietary deficiency require far more investigation during the unborn baby's life than through other periods since minor events in the mother at these times may produce catastrophic defects in the baby, crippling him for his lifetime. Nevertheless, relatively only a handful of investigators is presently exploring exclusively some of these avenues, and there is no institute which has developmental aspects as the major focus of interest.

Dr. Peter Gruenwald of the Sinai Hospital of Baltimore and the Johns Hopkins Hospital, a world renowned researcher in pathology, has written to me on this subject and I quote:

When a patient with heart disease or cancer is admitted to any good hospital, much pertinent examination and evaluation is done as a matter of accepted good practice. In contrast, consider as an example the usual state of pathology of reproductive wastage with which I am familiar. In the same good hospitals the pathology of the newborn is likely to be delegated to junior members of the department, and little effort is usually made to arrive at an intelligent interpretation of the case; pathology of stillborn infants is treated with contempt, and the placenta, the guardian of the fetus, is seldom—if ever—examined.

Prematurity: I have already alluded to the magnitude of this problem. In 1962, approximately 280,000 babies will be born prematurely; 42,000 will die. The causes of premature birth are almost completely unknown. Even more mysterious are the causes of brain damage and defective development which are present three times as commonly as in full-term babies. Dr. Nicholson Eastman, who is here today, and a renowned investigator, has indicated to me that according to his studies much of this damage must result after the birth of the baby.

Dr. Ethel Dunham in 1952 at a conference on prematurity, congenital malformation, and birth injury stressed the need for research in the causes of morbidity and mortality among premature infants.

She stressed the need (1) to reduce the incidence of premature births particularly of infants weighing less than 1,500 grams at birth, and (2) reduce the death rate of premature infants on the day following birth. The importance of these two points of attack is shown by the following data:

(1) Although only about 10 percent of live-born premature infants are in the weight group under 1,500 grams, the mortality rate is nearly 100 percent for those weighing under 1,000 grams and 66 percent for those weighing 1,001 to 1,500 grams, compared with rates of 24 and 6 percent for those in the two higher birth weight groups (New York State, exclusive of New York City, 1945-49).

(2) Nearly 60 percent of neonatal deaths among premature infants occur under 1 day of age. The neonatal death rate of premature infants under 1 day was 6.3 per 1,000 live births in 1948. This represents a decrease of 32 percent in the 13-year period 1935 to 1948; but 22,252 premature infants died on the first day of life in 1948, and 19,961 in 1935.

In regard to reducing the death rate of premature infants on the day following birth, studies of causes of neonatal mortality on the first day of life show that abnormal pulmonary ventilation and anoxia account for 64 percent of the deaths (Potters' studies). Eighteen percent of the deaths were due to injuries at birth and 12 percent to congenital malformations. The condition of hyaline membrane formation was the only pathological finding in 40 percent of the infants weighing between 1,000 and 2,500 grams who died in the Chicago Lying-In Hospital. The causes of delayed onset of respiration must be better understood in order to apply proper treatment in each case. Research on the best method of resuscitation as well as evaluation of mechanical resuscitators should be pursued as vigorously as physiologic and chemical studies. We have insufficient data on the physical growth and development of premature infants who survive.

I am sure that you gentlemen can appreciate the narrow margin of safety which exists in the care of these babies. When we use oxygen to keep them from turning blue, we run the risk of producing blindness from retrolental fibroplasia. Application of these research findings by expanded programmatic research and demonstration projects by the Children's Bureau can aid significantly in this problem.

Perinatal mortality: Although our Nation is the richest on earth and the most highly developed scientifically, we have fallen from 6th to 10th place among the advanced nations in the saving of infant lives. Despite great reduction in mortality in some areas, the mortality rate of infants in the first week of life has declined relatively little.

The most recent statistics from the Office of Vital Statistics on this point are here tabulated:

United States—1959

Total fetal deaths.....	92,566
Period of gestation, 20 weeks or more.....	68,613
Perinatal deaths (68,613+71,745).....	140,358
Deaths under 1 year of age.....	112,008
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First week:	
Under 1 hour.....	8,272
1-23 hours.....	35,440
1 day.....	11,789
2 days.....	7,738
3 days.....	3,617
4 days.....	2,125
5 days.....	1,564
6 days.....	1,200
<hr/>	
Total.....	71,745

These numbers represent significant loss of life and enormous loss in productivity when one considers the life span of the individual.

Very little progress in this field is being made. In the 10 years from 1950 through 1959 there was a reduction of less than 3 per thousand in infant mortality and 1 per thousand in early neonatal mortality (first week of life). In the 5 years 1955 through 1959, the rates did not decrease at all, remaining at 26.4 and 17 per thousand respectively.

Brain damage and mental retardation: The magnitude of mental retardation has now been recognized and is under study by a presidential panel composed of members from the major fields of American life concerned with the retarded. More refined statistics than the approximation of 5 million retarded individuals (IQ less than 75) in this country are not needed to document the cost and loss to the Nation.

Since mental retardation is a symptom and not a single disease, it may result from many causes operating over the developmental months and years of the unborn baby, the infant, and the child. Both biological and behavioral factors operating separately as well as together are responsible. One hope in this entire field is the prevention rather than the treatment of the condition. Since much of the damage which results in the severely and moderately retarded is incurred in the prenatal, newborn, or infant periods of life, research during this period and application of findings from this research will prevent future cases.

Senator YARBOROUGH. As to the statistics that you just gave of about 5 million individuals with an IQ of less than 75, is that a total for the children, or is it the gross for all ages?

Dr. COOKE. This is a total of all ages.

Senator YARBOROUGH. Is that IQ ratio the same as the Army general classification used in World War II?

Dr. COOKE. This, actually, is approximately at the same level.

Senator YARBOROUGH. That ranged from 0 to 150, did it not?

Dr. COOKE. That is right.

Senator YARBOROUGH. That is, in the Army general classification test?

Dr. COOKE. Yes.

Senator YARBOROUGH. So would this 75 be on the same level as 75 in the Army general classification test of World War II?

Dr. COOKE. I am sorry, I would not like to give an absolute statement on that. In regard to the draft rejections some work has been

done in reviewing this and it has been shown that large numbers of individuals were rejected on the basis of intellectual inadequacy. This number was in the millions. Mental subnormality was the single largest cause of rejection in the draft.

I would be pleased to get the proper answer to your question, if you would like it.

Senator YARBOROUGH. All right, if you could do that, I would like to have you do so.

(The information follows:)

The scores of the Army general classification test correspond approximately to those on standardized tests of the Binet type. The scores of 70 on each is about 2 standard deviations below the mean.

Senator YARBOROUGH. You may proceed. Thank you.

Dr. COOKE. The vast numbers of mildly retarded result from poorly understood behavioral and sociological factors operating in the pre-school period of the child's life. Unless adequate research facilities, faculties, and interested students are available to study the early life of the infant no progress can be made. The traditional clinical disciplines of neurology and psychiatry have great contributions to make in the later diagnosis and management of complications and secondary disorders. Research into the causes must, in large measure, reside in the fields concerned with prenatal and infant life since intellectual development is an integral part of the maturational process.

Knowledge of the abnormal necessitates full and complete understanding of the normal. The mechanisms of the retarded cannot be comprehended without complete awareness of the factors involved in normal human growth and development.

Accident prevention: Accidents are the greatest killer of the teenage group and a major hazard to the toddler. Why do parents permit situations to develop in which their children will succumb to accidents? The whole matter of parent education in this matter, as well as advice in child rearing, requires much more intensive research than it has received up to the present time. If answers could be found to this problem alone, the results would justify the establishment of this Institute.

Normal growth and development: Understanding of human development requires basic study of the process of maturation, with research into those forces which may favorably or otherwise modify maturation and its decline. These forces come from within the person and from the outside, the former of a general biological and psychological nature, the others of a behavioral and clinical nature. The interplay of forces begins with conception and proceeds most rapidly in the uterus and in very early life, then moves slowly but no less importantly through infancy, childhood, adolescence, and adulthood. Such problems require extensive, long-lasting, developmental studies.

All of us recognize that a well-born child is a community asset; anything else is a liability. The meaning of well born is that the child is assured of being born as free as is humanly possible of hereditary impairment or birth defect. Well reared means that a child's in-born capacity can be realized to its optimum, based on a good biological foundation and an acceptable environmental rearing by bringing together knowingly and properly interpreted all the factors of the environment.

How does an individual grow up? What are the factors that make a healthy individual and how are these influenced? What is the nature of irregularities in the growth processes that result in defective adolescents and adults? What infant and childhood forces operate or fail to operate that affect the life and health pattern of old age? These questions cannot now be answered fully and are fertile fields for investigation.

As a society grows in complexity, concern must be directed increasingly toward the intellectual, emotional, and social growth of children. At a time when much interest is directed toward helping children attain their greatest intellectual potentialities, and with fostering the development of creativity, resourcefulness, and emotional maturity, it would seem appropriate that an institute be established that would have as its primary objective the development of new knowledge to help achieve these goals.

Adolescence: The problems of the adolescent typify this area of research. This most difficult period of life for adults to comprehend is characterized by unique physiological activities—arrival at puberty and maturation of reproductive capacity intimately intermingled with alteration in growth rate, body habits, social, financial, and educational responsibilities. Psychiatric difficulties may occur as in other periods of life; however, the changes which usually occur are not due to disease and represent the impact of various biological and social forces upon the maturation process.

This area, as with many others of a maturational nature, has been neglected because it has been taken for granted as "growing up." The high incidence of delinquency and illegitimacy alone justifies an intensified study of such developmental processes.

Adulthood: Dr. Paul Dudley White, the world famous cardiologist, has spoken on nationwide television in support of the creation of the National Institute of Child Health and Human Development. He pointed out that the habit pattern of eating and the behavioral reactions to stress are established in childhood. Only by research in this period of life, and early application of findings, can eventual prevention of cardiovascular diseases such as coronary heart disease be attained.

Training of medical manpower: Administrative officials of medical schools are in complete agreement that the existing structure of the National Institutes of Health has affected medical education. The support of research in system or disease categories has stimulated faculty growth along these lines. As a consequence, human developmental biology has been ignored in most medical schools and students receive little or no exposure to this field. The number of young investigators in this discipline is limited and faculty posts are few. A focus centered within the National Institute of Child Health and Human Development should markedly elevate the status of this area of research and training and by its future program will improve recruitment of investigators and practitioners. Unless almost 50 percent of the graduates of medical schools enter the child health field in contrast with the present 10-15 percent, serious deficiencies in care will result.

As a byproduct of such an Institute concerned with the whole individual and his environment, the attitudes of the physician of the future toward his patient might be favorably affected by reemphasizing

the general and the anticipatory approach. Such an approach requires constant consideration of the total individual and of the effect of present care on future well-being and goes far beyond preventive medicine as it is now taught.

International health: The international effects of such an Institute will be great. The major concern of much of the world elsewhere is with problems of child health. Dr. Louis Diamond of the Boston Children's Hospital and Harvard University has noted this concern in a recent letter from which I quote:

I have returned a few weeks ago from a second visit to Uganda, Nigeria, and Ghana, where I had been about a year ago in the interests of setting up studies on malnutrition and anemia in infants and children. In contrast to our own country where we have well-established Institutes for the study of various diseases, these countries, as well as many others in Africa, Asia, and the Middle East, have taken as their first obligation in raising medical standards and the health of the country, the study and protection of infants and children. They are prepared to spend a large portion of their meager funds in child health and development projects and institutes to further research in this area. In Kampala, Uganda, there has been a Child Health Research Unit for several years. In Ibadan, Nigeria, one has recently been established and curiously, the money was requested and obtained from a private American charitable foundation. In Accra, Ghana, the Medical Research Council which is the equivalent of our National Institutes of Health, in its very first year of activity, is concentrating on child health and development. If these new and relatively underdeveloped countries see the importance of the health of children in their national welfare, it is surprising that we, in so many years of well-supported medical research, have failed to do likewise.

The Children's Bureau: I realize that there has been concern over the possible effects of this legislation on the Children's Bureau. For this reason a memorandum of agreement has been developed between the Children's Bureau and the National Institutes of Health.

The Children's Bureau should be supported in its endeavor to expand its research into the delivery of services to the community—funds for the conduct of operational research should be provided so that basic research of the new Institute might be rapidly and effectively applied. Companion legislation, S. 2273, introduced by Senator Kerr and Senator Hill, to permit grants by the Children's Bureau for research on the means of applying basic knowledge, should be speedily enacted.

I believe that research in this Institute can contribute significantly to the abolishing of many of the causes of accidents in young children.

To promote optimal coordination of research and service in child health, representatives from the Children's Bureau should sit with the Council of the National Institute of Child Health and Human Development.

Likewise, there should be no duplication of research on specific systems or diseases within this Institute. Heart disease or cancer, occurring in children, would remain within the National Heart Institute or National Cancer Institute respectively. Neurologic disorders in children and psychiatric disorders in children should remain within the existing Institutes.

Suggested corrections: Although this legislation is well conceived, I believe it would be vastly improved by the inclusion of appropriate language in the body of the bill indicating the large role that prenatal and maternal factors play in child health. The wording of H.R. 11099 in this respect properly recognizes the important place of ob-

stetrics and gynecology, and should assure appropriate representation on the Advisory Council of the new Institute.

Much thought and discussion have been given to the most meaningful title for this Institute. The National Institute of Maternal and Child Health and Human Development, the National Institute of Child and Maternal Health and Human Development, the National Institute of Human Development, and the National Institute of Maternal and Child Health have all been suggested.

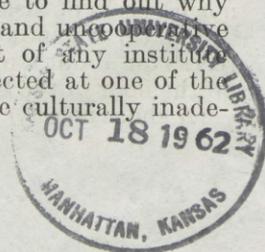
The present title, Child Health and Human Development, symbolizes the goal toward which all obstetric as well as pediatric and psychologic and sociologic efforts are directed. The term, "child health," does not carry with it any connotation of clinical specialty or other vested interest, but refers to the well-being of the child both as regards his past and his future.

Unfortunately, the term "maternal and child health" ignores the increasingly important role and responsibility of the father in influencing the development of the child. Quite obviously the development of the human and the well-being of the child depend upon many factors other than maternal ones. As a physician who is frequently the court of last appeal for many distraught parents with babies or children who are retarded or deformed, I constantly must fight the severe guilt feelings which exist in the mothers of these infants. So frequently in the public mind the mother is held responsible for the defect. Yet, there is abundant scientific evidence that these babies are the products of abnormal genes in the father as frequently as in the mother. I would hope that the Congress would not continue this concept of transference of blame to the mother by overemphasizing the maternal aspects of the problem.

In conclusion, I would hope that action by this committee and the Senate would make a greater degree of freedom from handicap possible for the children of the world than they have yet experienced. - Senator YARBOROUGH. Dr. Cooke, I thank you for this very fine statement, part of which is included in the pamphlet. All of it will be in the record.

I want to go back to an earlier part of your testimony about what you call the astonishing increase in illegitimates. Have there been enough studies made to determine the relationship between illegitimacy and the payments of stipends to unemployed single people, or to unemployed mothers, without husbands, where they have children to support? Have there been enough studies made to determine whether or not the payments are a factor in stimulating the increase in illegitimacy?

Dr. COOKE. I am not aware of any well-conceived studies in that particular regard. I think this, as you well recognize, is a major problem for welfare in which they continue to support families to prevent hardship for the offspring, to allow the children to have, at least, some food and clothing and shelter. At the same time I realize that it is believed by some to lead to a greater number of illegitimate children coming from these same parents. I feel that a great deal of behavioral and sociological research must be done to find out why these families remain such inadequate, passive, and uncooperative people. And I would think that a major effort of any institute concerned with human development would be directed at one of the severe problems that we have in our society of the culturally inade-



quate who would seem unable to take care of themselves and who, I think, can be rehabilitated if we can understand some of their problems better.

Senator YARBOROUGH. Thank you, Dr. Cooke. I believe that this is a most important measure, that is, that these studies could include research in behavioral and sociological problems, as well as in the fields of medicine and biochemistry and the sciences.

Dr. COOKE. Thank you.

Senator YARBOROUGH. The next witness is Dr. Philip Handler, professor and chairman of the department of biochemistry, Duke University School of Medicine, Durham, N.C.

**STATEMENT OF DR. PHILIP HANDLER, PROFESSOR AND CHAIRMAN
OF THE DEPARTMENT OF BIOCHEMISTRY, DUKE UNIVERSITY
SCHOOL OF MEDICINE, DURHAM, N.C.**

Dr. HANDLER. Senator Yarborough, I wish to thank you for the privilege of appearing before you this morning. I have a single copy of a prepared statement which I should like to submit for the record, if I may.

Senator YARBOROUGH. You are at liberty to file that for the record, Dr. Handler, and then you may condense it in such form as you desire.

Dr. HANDLER. That is what I propose to do, if I may.

Senator YARBOROUGH. You may proceed.

Dr. HANDLER. To identify myself, sir, I am Dr. Philip Handler, and I am professor and chairman of the department of biochemistry at Duke University. I am currently the president of the American Society of Biological Chemists, a member of the executive committee of the board of the Federation of American Societies for Experimental Biology. I have served the National Institutes of Health on various of its reviewing committees, including the National Advisory Health Council on which I have been for one term. This summer the President, Mr. Kennedy, submitted my name to the Senate as a nominee for membership on the National Science Board, but that action has not yet been confirmed.

I come before you specifically to discuss those provisions of the current bill which would elevate the Division of General Medical Sciences to the status of a full fledged Institute of General Medical Sciences. I do so in the conviction that of all programs at the National Institutes of Health, from the long-range standpoint, these programs currently supported through the Division of General Medical Sciences are, perhaps, the most important.

All of the research which is conducted through the programs supported by what are called the categorical Institutes at the National Institutes of Health, each of which has a specific mandate within a specific disease area, or group of related diseases are derivative or applied in nature. They are conducted with the premise that there already exists a sufficient body of knowledge concerning the normal functioning of the human body so as to permit effective attack on the mechanisms of disease processes which offset normal functions.

Senator YARBOROUGH. If you will pardon me for a moment, I must recess for about a minute and a half, because there is an urgent matter on the floor of the Senate. I hope to transact it in that time.

(A short recess.)

Senator YARBOROUGH. The subcommittee will be in order. You may proceed.

Dr. HANDLER. I was saying that the research supported through the categorical Institutes is very largely research which is derivative or applied. I use these terms in the sense that the investigator so engaged has addressed himself to the problems of specific diseases, disorders of the human body. If one is to do so successfully it must be assumed that there already exists a sufficient body of knowledge concerning normal physiological function as to permit one to understand the nature of the defects involved. If this premise is not correct it is highly unlikely that research specifically addressed to those disease processes will likely be successful.

Fortunately, there existed a large backlog of information after World War II concerning normal physiology, and our scientists who have been studying diseases in the years since have been trading on that backlog of knowledge which is, however, rapidly being exhausted.

It was with these thoughts in mind that I appeared before this subcommittee some 5 years ago and asked for direct support of research in what is called the basic medical science—research which is not necessarily addressed to a specific disease or group of diseases, but rather to an understanding of what man is and how he functions, even when he is not subject to any disorder.

In response to that hearing there was created the Division of General Medical Sciences as it now exists at the National Institutes of Health. This program has been funded very well in the years since and at the present time is funded at a level which far exceeds that which was available to any of the categorical Institutes at the time they were created.

The programs of this Division are dual in nature. On the one hand, they are designed to produce information and concepts, further understanding of the human body. It is this body of information which will be made available to all others who seek to understand the problems of disease. It is very heartening, indeed, to have watched the growth of the programs of this Division and the response of the scientific community to this growth.

The second group of programs sponsored by the Division are designed also, to feed the programs of the categorical Institutes, but, in this case, these programs supply trained investigators. The scientist who addresses himself to the problem of a specific disease cannot really be identified successfully as a cancer investigator or an arthritis investigator, or, even, perhaps, one investigating mental health. He must, first, have been trained in some specific scientific discipline and bring to bear on the problems before him the techniques, the body of information, even the philosophy of that discipline. And through these programs of training, we now produce scientists who are called biochemists, physiologists, pharmacologists, statisticians, microbiologists, virologists, and the like. Some of these are, also, practicing physicians who address themselves to disease. Others are scientists who remain within the fundamental disciplines and continue to expand the body of knowledge with respect to normal physiology and its functions.

It is these two programs which are the heart of the operation of the Division of General Medical Sciences, and it is upon these two that all

other programs at the National Institutes of Health must rest. These two produce the notions, the information, the concepts, and the investigators to do the work in all of the other programs supported by the National Institutes of Health.

At the same time this pool of manpower is imperative in many other areas of activity within our country.

For example, during the last year it has been my privilege to serve on a panel of the Institute of Defense Analyses charged with an examination of research in the life sciences within the Department of Defense. Secretary McNamara requested such a study. It became quite apparent that the limiting factor in what could be done within that program was the available supply of trained scientists. Similarly, many of our drug houses are in dire need of trained scientists to get on with their own business. The same kinds of scientists man the preclinical faculties, that is, it is they who teach in the first 2 years of medical schools. And if within the next 10 years we really are to create, perhaps, 25 new medical schools, our ability to do so is conditioned entirely on the supply of the scientists who will form the faculty thereof.

It is not money. It is not buildings which will be limiting at that time. It will be the available number of people who are competent to teach at the same standards which we now maintain, in such sciences as anatomy, biochemistry, pharmacology, pathology, and the like.

I think it is therefore quite appropriate to say, as I did when I began, that this is the platform upon which all of the other programs of the National Institutes of Health must rest and it is the success of this program which in the long run will determine what success the other programs will have.

One other set of programs of this division is noteworthy. There are occasional situations when a given disease process or a given problem does not quite fit within the purview of one or another of the already established categorical institutes. For example, the problem of homotransplantation, the technique for the transplantation of tissues and organs from one to another is one which is most important in our time. It does not quite fit within the province of the arthritis or cancer or heart institutes. Hence it was assigned to the Division for support. Up until recently the problems of aging again did not seem quite to fit properly within the programs of the existing Institutes and these also were assigned to the Division for Support.

As other such problems are identified, they, too, would be assigned to this Division, hopefully the new Institute until, perhaps, they grow sufficiently to warrant institute status on their own.

Now new funds are not requested at this time for these programs. Rather, it is requested that the program already in being on a very large magnitude be given the dignity and status of a proper institute. This is to insure that these programs which are already suggested to the National Institutes of Health by the actions of the Congress in providing specific funds for them will be within an institute which is itself a creature of the Congress and not an administrative device at the National Institutes of Health. It, also, would make possible the procuring of a top staff who will have the managerial competence to see to it that these programs are managed efficiently and adequately.

Finally, there is one more bonus that would come within Institute status. At the present time advice to the Surgeon General with

respect to the affairs of the Division is given by the National Advisory Health Council, a group which was originally created by statute to advise the Surgeon General with respect to the affairs at large of the U.S. Public Health Service. There are only 12 members of this Council. They cannot be all-wise and all-knowing. As one who served 4 years on it, I submit that there were many times when the group felt quite inadequate in its dual role. It could not adequately advise the Surgeon General with respect to the affairs of the marine hospitals, management of hospitals and care on Indian reservations, relationships between State health boards and the U.S. Public Health Service and all of the other affairs of the Surgeon General and the Public Health Service, outside of the National Institutes of Health, and then turn around and, also, give specific advice with respect to specific grants in the scientific areas which come within the programs of the National Institutes of Health. Hence it would be, I think, of great service to the Surgeon General, specifically to the public service more generally and to the people of the United States that there be two councils, one that would serve this new Institute and be drawn from scientists of appropriate competence, and yet another which would perform that which the National Advisory Health Council was originally supposed to do; namely, advise the Surgeon General with respect to the affairs more broadly of the total Public Health Service.

These, I think, are the cogent and, I hope, compelling reasons at this time for elevating the status of the Division of General Medical Services to that of an Institute. Thank you, sir.

Senator YARBOROUGH. I want to thank you for a most interesting statement. Your statement will be made a part of the record at this point.

(The prepared statement of Dr. Philip Handler follows:)

PREPARED STATEMENT BY PROF. PHILIP HANDLER

It is both pleasure and privilege to have this opportunity to testify in support of those provisions of the bill before you which would create an Institute of General Medical Sciences at the National Institutes of Health.

The National Institutes of Health constitute the research arm of the U.S. Public Health Service. The very names of the individual Institutes immediately convey an appreciation of the categorical mission of each of these Federal agencies. Each has been created so that, with the help of public funds, research directed toward the understanding and ultimate alleviation, if not eradication, of the dread diseases would be furthered. These are remarkable goals indeed, and well merit the support of the American people.

The categorical Institutes have clearly defined missions—vigorous attacks upon the specifically designated group of diseases encompassed within their titles. But it should be recognized that the investigator who conscientiously applies himself to the study of a specific disorder, be it schizophrenia, leukemia, arthritis, arteriosclerosis, or cystic fibrosis, is engaged in applied or derivative research. And the limiting factor which may determine the success of such studies is the depth of understanding, previously achieved, concerning the normal attributes of the particular physiological process affected by the specific disease in question.

As each of the categorical institutes has been established, those who have accepted the challenge posed by the goals of that institute, of necessity, have done so in the hope that there already exists a sufficient body of information and understanding with respect to normal human biology to permit identification of the manner in which one or another biological process deviates from the norm in the specific disorder under consideration. And if this premise be false, there is relatively little likelihood indeed of the success of the investigation. Exciting and suggestive as much of this categorical research has been, it is all too apparent that the goals of the categorical institutes cannot be achieved in a definitive way for some years to come. Many factors determine the total rate of progress of

such research, among them the adequacy of financial support for the conduct of research, the number of well-trained and highly motivated investigators willing to accept the challenge of the specific goals of the categorical institutes, and adequate physical facilities in which to conduct such research. Each of these is, in its own way, rate limiting in the total national effort. But, by all odds, the prime limiting factor remains the inadequacy of our understanding of normal human biology. It is the expansion of this body of knowledge which is the prime charge of the proposed National Institute of General Medical Sciences. Its research program would be conducted by such scientists as, for example, anatomists, biochemists, biophysicists, physiologists, pharmacologists, microbiologists, immunologists, pathologists, embryologists, geneticists, biometricians, etc. Perhaps a few illustrative examples may be of some assistance.

The National Institute for Arthritis and Metabolic Diseases supports investigations concerned with the nature, management, and therapy of diabetes. As you know, diabetes is a disorder characterized by a disturbance of the mechanisms which serve to regulate the amount of sugar in the blood. Realization of our hope for abatement of the magnitude of the problem of diabetes in the American population lies in our ability to counter the disturbance in such manner as to maintain the desirable level of blood sugar in those who are so afflicted. To do so requires detailed understanding of the many complex events which are normally operative in the maintenance of the blood sugar level. Such studies are conducted by biochemists and physiologists concerned with the mechanism of entry of the blood sugar—glucose—into the various types of cells in the body and the subsequent fate of that glucose. They must also understand the circumstances under which glucose enters the blood from the liver or from the intestine, after a meal, and the mechanisms which regulate the rate of such processes. Other biochemists seek to understand the manner in which insulin facilitates the entry of glucose into body cells. Still others, biochemists especially skilled in the chemistry of protein molecules, seek to identify those aspects of the chemical structure of insulin which endow it with its specific useful physiological properties. Only when these and many related facts have been assembled can we achieve our desired goal, an achievement which may well take the form of a cheap synthetic material with physiological properties similar to those of insulin and without untoward side effects.

Consider if you will the problem of cancer and the malignant neoplastic disorders. These disorders reflect the fact that, occasionally, body cells become less subject to normal regulatory mechanisms and begin to grow in an independent fashion, much as would a microbe which has invaded the body from without. But how does this come about? Glimmerings of understanding are available, understanding which has come from diverse channels. But we have no adequate answers to simple questions like, "What determines the size of the human liver? What determines the normal daily rate of production of white blood cells? How is it that, from a single fertilized egg cell, there develop huge numbers of cells of completely different structure and function, e.g., bone-forming cells, liver cells, red blood cells, contracting muscle cells, nerve cells, etc? How is it that whereas all of these cells are endowed with the same genetic 'information,' each utilizes only a specific fraction thereof and, hence, develops into a cell adapted to make its peculiar contribution to the function of a normal human body? How is it that an invading virus diverts the synthetic machinery of a cell into making copies of itself? And is a similar process involved in the genesis of tumors?" Only when answers to such questions have been provided by embryologists, cytologists, biochemists, immunologists, etc., will we be in position to apply the information so gained to a direct attack upon the derangements of these mechanisms which are reflected in the cancer cell.

Undoubtedly a major effort of the newly proposed Institute for Child Health and Human Development will be the identification, recognition, and treatment of those disorders of man which are genetically determined, since most such disorders find expression in early childhood. Approximately 100 such diseases have been recognized in the years since World War II. In each case, the disease has proved to be the consequence of genetically determined failure of the body to synthesize a specific type of protein or enzyme. But until biochemists have first demonstrated the existence of such proteins and ascertained their biological function, it is patently impossible for those engaged in pediatric research to establish which of them is involved in a specific disorder.

The specific instances given above are but a few of those which come to mind and reflect my own preoccupation with biochemistry. They are a small sample

of the kinds of research presently supported by the Division of General Medical Sciences and which would form the research program of the proposed Institute of General Medical Sciences.

Thus, this is a plea for continued support of basic research in normal human biology, an effort which will provide the facts and develop the concepts which are necessary before others may employ them in the applied research which is the mission of the categorical institutes. It is no longer necessary to document the concept that support of basic research leads to enormous dividends in the conduct of applied research. The success of our national aspirations in the future is contingent upon our gaining the needed information today. In a technological society, technology can progress no faster than the body of basic scientific information concerning the nature of the universe permits. This is no less true of our hopes for control of the dread diseases, hopes which hinge entirely upon the success of our national effort in understanding man himself.

Indeed, this concept is not new to the Congress which incorporated funds for such research into the budgets of each of the National Institutes of Health at their inception. Commencing 4 years ago, it was recognized by the House and Senate that such research should be enhanced and protected. Hence, funds were appropriated specifically for this purpose and were placed in the budget of the National Institutes of Health under the appropriation title, "General Research and Services." In order to administer these funds there was created at the National Institutes of Health a Division of General Medical Sciences. It is my hope that the Congress will see fit to dignify, consolidate, and strengthen this effort by elevating the Division of General Medical Sciences to a full-fledged institute.

The research program of this Institute would also include investigations into clinical problems which do not clearly fall within the purview of any of the established categorical institutes. For example, the problem of homotransplantation of tissues and organs has been receiving increasing attention with the help of funds from the Division of General Medical Sciences. As other such problems are identified, research directed to their solution could receive support through the Institute for General Medical Sciences.

The fundamental research to be conducted under the auspices of this Institute and the categorical research supported by its sister Institutes can only be accomplished by intelligent, highly motivated, and well-trained investigators. The magnitude of the national pool of such investigators is the determining limit on our national effort to understand the biology of man in health and disease. As it happens, I have been in peculiarly advantageous position to assess the inadequacy of our national supply of such investigators. As an officer of the American Society of Biological Chemists as well as chairman of a university department in which biochemists are trained, for some years I have been painfully aware of the serious discrepancy between the large numbers of positions available for biochemists and the comparatively few biochemists available to fill these positions. As a member of the board of the Federation of American Societies for Experimental Biology, I have served on the Advisory Committee to a Survey of Manpower in the biomedical sciences. Only the first phase of this operation, which has largely been devoted to development of methods for realistic appraisal of the supply and demand for such manpower has been completed. But already the data reveal that there is a serious discrepancy in all scientific fields between the number of positions and scientists available at the present time and that this discrepancy will become ever greater in the next several years. As one who has been seriously involved in national planning for medical education, I have become ever more impressed with the fact that the real limiting factor in our national ability to develop new medical schools so as to expand the pool of physicians who will in turn meet the demands for medical care for our expanding population, will be the supply of scientists to serve as the preclinical faculty in such new medical schools. Last fall, I served as a member of a special ad hoc committee which reported to the Surgeon General of the U.S. Public Health Service and to the President's Science Advisory Committee with respect to the status of our national research program in environmental health. That there is an immediate and urgent need to mount such a program appeared entirely indisputable. But, again, the limiting factor in determining when and where such a program could be mounted proved to be the supply of trained scientists. Most recently I have been serving as a member of a committee of consultants to the Institute for Defense Analyses charged with an appraisal of research in the life sciences within the Department of Defense. And again has it become apparent that here too, the prime limiting factor in enabling the research establishment of the Department of Defense to get on with its vital tasks derives from the inadequate national pool of highly trained and competent biological scientists.

It was in anticipation of these national needs that the National Institutes of Health, through its Division of General Medical Sciences, instituted a series of grants-in-aid to support programs in the training of scientists for research in the sciences related to medicine. These programs are conducted only in the appropriate departments of medical schools, great teaching hospitals and, occasionally, university departments outside the medical schools, which by their tradition, faculty, and facilities can provide research training of the caliber which is required to meet the demands of our time. Such programs now exist in the fields of the anatomical sciences, biochemistry, biophysics, physiology, pharmacology, pathology, microbiology, genetics, epidemiology, and biometrics. It is imperative that these programs be continued and, in time, expanded as additional academic departments demonstrate their competence to provide training of the type and caliber which is required. Such training, conducted at the graduate and post-doctoral level, inherently, is extremely expensive and beyond the normal capabilities of universities. The trainee must receive a broad background of the current state of knowledge in his field of interest as well as in related fields, must become skilled in scientific method and the design and conduct of experiments, must become proficient in the tools and techniques peculiar to the branch of science to which he has addressed himself and must acquire competence in research itself, competence which is acquired only by performance of research under the supervision of a mature and sophisticated investigator. The ratio of faculty to students is of necessity small and the apparatus and equipment becomes ever more complex and expensive. No university can afford such training without specific financial support.

But it is these programs which will constitute the very lifeline of our national effort in biomedical research. From them will emerge trained scientists, some of whom will address themselves to the fundamental problems of human biology while others attack the crying problems of disease. For research in disease is not conducted by "cancer specialists," or "pediatrics specialists," or "cardiac specialists," etc. The investigator interested in cancer must approach it specifically with the skills and knowledge of one highly trained in one or more of the biomedical sciences. The physician engaged in research on cancer or schizophrenia must bring to bear his disciplinary training in biochemistry, physiology, or genetics, etc. Thus, these training programs will provide the Nation with the investigators who will do both the fundamental and the applied research in the biomedical sciences. If support of these training programs is not continued and indeed expanded, in time it will have become pointless to appropriate money for the support of research for there will be few to perform such research; it will have become pointless to appropriate money for the construction of research facilities for there will be no investigators to labor within them. No program at the National Institutes of Health is more important than is the program of training grants now operated by the Division of General Medical Science.

My request, therefore, is that this committee recommend approval of the creation of an Institute of General Medical Sciences as here proposed. The program which would be conducted under the auspices of this Institute is already in being. Indeed, it is presently funded at a level far greater than that of any of the categorical Institutes at the time they were created by the Congress. Considering the paramount importance of its programs, it is fitting that this Division be elevated to the dignity and status of a full-fledged Institute, that such Institute be a creature of the Congress rather than a device of the administrative officers of the National Institutes of Health.

So vital are the programs of this Division that it is imperative that it continue to be administered by individuals of topflight managerial and scientific talent. To attract and maintain such a staff and permit attractive career development programs for them requires that the organization for which they would be responsible enjoy a status equal to that of the other Institutes at the National Institutes of Health. At the same time this will insure that the wishes of the Congress with respect to the conduct of this vital set of programs in biomedical research and research training shall continue and that, in any 1 year, the magnitude of this effort shall not be influenced by otherwise competing requests for support of research seemingly more directly addressed to the problems of disease. For the future of our total national biomedical effort lies within this basic program, which "feeds" both investigators and information essential for the conduct of the research programs of the categorical institutes.

There is an added dividend which is not lightly to be discounted. The advisory group which presently serves the Surgeon General with respect to the programs of the Division of General Medical Sciences is the National Advisory

Health Council. By law, this is also the Council upon which the Surgeon General should be free to call with regard to the broad responsibilities of the Public Health Service and the latter become more vital and significant to the American people daily. From his Advisory Council the Surgeon General should obtain the most competent professional advice with regard to such problems as the operation of the marine hospitals, the health problems of our Indian populations housed on reservations, the management of our pesticide and insecticide programs, techniques for the monitoring of fallout, water pollution, air pollution, accident prevention, the relationships between the U.S. Public Health Service and local and State departments of health and the overall operation of the National Institutes of Health. Clearly, this is already so all-encompassing a mission that it is difficult indeed to find a council of 12 members from whom first-hand competent professional advice can be had in all areas for which the Public Health Service now has responsibility. And it is fanciful to consider that a Council capable of providing competent professional advice in all of these areas could also serve the Surgeon General with equal competence with respect to the specific scientific programs of an Institute of General Medical Sciences. Since creation of the new Institute also entails formation of a new National Advisory Council, our Nation and the Surgeon General would be assured of more incisive and knowledgeable advice from two independent councils each of which is so constituted as to make available to the Surgeon General those individuals whose competence and professional interests are especially relevant to the tasks at hand. The membership of the National Advisory Health Council has not complained of the dual burdens under which it has labored for the past several years. But as one whose term on this Council expired last year, I believe that I can speak for the entire group in stating that each of us has frequently felt inadequate under the existing circumstances and all would welcome both creation of the proposed Institute and of an appropriate new Council.

Had the Division of General Medical Sciences never been created, if its programs were not in being, I should feel compelled to document in fuller detail the national needs for those programs for which the Division now has responsibility. But the Congress has already, by its previous actions, indicated its understanding of the problems involved. The magnitude of the appropriation for the Division of General Medical Sciences (found under the appropriation title, "General research and services") clearly indicates congressional recognition of the national significance of this program. It remains, therefore, for the Congress to invest this program with the dignity and status of an Institute so as to assure that, in the future, its programs will be prosecuted with a maximum of vigor, intelligence, and efficiency.

Senator YARBOROUGH. The most pleasant part of my work as a Senator is in committee hearings, believe it or not, where I have the opportunity of hearing some of the greatest teachers and scientists in America testify on different measures that come before us.

I would have insisted on your reading the full text of your statement, if we had the time, because I confess that I can better understand statements that are read and heard at the same time. But we must close this hearing before 12 o'clock. As stated, your statement will be printed in full in the record where we can read it.

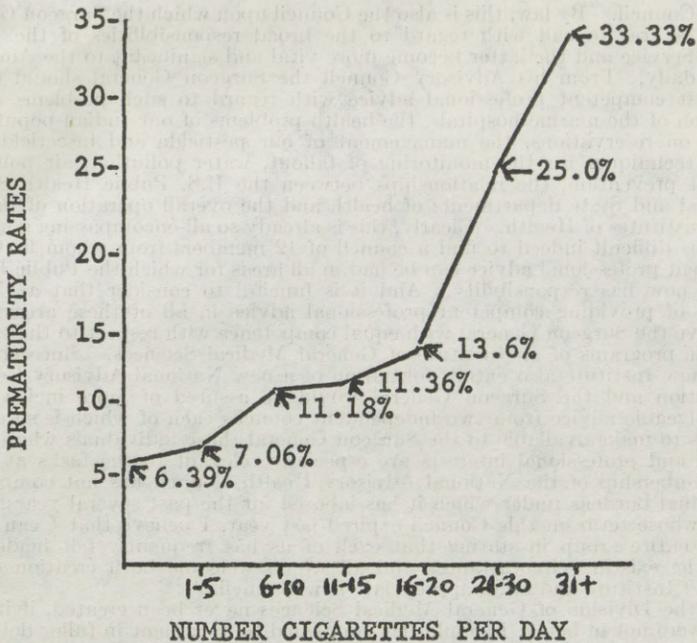
Dr. HANDLER. Thank you very much.

Senator YARBOROUGH. At this time I will ask the staff to obtain the preliminary reports from the National Institutes of Health on the effects of prenatal use of tobacco and alcohol on childbirth, and I will order that included in the record at this point.

(The information referred to above follows:)

COMMENTS ON RELATIONSHIP OF SMOKING AND ALCOHOL CONSUMPTION BY A PREGNANT WOMAN TO HEALTH OF THE INFANT

Cigarette smoking and an increased incidence of prematurity was first reported in 1957 by Dr. Winea Simpson, based upon data gathered from 7,499 patients (2,371 smokers and 5,128 nonsmokers). This report showed an incidence of premature births which was approximately twice as great for smoking mothers as it was for nonsmoking mothers. The prematurity rate, as illustrated by figure 1, increases with the number of cigarettes smoked per day. The highest prema-



turity rates are for heavy smokers and the lowest rates are for nonsmokers. This finding was confirmed in 1958 by Dr. Charles Lowe of England, and in 1961 by Frazier et al., of Baltimore.

Their findings were again corroborated in preliminary findings recently reported by the long-range collaborative perinatal research project of the National Institute of Neurological Diseases and Blindness. This increased rate of premature births in smokers is important in that the premature has a higher incidence of brain damage and infant death than does the full-term baby. That smoking is the causative factor in the premature birth cannot be stated until other coincident maternal events, such as nutritional deficiencies, viral infections, etc., have been ruled out. Although a statistical association has been demonstrated by these investigators between prematurity and smoking, no relationship between congenital defects and smoking has been reported.

In reviewing scientific reports on alcohol as a prenatal factor, we find no evidence incriminating alcohol as a causative agent in prematurity or in congenital defects. However, this may reflect a lack of research effort in this area, since only a handful of studies have been done.

There has been a paucity of research into maternal factors and habits which might adversely affect the outcome of pregnancy. The collaborative perinatal research program of the National Institute of Neurology and Blindness was the first large scale federally supported program to encourage investigation of prenatal factors and their effects upon the baby. This is a national study involving 15 university research centers which began in January 1959. It was designed to acquire information on the causation of cerebral palsy and other congenital neurologic diseases.

Senator YARBOROUGH. I will, also, want printed in the record at this point a letter from Senator Humphrey addressed to the Honorable Lister Hill, the chairman of this committee, in support of this legislation, as well as a letter from the American Parents Committee, Inc., dated August 31, 1962, to the Honorable Lister Hill, the chairman of this committee, signed by George J. Hecht, the chairman, in support of this legislation; also, a statement from Dr. Margaret Mead, of the American Museum of Natural History, and past president of the

American Anthropological Association, in support of this legislation; as well as a letter from Dr. Thomas C. Points of Oklahoma City, Okla., addressed to Senator Robert S. Kerr, which contains within it a statement—a very fine statement—in support of the legislation; as well as a statement from Prof. Hans Neurath, professor of biochemistry and executive office of the School of Medicine of the University of Washington, addressed to Senator Warren C. Magnuson, various prepared statements, letters, and telegrams. All of those are ordered printed at this point in the record.

(The documents referred to follow:)

U.S. SENATE,
COMMITTEE ON GOVERNMENT OPERATIONS,
SUBCOMMITTEE ON REORGANIZATION
AND INTERNATIONAL ORGANIZATIONS,
September 11, 1962.

Hon. LISTER HILL,
Chairman, Committee on Labor and Public Welfare.

MY DEAR MR. CHAIRMAN: I should like to convey my strongest endorsement of the concept of the establishment of a National Institute of Child Health and Human Development and a National Institute for General Medical Sciences, along lines proposed in the legislation pending before your committee.

I would appreciate if this letter could be printed in the record of the hearings along with a memorandum and exhibits which I am sending under separate cover.

The memorandum summarizes observations, particularly as regards the need for a Child Health Institute, but also with reference to the importance of inter-Institute collaboration.

I could not conclude this letter without expressing my deep admiration for the great contributions which you have personally made toward enabling the National Institutes of Health to expand their invaluable research at the frontiers of medicine, such as the pending bill proposes.

Warmest personal regards.

Sincerely,

HUBERT H. HUMPHREY.

Memorandum from Senator Hubert H. Humphrey.

Re the case for a National Institute of Child Health and Human Development and a National Institute of General Medical Sciences.

I submit this memorandum in support of the purposes of S. 2269 and H.R. 11099, 87th Congress, to amend the Public Health Service Act.

(1) *Summary*

I believe that the establishment of the two new Institutes will strongly facilitate research in the broad areas cited within this legislation.

The two Institutes can, in effect, make possible broader gaged consideration and coordination resulting in greater efficiency in national and international scientific effort.

Of course, the coordination will not come about automatically. The NIH Director's overall task of administering nine Institutes will become still more complex than the administering of seven Institutes, at present, plus what is now the Division of General Medical Sciences, in addition to the Division of Research Grants.

Then, too, at the level of individual Institute direction, each of the two new Institutes will pose a challenging problem of administration in itself. Yet, increased good can and, I am sure, will be realized from the bringing together of now widely scattered insight and knowledge into these areas.

(2) *Both Institutes important*

I shall refer principally to the need for a National Institute for Child Health and Human Development, because this happens to be a phase which I have studied in particular detail.

But, equally important is the proposed authority which would rightly be conferred upon the Surgeon General to establish an Institute of General Medical Sciences.

In my judgment, the elevation of the present Division of General Medical Sciences to Institute status is an important milestone in the history of Federal support of medical research.

As the members of the committee are aware, this proposed Institute will conduct and support research and research training in the general or basic medical sciences and in related natural or behavioral sciences which have significance for two or more other Institutes. By basic science is, of course, meant pharmacology, biology, as well as general studies.

Authorization of its own Advisory Council is especially important to the new Institute. A vigorous, capable, specialized Advisory Council can be of immense aid to the progress of an Institute.

(3) *The Child Health Institute*

The case for the establishment of a separate National Institute for Child Health and Human Development has already been eloquently made by leaders throughout the Nation—pediatricians, gynecologists, basic researchers, and others. Experts in the aging process have likewise substantiated the case for bringing within an Institute on Human Development the present Center for Research in Aging.

I would only add, to the splendid evidence which has been presented, a few observations which I have made from my vantage point of chairman of a Senate Government Operations Subcommittee. For several years, this subcommittee has been studying problems of international medical research. One of the areas on which we have concentrated and which I should like to focus on now is the support of perinatal research.

It became clear, early in our subcommittee's study, that only by systematic and coordinated effort could research in this perinatal field pay the tremendous dividends to human well-being which all of us desire and envision.

I know that members of this subcommittee are aware of the tremendous significance of the health of the pregnant mother, the embryo and then, the fetus—during the 9 months of gestation.

Only now is science beginning to gain detailed understanding of what occurs on a biochemical basis within the expectant mother's body and within the womb, in particular.

The two new Institutes—particularly the Child Health Institute—can contribute invaluable to expanding this understanding.

(4) *An illustration—Study of drug effects on pregnancy*

Over and over again, scientists have told us that all too little is yet known of the effects produced, for example, by drugs taken by pregnant mothers.

On August 1 and August 9, 1962, this subcommittee held hearings on this subject, and in particular, on the international tragedy which resulted from the use of the drug, thalidomide, by pregnant women, principally in Western Europe. It became clear, from the testimony which we received at that time, that infinitely more research must be conducted—and on a systematic, coordinated, evaluated basis—if countless parents are in the future to be spared the anguish of seeing infants stillborn or impaired with a congenital defect.

CORRESPONDENCE WITH TERATOLOGY EXPERTS

Over the years, I have corresponded with many perinatal experts. Recently, for example, I have been happy to hear from many distinguished members of the Teratology Society, a group highly expert in the study of congenital malformations and other defects.

I should like to quote now from but a few of many welcome letters received from members of the society. Each responded to comments which I had submitted on a specialized topic—the subject of the possible effects of drugs on pregnancy.

This matter of drug effects is, of course, one of but innumerable problem areas during pregnancy. I point up this area purely for purposes of illustration of the tremendous depth and complexity of any given subtopic in the field of perinatal study.

Let me introduce the subject by quoting an editorial from the September 17, 1962, issue of *Medical Tribune* as regards the meaning of "teratogenesis."

"TERATOGENESIS

"The Greek roots of the word teratogenesis (teratos, a monster; genesis, production) have firmly established the dictionary definition: the development of a fetal monstrosity. Indeed, photographs of the sad infants with phocomelia

ectromelia, and amelia as a result of ingestion of thalidomide by pregnant women are monstrous enough. But it is a mistake to think of teratogenesis as confined to this dictionary meaning. It was clear from the interview with Dr. D. H. Woolam reported in Medical Tribune 2 weeks ago (September 3, 1962) that he—like all the workers in the field of embryologic defects—uses the word teratogenesis to mean the development of congenital anomalies and malformations of any kind. These range widely, from cleft lips and palates to club feet, cardiac malformations, mongolisms, spina bifida, etc.

"Before 1940, all these defects were attributed to 'faulty germ plasm,' but there was little inkling of what had gone astray. It was after the Australian epidemic of rubella in 1939-40 that this viral infection during the first trimester of pregnancy was recognized as being capable of causing deafness, cataracts, and heart disease in the fetus whose chromosomal and germ plasm were perfectly normal at conception

"Since then, considerable work in animals has been performed and a multiplicity of agents have been identified as noxious to early embryogenic tissue of experimental animals. Dr. Woolam suggests certain general principles in testing drugs for teratogenicity. These are valuable suggestions and warrant study."

CHILDREN'S REHABILITATION CENTER,
Buffalo, N.Y., September 5, 1962.

Senator HUBERT H. HUMPHREY,
U.S. Senate,
International Health Study,
Washington, D.C.

DEAR SENATOR HUMPHREY: Thank you for your memorandum on the strengthening research on birth defects, which you sent to me along with other members of the Teratology Society.

We would greatly appreciate receiving the hearing volume, which you have offered to make available for our center. I am sure it will prove of value and make us better informed on the work of your subcommittee.

I should also like to express my appreciation on your stand to have the Senate enact the House-approved bill for the establishment of a National Institute of Child Health and Human Development.

We in the department of pediatrics have expressed to the New York State Senators our wholehearted approval of this bill.

If there is any way in which we could be of further help, I would appreciate hearing from you further.

Sincerely yours,

ROBERT WARNER, M.D.,
Medical Director.

STATE OF MICHIGAN,
LAFAYETTE CLINIC,
Detroit, Mich., September 11, 1962.

Senator HUBERT H. HUMPHREY,
U.S. Senate, Washington, D.C.

DEAR SENATOR HUMPHREY: As a former resident and student at the University of Minnesota, I was very pleased to receive your memorandum to the members of the Teratology Society expressing your interest and desire to strengthen research in the area of birth defects.

I would indeed appreciate receiving a copy of the hearings concerned with "Intra-Agency Coordination in Drug Research."

For those of us working in the field, the recent tragedy with thalidomide was nothing new. As a matter of fact many of us are greatly concerned by the fact that many kinds of drugs as well as other prenatal factors often result in a variety of defects involving such systems as the cardiovascular, central nervous system, as well as behavioral alterations. Because these defects are not readily observable, they tend to be frequently overlooked in relation to their etiological origin. As scientists and citizens, we must be concerned with these type of defects as well as with the observable and pronounced effects which were recently seen with thalidomide.

In light of these considerations, I am enclosing several reprints of my own work which indicates that behavioral consequences result from such prenatal manipulations.

Again let me add my support for you to continue your interests and efforts in this very important area.

Sincerely yours,

JACK WERBOFF, Ph.D.,
Director, Animal Behavior Laboratory.

UNIVERSITY OF ILLINOIS,
COLLEGE OF MEDICINE,
DEPARTMENT OF ANATOMY,
Chicago, Ill., September 7, 1962.

HON. HUBERT H. HUMPHREY,
Senate Office Building, Washington, D.C.

DEAR SENATOR HUMPHREY: Thank you so much for the mimeographed information which your office so kindly sent to members of the Teratology Society. I feel encouraged to know that someone in high office is in position to recognize that there is a group of physiologists, anatomists, biochemists, and pathologists who have joined together into a common society where their interests may be discussed on a free and scientific basis where the study of birth defects is concerned.

First, may I request that a copy of your subcommittee hearings, "Interagency Coordination in Drug Research," be sent to me.

I feel that it would be well for a thorough scientific review to be made of the possibility of doing drug screening with respect to congenital malformations and fetal welfare. This concerns not only malformations, but even fetal death.

Many years ago I was engaged in a summer project at an eastern medical school for a pharmaceutical concern. They gave me all of the data which they had and I was totally unsatisfied with their range of toxicity studies. I carried on an extensive series of studies in different species of animals, comparing intravascular, intraperitoneal, and oral effects and acute as well as chronic effects. I recall to this day how the pharmaceutical firm, which is one of the well known ones in the world, was amazed at the range of observation which I insisted upon making, in addition to the specific problem which they wanted me to engage in. It was perfectly clear that toxicity screening at that time did not involve very much. Of course, I know that there has been vast improvement both in technology and in design of experiments. I am not sure however, that all is done that should be done with respect to the effects on maternal and fetal health. I read in the papers, with respect to thalidomide, that this could not have been tested experimentally in animals. While I am not prepared to say just how this could be done, I do not think that anyone is in position to categorically say that it cannot and should not be done. I think that the answer is that we do not know and one may not say that certain types of tests in certain species of animals might not have been highly suggestive and provocative. I believe that some extension of toxicity studies of this sort might well be carried on to the Laboratory of Perinatal Physiology under the National Institutes of Mental Disease and Blindness in their new laboratory in San Juan, P.R. I know that there is a crossingover administratively of various lines from Food and Drug Administration to the National Institutes of Health. But where common health problems are concerned, I think that an administrative means must be found to overcome these. I feel that certain facilities do exist both in San Juan and in Portland, Oreg., to permit some testing on primates to be done. I am not convinced that some experiments, covering a wide range of drugs, should not be carried out in common laboratory animals as well as some laboratories which may not be so common. I think that by properly selecting animals and routes of administration one may well find animals especially suited for this type of work, at least for certain classes of drugs.

One of my former students, Dr. Hannelore Loevy, who received her Ph. D. in this department on a problem comparing genetic congenital malformation of the palate and teratological induced malformation, is now engaged in a post-doctoral training program in a department of pharmacology. While this is a step in the right direction, I felt that much more could be done along these lines. The point is, people in pharmacology are basically biochemists and toxicologists and people in anatomy and some aspects of physiological endocrinology are concerned with pregnancy mechanisms, gestation, fertility, and so on. The field seems pretty well to have divided itself and there are not at the present time

ready means of crossing over from one of these disciplines into another. The Teratology Society represents those groups which are involved, but it commits those who are unaware of the potential area of research in their own field, such as biochemists and pharmacologists.

I remain,

Sincerely yours,

S. R. M. REYNOLDS, Ph. D., D. Sc.,
Professor and Head, Department of Anatomy.

PARIS, FRANCE, *September 4, 1962.*

Senator HUBERT H. HUMPHREY,
International Health Study,
U.S. Senate.

DEAR SIR: As a member of the Teratology Society, I have received your letter on strengthening research on birth defects.

Your attempt to increase and coordinate research in this most complicated field constitutes certainly a very valuable contribution and should be most stimulating for those involved in these problems.

I would like to express my sincere appreciation to the committee and to its chairman for this most important and opportune initiative.

I think that your decision to favor the study of malformations will have a determining influence on future progress. Until these days research on congenital malformations has been limited to isolated workers or to small teams of three to four biologists. The recent tragedy of thalidomide, showing the practical importance of this problem, will certainly help us because it will lead to increased interests in human development. However, a coordination between clinicians and biologists on one hand, a frequent exchange between experimental workers of various countries will be most important in order to fight against the increasing number of malformations.

My collaborators and myself would be very happy to cooperate exchange informations with American scientists in order to be able to increase and accelerate our research projects.

We already have connections with American colleagues and I am very happy to have this year, in my department, Dr. L. Hurley, assistant professor in the University of California, a member of the Teratology Society.

However, I feel it desirable to increase our interrelations with the United States. Much time could be gained by a general planning and coordination of experimental investigations.

It is up to you to suggest to us the practical way to establish a connection with your committee and to examine if we could eventually receive a material help for our researches.

I may, perhaps, mention in relation with such a grant, the fact that with Professor Giroud we have founded in 1957 a society which tries to increase all studies which are able to facilitate the prevention of malformation "Fondation Médicale pour l'étude des troubles du développement prénatal." This foundation is composed by a small group of members (clinicians, pediatricians, obstetricians and experimental biologists). Most of the members are professors of University of Paris.

We meet three to four times each year in order to discuss specific problems of human or experimental malformations (included are two programs of our meetings).

The foundation in connection with your committee could eventually coordinate the research projects in France.

During the last 5 years we have demonstrated that several drugs such as hypoglycemic sulfonamides, various antimetotics, particularly Actinomycine D, glucagon, and antivitaminés can produce malformations in animals and are dangerous for pregnant women.

Faced with the problem of thalidomide we have been more lucky than most of the other biologists. We have shown that thalidomide is teratogenic in various strains of mice and in rabbits. Our results have been presented April 17, 1962 (Giroud, Tuchmann-Duplessis and Mercier-Parot), at the international meeting of Anatomy in Toulouse (France), at the Académie de Médecine (reprint included) at August 11, 1962, in the *Lancet*, page 298. We shall present in the near future a new paper on our recent results on thalidomide.

As far as I know our results have been already confirmed in rabbits by Sommers in Great Britain.

By separate mail we are sending you several reprints of our department. We would appreciate to receive the hearing volume mentioned in your letter.

With the sincere hope to contribute to an increased teratology research program, I am,

Sincerely yours,

H. TUCHMANN-DUPLESSIS,
*Professeur à la Faculté de Médecine de Paris,
 Directeur de Laboratoire à l'Ecole des Hautes Etudes.*

Our subcommittee hearing volume, entitled "Inter-Agency Coordination in Drug Research," points up, I believe, not only the hazards of drugs but the dangers from other now dimly perceived factors which may cause untold grief to parents whose child may not be born well or whole.

By means of the pending legislation, the Senate has the opportunity to enable the National Institutes of Health to move ahead expeditiously on the overall perinatal as well as on related fronts. Perinatal research, itself, will, I trust, be greatly strengthened and expanded after the legislation is approved.

(5) *Present child-oriented research*

My feeling on the need for this Institute is not new.

For several years, I have personally felt the desirability of a specialized Institute oriented to the varied needs of the developing child.

In 1960, I gathered information from the U.S. Children's Bureau, from the National Institutes of Health and from the Science Information Exchange as regards the then current Federal support of child-oriented research. I used this information in public comments to point out the need for a more coordinated effort.

Once again, in 1962, I have done so. Attached as an exhibit is a table prepared by the Science Information Exchange, describing, according to its records, the levels of child-oriented research now under Federal and (to the extent that information is available) private support. The exhibit indicates that Federal agencies may at present be providing \$34.4 million of support for some 1,302 projects, including \$5.4 million for 237 perinatal grants (over and above 13 intramural studies under this subcategory).

(I might add that estimates as to what constitutes child-oriented research vary widely, depending on definition and on who is making the estimate from a particular vantage point. NIH's estimates differ appreciably from those of the Science Information Exchange, for example.)

In any event, much work is being done. It is clear, however, that this work needs systematic coordination and evaluation such as a new National Institute could provide in conjunction with a strengthened Children's Bureau.

Concentrated attention on the problems of the infant must, of course, be accompanied by attention to maternal health, as well, for the reasons earlier indicated.

CONCLUSION

In conclusion, the authority proposed under pending legislation is necessary and essential. It will help assure maximum yield from a wide range of research which could, for the first time, be more systematically administered and evaluated. The yield will, in turn, be of immense significance for strengthening our greatest asset as a nation—the health of our people and, in particular, the health of our children.

EXHIBITS

There follow two tables from a letter of August 28, 1962, from David F. Hersey, Ph. D., Associate Director, Life Sciences, Science Information Exchange, as regards current support of research dealing with children.

Support of research dealing with children, 1 fiscal year 1962

	Diseases		Perinatal		Child growth		Other		Total	
	Grants	Amount	Grants	Amount	Grants	Amount	Grants	Amount	Grants	Amount
Department of Health, Education, and Welfare.....	475	\$14,187,561	231	\$5,313,052	104	\$2,370,092	454	\$11,912,641	1,264	\$33,783,346
National Institutes of Health.....	468	13,867,628	226	5,222,280	104	2,370,092	348	9,541,282	1,136	31,001,282
Office of Education.....	3	42,532					86	1,571,835	89	1,614,367
Office of Vocational Rehabilitation.....	8	114,894					13	590,395	21	645,289
Bureau of State Services.....	6	162,507	5	90,772			4	198,083	15	451,362
Social Security Administration.....							3	71,046	3	71,046
Department of the Army.....	9	112,726	1	11,802	1	28,752	1	39,107	13	192,387
Department of the Navy.....	1	22,212								22,212
Atomic Energy Commission.....			4	98,500			3	70,107	7	168,607
National Science Foundation.....	1	12,000	1	6,100	10	189,802	5	46,666	17	254,568
Total.....	486	14,334,499	237	5,429,454	115	2,588,646	464	12,068,521	1,302	34,421,120

The statistics in this table represent only those research grants and contracts registered with the Science Information Exchange by Federal granting agencies.



Intramural research dealing with children (number of projects registered with Science Information Exchange by Federal agencies), fiscal year 1962

	Diseases	Perinatal	Child growth	Other	Total
Department of Health, Education, and Welfare.....	37	4	4	21	66
National Institutes of Health.....	37	4	4	21	66
Veterans' Administration.....	13	9	5	10	37
Department of the Navy.....	1				1
Total.....	51	13	9	31	104

THE AMERICAN PARENTS COMMITTEE, INC.,
New York, N.Y., August 31, 1962.

HON. LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: I am writing to advise you of my interest and that of many members of the American Parents Committee in the pending legislation to provide for the establishment of an Institute of Child Health and Human Development (H.R. 11099; S. 2269). As a cosponsor of the companion bill to H.R. 11099, which has just passed the House, I am sure you share this interest.

Congressman John Fogarty made a very strong supporting speech during the House debate in which he said: "This bill is one of the most important pieces of legislation affecting the future welfare of the American people—and especially the future citizens who are as yet unborn—to come before the House since the act which completed the present group of Institutes at the National Institutes of Health was passed 12 years ago."

I realize there are many other important bills demanding your attention during the short time remaining in this session of Congress. However, because this legislation is in an area in which there is almost universal agreement, you may lack expressions of support.

I feel the enactment of this legislation would lead to a great increase in the pace and effectiveness of much needed research on the problems of child health and human development. I urge you not to let this legislation die with the session because of lack of time.

Sincerely yours,

GEORGE J. HECHT, *Chairman.*

PREPARED STATEMENT OF DR. MARGARET MEAD, AMERICAN MUSEUM OF NATURAL HISTORY; PAST PRESIDENT, AMERICAN ANTHROPOLOGICAL ASSOCIATION

I concur with those who feel that there is a great need to engage in a new and expanded program of research on mental retardation and other disorders inhibiting normal growth and development. Certainly no society facing the unprecedented challenge which we face today can strive to do anything less than make maximum use of all its human potential, and to stop the tragic waste of human potential which is occurring today.

What I would like to call to your attention is the equal importance of research, which is broadly based, and directed toward the entire spectrum of normal development, from conception through childhood, and adolescence into adulthood. Research of this kind is as basic to unraveling the causes of disorders like mental retardation, as theoretical physics is to the development of atomic reactors. Such research, to be truly effective, should include all of what I like to call the human sciences—that is, the biomedical and behavioral sciences.

The need for broadly based research into the many fundamental causes of mental retardation can be pointed up by a consideration of the Army draftees rejected as unfit during World War II. In many cases it was impossible to draw the line between mental deficiency and illiteracy among them. Careful studies of these, and other large numbers of mentally retarded, indicate that without any doubt the vast majority have been socially and psychologically deprived, rather than defective in any organic sense. The kinds of heredity and environment which produce the vast majority of cases of mental retardation also produce other

chronic, endemic problems like economic dependency and some kinds of delinquency. It would be completely inefficient to use our scarce resources of scientific manpower to launch a program of basic research into the causes of mental retardation without at the same time studying the many hereditary and environmental factors which contribute to mental retardation and to many other vexing social problems as well.

There are many ways in which social and cultural factors affect the processes of growth and development. During the last 25 years an extensive amount of research has been conducted on the ways in which children develop within different cultural settings around the world. While the broad lines of child development seem to be fairly comparable from one human stock and one cultural environment to another, there are many variations where the cause of the variation is still uncertain: it may be due to constitution, nutrition, or some detail of parental behavior.

Of direct relevance to mental development are the studies of the "kwashiokor" syndrome in tropical areas, and studies of institutionalized and emotionally deprived children. These have shown how certain types of apathetic withdrawal and emotional and cognitive stunting—of the kind presumably involved in mental retardation—emerge from different causes: some nutritional, others having to do with disease, parental stimulation, sensitivity of parents, and so on.

As the human biologists and other medical scientists increase their ability to diagnose genetic anomalies, nutritional anomalies, sensory defects, arhythmias, etc., it will become ever more important to pay attention to small details of child feeding, the amount of stimulation the child receives, the sensitivity of adults to details of child behavior, and their emotional attitudes in caring for the child. If we are to do this, we must support the behavioral sciences as well as the biomedical sciences, and study the normal, as well as the pathological features, of human development.

Such a broad and basic program of research in all of the human sciences will also require, in my opinion, the organizational support of the National Institute of General Medical Sciences. The basic disciplines need to be supported, in order for us to have adequate knowledge to pursue studies of human development, and people need to be trained in increasing numbers to enter the basic human sciences. This, as I understand it, the new Institute of General Medical Sciences is to be set up to do.

OKLAHOMA CITY, February 6, 1962.

Senator ROBERT S. KERR,
U.S. Senate Building, Washington, D.C.

DEAR SENATOR KERR: This letter is my support of the principle of S. 2269, authored by Senator Hill and yourself as introduced in the 87th Congress, 1st session. Said bill to provide for the establishment of an Institute of Child Health and Human Development. The opinions expressed herewith are based on my experiences (1) as a private practitioner of the speciality of obstetrics and gynecology for 20 years, (2) as a teacher of medicine by virtue of the rank of associate clinical professor of gynecology and obstetrics at the University of Oklahoma Medical Center, (3) as a research scientist, having performed research on perinatal and obstetrical problems since 1947, and (4) from the public health viewpoint; having received a master of science degree in material and child health from the university in 1955 and at the present lack only 4 semester hours for a Ph. D. degree in maternal and child health. As near as can be ascertained, there has not been a Ph. D. awarded in this field within the United States.

While I am intensely interested in the functions as set forth in the bill, one exceedingly important area of medicine has been omitted from the objectives of the proposed institute. To wit: prenatal development of the new life before it becomes a human being and assumes its place as an important part of the earthly society. This facet is not referred to either directly or by implication in the bill. The need for the inclusion of such will be substantiated by the following discussion of facts:

The basic objective of every physician who performs obstetrics is "Deliver a live, normal, and healthy baby, who will be an asset to the world throughout its life, and to have a mother who is physically and mentally capable of raising her child." At the present time there are some 4,300,000 babies born each year in the United States. I conducted a 5-year statistical analysis of the four major hospitals in Oklahoma City and using these statistics for calculations on a national basis in the United States we have 322,500 premature births each year of which

68,692 die. In addition there would be 21,875 full-term deaths, giving approximately 90,657 baby deaths each year from the 20th week of pregnancy through the first 28 days following birth.

In addition, at least 15 percent of all pregnancies, or 645,000, end in abortions each year. These are not included in the above figures and neither are we able to determine the cause of the abortion in the majority of them.

Consequently, in the United States alone each year 735,567 lives are lost before 1 month of life has taken place.

As comparison, there are approximately 659,520 deaths from diseases of the heart, 165,320 from cancer, 192,780 from cerebral vascular disease, 33,000 from automobile accidents.

Looking at these statistics another way; 1 out of every 40 pregnancies after 20 weeks of pregnancy ends in death of the baby and 1 out of every 10 pregnancies ends in disaster to fetus or baby; whereby, in diseases of the heart, only 1 person out of 272 will die of heart disease, 1 person out of 679 will die of malignancy, 1 out of 935 will die from vascular accidents of the central nervous system, and 1 person out of 5,050 will be killed in car accidents. As further comparison, a baby (not including abortions) has seven times the chance of dying from the 20th week of pregnancy to 1 month of age, as do all the rest of the people dying of diseases of the heart, and remember the latter is considered to be the major cause of death in the United States. Those babies have 126 times the chance of dying as one would in an automobile accident, and yet the headlines in the daily papers scream about the number of violent automobile deaths on the highways. A baby's death is just as violent and shocking to its family.

Now let us take a look at another and more lasting problem connected with the obstetrical area. I refer to those babies who were born and lived, but yet are not whole humans; having congenital malformations, cerebral palsy, mental retardation, etc. One out of every sixteen births are congenitally malformed and recognizable within the first few days of life. Many other malformations are not observed until later in the life cycle so that the exact incidence is difficult to determine. Coordinated and energetic study of the pathogenesis and epidemiology of these defects give promise of a significant contribution to their control. Each year congenital malformations of the heart take the lives of approximately 6,000 children less than 16 years of age in the United States alone. Of the 253,808 premature babies each year that live, 1 in 4 of them is admitted to the hospital within the first 2 years of life, compared with 1 in 10 of full-term babies. The reduction of perinatal deaths from prematurity primarily involves obstetrical considerations, for without exception, the longer the fetus can remain in the mother's uterus, the greater the chance of extrauterine survival. The mother's uterus is by all standards a better incubator than is the one in the hospital nursery in addition being much less expensive on a per day cost. During the full period of intrauterine life and development, the embryo and fetus has tremendous growth; this is best illustrated by the growth stretching from the tiniest speck to over 50 centimeters in length and the weight increases some 6 billion times.

Due to the impetus provided by the other National Institutes of Health, research and, in turn, teaching of these subjects, has so crowded the curriculums in the medical schools to the point that we find obstetrics slowly given less and less time, to the point of almost being doomed, and yet, a large majority of the medical students, when they become physicians, will have obstetrical patients; some will practice it the rest of their lives.

Man's progress in civilization has been closely intertwined with development of measures to protect lives. Reduction of newborn lives is one of the greatest yardsticks. We, in the United States have not reduced our perinatal losses to an appreciable degree in the last 10 years. The small reduction which has been accomplished has been the result of findings for the care of the child after delivery; not the prevention of the trouble before birth. This perinatal loss is a many-faceted problem, before which science has traditionally bowed its head in helplessness toward these uncounted generations. We must remember that as human beings we have some mastery of our fate.

Five million four hundred thousand Americans are mentally retarded to a point of an intelligence quotient of no more than 75, which is equal to the brainpower of a 12-year-old. Some 4 percent of these victims require institutional care. It has been calculated that 126,000 infants a year, or about 3 percent of the total births, come into the world a mental cripple. The total cost of their care and education run into hundreds of millions of dollars annually. Alone the cost of caring for the retarded in State institutions is \$250 million a year. Another \$750 million is spent annually by other public and private agencies and families

of retarded children for care and education. A minimum of \$1 billion a year is lost in the productive earnings from these individuals. Research, therefore, is crucial; for unless ways are discovered about the reasons for the deaths, deformatives, prematures, and mental retardation, the country will have to meet an increasing and eventually staggering burden and disability. Of necessity, the medical scientists spend most of their energies in the field of curative, supportive rehabilitation and reconstruction of the diseased individual. The field of prenatal care is one of the greatest areas of preventive medicine; the prevention of the lifelong lasting defect and of the immediate fetal deaths, so the individual can be an asset to the family and country, rather than a liability.

The well-being of the newborn infant depends not only on genetics but also on the good health of the mother and fetus throughout her pregnancy and child-birth. The formations and functional growth of the placenta and its role on maternal and fetal welfare is due an increased attention. The placenta, until recent years, has been one of the most universally overlooked, degraded, and wasted of human products. It holds the key of many of these questions, yet even today the lowly placenta is tossed into the garbage can without a thought that it could be the answer to the marked and tremendous human loss. Almost every physiological and biological change which occurs in the pregnant woman are the result of placental activity. It is evident that a clearer understanding of the placenta must be known to prevent sacrifice of some of these complications.

With the rapid increase in the number of young women now being employed, the proper management of obstetrics in relation to the various types of work becomes more significant than ever before. Somewhat over 50 percent of women between the ages of 18 and 40 are gainfully employed. The employment of pregnant women must be considered from two viewpoints; the pregnancy as to the limited ability of the woman to work, and the effect of the industrial work on the health of the woman and her infant throughout all of its life.

The actual true motivation for the onset of labor still remains a puzzle. From the very first known recording in history, we know the female of the mammal species "went into labor," and furthermore we can assume they did long, long before that. It is probably the most common, and by far the most important biological process which keeps the human race in existence, and yet science has never found the answer as to what controls its starting in order to bring a new life into being. Why is it that it starts at approximately 280 days after conception, and has, all these thousands of years? If this one thing could be discovered, then there would be the mechanism for physicians to counteract these premature labors and thereby save the lives of some 68,000 babies a year. It could help in preventing the mental retardation associated with premature births, and ultimately, we would have a chance of preventing thousands upon thousands of abortions. Where would the automobile, the basis of our great industrial Nation, be if the spark to ignite gasoline to start the motor, which moves the piston to push the car forward had not been discovered? Some 23 years ago a great university constructed a new and separate lying-in hospital. Around the outside walls are many alcoves, each with a plaque commemorating a great scientist for his part in reducing obstetrical complications. One alcove however is blank. This one is to honor the scientist who discovers the etiology of eclampsia, the poisoning of pregnancy. To this day the empty alcove still remains because the cause of this dreadful disease has not been discovered, although the incidence and morbidity from it have been markedly reduced by physicians. Only a minute percentage of the cerebral palsy cases are caused by heredity. Thirty percent are caused by diseases of the mother during her pregnancy and the rest to the altered fetal physiology within the uterus.

One recognized textbook on the fetal physiology used for teaching purposes is a book of only 10,000 words whereby the recognized textbook on the physiology of the human after birth has hundreds of thousands words. There is an urgent necessity to learn more about fetal physiology. The truth of the matter is that fully one-third of the deaths in the perinatal period can be attributed to altered fetal physiology. No medical problem can be more challenging than this extravagant waste of nature in her quest for population improvement.

If we found an absolute cure for cancer, the years gained by eradicating that cause of death would be somewhere close to 1.5 years per person. In the United States with 165,320 deaths from cancer, the total years gained from elimination of cancer would be about 243,020. However, with saving the lives of these 735,567 babies we would gain 51,489,690 because each baby who lives past 1 month has a life expectancy of 70 years. Here another important element must be introduced and that is, at what age do these deaths occur? Ninety-six and

seven-tenths percent of the deaths from cerebral accidents occur at age 65 or over. In other words, the years that would be added by complete erraticity of cerebral vascular disease would be the years when the person is beyond the productive age and many are burdens to society. However, with those years gained by saving the babies, we would have 33,090,515 valuable productive years, because to the age of 20, any infant could be considered a partial burden to society. The years 20 to 65 would constitute an asset both to the reproductive and the productive capacity of the "state."

This is one way of thinking on the relative importance of these public health problems, but not the only way. Life at any age is sacred, and money spent on heart and cancer research is worthwhile to all individuals. Granted, that the other Institutes of Health have been conducting some research related to this perinatal field as a byproduct of their major function, but it has been, and rightly so, a secondary, tertiary, or even of lower consideration.

The proposed Institute, if one of its major functions would be studying perinatal life, and so "spelled out" in the bill creating it, can accomplish a tremendous service to mankind. Administration cost of similar projects of various other Institutes are not repeated or duplicated and these costs are no mere pittance. Further, the present way can be wasteful and inefficient, while further depleting an already inadequate supply of professional talent in this field. The delays and failures to communicate between these present Institutes can be tragic and especially in the cases of children, for proper research in the months of prenatal care are almost certain to have lifelong effects. The financing of such an Institute can be accomplished by the fact of coordinating existing research in this area and the saving could be passed along to establish the proposed Institute. There is already a great amount of study into the aging processes as to heart, cardiovascular, and cancer in the scope of the other Institutes. This is rightfully so as they appear in the aging process and I propose the present Institute be in the maternal and child health area rather than in the child health and aging process, as the latter again, gives another duplication of effort and expense.

The thought that keeps rearing its head is "How many Washingtons, Hamiltons, Lincolns, Edisons, Einsteins, Pasteurs, and just plain good solid citizens of the world have been lost in this needless extravagance of wastage.

In the physicians' window in the Washington, D.C., Cathedral, Louis Pasteur is memorialized, holding a scroll on which is written: "Science will enlarge the frontiers of life." It could be when the proposed Institute begins its work that a postscript to the scroll might someday be added, "and science made possible the life that otherwise would have been lost before it could have started."

There is predicated some 2 million more births per year in the United States from 1970. With these 6,500,000 births per year and without the research to reduce the percentage loss, it could become a national disgrace. Therefore, Senator Kerr, I hope that Senate bill 2269 will be enacted. If I can be of further service in its passage and implementation I await your request.

Sincerely,

THOMAS C. POINTS, M.D.

UNIVERSITY OF WASHINGTON,
Seattle, August 11, 1961.

HON. WARREN C. MAGNUSON,
U.S. Senate, Washington, D.C.

DEAR MR. MAGNUSON: I am writing you to ask for your support of S. 2269 which Senators Hill and Kerr have introduced and which calls for the establishment of a national institute in the field of child health and human development, and of a National Institute of General Medical Sciences.

Having served for several years as an adviser of the National Institutes of Health, first as a member of the Biophysics Study Section, and subsequently as a member of the Biochemistry Training Committee, I am deeply convinced of the merits and needs of elevating the Division of General Medical Sciences to the status of a national institute. The work of this Division is largely fundamental in nature, and provides the basis for acquiring the knowledge which can be brought to bear in the solution of specific problems in the field of human disease. Thus the advances in medicine and medical research are interrelated to, and interdependent on those in basic biological and medical science. There is abundant evidence to demonstrate the catalytic effect of fundamental biochemistry, anatomy, genetics, microbiology, and others on the understanding of specific disease processes. The establishment of a National Institute of General Medical Sciences

thus seems to me a logical development which, in fact, might well have preceded rather than succeeded the establishment of specific disease-oriented institutes.

The past record of the work of the Division of General Medical Sciences is an admirable one; the importance of the further development of this program in the interests of the national effort in the fields of biology and medicine can hardly be exaggerated. We are experiencing acute shortages of well-trained investigators in several areas of fundamental research, and if we are to maintain our initiative and momentum in the development of this rapidly growing field of biological and medical research, we shall have to expand our training programs in the various areas manifold. There are so many more pressing problems awaiting solution in basic biology and medicine than there are investigators who are ready to tackle them. The facilities required for an expansion of our research efforts in unrestricted basic biology and medicine are entirely inadequate and need to be expanded to a very high degree. The establishment of a National Institute of General Medical Sciences would be a most effective way to deal with these problems relating to research and research training.

I believe that I share with many of my scientific colleagues in this field the view that we are on the eve of revolutionary developments in biological and medical research which are equal in significance and importance to those in nuclear physics, in space research, and in other areas of human endeavor in which we now find ourselves in competition with the Communist world. In this area, however, we have maintained a lead over the Soviet Union and satellite countries, and I think it is essential that we not only maintain it but that, in the conquest of the natural forces which threaten human health, we get there first.

Hoping that Senate bill S. 2269 will be passed by the 87th Congress, I am,

Very sincerely yours,

HANS NEURATH,

Professor of Biochemistry and Executive Officer.

NATIONAL MEDICAL FOUNDATION FOR EYE CARE,
New York, N.Y., September 14, 1962.

HON. LISTER HILL,
*Chairman, Committee on Labor and Public Welfare,
U.S. Senate, Washington, D.C.*

MY DEAR SENATOR HILL: The enclosed statement is submitted for the consideration of the Senate Committee on Labor and Public Welfare and for the official record in connection with the hearings on and consideration of H.R. 11099. Your courtesy in affording us opportunity to file this statement is deeply appreciated.

Sincerely yours,

CHARLES E. JAECKLE, M.D., *Secretary.*

PREPARED STATEMENT OF CHARLES E. JAECKLE, M.D., NATIONAL MEDICAL
FOUNDATION FOR EYE CARE

The National Medical Foundation for Eye Care represents the physicians of the United States primarily concerned with the clinical and research problems of vision and eye care, including those in the fields of child health and of the general medical sciences. These eye physicians are doctors of medicine with special qualifications in ophthalmology, the branch of medical science concerned with all matters pertaining to the eye and the visual system, including, among others, the development and the optics of the eye, its defects and diseases, and the interrelation of ocular and visual problems with the other medical sciences and related basic disciplines. We wish to express our support of H.R. 11099 as written. What follows deals with the bill as it pertains to the eye and visual system in general.

In the hearings before the House Subcommittee on Health and Safety on H.R. 8398 precursor to H.R. 11099 testimony was presented on behalf of optometrists urging that changes be made to make specific reference to vision, visual development, physiological optics, and developmental vision, a segment of the eye sciences. The optometric witness also proposed that the committee history "make it clear to the Surgeon General" that he should make specific use of optometrists in the programs and projects growing out of the proposed amendments to the Public Health Service Act. The House committee, wisely we feel, did not accept those recommended changes.

Physiological optics is one of the general and basic medical sciences for research in which H.R. 11099 provides. There is no more reason for specifically mentioning physiological optics than anatomy, histology, physiological chemistry, biophysics, physiology, and pharmacology, to mention but a few. The relation of optics to the general medical science is well delineated in the report "Medical Care for Eye Patients," published by the AMA, copy of which is attached.

We submit that there is no more need, reason, or justification for specifically mentioning "vision" or "developmental vision" in the description and provisions for establishment of an Institute of Child Health and Human Development, and for establishment of an Institute of General Medical Sciences than there would be a need, reason, or justification for listing any of the other functional faculties or physiological properties of the human body, the proper functioning of which are clearly integral parts of satisfactory child health and human development. The conditions essential for effective research in the eye and the visual system include a clear understanding that a small segment of the eye sciences should not be isolated, but that all aspects of the eye and vision must be studied in relation to the other medical disciplines and related basic medical science disciplines.

On the other hand, we submit that in the phraseology of the bill as now written, there is no conceivable reason to suppose that the Surgeon General, or any agency functioning under his authority, would be inhibited or other scientific disciplines, or any other technical services, which in his or their judgment might contribute to the problems or projects under consideration.

In testimony before the House subcommittee, proponents of special mention of this small area of the science of the eye and the visual system observed that existing medical agencies in the Department of Health, Education, and Welfare have seldom found it necessary to avail themselves of "optometric consultants." Perhaps the reasons why the services of optometrists have not generally been found necessary to the work of these medical agencies are that optometry is not a medical science; that optometrists are not medical scientists; and that the training and functions of the physician embrace, as an integral part of medicine and the medical sciences, those areas in which optometrists are legally permitted to function.

Proposals in this area such as were offered to the House subcommittee add nothing whatever to the sense, clarity, and purposes of this bill, and the interests they would further are not the public interest. We therefore respectfully suggest that in the event similar proposals are offered to the Committee on Labor and Public Welfare of the U.S. Senate, that they should be rejected.

[Reprinted from the Journal of American Medical Association, Nov. 4, 1961]

MEDICAL CARE FOR EYE PATIENTS—REPORT OF THE SUBCOMMITTEE TO STUDY THE RELATION OF MEDICINE TO OPTOMETRY APPROVED BY THE AMA HOUSE OF DELEGATES, NEW YORK CITY, JUNE 29, 1961

In 1934 the House of Delegates of the American Medical Association adopted a resolution providing:

"Resolved, That the Section on Ophthalmology of the American Medical Association declares that it is unethical for any member of the American Medical Association to give lectures or courses of instruction to or consult with any one not associated with the actual medical service."

In 1950 the House of Delegates adopted a Resolution introduced from the Section on Ophthalmology:

"Resolved, That the Section on Ophthalmology of the American Medical Association declares that it is entirely within the definition of medical ethics for its members to engage in lectures, demonstrations, the preparation of pamphlets, and other measures suitable for the dissemination of information designed to prevent blindness and directed to any nonmedical group."

It had been the objective of the action of the house of delegates in 1950 that improvement would result in the quality of eye care of the general public. In the course of the following 5 years it was not clearly evident that this laudable goal was being achieved. Furthermore, it became obvious that the position of the AMA was misconstrued by some and gave a false sense of security to optometrists and to the public. Consequently, in 1955 the house of delegates undertook to clarify the position of American medicine by three specific actions. (1) In Resolution 77 it reverted to the previous position that physicians should not teach optometrists. (2) In Resolution 78 it took cognizance of the extension of optometry into the field of medicine through the expediency of widespread legislative action at national and State levels. (3) Resolution 79 endorsed the principle of the establishment of criteria for the referral of patients by the optometrist.

This committee was charged by the house of delegates with studying "the relation of medicine to optometry from the standpoint of the public interest." To this end the house directed that the committee be composed of physicians in various branches of medicine, and provided for adequate representation of physicians whose primary duty is the care of the eye patient. Your committee notes the fact that the house of delegates has previously approved the interpretation of the judicial council that voluntary professional association of the physician with an optometrist is unethical.

HISTORY OF REFRACTION

The term "optometer" was first used by the physician Porterfield in 1750 to describe an instrument for the measurement of the refraction of the eye. The word "optometry" was first employed by the eye physician, Landolt, in 1877 to describe the procedure of measuring the refraction of the human eye. In 1843 the German ophthalmologist, Fronmüller, invented the trial lens case, leading to the prescribing of spectacles in the place of their selection by the wearer. Dr. Isaac Hays of Philadelphia included the subject of refraction in "Treatise on Disease of the Eye," 1954.

In general, however, prior to the middle of the 19th century and the work of the Dutch eye physician, Donders, glasses were selected by the wearer at the time of purchase from an optician. The research of Donders, an ophthalmologist, provided the scientific medical basis for prescribing glasses. After the publication of his book in 1864, eye physicians progressively included the prescribing of glasses in their practice. Glasses then were sold by opticians either according to a physician's prescription, or as selected by the wearer.

Among opticians were some who undertook the "adaptation of lenses" for correction of refractive error (without prescription from the physician). There evolved two classes of opticians: refracting opticians and dispensing opticians. The dispensing optician supplied glasses only on a physician's prescription. The refracting optician in addition to supplying glasses on a physician's prescription, continued to "adapt lenses" independently. The refracting opticians began to identify themselves as "optometrists" at the turn of this century and the term "optometrist" was officially adopted in 1904 by the opticians' national organization, the American Optical Association, which became the American Optometric Association in 1918.

The refracting optician became legally identified as "optometrist" between 1901 and 1924, and in general legally authorized to apply optical principles "to measure the powers of vision" (refraction) and "to adapt lenses for the aid thereof." The term "optometry" thereby legally defined an occupation apart from medicine, although it encompassed a previously described medical procedure.

It has been the position of the medical profession that the appropriate area of function of the optometrist is in the measurement of ocular refractive errors, and their correction by glasses. A study of the optometric laws indicates that the scope of activities of the optometrist has been considerably expanded over the years by legislative action. The early proponents of optometric licensure had contended that refraction was separable from medicine. They argued that "a lens is not a pill," "physics is not physique," "a lens treats light, not the eye." It has become evident that optometry has departed from its original concept. The expansion of practice beyond refraction, and "the use of all modalities and instrumentalities" other than spectacle lenses, have constituted a progressive extension into the field of medicine.

THE NATURE OF EYE CARE

No different principle applies to the care of the patient with ocular symptoms than to the care of any other patient. Ocular manifestations cannot always be evaluated as isolated disorders of a particular organ. The eye and the visual system must be evaluated in light of the patient's entire medical status. The patient with an eye problem, whether of functional, organic, or psychiatric origin, or the patient seeking preventive care, requires medical examination and diagnosis. This demands of the examiner the broad medical knowledge and training possessed only by the physician. The objective of the examination is not merely to ascertain the refractive error, but to determine what abnormal conditions are present or absent. Medical competence is a requisite to diagnostic exclusion of more serious causes of symptoms than refractive error or functional disturbance. Such diagnostic exclusion is an essential and integral part of examination of the eye patient.

Diseases leading to blindness may be present without symptoms; they have often escaped detection for lack of medical examination. Anything less than a medical examination of the eyes may jeopardize not only the patient's vision, but his general health, and even his life.

The science which deals with the structure, function, and diseases of the eye and of the visual system is ophthalmology, a branch of medicine. The ophthalmologist is a physician. He has acquired a general medical education, and has received the degree of doctor of medicine (or in the case of foreign physicians, an equivalent medical degree). He has had special education and training in the diagnosis and treatment of ocular diseases, in the application of physiological and optical principles to the prescription of glasses and the correction of aberrations of ocular function, and in surgery of the eye and its related structures.

Diagnosis, as much as medical therapy, requires medical training. Ocular diagnosis can only be made by the meticulous integration of the patient's medical history with the functional, optical, and physical findings, pharmacological responses, corneal tonometric readings, and laboratory findings, all interpreted in relation to the individual and his environment.

The symptomatology of such diseases as brain tumor, multiple sclerosis, myasthenia gravis, and cerebrovascular disease at times has simulated simple ocular dysfunctions. In such situations orthoptic exercises have sometimes been instituted as therapy when patients have not had medical examination and diagnosis. Not through human error, but for lack of medical training on the part of the optometrist, impaired vision due to tumors of the eye and the brain, to retrobulbar neuritis, and to ocular injury has been mistaken for amblyopia.

To define a vocation by the expression "diagnosis and treatment by any means other than the use of drugs and surgery," as has sometimes been proposed by optometry, fails to define a discipline separate from medicine.

Although many agents may be administered by one without medical training, the proper use of agents, such as orthoptics, diathermy, contact lenses, thermal agents, radiant and sonic energy, demands, as much as does the use of drugs and surgery, a specific knowledge of their physiological and pathological effects.

Anything less than complete medical training does not qualify one to do more than evaluate the refraction of the eye and adapt lenses for the correction thereof in cases where this may be accomplished without drugs.

PUBLIC CONFUSION REGARDING EYE CARE

Persons seeking optometric services sometimes do so aware of the limitations of the optometrist. Statements volunteered by patients, however, indicate that many do so under one of two erroneous impressions: (1) the belief that the optometrist is medically trained; and (2) the belief that the optometrist is competent to determine whether or not the services of a physician are needed.

Many optometrists also appear to subscribe to the second concept. This is the official position of organized optometry.¹ The promotion of this concept has led to the confusion of the public seeking eye care. Confusion has sometimes led to delay in medical care, with detriment to the patient.

A current official optometric publication uses the word "optometry" as synonymous with "eye care," and states, "Optometry is the art and science of vision care. It is the only profession licensed * * * to examine eyes." It is necessary to point out that such licensure authorizes a limited service. It must be emphasized that the diagnosis and treatment of diseases of the entire body including the visual system is the responsibility of the physician.

THE CHANGING STATUS OF OPTOMETRY

The public interest requires that physicians understand the extent to which optometry's position and practices conflict with or are consistent with medical principles. Public statements from optometry indicate a changing concept on the part of the optometrist of the scope of his competence. The practice of optometry was defined by law in New York in 1908 to be "the employment of any means other than the use of drugs for the measurement of the powers of vision and the

¹ "Assuming both practitioners (optometrist or ophthalmologist) to be functioning in their assignment to the EENT sections of a medical unit, the one factor which should serve to direct a patient reporting to the dispensary with a complaint of eye trouble to either practitioner would be the presence or absence of pathology. This determination could be made equally well by whichever practitioner saw the patient first and then he would be cared for by the one indicated following the determination of the specific difficulty. * * * We would hold intolerable the limiting or abrogating of this responsibility of the optometrist by any other practitioner."—Letter to Surgeon General, U.S. Army, from American Optometric Association.

adaptation of lenses for the aid thereof." More or less similar definitions were adopted by all States and the District of Columbia between 1901 and 1924. In the past 35 years this definition has been expanded far beyond the "adaptation of lenses."

The following definition of the practice of optometry in the Indiana Optometric Act is an example:

"The practice of optometry is hereby defined to be any of the following acts or any combination of, or part of the following acts:

"(a) Diagnosis: The examination or diagnosis of the human eye, to ascertain the presence of abnormal conditions or functions which may be diagnosed, corrected, remedied, or relieved, or the application or prescription of lenses, prisms, exercises, or any physical mechanical, physiological or psychological therapy, detecting any diseases or pathological condition of the eye, or the effects of any diseased or pathological condition of the eye which may have significance in a complete optometric diagnosis of the eye or its associated structure.

"(b) Examination through scientific and professional methods and devices: The application, use, or adaptation of physical, anatomical, physiological, psychological, or any other principles through scientific professional methods and devices, to the examination of the eyes and vision, measuring their function for the purpose of determining the nature and degree of their departure from the normal, if any, and adopting optical, physiological and psychological measures and/or the furnishing or providing any prosthetic or therapeutic devices for the emendation thereof."

It is the hope of this study committee that the majority of optometrists, conscientious and responsible, will be receptive to an informative statement of the principles involved.

Medical training is not necessary to qualify one to perform refractive tests, nor is it always necessary to qualify one to prescribe satisfactory glasses. Over the years optometrists have earned, as refractionists, a measure of respect from physicians. Complete medical training is required to qualify one to determine the need for medical treatment, to diagnose, to assume the responsibility for detecting or determining the presence or absence of disease. To grant these responsibilities of the physician to the nonphysician, or to imply that one other than a physician is competent to discharge them, is to establish a double standard for the practice of medicine which is not in the public interest. If optometrists wish to function as physicians, they should pursue the same education, be measured by the same standards, and submit to the same tests as do doctors of medicine.

Your committee has attempted to furnish the profession with a brief historical background of the development of the medical science of refraction and of the origin and nature of optometry as an independent service. It has shown the tendency of some segments of optometry to expand their endeavors beyond the field of refraction. The attempt to equate the optometrist with the eye physician presents a serious public health problem.

The potential dangers existing in the present situation are known best to those physicians who are primarily concerned with eye care. The full significance has not been generally recognized by the medical profession as a whole or by the public.

Your committee notes that the house of delegates pursued a positive, constructive approach in Resolution 79, in 1955, in recognizing that the optometrist will sometimes identify among those who consult him for refraction, persons who require medical service. The action of the house calling for the development of criteria to facilitate such identification when it is possible, offers in the opinion of the committee, an opportunity for exploration.

NORMAN A. WELCH, M.D., *Chairman.*

HAROLD F. FALLS, M.D.

CHARLES E. JAECKLE, M.D.

DONALD W. MULDER, M.D.

BARNET R. SAKLER, M.D.

PREPARED STATEMENT OF JULES C. STEIN

The move to establish two new Institutes of Health, one for general research and one for child health and human development, in the Public Health Service is worthy of your earnest consideration. However, I come before you to urge that consideration also be given to the establishment of a separate National Eye Institute.

My request is directed to you not only as a private citizen, but also as chairman of Research To Prevent Blindness, Inc., a voluntary health foundation pledged to stimulate an all-out attack on the causes of blindness. Before I founded the Music Corp. of America, an enterprise which I also head, I was a practicing ophthalmologist and a fellow of the American Board of Ophthalmology.

A great many informed citizens share my views that the tragic problem of blindness has been a stepchild of medical research. During the past decade, scientific investigation, thanks in large part to the support of Congress through the National Institutes of Health, has eliminated or diminished the ravages of scores of killing and debilitating diseases. However, in this same period, the incidence of blindness has risen at an alarming rate, and the indications are that this trend will continue unless we make a determined assault on the problem—an attack of adequate dimensions in all respects.

The average annual increase in the number of newly blind was 6,700 per year during the decade of the forties. Today, more than 30,000 Americans go blind every year. The rise, which is continuing, is attributed to population increases and the increase in the U.S. lifespan and disorders associated with the aging. The array of statistics which provide a measurement of the scope of the problem are voluminous and dramatic. Suffice it to say here, that an estimated 100 million Americans—as much as 58 percent of our population—now require some form of vision care. Of this vast number, 3 million have serious visual defects including blindness. These statistics underscore the need for a more concentrated eye research and training effort.

Medical scientists believe that nearly all those now destined to go blind can be saved through adequate research and prevention. But in 1960, the year Research To Prevent Blindness was incorporated, expenditures for eye research in this country totaled as little as \$6 million. In the same year, according to the U.S. Public Health Service, care, compensation, benefits, and education for the blind cost an estimated \$500 million. I think you will agree this is quite a contrast.

It was encouraging to see the Senate Appropriations Committee single out blindness last year, when considering appropriations for the National Institutes of Health, “* * * as an area in critical need of accelerated research and training endeavors.” This awareness has led to a growing interest in eye research and training programs, but proper governmental attention, in my opinion, will not be directed to the blinding eye disease problem until it is given the status it deserves within the framework of a separate Institute of Health.

While it is true that the National Institute of Neurological Diseases and Blindness has done a creditable job in support of eye research, it is equally true that only a small portion of its resources have been devoted over the years to this great area of need. This seems only natural, since its primary responsibility is looked on as neurology. Indeed, the word “blindness” appears to many to have been attached as an afterthought to the title of the National Institute of Neurological Diseases and Blindness.

Since 1954 approximately 16 percent of the Institute’s appropriation each year has been allocated for blindness research and training. While you may think the percentage allocation for blindness is small in relation to the problem, it has nevertheless climbed from only \$675,205 in 1954 to an estimated allocation of \$13,406,000 for 1963. It is significant that this figure is about three times as much as was appropriated for all programs of the National Institute of Neurological Diseases and Blindness in 1954. But it still falls short of the amount needed for real progress in this important field.

We presented a valid case for \$25,900,000 for eye research and training programs to the appropriations committees of the House and Senate earlier this year. We will again present our carefully considered recommendations for a similar amount next year. If these funds are appropriated—and the need for them is a desperate one—they will be at a level where their most effective and proper administration will require a separate institute within the National Institutes of Health with a complete identity of its own.

I strongly recommend favorable consideration on the part of your committee of an amendment to the bill before you to establish a National Eye Institute as a vital step forward in eliminating one of man’s oldest afflictions.

PREPARED STATEMENT OF DR. LOIS B. BING, D.O., CHAIRMAN, COMMITTEE ON VISUAL PROBLEMS OF CHILDREN AND YOUTH, AMERICAN OPTOMETRIC ASSOCIATION

When H.R. 8398, the predecessor of H.R. 11099, was being considered by the House Interstate and Foreign Commerce Committee, Dr. Gordon Glenn Heath, associate professor of optometry at the university, appeared and testified, suggesting some simple amendments to that bill (House hearings on H.R. 8398, p. 129). Unfortunately these amendments were not incorporated in the so-called clean bill (H.R. 11099) when it was introduced in the House. Our association had arranged for these amendments to be offered when the bill was to be considered in the House, but it was taken up and passed under the suspension of the rules which prohibited the offering of any amendments. Congressman Clark Thompson of Texas, in speaking in favor of the bill, referred to optometry's role in dealing with the visual problems of children and the importance of the utilization of optometrists when the new Institute is established. His remarks appear in the Congressional Record of August 27, but for ready reference of the committee a copy of his remarks are attached.

I had hoped to appear before you in person, but, unfortunately, this proved to be impossible because the subcommittee decided to hold only 1 day's hearing, but permission was granted to file this statement.

I am an optometrist practicing my profession in Shaker Heights (a suburb of Cleveland), Ohio. I am a graduate (A.B.) of Wooster College, Wooster, Ohio, and qualified as a teacher in that State. Subsequently, I obtained the degree of bachelor of science in optometry from Ohio State University, where I did graduate study in education and psychology, including courses in these subjects at the University of Pittsburgh and Western Reserve University. The Massachusetts College of Optometry awarded me an honorary degree of doctor of ocular science.

For 11 years I have served as chairman of the Committee on Visual Problems of Children and Youth of the American Optometric Association and have also during that entire period acted as chairman of the Annual Forum on Visual Problems of Children and Youth which is held in Cleveland, Ohio. This forum is attended by many leading educators, pediatricians, and psychologists. I have also served as visual consultant to the Euclid Board of Education, Euclid, Ohio, and the Kyle Reading Clinic, Rocky River, Ohio.

A list of the publications which I have authored or in which I have participated is attached hereto and also some of my research projects. It was my privilege to actively participate in the planning of the 1960 White House Conference on Children and Youth as well as to represent the optometric profession at that conference. Copy of the report prepared for the conference entitled "The Importance of Vision to a Creative Life in Freedom and Dignity" is also submitted herewith.

Our association recommends passage of a bill which would establish an Institute of Child Health and Human Development. However, we believe that certain amendments should be made which would clearly indicate the congressional intent that special attention should be paid to vision and that the services of optometrists should be utilized both as consultants and as full-time employees. In the work of the Institute there would be two distinct functions—one that of prevention. This is primarily, although not exclusively, in the medical field. The other is equally important but is sometimes referred to as secondary because it is taking what you have and making the best use of it. This is particularly true of vision as it pertains to the partially seeing child.

Research and study, especially during the past 20 years, have led to a changed concept of vision care for children. Formerly our concern was primarily with the keenness of vision and the use of both eyes in the act of seeing. These are still important considerations in caring for the vision of the child but they constitute only a small segment of the knowledge an optometrist must have to determine whether the child is visually efficient so that meaning may be obtained from the printed page and from the blackboard. New concepts and new techniques have been pioneered to the need of uncovering and correcting learning difficulties experienced by children. This broader concept of vision has led to the realization that seeing affects the performances of the whole child. It relates not only to the child's performance and adjustment in school activities but also his health and social behavior.

Defective vision not only is responsible for retarded learners in the schoolroom but is a strongly contributing factor in juvenile delinquency. Practically every optometrist who does any appreciable amount of work with children has in his or her files numerous cases in which the correction of a visual impairment has subsequently improved the department record of the patient.

Arnold Gesell, M.D., called by the American Medical Association "America's foremost authority on child development," points up the relative functioning of ophthalmology and optometry in this particular field and goes on to state:

"In recent years optometry has evolved techniques for the analysis of visual functions and has greatly advanced methods of training for the amelioration of visual difficulties and the increase of visual achievement."

Optometry, by reason of its background of training in physiological, psychological, and ophthalmic optics, has made significant contributions to the better understanding of vision development in the infant and child. Among the better known optometric studies are:

The Winter Haven Project.

The Symposium on Myopia, conducted by the New York Optometric Center.

The Ludlum report "Orthoptic Treatment of Strabismus" American Journal of Optometry, July 1961.

There is also submitted the association's "Manual on the Visual Care of the Partially Seeing Child." This was originally prepared in 1959 and the copy submitted is the third revised edition. We are pleased to make available to the committee and its staff a copy of Dr. Gesell's work "Vision, Its Development in Infant and Child" and also a copy of a publication by two of our leading optometrists, Ralph Wick, O.D., and Monroe Hirsch, O.D., "Vision of the Aging Patient."

By this time you may be wondering why it seems necessary to stress what appears to be obvious; namely, the importance of children's vision and optometry's contribution to the solution of its problems. The reason is just as real, but not as obvious, because it seems as though it were utterly impossible. Nevertheless, with the exception of the Navy during World War II, it is a fact that the Federal governmental agencies dealing with vision problems have not utilized a single optometrist unless specifically so directed by Congress. The Army refused to commission optometrists, as such, during World War II and it was not until Congress passed the Medical Service Corps law in 1947 that there were any commissioned optometrists in either the Army or Air Force. Today there are over 330 commissioned optometrists in these two branches of our military service. Optometrists were barred from the social security aid to the blind program until 1950 when Congress corrected the situation by requiring that optometric services be made available to the beneficiaries of that program who desired to utilize them. In spite of the fact that this action by Congress has proven most beneficial both to the States and to the indigent blind, the American Medical Association appeared before the Senate Finance Committee this year and advocated the repeal of that provision of the 1950 amendment and also the elimination of optometric services from the Kerr-Mills program. Their recommendation was not adopted by either the House Ways and Means Committee or the Senate Finance Committee, with the result that when H.R. 10606 was signed by the President, optometric services were still made available to beneficiaries desiring to utilize them.

It required action by the 86th Congress before veterans entitled to outpatient vision care could seek the services of an optometrist. The great Department of Health, Education, and Welfare, which would administer the proposed Institute of Child Health and Human Development, does not employ 1 optometrist as such, although 17,000 practicing members of our profession care for the visual needs of some 60 millions of our citizens. In spite of our repeated efforts, that Department does not have one optometric consultant. Nevertheless, this year President Kennedy appointed a past president of our association to his National Advisory Committee to Selective Service. Another past president is the optometric consultant to the Medical Director of the Veterans' Administration following the action taken by the 86th Congress. The present president of the association is the optometric consultant to the Surgeon General of the Army and the former director of our department of national affairs is the optometric consultant to the Surgeon General of the Air Force.

It is because of our past experience that we feel it is absolutely essential that the four small amendments which I suggest be incorporated in whichever one of these two bills the committee decided to report. The amendments refer to S. 2269 as this is the chairman's bill, but they can be readily applied to the House bill, H. R. 11099, if that is the one which the committee decides to report:

Page 2, line 8, after the word "health" insert the word "vision."

Page 2, line 9, after the word "health" insert the words "and visual."

Page 2, line 12, after the word "development" insert the words "physiological optics."

Page 3, line 13, strike out the word "or" and insert in lieu thereof the words "optometric or other."

If these amendments are incorporated in the legislation, we believe that the Secretary of Health, Education, and Welfare, in administering the new Institute, will utilize optometric services.

While my primary interest has been in the field of visual problems of children and youth, our association has two very active committees, one on vision aid to the partially blind, and the other on vision care of the aging. We were disappointed to note that the bill passed by the House eliminated these particular fields of health care. On behalf of our association, I would recommend that these activities be reinstated when the bill is reported to the Senate.

Vision is becoming more and more important in education, industry, research, safety, national defense, and to the ever increasing number who enter the so-called golden circle of our later years. Vision is sometimes referred to as "God's greatest gift to mankind" but notwithstanding that it is a gift, it requires care, protection, and training, all of which start in infancy and continue to life's end. Our profession is dedicated to serving all mankind in this great field.

Respectfully submitted.

LOIS B. BING, O.D.

PUBLICATIONS

1. "A Critical Review of the Literature on Certain Visual Functions Which Seem To Be Related to Reading Achievement." *Journal of the American Optometric Association*. 22: (8): 454-463.

2. "Bibliography—Vision and Reading." *Journal American Optometric Association*, 1952.

3. "The AOA Policy on School Vision Screening." *Journal American Optometric Association*, March 1957.

4. "Visual Problems in Reading and Optometric Limits." *American Journal of Optometry*, 1958.

5. "Vision and Reading." *The Reading Teacher*, 1961.

6. "Vision Screening and the Welfare of Children and Youth." *American Journal of Optometry*, 1961.

7. In cooperation with Dr. George Spache: "Children's Vision and School Success." 1962. (Manual.)

MATERIALS, PAMPHLETS AND MANUALS PREPARED IN COOPERATION WITH OTHERS

1. Teacher's Guide to Vision Problems With Checklist.
2. Student Vision Report Form.
3. Check Your Child's Vision.
4. Report to the 1960 White House Conference on Children and Youth From the American Optometric Association.

RESEARCH (CURRENT)

Cooperative research with Dr. Mary C. Austin (Western Reserve University), Lillian R. Hinds and others (Euclid Board of Education, Euclid, Ohio) on the relation of vision to reading achievement. Data for these studies are being analyzed statistically and published in cooperation with Dr. Wilda Rosebrook (formerly of Ohio State University) and Dr. Charles B. Huelsman, Jr., Ohio State University. Data includes: a cross-sectional study involving 115 children at grades 2, 4, 6, 8; and two 6-year longitudinal studies; 19 strabismic cases.

REMARKS OF CONGRESSMAN CLARK THOMPSON OF TEXAS CONCERNING H.R. 11099 A BILL TO ESTABLISH AN INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT, ON THE FLOOR OF THE HOUSE OF REPRESENTATIVES, AUGUST 27, 1962

I am in favor of the enactment of this bill. However, were it not for the fact that it is being considered under suspension of the rules, I would offer some clarifying amendments to make certain that vision and physiological optics were specifically included in the programs of the new Institute of Child Health and Human Development. There can be no argument but that vision is one of the most important factors in the well-being, not only of children but of the entire population.

It is true that the language of the bill is broad enough to include these subjects and to enable the Surgeon General to avail himself of the services of optometrists who have made outstanding contributions to the solution of visual problems of

children and youth. Unfortunately, notwithstanding all that this profession has done and is doing in this field, I am informed that there is not a single optometrist, as such, employed in the entire Department of Health, Education, and Welfare. This is something which I hope the new head of that Department will speedily rectify.

In supporting the passage of this bill, I want the record to clearly indicate that this is what was intended not only by myself but by many others who will support the passage of this legislation.

PREPARED STATEMENT OF THE AMERICAN OSTEOPATHIC ASSOCIATION, BY CARL E. MORRISON, D.O., CHAIRMAN, AOA COUNCIL ON FEDERAL HEALTH PROGRAMS, FOR THE RECORD ON BILLS S. 2269 AND H.R. 11099, SENATE SUBCOMMITTEE ON HEALTH, SEPTEMBER 13, 1962

The American Osteopathic Association, acting for the osteopathic profession which is engaged in the health care of children in all the States, supports establishment of Institutes of Child Health and Human Development and of General Medical Sciences in the National Institutes of Health, as provided in S. 2269 and H.R. 11099.

Since 1950 our country has slipped from 6th to 10th place among the advanced nations of the world in the saving of infant lives. This was pointed out by the President in his health messages to Congress recommending a new institute for child health. Notwithstanding the great advances in medical knowledge, there is a large area of unknown factors causing some 400,000 babies to be born each year with congenital malformations and other serious conditions which require additional research.

In 1947, the Bureau (Committee) on Research of the American Osteopathic Association sponsored a study aimed at finding if a relationship exists between the mechanical faults of children and those of symptom-expressing adults. An 8-year study of children in the rural areas of Adair County, Mo., was inaugurated with the aid of the personnel and equipment of the Kirksville College of Osteopathy and Surgery. This study indicated that structural errors and anomalies and developmental faults found in children in the first grade remain evident through the eighth grade without spontaneous correction, and may carry forward to adult age. About one-third of the 700 children whose structure was examined in 1947-48 are living in this same area. Interval films of these young people should be taken when adequate funds are available.

The new institute would conduct and support research and research training in the field of normal and abnormal development of man from conception through the lifespan. It would promote broader teaching and research efforts in the obstetric and pediatric departments of institutions engaged in the training of physicians (M.D. and D.O.).

According to a reported recent Public Health Service study, if present trends continue, by 1975 there will be half as many physicians for children, not just pediatricians but general practitioners as well, per 1,000 children. This points up the necessity not only of increasing the output of physicians but of increasing the current knowledge and equipment of available physicians.

Beginning in 1933 an annual child health conference and clinic was inaugurated under the sponsorship of the Jackson County (Mo.) Osteopathic Association and the Kansas City College of Osteopathy and Surgery to provide examinations for children and to offer postgraduate training for the osteopathic profession. Held annually at Kansas City the conference grew to such proportions of national importance, that in 1954 and thereafter it has been held under the aegis of the American Osteopathic Association, in addition to its regular joint sponsors. At their own annual meetings and other occasions, the American College of Osteopathic Obstetricians and Gynecologists and the American College of Osteopathic Pediatricians provide intensive postgraduate programs for the continual improvement of the knowledge and practice of those obstetricians and pediatricians who are already in practice, as well as those who are in training.

The new Institute of Child Health and Human Development would have transferred to it from the NIH Division of Medical Sciences, the Center for Aging, established in 1959, and the Center for Research in Child Health, established in 1961.

The elevation of the Division of Medical Sciences to institute status is overdue. It conducts and supports research and research training in the general or basic medical sciences and related natural or behavioral sciences which are either out

of the general area of responsibility of any other institute, or have significance for two or more other institutes, as for example, the recently established general research support program under which research support is provided to medical, osteopathic, and dental schools.

UNIVERSITY OF ARKANSAS,
MEDICAL CENTER,
Little Rock, September 14, 1962.

HON. LISTER A. HILL,
Chairman, Senate Committee on Health Affairs,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: Senate bill S. 2269 (establishment of a National Institute of Child Health and Human Development) will be considered by your committee in the immediate future. Many factors make favorable action on this bill of the utmost importance.

Although there has been much publicity regarding the problems of the aged, the future of our country is dependent on our children. It is in this area that we are faced with a developing crisis. By 1972 children under 16 years of age will comprise 40 to 42 percent of our total population. In the midst of this explosion we are faced with the disturbing fact that the ratio of physicians who care for children (general practitioners and pediatricians) has dropped precipitously from 384 to 169 per 100,000 children since 1940. This is not a simple matter of producing more physicians. More fundamental is the need to shift emphasis from sickness and custodial care to prevention of acquired and inheritable disease, mental as well as physical. The proposed institute would provide the appropriate leadership to convert many critical problems into a national triumph, hence, would do much to insure the future health and welfare of our children, on whom the future of this Nation rests.

Thank you for your consideration. Your many invaluable contributions to health programs in the past is greatly appreciated.

Respectfully yours,

JAMES L. DENNIS, M.D.,
Secretary, the Section on Pediatrics, American Medical Association.

THE GALTON INSTITUTE,
Los Angeles, Calif., August 4, 1961.

HON. SENATOR HILL,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: I would like to go on record as lending my strong support to the Senate bill 2269 which you recently helped to introduce. As a psychologist interested in the development of creativity in children of high intelligence, I am aware of the need for a new Institute of Child Health and Human Development. As a citizen, I feel that both the proposed institutes will serve the welfare of the Nation and encourage growth in scientific knowledge.

Thank you for your contribution in proposing this legislation.

Respectfully,

FRIEDA B. LIBAW.

UNIVERSITY OF CALIFORNIA,
Los Angeles, Calif., December 8, 1961.

Senator LISTER HILL,
Senate Office Building,
Washington, D.C.

DEAR SENATOR HILL: The introduction of Senate bill 2269 is most welcome to me since it proposes a national program for child health and human development. My own work embraces collaborative teaching between pediatrics and child psychiatry, an activity which uses developmental material as its base. Over the last few years I have been concerned with programs to make this teaching more effective as well as to foster the use of developmental concepts.

With my experience I am naturally very concerned about the direction that a program at the national level would take. Particularly, I am very concerned about qualifications of a director for this new institute. Human development has already been demonstrated to have a very broad base. It is important, therefore,

that whoever holds the position of Director of this Institute be an individual who can successfully comprehend and coordinate approaches of different disciplines in the developmental field. It seems particularly important from the point of view of my own interest in development that the Director be one who is highly conversant with all phases of psychological and emotional development. An understanding of the physical and organic bases must needs be complemented by an appreciation of many behavioral phenomenon in order to fully understand the progress of a child from birth toward adulthood.

Mere interest in children and the structural phenomenon of growth would not be adequate. The contributions of pediatrics alone over the years have not always fulfilled these broader criteria. Training or experience beyond the usual scope of pediatrics would certainly be indicated for a director of so important an institution. It is my hope that such considerations can be included in the planning for this bill. I would be very happy to expand these ideas if indicated.

Sincerely,

HENRY H. WORK, M.D.,
Chief, Division of Child Psychiatry.

BERKELEY, CALIF., September 11, 1962.

Senator LISTER HILL,
U.S. Senate,
Washington, D.C.:

I urge enactment of S. 2269, establishing NIH Institute of Child Health and Human Development, and of S. 2273, authorizing research grants under title 5 of Social Security Act.

HELEN M. WALLACE, M.D.,
Chairman, Committee on Child Health, American Public Health Association,
and Professor of Maternal and Child Health, University of California
School of Public Health.

AMERICAN ASSOCIATION ON MENTAL DEFICIENCY, INC.,
September 12, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.

HON. SENATOR HILL: The legislation to establish an Institute of Child Health and Human Development is urgently needed so that we can begin to carry out an organized program in the area of mental retardation and other problems of child development.

The executive board of the southern California region of the American Association on Mental Deficiency voted unanimously to support this legislation.

Sincerely yours,

BEULAH LIGHT,
Chairman, Southern California Region, AAMD.
BETTY V. GRALIKER,
Secretary.

CHILDRENS HOSPITAL SOCIETY OF LOS ANGELES,
Los Angeles, Calif., September 14, 1961.

HON. LISTER HILL,
Chairman, Subcommittee of Committee on Appropriations,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: The legislation setting up a new Child Development Institute (S. 2269) is urgently needed so that we can begin to carry out an organized program in the area of mental retardation.

Sincerely,

RICHARD KOCH, M.D.,
Pediatrician in Charge of the Child Development Clinic of the Childrens Hospital, and Associate Professor of Pediatrics, University of Southern California School of Medicine.

YALE UNIVERSITY SCHOOL OF MEDICINE,
New Haven, Conn., September 6, 1961.

HON. LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SIR: I wish to urge you to give strong support to the establishment of the Institute of Child Health and Human Development. This would represent a very great step in the health of the Nation.

It has been my good fortune to be involved in the Yale project of the national collaborative study of the relationship of perinatal factors to cerebral palsy and other neurological and sensory organ diseases for the past 4 years, and project director for the last 2 years. My work on this project both at Yale and at a national level has really made a tremendous impression upon me regarding the importance of further support along these lines.

The proposed institute would do much to bring this type of research into sharp focus and would, I am sure, give it tremendous impetus. I urge you to do everything that you can to foster the passage of this bill.

Sincerely yours,

C. D. DAVIS, M.D.,
Associate Professor.

GAINESVILLE, FLA., December 19, 1961.

HON. GEORGE SMATHERS,
U.S. Senate, Washington, D.C.

DEAR SENATOR SMATHERS: As a physician residing in the State of Florida, it has come to my attention that before Congress is a bill concerning the establishment of an Institute for Child Health and Human Development (S. 2269 or H.R. 8398). All of my colleagues as well as lay persons to whom I have spoken about the need for such a proposal are enthusiastic over it. We can envisage far-reaching effects stemming from the financial and moral support which this Institute would provide. Basic and clinical research in the fields of infectious disease has already permitted us to serve our communities far more effectively than our predecessors.

On the other hand, disease and deformity do not all arise from contact with susceptible organisms. Problems arising from defects in organ structure and basic metabolic processes, derangements of tissue caused by disease and the effects of growth and development upon the natural course of disease are just a few of the many vast areas yet to be investigated.

With the assistance of this proposed Institute, it is felt that many of these unanswered questions in medicine will be brought under the scrutiny of competent investigators who will be able to devote their time and effort to the eventual betterment of mankind. Your support of this legislation is humbly sought.

Sincerely,

MELVIN GREER, M.D.

EMORY UNIVERSITY,
Atlanta, Ga., July 19, 1961.

HON. LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: I have just learned that a bill has been introduced into the Senate under the number 2269, and that it deals with the establishment of two new Institutes. I am particularly interested in that part of the bill which deals with the National Institute of General Medical Sciences.

I have served as a consultant to the National Institutes of Health for nearly 10 years in several capacities. More recently I have served as chairman of the Selection Committee for the Senior Research Fellowship Program. Speaking from a dual position as a consultant to the National Institutes of Health and as a dean of a medical school, I wish to strongly urge the passage of Senate bill 2269. While I am fully in agreement with the original plans to establish categorical institutes, it has become increasingly apparent to me that there is a body of activity which cannot and ought not be centered in one of the categorical institutes. General and basic medical research is essential to the solution of a great many problems which we now encounter and it is from these fields of endeavor that we will in all likelihood find the answers to categorical diseases. I have seen frequent instances in which the administration of the National Institutes of Health have

found difficulty in carrying out their total responsibility because there has been no institute covering general and basic research. The establishment of a National Institute of General Medical Sciences will therefore fill a gap in our present attack on problems affecting the health of this Nation. I, therefore, sincerely urge you to give all possible support to the enactment of Senate bill 2269.

If there is anything I can do in regard to collecting supporting information or data with the point of view which I have expressed, please do not hesitate to call on me.

Very sincerely yours,

ARTHUR P. RICHARDSON, M.D., *Dean.*

THE UNIVERSITY OF CHICAGO,
Chicago, Ill., August 22, 1961.

HON. LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: I am very happy to learn that Senate bill 2269 carries a provision in it to create an Institute for General Medical Sciences. I wish to applaud the persons who are responsible for inserting this provision in the bill and state that I hope sincerely it will pass.

The research and research training program under the sponsorship of the general medical sciences is of special importance to anatomists and to deans of medical schools. To strengthen this program by granting institute status to the program in general medical sciences will be of great value. I can speak as past president of the American Association of Anatomists. Our association has been deeply concerned with our responsibilities of providing our country with a sufficient number of well-trained anatomists to fill the anatomy departments of the medical schools which our country needs. As you are well aware, there has been a shortage of anatomists, and for a while there was a decline in the number of graduate students and medical students seeking training in anatomy. Thanks to the research training program under the Division of General Medical Sciences there has been a sharp upturn in trainees in the anatomical sciences in recent years. This will be helpful in meeting the demands which our country will make on this field in the next decades. However, the upturn has not yet been sufficient and the research and research training support is not yet on a scale large enough to provide the country with what it needs. I am hopeful that an institute status for general medical sciences will accelerate this increase and insure for our country an adequate number of well-trained scientists in the fields of anatomy.

Speaking now in my capacity as dean of the division of biological sciences, including the school of medicine, at the University of Chicago, I wish to state that the considerations outlined above for the special case of anatomy are equally pertinent in the broad fields of the biological and medical sciences. Medical schools throughout the country will be strengthened by any measures made to strengthen the NIH work in general medical sciences, with special attention to its research training and research program. May I commend your statesmanship in fostering this development.

Sincerely yours,

H. STANLEY BENNETT, M.D., *Dean.*

THE UNIVERSITY OF CHICAGO,
Chicago, Ill., September 20, 1961.

Senator LISTER HILL,
*Chairman, Senate Committee on Labor and Public Welfare,
Washington, D.C.*

DEAR SENATOR HILL: As president of the American Society for Experimental Pathology, I would like to express my wholehearted support for the provisions of S. 2269, which would create an Institute of General Medical Sciences. This would do much to advance the progress of the health sciences and the conquest of disease.

The programs of the current Division of Medical Sciences are, I feel, some of the most important at the National Institutes of Health, and its activities have been steadily increasing to include those programs which most closely relate to research and research training in the basic biological and medical sciences, as well as those disease areas which are not within the domain of the authorized categorical disease institutes at the present time.

In these days of ever accelerating scientific advancements, it is imperative that delays due to administrative problems should be held to the barest minimum. While I realize that this new institute would not alleviate all problems presently encountered, I am confident that it will be a step in the right direction.

Sincerely yours,

ROBERT W. WISSLER, Ph. D., M.D.,
President, American Society for Experimental Pathology.

THE UNIVERSITY OF CHICAGO,
THE COMMITTEE ON HUMAN DEVELOPMENT,
Chicago, Ill., February 27, 1962.

HON. LISTER HILL,
*Chairman, Committee on Labor and Public Welfare,
U.S. Senate, Washington, D.C.*

DEAR SIR: I am writing to ask your support for the proposed Institute for Child Health and Human Development.

Since I am executive secretary of the committee on human development, my opinions are reflected in the memorandum supporting H.R. 8398, filed with the House Subcommittee on Health and Safety, Committee on Interstate and Foreign Commerce. (This statement was submitted February 15, 1962, by Dr. Robert Hess, chairman of the committee on human development.) I should like, however, to add this personal letter as well.

I think it is especially important that the proposed Institute be one which provides support for the behavioral sciences and for research in the social aspects of human development. I think also that the support of research in normal development will be important in the prevention of both mental and physical illness, and that the proposed Institute could well fulfill the function of encouraging that research.

Respectfully yours,

BERNICE NEUGARTEN,
Associate Professor and Executive Secretary.

THE UNIVERSITY OF CHICAGO,
DEPARTMENT OF PSYCHOLOGY,
Chicago, Ill., February 27, 1962.

HON. LISTER HILL,
*Chairman, Committee on Labor and Public Welfare,
U.S. Senate, Washington, D.C.*

DEAR SENATOR HILL: This letter is in strong support of S. 2296 (Institute of Child Health and Human Development). It is especially important that this Institute be designed to emphasize the social and emotional problems of development.

Very truly yours,

DONALD W. FISKE,
Professor of Psychology.

THE LILLY RESEARCH LABORATORIES,
ELI LILLY & Co.,
Indianapolis, Ind., July 20, 1961.

HON. LISTER HILL,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: It has come to my attention that Secretary Abraham A. Ribicoff of the Department of Health, Education, and Welfare has requested the elevation of the Division of General Medical Sciences to Institute status within the structures of the National Institutes of Health, and that you have approved it and will introduce the bill as S. 2269.

As a special consultant to the Surgeon General of the Public Health Service and as a member of the Pharmacology Training Grants Committee, I wish to urge you to do everything in your power so that this bill will be passed during the present session. Everyone interested in medical education, including yourself and the Secretary, realizes that this country is woefully deficient in general medical science personnel. A special institute will facilitate additional funda-

mental work and training of capable scientists. Your effort in putting through this legislation will benefit our population for generations to come.

As my identification, I served two terms as a member of the Pharmacology and Experimental Therapeutics Study Section and am beginning a term as a member of the Pharmacology Training Grants Committee.

With best wishes, I am,

Respectfully,

K. K. CHEN, Ph. D., M.D., Sc. D.,
Director of Pharmacologic Research.

TULANE UNIVERSITY,
SCHOOL OF MEDICINE,
DEPARTMENT OF MICROBIOLOGY,
New Orleans, La., August 21, 1961.

Senator LISTER HILL,
*U.S. Senate Office Building,
Washington, D.C.*

DEAR SENATOR HILL: It has come to my attention that you are interested in bill S. 2269, calling for the creation of a National Institute of General Medical Sciences. I am pleased indeed to know of this, inasmuch as I believe that the creation of such an Institute would lend further impetus to the progress of medical research along basic lines—research which, as you well know, may have unpredictable but ultimately far-reaching significance in many ways for the health and welfare of mankind. In the light of your distinguished record of encouragement for medical science I trust this bill will receive your unstinted support.

Sincerely yours,

MORRIS F. SHAFFER, *Departmental Chairman.*

BALTIMORE, MD., *July 20, 1961.*

Senator LISTER HILL,
*Senate Office Building,
Washington, D.C.:*

Strongly support Senate bill S. 2269 for creation of National Institute of General Medical Sciences. Vital areas of basic research upon which major new approaches to medical problems depend require more adequate support. Need only point out two recent Nobel prizes related to genetics and basis of heredity were awarded for basic research with micro-organisms.

CHARLES L. WISSEMAN, Jr., M.D.,
Professor of Microbiology, University of Maryland Medical School.

FREDERICK M. ZERZAVY, M.D.,
Baltimore, Md., August 30, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: By all means give full support to bill No. S. 2273. The Institute of Child Health and Human Development is a necessity. There is so much work to be done especially research and practical application of mental health in the prenatal and postnatal period. How can one expect healthy children without physically and mentally healthy and prepared mothers.

Sincerely,

FRED. M. ZERZAVY, M.D., M.P.H.,
*Fellow in Maternal and Child Health, The Johns Hopkins School of Hygiene
and Public Health, Baltimore.*

BOSTON, MASS., *September 10, 1962.*

Senator LISTER HILL,
Chairman, Committee on Labor and Welfare,
U.S. Senate, Washington, D.C.:

I strongly support proposed National Institute of Child Health and Human Development. Hope S. 2269 will be favorably recommended by your committee. Proposed Institute will greatly further much needed basic research concerning health of mothers and children. In addition studies related to programs for mothers and children need greater support, which could be achieved through enactment of S. 2273. Highly desirable companion bill to proposed Institute and would help assure that basic research findings would promptly and effectively be brought into action throughout the country.

WILLIAM M. SCHMIDT, M.D.,
Harvard School of Public Health.

HARVARD UNIVERSITY,
SCHOOL OF PUBLIC HEALTH,
Boston, Mass., September 13, 1962.

Hon. LISTER HILL,
Chairman, Committee on Labor and Public Welfare,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: I understand that hearings are being held today on S. 2269, a bill to establish an Institute of Child Health and Human Development. I am writing in connection with this bill.

With certain clarification of the language of this bill, which I will explain, I would support the passage of this bill.

At the time S. 2269 was introduced by you in behalf of yourself and Senator Kerr in July 1961, Senator Kerr introduced a companion bill, S. 2273, in your behalf as well as his own. These two bills have the support of the President, the Budget Bureau, and the Department of Health, Education, and Welfare. They complement each other and if enacted would strengthen research in the total field of child life very greatly. The research that is required if we are to advance all types of services to children and youth and their families is of many types.

In order that there be no confusion between the purposes of S. 2269 and S. 2273 I hope that it can be made clear in the report of your committee on S. 2269 that the research to be undertaken under these two bills is differently focused.

It is my understanding that it is the intent of S. 2269 that the research to be undertaken in the proposed Institute of Child Health and Human Development will be focused on the basic research required to increase our knowledge of child growth and development, and, indeed, the processes of maturation and senescence throughout life. In other words the focus of this bill is basic science research.

On the other hand, the focus of research under S. 2273, the bill that you introduced, supporting Senator Kerr, is program related and would be directed toward improving the quality of services provided under the grants-in-aid from the Federal Government (through the Children's Bureau) to State health agencies and State crippled children's agencies. Today many millions of dollars are devoted by the Federal, State, and local governments to extend and improve maternity care and health services to children and youth including those rendered under the maternal and child health and crippled children's programs of the Social Security Act. Far too little research of an operational or program-related nature directed toward improving the techniques and methods of applying the new knowledge from basic research and learning the most advantageous ways of overcoming social and cultural problems that get in the way of reaching mothers and children and youth who need better health supervision and medical care. Investigations of the interrelationships of child health and child welfare services and the practical meaning of this to the child in his family, especially those whose maintenance comes from public funds or who are the beneficiaries of programs of the departments of health, welfare or education in the States or localities, are urgently needed if taxpayers are to be assured that their money is well used.

In order to clarify this question I would suggest that section 441 of S. 2269 be amended to read as follows:

"SEC. 441. The Surgeon General is authorized, with the approval of the Secretary, to establish in the Public Health Service an Institute for the conduct and support of research and training *in the basic sciences* relating to child health and human development, including research and training in the special health problems and requirements of children and aged persons and in the basic sciences relating to the processes of human growth and development." With such clarification, as I have already pointed out, I would support the passage of this bill, S. 2269.

With kind regards, I am
Yours sincerely,

MARTHA M. ELIOT, M.D.,
Professor of Maternal and Child Health, Emerita.

DEPARTMENT OF ANATOMY,
HARVARD MEDICAL SCHOOL,
Boston, Mass., July 20, 1961.

Hon. LISTER HILL,
*Senate Office Building,
Washington, D.C.*

DEAR SENATOR HILL: It has come to my attention that the President has recommended legislation that would elevate the present Division of General Medical Sciences of the Public Health Service to the status of an Institute of General Medical Sciences. The training grants, fellowship programs, and other activities of this Division are of incalculable value in insuring a continuing supply of well-trained research workers in the basic medical sciences. The importance of this service to the future health of the Nation makes the Division of General Medical Sciences richly deserving of the recognition envisioned in the President's recommendation. I hope you will work for the enabling legislation as you have for many of the other substantial gains in health and education made in recent years.

Sincerely,

DON W. FAWCETT, M.D.,
Hersey Professor of Anatomy.

BOSTON, MASS., *July 20, 1961.*

Hon. LISTER HILL,
Senate Office Building, Washington, D.C.:

I wish to express my hearty and enthusiastic endorsement of S. 2269 to establish a National Institute of General Medical Sciences and a National Institute of Child Health and Human Development. Such noncategorical support of research would be the most effective step taken by the Congress since generous support of research was begun. These institutes would be of inestimable value to medical schools in carrying out imaginative and advanced research.

J. M. HAYMAN,
Dean, Tufts School of Medicine.

TUFTS UNIVERSITY SCHOOL OF MEDICINE,
Boston, Mass., July 19, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: I have learned of the introduction of Senate bill, S. 2269 which provides for the establishment of a National Institute of General Medical Sciences and a National Institute of Child Health and Human Development. The formation of these institutes would be an extremely important step and one that would certainly be welcomed by medical educators, medical research workers, and others. I believe that the establishment of these institutes would strengthen considerably the total effort of the National Institutes of Health in their support of medical research and medical research training in the United States. It would give full recognition to the fact that we need support of our basic medical research and medical research training activities per se, in addition of course to that required for research on specific diseases such as heart disease and cancer.

I sincerely hope that you will continue to give your support to this important measure.

Sincerely yours,

ALTON MEISTER,
Professor and Chairman, Department of Biochemistry.

WATERTOWN, MASS., July 24, 1961.

HON. LISTER HILL,
*Senate Office Building,
Washington, D.C.:*

Having been one of the original members of the Human Embryology and Development Study Section of the NIH permit me to register my support of Senate bill S. 2269, which I understand you are to introduce into the Senate in the very near future. I would deem it a privilege if I can aid in any way in furthering the projected Child Health Institute.

DUNCAN E. REID,
Chairman, Department of Obstetrics and Gynecology, Harvard Medical School.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY,
DEPARTMENT OF BIOLOGY,
Cambridge, Mass., September 14, 1961.

MR. LISTER HILL,
*Chairman, Subcommittee of Committee on Appropriations, Labor-Health, Education,
and Welfare, U.S. Senate, Washington, D.C.*

DEAR MR. HILL: I understand that there has been introduced to Congress a bill to amend the Public Health Service Act to provide for the establishment of an Institute of Child Health and Human Development and an Institute of General Medical Sciences (H.R. 8398, S. 2269).

I have been very much aware of the need for such institutes for the last several years as a result of my contacts with the National Institutes of Health as a consultant and as a result of my role at MIT as head of the department of biology. It is becoming increasingly clear that basic research in the life sciences can pay off handsomely in the field of health and medicine. While we already have institutes to cover the major disease categories, we do not have comparable institutes to cover basic work in human development and basic medical science. I believe that the establishment of these two institutes would make possible a great development in research of a basic nature and I am therefore enthusiastic about the establishment of these two new institutes.

Much of the basic research in the life sciences at MIT is supported by research and training grants from the National Institutes of Health. These grants have contributed greatly to building up MIT's research program in science related to health and medicine. In talking over this problem with my colleagues on the faculty of MIT, I can say that everyone is strongly in favor of the establishment of these two new institutes.

Should your committee need anyone to testify concerning the advisability of these two bills, please do not hesitate to call upon me or my associates.

Sincerely yours,

IRWIN W. SIZER,
Head, Department of Biology.

THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL,
DEPARTMENT OF HUMAN GENETICS,
Ann Arbor, Mich., July 20, 1961.

SENATOR LISTER HILL,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: I am writing as a private citizen to express my strong endorsement of bill S. 2269, and particularly that provision which is concerned with the creation of a National Institute of General Medical Sciences. The present Division of General Medical Sciences has come to occupy an extremely strategic position in the development of basic or general medical sciences in this country. Those of us who have been associated with the Division in an advisory capacity over the years have felt that the long-term implications of many of the

decisions made there are at least of equal magnitude with those made by the various categorical institutes. There is every indication that the importance of adequate support for the general medical sciences will increase rather than diminish in the future. Under the circumstances, I am convinced that giving Institute status to the Division would be a step toward insuring it a more effective place in the many important administrative and policy questions which arise in connection with Federal support of medical research.

Sincerely yours,

JAMES V. NEEL, M.D.

THE AMERICAN PHYSIOLOGICAL SOCIETY,
July 31, 1961.

HON. LISTER HILL,
Senate Office Building,
Washington, D.C.

DEAR SENATOR HILL: The purpose of this letter is to indicate my support for Senate bill 2269, to create two new institutes at the National Institutes of Health. I have no specific comments to make on the proposed Institute for Child Health and Development, but I want to express enthusiastic approval of the proposed Institute of General Medical Sciences. We all know how much the National Institutes have done to support research in the health sciences, but to my mind an equally important factor has been the way the National Institutes have used money appropriated to them to strengthen the basis upon which research activity is erected. The training grants, the predoctoral and postdoctoral fellowship programs, the career awards, the institutional grants, and many other noncategorical activities now grouped in the Division of General Medical Sciences have had enormous beneficial influence, and without them the strictly categorical support of biomedical science would be relatively ineffective. I look forward to still greater influence of the Division of General Medical Sciences, and I believe it should have the status of an independent Institute.

Respectfully yours,

HORACE W. DAVENPORT,
Professor of Physiology, Chairman of the Department, University of Michigan;
President, American Physiological Society.

MAYO CLINIC,
Rochester, Minn., July 26, 1961.

HON. LISTER HILL,
Senate Office Building,
Washington, D.C.

DEAR SENATOR HILL: May I express to you my appreciation of your efforts in behalf of Senate bill S. 2269 recommending the creation of the National Institute of General Medical Sciences.

As a clinical psychiatrist, I can assure you that progress in our speciality, and this is equally true of all the other applied fields in medicine, depends to a significant degree upon the basic inquiries made by our colleagues in the general medical sciences. Hence the kind of support you propose for them in effect benefits many other areas seemingly far removed from the laboratories of chemistry, physiology, and the like.

Further, as a member of the Senior Research Fellowship Selection Committee, I have had a unique opportunity to see the great value which it is in furthering this objective. I suspect that if S. 2269 is enacted, this kind of support will be given the recognition its nuclear importance in medical education and research warrants.

May I express my gratitude to you for your longstanding interest in health matters, and commend the extensions you propose as most worthy companions to the current panel of categorical institutes.

Sincerely yours,

HOWARD P. ROME, M.D.

St. Louis, Mo., July 21, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.:

The bill to create a National Institute of General Medical Sciences has my strongest support. Research and training in the basic medical sciences is a first-priority matter for the national welfare. The new Institute will go far toward rectifying a possible imbalance in our health program.

EDWARD W. DEMPSEY,
Dean, Washington University School of Medicine.

THE AMERICAN SOCIETY FOR PHARMACOLOGY AND
EXPERIMENTAL THERAPEUTICS, INC.,
Princeton, N.J., August 15, 1961.

Hon. LISTER HILL,
Chairman, Senate Committee on Labor and Public Welfare,
Senate Office Building, Washington, D.C.

MY DEAR SENATOR HILL: I am writing in support of proposed legislation, Senate bill S. 2269, which will create a new Institute for General Medical Sciences within the National Institutes of Health.

As you know, for the past 4 years the many scientific programs conducted by General Medical Sciences have operated as a Division within the NIH, rather than a congressionally appointed Institute. During this time, the appropriations for the Division have grown from \$5 to \$133 million in recognition of the fact that the programs of this Division support some of the most important activities at NIH. Among these are research in the most fundamental aspects of biomedical sciences, not necessarily related to any of the categorical diseases; training grants in pharmacology, physiology, anatomical sciences, biochemistry, microbiology, genetics, biophysics, immunology, nutrition, biometry, experimental pathology, and epidemiology; predoctoral and postdoctoral fellowships in these fields; the program of senior fellowships; the newly created career awards; the institutional grants to be implemented this fall (now termed general research support awards); and the noncategorical clinical research centers. Thus, the Division of General Medical Sciences has been charged with those programs which most closely relate to research and research training in the basic biological and medical sciences, those disease areas which are not within the domain of the authorized categorical disease Institutes, career support for investigators, and the support of institutions as such.

In view of the foregoing pertinent facts, I join my many colleagues in pharmacology and in other basic sciences in emphatic support of the proposed bill that will confer upon the Division the dignity and status of an Institute.

Sincerely yours,

CARL C. PFEIFFER, M.D., Ph. D., *President.*

RUTGERS—THE STATE UNIVERSITY,
COLLEGE OF ARTS & SCIENCES,
New Brunswick, N.J., September 7, 1961.

Hon. LISTER HILL,
U.S. Senate, Washington, D.C.

DEAR SENATOR: As a long-term supporter of Federal support for research and training for research I want to go on record as urging you to support Senate bill S. 2269 calling for the creation of two new national institutes. I have been a member of two different study sections so I know the needs.

I speak most knowledgeably about the National Institute of General Medical Sciences. This is the field my own work has been in and the phrase in the bill for the promotion of the general and basic sciences seems to me to be a more fundamental approach to our needs. I do not disapprove of disease-oriented or clinical works, of course, but I believe that there should be better recognition of the need for support of the basic sciences.

Sincerely yours,

LESLIE A. STAUBER,
Chairman, Department of Zoology.

BROOKLYN, N.Y., July 19, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.:

Sincerest congratulations on presentation S. 2269. Both Institutes will serve public well and contribute research impetus in neglected fields. Delighted to see inclusion of obstetrics in Child Health Institute. Glad to volunteer testimony at Senate hearing if desired.

L. M. HELLMAN,
*Professor and Chairman, Obstetrics and Gynecology,
State University of New York, Brooklyn, N.Y.*

NEW YORK, N.Y., September 14, 1962.

Senator LISTER HILL,
U.S. Senate, Washington, D.C.:

We deeply appreciate your interest and support of H.R. 11099 establishing an Institute of Child Health and Human Development. Are convinced that the work of such an institute would greatly further a coordinated research attack upon the causes of mental retardation.

VINCENT J. FITZPATRICK,
President, National Association for Retarded Children.

NEW YORK UNIVERSITY,
COLLEGE OF DENTISTRY,
New York, N.Y., August 3, 1961.

Hon. LISTER HILL,
U.S. Senate, Washington, D.C.

DEAR MR. SENATOR: It has come to my attention that President Kennedy has recommended that two new institutes be set up; namely, a National Institute of General Medical Sciences and a National Institute of Child and Human Development. Since the National Institutes of Health have done such a magnificent job in upgrading medical research and education, I am strongly in favor of extending the scope of the program. It appears to me, that the contemplated legislation would greatly strengthen a number of programs which at the moment are in the process of change.

I would like at this time to take the opportunity to thank you personally for the magnificent contribution which you have made to medical research and education.

Sincerely yours,

E. D. GOLDSMITH, *Research Coordinator.*

NEW YORK, N.Y., July 19, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR: Institutes of Child Care and of General Medicine are urgently needed. I therefore urge the support of S. 2269.

WALTER MODELL, M.D.,
Cornell University Medical College.

NEW YORK, N.Y., July 19, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.:

Pleased to know you are backing S. 2269. Congratulations on breadth of vision and specific proposal for establishment of Institutes of Child Health and Development and Medical Sciences.

LEONARD W. MAYO,
Association for the Aid of Crippled Children.

NEW YORK, N.Y., July 19, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR: I urge the establishment of a National Institute of General Medical Sciences. The importance of formal recognition and support of noncategorical medical research to the basic advance of medicine cannot be overestimated.

WALTER F. RIKER, Jr., M.D.,
*Professor of Pharmacology, Cornell University Medical College; Chairman,
Pharmacology Training Grant Committee, National Institutes of Health.*

ROCHESTER, N.Y., July 20, 1961.

Senator LESTER HILL,
U.S. Senate, Washington, D.C.:

Endorse bill S. 2269 giving institute status to Division of General Medical Sciences.

HAROLD C. HODGE,
*Professor of Pharmacology,
University of Rochester Medical School.*

STATE UNIVERSITY OF NEW YORK,
DOWNSTATE MEDICAL CENTER,
COLLEGE OF MEDICINE,
Brooklyn, N.Y., July 24, 1961.

Senator LISTER HILL,
*U.S. Senate,
Washington, D.C.*

DEAR SENATOR HILL: In the New York Times of July 19 there was an article stating that President Kennedy and Secretary Ribicoff were requesting Congress to authorize the establishment of a child care institute and the promotion of the Division of General Medical Sciences to institute rank within the Public Health Service. I have been informed that you are introducing a bill (S. 2269) for the purpose of authorizing these two new institutes in the Public Health Service, and I am therefore writing to you to express my approval of the bill.

In particular, I would like to speak to the matter of giving the Division of General Medical Sciences institute rank. As you well know, the duties and activities of the DGMS have expanded tremendously over the past several years. During this expansion the personnel of the DGMS has done an outstanding job. From the standpoint of those of us in teaching, research, and administration in medical schools, DGMS is certainly as important as the present Institutes within the Public Health Service; and the administrative personnel of DGMS has earned our respect and admiration. As a new member of the Pharmacology Training Committee of DGMS, I have recently had the opportunity to learn more about the activities of this Division. Because of what DGMS has already contributed, and because its role in the future will be of great importance in the development of research and teaching in the medical sciences in this country, I am strongly in favor of it being given institute rank within the Public Health Service.

Respectfully yours,

ROBERT F. FURCHGOTT,
*Professor and Chairman,
Department of Pharmacology.*

CARNEGIE INSTITUTION OF WASHINGTON,
DEPARTMENT OF GENETICS,
Cold Spring Harbor, Long Island, N.Y., August 9, 1961.

HON. LISTER HILL,
*Chairman, Senate Committee on Labor and Public Welfare,
U.S. Senate, Washington, D.C.*

MY DEAR SENATOR: As president of the Genetics Society of America, I respectfully urge your consideration and support of Senate bill S. 2269, for the creation of an Institute of General Medical Sciences at the National Institutes of Health.

Geneticists in general are very much interested in the progress of biomedical sciences, which undoubtedly would be furthered by the establishment of this new Institute. I accordingly trust that the plan will have your endorsement.

Yours very truly,

BERWIND P. KAUFMANN,
President, Genetics Society of America.

THE ROCKEFELLER INSTITUTE,
New York, N.Y., August 14, 1961.

HON. LISTER HILL,
*Senate Committee on Labor and Public Welfare,
U.S. Senate, Washington, D.C.*

DEAR SENATOR HILL: It has come to my attention that the Senate is considering a bill (No. 2269) which has as its aim the creating of a new Institute of General Medical Sciences, as one of the National Institutes of Health. For scientists engaged in fundamental research in biology and medicine this is an important and welcome development and I would like to urge you to support this bill and help it on its way through committee and Congress. I think, also, that I represent, in this plea, the opinion of a large majority of the scientists (600) who are members of the American Society for Cell Biology.

It must be obvious to you that the basic information and ideas which are necessary for logical approaches to the solution of some of our most baffling medical problems come from the investigation of seemingly unrelated biological phenomena. Such research may receive slight attention compared with the more glamorous search for cures, yet it is more important. This fact was recognized some years ago in the creation of a Division of General Medical Sciences at NIH which has done an enormous good in training young people for careers in the biomedical sciences and in supporting their studies. Now it would seem to be appropriate to confer on this Division the status of Institute, so that it can compete favorably for attention and support with the other Institutes and more effectively pursue its support of fundamental research.

Respectfully submitted.

KEITH R. PORTER,
*Professor of Biology, Harvard University (Formerly Member and Professor,
The Rockefeller Institute), President, ASCB.*

THE SOCIETY FOR GYNECOLOGIC INVESTIGATION,
September 5, 1961.

HON. LISTER HILL,
*Senator from Alabama,
Senate Office Building, Washington, D.C.*

DEAR SENATOR HILL: I am writing to you about Senate bill 2269, and in behalf of the Society for Gynecologic Investigation. Perhaps I should first identify that organization. The society is made up of the active, young investigators in the field of human reproduction (no one past age 45 is eligible for election to the society). These young men are the future leaders in the field of obstetrics and gynecology and 17 of our members already have been appointed to departmental chairmanships since their election to the society; in all, 27 of our members hold such positions. In the listing of NIH grants for the fiscal year 1960, our members, as principal investigators, received a total of \$972,533 in research grants. In addition to this, many were not listed because their work was supported by grants made to teams in which their names were not recorded as principal investigator.

I give you this background to indicate that the medical profession must look to our membership for the research and advances in knowledge in the field of human reproduction.

The Society for Gynecologic Investigation wishes to endorse the principle of bill S. 2269, which provides for the Institute of Child Health and Development. However, we strongly believe that the enabling legislation should specifically include provision for maternal health, for the most important period of life is the 9 months of development within the maternal body.

The national total of deaths occurring within the first week after birth approaches 80,000 per year and this is nearly matched in stillbirths. The great majority of these deaths trace back to abnormalities in the pregnancy. More-

over, some of these abnormalities take additional toll in the forms of cerebral palsy, mental retardation and congenital malformations. While it is obvious that something has gone wrong with reproductive physiology in these cases, only further research will uncover the answers to these problems.

In brief, we believe that child health and development includes the 9-month prenatal period and that this period often determines health and development in the years after birth. Obstetric problems lie at the very heart of the whole program.

Therefore, we urge you to amend bill S. 2269 in the following sense: page 2, line 8, insert "maternal health" just before "child health," to make line 8 read "and training relating to maternal health, child health and human development." Page 2, line 12, insert "including prenatal development and pertinent maternal factors," so that line 12 will read: "development, including prenatal development and pertinent maternal factors."

Respectfully,

LEON C. CHESLEY, Ph. D.,
President, Society for Gynecologic Investigation.

CLEVELAND, OHIO, July 19, 1961.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: For several years I have participated in the activities of the DGMS as a consultant. I have been tremendously impressed by the need for even greater effort in this area not only for future medical care, but for the training of good, sound, clear thinking men that our country will need in general in the future. I urge you to support bill S. 2269 which will strengthen the activity of this important medical science division.

Sincerely,

EARL W. SUTHERLAND, Jr.,
Professor of Pharmacology; Director of the Department, Western Reserve University School of Medicine; and Member of Pharmacology Training Committee, DGMS.

CITY OF PHILADELPHIA,
PHILADELPHIA GENERAL HOSPITAL,
August 11, 1961.

Senator LISTER HILL,
U.S. Senate, Capitol Building, Washington, D.C.

DEAR SENATOR HILL: As pediatrician and nutritionist, I consider the above bill a real milestone in the development of the National Institutes of Health. For the last 10 years I have taken increasing interest in the international aspects of pediatric research and training. As chairman of the protein advisory group of WHO, FAO, and UNICEF, I am well aware of greatly needed opportunities in this field. A National Institute for Child Health and Human Development, in combination of the Division of General Medical Sciences, would offer facilities for pediatricians and nutritionists from a great number of developing countries to get the proper training in the United States so that they could return to their own countries with proper skill and dedication. In this respect this new Institute should be considered as part of our peaceful fight against communism.

Health, even more than disease, is of worldwide impact, and we have to maintain our incontestable lead in this all-important field.

Although I cannot speak for the membership of the American Institute of Nutrition, I do it as a member of the scientific community who is at present president of the American Institute of Nutrition, one of the federated societies.

We in the medical profession are very grateful to you, Senator Hill, for the zeal with which you identify yourself with this noble effort.

I am sending copies of this letter to your colleagues, Senators Clark and Scott of Pennsylvania, for their information.

Respectfully yours,

PAUL GYÖRGY, M.D.,
Professor Emeritus of Pediatrics, University of Pennsylvania.

UNIVERSITY OF PITTSBURGH,
Pittsburgh, Pa., August 16, 1961.

HON. MR. LISTER HILL,
Chairman, Senate Committee on Labor and Public Welfare,
Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: I am writing to you to urge favorable committee action on the proposal to create an Institute for General Medical Sciences within the National Institutes of Health.

An Institute for General Medical Sciences would be concerned with basic research in such fundamental sciences as anatomy, biochemistry, biometry, biophysics, genetics, microbiology, physiology, etc., which underpin all of the efforts to find new and different solutions for specific medical problems. Successful application of scientific knowledge can come only after basic knowledge has been discovered. We in America have always been very successful in applying scientific knowledge to the solution of our practical problems. However, prior to World War II, we were relatively weak in truly fundamental or basic research aimed at broadening the foundation of scientific knowledge. We had to rely heavily on science emanating from other countries. There has been marked improvement in our situation within the past two decades, but there is still room for further development. The creation of an Institute for General Medical Sciences would be a big step in this direction.

Many people think that basic or fundamental science is an impractical luxury. This is not true. Basic science is differentiated from practical or applied science in the sense that the investigator does not know what practical application will or might ensue from his research while he is doing it. Nevertheless, all truly revolutionary advances in applied science are based on new discoveries in basic science. An obvious example is the case of X-rays. The application of X-rays and other ionizing radiations in the field of medicine are almost innumerable. Yet all of these applications could come only after Roentgen discovered X-rays. He did this by fooling around in his laboratory, primarily for the purpose of satisfying his own curiosity. There are many unsolved problems in medicine. Some of them can probably be solved by application of existing basic knowledge. I am certain, however, that others must await creation of new knowledge through purely basic research. For this reason, I have often expressed the opinion that purely basic or fundamental research, rather than being impractical, is truly the most practical kind of research there is.

Sincerely yours,

MAX A. LAUFFER,
Dean, Division of the Natural Sciences; Professor of Biophysics; President of
the Biophysical Society.

THE UNIVERSITY OF TEXAS—MEDICAL BRANCH,
Galveston, July 26, 1961.

Senator LISTER HILL,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: This is to urge your favorable consideration and support of Senate bill 2269 which relates to the establishment of an Institute of Child Health and Human Development and an Institute of General Medical Sciences within the National Institutes of Health.

For some 8 years I have been associated in consultation capacities with the National Institutes of Health, and am presently a member of the Senior Fellowship Selection Committee. During this time, I have gained sufficient knowledge and perspective of the functions of the National Institutes of Health to offer high praise for the excellent work they have done in relation not only to medical research, but that form of medical education which provides, indirectly, for high quality medical research. I am convinced that the creation of two additional Institutes, as provided for in bill 2269, would materially aid the National Institutes of Health in the very important work they are doing.

Sincerely yours,

HOWARD C. HOPPS, M.D.,
Professor and Chairman, Department of Pathology.

SEATTLE, WASH., September 5, 1962.

Senator LISTER HILL,
Senate Office Building, Washington, D.C.:

Strongly urge Senate consideration and passage this session of H.R. 11099 as recently passed by House of Representatives with minor modifications. This bill provides for establishment of an Institute of Child Health and Human Development, a need which is urgent as recently illustrated by the thalidomide example. Please do everything you can to advance this measure so that no time will be lost. This bill has political support from both major political parties, from practitioners of medicine, medical scientists throughout the Nation and the Federal administration.

It is a noncontroversial measure of greatest importance to our future citizens.

ROBERT ALDRICH, M.D.,

Professor and Chairman, Department of Pediatrics, University of Washington
School of Medicine.

SEATTLE, WASH., July 26, 1961.

Senator LISTER HILL,
U.S. Senate, Washington, D.C.:

The Division of General Medical Sciences of the National Institutes of Health has contributed greatly to the stimulation of research in microbiology, basic to many medical problems. I therefore urge the adoption of Senate bill, S. 2269, creating a National Institute of Child Health and Human Development and a National Institute of General Medical Sciences.

CHARLES A. EVANS, M.D., Ph. D.,

Chairman, American Academy of Microbiology, Department of Microbiology,
University of Washington, Seattle.

Senator YARBOROUGH. The record will be ordered left open until Monday of next week for the receiving of additional communications that we are advised are on the way. And if any of you gentlemen have additional statements you would like to present they will be received and printed, too. This record of the hearing will be available to all of you and others. I think that with the statements that have been presented we have a very fine compendium of material here that can be used in support of this legislation. In addition to the Federal funds I know there will be supplementary grants from States and from private foundations and from other sources, so that all of the resources of America may be brought to bear on what is a problem of the American people.

Thank you all for your participation.

I will say this, that I notice that when I stated the difficulty that our other committee had in raising salaries for people who work in these scientific positions to a level higher than those of assistant secretaries, I saw many mournful shakings of heads. That is one of the facts that we deal with in this, but we do have comprehensive legislation to try to raise the salaries of the executive officers of Government. There will be this payment of—I will not say adequate—but high enough salaries, to be able to get the optimum people in these different scientific professional disciplines, so that people will come to serve the National Government. I am hopeful that we will have the solution within the next 16 months. Thank you very much. The hearing is adjourned.

(Whereupon, at 12 noon, the subcommittee adjourned.)



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Fourth block of faint, illegible text, located in the lower half of the page.



