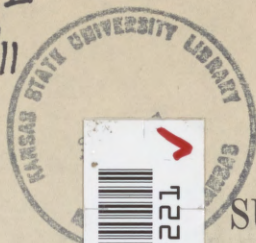


AMEND THE PUBLIC HEALTH SERVICE ACT TO PROVIDE
ADEQUATE MEDICAL LIBRARY SERVICES AND FACILITIES



HEARINGS
BEFORE THE
SUBCOMMITTEE ON HEALTH
OF THE
COMMITTEE ON
LABOR AND PUBLIC WELFARE
UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

FIRST SESSION

ON

S. 597

A BILL TO AMEND THE PUBLIC HEALTH SERVICE ACT TO
PROVIDE FOR A PROGRAM OF GRANTS TO ASSIST IN
MEETING THE NEED FOR ADEQUATE MEDICAL LIBRARY
SERVICES AND FACILITIES

JUNE 14 AND 15, 1965

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



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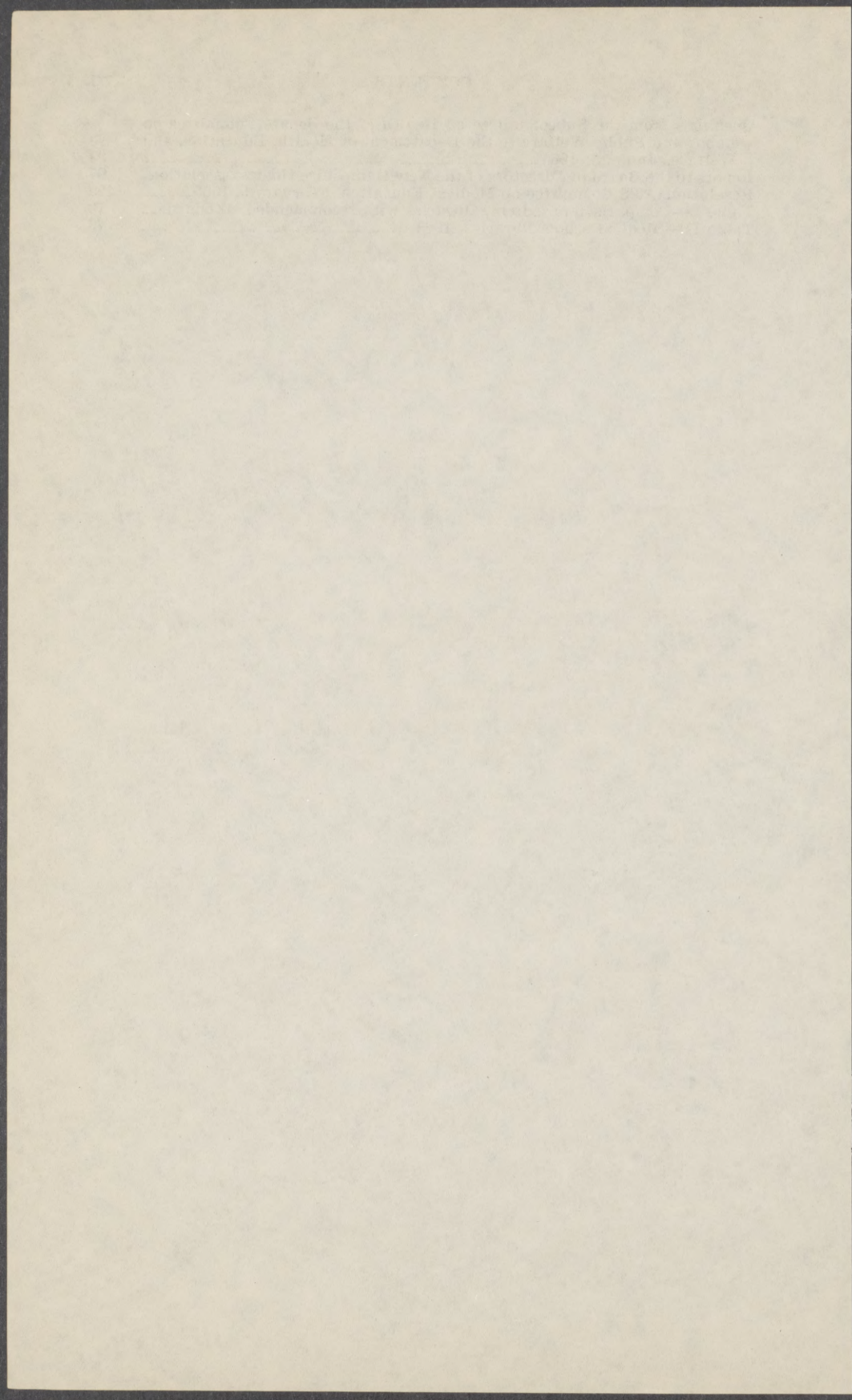
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TO AMEND THE PUBLIC HEALTH SERVICE ACT TO PROVIDE FOR ADEQUATE MEDICAL LIBRARY SERV- ICES AND FACILITIES

MONDAY, JUNE 14, 1965

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

The subcommittee met, pursuant to notice, at 10:05 o'clock a.m., in room 4232, New Senate Office Building, Senator Lister Hill, chairman of the committee, presiding.

Present: Senators Hill (presiding), Yarborough, and Kennedy of Massachusetts.

Committee staff members present: Stewart E. McClure, chief clerk; Robert W. Barclay, professional staff member; and Roy H. Millenson, minority clerk.

The CHAIRMAN. The subcommittee will kindly come to order.

The Subcommittee on Health is meeting this morning to receive testimony on S. 597, the Medical Library Assistance Act of 1965.

(The bill, S. 597, follows:)

89TH CONGRESS
1ST SESSION

S. 597

IN THE SENATE OF THE UNITED STATES

JANUARY 19, 1965

Mr. HILL introduced the following bill; which was read twice and referred to the Committee on Labor and Public Welfare

A BILL

To amend the Public Health Service Act to provide for a program of grants to assist in meeting the need for adequate medical library services and facilities.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 SECTION 1. This Act may be cited as the "Medical
4 Library Assistance Act of 1965".

5 SEC. 2. Title III of the Public Health Service Act is
6 amended by inserting at the end thereof the following new
7 part:

8 "PART I—ASSISTANCE TO MEDICAL LIBRARIES

9 "DECLARATION OF POLICY AND STATEMENT OF PURPOSE

10 "SEC. 390. (a) The Congress hereby finds and declares

2

1 that (1) the unprecedented expansion of knowledge in the
2 health sciences within the past two decades has brought about
3 a massive growth in the quantity, and major changes in the
4 nature of, biomedical information, materials, and publica-
5 tions, (2) there has not been a corresponding growth in the
6 facilities and techniques necessary adequately to coordinate
7 and disseminate among health scientists and practitioners the
8 ever increasing volume of knowledge and information which
9 has been developed in the health science field; (3) much of
10 the value of the ever increasing volume of knowledge and
11 information which has been, and continues to be, developed
12 in the health science field will be lost unless proper measures
13 are taken in the immediate future to develop facilities and
14 techniques necessary to collect, preserve, store, process,
15 retrieve, and facilitate the dissemination and utilization of,
16 such knowledge and information.

17 “(b) It is therefore the policy of this part to—

18 “(1) assist in the construction of new, and the reno-
19 vation, expansion, or rehabilitation, of existing medical
20 library facilities;

21 “(2) assist in the training of medical librarians
22 and other information specialists in the health sciences;

23 “(3) assist, through the awarding of special fellow-
24 ships to physicians and scientists, in the compilation of
25 existing, and the creation of additional, written matter

3

1 which will facilitate the distribution and utilization of
2 knowledge and information relating to scientific, social
3 and cultural advancements in sciences related to health;

4 “(4) assist in the conduct of research and investi-
5 gations in the field of medical library science and related
6 activities, and in the development of new techniques,
7 systems and equipment for processing, storing, retriev-
8 ing, and distributing information in the sciences related to
9 health;

10 “(5) assist in improving and expanding the basic
11 resources of medical libraries and related facilities;

12 “(6) assist in the development of a national system
13 of regional medical libraries each of which would have
14 facilities of sufficient depth and scope to supplement the
15 services of other medical libraries within the region
16 served by it; and

17 “(7) provide financial support to biomedical sci-
18 entific publications.

19 “DEFINITIONS

20 “SEC. 391. As used in this part—

21 “(1) the term ‘sciences related to health’ includes
22 medicine, osteopathy, dentistry, and public health, and
23 fundamental and applied sciences when related thereto;

24 “(2) the terms ‘National Medical Libraries Assist-
25 ance Advisory Board’ and ‘Board’ means the Board of

4

1 Regents of the National Library of Medicine established
2 under section 373 (a) of this Act;

3 “(3) the terms ‘construction’ and ‘cost of construc-
4 tion’, when used with reference to any medical library
5 facility, include (A) the construction of new buildings,
6 and the expansion, remodeling, and alteration of exist-
7 ing buildings, including architects’ fees, but not includ-
8 ing the cost of acquisition of land or off-site improve-
9 ments, and (B) equipping new buildings and existing
10 buildings (whether or not expanded, remodeled, or
11 altered) for use as a library (including provision of
12 automatic data processing equipment) but not with
13 books, pamphlets, or related material.

14 NATIONAL MEDICAL LIBRARIES ASSISTANCE BOARD

15 “SEC. 392. (a) The Board of Regents of the National
16 Library of Medicine established pursuant to section 373 (a)
17 shall, in addition to its functions prescribed under section
18 373, constitute and serve as the National Medical Libraries
19 Assistance Advisory Board (hereinafter in this part referred
20 to as the ‘Board’).

21 “(b) The Board shall—

22 “(1) advise and assist the Surgeon General in the
23 preparation of general regulations and with respect to
24 policy matters arising in the administration of this part;
25 and

5

1 “(2) consider all applications for construction
2 grants under this part and make to the Surgeon General
3 such recommendations as it deems advisable with respect
4 to (A) the approval of such applications, and (B) the
5 amount which should be granted to each applicant whose
6 application, in its opinion, should be approved.

7 “(c) The Surgeon General is authorized to use the serv-
8 ices of any member or members of the Board, in connection
9 with matters related to the administration of this part, for
10 such periods, in addition to conference periods, as he may
11 determine.

12 “(d) Appointed members of the Board who are not
13 otherwise in the employ of the United States, while attend-
14 ing conferences of the Board or otherwise serving at the
15 request of the Surgeon General in connection with the ad-
16 ministration of this part, shall be entitled to receive com-
17 pensation, per diem in lieu of subsistence, and travel expenses
18 in the same manner and under the same conditions as that
19 prescribed under section 373 (d), when attending confer-
20 ences, traveling, or serving at the request of the Surgeon
21 General in connection with the administration of part H
22 which deals with the National Library of Medicine.

23 “ASSISTANCE FOR CONSTRUCTION OF FACILITIES

24 “SEC. 393. (a) In carrying out the purposes of section
25 390 (b) (1), the Surgeon General may, upon application of

6

1 any public or private nonprofit agency or institution, make
2 grants to such agency or institution toward the cost of con-
3 struction of any medical library facility to be constructed by
4 such agency or institution.

5 “(b) A grant under this section may be made only if
6 the application therefor is recommended for approval by
7 the Board and is approved by the Surgeon-General upon his
8 determination that—

9 “(1) the application contains or is supported by
10 reasonable assurances that (A) for not less than ten
11 years after completion of construction, the facility will
12 be used as a medical library facility, (B) subject to
13 subsection (c), sufficient funds will be available to meet
14 the non-Federal share of the cost of constructing the fa-
15 cility, and (C) sufficient funds will be available, when
16 construction is completed, for effective use of the facility
17 for the purpose for which it is being constructed;

18 “(2) the proposed construction is necessary to meet
19 the demonstrated needs for additional or improved medi-
20 cal library facilities in the community or area in which
21 the proposed construction is to take place;

22 “(3) the application contains or is supported by
23 adequate assurance that any laborer or mechanic em-
24 ployed by any contractor or subcontractor in the per-
25 formance of work on the construction of the facility will

7

1 be paid wages at rates not less than those prevailing on
2 similar construction in the locality as determined by the
3 Secretary of Labor in accordance with the Davis-Bacon
4 Act, as amended (40 U.S.C. 276a-276a5). The Secre-
5 tary of Labor shall have, with respect to the labor stand-
6 ards specified in this paragraph, the authority and func-
7 tions set forth in Reorganization Plan Numbered 14 of
8 1950 (15 F.R. 3176; 64 Stat. 1267), and section 2 of
9 the Act of June 13, 1934, as amended (40 U.S.C.
10 276c).

11 “(c) Within such aggregate monetary limit as the Sur-
12 geon General may prescribe, after consultation with the
13 Board, applications which (solely by reason of the inability
14 of the applicants to give the assurance required by clause
15 (B) of subsection (b) (1)) fail to meet the requirements
16 for approval set forth in subsection (b) may be approved
17 upon condition that the applicants give the assurance required
18 by such clause (B) within a reasonable time and upon such
19 other reasonable terms and conditions as he may determine
20 after consultation with the Board.

21 “(d) In acting upon applications for grants under this
22 section, the Board and the Surgeon General shall take into
23 consideration the relative effectiveness of the proposed facili-
24 ties in meeting demonstrated needs for additional or improved
25 medical library services, and shall give priority to applica-

8

1 tions for construction of facilities for which the need is
2 greatest.

3 “(e) The amount of any grant made under this section
4 shall be that recommended by the Board or such lesser
5 amount as the Surgeon General determines to be appropriate;
6 except that in no event may such amount exceed 75 per
7 centum of the necessary cost of the construction of such
8 facility as determined by him.

9 “(f) Upon approval of any application for a grant
10 under this section, the Surgeon General shall reserve, from
11 any appropriation available therefor, the amount of such
12 grant as determined under subsection (e), and shall pay
13 such amount, in advance or by way of reimbursement, and
14 in such installments consistent with construction progress, as
15 he may determine. Such payments shall be made through
16 the disbursement facilities of the Department of the Treas-
17 ury. The Surgeon General’s reservation of any amount
18 under this subsection may be amended by him, either upon
19 approval of an amendment of the application or upon re-
20 vision of the estimated cost of construction of the facility.

21 “(g) In determining the amount of any grant under
22 this section, there shall be excluded from the cost of con-
23 struction an amount equal to the sum of (1) the amount
24 of any other Federal grant which the applicant has obtained,
25 or is assured of obtaining, with respect to the construction

9

1 which is to be financed in part by grants authorized under
2 this section, and (2) the amount of any non-Federal funds
3 required to be expended as a condition of such other Federal
4 grant.

5 “(h) If, within ten years after completion of any con-
6 struction for which funds have been paid under this section—

7 “(1) the applicant or other owner of the facility
8 shall cease to be a public or nonprofit institution, or

9 “(2) the facility shall cease to be used for medical
10 library purposes, unless the Surgeon General determines,
11 in accordance with regulations prescribed by him after
12 consultation with the Board, that there is good cause
13 for releasing the applicant or other owner from the
14 obligation to do so,

15 the United States shall be entitled to recover from the ap-
16 plicant or other owner of the facility the amount bearing
17 the same ratio to the then value (as determined by agree-
18 ment of the parties or by action brought in the United States
19 District Court for the district in which such facility is situ-
20 ated) of the facility, as the amount of the Federal participa-
21 tion bore to the cost of construction of such facility.

22 “(i) For the purposes of carrying out the provisions
23 of this section, there are hereby authorized to be appro-
24 priated for each fiscal year, beginning with the fiscal year

10

1 ending June 30, 1966, and ending with the fiscal year
2 ending June 30, 1970, such sums, not to exceed \$10,000,-
3 000 for any fiscal year, as may be necessary.

4 "GRANTS FOR TRAINING IN MEDICAL LIBRARY SCIENCES

5 "SEC. 394. (a) In order to enable the Surgeon General
6 to carry out the purposes of section 390 (b) (2), there are
7 hereby authorized to be appropriated for each fiscal year,
8 beginning with the fiscal year ending June 30, 1966, and
9 ending with the fiscal year ending June 30, 1970, such
10 sums, not to exceed \$1,000,000 for any fiscal year, as may
11 be necessary. Sums made available under this section shall
12 be utilized by the Surgeon General in making grants—

13 " (1) to individuals to enable them to accept
14 traineeships and fellowships leading to post baccalau-
15 reate academic degrees in the field of medical library
16 science, in related fields pertaining to sciences related
17 to health, or in the field of the communication of in-
18 formation;

19 " (2) to individuals who are librarians or specialists
20 in information on sciences relating to health, to enable
21 them to undergo intensive training or retraining so as
22 to attain greater competence in their occupations (in-
23 cluding competence in the fields of automatic data
24 processing and retrieval) ;

25 " (3) to assist appropriate public and private non-

11

1 profit institutions in developing, expanding, and im-
2 proving, training programs in library science and the
3 field of communications of information pertaining to
4 sciences relating to health; and

5 “(4) to assist in the establishment of internship
6 programs in established medical libraries meeting stand-
7 ards which the Surgeon General shall prescribe.

8 “(b) Payment pursuant to grants made under this
9 section may be made in advance or by way of reimburse-
10 ment and in such installments as the Surgeon General shall
11 prescribe by regulations after consultation with the Board.

12 “ASSISTANCE TO SPECIAL SCIENTIFIC PROJECTS

13 “SEC. 395. In order to enable the Surgeon General to
14 carry out the purposes of section 390 (b) (3), there are
15 hereby authorized to be appropriated for each fiscal year,
16 beginning with the fiscal year ending June 30, 1966, and
17 ending with the fiscal year ending June 30, 1970, such sums,
18 not to exceed \$500,000 for any fiscal year, as may be neces-
19 sary. Sums made available under this section shall be uti-
20 lized by the Surgeon General for the establishment of special
21 fellowships to be awarded to physicians and scientists for
22 the compilation of existing, or writing of original, contribu-
23 tions relating to scientific, social, or cultural, advancements
24 in sciences related to health. In establishing such fellow-
25 ships, the Surgeon General shall make appropriate arrange-

12

1 ments whereby the facilities of the National Library of Medi-
2 cine and the facilities of libraries of public and private non-
3 profit institutions of higher learning may be made available
4 in connection with the projects for which such fellowships
5 are established.

6 "RESEARCH AND DEVELOPMENT IN MEDICAL LIBRARY
7 SCIENCE AND RELATED FIELDS

8 "SEC. 396. (a) In order to enable the Surgeon General
9 to carry out the purposes of section 390 (b) (4), there are
10 hereby authorized to be appropriated for each fiscal year,
11 beginning with the fiscal year ending June 30, 1966, and
12 ending with the fiscal year ending June 30, 1970, such
13 sums, not to exceed \$3,000,000 for any fiscal year, as may
14 be necessary. Sums made available under this section shall
15 be utilized by the Surgeon General in making grants to ap-
16 propriate public or private nonprofit institutions and entering
17 into contracts with appropriate persons, for purposes of
18 carrying out projects of research and investigations in the
19 field of medical library science and related activities and for
20 the development of new techniques, systems and equipment,
21 for processing, storing, and retrieving and distributing in-
22 formation pertaining to sciences related to health.

23 "(b) Payment pursuant to grants made under this sec-
24 tion may be in advance or by way or reimbursement and in

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1 such installments as the Surgeon General shall prescribe by
2 regulations after consultation with the Board.

3 "GRANTS FOR IMPROVING AND EXPANDING THE BASIC
4 RESOURCES OF MEDICAL LIBRARIES AND RELATED
5 INSTRUMENTALITIES

6 "SEC. 397. (a) In order to enable the Surgeon General
7 to carry out the purposes of section 390 (b) (5), there are
8 hereby authorized to be appropriated for each fiscal year, be-
9 ginning with the fiscal year ending June 30, 1966, and end-
10 ing with the fiscal year ending June 30, 1970, such sums,
11 not to exceed \$3,000,000 for any fiscal year, as may be
12 necessary.

13 "(b) Sums made available under this section shall be
14 utilized by the Surgeon General for making grants of money,
15 materials, or both, to public or private nonprofit medical
16 libraries and related scientific communication instrumental-
17 ities for the purpose of expanding and improving their basic
18 medical library or related resources. The uses for which
19 grants so made may be employed include, but are not limited
20 to, the following: (A) acquisition of books, journals, photo-
21 graphs, motion picture and other films, and other similar
22 materials, (B) cataloging, binding and other services and
23 procedures for processing library resource materials for use

14

1 by those who are served by the library or related instru-
 2 mentality, and (C) acquisition of duplication devices, fac-
 3 simile equipment, film projectors, recording equipment, and
 4 other equipment to facilitate the use of the resources of the
 5 library or related instrumentality by those who are served
 6 by it, and (D) introduction of new technologies in medical
 7 librarianship.

8 “(c) (1) The amount of any grant under this section to
 9 any medical library or related instrumentality shall be deter-
 10 mined by the Surgeon General on the basis of the scope of
 11 library or related services provided by such library or instru-
 12 mentality in relation to the population and purposes served
 13 by it. In making a determination of the scope of services
 14 served by any medical library or related instrumentality,
 15 the Surgeon General shall take into account the following
 16 factors—

17 “(A) the number of graduate and undergraduate
 18 students making use of the resources of such library or
 19 instrumentality;

20 “(B) the number of physicians utilizing the re-
 21 sources of such library or instrumentality;

22 “(C) the type of supportive staffs, if any, available
 23 to such library or instrumentality;

24 “(D) the type, size, and qualifications, of the

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1 faculty of any school with which such library or instru-
2 mentality is affiliated;

3 “(E) the staff of any hospital or hospitals or of
4 any clinic or clinics with which such library or instru-
5 mentality is affiliated; and

6 “(F) the geographic area served by such library
7 or instrumentality and the availability, within such area,
8 of medical library or related services provided by other
9 libraries or related instrumentalities.

10 “(2) In no case shall any grant under this section to a
11 medical library or related instrumentality during any fiscal
12 year exceed \$200,000, or if lesser, an amount equal to—

13 “(A) 60 per centum of the annual operating ex-
14 penses of such library or related instrumentality, if such
15 fiscal year is the first fiscal year with respect to which
16 a grant under this section is made to it;

17 “(B) (i) 50 per centum of the annual operating
18 expenses of such library or related instrumentality, (ii)
19 or, if lesser, five-sixths of the amount of its first year
20 grant under this section, if such year is the second fiscal
21 year with respect to which a grant under this section has
22 been made to it;

23 “(C) (i) 40 per centum of the annual operating
24 expenses of such library or related instrumentality, (ii)

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1 or, if lesser, four-fifths of the amount of the second year
2 grant under this section, if such year is the third fiscal
3 year with respect to which a grant under this section has
4 been made to it;

5 “(D) (i) 30 per centum of the annual operating
6 expenses of such library or related instrumentality, (ii)
7 or, if lesser, three-fourths of the amount of the third
8 year grant under this section, if such year is the fourth
9 fiscal year with respect to which a grant under this sec-
10 tion has been made to it; and

11 “(E) (i) 20 per centum of the annual operating
12 expenses of such library or related instrumentality, (ii)
13 or, if lesser, two-thirds of the amount of the fourth year
14 grant under this section, if such year is the fifth fiscal
15 year with respect to which a grant under this section
16 has been made to it.

17 The ‘annual operating expense’ of a library or related instru-
18 mentality shall, for purposes of the preceding sentence, be an
19 amount equal (if such annual operating expense is to be
20 determined with respect to the first grant to be made to such
21 library or instrumentality under this section) to the amount
22 of the average of the annual operating expenses of such
23 library or instrumentality over the three fiscal years preced-
24 ing the year in which such grant is applied for; and if such
25 library or related instrumentality has been operating for less

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1 than three years prior to applying for such grant, its 'annual
2 operating expense' shall be an amount determined by the
3 Surgeon General pursuant to regulations prescribed by him.
4 For the second or succeeding fiscal year in which a grant is
5 made to a library or related instrumentality, the 'annual
6 operating expense' of such library or related instrumentality
7 shall, for purposes of such sentence, be equal to its operating
8 expense (exclusive of Federal financial assistance under this
9 part) for the preceding fiscal year.

10 "GRANTS FOR ESTABLISHMENT OF REGIONAL MEDICAL
11 LIBRARIES

12 "SEC. 398. (a) In order to enable the Surgeon General
13 to carry out the purposes of section 390 (b) (6) , there are
14 hereby authorized to be appropriated for each fiscal year,
15 beginning with the fiscal year ending June 30, 1966, and
16 ending with the fiscal year ending June 30, 1970, such sums,
17 not to exceed \$2,500,000 for any fiscal year, as may be
18 necessary. Sums made available under this section shall be
19 utilized by the Surgeon General, with the advice of the
20 Board, to make grants to existing public or private non-
21 profit medical libraries so as to enable each of them to serve
22 as the regional medical library for the geographical area in
23 which it is located.

24 "(b) The uses for which grants made under this section

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1 may be employed include, but are not limited to, the follow-
2 ing—

3 “(1) acquisition of books, journals, and other simi-
4 lar materials;

5 “(2) cataloging, binding, and other procedures for
6 processing library resource materials for use by those
7 who are served by the library;

8 “(3) acquisition of duplicating devices and other
9 equipment to facilitate the use of the resources of the
10 library by those who are served by it;

11 “(4) acquisition of mechanisms and employment of
12 personnel for the speedy transmission of materials from
13 the regional library to local libraries in the geographic
14 area served by the regional library; and

15 “(5) construction, renovation, rehabilitation, or
16 expansion of physical plant considered necessary by such
17 library to carry out its proper functions as a regional
18 library.

19 “(c) (1) Grants under this section shall be made only
20 to medical libraries which agree (A) to modify and increase
21 their library resources so as to be able to provide supportive
22 services to other libraries in the region as well as individual
23 users of library services, (B) to provide free loan services to
24 qualified users, and make available photo-duplicated or fac-

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1 simile copies of biomedical materials which qualified re-
2 questors may retain.

3 “(2) The Surgeon General, in awarding grants under
4 this section, shall give priority to medical libraries having
5 the greatest potential of fulfilling the needs for regional
6 medical libraries. In determining the priority to be assigned
7 to any medical library, he shall consider—

8 “(A) the need of such library, as determined by
9 the levels of research, teaching, and medical, activities
10 of the library in relation to other existing library and
11 medical communication services in the region;

12 “(B) the adequacy of the library (in terms of
13 collections, personnel, equipment, and other facilities)
14 as a basis for a regional medical library; and

15 “(C) the size and nature of the population to be
16 served in the region in which the library is located.

17 “(d) Grants under this section for construction, renova-
18 tion, rehabilitation, or expansion of physical plant shall be
19 made in the same manner and subject to the same conditions
20 as are provided for grants made under section 393, except
21 that the eligibility for any such grant would be determined on
22 the basis of the construction requirements of the library so as
23 to be able to serve as a regional medical library. Grants
24 under this section for basic resource materials to a library

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1 may not exceed 50 per centum of the library's annual operat-
2 ing expense (exclusive of Federal financial assistance under
3 this part) for the preceding year; or in case of the first year
4 in which the library receives a grant under this section for
5 basic resource materials, 50 per centum of its average annual
6 operating expenses over the past three years (or if it had
7 been in operation for less than three years, its annual operat-
8 ing expenses determined by the Surgeon General in accord-
9 ance with regulations prescribed by him).

10 “(e) Payment pursuant to grants made under this sec-
11 tion may be made in advance or by way of reimbursement
12 and in such installments as the Surgeon General shall pre-
13 scribe by regulations after consultation with the Board.

14 “FINANCIAL SUPPORT OF BIOMEDICAL SCIENTIFIC
15 PUBLICATIONS

16 “SEC. 399. (a) In order to enable the Surgeon General
17 to carry out the purposes of section 390 (b) (7), there are
18 hereby authorized to be appropriated for each fiscal year,
19 beginning with the fiscal year ending June 30, 1966, and
20 ending with the fiscal year ending June 30, 1970, such sums,
21 not to exceed \$1,500,000 for any fiscal year, as may be
22 necessary. Sums made available under this section shall be
23 utilized by the Surgeon General, with the advice of the
24 Board, in making grants to, and entering into appropriate
25 contracts with, public or private nonprofit institutions of

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1 higher education and individual scientists for the purpose of
2 supporting biomedical scientific publications of a nonprofit
3 nature and to procure the compilation, writing, editing, and
4 publication of reviews, abstracts, indices, handbooks, bibli-
5 ographies, and related matter pertaining to scientific works
6 and scientific developments.

7 “(b) Grants under this section in support of any single
8 periodical publication may not be made for more than three
9 years.

10 “(c) Payment pursuant to grants made under this sec-
11 tion may be made in advance or by way of reimbursement
12 and in such installments as the Surgeon General shall pre-
13 scribe by regulations after consultation with the Board.

14 “CONTINUING AVAILABILITY OF APPROPRIATED FUNDS

15 “SEC. 399a. Funds appropriated to carry out any of the
16 purposes of this part for any fiscal year shall remain available
17 for such purposes for the fiscal year immediately follow-
18 ing the fiscal year for which they were appropriated.”

19 REGIONAL BRANCHES OF THE NATIONAL LIBRARY OF

20 MEDICINE

21 SEC. 3. Part H of title III of the Public Health Service
22 Act which deals with the National Library of Medicine is
23 amended by adding at the end thereof the following new
24 section:

22

1 "REGIONAL BRANCHES OF THE NATIONAL LIBRARY OF
2 MEDICINE

3 "SEC. 378. (a) Whenever the Surgeon General, with
4 the advice of the Board, determines that—

5 "(1) in any geographic area of the United States,
6 there is no regional medical library adequate to serve
7 such area;

8 "(2) under the criteria prescribed in section 398,
9 there is a need for a regional medical library to serve
10 such area; and

11 "(3) because there is located in such area no medi-
12 cal library which, under the provisions of section 398,
13 can feasibly be developed into a regional medical library
14 adequate to serve such area,

15 he is authorized to establish, as a branch of the National
16 Library of Medicine, a regional medical library to serve the
17 needs of such area.

18 "(b) For the purpose of establishing branches of the
19 National Library of Medicine under this section, there are
20 hereby authorized to be appropriated for each fiscal year,
21 beginning with the fiscal year ending June 30, 1966, and
22 ending with the fiscal year ending June 30, 1970, such
23 sums, not to exceed \$2,000,000 for any fiscal year, as may
24 be necessary. Sums appropriated pursuant to this section
25 for any fiscal year shall remain available until expended."

1 COMPENSATION OF MEMBERS OF THE BOARD OF REGENTS
2 OF THE NATIONAL LIBRARY OF MEDICINE

3 SEC. 4. Part H of title III of the Public Health Service
4 Act which deals with the National Library of Medicine is
5 amended by striking out, in section 373 (d) thereof, "\$50"
6 and inserting in lieu thereof "\$75".

The CHAIRMAN. We are all familiar with the distinguished history of the National Library of Medicine. This Thursday we will honor its 100th anniversary as a national resource and pay tribute to one of the truly great men of medicine, the founder of the Army Medical Library, Dr. John Shaw Billings.

As we know, the Army Medical Library was later known as the Armed Forces Medical Library. It was transferred in 1956 to the Public Health Service as the National Library of Medicine. I had the privilege of sponsoring the legislation that authorized the transfer with the late President Kennedy who at the time was serving in the Senate.

Through the many years since its establishment, the Library has contributed importantly to the health of mankind through its contributions to medical research, to medical education, and to the practice of medicine.

The library today is faced with new challenges due to the rapid accumulation of new medical knowledge over the past two decades. Scientists have stated the period of the past 20 years has been the most productive of new medical knowledge in the entire history of medicine.

If this new knowledge is to be used to the fullest advantage it is imperative that we increase and expand the resources and authorities of the National Library of Medicine. Legislation to achieve these objectives was recommended by the President's Committee on Heart Disease, Cancer and Stroke.

This is the legislation that we shall consider here this morning. We are very happy to have you, Dr. Dempsey, you, Dr. Terry, and you, Dr. Cummings, here with us and you may proceed now in your own way.

STATEMENT OF DR. EDWARD W. DEMPSEY, SPECIAL ASSISTANT TO THE SECRETARY, HEALTH AND MEDICAL AFFAIRS, ACCOMPANIED BY DR. LUTHER L. TERRY, SURGEON GENERAL, U.S. PUBLIC HEALTH SERVICE; AND DR. MARTIN M. CUMMINGS, DIRECTOR, NATIONAL LIBRARY OF MEDICINE

Dr. DEMPSEY. Thank you, Mr. Chairman, I am very pleased indeed to appear this morning to indicate the enthusiastic support by the Department of Health, Education, and Welfare of S. 597, the Medical Library Assistance Act of 1965, which has been introduced by the distinguished chairman of the committee.

There can be no doubt but that this bill addresses itself to a most serious problem confronting the Nation in relation to the health of our people. We urge the enactment of this legislation as essential to the success of the health programs of the Department and of the Nation. Unless a bold program of library assistance is mounted, major investments in programs of health service and research will be placed in jeopardy through failure of effective development of health information systems.

The report of the Secretary to the chairman of this committee on S. 597 outlines in detail the Department's position of support of the program of assistance for medical libraries. Therefore, Mr. Chairman, I wish to take this opportunity to briefly underline the magnitude

of the problem and to emphasize some of the things this bill will accomplish.

I would like to indicate, therefore, that the detailed analysis and recommendations appear in the Department's report on this bill which we have submitted to you.

The CHAIRMAN. All right, sir. Good. We will have that printed in full in the record. (See p. 166.)

Dr. DEMPSEY. Our society has seen fit to support large programs of medical research by private and governmental agencies. Overlooked in these programs has been support for medical libraries, the services and facilities of which are needed by the research scientist, the teacher, the student, and the practitioner to further the advance of knowledge, to transmit the knowledge to coming generations, and to apply the knowledge to the benefit of the people.

The Medical Library Assistance Act of 1965 sets forth a program of assistance designed to correct the deficiencies of biomedical libraries. At the present time they are: Ill housed; understaffed; inadequately stocked with books, journals, and other resources; functioning with antiquated procedures and technologies.

The bill would authorize the Public Health Service to award grants of up to 75 percent of the costs of constructing, renovating, expanding, or remodeling biomedical library facilities. This section of the bill is directed at one of the most serious problems of the libraries. In many of them there is crowding to the point that routine day-to-day activities are impeded, access to certain materials is made difficult or impossible, and utilization of the libraries by scientific and medical staffs is inhibited. However, since the technology of library science has shared in the technological revolution of the last few decades, we feel that the construction program should be preceded by a careful study of the kinds of facilities which will be best suited to meeting present and future requirements in the light of these rapid technological developments. We have, therefore, recommended in our letter to you, Mr. Chairman, that this provision be amended for this purpose.

The contribution that biomedical libraries can make to the advancement of medical knowledge and medical service is directly related to the caliber of the people who staff them. There is a tremendous deficit of professionally trained manpower in this field.

The bill would authorize the Public Health Service to make grants to assist in the training of medical librarians and other information specialists in the health sciences. Today it is essential that the personnel responsible for the operation and future planning of the medical libraries have special training over and above traditional librarianship. This training must be related to the specialized communication problems of the medical community. They must be well grounded in the biomedical sciences and they must be thoroughly familiar with the design of technical information systems. Many of those presently staffing biomedical libraries are in need of intensive specialized training in order to increase and update their competence. The urgency to begin action programs in this area cannot be overstated.

The requirements of medical libraries for books, journals, and other resources is of such magnitude and so directly related to medical research, to the training of medical manpower and the information

essential to the practicing medical community as to require special, intense attention immediately if our fundamental responsibilities for a healthy nation are to be fulfilled.

Two sections of the bill propose to aid in making more and better resources available to local medical libraries. One of these would authorize the Public Health Service to make grants on a matching basis to the libraries and related scientific communication organizations to expand and improve their basic medical library and related resources. These grants would be limited to 5 years for any institution and would decrease each year.

The other section of the bill is designed to increase the availability of books, journals, and other informational material to local libraries through the support of regional medical libraries. Grants under this section would be made to medical libraries which agree to provide supportive services to other medical libraries in the region.

The need for regional service has become acute with the growth in the size of the medical literature and with the need for increased speed of access to it. Presently the National Library of Medicine is serving as the "libraries' library" in meeting the requirements for increasing amounts of material which local medical libraries do not have on their shelves. This function of the National Library of Medicine has reached such proportion as to make mandatory the assumption of a part of the responsibility elsewhere. Regional medical libraries, in lending such assistance to the local libraries, would help materially in solving this problem, while taking account of the fact that it is neither economically feasible nor necessary for each medical library to try to build its collection to encompass even a sizable part of the whole of the medical literature.

Many of the tools and methods used today to operate medical libraries are hopelessly outdated. A great deal of research and development is required to devise new and more efficient techniques to deal with medical information requirements. The bill would authorize grants and contracts to accomplish this research.

The bill would also authorize a program of grants and contracts for support of nonprofit publications and translations and to procure the preparation and publication of reviews, abstracts, indexes, handbooks, bibliographies, and other forms of secondary publications.

Effective access to the medical literature requires a variety of these forms of publications. This is particularly true now that the biomedical literature is so complex and voluminous. This increase in complexity and volume of the literature has given rise to the need for a program of support for individual scholars for the preparation of critical reviews and similar compilations of original contributions of a high degree of excellence and reliability. These works are needed to make more readily available to the biomedical community knowledge of advances in the health sciences which have been carefully evaluated and interpreted by experts in the particular field. The bill would authorize a program of grants to scholars in the medical sciences to accomplish these ends.

In conclusion, all sections of S. 597 are interrelated and together constitute a comprehensive plan which can effectively repair the devastation of many years of neglect, maximize the resources, functions, and services which do exist, and bring medical library practice and

facilities to the frontiers of knowledge and capability, both theoretical and practical, in this field.

The medical library is a logical strategic base on which to build our overall effort to improve and perfect health information complexes. The National Library of Medicine is the most appropriate organizational element of the Public Health Service to implement and operate the programs called for in this proposed legislation.

A well-developed program of assistance is necessary and timely; it should not be further delayed. I am confident the program, as conceived in S. 597, is entirely feasible and practical. The opportunity for immediate recognizable accomplishment is unequaled by many of our other programs. The far-reaching impact on an extensive array of other health programs which the medical library assistance program can realize is equally unique.

Thank you, Mr. Chairman. My colleagues and I would be glad to answer any questions we can that you might wish to ask.

The CHAIRMAN. This is a splendid statement. As to the administration, that would be in the hands of the director with the counsel and advice of the board of regents for the library, isn't that true?

Dr. DEMPSEY. Yes, sir.

The CHAIRMAN. He can make the decisions.

What is your thinking in terms of these grants as to how they might be made, I mean, how much might be approved for some projects as opposed to other projects?

Dr. DEMPSEY. In general, I think that the size of the project and the amount of the grant ought to be related to the magnitude of the problem that is vested in and evaluated by a group of experts as is the case with other granting mechanisms that are presently in the Public Health Service.

Dr. Cummings, the Director of the Medical Library, is with me and with your permission I would like to refer your question to him since he would be responsible for this direction.

The CHAIRMAN. All right, Doctor, we will be happy to hear from you, sir.

Dr. CUMMINGS. Mr. Hill, the mechanisms which are envisioned for the grant operation are very similar to those currently carried out by the Public Health Service in its other grant activities. We are pleased that the provision of the bill itself calls for a distribution of funds which seems to be geared to meet the needs as they exist.

Thus, the major investment would fall in the areas of medical library construction and medical library resources. Smaller amounts would be expended for the support of training for the research and development projects that are needed to upgrade the technology of librarianship.

The CHAIRMAN. It would be a matter to be determined with the advice and counsel of the Board of Regents.

Dr. CUMMINGS. Yes, sir. And the Surgeon General would be involved in the final payment procedure.

Dr. DEMPSEY. Mr. Chairman, the procedure customarily used in the Public Health Service I believe is one that has gained almost universal acclaim for being adequate to effect programs of merit as judged by the most well-informed people in the field. The Wooldridge report, as you know, recently pointed out that the study section-council double

review system by peer evaluation is one that we can repose a great deal of confidence in, and this procedure is implicit in the evaluation of the research grants under the medical library assistance act.

The CHAIRMAN. Now, do the cost figures as set out in the bill, a total of some \$117,500,000, is that in line with your thinking in the matter.

Dr. DEMPSEY. This seems realistic to make an attack upon the problem in the real magnitude that it exists at the moment on the one hand and also to be budgeted over the 5-year period in such a way as to permit a practical series of attempts to implement the problem. In other words, it is not so large as to be impossible of attainment immediately and yet it is, we believe, realistic in assessing the magnitude of the problem.

The CHAIRMAN. Well, I was impressed with the emphasis you gave to study and planning, in your statement. You have got to do some bit of study before you can go forward with a lot of these programs. Isn't that true?

Dr. DEMPSEY. Our thought here was that we stand today on the brink of perhaps quite radical changes in library practice just as we stand on the brink of quite dramatic changes in many other areas of medicine. The application of information retrieval systems, of telecommunications, of many other devices to handle information of a medical nature as well as of all other kinds of information, these have created problems of construction and implementation for libraries today which we have never had to deal with in the past. Consequently, to assure that the construction which we would undertake would be adequately studied, adequately devised to meet these new demands, we believe that it would be advisable to make a study of the architectural needs of the libraries of the future.

The CHAIRMAN. Dr. Terry?

Dr. TERRY. I would simply like to emphasize, Senator Hill, what has already been said here. There are so many areas related to health in which we have made substantial beginnings or great progress over recent years. Of course, the most outstanding in this direction is the support of medical research. And in addition to that, as you well know, we have made substantial moves which will support the training of health manpower. And we have over the recent years set up a nucleus, international library of medicine, which can serve to carry forth this proposed program for medical libraries throughout the country.

One of our great concerns in the field of health today is the slowness of getting recently discovered medical information into practical usefulness in the practice of medicine. We feel that this step in terms of developing a more comprehensive, a more rapid and adequate medical library system, is one of the important cogs in terms of cutting down on this costly timing lag. So that I think that it is the next appropriate step to be taken. I think it is badly needed and I would like to say that we are most enthusiastic about the proposal and, with the proper authorization and funds, we will move ahead as fast as we can in the Public Health Service to expedite the provisions of this bill.

The CHAIRMAN. Senator Javits, who is a ranking member of this subcommittee, has been detained on a very important matter. But he had some questions that he was interested in which I shall ask you.

It seems that each of eight authorization items in the bill is for the same amount for each of the 5 fiscal years. Why is not the authorization for the first year or two a lesser amount while the program is being developed, as is usually the practice in legislation establishing new programs?

What is your thought about that, Dr. Dempsey?

Dr. DEMPSEY. Again, with your permission, I would like to ask Dr. Cummings to amplify my answer.

The CHAIRMAN. All right.

Dr. DEMPSEY. But I would like to say first that the needs in the library system of the United States are so evident to the informed librarians in the field and the proposal embodied in Senate bill 597 has been so carefully studied and evaluated as it was prepared that we believed that it was necessary to proceed with a considerable amount of emphasis and dispatch on making an immediate attack upon some of these problems.

The CHAIRMAN. Anything you would like to add, Dr. Cummings?

Dr. CUMMINGS. I concur in Dr. Dempsey's evaluation of this question, but would add also that the construction portion of the proposed legislation which represents almost 50 percent of the aggregate budget would probably start at a lower level during the first year. This would provide the time for the study of the profile and functions of new research libraries as Dr. Dempsey mentioned earlier. I am reminded also that the provisions of the bill call for maximum annual budgetary authorizations and does not necessarily mean that each budget year will necessarily require the same amount.

The CHAIRMAN. Now, the Bureau of the Budget in its May 21 letter suggested deferring the library construction program until 1967 in order to allow time for completion of the Office of Science and Technology study of the future biomedical library needs. Any particular comment on that?

Dr. DEMPSEY. I believe I have already covered that in essence by explaining the need for rather rigorous reevaluation of the needs for machine rooms, for telecommunication systems in the libraries of the future, and it was our effort to assure that adequate evaluation of this problem has been made that led us to suggest with the Office of Science and Technology that construction not be undertaken until we were sure of the future architectural design of libraries.

The CHAIRMAN. In that same letter of May 21, the Bureau of the Budget suggested combined authorizations rather than separate authorizations. What is your comment on that?

Dr. DEMPSEY. My comment would be on this that the Department could deal, we believe, adequately with either procedure. I believe most administrators like the idea of the maximum amount of flexibility of authorization and, given our choices, would prefer combining the ceilings into a single program so that we would not have too many separate items. However, we have no strong opinion on either side of the question.

The CHAIRMAN. Anything you would like to add on that, Dr. Cummings?

Dr. CUMMINGS. I fall in the group of program administrators who prefer budgetary flexibility rather than multiple accounts in the administration of the program.

The CHAIRMAN. Well, in that same letter, of May 21, there is a recommendation that the construction program be for 4 years, with an annual authorization of \$12½ million a year.

Dr. DEMPSEY. It was our understanding that the bill now authorized \$10 million a year for 5 years and that if the construction program were to be delayed for 1 year but then implemented for 4 years at \$12½ million, that the aggregate total over the 5-year period would be the same.

The CHAIRMAN. It would be the same total amount.

Dr. DEMPSEY. Yes, sir.

The CHAIRMAN. In that same letter of May 21, they cast doubt on the need for regional branches of the Library of Medicine. What is your comment on that?

Dr. DEMPSEY. My particular thought on this is that the medical libraries associated with medical schools and medical centers are, of course, essential to the operation of any kind of medical library system or network which we would set up. There are, however, vast regions of the United States in which the geography of the medical institutions does not fit with the geography of the Nation itself, and in order to assure the maximum distribution of medical information to all of the people in the United States, we foresaw the necessity of constructing into the system in adequate locations regional libraries which would deal with those needs even though there might not be a medical center or medical schools with an existing library which could be built into the system.

I could mention only Alaska, for example, which is a very large territorial area which at the present time has no medical school, no medical library of the kind that could be depended upon.

The CHAIRMAN. Anything you would like to add, Dr. Cummings?

Dr. CUMMINGS. I would add that I believe that we look toward the existing centers of excellence as the primary sites for the development of regional libraries, but as Dr. Dempsey pointed out, these do not always match the concentration of needs. Thus I believe this provision is important, if you will, as an insurance policy that the total national need can be met through the development of NLM branches in such isolated geographic areas.

Dr. TERRY. I would like to add to that, Senator, that already even with the fine automation that we have in our system, we are developing evidence that unless we have some such sort of system which would assist us in the rapid distribution of information, that our central nucleus in the National Library of Medicine is going to be overwhelmed by the sheer volume of requests placed upon it and we feel that such regional concepts can be extremely important in terms of not only making material more readily available but also in assisting to distribute the workload in such a way that it can be done better and more expeditiously.

The CHAIRMAN. Anything you would like to add, Dr. Dempsey, on the whole matter?

Dr. DEMPSEY. I believe not. It occurred to me that in connection with what the Surgeon General just said, that an increasing respon-

sibility of our information distribution system in the medical field falls into the international field as well. We have important connections with other countries in both receiving and distributing medical information and in such places as the Pacific basin again a regional installation would be required simply because there is not an existing one that could immediately be adapted to the problem.

Dr. TERRY. May I add some points here, Senator?

The CHAIRMAN. Sure.

Dr. TERRY. Our delegation to the World Health assembly which met in May of this year has just returned. We felt that we had a very successful meeting of the World Health assembly. One of the very important parts of the action which took place at this time was to further define the role of the World Health Organization in relation to responsibility for the development, collection, and distribution of information in the medical and health field.

This is in support of the point that Dr. Dempsey was just making and we very clearly have defined a role for the World Health Organization in this respect and we would expect that our national library system through the National Library of Medicine would work closely with this international system both in terms of the distribution as well as receiving biomedical information which would be important to the people of this Nation. So that I think that we have made a substantial step in this direction already in the international field as well as the beginning developments of an adequate system at the national level.

The CHAIRMAN. Anything you would like to add, Doctor? Dr. Cummings, anything else?

Well, gentlemen, we want to thank you very, very much for your testimony here. We appreciate it. Thank you.

Dr. DEMPSEY. Thank you, sir.

The CHAIRMAN. Dr. Alfred Brandon, president of the Medical Library Association, and librarian, Welch Medical Library, Johns Hopkins University.

STATEMENT OF DR. ALFRED BRANDON, PRESIDENT, MEDICAL LIBRARY ASSOCIATION, AND LIBRARIAN, WELCH MEDICAL LIBRARY, JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.

The CHAIRMAN. Doctor, we are happy to have you here, sir. We welcome you. We will be glad to have you proceed in your own way.

Dr. BRANDON. Thank you, Senator Hill.

It is a privilege to appear before this distinguished committee to urge your recommendation of this bill which is of incalculable importance in the revitalizing of medical libraries whose mission it is to preserve, organize, and transfer published knowledge resulting from the research efforts this committee has, itself, done so much to foster through its long and splendid support of health legislation.

SECTION 393

Despite other programs of support for the construction of health-related facilities, medical libraries have never received an adequate share of assistance. A recent survey of 116 established medical, dental, osteopathic, and public health schools shows that 86 of their libraries

were in need of funds for construction of new facilities and 18 needed funds for renovating existing library quarters.

During the last 8 years I have visited most of the medical school libraries in the United States. With few exceptions, I found them overcrowded with little expansion possibilities in their present stacks. Seating capacities were generally low in relation to the clientele served and work areas for the librarians were at a premium.

The enactment of this bill would do much to improve the physical facilities of medical libraries. The total estimated need for construction for medical, dental, osteopathic, and public health schools, both established and new, at 75 percent matching, is over \$96 million. The kind of support included in this bill for construction would represent a significant step toward meeting this critical need.

SECTION 394

The most important element in the success of any venture are the people who operate it. Funds for books, for buildings, for equipment—key punches, sorters, computers—will avail little if we do not have knowledgeable, imaginative, and dedicated people to transmute them into live library service.

The critical shortage of qualified personnel in all areas of science information handling has been emphasized over and over in reports of recent years on communication problems in science, notably in the Surgeon General's Conference on Health Communications (1962), the President's Science Advisory Committee's Science Government and Information (1963), the National Academy of Sciences-National Research Council's Communication Problems in Biomedical Research (1964) and in the recommendations of President's Commission on Heart Disease, Cancer, and Stroke. The Medical Library Association has made the problem the pivot of its activities, for example, its programs for continuing education, certification, and recruiting. I think it would be accurate to say that we consider shortage of personnel plus shortage of professional training opportunities our No. 1 problem. This point of view is brought out well in "Guidelines for Medical School Libraries," published this year which was prepared by a joint committee of the Association of American Medical Colleges and the Medical Library Association.

The usual minimum professional preparation for librarianship is a bachelor's degree followed by a year of graduate study for the master's degree in one of the country's 33 graduate library schools. Ten of these schools now offer a single course in medical librarianship varying from 30 to 45 semester hours. Three medical libraries offer postmaster's training programs with a total of eight places each year available. These offerings are tied in with the Medical Library Association's certification plan. They are very useful, but they do not go far in alleviating the overall shortages—and there is nothing more except scattered courses in information science which are not directly concerned with the health sciences field.

Information assembled by the President's Commission on Heart Disease, Cancer, and Stroke shows that we are short at least 3,000 professional librarians in the 6,300 health science libraries at the present time. We lose 150 through normal attrition each year and we

bring in from the library schools 100 of whom 60 already hold medical library positions. Thus, only an approximate 40 new people, many of whom have neither subject background nor special training of any sort for the health sciences, are added annually. Positions are commonly open for 6 to 8 months, not infrequently for a year or more even in top locations and situations. Veteran head librarians are flooded with requests for recommendations for vacant positions from every part of the land. The well qualified, sometimes even the half qualified, are courted on all sides at all levels. There is constant reshuffling of people and jobs. To fully appreciate existing conditions one must remember that medical libraries are, for the most part, very seriously undermanned even when all positions are filled. The effects of such conditions on service are obvious.

Meanwhile the demands on libraries become both larger and more complex as we struggle not only with the size of the literature, but also with its rapidly evolving interdisciplinary nature which requires a whole realining of the traditional concept of scope of collections and public services. Expansion and change in literature are, of course, the direct result of expansion and change in research personnel, the same personnel who account, in turn, directly or indirectly, for all calls on the library for larger collections and greater services. The cycle continually winds back on itself in wider and wider circles. A few of the larger libraries are beginning to attempt to hold this spiral in place by the automation of library operations and the pioneering of library-based information and search centers, but these experiments only increase the need for staff, and highly qualified staff at that. Too, any success in finding new ways of handling information processing affects the profession as a whole and steps up the urgency of equipping everyone in it to take as much advantage as possible of the innovations. For example, the librarian in the field needs some insight into the system to obtain for his clientele full benefits from medlars. The more he knows about both medicine and data processing the better his insight will be.

Our personnel shortages then are in both number and kind. There is no choice but to find recruits with subject background in the sciences for many of our positions and recruits who are acquainted with at least the elements of data processing and information science for others. There must be people on the staff who can interpret the library to programmers, systems designers, computer experts, and so forth, and work with them to devise new and better patterns and procedures. But can we, indeed, find these recruits?

From what experience we have had, we know that students with appropriate subject background and academic qualifications can be drawn into librarianship and other areas of information work once they are aware the field exists. Awareness increases as scholarships, fellowships, and traineeships become available, as new programs are offered in the library schools and related institutions and as salary and status improve. Moreover, so far as shortage in kind of personnel is concerned, we are not without a backstop of able practicing librarians eager to learn as much as they can of the new technology, eager to improve their subject competence, and to add to their foreign language proficiency. This has been demonstrated by attendance at the Association's continuing education classes, in the organization of

workshops and short courses in some parts of the country, and by individual enrollment in university courses.

The truism holds as elsewhere that people go where opportunity beckons. S. 597 provides for most of the opportunities we have long sought: assistance for developing programs in medical library science and in the general field of communication in the health sciences, traineeships and fellowships for students seeking graduate degrees in these areas, internship programs in medical libraries, and retraining for those already working in the health information area.

SECTION 396

Medical libraries are twice as old as medical schools, and during the 3,000 long years of their existence, their librarians have accumulated a large store of experience which has served them well until the past decade.

The CHAIRMAN. Excuse me. May I ask a question there?

Dr. BRANDON. Go right ahead, Senator.

The CHAIRMAN. You speak, Dr. Brandon, of medical libraries. Do we have any evidence as to which is the oldest medical library in the world today?

Dr. BRANDON. I have a short article on medical history I would like to insert in the record.

(The article referred to follows:)

HISTORY OF MEDICAL LIBRARIES

Small collections of papyrus rolls were kept in the temples of ancient Egypt. We know that some of the works were medical because copies of them have come down to us. In Mesopotamia books were in the form of baked clay tablets, and the libraries containing them date back as far as 3,000 B.C. The most famous of these libraries was that of Assurbanipal, King of Assyria in the seventh century B.C. His library was divided into rooms or cubicles, according to subject. Medical works were included, many of which have survived. Libraries existed in the Greek cities. Of course the greatest library of the Hellenistic period was that at Alexandria which is said to have contained more than half a million papyrus rolls, including the medical writings of the Greek physicians. We know also of libraries in Rome and later of monastic libraries in Western Europe. With the development of hospitals and the creation of faculties of medicine in the universities at the end of the Middle Ages, libraries devoted to medicine began. For example, in the year 1391 the faculté de Médecine of Paris acquired its first books.

The first medical library in the British colonies in North America was probably that at the Pennsylvania Hospital in Philadelphia. It was started in 1762 and owed its existence largely to the efforts of Benjamin Franklin. The collection has been maintained at the hospital up to the present time.

It could be said that preparations for the first medical school library in America were made at Harvard. The Harvard College Library was established in 1636 and by 1764 it included a rather extensive medical collection, in anticipation of the founding of a medical school. The medical school, however, did not open until 1784 and by that time two other medical schools had come into existence (Pennsylvania and Columbia). The medical department of the University of Pennsylvania was the first, starting instruction in 1765. However, a library for the school was not provided until 1777 with a gift of 3,000 volumes from the private library of Dr. Alfred Stillé.

Dr. BRANDON. During the past 10 years, knowledge, including medical knowledge, has become central in our society, and there has been a tremendous increase in the urgency to have medical knowledge immediately available for the treatment of those ill, for the protection of

those well, and for the research on which cure and protection rest. In these modern circumstances, the old cut-and-try, haphazard methods for acquiring new knowledge and techniques in medical library sciences have failed. It is now necessary to adopt the methodology of the sciences and to formulate and prosecute programs of research and investigation which will yield information that will improve medical library techniques. In particular, funds are needed for research and development in the application of computers to the processing, storing, retrieving, and distributing of medical information. Such investigations have begun in some libraries, but money is sorely needed to train new investigators to support their investigations and to make available to them expensive equipment required for the development of new techniques. Thereby, the passage of S. 597 will contribute to the development of wholly new medical library systems.

SECTION 397

Section 397, Grants for Improving and Expanding the Basic Resources of Medical Libraries and Related Instrumentalities, is perhaps the most important part of this bill. Medical library collection needs based on suggested standards indicate a total of \$102,732,952 would be needed to bring these libraries up to recommended strength. An analysis of needs would substantiate the propriety of suggesting a considerable larger annual appropriation for resources than the \$3 million the bill presently contains. Administered wisely, this provision can in some way reach every aspect of the medical community: student, research, and practitioner of all health professions. It is important to recognize the magnitude of this need and to understand that the appropriation authorized by this section would hardly begin to provide the solution.

The CHAIRMAN. What do you think this appropriation ought to be?

Dr. BRANDON. Well, I would think that in order to make a real dent in the needs today, which have existed for so many decades, that doubling this appropriation would certainly go that much further to eliminate the great gaps that we have in our research collections today.

You mentioned the University of Pennsylvania a few moments ago. I think that this is a typical example of a neglected medical school library to serve the needs of its research clientele. It is true that they rely somewhat heavily on the College of Physicians Library in Philadelphia for their research materials and I will make mention in a moment of the part that this kind of a regional library can play.

Sections 397 and 398 of the bill recognize that certain larger medical libraries extend their service beyond their immediate constituencies to share resources with nearby hospitals, medical schools, publishers, municipal, State and Federal governmental agencies, as well as other public and private institutions requiring access to medical literature. In many cases, the members of these regional resources facilities are carrying most of the costs even though their own use of the library is a small proportion of its service load.

Government grant support allocation for overhead goes to the institution where the principal investigator has his primary affiliation but does not reach the regional library to which these investigators turn when the libraries of their own institutions prove inadequate.

These sections of S. 597 also recognize that all medical libraries do not need to be self sufficient (if, indeed, any medical library could achieve completeness today). Smaller collections may satisfy a large percentage of immediate clientele needs and they may be effectively supplemented by a nearby regional library which can fill requests for less demanded but frequently very expensive material.

In different parts of the country, this regional function is performed by different types of libraries; in some cases medical school libraries are serving the entire community, in other cases private hospitals, medical societies, and governmental agencies are performing this reservoir function.

The increasing amount of medical literature and the rising costs of operating a comprehensive medical library is outstripping the capacity of any one institution to furnish adequate support. The National Library of Medicine recognizes its inability to meet the medical literature needs of the entire Nation without support from a network of regional libraries. It is both economical and logical to prevent the deterioration of these reservoir libraries by furnishing Federal support in recognition of the vital function which they are already performing. Failure to secure greater support will result in less effective service which will jeopardize existing support. In many communities there are no other institutions able to meet these needs if existing regional libraries fall victim to rising costs and increasing demands without means of increasing income.

S. 597 contains provisions which will aid science in the transmission of new knowledge and the methods by which it is preserved and brought forth when needed. It provides for research in methods of handling scientific data, so that society can get the most efficient return for the money it invests in medical libraries; and it provides for the training of people who will handle these data. It allows for support of syntheses of existing knowledge so that each individual does not, himself, have to go through the entire record to extract the meaningful portions for his field, and it provides for the compilation of historical discussions of the means whereby the discoveries were made, thus (hopefully) putting out more fruitful ways to investigate problems in the future.

Since the results of medical advance are now preserved in written form, the bill makes provision for the collection of such publications in strategic positions around the country, as well as for the buildings and other storage depots which will contain these publications. But it also sees to it that the exciting new frontiers of the transmission of medical data, as exemplified by the medlars system at the National Library of Medicine, are expanded and made available on a wider scale.

The Medical Library Association, representing about 2,000 medical libraries and librarians throughout the world, wholeheartedly supports the provisions of this bill. The impact which Federal moneys, particularly grants for research and teaching in medicine, have had on U.S. medical libraries is profound. It has made the needs of the users far outstrip the abilities of the institutions with which the libraries are connected to support them. Unless the scientific information handling apparatus of the country is brought up to the level of the research, teaching, and patient care of this country, we may very well

see either a decline in the status of our medical sciences, or find different and more expensive methods of reaching the same goals being attempted by society. We urge, therefore, that the Senate pass S. 597, the Medical Library Assistance Act of 1965, speedily, and we hope that the necessary funds to implement it will be provided in the next executive budget.

Thank you, Senator.

The CHAIRMAN. How much do you think the benefit of this bill might be to the smaller hospitals who may have what we would term a relatively small training program?

Dr. BRANDON. As far as support to small hospital libraries are concerned, I would say this, that it should help them build working collections which would provide for the needs of the practicing physician, and other individuals on the staff of that hospital. Depending on the size of the hospital, these needs will vary. However, the establishment of regional libraries where they have excellent resources available to them in an immediate vicinity would back up the needs of the researcher working in these small hospitals. I can foresee a training program not only within a large medical center library, either a medical school or medical society, but also a training program in hospitals themselves to help train librarians in the work of hospital library science.

The CHAIRMAN. I was very much interested in your statement, and particularly the emphasis which I felt you gave to the need for regional libraries. You feel that is a very important part of the overall program, don't you?

Dr. BRANDON. Yes; I believe it is, Senator Hill. We recognize that there are greater and greater demands being placed on the National Library of Medicine from all areas of the United States and, as a matter of fact, of the world. We feel that if support is not given to decentralize some of these services, that it will be impossible for the National Library of Medicine, in time, to keep up with this demand and to give us the service, within a reasonable length of time, that our researchers require. There already exists a pattern of medical library regionalization, but this needs to be strengthened and by all means supported.

The CHAIRMAN. You have brought us a splendid statement, Doctor, which we appreciate very much. I was interested to see that you are director of the William H. Welch Medical Library. I may say that just before Dr. Welch left New York to come down to Johns Hopkins, my father studied under him in New York. He also said he was the first person to put a dissecting apron on him and he had a tremendous amount of admiration for Dr. Welch and surely Dr. Welch is entitled to be named one of the big four, isn't that right?

Dr. BRANDON. That is correct. Even today I meet people who remember "Popsie Welch" and the influence that he had on their training and on their use of libraries, as a matter of fact, because, as you know, Dr. Welch had a great interest in them.

The CHAIRMAN. He must have been a wonderful man.

Thank you very much, Doctor. We certainly appreciate your being here and your fine testimony.

Dr. BRANDON. Thank you.

The CHAIRMAN. Now, Dr. Richard H. Logsdon, past chairman, Association of Research Libraries, and director of libraries at Columbia University.

Doctor, we are happy to have you here.

STATEMENT OF DR. RICHARD H. LOGSDON, DIRECTOR, LIBRARIES OF COLUMBIA UNIVERSITY, ACCOMPANIED BY JAMES E. SKIPPER, EXECUTIVE SECRETARY OF THE ASSOCIATION OF RESEARCH LIBRARIES

Dr. LOGSDON. Thank you, and appearing with me to help us in any question period is Dr. Skipper who is executive secretary of the Association of Research Libraries.

The CHAIRMAN. Good. Where are you from, Doctor?

Dr. SKIPPER. Washington.

The CHAIRMAN. That is what I thought. You have been with us before.

Dr. SKIPPER. That is right.

The CHAIRMAN. You are still here in Washington, aren't you?

Dr. SKIPPER. Yes. We have a secretariat in Washington.

The CHAIRMAN. We are glad to have you here.

Dr. SKIPPER. Thank you.

The CHAIRMAN. All right, Doctor, you may proceed in your own way.

Dr. LOGSDON. It is a pleasure to appear here to testify before your subcommittee.

Our organization was established in 1932, a relatively new association among library groups. It comprises some 75 institutional members. These are the larger academic public and special libraries which collect comprehensively in support of research. Of particular note today is that 61 of the members are American university libraries, 47 of which operate medical schools and medical research centers.

Our member institutions accordingly are carrying a substantial part of the total responsibility for nurturing biomedical research and medical education. They are similarly in a good position, we feel, to assess present shortcomings of the whole information complex and in turn to assess also the opportunity offered to Congress in this bill to strengthen both medical library resources and medical library services. This testimony is based not only on 17 years of direct experience at Columbia in the administration and financing of library services to one of these medical research centers, but also on knowledge of the pressures which are being felt by medical libraries generally.

The case for this bill can be stated briefly under four headings:

(1) Programs of education and research in medicine and the health related fields will be effective only if supported by adequate library and information services.

(2) Medical library resources and services are not now adequate to the needs of the research community.

(3) The gap between present levels of support and adequacy is too large to be closed quickly if at all from nongovernmental resources.

(4) The program set forth in S. 597 in our opinion is soundly conceived and would achieve a dramatic and balanced development of medical library resources.

ADEQUATE LIBRARY AND INFORMATION SERVICES ARE ESSENTIAL FOR
RESEARCH

One of the best guarantees that funds available for research will be spent effectively is through the provision of adequate library resources. Medical libraries form a vital link in the chain of communication of ideas and information in the health sciences. They serve as custodians of recorded knowledge; the recipients of a vital torrent of publications reporting the results of current research; and as the principal means through which medical school teaching is kept up to date and research guided to new frontiers of discovery and understanding. Only through well organized, comprehensive, and readily available collections is it possible for the researcher to know what has been done in his field of specialization, the direction of current research, and the areas needing further study. The findings of research must be reported and put to use if the original objectives of research grants from whatever source or sources are to be achieved.

The ultimate objective is, of course, better patient care and here, too, the library plays an important role by bringing the distance between the findings of research and the practicing physician.

MEDICAL LIBRARY RESOURCES ARE NOT ADEQUATE

That funds available for biomedical research have increased much faster than appropriations for medical libraries is, I believe, well established. Funds from the Federal Government alone have risen from \$27 million in 1947 to an estimated \$1.3 billion. This emphasis on the part of Government, coupled with funds from nongovernmental sources has, in a real sense, created the library problem by generating the so-called explosion both in publication output and, of course, in the number of users to be served. Similarly increasing specialization in research has brought demands for library and other information services of a much more sophisticated nature calling for subject analysis in depth and ultimately, of course, machine handling of bibliographical records. Taken together these influences call for a higher proportion of total funds for information services at a time when library support is almost certainly falling behind on a percentage basis.

FEDERAL SUPPORT NECESSARY TO BRIDGE THE GAP

The logic of Federal support for strengthening medical library services is, I believe, uncontestable. Not only is the gap so large as to preclude early correction from private sources, but the Federal Government itself is likely to be the principal beneficiary. Improved information services will, as stressed earlier, increase the effectiveness of Federal funds for research and in addition decrease the possible incidence of needless duplication of research. Time is, of course, important in that each year of delay risks the losses which can be generated by a poor communication network.

THE PROVISIONS OF S. 597 ARE SOUNDLY CONCEIVED

Those responsible for the drafting of this bill are to be commended for the care and appropriateness with which the several key aspects of a good medical library program are considered. I should

now like to comment briefly on those separate provisions especially those which deal particularly with medical library services.

SECTION 393—CONSTRUCTION OF FACILITIES

It seems to be especially difficult to secure construction funds for library buildings. At Columbia, to cite one example, the money must be sought from individual donors or foundations as is true of other privately supported institutions. A medical library area planned years ago for a relatively small collection and before the dramatic expansion in biomedical research is simply not meeting current needs for collections, for staff activities, and for services. While some funds are in hand for new building, it may be several years before construction could begin from private sources alone. A matching grant, on the other hand, would make it possible to begin immediate construction. And as Dr. Brandon has pointed out, this situation is duplicated in dozens of other universities and medical centers throughout the country.

SECTION 394—TRAINING IN THE MEDICAL LIBRARY SCIENCES

The shortage of library personnel generally, and especially of persons qualified in specializations like medical librarianship, has been a critical handicap in the maintenance of good library service. The investment in training provided for in this section including the program for information specialists would be extremely helpful in recruiting the staff necessary for achieving high standards of service.

SECTION 396—RESEARCH AND DEVELOPMENT IN MEDICAL LIBRARY SCIENCE

I find it gratifying to see the emphasis given in this bill to research and development. Libraries have been so hard pressed through the years to provide the essentials in acquisitions, organization of collections and reference services that there has been all too little attention given to research in the nature of library operation itself. The program here proposed would go a long way toward correcting this lack of emphasis in the past and would contribute to the improvement and efficiency of library operations not only in medical libraries but libraries generally.

SECTION 397—IMPROVING AND EXPANDING THE BASIC RESOURCES

I think this section offers the promise of the kind of direct and quick strengthening of resources and services at the very important local level which could bring immediate benefits to research programs. It should help to correct the present imbalance between the levels of local support for research and support for medical libraries.

SECTION 398—REGIONAL MEDICAL LIBRARIES

There is growing evidence and increasing conviction that the total information needs of the society will finally be met only through the creation of a network of libraries, each providing a level and quality

of service appropriate to the geographical area and clientele served. The program here envisaged would establish just that kind of pattern of interrelation between a local service, a more comprehensive back-stop collection for a larger area, and of course, the capstone of the National Library of Medicine. Achieving this kind of network for biomedical literature would be a big step toward the ultimate goal for all library service to research.

SECTION 378—REGIONAL BRANCHES OF THE NATIONAL LIBRARY OF
MEDICINE

The proposal to amend the Public Health Service Act to enable the National Library of Medicine to establish regional branches, similarly, supports the idea of a network of medical library service mentioned above. The concept is consistent with emerging ideas of good library planning and deserves support. Thank you, Mr. Chairman.

The CHAIRMAN. Doctor, has your library experienced difficulty in recruiting trained medical library personnel?

Dr. LOGSDON. Our experience follows precisely what Dr. Brandon has indicated. In addition we serve as a training agency for other libraries. Persons with a few years of good experience in a good medical library are in great demand.

The CHAIRMAN. It presents a little problem, doesn't it.

Dr. LOGSDON. A real problem and probably a key problem.

The CHAIRMAN. Probably, you say, the key problem?

Dr. LOGSDON. A key problem.

The CHAIRMAN. A key problem.

Does Columbia train personnel in medical library science?

Dr. LOGSDON. One of the courses in our school of library services is medical librarianship given by the librarian in charge of our medical center library. Here, too, I think we have had hopes through the years of doing more in relation to medical library internships because we need to take the librarian generalist with his good background of education, in his general library school training and then give him not only additional course work but practical work under supervision in an actual library situation.

This would help immeasurably in that regard.

The CHAIRMAN. Dr. Skipper, is there anything you would like to add?

Dr. SKIPPER. Senator, if I may. I operate in the general area of research librarianship of which biomedical activities are certainly an important part.

I would like to say that I have been tremendously impressed by the imagination that is inherent in this bill. It will obviously close the gap or the imbalance between the support given for research programs and the support required to make the results of that investigation known to the medical community without delay.

Second, I personally look forward to a tremendous byproduct from this program. The National Library of Medicine has been one of the pioneers in developing new programs for repackaging information, getting it out in an imaginative and useful form. I think the techniques they discover, and which would be implemented by this

bill, will have a tremendous affect on the library community at large. Taking an overview of the whole situation, the analogy to me is creating a public utility. At the present time, there is a great amount of inefficient generation of electricity in local basements (libraries) all over the country.

The thing we are looking for, if you will allow me to generalize, sir, is a central point of generation, an effective transmission system, a network of regional libraries that can regenerate, alter the current, repackage it for local use and make it much more effective for the local consumer.

The CHAIRMAN. Get it where the need is.

Dr. SKIPPER. Yes, sir.

The CHAIRMAN. Is that right? Anything you would like to add, Doctor?

Dr. LOGSDON. No. I think not. It has been a pleasure to be here.

The CHAIRMAN. We want to thank both of you gentlemen. You brought up another very fine statement, we appreciate both of you being here. Thank you, very much.

Now, Mr. William S. Budington, president, Special Libraries Association.

STATEMENT OF WILLIAM S. BUDINGTON, PRESIDENT, SPECIAL LIBRARIES ASSOCIATION

The CHAIRMAN. Mr. Budington, we are glad to have you here. We will be happy to have you now proceed in your own way, sir.

Mr. BUDINGTON. Mr. Chairman, it is a great pleasure to be here this morning to represent two different groups. Officially I am the immediate past president of the Special Libraries Association. This association is composed of some 6,100 members who are librarians and information specialists employed in private and public organizations and institutions, including industrial, academic, association, and independent nonprofit libraries.

I am also associate librarian of the John Crerar Library in Chicago which is a nonprofit organization providing free public library services in science, technology, and medicine and is the largest such public library in this country.

Our association wishes to express its wholehearted support of S. 597. In its "Declaration of Policy and Statement of Purpose," the bill itself pinpoints very nicely the needs for action. It is hardly necessary for me to speak again of the rate at which scientific research is outpacing itself, in terms of utilization of known facts, old and new. In the health sciences this is especially critical in today's context of concern for our Nation's health and the continuing welfare of our citizens. While we are accustomed to support research activity, we have not provided adequately for dissemination and availability of generated results. To insure prompt and effective use of our new skills and knowledge, it is essential that the creation, recording bibliographic control and availability of medical knowledge be assured; this requires federalized, coordinated support at each phase of the communicative chain in this vital area.

Of all areas of scientific communication, medicine is presently seeing perhaps the most interesting advancement, through work at the National Library of Medicine. Through experimentation, and in current applications, we are witnessing application of computer technology and mechanization to the storage and rapid dissemination of data and ideas. The proposed legislation will promote a network of facilities which will be largely autonomous and soundly prepared; yet they will be continually infused and mutually supportive in seeing that the needed, correct, and latest information is always ready, anywhere in our country.

Support of libraries and information activity is commonly seen as building more buildings and buying more books. These are indeed basic. But present and future needs reflect even more basic changes. It is not sufficient to buy a book, shelve it, and maintain silence around it. Today's librarians and information specialists are only secondarily interested in a book as a container; they are vitally concerned with its content and, as expressed by our association slogan, with "Putting Knowledge to Work." Creation of such content and knowledge in the biomedical sciences has been spurred by Federal expenditures; in this subject area alone, such support now totals more than \$1 billion per year in sponsored research. In virtually no instances have these grants provided for libraries or for increased facilities in the supply and flow of information. Operating budgets and added space for libraries has had to come from institutional funds, and you will be hard put to find much evidence of any such support from local resources. If money wasn't to be had for libraries before the grant, it isn't there afterward, either.

The bill speaks—and one naturally thinks—of medical schools, local practitioners, and institute researchers as benefiting most. In reality, the influence is much broader. The membership of my own association includes but 580 members in its biological sciences division. In the space sciences, nuclear sciences, technology, chemistry, and similar areas are another 2,800. And all of them have need of medical information ranging from casual to constant. Recall, if you will, such topics as aerospace physiology, radiation hazards, toxicity of materials, air pollution, and the like. An aircraft company may have a good technical library; it must depend on other sources for medical documents and information. While such industry naturally turns to, say a local medical school, this library is seldom equipped to serve these demands in addition to its own staff and students. Provision of regional medical library centers will thus benefit industry in addition to existing medical school facilities. It will also insure such resources in areas where no topflight medical libraries of any kind are now to be found.

To some extent, the present bill is aimed at curing present ills. We need better libraries, library facilities now. We need better trained staff now, grounded in the subject matters of medical science and library or information science. We need radically new techniques now, to cope with a present flood of information and publications. But if we need these things now, and badly, what is in store for the future, as our research effort and our support climbs literally astronomically? Above all, we need action now so that we will not be completely engulfed and eternally helpless. Today's preparation, as em-

bodied in the provisions of this bill, will provide tomorrow's resources. Resources for efficient medical research, resources for adequate education, resources for use in all fields touched by medical implications and advances. Information at the right time, at the right place, for the right person and in the right form will be vitally needed. If we make no provision for these resources, we had better save our current research outlay, for its results will be permanently and irrevocably buried.

A particularly important feature of this bill is that its implementation, while including educational institutions is not restricted to them. In our current concern for maximum advancement of educational programs at all levels we may overlook the fact that information needs and flow and learning occur throughout our economy and our geography, not solely in the teaching process and institution. I have mentioned the needs of industry. One must remember also the needs of scholars in other fields than medicine, at nonmedical institutions. One must especially remember the practitioner and the hospital. These people may be far removed from a medical school; yet their daily needs are increasing. The doctor must continue his education. His practice, and the work of this hospital staff, need more than ever the close contact with the latest laboratory developments and the new clinical or surgical techniques. The regional medical library can best serve their needs, with services developed on a very broad scale. These services may include support of teaching and medical education, indeed. But they go far beyond, in providing a tailored, automatic, prompt, and continuing flow of information to all who need it.

This also requires specialists in medical information work, who are trained for this specific field and have not just drifted into it. The curriculums of librarianship and information science are reflecting these needs. Attention is now given in several professional schools to thorough training in medical librarianship. We cannot find enough such specialists now; the supply must be stepped up.

In conclusion, I wish to reiterate the support of our association for this bill. We believe it provides sound elements for expansion of facilities, available personnel, and improved medical communications. Thank you, sir.

The CHAIRMAN. We thank you for a splendid statement.

Let me ask this. The John Crerar Library has a fine reputation as a library serving the many educational institutions in the Chicago area, that whole area, really.

To what extent does your library serve as, you might say, a regional library.

Mr. BUDINGTON. We serve as a regional library due to some extent to the accumulated size and the growth over a number of years. Our collections actually constitute one of the largest, if not the largest medical library in the country, west of the Atlantic seaboard. We number somewhat in the order of a quarter of a million volumes, in medicine and our holdings make it unnecessary for many of the medical school libraries in our area to build large back files of older materials, the most esoteric languages, which may be needed only occasionally. But we are depended upon as such a resource to have

the material available whenever a research person or student has need for this.

The CHAIRMAN. It is available to anyone that may be working in the smaller library or medical school or any other institution where they are seeking knowledge, is that right?

Mr. BUDINGTON. Yes sir, that is true.

The CHAIRMAN. May I ask, what was the genesis of your library?

Mr. BUDINGTON. This was founded through the terms of a bequest of an industrialist in the Midwest who specialized in railroad construction equipment in the last century when the railroads were expanding, and his funds came from this source. He died a bachelor and left the bulk of his money to establish a free public library to carry on the education of that region.

The CHAIRMAN. He must have left a pretty good sized gift, did he not?

Mr. BUDINGTON. Approximately \$2 million at that time.

The CHAIRMAN. At that time. But you have had other sources of funds, have you not, since then?

Mr. BUDINGTON. We depend at the present time for approximately 25 percent of our operating funds on contributions from industry which we must go out and raise every year.

The CHAIRMAN. What year was your library established?

Mr. BUDINGTON. 1894.

The CHAIRMAN. Well, you certainly have a splendid reputation, I will say that.

Mr. BUDINGTON. We hope to continue that.

The CHAIRMAN. And the service that you render that great area out there. We want to thank you very much. As I say, you brought us another splendid statement. We certainly appreciate it.

Mr. BUDINGTON. Thank you.

The CHAIRMAN. Dr. William M. Hubbard, Chairman of the Board of Regents of the National Library of Medicine, dean, University of Michigan Medical School, Ann Arbor.

Doctor, we are happy to have you here. We would be delighted to have you proceed in your own way.

**STATEMENT OF DR. WILLIAM M. HUBBARD, JR., CHAIRMAN, DEAN,
UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, ANN ARBOR,
MICH.**

Dr. HUBBARD. Thank you very much. I thank you for this opportunity to express my support of this legislation. If I may, I would like to leave with the subcommittee the prepared statement that I have submitted and in deference to the hour, makes some comments, sir, and then respond as you may ask.

The CHAIRMAN. All right.

We will have your statement appear in full in the record and then you proceed in any way to make any supplementary additional statement you see fit, sir. (See p. 49.)

Dr. HUBBARD. Thank you, very much.

I would like to emphasize, Senator Hill, that the libraries are a integral part of the means by which we are going to see that health service is brought to all of the people. They are an essential part of

this apparatus and I believe that the Medical Library Assistance Act of 1965 should be looked upon as one of a series of important legislative provisions for the health of the people, each of which is necessary in support of the other.

The knowledge that is fundamental to providing this health service, as has been well recognized by yourself in sponsoring this legislation, must be more widely and more readily available. Biomedical libraries vary in one way from many other collections. Their range of interest is all those matters concerned with human health. Now, this is a different kind of subject matter arrangement than many other libraries have and out of this arise some unique considerations that merit the support of legislation before the committee.

There is a need, of course, to support the broad research program which we have mounted. It is inadequately supported now, both in breadth and currency of the return of information to the investigator.

Students in increasing number and variety are going to have to be educated in order to meet the health needs of the nation and the universities are going to have to be able to provide markedly and selectively extended resources for those in the health sciences.

The practitioner today requires a kind of currency of information that is novel to our time. The demands of the drug information centers, the postgraduate continuing education that our practitioners seek, both are going to lean upon these modern health information centers for their implementation.

I believe, sir, that we are recommending, then, not the dissolution of the present library system but its support and its expansion and improvement with new electronic means of handling of information so that the people and the equipment and the space that is needed in this part of the whole apparatus of health care will be provided.

I would emphasize, perhaps unnecessarily, that the present library system has not exactly failed. It is, however, sorely stressed. The fact, however, that it is avidly sought by users should be remembered. In our own University of Michigan, our data on the medical library would show that in the last 3 years, home loans have increased by 43 percent and in that same 3 years, circulation within the medical library itself has increased by 75 percent.

The CHAIRMAN. That much increase?

Dr. HUBBARD. Yes, sir; and this during the time when our student body has not increased significantly. So that we are looking to the support of a very viable and attractive system and its enhancement.

I thank you, sir, and I would be pleased to respond as you wish.

The CHAIRMAN. Doctor, let me ask you this.

To what extent do people other than medical students use the medical library at the University of Michigan; I am thinking of students in your school of dentistry, your nurses, and pharmacists?

Dr. HUBBARD. Yes, sir. Our candidates for the M.D. degree make up less than one-third of the total users of the so-called medical library. We have, sir, in fact, changed the name to the health sciences library to reflect more accurately its actual role. As we are planning for the future at our university and we are by no means unique, we entitled the library organization for the future the health science information center to emphasize that it is broadly responsible for information in all health sciences.

The CHAIRMAN. All the biological sciences.

Dr. HUBBARD. Yes, sir. One of the great users of our library is the pharmaceutical industry in the State. So that it is in fact a health science information center and becomes an essential part of the total effort in health related activity.

The CHAIRMAN. Doctor, we don't ordinarily think of medical libraries just in terms of medicine?

Dr. HUBBARD. No, sir.

The CHAIRMAN. Biological sciences are also involved; isn't that right?

Dr. HUBBARD. Yes, sir. I like to think of medicine as being a reflection of the needs of human health and this is a broad rather than a limited concept.

The CHAIRMAN. Whether it be in the field of pharmacology, or dentistry, or nursing, or any of these fields, is that right?

Dr. HUBBARD. Right.

The CHAIRMAN. Biochemistry, or any of those other biomedical fields.

Dr. HUBBARD. Wherever information is available that can support the health of man, this is the concern of medicine and medical libraries.

The CHAIRMAN. And your library is generally used by people in many different fields, is that right?

Dr. HUBBARD. It is used very broadly by people in all of these fields. It serves as a reference library for public health, dentistry, medicine, nursing, pharmacy, the physical therapy, medical technology, over 400 interns and residents in training in the university hospital, all of the research workers that relate to the medical area, and also to the medical students.

The CHAIRMAN. Do you have 400 interns today in your university hospital?

Dr. HUBBARD. Well, sir, most of these are residents. Actually we have only about 40 interns and some 360 residents.

The CHAIRMAN. Residents? You must have a pretty good sized hospital.

Dr. HUBBARD. Yes, sir. We have about a thousand beds.

The CHAIRMAN. You have a thousand beds. Well, I know you have a fine school there.

Dr. HUBBARD. Yes, sir; we pride ourselves at the University of Michigan on having the chairman of this committee as one of our alumni.

The CHAIRMAN. Well, I wasn't smart enough to get into the medical school. I just got into law school. Although I may say this, I was at Columbia University on the first of May, and I called attention to the fact that I had an LL.D. degree. I said the "L" comes before "M," and therefore a lawyer ranks a doctor.

I won't ask you to comment on that.

Dr. HUBBARD. I appreciate that.

The CHAIRMAN. I want you to have a warm welcome by your medical associates when you get back to Ann Arbor, you see.

Dr. HUBBARD. Thank you.

The CHAIRMAN. Anything you would like to add?

Dr. HUBBARD. I believe not. Thank you, sir.

The CHAIRMAN. We certainly appreciate your testimony very, very much.

(The prepared statement of Dr. Hubbard follows:)

PREPARED STATEMENT OF WILLIAM N. HUBBARD, JR., M.D.

CURRICULUM VITAE, WILLIAM NEILL HUBBARD, JR., M.D.

Born: October 15, 1919, in Fairmont, N.C.

Marital status: Married Elizabeth Terleski, December 28, 1945.

Children: William N., III, Michael James, Mary Emma, Elizabeth Ann, and Susan Ellen.

Education

Premedical: Columbia College, Columbia University, 1937-41, A.B.

Medical: University of North Carolina School of Medicine, 1941-43; New York University College of Medicine, 1943-44, M.D.

Postgraduate: Bellevue Hospital, Intern, Third Medical Division, 1944; Assistant Resident, Third Medical Division, 1945; Schenectady County Tuberculosis Hospital, Resident, 1946; Bellevue Hospital, Intern, Department of Pathology, 1947; Assistant Resident, Third Medical Division, 1948; Resident, Third Medical Division, 1949.

University appointments

New York University College of Medicine, Assistant in Medicine, 1949-50; John Wyckoff Fellow in Medicine, 1950-51; Instructor in Medicine, 1950-53; Assistant Professor of Medicine, 1953-59; Assistant Dean, August 1, 1951 to June 30, 1953; Associate Dean, July 1, 1953 to June 30, 1959.

University of Michigan Medical School, Dean since July 1, 1959; Associate Professor of Internal Medicine, July 1, 1959 to June 30, 1964; Professor of Internal Medicine since July 1, 1964.

Hospital appointments

Bellevue Hospital, Third Medical Division, clinical assistant visiting physician, 1950-52; assistant visiting physician, 1952-59.

University Hospital of New York University, assistant attending physician in medicine, 1952-59.

University of Michigan Medical Center, senior medical staff, University of Michigan Hospital, 1959-

Membership in societies: New York Academy of Medicine, the Harvey Society, Society of Alumni of Bellevue Hospital, Sigma Xi, Alpha Omega Alpha, Phi Kappa Phi, Alpha Kappa Kappa, Washtenaw County Medical Society, Michigan State Medical Society, member council, 1960-, American Medical Association, Rotary Club, American Association for the Advancement of Science, fellow of the American College of Physicians.

U.S. Government agency appointments: Member of the Study Section, Heart Program Project Committee of the National Institutes of Health, 1960-64; member, Ad Hoc Advisory Committee to the Surgeon General on Dental Research Centers, 1964-; member, Ad Hoc Advisory Committee on National Networks of Data Processing Systems, Office of Science and Technology, 1965; consultant to the Public Health Service Division of Hospitals and Medical Facilities, 1964-; regent of the National Library of Medicine, 1963-; chairman of the board of regents, 1965-.

Appointments: Member, board of directors, National Society for Medical Research, 1962-64; member, board of directors, National Fund for Medical Education, 1962-; member, medical advisory committee, the W. K. Kellogg Foundation, 1959-; member, A.M.A., Task Force on Animal Care, 1962-; Association of American Medical Colleges, associate secretary, part time, 1954-56; member, editorial board, Journal of Medical Education, 1960-, member, executive council, 1962-, vice chairman of the Committee for Planning for Medical Progress Through Education, 1964-65; multiple committee activities for medical societies and the University of Michigan.

Awards and honors: Distinguished alumni service award, University of North Carolina, 1962.

Mr. Chairman, I thank you for this opportunity to express my wholehearted support for the Medical Library Assistance Act of 1965.

Many distinguished national associations concerned with the health of the American public have supported this act. The President's Commission on Heart Disease, Cancer, and Stroke has included several recommendations which would

be supported by this act and has emphasized the importance of these matters by stating:

"The Commission feels strongly that unless major attention is directed to improvement of our national medical library base, the continued and accelerated generation of scientific knowledge will become increasingly an exercise in futility."

The National Advisory Health Council of the U.S. Public Health Service has, on two recent occasions, made formal resolutions supporting programs which would be implemented under the provisions of this act.

My own testimony is based on 15 years of activity in administrative posts supporting medical education, health-related research and medical care. As the dean of the University of Michigan Medical School, a member of the executive council of the Association of American Medical Colleges, and the Board of Regents of the National Library of Medicine, I have a privileged perspective of the communication needs in medicine and the related health sciences. The opportunity of serving on committees advisory to Federal agencies concerned with health problems has led me to a full appreciation of the importance of the role of the Federal Government in securing the health of the people.

SECTION 390, DECLARATION OF POLICY AND STATEMENT OF PURPOSE

This section reflects the complex variety of users that a modern library of the health sciences must serve. Requirements of the graduate or professional student, the researcher, the faculty, the hospital interns and residents, the post-doctoral fellow, the community practitioner, industry and, not least, the requests of other health-science libraries must all be met.

Although weekly and monthly serial journals now make up the bulk of the holdings of medical libraries; textbooks and monographs continue as important reference documents. Without diminishing the importance of these more traditional holdings, television tapes, photographic films and slides, audiotapes, and visual displays are becoming of increasing importance as means of storing scientific information. Modern electronic forms of handling this information through the use of computers and microreproduction hold the promise of more efficient and more economical access to this stored information. Such electronic devices also allow access to the holdings of the library from distant areas and form the basis of predicting the development of a national network.

The policies enunciated in section 390 recognize the breadth and complexity of the problem of communications in the health sciences and the importance of the evolving library as a means of providing essential improvements in these communications.

SECTION 392, NATIONAL MEDICAL LIBRARIES ASSISTANCE BOARD

This section represents an extension of the existing function of the board of regents of the National Library of Medicine. I do not speak formally for that board, but would assert that the mood of the membership is to accept the responsibilities defined under this section as representing a proper expansion rather than a digression from their established responsibility.

SECTION 393, ASSISTANCE FOR CONSTRUCTION OF FACILITIES

The need for increased manpower in support of the health of the Nation is well documented. Not only physicians, dentists, and nurses, but an array of related health workers of increasing importance to the system of delivering health service, must be educated in our colleges, universities, and teaching hospitals; all of which require library facilities beyond those now available. Furthermore, the need for maintenance of our health-related research effort requires the improvement and extension of our library system. As the postgraduate education efforts that are so sorely needed on behalf of the community practitioner are realized, he, too, will seek continuing access to the library.

It can fairly be said, then, that to achieve the improved health service that the American people deserve and demand, the capital expansion of our library system is essential. In my opinion, we must provide for capital expansion of the library system as it exists today as the foundation for its evolution into the health science information center that is needed. It will therefore be important to make a judicious division of the available funds for capital improvement so that we do not merely expand libraries as they have been traditionally con-

ceived as repositories for printed information but include provision for their rapid evolution into "information centers" that take advantage of all the present-day improvements in communications techniques.

It is my opinion that the \$10 million a year for the fiscal year ending June 30, 1966 through that ending June 30, 1970 is appropriate in order that the program can be reviewed at that time. I would predict that at the time of review in the future it will be found that significantly larger sums can be effectively expended in this category as most valuable contributions to the health of the people of this country.

SECTION 394, GRANTS FOR TRAINING IN MEDICAL LIBRARY SCIENCES

Our medical libraries need many more librarians than are now available or are likely to become available within the foreseeable future unless a strong effort is made to strengthen and accelerate our program for training in medical librarianship. These new librarians must not only have the established competence of organizing printed materials so that they are readily accessible to readers, but must become familiar with recent developments in electronic technology and information theory which will provide a new kind of bibliographic control over the growing and changing mass of knowledge produced by our research programs and clinical experience. It is safe to say that there are few fields where teachers, researchers, and administrators agree so completely with librarians on the importance of a training program.

This section recognizes the need not only to provide improved training for new degree candidates in library sciences, but also allows for existing librarians and specialists in information sciences related to health to be given support in learning of the new developments in the field of electronic information storage and retrieval.

The addition of an internship program to the traditional period of library training will allow the recent graduate to enter the community much better prepared to undertake operating responsibility than he has been in the past.

This section, then, provides for the necessary improvement and expansion of training of the manpower responsible for the operation of medical libraries in the future.

SECTION 395, ASSISTANCE TO SPECIAL SCIENTIFIC PROJECTS

This section fills a most important need in that it provides the opportunity for physicians and scientists to utilize library resources to their fullest depth in writing up the original contributions that their efforts have produced. At the present time, these people have to steal time from their research, teaching, and patient-care duties in order to utilize in depth the resources of the library. These special fellowships would enhance their opportunity to utilize the unique facilities of the National Library of Medicine as well as supporting "in depth" literature reviews.

Intensive utilization also gives an opportunity to understand more clearly the limitations of the present library system. To the casual user of the library, these limitations may not be evident and he may therefore fail to obtain with precision and depth the information which he should have. From experience in the needs of intensive consumers of library service it will be possible to provide more precisely for improvements in providing that service.

SECTION 396, RESEARCH AND DEVELOPMENT IN MEDICAL LIBRARY SCIENCE AND RELATED FIELDS

The importance of research and development in library science has been alluded to already in my testimony. At this point I would suggest that consideration be given to the establishment of a small number of health-science information centers which could serve as prototype models for the fullest exploitation of available modern techniques in information processing. In my opinion, the development of a few such models is of a very high degree of importance. It would allow for practical experience in a field which is now full of speculation about "what might happen." If these model units were established in areas with long experience with the more traditional library organization, then something akin to a controlled experiment could be conducted which allowed objective comparison of the advantages and shortcomings of the traditional as compared to the electronically based methods. Once established, such a prototype information

center in the health sciences would provide the resources for research, training, and experience in service which will be essential before a comprehensive national library can be most effectively designed. The established systems of the National Library of Medicine make it uniquely competent to lead such developments.

There are only a few institutions whose libraries are in a position to carry on this kind of research and development but their role as models is of crucial importance to the Nation.

SECTION 397, GRANTS FOR IMPROVING AND EXPANDING THE BASIC RESOURCES OF MEDICAL LIBRARIES AND RELATED INSTRUMENTALITIES

This section recognizes that we are not undertaking a dissolution of the existing library system but rather seeking full advantage of its optimum potential while adding to it the modern electronic developments which will give a new dimension to its power.

The provisions in this section will allow for those medical libraries which have heretofore been unable to take advantage of well-established methods of improving library service to acquire this enhanced potential. Such a simple matter as being unable to photoduplicate rapidly articles in journals so that the volumes themselves do not have to circulate is a distressingly frequent defect in existing medical libraries. It is a rare medical library that has a budget for the acquisition of magnetic tapes and films and the facilities for using them.

While I recognize that we must plan immediately for the development of an electronic computer-based national system for communications, I would assert that we should not forget that we have in existence a library system which, if given adequate support, will continue to be an essential component of any communication system in the health sciences. Home circulation of volumes from the medical library of the University of Michigan has increased 43 percent in the past 3 years. Loans within the library itself have increased by approximately 75 percent in that same period. I cite these figures to emphasize that we are by no means suggesting that we abandon the existing system since it is clearly a very attractive resource to its users. Rather, we look forward to securing the advantages of the present system while adding new and improved capacities.

SECTION 398, GRANTS FOR ESTABLISHMENT OF REGIONAL MEDICAL LIBRARIES

More and more in the United States we are recognizing that health services of all kinds must be planned on a regional basis. The unnecessary duplication and self-seeking competition that can develop when isolated institutions pursue their own development without reference to regional needs is a luxury that we cannot afford. Some early beginnings have been made in this kind of regional development. The New York Academy of Medicine, as an example, has for years collaborated with the hospitals, the medical society, and the universities in the greater metropolitan area in providing a central repository library and reference source. More recently, Harvard, Yale, and Columbia have announced their intention of developing communications that would allow their medical science libraries to collaborate more effectively. There are a few more instances that could be cited.

In general, however, the support necessary to function as a regional resource which can provide free loan services to qualified users and make available photoduplicated or facsimile copies wherever qualified requesters wish to retain them is unavailable. This section, therefore, addresses itself to those medical libraries which might wish to provide regional service and free loan service in addition to their traditional obligations. Where the budget of a medical library is sharply limited—as all of them are—it is very difficult to add the personnel and equipment that is necessary to meet the regional responsibility described in this section. The development of a physical plant which would provide this regional service without diminishing service to the existing users of the library makes necessary the provision for construction that is within this section.

As we look forward to the development of regionalization of health services of all kinds, it is essential that we have the means for developing regional medical libraries to serve as health science information centers.

SECTION 399, FINANCIAL SUPPORT OF BIOMEDICAL SCIENTIFIC PUBLICATIONS

An essential component of our present method of distributing new research information related to health is the publishing capacity of nonprofit societies and organizations. The costs of publication have risen to the point that, even where

advertising is solicited by the journal, the costs of publication are an important limiting factor in the journal's dissemination. Many journals are sharply limited in the extent to which they will accept charts and illustrations or bibliographic references.

Of particular importance is the need to supply biomedical scientific publications with the resources which will allow them to adapt their present indexing and abstracting to the needs of existing and projected computerized forms of bibliographic storage and retrieval. As we look forward to the development of a computer-based national network of libraries, the form of the information put into this system must be adapted to the needs of the electronic means of retrieving it. These changes in abstracting and indexing journals is an essential element of the development of a national system of libraries where free interchange of information is available. The grants authorized in this section will allow for a more complete and expeditious transmittal of information to those investigators and practitioners who have a need for it.

REGIONAL BRANCHES OF THE NATIONAL LIBRARY OF MEDICINE

There are in the United States geographic areas which do not now contain a medical library or group of medical libraries which are able to undertake the role of a regional resource. Where such a circumstance exists, the need of the people, in my opinion, should be met by the establishment of regional branches of the National Library of Medicine.

Mr. Chairman, it is obvious that we are not talking about support of the library function which is confined to giving readers access to printed materials. We are talking instead about the need for securing an essential regional health source which is capable of providing to students, teachers, researchers, and practitioners the up-to-date information which they must have in order to serve their role in providing for the health of the Nation. I urge passage of this Medical Library Assistance Act of 1965 as an essential component of the programs necessary to meet the health needs of the Nation.

The CHAIRMAN. Now, I notice we have with us today, although he was not on our list of witnesses, our friend, Dr. Stafford Warren, who has been very much interested in this matter of libraries. Anything you would like to add, Doctor?

Dr. WARREN. No, I think not, Senator. Everything seems to be in good order and under good control. I have been very much pleased, though, to be here at this historic occasion.

The CHAIRMAN. Well, would you like to add to this good testimony we have had?

Dr. WARREN. I think it would be quite appropriate for me to do so, sir, but not at this moment. In another 4 weeks I would be very pleased to.

The CHAIRMAN. Well, if you should like to put anything in this record before we have it printed, I would be happy to have you submit it. We will be glad to have it, sir.

Dr. WARREN. Thank you.

The CHAIRMAN. We certainly would. Anyone else—anything anyone else they would like to say?

If not, the subcommittee will stand in recess and meet in the morning at 10 o'clock.

(Whereupon, at 11:35 o'clock a.m., the subcommittee was adjourned, to reconvene at 10 a.m., June 15, 1965.)

TO AMEND THE PUBLIC HEALTH SERVICE ACT TO PROVIDE FOR ADEQUATE MEDICAL LIBRARY SERV- ICES AND FACILITIES

TUESDAY, JUNE 15, 1965

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 a.m., in room 4232, New Senate Office Building, Senator Lister Hill, chairman of the committee, presiding.

Present: Senators Hill (presiding), Yarborough, Pell, and Javits.

Committee staff members present: Stewart E. McClure, chief clerk, Robert W. Barclay, professional staff member, Roy H. Millenson, minority clerk, and Stephen Kurzman, minority counsel.

The CHAIRMAN. The subcommittee will kindly come to order.

Dr. George A. Wolf, Jr., president, Association of American Medical Colleges, and vice president of medical and dental affairs, Tufts University.

Doctor, we are glad to have you here. Will you proceed in your own way, sir?

STATEMENT OF DR. GEORGE A. WOLF, JR., PRESIDENT, ASSOCIATION OF AMERICAN MEDICAL COLLEGES, VICE PRESIDENT OF MEDICAL AND DENTAL AFFAIRS, TUFTS UNIVERSITY, BOSTON, MASS.; ACCOMPANIED BY DR. ROBERT C. BERSON, EXECUTIVE DIRECTOR, ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Dr. WOLF. If I may, I would like to introduce into the record testimony on behalf of the Association of American Medical Colleges in support of S. 597 which has been prepared by Dr. Berson.

The CHAIRMAN. We will have that appear in full in the record, Doctor, immediately following your remarks.

Dr. WOLF. This statement has been approved in full by the AAMC's Committee on Federal Relations which includes Dr. John Parks, dean of George Washington University Medical School here, Dr. John Deitrick, dean of Cornell University Medical School, Dr. Alden Miller, dean of University of Kansas Medical School, Dr. Thomas Turner, dean of Johns Hopkins Medical School, Dr. Donald Anderson, dean of the University of Rochester Medical School. I would like to add a few brief remarks of my own as president of the AAMC. As you have undoubtedly heard, libraries are the most important resource of medical schools and of universities. Medical libraries play a very

important part in the education of research scientists in the health field.

Federal support of research has resulted in the growth of libraries in terms of holdings and in terms of usage of libraries. The inter-library loan system has flourished in recent years. The development of photo reproduction, of miniaturization, computer technology have made libraries more efficient than they have been in the past.

However, in spite of all these factors, operating under the supervision of trained medical librarians, libraries have increased in size, have increased their holdings, are experiencing a shortage of trained personnel and are increasingly using the interlibrary loan system. It is clear to me that demand is outstripping resources and the medical library's future is dependent upon additional resources. These resources will answer a need to improve and expand existing library facilities and create new library facilities. Resources are needed to train new personnel in the library field, to expand holdings, to exploit to the fullest the interlibrary loan technique, particularly by developing regional centers.

There is the necessity of exploiting by experimentation and demonstration the use of modern technology, particularly improving the efficiency of library operation and recognizing some of the problems which are peculiar to libraries in the health professional areas.

Inasmuch as S. 597 provides for meeting these needs in part, I think I can speak for the deans of the medical schools of this Nation in urging the passage of this bill.

Thank you, sir.

(Statement on behalf of the AAMC follows:)

PREPARED STATEMENT OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Speaking for all the 87 medical schools in this country who constitute the institutional membership of the Association of American Medical Colleges, I want to express unequivocal support for all parts of this legislation and urge its passage at an early date.

Throughout the long history of man's struggle against disease, countless observations and a vast amount of knowledge have been recorded. These records are stored in libraries—chiefly in the libraries of medical schools and universities but also in the libraries of medical societies, hospitals and other scientific institutions—where they can be made available to seekers of knowledge. The faculty and the students of a medical school need ready access to these archives for, to paraphrase Osler, to study medicine without books is to go to sea without a compass.

While the major medical libraries in this country are to be found in medical schools, medical centers, major research complexes, and the medical societies of a few metropolitan areas, it is important to bear in mind that there are a total of over 6,000 medical libraries in smaller medical societies and particularly in hospitals throughout the Nation.

For a number of years there have been responsible reports that the medical libraries of the Nation are in a serious state of disrepair and are finding it impossible to keep pace with the growing volume of scientific literature of great importance to medicine. In 1953, John Detrick wrote:

"Little evidence was found by this survey of attempts to meet the libraries' increased needs during a period of tremendous expansion in the research and other activities of the schools. Faculty members, research workers, and students will be severely handicapped unless the new demands placed upon the libraries are met by careful administrative and budgetary planning. In a nation dependent upon medical research to a greater degree than ever before, surprisingly little is being expended on the housing of the reports of that research and on making those reports available." (1)

In 1960, the Jones report prepared for the Senate Appropriations Committee stated, "One urgent need almost all medical schools have in common is the improvement of their libraries which are essential to the functions of education research and good medical care." (2)

In 1953, Bloomquist wrote:

"As a result of chronic inattention, the medical school library is woefully inadequate to meet the demands placed upon it as an agency of our medical communication, and the major investment made by society in these libraries is in jeopardy. Financial support has not kept pace with the increased demands, indeed, there is evidence that the libraries' share of support is shrinking. The quality of medical education, research, and patient care is thereby threatened." (3)

In February of this year, the report of the President's Commission on Heart Disease, Cancer, and Stroke (4) included considerable data on the existing situation and the needs in all types of medical libraries and recommended a national program whose major provisions are embodied in this legislation.

And also in this year, a study by the Association of American Medical Colleges (5) indicated that the average medical school library needs an additional 32,000 square feet of space and an additional 18,000 volumes and periodicals to meet reasonable standards as well as having substantial needs for support for cataloging, binding, and other instructional media or equipment.

The literal dependence of intelligent medical research on access to the relevant literature is quite obvious. Naturally, each research project results in one or more published articles or periodicals and as the number of research projects underway in this and other countries has increased, the volume of published literature has grown at an astonishing rate. The protection of our national investment in research requires adequate provision for making the published results available to investigators.

It is important to emphasize, however, that every medical library plays a very important role in the education of medical students, dental students, students of public health and veterinary medicine, other students in the health disciplines, interns, and residents. It is perhaps even more important to the care of patients for practicing physicians to have access to appropriate parts of the published literature in order to keep abreast of new developments in the study and care of patients.

This triple role of the medical library in providing a service basic to research, education, and patient care has made it difficult for existing national programs to meet the needs of medical libraries.

The Hospital Construction Act provides matching funds for the construction of hospitals and outpatient departments. Local and State priorities are based on a demonstrated need for additional hospital beds for patients. Although some of these funds have been used for the construction of hospital library facilities, they have been relatively modest and, of course, no funds for the acquisition of books, periodicals, or the operation of the library are included.

The health research facilities program provides matching funds for the construction of research facilities. The fact that medical libraries subserve other functions in addition to research has, in most institutions, made it impossible to dissect out the portion of the construction cost of the library that would be solely related to research and to find the funds at the same time to provide for the other portions of the medical library and, of course, this program provides no funds for acquisition or operation.

The funds for the support of medical research have been provided largely through research projects and programs, fellowships, and grants for training in research. These programs assume the availability of adequate library resources and it is quite impractical to dissect out what portion of each project should be considered as necessary support for the medical library.

The Health Professions Educational Assistance Act of 1963 is intended to increase the total number of medical students being graduated and the direct relationship between an increase in library facilities and an increased number of students is difficult to demonstrate except in the case of entirely new schools. Medical library facility needs are of such volume and urgency that they cannot be met by other programs to which medical libraries are incidental. In the competition with more fundamental legislative and administrative purposes, adequate support for medical library construction and operation cannot be anticipated from existing programs. Even if all the existing programs could be so adequately funded that the needs of medical libraries for construction, acquisition of books and periodicals, and the employment of additional personnel could

be met, strengthening the cooperation and communications between medical libraries would require attention.

One of the most important traditions of science has always been the free exchange of knowledge and results between scientists wherever located. It can truly be said that the literature of medical science as well as the problems it attempts to solve transcends national boundaries. At the present time a considerable percent of the important new periodicals in medical literature are printed in languages other than English. There is a very active exchange of literature between this country and Russia, as well as our former enemies, Germany and Japan. It is obviously more efficient for translating, abstracting and bibliographic services to serve the entire English-speaking world rather than for each library to attempt its own, so there are great opportunities for strong leadership at the national level through the National Library of Medicine. The more than 6,000 medical libraries in this country reflect the efforts that have been made through hospitals, research institutes, professional societies, and medical schools to provide library services. It has been estimated that the present investment in medical libraries in this country is something over \$300 million, essentially all of which has come from private, local, or State resources. The Medical Library Assistance Act of 1965 assumes that these local sources will continue to carry most of the expense. It also assumes that Federal funds should be provided to augment these local funds and to strengthen the role of leadership of the National Library of Medicine in matters that can be handled effectively on a national basis. This legislation has been carefully written and the Association of American Medical Colleges believes that it is entirely sound.

Assistance for Construction of Facilities, section 393, will provide matching grants for the construction of libraries, providing up to 75 percent of the necessary cost of construction, and for this purpose not more than \$10 million for each fiscal year 1966 through 1970 is provided. We are convinced that this is fully justified and will bring tremendous benefits. As this program develops, applications to be reviewed by the proposed National Medical Libraries' Assistance Advisory Board will bring into clear focus whether the real need exceeds the amount provided in this legislation or not. The Association of American Medical Colleges is convinced that the need is substantially larger than can be met by the funds proposed, but we consider it important to begin the program at this level of funding.

Grants for Training in Medical Library Sciences, section 394, is one of the most important parts of this legislation. This section will provide up to \$1 million in each of the fiscal years 1966 through 1970 for grants, (1) to individuals to enable them to accept traineeships and fellowships leading to postbaccalaureate academic degrees in the field of medical library science, in related fields pertaining to science as related to health, or in the field of the communication of information; (2) to individuals who are librarians or specialists in information on sciences relating to health to enable them to undergo intensive training or retraining so as to attain greater competence in their occupations (including competence in the fields of automatic data processing and retrieval); (3) to assist appropriate public and private nonprofit institutions in developing, expanding, and improving training programs in library science in the field of communication of information pertaining to sciences relating to health; and (4) to assist in the establishment of internship programs and establish medical libraries meeting standards which the Surgeon General shall provide.

Although there are more than 6,000 medical libraries in this country, there are only a few more than 3,000 trained professional librarians. The rate at which additional individuals are being trained is not sufficient to keep up with the normal attrition in the field. And the exciting new developments in the field of storage and retrieval of information offer great opportunities for coping with the growing volume of medical literature.

Assistance to Special Scientific Projects, section 395, authorizes up to \$500,000 for each fiscal year 1966 through 1970 to establish special fellowships to be awarded to physicians and scientists for the compilation of existing or writing of original contributions relating to scientific, social, or cultural advancements in sciences related to health. It is likely that most of these special fellowships will involve working with the resources of the National Library of Medicine which represents the greatest collection of medical literature on earth.

Research and Development in Medical Library Science and Related Fields, section 396, will provide up to \$3 million for each fiscal year 1966 through 1970 for grants to appropriate public or private nonprofit institutions and contracts

with the appropriate persons for the purposes of carrying out projects of research and investigations in the field of medical library science and related activities for the development of new techniques, systems and equipment for processing, storing, and retrieving and distributing information pertaining to sciences related to health. There are exciting prospects that new techniques can result in great efficiency in the handling of literature and in its exchange between medical libraries and sciences, but these new techniques are extremely expensive. Careful research and feasibility study simply must precede heavy commitments by institutions, local, State, or National government to employ these techniques.

Grants for Improving and Expanding the Basic Resources of Medical Libraries and Related Instrumentalities, section 397, will provide up to \$3 million for each fiscal year 1966 through 1970 for making grants of money, materials or both to public or private nonprofit medical libraries and related scientific communication instrumentalities for the purpose of expanding and improving their basic medical library or related resources. These grants supplemented by institutional and local funds are clearly needed to make it possible for the medical libraries of this country to adequately provide services basic to research, education, and patient care.

Grants for Establishment of Regional Medical Libraries, section 398, will provide up to \$2,500,000 for each fiscal year 1966 through 1970 for grants to existing public or private nonprofit medical libraries so as to enable each of them to service a regional medical library for the geographic area in which it is located. This can greatly strengthen and augment the well-established tradition of close cooperation between existing medical libraries and the sharing of resources. The concentration of many types of literature in an appropriate regional library can make it sufficiently available to all of the medical libraries in that geographic area without the need to duplicate the material in each one, thus achieving a high degree of overall effectiveness as well as economy.

Financial Support of Biomedical Scientific Publications, section 399, will provide up to \$1,500,000 for each fiscal year 1966 through 1970 for making grants to and entering into appropriate contracts with public or private nonprofit institutions for education and individual scientists for the purposes of supporting biomedical scientific publications of a nonprofit nature and to procure the compilation, writing, editing, and publication of reviews, abstracts, indexes, handbooks, bibliographies, and related matter pertaining to scientific works and scientific developments. This sort of secondary publication is of growing importance in making it possible for scientists working in a given field to become quickly aware of what has been published in that field and decide whether or not he needs access to the full text.

Regional Branches of the National Library of Medicine authorizes the Surgeon General to establish as a branch of the National Library of Medicine a regional medical library to serve the needs of areas in which there is no regional medical library adequate to serve the area. It would authorize up to \$2 million for each fiscal year 1966 through 1970 for this purpose. Careful study will be necessary to determine whether there is a clear need for such a regional branch of the National Library of Medicine in the area, but prior to such study, it seems likely that that will be found to be the case.

In closing, I want to repeat the unequivocal opinion of all of the medical schools of this country that it is urgently important that this legislation be passed, so that we can begin at once to correct the serious disrepair of our national library system and so that we can look forward to a future in which medical research, medical education, and the care of patients can be supported by ready access to the medical literature.

- (1) Medical Schools in the United States at Mid-Century, John B. Deitrick and Robert C. Berson, Association of American Medical Colleges, 1953, Evanston, Ill.
- (2) U.S. Committee of Consultants on Medical Research, Federal Support of Medical Research, Washington, D.C., 1960.
- (3) Bloomquist, H. The status and needs of medical school libraries in the United States. *Journal of Medical Education*, 38: 145-163, 1963.
- (4) A National Program to Conquer Heart Disease, Cancer, and Stroke, the President's Commission on Heart Disease, Cancer, and Stroke, Washington, D.C., 1965.
- (5) Medical Library Needs. *Datagrams: Association of American Medical Colleges*, Evanston, Ill., April 1965.

The CHAIRMAN. Doctor, I wonder if you have any figures on how much money has gone into medical libraries in the last 15 or 20 years?

Dr. WOLF. I do not have those figures at hand.

The CHAIRMAN. I imagine we can get them all right.

Dr. WOLF. I could see, if you like, if we could obtain these for you. I am sure the operating budgets of the libraries have more than doubled in the last 5 years.

The CHAIRMAN. That is what I had in mind, not only the amount for physical structures, but also the figures for the operations including personnel.

Are you finding much difficulty in getting staffs, operating personnel?

Dr. WOLF. Yes.

The CHAIRMAN. You are?

Dr. WOLF. In my own personal experience frequently we have had to wait a year to find a qualified librarian. I know there are a number of schools that have had to settle for less than qualified personnel.

The CHAIRMAN. What are we doing now to get more personnel, which we are definitely going to need?

Dr. WOLF. There are a limited number of training programs. I am not directly familiar with how many there are, but to my knowledge, they are not expanding at the present time very rapidly.

The CHAIRMAN. Well, Doctor, is it not true that our medical libraries are being used today to an increasing extent by postgraduate students in the basic medical sciences and by many categories of the paramedical students?

Dr. WOLF. Yes, sir; that is why I said the health professions before, because I think it is important to know—

The CHAIRMAN. That is just what you had in mind when you spoke about the health professions. You have in mind not only the medical students, but the dental students, those in pharmacy, those in nursing.

Dr. WOLF. Then the graduate students in the basic sciences for the Ph. D. degree and of course, interns and residents and physicians who are in practice.

The CHAIRMAN. Well, I find from the testimony that I hear on my appropriations committee, particular references to the basic sciences and medical research. For instance, biochemists are playing a greater role in medical research. Is that not true?

Dr. WOLF. Oh, yes; and even broader than that, the behavioral sciences are becoming more and more important. And many medical schools are finding their holdings in these fields are sadly lacking. They should have things in their own libraries, but they are dependent on loans.

The CHAIRMAN. I wonder if we have any statistics as to the increase in the enrollment of what you might term the nonphysician students in these more recent years?

Dr. WOLF. I am sure that can be obtained.

The CHAIRMAN. You might check that and it might be of good to have it for the record.

Dr. Berson, will you come up and have a seat with the Doctor. Anything you would like to add on that last point?

Dr. BERSON. Senator, we do have some figures on the recent increase in enrollment of people in the allied health professions for whom the

medical faculties are responsible and I shall be happy to send you a letter summarizing that.

The CHAIRMAN. All right, if you will do that, we will have it inserted in the record.

(The letter referred to follows:)

ASSOCIATION OF AMERICAN MEDICAL COLLEGES,
Washington, D.C., June 17, 1965.

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

DEAR SIR: The purpose of this letter is to provide for the record of the hearings on S. 597 some figures concerning the increases in enrollment of several categories of students for whom medical schools have total or partial responsibility. Some categories of students use medical libraries more heavily than others, but they all have some library needs which must be met.

Increases in medical and graduate students, interns, and residents and other students

	1956-57 ¹	1962-63 ²	Percent increase
Medical students.....	28,852	31,491	9.1
Graduate students.....	2,552	4,105	60.8
Fellows.....	1,163	4,649	299.7
Interns.....	2,537	4,134	62.9
Residents.....	7,267	13,539	86.3
Other.....	29,719	105,427	254.7
Total.....	72,090	163,345	126.6

¹ JAMA, Vol. 165, No. 11, page 1417.

² JAMA, Vol. 186, No. 7, page 701.

Sincerely yours,

ROBERT C. BERSON, M.D.,
Executive Director.

THE CHAIRMAN. Anything you would like to add, Dr. Wolf?
Dr. WOLF. No, sir.

The CHAIRMAN. We thank you for your statement and for your presence here this morning.

Dr. Edward C. Rosenow, Jr., executive director, American College of Physicians.

STATEMENT OF EDWARD C. ROSENOW, JR., M.D., EXECUTIVE DIRECTOR, AMERICAN COLLEGE OF PHYSICIANS, PHILADELPHIA, PA.

Dr. ROSENOW. Thank you, very much, Senator.

I appreciate the opportunity of appearing. I am Dr. Edward C. Rosenow, Jr., of Philadelphia—an internist who spent 20 years in the practice of medicine before becoming executive director of the American College of Physicians.

The CHAIRMAN. Doctor, off the record.
(Discussion off the record.)

Dr. ROSENOW. During all this time in practice and since I have become executive director, I have been keeping active by actually teaching medical students. Next month, for instance, I go to take my turn in service at Philadelphia General.

The president of the American College of Physicians, Dr. A. Carlton Ernstene, of Cleveland, has asked me to appear before you today to

present a statement in support of Senate bill 597, the Medical Library Assistance Act, which was introduced in the Senate by the chairman of your full committee, Senator Lister Hill.

Before reading the American College of Physicians' statement, which was passed by the board of regents and also by the membership at a meeting, I would like to say, parenthetically, that I also have the honor of serving as president of the American Medical Writers Association, an organization of some 1,800 scientific writers in the medical field. It will interest the subcommittee to know that the AMWA has also endorsed the purposes of the proposed legislation.

For those present today who do not know of the American College of Physicians, I would like to take a moment to describe our society. The college, which is 50 years old this year, represents 12,400 specialists in internal medicine and related fields.

The allied fields previously are nonmedical fields. We have some dermatologists, psychologists, radiologists, this group of people. Our principal interest is the continuing education of physicians. To work toward this goal, the college sponsors 2 national and 25 regional meetings each year; it conducts 18 postgraduate courses and publishes the monthly *Annals of Internal Medicine*. These courses are 5-day extension courses at different medical schools around the country and publishes the monthly *Annals of Internal Medicine*, which at the present time goes to 15,000 subscribers each month.

The CHAIRMAN. How is your attendance at these meetings?

Dr. ROSENOW. The attendance at our most recent meeting in Chicago was over 5,000 doctors. The one in Philadelphia 2 years ago had 7,200 registration.

Our postgraduate courses average 100 per course so we have about 1,800 physicians per year registered in these courses. The total number of people who go to these regional meetings amount to about 2,500. Those are 1- or 2-day meetings. I cannot tell you how many read the *Annals of Internal Medicine*, but I am sure a substantial number do, because we get a lot of letters, both favorable and unfavorable.

To aid in maintaining high standards of medical practice, the college participates in the administration of the certifying agency for internists—the American Board of Internal Medicine—and, with other medical organizations, operates the Joint Commission on Accreditation of Hospitals and the Commission on Professional and Hospital Activities.

Included among our leadership are the physicians responsible for the training of a large percentage of our Nation's undergraduate and graduate physicians, obviously within their special field.

Because of its intense interest in the training of physicians and in the continuing education of internists, the American College of Physicians looks favorably on any Federal act that would improve medical library facilities.

We feel that S. 597, and its companion bill in the House of Representatives, provides realistic solutions to a growing problem of collecting and retaining information vitally important to the present and future practice of medicine. Parenthetically, and this is a personal opinion, it would seem to me that this act would make a substantial contribution toward solving the present problem but will need to be a continuing support program in order for us to keep abreast of the

rapidly expanding field of knowledge and the increasing number of physicians and the other allied health personnel.

The American College of Physicians supports the provisions of Senate bill 597 and commends Senator Lister Hill for sponsorship of the legislation.

Thank you very much.

The CHAIRMAN. Doctor, I was interested in what you had to say about your regional meetings. You feel that these regional libraries would be quite an asset, do you not?

Dr. ROSENOW. Yes, sir. Almost without exception it is a very interesting thing, Senator Hill, to look through our directory and see how many people are listed as having some kind of a teaching connection with a medical school in any town where there is a medical school, and also, we know that most of our members are active in the training of interns and residents and whenever they have to prepare a paper or anything for one of these meetings, they have to find things in the library that are not only useful for giving a paper, but that are also useful in their daily practice of medicine.

The CHAIRMAN. You feel, then, that this bill will definitely be a step forward?

Dr. ROSENOW. Yes, sir.

The CHAIRMAN. Doctor, what are the criteria for membership in the College of Physicians?

Dr. ROSENOW. A man must be a licensed physician, he must have spent a formal period of time getting training in internal medicine or one of these allied fields. He may become an associate member of a medical college—about 5 years out of medical school he is eligible to belong. Then he advances to fellowship or full membership upon passing his American Board of Internal Medicine examination, and doing other things. For example, he is required to either publish some papers or write up some case reports or thesis.

One of the interesting things is, it is required, if he writes up five case reports as a requirement, that he must attach to it a suitable bibliography and a discussion of the literature which pertains to these five cases.

He may not apply to become member of our college. He must be proposed by someone and seconded and endorsed by a Governor in each State and he is supported by the board of regents.

The CHAIRMAN. He must be nominated?

Dr. ROSENOW. We do not make it too impossible. If he writes to me and asks how to join, I send a proposal for him to give to somebody and ask to be nominated.

The CHAIRMAN. That is the democratic way to do it, is it not?

Dr. ROSENOW. That is what we think.

The CHAIRMAN. You have brought us another good statement, Doctor, and I want you to know we very much appreciate it. We are having some mighty good testimony for this bill. We certainly appreciate your contribution.

I may say I have a telegram here from Chicago which I shall read:

I should like to join my colleagues here and in other medical centers throughout the country in urging the passage of the Medical Library Assistance Act. The need for improved communication in the biomedical sciences is urgent and the enactment of this bill should result in improved medical care for the Nation.

H. STANLEY BENNETT, M.D.,

Dean, Division of Biological Sciences, University of Chicago.

Dr. Carleton B. Chapman, president, American Heart Association. Doctor, we welcome you back. You have been with us before and you are always most helpful.

STATEMENT OF CARLETON B. CHAPMAN, M.D., PRESIDENT, AMERICAN HEART ASSOCIATION; PROFESSOR OF INTERNAL MEDICINE, UNIVERSITY OF TEXAS, SOUTHWESTERN MEDICAL SCHOOL; ACCOMPANIED BY DR. GEORGE E. WAKERLIN, MEDICAL DIRECTOR, AMERICAN HEART ASSOCIATION

Dr. CHAPMAN. Thank you, sir.

I have brought with me also Dr. Wakerlin, who has been before you also, sir.

The CHAIRMAN. Dr. Wakerlin, we are delighted to have you with us again.

Proceed, sir.

Dr. CHAPMAN. I am Carleton B. Chapman, professor of medicine of the University of Texas, Southwestern Medical School, and currently president of the American Heart Association. Our board of directors has instructed me to testify in support of the proposed Medical Library Assistance Act of 1965—S. 597—very enthusiastically and with no qualifications or reservations. The board did, however, place certain emphases which I shall try to convey.

We are honored and pleased to have the opportunity to offer support for this very fine proposal. As a matter of fact, our first reaction to it was to wonder why it has been so long in coming. We have circulated the bill—and our reaction to it—among our 55 affiliate and 236 chapter heart associations. We have the assurance that the proposal has been brought to the attention of a large proportion of our 70,000 members (of whom half are physicians). We find no one who is opposed; quite on the contrary, support for it throughout our organization has been strong and outspoken.

The CHAIRMAN. Doctor, may I interrupt you there?

Dr. CHAPMAN. Yes, sir.

The CHAIRMAN. You have just made a statement that has been in my mind ever since these hearings started. That is, why we have not done something about these libraries before, why we waited so long.

Dr. CHAPMAN. I do not know, sir; we have a point or two to make about that later in our testimony.

The CHAIRMAN. I note we have a friend here with us, Dr. Warren. He has been a great advocate, a great champion.

Go ahead, sir.

Dr. CHAPMAN. The American Heart Association is primarily concerned with the control of diseases of the heart and blood vessels through research, education, and community program. Since 1948 the association has emphasized basic research in the belief that the most direct route to the attainment of its goals runs via the discovery of fundamental causative factors. This, in turn, involves laboratory research, investigation at the bedside, and field studies. We have supported and implemented work of this sort to the full extent of our resources, always placing the main emphasis on the support of people rather than on glittering glassware, laboratory chrome plate,

and electronic machinery. But, in the past few years, there has been growing up among us a considerable uneasiness that something was missing from our general approach to our goal. We began some time ago to recognize the fact that many of our applicants, often brilliant and capable people, were frequently not sufficiently aware of the background against which they were working. It was not—and is not—unusual for us to receive requests to support work that has already been done in other regions and in other countries. And while we see some merit in duplicating work for the purposes of checking and cross-checking, we see nothing but disadvantage in encouraging an investigator—young or old—to set out on a piece of research without first becoming something of an authority on what has gone before. We have seen investigators follow lines that have long since been disproved; we have seen them struggle along, using inadequate methods, despite the fact that a few hours in a good library would have placed much more powerful tools at their disposal; we have seen men work for months designing and perfect apparatus that was already in highly successful use in other laboratories. And we have sat in scientific audiences listening to brilliant young investigators proudly laying out the results of their studies, only to have someone rise, after the initial applause has died down, and say: "We entirely agree with these results; in fact, we did the same work and came to the same conclusions 10 years ago." There then follows the citing of a published reference to substantiate the claim and the young investigator retires, not in triumph but in hideous embarrassment.

But it is not a young man's discomfort that should concern us at such times. Unfortunately, he receives what he deserves. It is the harsh and troublesome fact that duplication of research in ignorance and without conscious plan is wasteful and expensive. It is expensive not only in dollars, but also in terms of scientific progress and intellectual effort.

We have no figures—no totals in dollars—to substantiate this burden. Records of this sort of investigative mishap are not usually kept; indeed, the people involved are usually ashamed of the fact and have no wish to advertise it. But the intangible cost to our Nation's research effort and progress must be staggering.

Equally intangible, but scarcely less important, is the handicap imposed on imaginative planning and synthesis of research results by incomplete knowledge of the scientific record. These are the processes by means of which the thinking and the discoveries of others are moulded and composed to yield new in sights and new direction of attack. And it is always, partly or entirely, through the medium of the written record that men's minds come into effective contact and begin to move off on independent new scientific errands. Many of us in the American Heart Association have begun to realize that we have, in the past, given insufficient weight to the necessity of studying the scientific record in depth as an indispensable forerunner to laboratory, bedside, or field studies. We have begun to appreciate the actual damage done when a young and inexperienced investigator is allowed, and even urged, to rush blindly into the laboratory without first having carefully and thoughtfully studied the relevant literature. We wish to stress our profound conviction that sound scholarship is nei-

ther a luxury nor evidence of weakness. It is rather an utter necessity and the hallmark of the creative, successful researcher.

We immediately realized, when we began to study the proposed Assistance to Medical Libraries bill (S. 597) that implementation of it would go a long way to correct the dangerous imbalance that has developed in biomedical research; an imbalance created by a disproportionate emphasis on the test-tube method of answering questions; a distortion that has the effect of banishing forever any printed contribution that is more than a few months old. The proposed bill will also have the effect of converting many of our biomedical libraries from mere warehouses for books to active information centers; receiving, processing, and above all distributing knowledge in the biomedical field to those who need and use it. But we also realize that no matter how freely scientific literature is made available, the effort will be useless unless our researchers are willing to sit down and digest it. Such a willingness is hardly likely to be directly created by passing a law; but it will begin to develop when an appropriate climate is created. Much of this is the responsibility of our universities and directors of research but the proposed bill, if enacted, will be very influential in this direction. Such a move will provide eloquent evidence that our national leaders understand and accept the vital necessity to read and digest other men's views and results, as well as to labor in the laboratory with vigor and with wisdom.

So much, then, for the intangibles. We believe they are of paramount importance and resolutely resist the usual impression that because they are intangible they are also nebulous and unimportant.

I turn now to the first provision of the proposed bill which provides funds for constructing new facilities and renovating old ones. The abysmal physical plight of the Nation's medical libraries is such common knowledge that it hardly needs further elaboration. But it should be noted that the recent construction of a few very splendid medical libraries is only a small beginning. Our contact with medical schools and their libraries is a close and continuing one; and we have noted with increasing dismay and bewilderment the general neglect of such libraries by the medical schools themselves. They have used funds (their own and Federal funds) for other types of construction imaginatively and aggressively, but the gross inadequacy of library buildings and facilities has usually gone unrelieved as if it were a matter of lowest priority; an item which can safely be ignored indefinitely. Even where we have found efforts to relieve the inadequacies underway, we have often been amazed at the inadequacy of the efforts themselves; at the incredible lack of comprehension of the basic relation of medical libraries to medical research and education, especially at the student level. Documentation of this long neglected need is readily available and undoubtedly has been or will be presented to this subcommittee. But the facts that over half our medical school library buildings are more than 30 years old and that over half of them are filled far beyond their nominal capacities are certainly worth noting. It is also of interest that medical schools have for years been devoting about 1.5 percent of their incomes to their medical libraries and that the figure has almost, if not quite, kept pace with increasing income in recent years. But, in our minds, the figure has been much too low all along, and many of the deficien-

cies in our medical educational system can logically be attributed in some measure to this fact. I believe I can say with almost universal agreement, in sum, that medical school libraries are undoubtedly the most neglected of all medical school facilities. This generalization, incidentally, includes their collections and operating budgets as well as their physical plants.

One should certainly note, in passing, that the plight of many medical libraries that are not parts of medical schools is likewise dismal. The American Heart Association depends in some measure on several such libraries and feels strongly that they should share in the use of Federal aid for upgrading facilities and services and for protection of their invaluable collections. We believe, in fact, that a good case can be made for increasing the amount of money to be made available for construction in the first 2 years. And we suggest that consideration be given to a flexible matching policy so that the Federal contribution might vary from 50 to 90 percent of the cost of construction, depending on circumstances. This is in line with our continuing concern that under a rigid one-to-one matching policy, the affluent institutions may be able to participate quite easily; but those with inadequate funds of their own, when the need for upgrading of facilities is often quite urgent, may be unable to participate at all.

We share in the strong general impression that adequately trained library personnel is grossly inadequate to meet the national need. We are especially impressed with the need for library personnel who are also conversant with medical subject matter and concepts. We support the request for training funds as stated and, in addition, hope that some consideration can be given to methods of inducing graduate physicians to consider becoming professional medical librarians. Some such move seems to us to be very much indicated and would, we believe, be an important step toward bringing physicians in both practice and research into more effective contact with the biomedical literature.

The proposal to establish special fellowships for creative literary work in the biomedical and social sciences is worthy in itself and should be supported, in our opinion, provided such fellowships cannot be more logically included in existing programs. They would not, however, meet the specific need for a mechanism to bring trained physicians into medical library work. We find the fellowship proposal of interest primarily in that it may serve as one means of attacking the growing need for better communication between the biomedical professions and the lay public. Such fellowships could, we believe, be made to provide suitable physicians with the necessary time and professional advice to enable them to turn out authoritative reports primarily designed for lay consumption. It might also make it possible for certain physicians to contribute communications in depth in fields, such as medical history, that tend to narrow the gap between medicine and the humanities.

Next to funds for construction, we regard the provision of the bill for improving and expanding basic resources to be the most fundamental. It would provide in some instances for much needed expansion of holdings, especially of periodicals. Perhaps more important, it would give small libraries the opportunity of building up microfilm or microcard collections covering items that are unpro-

curable in the original. Runs of many important biomedical journals, for example, can often be acquired in this form at reasonable cost but are prohibitively expensive (or unprocurable) in the original. Such funds would also make it possible for libraries to expand their copying facilities so that most loans can be issued in copy instead of in the original. This system, now thoroughly tested in several centers, not only spares wear and tear on the original but provides the reader with a permanent copy for his own use. We also trust that funds under this provision could be used, when indicated, to bring salary scales of library workers to a reasonable level. In many instances they desert the library as soon as a better-paid opening is available. We believe the descending scale of awards under this provision (\$200,000 or 60 percent of annual operating expenses in the first year; 50 percent in the second; 40 percent in the third, and so on) to be wise and hope that it may serve to induce parent institutions gradually to increase the amounts allocated to their libraries.

The proposal to support research and development (sec. 396) in medical library science is especially important in view of rapid progress in storage and retrieval techniques, methods made mandatory by the explosive increase in publication of biomedical material. Also to be considered are improved methods of copying and transmission and other items. The American Heart Association regards the proposal (sec. 396) as a reasonable component of the larger plan to improve the Nation's medical library facilities.

The American Heart Association strongly approves the proposal of financial support for appropriate biomedical scientific publications (sec. 399) of a nonprofit nature. Certain needed scientific journals, particularly of a technical nature with relatively limited, but crucial, readership, not infrequently require financial assistance in the beginning years and in some instances, in subsequent years as well. Likewise, other significant scientific publications may never appear without financial subsidy. A recent example in the cardiovascular field is the *Journal of Lipid Research* (for biochemists and other investigators in atherosclerosis and related research) which was established with wisely expended Federal funds. Likewise, the proceedings of the 1964 Second National Conference on Cardiovascular Diseases and the summary of the conference are being published through joint support of the National Heart Institute, the heart disease control program, and the American Heart Association.

Since certain highly meritorious periodical publications may not achieve financial stability during the first 3 years, our association recommends that the restriction of grant support to 3 years be liberalized, certainly to 5, and possibly to 10 years.

The CHAIRMAN. You mean they might not achieve financial stability during the first 3 years?

Dr. CHAPMAN. Yes, sir, we feel they need some more stability in point of time and planning and so on.

Our last point, sir, relates to the regional medical library provision (sec. 398). We fully support the provision but urge that careful consideration be given, in its implementation, to existing medical library developments of a regional nature.

We note, for example, that the Medical Library Extension Service of the University of Wisconsin has been in successful operation since 1926. Similar services are provided by the University of Nebraska in its State. Most significant, however, is the fact that in both instances the service is not actually promoted or advertised owing to the fact that each is already operating to capacity (but on a very small scale). Similarly, the farsighted efforts of the Medical Library Center of New York should be studied and facilitated in implementing this provision of the bill.

Special consideration should, we believe, be given to the library needs of the practicing physician. The Wisconsin and Nebraska operations are primarily devoted to meeting such needs. In some States, including Texas, State medical societies maintain special collections and facilities to serve the needs of practicing physicians which are not incidentally, always similar to those of the medical student or research worker. We believe that the experience of such units should be carefully studied and that any regional medical library plan should help them to expand and upgrade their operation. The services they render are indispensable and, in most instances, overtaxed. Whether or not such units join a regional library plan, or cooperate as an independent unit, should be optional.

In the last analysis, regional organization of medical library facilities is the only solution to the problems created by small collections, inadequate operating funds, and the costliness of modern bibliographic and copying machinery. The American Heart Association believes that the provision relating to regional medical libraries will greatly facilitate existing efforts at regionalization and considers it a wise and useful component of the bill.

In conclusion, the American Heart Association puts itself solidly on record as strongly favoring the Medical Library Assistance proposal (S. 597) virtually in its entirety. Even with careful consideration, we can find no serious fault with it. More positively, we believe it will make a contribution to the health of the Nation that is out of all proportion to the amount of money requested. Funds for construction and renovation, on a matching basis which should be negotiable within wide limits, are very urgent. So are funds for expansion of collections and services. Training funds are scarcely less important and we urge that some means of making the career of medical librarians attractive to physicians be earnestly sought. The use of funds for research in library and bibliographic techniques seems eminently sensible to us and we hope it will receive favorable consideration. We are especially impressed with the need for Federal funds in support of special types of medical publications. It is paradoxical that there is a sizable number of biomedical publications which, although of little commercial promise, are inordinately valuable scientifically. Finally we support the regionalization of medical library facilities as a logical and highly useful provision. And we again urge that in planning regional organizations, previously established units be considered and assisted; and that the library needs of practicing doctors, as well as other categories of physicians, be taken into account.

Finally, the American Heart Association finds that the tangible reasons for supporting the proposal (S. 597) are quite compelling but wishes, nevertheless, to place great emphasis on the intangible. We

believe that progress in biomedical research will be more effectively served by renewed emphasis on sound scholarship than by any other single action now open to us. The medical libraries assistance proposal (S. 597), if implemented, will be a giant stride in this direction.

The CHAIRMAN. Doctor, you speak about the library needs of practicing doctors. Just as you have emphasized, it seems to me this is important, that doctors may have the benefit of these libraries. We should do all we can to encourage them to make the best possible use of these libraries and get the benefits therefrom. Is that not true?

Dr. CHAPMAN. We agree entirely, sir, and we find that if information is made available to them, they will usually call for it. This is certainly true in our own experience in distributing American Heart Association publications among practicing physicians.

The CHAIRMAN. I read an article in a medical magazine not long ago that a doctor graduating in 1920, if he did not pursue new knowledge very much, he would still be all right by 1940. But if he graduated in 1940, if he did not pursue his education, so to speak, seeking and gaining new knowledge, he would be out of date by 1950. If that be true between 1940 and 1950, what in the world would it be today between 1950 and 1965? There has been so much new knowledge acquired, is that not true?

Dr. CHAPMAN. Yes, sir, the doctor would be in a very difficult position without access to updated information at all times.

The CHAIRMAN. Doctor, you brought us another fine statement. You brought us a fine statement, you will remember, on the complexes, carrying out the De Bakey commission's report. Do you not think these complement each other?

Dr. CHAPMAN. Yes, sir; we feel it is necessary in any kind of medical advance to have readily available up-to-date information and it ought to be available on short notice. We believe this bill will accomplish this very important purpose.

The CHAIRMAN. In other words, if we increase library resources, we would contribute to the effectiveness of these regional complexes, wouldn't we?

Dr. CHAPMAN. Yes, sir; I think it will contribute to medical effectiveness all across the board.

The CHAIRMAN. Dr. Wakerlin, we shall be glad to have you say anything you wish to, sir.

Mr. WAKERLIN. Mr. Chairman, I might make a few remarks, very, very briefly, by way of reiterating Dr. Chapman's comments.

I might say first of all that before becoming the director of the American Heart Association several years ago, I was a medical faculty member and department head for some 30 years. I have been a user of medical libraries from the time I was a medical student over 45 years ago.

The CHAIRMAN. Where did you graduate from?

Dr. WAKERLIN. Rush Medical College, the University of Chicago.

Certainly there is need for expansion and for renovation of the physical facilities of many libraries. I have visited many of them. Some of them are really far behind in terms of their physical facilities. We need more training for librarians, more training facilities and opportunities available. As Dr. Chapman said, we certainly need to upgrade the status of medical librarians. One way to do this, in

my judgment, would be to increase their salaries. Not infrequently, medical librarians are salaried at levels less than a good secretary or a good stenographer in certain parts of the country.

The CHAIRMAN. Would they be that low?

Dr. WAKERLIN. I think so, in certain areas, sir. There are salaries of \$4,800, \$5,000, \$5,200 a year for some of our medical librarians.

I saw a figure recently—I don't know how accurate it is and I hope it is untrue—that the top medical librarian salary in the country, and this was a few years ago, was \$14,500. If we want to attract physicians into medical librarian opportunities, we are going to have to pay better salaries than that.

We certainly could use these special fellowships that are indicated in S. 597, and surely, there is need for improving and expanding the basic resources and operational facilities of libraries. There is surely a great need for more research in library methodology and this bill would provide for support of such research. And Dr. Chapman referred, of course, to the importance of subsidizing certain scientific publications which are not commercially profitable but, which are very important from the standpoint of advancing medicine and science.

Lastly, I should say again, as he did, that regionalization of library facilities and opportunities is a very important provision of this bill and would have an effect, certainly, in improving the library facilities of our community hospitals in the smaller towns and cities over the country.

In other words, if this bill were to pass, and I personally, and the American Heart Association as an organization, very much hope that it will, this bill indirectly will improve medical research, it will improve professional education and thereby patient care, health education of the public, and also community health programing. I think the need of the libraries of medicine is great. The benefits from this bill, if it is enacted into law, will be very important to our people. Federal leadership is very much necessary here, Federal subsidization is very much necessary, and the American Heart Association, sir, is heartily in support of S. 597 and the companion bill in the House.

The CHAIRMAN. The truth is, in a way, this is a necessary complement to what the Federal Government has done in medical research, is that not true? Medical research is wonderful and we have done a lot with it, but it does not do any good to find the knowledge unless you get it in the hands of those who need it, is that right?

Dr. WAKERLIN. This is indeed correct, sir. I saw a figure recently that the National Institutes of Health, which of course support research in large amounts, approximately \$1 billion a year, are in the position at the present time to support libraries to the extent of about \$1 million a year, or about one-tenth of one percent, which is therefore definitely smaller than the figure of 1.5 percent which Dr. Chapman quoted for medical schools.

I think one measure of a university is how it treats its libraries. On that basis, there are some universities that do not come out too well, Mr. Chairman.

The CHAIRMAN. Anything you would like to add, Doctor?

Dr. CHAPMAN. No, sir; that is fine.

The CHAIRMAN. You brought us some fine testimony. We deeply appreciate it and certainly want to thank you both. Thank you.

Now, Dr. William A. Sodeman, dean of the Jefferson Medical College and member of the American Medical Association Council on Medical Education.

STATEMENT OF DR. WILLIAM A. SODEMAN, DEAN OF THE JEFFERSON MEDICAL COLLEGE, AND MEMBER OF THE AMERICAN MEDICAL ASSOCIATION COUNCIL ON MEDICAL EDUCATION, ACCOMPANIED BY DR. C. H. WILLIAM RUHE, ASSOCIATE SECRETARY OF THE AMA COUNCIL ON MEDICAL EDUCATION; AND PAUL R. M. DONELAN, ATTORNEY ON STAFF OF THE AMA LEGISLATIVE DEPARTMENT

Dr. SODEMAN. Thank you, Mr. Chairman.

As you have mentioned, I am Dr. William A. Sodeman, a physician residing in Philadelphia, Pa. I am dean of the Jefferson Medical College of Philadelphia and serve as a member of the American Medical Association Council on Medical Education. With me today are Dr. C. H. William Ruhe, associate secretary of the AMA Council on Medical Education, and Mr. Paul R. M. Donelan, an attorney on the staff of the AMA legislative department.

The CHAIRMAN. May I say we are happy to have Dr. Ruhe and Mr. Donelan with us, too?

Dr. SODEMAN. Thank you very much.

The American Medical Association has always recognized the importance of medical libraries at all levels of education for health personnel. Evidence of this is contained in statements of the "essentials" of various educational programs accredited by the AMA Council on Medical Education. For example, the following paragraph is contained in "Functions and Structure of a Modern Medical School," a statement developed by the American Medical Association and the Association of American Medical Colleges as a general guide in the medical school accreditation program:

A well-maintained and cataloged medical library that can be used conveniently and effectively by both students and faculty is essential to a modern medical school. A trained librarian with experience in medical library work should be employed to supervise the development and operation of the library with the advice and assistance of an active representative committee of the faculty. The library should receive regularly the leading medical periodicals, the current numbers of which should be readily accessible. Adequate arrangements should be made by the librarian and the faculty to instruct all students in the use of the library at the beginning of their medical studies.

Similar statements may be found in the "Essentials of Approved Internships," "Essentials of Approved Residencies," "Essentials of an Acceptable School of Medical Technology," "Essentials of an Accredited School of X-Ray Technology," "Essentials of an Acceptable School of Occupational Therapy," "Essentials of an Acceptable School of Cytotechnology," "Essentials of an Acceptable School of Physical Therapy," "Essentials of an Acceptable School for Medical Record Librarians," and "Essentials of an Acceptable School for Inhalation Therapy Technicians."

The medical library is likewise recognized as playing an important role in the continuing education of the practicing physician. An area, parenthetically, which you, Senator, have just discussed. The AMA's "Guide Regarding Objectives and Basic Principles of Continuing Medical Education Programs" cites the medical library as one of the important facilities which should be available to the physician-student.

The current bill, S. 597, is based on the premises that the massive growth of knowledge in the health sciences in the past 20 years has not been matched by a growth of library facilities and techniques, and that much of the value of the knowledge and information may be lost unless proper measures are taken to develop the appropriate facilities and techniques. The American Medical Association is in agreement with these premises and believes that action should be taken to provide assistance in the construction of new facilities, the expansion and rehabilitation of existing facilities, the training of professional personnel and the development of new tools and methods for dissemination of medical knowledge and information.

Evidence of the need for assistance is available from information gathered through the annual report of the AMA Council on Medical Education, published in the November 16, 1964, issue of JAMA and from a series of studies on the subject published in recent issues of the Journal of Medical Education.

A comparison of the 87 existing medical school libraries with minimum standards recommended by a joint USPHS-AMA-AAMC committee (table I) showed that the average existing library was well below recommendations in space, volumes, and serial titles during the 1963-64 academic year.

(Tables I and II follow:)

TABLE I.—Comparison of existing libraries with recommended standards

	Recom- mended ¹	Existing		Number above recommended
		Average	Median	
Space (sq. ft.).....	29,560	18,000	10,000	15
Volumes.....	100,000	77,000	65,000	14
Serial title received.....	1,600	1,340	1,200	22

¹ From Medical Education Facilities, U.S. Department of Health, Education, and Welfare, Public Health Service, Publication 1180-A-1b, 1964.

Review of the information provided by the 87 medical schools in existence during 1963-64 revealed startling variations in size and holdings among the various school libraries. The number of volumes held ranged from 2,000 to 359,000; the number of serial titles from 275 to 5,057. The range in annual budgets was from \$13,000 to \$382,101, and the number of full-time staff varied from a low of 1 to a high of 55. Details are given in table II.

TABLE II.—Medical school libraries, 1963-64

	Total	Range	Average	Median
Budget.....	\$8,519,412	\$13,000 to \$382,101.....	\$99,000	\$80,000
Volumes.....	6,751,150	\$2,000 to \$359,000.....	77,000	65,000
Acquisitions.....	285,278	\$181 to \$14,612.....	33,000	2,800
Serial titles currently received.....	116,568	\$275 to \$5,057.....	1,340	1,200
Space (square feet).....	1,606,711	\$1,809 to \$83,497.....	18,000	10,000
Seat capacity.....	13,492	\$38 to \$496.....	155	140
Number of full-time staff.....	975	\$1 to \$55.....	11	9

The CHAIRMAN. Quite a variation, Doctor.

Dr. SODEMAN. Yes, it is quite a variation.

It is clear from these figures that one should not make general statements about the condition of all medical school libraries. A few appear to be relatively very well off, while many others fall below the minimum standards recommended by the joint committee.

Recent articles in the *Journal of Medical Education* have shown that expenditures for medical school libraries have not kept pace with the growth in their research expenditures, even though the marked increase in research activity has brought about greatly increased demands upon the library facilities. Similarly, the growth in complexity of activities in medical schools and hospitals has resulted in unusual demand upon the holdings and services of the medical library. Hosts of new professional, scientific, and technical personnel are seeking access to new kinds of scientific and medical information which many medical school libraries are simply not prepared to provide. As a result, there has been some impediment to the flow of productive research and to the availability of research information to professional practitioners.

Detailed information on the current status of private, independent medical libraries, of those in community hospitals, and of those in State and county medical societies and other professional medical societies is not available to us at this time. The AMA is undertaking a study of the status and needs of medical libraries of state and county medical societies; but the results will not be available until later this year.

The American Medical Association strongly supports the intent and purposes of S. 597. We will comment, however, separately on each of the substantive sections of the bill.

SECTION 393—ASSISTANCE FOR THE CONSTRUCTION OF FACILITIES

The American Medical Association supports the concept of the use of Federal funds for the construction of facilities. In implementing these provisions, we recommend that emphasis be given to the requirement that the construction meet demonstrated needs for additional or improved medical library facilities in the community or area. Properly favored, then, would be the provision of facilities in new medical schools and in currently underprivileged institutions; those in the lower category that you remarked about, Senator. In addition, we would hope that care would be exercised in the administration of the program, to prevent an overlap in grants with other Federal construction grant programs.

SECTION 394—GRANTS FOR TRAINING IN MEDICAL LIBRARY SCIENCES

We believe that there is a need for professionally trained personnel in medical library science and in related health science fields, as well as in the field of communication of information. The provision of grants for traineeships and fellowships and for the establishment of new training programs, both for new persons entering the field and to modernize and improve the skills and knowledge of persons already in the field, is most important and the American Medical Association supports this section wholly.

SECTION 395—ASSISTANCE TO SPECIAL SCIENTIFIC PROJECTS, AND
SECTION 396—RESEARCH AND DEVELOPMENT IN MEDICAL LIBRARY SCIENCE
AND RELATED FIELDS

Section 396 provides for grants for projects of research and investigation in the field of medical library science and for "the development of new techniques, systems, and equipment, for processing, storing, and retrieving and distributing information pertaining to sciences related to health."

We believe this section to be of particular importance.

Since emphasis is usually placed on space, budget, and library holdings, the important aspect of utilization is often overlooked. The critical factor in the value of a medical library is, after all, the question of how effectively its stored information is made available to the learner in response to his need. The largest and most magnificent library is of little value until its storehouse of information is actually in use. New methods of meeting the requirements of the learner more quickly and efficiently are badly needed, and we strongly support this section which is intended to develop such new methods.

SECTION 397—GRANTS FOR IMPROVING AND EXPANDING BASIC RESOURCES
OF LIBRARIES

This section would provide the means for libraries to improve their holdings of books, journals, et cetera, and thus strengthen their basic resources and facilities. The provisions permitting acquisition of films, projectors, duplicating devices, and new technologic equipment are particularly valuable since most medical libraries are deficient in these areas. The AMA supports this section of the bill.

SECTION 398—GRANTS FOR ESTABLISHMENT OF REGIONAL MEDICAL
LIBRARIES

The concept of having a strong medical library in each region of the country to serve as a source of support for other libraries in the area appears to be a very reasonable one under present conditions.

The purpose of this section would seem to be best fulfilled by strengthening existing medical libraries in strategic locations to serve as regional libraries. Except in the unusual circumstances where a geographic area is completely lacking in library resources, new and separate regional libraries need not be established.

SECTION 399—FINANCIAL SUPPORT OF BIOMEDICAL PUBLICATIONS

We make no specific comment as to sections 395 and 399. However, the need for these provisions is less apparent to us.

Mr. Chairman and members of the subcommittee, the American Medical Association appreciates this opportunity of presenting its views on this important legislation. We will be pleased to attempt to answer any questions the committee may have.

The CHAIRMAN. Doctor, we very much appreciate your presence and very much appreciate these views from the American Medical Association. I was naturally very much impressed with your statement

showing the great variation in medical schools with respect to the adequacy of their libraries. Does this same variation exist with respect to other aspects of their operations, their budgets for the training and education of physicians?

Dr. SODEMAN. It does exist generally, Senator, in other areas as well. I think it is more striking, perhaps, in the library area, but we have important deficits in many areas aside from the library itself.

The CHAIRMAN. Aside from the libraries.

Doctor Ruhe, anything you would like to add, sir?

Dr. RUHE. Mr. Chairman, you asked one of the previous testimonies, about the expenditures of libraries, and how they might have grown in recent years. I happen to have with me some figures on this which are not our figures alone. Some of these are from an article by Scott Adams of the National Library of Medicine published in the Journal of Medical Education. Some are based on a report by Dr. Deitrick and Dr. Berson in their study of medical schools back in 1950.

In 1951, for 59 schools, a total of \$1,377,000 was spent on medical libraries and school libraries—

The CHAIRMAN. Excuse me 1 minute, Doctor. You speak about spent. Does that mean physical construction, or just operation, or both?

Dr. RUHE. These are total expenditures. I believe that includes—this is not construction.

The CHAIRMAN. It would not be construction. That is what I thought.

Dr. RUHE. No, this is for acquisitions of volumes and serial titles, for salaries of personnel, this kind of thing—the operating expenses. This figure of \$1,377,000 had grown to \$5,030,000 in 1961 for 87 schools. In the academic year 1963–64, the figure for 87 schools was \$8,519,000. So there has been a growth in the expenditures of the libraries, but we believe not nearly enough to meet the needs.

The CHAIRMAN. There has been a definite growth, but you started pretty small, did you not?

Dr. RUHE. That is right.

The CHAIRMAN. Anything else you would like to add?

Dr. RUHE. No, sir, thank you.

The CHAIRMAN. Mr. Donelan?

Mr. DONELAN. No, sir, thank you.

The CHAIRMAN. Senator Yarborough?

Senator YARBOROUGH. I want to commend the distinguished chairman of this Health Subcommittee for this bill, another of the many measures for the improvement of the health of the American people and their care and medical treatment over the years. I want to say I fully support it.

I have not had an opportunity to hear all of these statements. I have just heard Dr. Sodeman's statement for the American Medical Association, glanced through the statement of Dr. Chapman, who is president of the American Heart Association, a constituent of mine from Dallas, Tex. I regret that another committee held me and I have another one I must go to, so I have to leave you now. But this faithful chairman is always here, even when the other members are out.

You gentlemen know what he has done in so many fields—the Hill-Burton Act, Medical Education Act of 1963, all of these many acts.

I think that in all the history of American legislation, National and State, there has never been a man who has even touched Senator Lister Hill's record in the field of remedial, beneficial, progressive medical legislation.

It is a pleasure, Senator Hill, to be on a subcommittee with the greatest leader of this type of history of American legislation. I pledge you my support to get adequate help for American medical libraries.

The CHAIRMAN. Senator, you are most kind. I wish I knew how to thank you.

I will say this, whereas you are busy, with many, many, committees, just as you always are, you are always here when the chips are down. You are always here when the voting comes.

Senator YARBOROUGH. I am here to vote for the Chairman.

The CHAIRMAN. We have never had any health measure before this committee since you have been on this committee, which is some several years now, that you have not always been right here giving it your wholehearted support.

Senator YARBOROUGH. Well, when we have good leadership, Mr. Chairman, we have no problem because of the leadership we have.

Thank you, very much.

The CHAIRMAN. Anything you gentlemen would like to add?

Dr. SODEMAN. Senator, may I add a parenthetical remark?

The CHAIRMAN. Sure.

Dr. SODEMAN. As dean of a medical school, I often look on a school as having three components to it. One, of course, is the instructor or professor, with his laboratories, whether that is a laboratory with test tubes or whether that is the hospital and the laboratory with the patients in bed.

The secondary component is the student, and the third, the library. Now, the instructor and his facilities can take the susceptible student and teach him all that he can, but he cannot do very much without all the accumulated knowledge of all medical science which is available to the student in a library. The student has available past and present knowledge of everything that has happened in medicine. The library provides an instructor who lives in Australia or who lives in Africa or who may live in Vienna to the medical student as well. The library is such a vital and fundamental part of the medical school that you cannot look on it as the right arm of the medical school; it is one of the internal vital organs without which the medical school would die.

The CHAIRMAN. You have to have it, do you not?

Dr. SODEMAN. You absolutely have to have it, sir, and it must be very adequate.

The CHAIRMAN. It is the eternal spring which provides the fresh water all the time, is it not? May we say that about it?

Dr. SODEMAN. That is right, sir.

The CHAIRMAN. Well, you brought us some very fine testimony. As you know, my father was a graduate of Jefferson Medical College.

Dr. SODEMAN. A very distinguished one, sir. We are very happy about it.

The CHAIRMAN. Thank you, sir. We certainly appreciate your appearance here this morning, and deeply appreciate your fine testimony.

Dr. SODEMAN. Thank you, sir.

The CHAIRMAN. Now, the American Dental Association, Dr. Sholom Pearlman. Our old friend, Mr. Christensen, is with you.

We shall be glad to have you proceed in your own way.

STATEMENT OF SHOLOM PEARLMAN, SECRETARY, COUNCIL ON DENTAL RESEARCH OF THE AMERICAN DENTAL ASSOCIATION; MEMBER, NATIONAL RESEARCH COUNCIL; MEMBER, ADVISORY COMMITTEE ON SCIENTIFIC PUBLICATIONS OF THE NATIONAL LIBRARY OF MEDICINE, ACCOMPANIED BY HAL CHRISTENSEN, ASSISTANT SECRETARY OF THE ASSOCIATION

Dr. PEARLMAN. I am Sholom Pearlman, secretary of the Council on Dental Research of the American Dental Association; a member of the National Research Council; a member of the Advisory Committee on Scientific Publications of the National Library of Medicine.

With me to my left is Mr. Hal Christensen the association's, Washington Council.

I am appearing before you in behalf of the American Dental Association and the American Association of Dental Schools, sir. It is my privilege to speak in support of this bill, S. 597, on behalf of both organizations.

In addition to my oral comments, there is a prepared statement which I would like to file with you for the record, to be considered as a joint statement of both organizations.

The CHAIRMAN. We shall be happy to have that statement and have it appear in full in the record immediately following your statement, Doctor.

Dr. PEARLMAN. Thank you, sir.

The overall purpose of this bill is to improve communication. The dental profession has a responsibility for a large segment of the public's health and this bill, if it passes, will certainly assist us in discharging that responsibility to the public.

Communication is the key to progress in the area of dental practice, in research and in education, and interdisciplinary communication is a professional communication—again, research, education, and practice and service. To improve our capability in the dental field and in the dental area of responsibility, this bill would help us meet certain needs in the following categories with respect to space and facilities, with respect to resources, with respect to personnel, services, and research and development. In connection with the need for space and facilities, for example, 21 of the existing 48 dental schools now have separate libraries. Twenty-seven of the dental schools share a library with either a medical school or a medical complex. In addition, there are five new dental schools now in process of development. Recent surveys indicated that the average size of the dental libraries in the 21 schools with separate libraries run something in the neighborhood of 1,430 square feet. It is recommended that at least 9,000 square feet will be required and it is our conviction that if funds were available all of these schools would indeed expand their space to the recommended minimum of 9,000 square feet, because as you can see, these figures indicate that they are now operating at approximately 15 per-

cent of the recommended space. The new schools plan, generally speaking 9,000 or 10,000 feet on the basis of an entering class of 100 students. This represents approximately 5 percent of the total space for the dental educational program in new institutions being planned.

With regard to resources, this bill would certainly help us improve our resources for further library services.

In the area of library collections, for example, the average size of a collection in the 21 schools that have separate libraries runs approximately 13,000 volumes. This is in a range which is rather broad—from a low estimate of about 3,700 all the way up to over 40,000. Several years ago, the American Association of Dental Schools and the American Dental Association, with the Public Health Service, made a study and recommended a minimum of 25,000 volumes for each dental school. I emphasize, this is a minimum. This makes a deficit on the average of 12,000 volumes in the existing dental schools.

The CHAIRMAN. That is your average?

Dr. PEARLMAN. That is the average deficit, sir, based on an average present collection of about 13,000 volumes.

I emphasize again, this is a minimum recommendation of 25,000. One school, Northwestern University Dental School, for example, now has in excess of 42,000 volumes and the librarian there indicates they would certainly wish to expand this even further. The University of Indiana in the last 10 years has tripled its library collection and is still expanding.

Based on the 12,000 average deficit of volumes for the 21 schools and the average cost of about \$13 a volume, we could use over \$3.25 million in these 21 schools alone, just to build the collections up to an adequate size. The dental libraries that are now shared with the medical complex or medical school would need about the same number. So that the total cost probably would be somewhere in the neighborhood of \$6.5 million to build existing school libraries into an adequate status.

In addition, each new dental school which has to start a new library from scratch can expect to spend approximately \$325,000 to acquire the basic 25,000 volumes indicated as a minimum. This would probably cost in the neighborhood of \$1,625,000, so right off the bat, \$8 million would be required if we were able to do it in 1 year to build the dental libraries up to an adequate level across the country.

These figures do not take into account the cost for periodicals and serials, and periodicals in the dental fields as well as other fields are continuing to increase both in number and in usage. Often many duplicates are required. I do not have any figures on the cost, but each library should certainly have a minimum of 300 to 500 different periodicals, including some in the biomedical fields and the scientific areas that are important to research in dentistry.

With regard to the need for personnel which this bill would assist in meeting, we are informed that with all the responsibility for handling all the information that has come out of research in the last decade or so, medical and dental school libraries are dependent on only a few hundred topflight medical and dental librarians. The total involved in medical and dental library work is approximately 3,000. About 150 librarians are lost through attrition each year and the schools of library science are turning out only about 100 per year, of which 60 are already employed, leaving only about 40 for a new

supply. It is recommended that in the dental schools certainly, we need at least two top notch librarians for each library. On this basis, the 21 separate libraries, plus the libraries in the 5 new schools, would use up 31 of the available 40 immediately, if it were possible to employ them.

With regard to services, there is an increasing load on the library and the increasing load, of course, means more demand for services, demand from students, from research scientists, and from practitioners in general. More funds are needed to meet these increasing needs.

Also, all of these services require some research and development for refinement and improvement of the communication methods of which they are a part. In fact, I would like to handle research and development with the service aspect in mind.

In research and development, there is a strong need, for example, for continuing and expanding research in nomenclature, in indexing, in cataloging. We need research and development for better storage and retrieval methods and services. We need research and development for better reproduction of materials and of course distribution services, which need to be improved.

There is a need for more microfilming, for example, which will provide first of all for secondary storage of material, would provide quick access for reproduction, for dissemination of the reproduced material, and secondarily, would provide a means of saving space on volumes that may be discarded or volumes that are received on loan and must be returned.

We need to go ahead with research on the preparation of special bibliographies and packets for continuing education of the dentist, for research people who require them, et cetera.

There is a need to develop regional libraries if it is not feasible to have full-scale independent libraries at each school in a certain area or region. Certainly, regional libraries would serve as a source of support for libraries in any particular region.

In addition, there is a possibility of developing special categorical types of subject libraries, information centers, for example, in speech or in cleft palate, for example, which might be established in an appropriate school where there is a resource pool of topflight scientists familiar with this field, on whom the librarian can draw for support and consultation.

In general, there is a great need for research on communication and information transfer from scientist to scientist, between practitioners, and also for feedback in intercommunication between scientists and practitioners so as to keep this dynamic relationship going for better research, better education, and better service.

Our objective here, as in other programs, is ultimately to benefit the public by providing better service. This can be achieved, Mr. Chairman, only by closing the gap between research and development and the provision of better service by the practitioner.

Mr. Chairman, in conclusion, we are pleased to support this bill. I would like to make one final point, however. It is our understanding that this bill was intended to cover medicine, dentistry, osteopathy, and public health in all sections of the bill. It is believed, however, that with respect to sections of the bill other than section 394, this intent is not entirely clear, and clarifying amendments would be ex-

tremely desirable. In particular, we believe that the term "medical library" and "medical library facilities" could be defined to include dental libraries and the term "physician" should be defined to include dentists.

The reasons for the timeliness and the necessity of this bill, Mr. Chairman, are quite obvious and have been touched on by reports and many of the groups who have testified before you. There has been expansion of research in the last several decades. There is a growth in the number of schools which place more demand on libraries, both in the size and activity of the school. And the dentist himself needs to keep in touch with this information as well as he can in the face of a growing population, which puts more and more demand on his time.

In short, Mr. Chairman, we believe this is desirable legislation and should be enacted.

Before I close, I would like to express, sir, the pleasure I feel at having the privilege of appearing before this committee which has demonstrated in the past such great vision and will have this opportunity again to exercise the vision that is embodied in this bill, S. 597. We are here at your disposal, sir, if there are questions which we may be able to answer.

(The prepared statement of the American Association of Dental Schools follows:)

PREPARED STATEMENT OF THE AMERICAN DENTAL ASSOCIATION AND THE AMERICAN ASSOCIATION OF DENTAL SCHOOLS

INTRODUCTION

The American Association of Dental Schools, which represents the 50 dental schools in the United States, is pleased to have this opportunity to record its enthusiastic and unqualified support for S. 597, a bill to amend the Public Health Service Act to provide for a program of grants to assist in meeting the need for adequate medical library services and facilities. In recording this support, the association makes a basic assumption that the intent of this legislation is to provide, within each of the provisions of the bill, assistance to all biomedical library and communication activities, including those related to dentistry and to the fundamental and applied sciences related thereto.

The chairman of the committee has once again demonstrated an informed interest and sensitivity to a major problem confronting the health professions of the country. As documented so convincingly in volume II of "A National Program to Conquer Heart Disease, Cancer and Stroke," in the special report prepared by the Subcommittee on Facilities of the President's Commission, the development of a large scale, coordinated, national program to improve communication and research in the biological and health sciences has come to be one of the most urgent needs confronting the public and private agencies concerned with our Nation's health. Although there is yet much to be done, the support which the Federal Government has given to the construction of hospital and health research facilities has aided immeasurably in achieving significant progress in the understanding, treatment and cure of disease. More recently, the Health Professions Educational Assistance Act of 1963 has encouraged the expansion of educational facilities for the preparation of professional health personnel. In addition to these programs oriented toward specific problems of health facilities and manpower, the program of the National Institutes of Health has and continues to provide much needed and expanded support for research and research training as evidenced by the more than \$1 billion appropriated for these purposes during the current fiscal year.

As important and beneficial as these federally supported programs have been, however, relatively little has been accomplished in expanding and strengthening the vital lifeline of all of these developments—namely, the expansion and modernization of the systems needed to communicate biomedical literature to

the community of health practitioners and research scientists. With the exception of the modestly supported program of the National Library of Medicine, there has been no concentrated effort to develop a cohesive and coordinated national program of biomedical communication commensurate with the greatly expanded demands which are placed on the health science libraries of today. With rare exception, those publicly or privately supported health centers which have been developed or which are now developing, have not been able to incorporate within their plans the kind of forward-looking communications systems and facilities which will be needed increasingly in the future. In the view of the association adoption of S. 597 would be a major step in the direction of strengthening the communication of scientific knowledge—one of the weakest elements of the Nation's total health effort.

During the past 3 years, the American Association of Dental Schools has devoted extensive efforts to studying the ways and means of developing more effective continuing education programs for dental practitioners. Although the formats and techniques of providing continued professional education are many and varied, the overriding objective of any activity of this kind is to assist the dental practitioner in bringing to his patients the very best oral health care available. Through the cooperative efforts of dental schools, other educational institutions, State and local dental societies and study clubs more than 35 percent of the Nation's active dental practitioners today engage in some form of continuing education each year. This is indeed encouraging but we cannot and must not be satisfied until every practitioner finds it possible to keep abreast of the progress which is being made through dental research and through improved methods of oral health care. This goal, we firmly believe, will be more attainable if financial support such as that proposed in S. 597 is made available for the construction of expanded dental library and other communication facilities, for the training of specialists in the communication sciences, for the support of research and development of new techniques and equipment related to the distribution of new information and for the expansion of published reviews, abstracts, and bibliographies.

Before commenting on some of the specific needs of dental libraries, the Association would like to commend Senator Hill on the broadly based approach which has been proposed for solving the problems of biomedical communication. Although there are specific problems which relate uniquely to medicine, dentistry, public health, and the several biological and physical sciences related to health, it is increasingly apparent that real progress toward realizing total health care for all of our people will be achieved most effectively by an interdisciplinary approach to research, education, and the communication of new knowledge. It should be emphasized, therefore, that although the Association will comment primarily upon those activities which relate to dental education, research, and the communication of dental knowledge, these comments are intended to be within the comprehensive frame of reference proposed by S. 597 supporting the need for a greatly expanded system of communication among all of the sciences related to health.

LIBRARY FACILITY NEEDS OF THE DENTAL SCHOOLS

There are three basic types of libraries which serve dental schools today. One is an integral part of the dental school; the second is either a combined medical-dental library or a health science library; and the third is a part of a main university library. At present, 21 of the 50 dental schools operate separate libraries. Of the remainder, most are conducted as medical-dental or health-science facilities. There are, of course, advantages and disadvantages to each of these administrative arrangements but, irrespective of the organizational pattern, the library is considered as an essential ingredient of any acceptable program of dental education.

According to a recent survey, the present average size of the library in those institutions which conduct a separate facility is 1,430 square feet. This same survey indicated that, were it possible to do so, these institutions would expand their existing facility to at least 9,000 square feet per institution, indicating that the present dental school library is operating at about 15 per cent of the size which is considered desirable.

These estimates are reinforced by recent information submitted by dental schools now being planned in which the average amount of space projected for the library facility is about 9,000 square feet for an entering class size of 100 students. A space allocation of this amount represents between 5 and 6 percent

of the total space planned for the dental educational program in new institutions presently under consideration—a modest allowance indeed when considering the multiple responsibilities of the modern health science library.

With reference to physical facilities, it is apparent that the majority of existing dental schools utilize library facilities which are a part of the total health center. As additional health center complexes are constructed, it seems likely that there will be an increasing trend toward the sharing of library and scientific communication facilities. In addition to the reasons already cited, such sharing will become increasingly important as more complex and sophisticated systems of information accumulation and retrieval are developed. As the committee recognizes, however, the cost of constructing, equipping, and maintaining multipurpose biomedical communication facilities will increase proportionately, thus it is urged that the suggested appropriations in S. 597 be supported at the levels presented.

LIBRARY RESOURCE NEEDS OF DENTAL SCHOOLS

One of the measures of the adequacy of a dental library is the size and quality of its book and periodical collection. The average size of the book collection presently available in the 21 separate dental school libraries is 13,000 volumes. It has been estimated conservatively that the minimum need of a dental school library is at least 25,000 volumes, thus there is an average deficit of 12,000 volumes in each of these dental libraries at the present time. Based on an average acquisition cost of \$13 per volume, it would be necessary for the 21 institutions which have separate dental libraries to invest over \$3¼ million in order to bring their collections up to an acceptable standard.

In addition, each of the new dental schools now under construction or planning can anticipate an expenditure of \$325,000 in order to establish an acceptable library collection, based on the standards cited above. These figures present estimates of expenditures based only on text and reference book acquisition and do not provide for periodical subscriptions, the purchase and maintenance of microfilming equipment, and the use of the many information indexing and retrieval systems which are now available. It is apparent, therefore, that the dental school libraries presently in operation and those which are to be constructed and placed in operation within the next several years have an urgent need for the type of improvement and expansion grants proposed in section 397 of the "Medical Library Assistance Act of 1965."

The association is presently involved in a comprehensive Cost Study of Dental Education which, when completed in November 1965, will provide explicit information on the various cost elements involved in conducting a dental educational program. Although the final figures from the Cost Study are not yet available, preliminary information indicates that dental school libraries are supported at the seriously inadequate level of approximately \$25,000 per year in public institutions and at slightly less than \$19,000 a year in privately supported schools. Cost figures cited previously in this statement with respect to the funds needed to develop an adequate textbook collection indicate an average need of more than \$150,000 in each of the 21 dental schools which maintain separate library facilities. There is no reason to believe that this need is not at least as great in those dental libraries which are a part of the health science centers of university complexes. It is abundantly apparent, therefore, that the library activity is in critical need of financial assistance far above the level which it has thus far been possible for the dental schools to achieve. The American Association of Dental Schools urgently requests the committee to place the highest possible priority on the legislation under consideration and, specifically, to seek the full authorization recommended for the improvement and expansion of basic resources of biomedical libraries.

DEVELOPMENT OF LIBRARY PERSONNEL

As is true in all aspects of dental education and research, the ultimate effectiveness of the activities which are the responsibility of the dental library is determined by the availability of a sufficient number of highly qualified personnel. The science of medical librarianship, including all of the ramifications of scientific communication, is no less exacting and specialized than any other field of endeavor in the health professions. Although the association does not have current statistics on the shortage of qualified medical and dental librarians, it is aware of the information that has been compiled by the National Library of Medicine which indicates that there is a net gain of only 40 trained medical

librarians annually available to institutions engaged in health science education. This production must be expanded many fold if we are to have available the numbers and caliber of individuals already needed in our health educational institutions. Through the attrition of currently trained personnel and with the addition of new institutions the demand for newly trained medical librarians will become even more acute.

RESEARCH AND DEVELOPMENT

One of the important objectives of S. 597 is to make possible the implementation of modern automated systems of storing, processing, and retrieving information from publications related to biomedical sciences. The need for these systems is imperative if the public is to receive optimum benefit from research efforts which are being conducted in this field.

Today, as a result of inadequate storage and retrieval systems, which fail to make use of modern data processing techniques, the conscientious researcher must spend needless hours, days, or even weeks searching for reports of related research. Even then, a report containing valuable information may be unavailable or remain uncataloged and consequently undetected. The phenomenal growth which has taken place during the past decade in biomedical research and the equally astounding progress which has been made in the fields of automatic information processing virtually demand that the prompt and extensive correlation of these concurrent developments be expedited. This is not, in the view of the association, an attainment which can be realized without substantial assistance from the Federal Government. It is, of course, apparent to the Committee that the application of modern information processing techniques in this field holds the potential not only for improving the amount and quality of scientific investigation but can also be expected to accomplish substantial economy in the saving of man-hours and physical space requirements. The American Association of Dental Schools endorses with enthusiasm the contributions which S. 597 would make toward the development of a modern information storage, cataloging and retrieval systems for the literature of the biomedical sciences.

Finally, the association urges the support of a greatly expanded program of research and development in medical library science and related fields. The necessity for continuous study of improved techniques for communication is so obvious as to need no further support. It should be indicated, however, that the essential research and development which is needed in the science of communication in the health fields has not kept pace with the other important phases of health research, thus the modest contribution recommended in S. 597 is particularly and urgently needed.

In conclusion, the American Association of Dental Schools urges the committee to give prompt and full support to this important legislation in the interest of the improved health of the people of the United States and, indeed, of the entire world.

The CHAIRMAN. Doctor, we certainly want to thank you for your testimony. I want to assure you that it is our intention that the doctor of dentistry should have the benefit of this bill as well as the doctor of medicine. We want to make that very definite and very clear.

Doctor, you heard Dr. Sodeman's testimony with reference to the wide range in adequacy of libraries with respect to medical schools. Would you say this wide range pretty much exists with reference to the dental schools, too?

Dr. PEARLMAN. Yes, I would, definitely. It is the same picture, Mr. Chairman, all the way through. There is a wide range of adequacy, a wide range of size, and a wide range of need. I might add a wide range of competency which needs to be improved too.

The CHAIRMAN. Well, now, are new dental schools making adequate provision for library and research space?

Dr. PEARLMAN. Did you say the new schools, sir?

The CHAIRMAN. The new dental schools.

Dr. PEARLMAN. Yes, they definitely are. This is one of the very heartening things which has developed in the past couple of decades.

As I have indicated, there is an allowance in almost all the plans for at least 9,00 feet of library space. I am certain that with the thinking that now permeates the dental education community, research in library science, and the development of communication is also given a rather high rating.

The CHAIRMAN. Mr. Christensen, anything you would like to add, sir?

Mr. CHRISTENSEN. No, thank you, sir.

The CHAIRMAN. Senator Javits, any questions?

Senator JAVITS. No, thank you. It is a very fine statement.

The CHAIRMAN. Doctor, we want to thank you very much for a very fine statement.

Thank you, Mr. Christensen.

Now, Mr. Eric Meyerhoff, director of the Medical Library Center of New York.

STATEMENT OF ERICH MEYERHOFF, DIRECTOR, THE MEDICAL LIBRARY CENTER OF NEW YORK

The CHAIRMAN. We are glad to have you, sir. We are happy to have you proceed in your own way.

Senator JAVITS. Mr. Chairman, Mr. Meyerhoff appears at my request, I am very happy to introduce him to the subcommittee as a distinguished New Yorker in this field. As the Chair knows, he is director of the Medical Library Center of New York, which is a cooperative venture of a number of medical schools and other research institutions. He also is the secretary of the Advisory Committee of Librarians.

Thank you, Mr. Chairman.

Mr. MEYERHOFF. Mr. Chairman, gentlemen of the subcommittee, I am the director of the Medical Library Center of New York and the secretary of its Advisory Committee of Librarians. It is a privilege to appear before this subcommittee to testify in support of S. 597, the Medical Library Assistance Act of 1965.

The Medical Library Center of New York is a cooperative, regional medical library, serving the schools of medicine and related disciplines, the hospitals, and the medical research institutions of the New York metropolitan area. Its sponsoring and participating members are Cornell University Medical College, Columbia University, the Schools of Medicine of New York University, New York Medical College, the Albert Einstein College of Medicine of Yeshiva University, Memorial Sloan-Kettering Cancer Center, the New York Academy of Medicine, the Rockefeller Institute, Mount Sinai Hospital, and the health department of the city of New York.

Senator JAVITS. Mr. Meyerhoff, would you mind yielding to tell us where this is located physically?

Mr. MEYERHOFF. Physically it is located at 5 East 102d Street.

Senator JAVITS. Which is the home of the Academy of Medicine?

Mr. MEYERHOFF. No; the Academy of Medicine is on 103d Street, Senator.

Senator JAVITS. You are a block down?

Mr. MEYERHOFF. Yes.

Senator JAVITS. You have your own building?

Mr. MEYERHOFF. Yes; it is a rather unusual building. We are in a garage, an eight-story garage, a floor of which was converted for library purposes.

Senator JAVITS. Speaking personally, does your own institution need rehousing, et cetera, or is it adequate where you are?

Mr. MEYERHOFF. Well, the fact that we are where we are is partly the result of the financial stringencies under which we have to operate.

Senator JAVITS. Thank you, Mr. Chairman.

The CHAIRMAN. Proceed, sir.

Mr. MEYERHOFF. Since last year the Center operates a central stack and storage facility for journals, books, and government documents relating to health. To improve the accessibility of medical information it provides a daily delivery service for the speedy transmission of materials from one library to another. It has established a central Union Catalog of Medical Periodicals that contains the serial publication and periodical holdings of 70 biomedical science libraries and provides information about the location of any periodical in any of these libraries. To improve the resources at large the Medical Library Center of New York is committed to acquire materials not commonly held by libraries in the area so that their use may be shared. The very existence of the Center is a response to the needs which the bill under consideration is designed to remedy.

The need for the various provisions of S. 597 has been recently demonstrated by the President's Commission on Heart Disease, Cancer, and Stroke in volume II of its report "A National Program To Conquer Heart Disease, Cancer, and Stroke." But the nature of my organization gives me some insight into the need for section 348 "The Establishment of Regional Medical Libraries."

Although medical library resources are inadequate throughout the United States, there is hardly an equality of poverty and some regions fare far better than others. Indeed the existence of an imbalance of resources is implicit in the need for the establishment of regional branches of the National Library of Medicine as provided in the present bill. This imbalance has been of concern since World War II because it affects the preservation of national scientific and cultural resources in the event of widespread destruction. The establishment of strong regional medical libraries will go a long way toward the elimination of these imbalances and provide physicians and research men in any region of the country with equal access to good literature and information resources.

The growth of the biomedical literature has been such that no single library can afford to acquire and house what is published and needed. Libraries have traditionally accommodated each other through a system of interlibrary loans which is presently at the brink of a breakdown. The libraries with more limited resources are becoming insupportable burdens on those more richly endowed. Even the aggregate resources of an area of such exceptional strength as New York City are inadequate to meet the demands of modern research, patient care, and medical education, because the massing of medical personnel and activities in large urban centers results in greater demands for more varied and more uncommon journals, books, and reports that are truly international in character. This material is expensive and the coverage of the medical output long ago ceased to be systematic in the New York area. Similar conditions prevail in other parts of the

country. Regional medical libraries can assume the responsibility of acquiring these materials and making them available to all who need them.

It is in the nature of the use of the literature that even the most heavily used journals and textbooks reach a low level of use 10 years after publication. If we are not to be buried in this accumulation an orderly and systematic control must be established for this less-used material. This is as important as its initial acquisition. Regional medical libraries have the necessary and economical function of eliminating the costly and unnecessary duplication of materials and of providing quick and efficient access to them.

Finally, regional medical libraries will be ideal locations for comprehensive information retrieval systems, especially for the medical literature analysis and retrieval system (medlars) perfected by the National Library of Medicine. Particularly smaller institutions and hospitals which are unable to acquire the expensive equipment necessary to search medlars tapes will not suffer because of their financial limitations and their physicians will benefit.

What is needed are strong regional medical libraries adequately financed to acquire the large number of more uncommon journals and textbooks, to facilitate their use by means of central information retrieval systems, speedy duplication and delivery services, by means of central translation pools and the maintenance of free and equal access to these services. The magnitude of the needs are such that the provisions of this bill will only begin to meet them.

It is for these reasons that we sincerely hope that this Committee will render a favorable report on S. 597, the Medical Library Assistance Act of 1965. Thank you.

The CHAIRMAN. Mr. Meyerhoff, you make an interesting statement here; it is in the nature of the use of the literature that even the most heavily used journals and textbooks reach a low level of use 10 years after publication.

Is that largely due to the advances we are making in new knowledge, discovery of new knowledge?

Mr. MEYERHOFF. Yes; that is primarily so.

The CHAIRMAN. In other words, some of our publications become out of date, is that right?

Mr. MEYERHOFF. I do not know that they become out of date, the use of the journal, I think, is not related to its importance. They may have very important information; the fact that it is not used frequently is because I think people tend to read more what is currently available in current output.

The CHAIRMAN. Rather than going back to the older publications. How old is your setup?

Mr. MEYERHOFF. Just a year.

The CHAIRMAN. Just a year old? That is the reason you had to go in this garage, I guess.

Did not the New York Academy used to be down at 40th Street?

Mr. MEYERHOFF. Yes; they used to.

The CHAIRMAN. When did they move out to 103d Street?

Mr. MEYERHOFF. Around 1927.

The CHAIRMAN. Of course, as we know and as you have made very clear, your library services many medical schools and health agencies

in New York City. Do you serve smaller libraries or health personnel located outside your immediate area?

Mr. MEYERHOFF. Yes; we do.

The CHAIRMAN. How much of that service would you say you are able to give?

Mr. MEYERHOFF. Well, actually, we receive already requests from all over the country for some of the materials that we have.

The CHAIRMAN. Then, of course, you have the Rochester Medical School up in northern New York, do you not?

Mr. MEYERHOFF. Yes.

The CHAIRMAN. You serve it some, too, do you?

Mr. MEYERHOFF. When they request materials from us, yes.

The CHAIRMAN. And you do serve them outside of the Metropolitan New York area?

Mr. MEYERHOFF. We do.

The CHAIRMAN. Not only in New York State, but in other States, is that correct?

Mr. MEYERHOFF. In other States.

The CHAIRMAN. Does this constitute some bit of your service?

Mr. MEYERHOFF. I am sorry.

The CHAIRMAN. Does this constitute what you might call a significant share of your overall service?

Mr. MEYERHOFF. Yes.

The CHAIRMAN. Senator Javits?

UTILIZING EXISTING INSTITUTIONS AS REGIONAL LIBRARIES

Senator JAVITS. I notice that there is some testimony here by two groups, one, the American Heart Association and the other the AMA, recommending the idea of taking an institution like yours and making it a regional medical library as contemplated by this bill. Is that practical?

Mr. MEYERHOFF. Yes, sir; that is practical.

Senator JAVITS. In other words, useful, so that you would wish us to provide in the legislation that not only would we be setting up regional medical libraries but we could also take over a desirable establishment and make of an existing one, which could be privately or cooperatively owned, a regional library. Is that correct?

Mr. MEYERHOFF. Certainly.

Senator JAVITS. Yours would be a suitable object lesson in that regard?

Mr. MEYERHOFF. In New York, we have a rather unusual situation, as we have in some other, larger metropolitan centers. We have six medical schools in the city alone and the seventh has just been chartered.

Senator JAVITS. Which one is that, incidentally?

Mr. MEYERHOFF. Mount Sinai.

Senator JAVITS. Oh, yes, they just got a grant in the name of Mrs. Annenberg.

The CHAIRMAN. You are just getting ready to build that school, are you not?

Mr. MEYERHOFF. Yes.

Senator JAVITS. It is housed within Mount Sinai?

The CHAIRMAN. Yes; it is going to be housed at the hospital, but will be a new medical school, as I understand from what I read about it in the New York Times, is that correct?

Mr. MEYERHOFF. Yes.

And as such, there are a large number of resources, and as I pointed out, even though the resources are large, there is still a great need for additional material. But in our case, a separate agency is highly desirable because we can consolidate, for example, some of these older journals in one place. They do not need to be in all six of these medical school libraries. Since we have a daily delivery service, we can provide materials within 12 to 24 hours, whenever it is called for.

Senator JAVITS. Now, you would, as I understand it, therefore, make or provide very flexible arrangements so that the Surgeon General could conceivably contract with a library like your own to make it into a regional medical library, either entirely or by your adding to services and facilities in such a way as to give it a practical effect of a regional medical library, is that correct?

Mr. MEYERHOFF. That is my understanding of the bill.

SATELLITE LIBRARIES

Senator JAVITS. Also, would you believe that an organization like your own could undertake to have satellites so that, for example, you could not only cover New York City, but because of your management techniques as well as your properties and, because it is such a congested region, you might conceivably have branches which would be your tributaries, but could serve the practical purpose of a regional medical library in other areas which are satellite to New York City?

Mr. MEYERHOFF. This could be done. Actually, our service area includes northern New Jersey, Westchester County, going out to Long Island.

Senator JAVITS. And that could be extended beyond that?

Mr. MEYERHOFF. Yes.

Senator JAVITS. Do you think that would be much more economical than establishing new medical libraries on a regional basis?

Mr. MEYERHOFF. Well, ours is a new medical library. Ours is a separate institution that is supported by the medical schools and medical institutions in the city.

Now, this differs in an area where resources may be very scarce to begin with. You may fix on one library and build this up into a regional resource.

MAINTENANCE EFFORT

Senator JAVITS. Now, do you not think we also have to be careful that we do not substitute the Government for the people who are doing it now? In other words, we want to preserve everything we have, including, for example, the support of an installation like your own, by the medical schools, at the same time that we build upon that rather than just have the U.S. Government take their place? Would you agree with that?

Mr. MEYERHOFF. Senator, the establishment of our center has been a very difficult—has been very difficult financially. It took nearly 5 years to accumulate the basic funds for the acquisition of the building alone from various private foundations in order to get this started.

We have to rely entirely on the contributions of our members and this limits our budget tremendously. As it is, each of the medical schools are funding this by \$10,000 apiece, and they find this a great burden.

As far as the membership of hospitals in our area, the fee is limited to \$2,000 a year. Most hospital find it impossible to put that much money into an additional library facility.

Senator JAVITS. But nonetheless, they are doing it, right?

Mr. MEYERHOFF. Some of them are doing it.

Senator JAVITS. They may find it impossible, but they are doing it.

Mr. MEYERHOFF. Not the hospitals.

Senator JAVITS. Well, those who are supporting you are doing it. They got you to where you are?

Mr. MEYERHOFF. That is true.

PAYMENT OF FEES

Senator JAVITS. It was not the easiest but you got there. We do not want to sacrifice the initiative.

One other question: The medical profession is supposed to be a place where people earn a lot of money. What about the payment of fees for the use of your facility. Is that done?

Mr. MEYERHOFF. Of course.

Senator JAVITS. It is done?

Mr. MEYERHOFF. Yes.

Senator JAVITS. And do you feel that the fee schedule is fair—one apportioned to the fact that doctors have pretty good incomes from their practice and that the patients really pay the bill?

Mr. MEYERHOFF. It is the institutions that pay us, it is not any individual doctor.

Senator JAVITS. Well, would it be feasible to get fees from doctors who use your services?

Mr. MEYERHOFF. I do not believe so.

Senator JAVITS. Why not?

Mr. MEYERHOFF. I think most of the demand for this kind of service is generated through institutions—hospitals, medical schools—in which physicians work. Most of these requests come from—they come through the established libraries. I think this would be extremely difficult to handle, to try to ask from a physician, for example, who is giving his time in a clinic and is pursuing some research, that he should be paying an extra fee because he happens to need a journal or book in order to pursue his research in patient care.

Senator JAVITS. Are we to assume, then, that the practicing physician who earns fees does not do any looking into journals?

Mr. MEYERHOFF. Oh, yes, he does.

Senator JAVITS. Why should he not pay a fee? His patient is paying him.

Well, in any case, this is a creative area for thought, is it not?

Mr. MEYERHOFF. Yes.

MAINTENANCE OF EFFORT

Senator JAVITS. Well, one other question: In order to avoid letting hospitals and medical schools, and I can speak very freely on this because I am a contributor just like my colleagues here, in order to

avoid their getting off the hook if the Federal Government gets into this business, do you not think we have to think about a membership schedule for them in the regional library so that they do not withdraw their contributions from a situation like yours, but continue it in order to use it?

Mr. MEYERHOFF. Well, I am a little puzzled, because why should the library and the services that the library gives be separated from the support that medical schools get from the Federal Government in general? Physicians are not asked to support the medical schools, for example, and the hospitals in which they serve, with specific contributions.

Senator JAVITS. You are asking me that question. I think I can answer it. Even though the Federal Government does help support medical schools, and should, I think there is something to be said for their paying to an effort of this character and then they will be on the ball to see that it is run right and not wasteful and they can do it much better than we.

Well, we shall deal with that, but I just wanted to get your view. Thank you.

The CHAIRMAN. You are saying, where your treasury is, there is your heart also, right?

We would be interested in knowing how much did your physical structure, your building, cost you?

Mr. MEYERHOFF. The physical building? The building was acquired—the building cost \$900,000 and we made a payment on it of \$450,000. There are still two mortgages riding on it.

The CHAIRMAN. You still owe \$450,000 on it?

Mr. MEYERHOFF. Yes, sir.

The CHAIRMAN. You had to make some expenditure, did you not, to accommodate it to your use?

Mr. MEYERHOFF. Yes; to convert the 20,000 square feet for library purposes cost about \$300,000.

The CHAIRMAN. Was that all you had to expend to accommodate it to your use?

Mr. MEYERHOFF. We had some other expenditures. The building was not in a good state. We had to put a new roof on and new boilers and that cost another \$120,000.

The CHAIRMAN. Do you have any other expenses with reference to the physical structure?

Mr. MEYERHOFF. That is about it.

The CHAIRMAN. Senator Pell?

Senator PELL. No.

The CHAIRMAN. Senator Javits?

Senator JAVITS. I have just one other question.

I have been directing my questions more at maintenance. I can appreciate the difference between establishing such a facility where I think Federal help would be most desired, and maintaining it, where I would like to see it as cooperatively maintained by those who use it as possible. I wish to make that very clear.

Would you agree in principle?

Mr. MEYERHOFF. Yes; I do.

The CHAIRMAN. I want to thank you very much, sir. We appreciate your statement very, very much. Thank you, sir.

Dr. Stafford Warren, anything you would like to add?

STATEMENT OF DR. STAFFORD WARREN

Dr. WARREN. Sir, I have a statement in preparation which I would like to put in the record later in the day, if I might.

The CHAIRMAN. We shall be very happy to have that statement appear in full in the record.

(The prepared statement of Dr. Warren follows:)

PREPARED STATEMENT OF DR. STAFFORD L. WARREN

HON. LISTER HILL.

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

I am Stafford L. Warren, M.D., former dean of medicine and vice chancellor of the health sciences emeritus at the University of California at Los Angeles.

I appreciate very much the opportunity and privilege of being invited to present some brief comments to you and your committee this morning. I consider this to be an historic occasion and of great importance to all of us in the biomedical fields and to science generally.

Others have spoken here on the organization and academic aspects of S. 597. It is timely to speak of the users of the scientific literature * * * the scholar and the student who will benefit by S. 597. As a former dean of medicine, the problem of making the medical and scientific literature available to the faculty and students in the biomedical disciplines became more and more difficult as the literature proliferated and as the number of scholars and students steadily grew over the last decade.

As you have heard, every librarian worth his salt wants the world's literature on his shelves. For each, however, there has always been the lesser goal within the practical limits of his budget and space. He has had to put up with such statements as "This is good enough" or "This is all that is possible now." Few medical libraries are considered to be even adequate. Fortunately this situation does not need to remain, for with the passage of this bill, it soon will be possible for any and every scholar and student in any field of biology and medicine in any educational or research or industrial situation to have access to the world's scientific journal literature in citation and facsimile through his own biomedical library * * * not only access but rapid and comprehensive search and a printout of the bibliography which he needs made in one fell swoop of the computer in which the citations are filed.

As a practicing user of card catalogs and indexes over a 45-year period, I can testify to a well-known observation that about half the time over those years spent in searching the literature has been spent in physical exercise in the stacks and in searching indexes and card catalogs. This is work which is done just to find the materials and before any useful reading is accomplished. Medlars can now do this for us and better and more quickly. Like any anxious close friend of the family, I have watched the gradual movement of the National Library of Medicine into the frontier of computer technology. The inception was long ago, the gestation period fraught with difficulty, but at last, in January 1963, the Medlars computer began to compose and print out the Index Medicus and then bibliography on demand. No one could have been more delighted than our staff recently when 39 references on P.K.U. research were delivered promptly by Medlars out of the 140,000 citations then in the file accumulated since January 1963. The remarkable thing was that the newest reference was issued only 6 weeks previously.

I would hope that sufficient budget is always provided in succeeding years for building up the computer file with all of the biomedical literature instead of just the "most important journals" as is presently the case. Comprehensive search is very important to the investigator and there must be, therefore, no gaps in the central file.

To spread this facility nationwide, by means of a network of Medlars, regional units to which access by all of those needing to use it is a relatively inexpensive maneuver. The librarian is at long last in his "hey day" for he (or she) can serve the professional needs of the student and scholar in a professionally satisfying manner, letting the computer do the legwork.

There is still a lot to do in training new librarians, in refining the methods, in constructing and organizing the network, and so on, but the day of achievement is here and now. I, for one, consider it to be one of the scientific breakthroughs of this era since it is a new and fundamental tool in the quick, accurate, and

comprehensive communication of research findings and knowledge generally. It is the beginning of what we all know and expect to be the pattern for all of the literature * * * a pattern which will assist scholarly work in every field, and everywhere.

While this achievement has taken considerable time and many hands in many ventures, both academic and industrial, the leadership and sensitivity and dedication of Senator Lister Hill and his conferees in Congress has been particularly significant, for without their perception and action the National Library of Medicine might have remained just another splendid library. By passage of S. 597 the holdings and services of the National Library of Medicine can be extended to all through the network.

I pay tribute also to the quick response by the many key administrators in the Department of HEW in support of the program every step of the way. From the viewpoint of the scholar and student, the library is the one place where the past and present meet and it is in this setting that "learning and teaching" are also brought together. In medicine particularly the use of books, computers and medical skills contribute to the health of our Nation in a manner which no other discipline can claim. This purpose requires a vigorous library system for achievement. The price is small for the dividends to be derived from this investment.

Without any doubts and with great confidence of their complete support, I urge the passage of S. 597 on behalf of scholars and students in the biomedical disciplines everywhere.

Sincerely yours,

STAFFORD L. WARREN, M.D.,
*Vice Chancellor of the Health Sciences Emeritus,
University of California.*

The CHAIRMAN. Does anybody else have anything he wants to add? We have had some very fine testimony this morning.

Anything you want to add, Senator Pell?

Senator PELL. No; I just apologize for not being here earlier. I would just like to state my strong support of the bill and congratulate the chairman on his progress in this field.

The CHAIRMAN. We realized you had another committee where you wanted to be. We were sorry you were not with us.

At this point I will insert in the record communications and various material.

QUESTIONS FROM THE SUBCOMMITTEE ON HEALTH OF THE SENATE COMMITTEE ON LABOR AND PUBLIC WELFARE, ON JUNE 15, 1965, TO THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, IN RESPECT TO S. 597, THE MEDICAL LIBRARY ASSISTANCE ACT OF 1965

JUNE 17, 1965.

1. How many regional branches of the National Library of Medicine are contemplated?

As the word "branches" is employed in S. 597, there are no definite or immediate plans for such extension units of the National Library of Medicine. It is understood that the provision for such branches (sec. 3. pt. H, of title III of the PHS Act) is included simply to backstop the plan to establish regional libraries across the country in selected geographic areas. The regional libraries, in accordance with the terms of the bill, would be established in cooperation with and through existing medical libraries of excellence. Federal grants-in-aid would be used to support the Federal portion of such operations. Such regional libraries therefore, of course, would not be branches of NLM, any more than any other institution receiving a Federal grant is a unit of the Federal Government. The provision for NLM branches, which as such necessarily would be Federal establishments, would be used only where there were no local and private medical libraries suitable for, or desirous of, being enlarged to serve a regional function.

It is contemplated that 8 or 10 regional libraries would be supported with grants-in-aid, over a 5-year period, in selected geographic areas across the country.

2. What coordination is contemplated between the medical complexes which will be created by S. 596, the heart disease, cancer, and stroke amendments of

1965, and the regional branches of the National Library of Medicine to be created under S. 597?

The regional libraries will be selected only after careful study of existing population groups and service patterns in centers showing concentration of research, education, and health practice information needs. This orientation is entirely compatible with that of the medical complexes which would be created by S. 596.

The regional libraries would thus constitute a specialized information resource to be utilized by and to backstop the medical complexes when they are authorized. Special services would be provided to medical complexes upon request.

As plans are developed for the medical complexes, which would be authorized by S. 596, close coordination will be effected with the developing medical library network, including the regional libraries, which would be authorized by S. 597.

Regional "branches," which would be established only where no local or private medical libraries suitable for, or desirous of, undertaking a regional function exist, would be developed along the same lines.

3. Title II, part A, of S. 600 "The Higher Education Act of 1965," presently pending before the Education Subcommittee, deals with library resources. Maintenance of effort is required. Would not a similar provision be appropriate for section 397 of S. 597?

In S. 600, the wording of title II, part A, calls for support for library resources over a 5-year period.

Section 397 of S. 597 similarly calls for support over a 5-year period.

S. 597 apparently envisions that support for medical library resources, of the type and magnitude discussed in the bill, should not be necessary beyond a 5-year period. The matching formula has been designed with this in mind. The formula calls for a high level of Federal funds (60 percent) for the first year and then decreasing for the subsequent 4 years, the idea being to encourage and enable the private medical libraries to gradually build up their own levels of expenditures for resources.

AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS, INC.,
Washington, D.C., February 2, 1965.

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

DEAR SENATOR HILL: The bill S. 597 to create the "Medical Library Assistance Act of 1965" is indeed a landmark proposal. Its enactment and implementation will go a long way toward repairing and refurbishing a vital link in the communication chain which will facilitate fuller enjoyment by the people of this country of the fruits of the great advances our medical researches have made possible.

Since 1945 public expenditures per year for health and medical services have increased more than fourfold, from \$2.1 to \$9 billion, while during the period from 1957 to 1964 Federal expenditures for medical research have increased from \$229 million to somewhat more than \$1 billion and support from the private sector has grown to an estimated \$540 million per year.

There have been during the same period significant increases in the numbers of physicians, dentists, nurses, and scientists engaged in biomedical research. The corresponding growth in the amount of publication generated through the efforts of all these people has enormously increased the total amount of information which must be conveyed effectively to all components of our health teams if the vital work supported in this way is to be made useful and meaningful to the people. An integral role in this process is played, not only by the libraries of our 87 medical schools but also by our more than 3,000 hospital libraries and the libraries of our other health related institutions (schools of dentistry, pharmacy, nursing, osteopathy, veterinary medicine, etc.).

Your bill, sir, is clearly aimed at the entire complex and has far more than the limited goal of more or bigger libraries merely for their own sake. The Federal expenditures to date for medical libraries have indeed been meager and the fact that these facilities have lagged so far behind our enormously expanded research efforts has emphasized the weakness of the link labeled "library" in the communication chain. The President's Commission on Heart Disease, Cancer, and Stroke has wisely perceived this problem and has made some highly pertinent recommendations in this area. Your bill will go a long way to providing the essential authority for the Federal Government through its already pivotally

located National Library of Medicine to improve the situation over the next 5 years and increase the effectiveness of public enjoyment of the health advances made possible by our impressive research accomplishments.

I could easily cite the wealth of available statistics which further buttress the main thesis of this letter but they are, I am sure, already known to you. I would rather conclude, at this time, by urging your continuing, untiring efforts toward successful passage of this important bill. Please feel free to use this letter in any way which might be of assistance to you, the members of your committee, and your colleagues in the Senate. A substantially identical letter is going forward to Representative Oren Harris to whose House Committee on Interstate and Foreign Commerce a counterpart measure has been referred.

Respectfully yours,

ROBERT A. HARTE.

GEORGETOWN UNIVERSITY,
Washington, D.C., February 24, 1965.

Hon. LISTER HILL,
*U.S. Senate,
Washington, D.C.*

DEAR SENATOR HILL: I want to express my support and the wholehearted support of the faculty and student body of the Georgetown University School of Medicine for the bill S. 597. In the Federal program to upgrade medical education, in which your efforts have been so important, no item is more important than support for the libraries of the medical schools. These libraries are particularly important when they also serve university hospitals, schools of dentistry, and other training areas for the health professions.

I know that you are well aware of the problem created by the increasing volume of important scientific medical literature. The medical center libraries are faced with rapidly developing obsolescence unless facilities can be constructed, people trained and new techniques developed for processing, storing and distributing information in the health sciences.

Here at Georgetown University Medical Center, we are keenly aware of this problem. Indeed, we can provide a graphic demonstration of the urgency for action in the medical library field. The inadequacy of our library facilities threatens to reduce the effectiveness of our educational programs. In consultation with experts, we have now developed plans for a new library to serve the extraordinarily large population of a growing medical center: Medical students, dental students, nursing students, interns, resident physicians, full-time faculty of the three health-related schools of the university, the staffs of our affiliated hospitals, and the community of physicians and dentists.

We are grateful for your efforts in this vital field, and I want to assure you that we stand ready to help you in any way that we can toward the passage of this proposed legislation.

Sincerely,

JOHN C. ROSE, M.D., *Dean.*

U.S. SENATE,
COMMITTEE ON AERONAUTICAL AND SPACE SCIENCES,
February 8, 1965.

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

DEAR MR. CHAIRMAN: I am taking the liberty of enclosing for your information a copy of a letter I have received from Dean Fitz of the School of Medicine of the University of New Mexico. The dean is very much in favor of your proposal, S. 587, to provide a program of grants to assist in meeting the need for adequate medical library facilities and services.

Sincerely yours,

CLINTON P. ANDERSON.

THE UNIVERSITY OF NEW MEXICO,
Albuquerque, N. Mex., February 4, 1965.

Hon. CLINTON P. ANDERSON,
New Senate Building, Washington, D.C.

DEAR SENATOR ANDERSON: Senator Lister Hill has recently introduced a bill, S. 597, to provide a program of grants to assist in meeting the need for adequate medical library facilities and services. I am strongly in favor of this bill. As

a physician interested in medical education, I believe that adequate library resources are of the utmost importance to the effective practice of medicine and to medical education. As dean of a developing medical school, I can state without equivocation that the development of the library is perhaps the most critical single factor in the establishment of a new school.

I hope you will see fit to support this legislation when it reaches the floor of the Senate.

Best personal regards.

Yours sincerely,

REGINALD H. FITZ, M.D., *Dean.*

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., May 28, 1965.

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

DEAR SENATOR HILL: A constituent of mine, Dr. Sidney Curelop, a member of the New Hampshire Heart Association, has written the enclosed report on S. 597.

I would appreciate having this statement made a part of your records and it would be most helpful having your views or those of your staff concerning this report.

Sincerely,

JAMES C. CLEVELAND, M.C.

[The report appears on pp. 97-98.]

U.S. SENATE,
COMMITTEE ON COMMERCE,
June 15, 1965.

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

DEAR MR. CHAIRMAN: Richard R. Fernald, chairman of the board of directors of the New Hampshire Heart Association, wrote me a month or so ago regarding S. 597 and enclosed with his letter a report by the ad hoc committee to study medical library systems legislation.

Dr. Curelop's remarks seem very much to the point, and I believe they may be of interest to your committee in connection with its consideration of the Medical Libraries bill.

I should like to request, too, that they be made a part of the record of hearings.

With every good wish.

Yours sincerely,

NORRIS COTTON,
U.S. Senator.

NEW HAMPSHIRE HEART ASSOCIATION,
April 28, 1965.

HON. NORRIS COTTON,
Senate Office Building, Washington, D.C.

DEAR SENATOR COTTON: Enclosed you will find a report submitted, by request of this association's board of directors, from one of its members, Dr. Sidney Curelop, on Senate bill 597, relative to funds for medical libraries.

The New Hampshire Heart Association's board of directors has urged its parent body, the American Heart Association, to take a strong favorable stand on S. 597. They have requested that I urge the same of you.

At the same time, may I bring to your attention the significant observation made here by Dr. Curelop—that these funds can serve their greatest purpose if they are used also in improving the medical library services of community hospitals, when they can benefit the practicing physician.

I would like to ask that you let the Association know of your position on this legislation.

Sincerely,

RICHARD R. FERNALD,
Chairman, Board of Directors.

REPORT TO THE BOARD OF DIRECTORS OF THE NEW HAMPSHIRE HEART ASSOCIATION
BY THE AD HOC COMMITTEE TO STUDY MEDICAL LIBRARY SYSTEMS LEGISLATION

The bill recently introduced by Senator Hill and Congressman Harris takes cognizance of the fact that growth of biomedical data has not been matched by a growth in facilities and techniques for dissemination of these fruits of research among scientists and practitioners. The purpose of the legislation is to improve the means of such dissemination. We recognize the importance of dissemination of such information among health scientists. However, we feel strongly that relatively less attention has been paid to increasing the flow of information to the practicing physician than to the individual engaged in medical or paramedical investigation. As a heart association in a relatively small and relatively rural State we wish to stress importance of improving the facilities for bringing information to the practicing physician. Improvement in techniques and facilities available in large medical center libraries is valuable and necessary. However, that is not the kind of medical library likely to be used by the great bulk of practicing physicians. They usually turn to their community hospital libraries for reference help. How often they are disappointed in this quest.

The average community hospital library, or, certainly a large number of community hospital libraries, consists of haphazardly selected collections of partially or entirely unbound medical journals and obsolete or antiquated textbooks. Indexes are almost unknown unless the library is large enough to justify subscribing to the Index Medicus. In view of the enormous number of medical journals indexed therein very few community hospital libraries could justify such an expenditure or even the requisite shelf space. It must be emphasized that we are concerned with the 20, 30, or 40 journal collection supplemented by 40 or 50 selected reference works. Collections of journals and books of this magnitude would not be dignified by some medical librarians with the term "library." However, it is important to realize that a properly indexed collection of the size indicated would be far better than what is presently available in many (and I feel safe in saying almost all) community hospital libraries.

We should very strongly alert the American Heart Association to the fallacy of taking the advice of medical librarians at face value. Such individuals, by virtue of their training and experience, are incapable of understanding the true needs of the practicing physician, who snatches 10 or 15 minutes from his crushing daily schedule to seek information about a patient in his practice. The practicing physician wants some accurate information quickly. He does not require or perhaps need the kind of comprehensive bibliography that would be needed to satisfy a librarian or someone writing for publication.

In an article which appeared in "Hospitals" of June 16, 1964, Mr. Scott Adams, the deputy director of the National Library of Medicine, had some interesting comments to make on hospital libraries. He pointed out the Dryer report on postgraduate education of physicians had paid very little attention to the matter of such conventional education media as books, journals, and libraries. In alluding to the size of hospital libraries he said that the joint committee on standards for hospital libraries required 1,000 volumes and a journal collection of at least 25. To him this seemed grossly inadequate and he spoke of a library collection of 5,000 volumes and 100 journals. However, in the paragraph which followed that allusion, he referred to a study of the interlibrary loans at the National Library of Medicine which demonstrated that the heaviest traffic was in three extremely well-known journals: The Journal of the American Medical Association, the British Medical Journal, and The Lancet. These three journals are so widely read that they certainly should be included in any hospital library collection. Yet they are apparently not available in many hospital libraries. Here again, we see evidence that many of the practicing physician's reference needs can be satisfied by the widely read journals which should be commonly available. This again is an indication that a much smaller number of journals than one which would satisfy a professional librarian would probably satisfy the practicing physician.

On page 3 of S. 597, beginning on line 4 and continuing through line 9, we see the justification for the establishment of methods of indexing of small hospital collections which would be essential in the establishment of the kind of improved hospital library facilities we have in mind. The Index Medicus is now made by the MEDLARS computer. As a byproduct of this index it is now possible to make an index of any combination of journals which are contained in the

master index. Such an index would be invaluable to the small hospital library. We strongly urge that the National Library of Medicine be requested to consider making such indexes with funds supplied by S. 597.

A major obstacle to establishment of proper library facilities in community hospitals is the absence of a medical librarian. To the hospital administrators she often represents an unnecessary expenditure, or one which is difficult to justify to the board of trustees.

Certainly a hospital library with a collection of a few hundred volumes and 20 or 30 journals cannot justify the maintenance of a full-time librarian. However, among the hospital volunteer corps there are frequently individuals who would be interested in such work. Under S. 597 the training of such people for part-time work as volunteer librarians could be carried out. Direct subsidy of part-time or full-time librarians would, of course be another possible approach.

On page 3 of S. 597 on line 17 we see justification for support to biomedical, scientific publications.

Lange publications of Los Altos, Calif., has so far published three editions of a little book called "Current Medical References," edited by Dr. Milton J. Chatton and Dr. Paul Sanazaro. This volume is a bibliography of medical articles which satisfy many if not most of the requirements of practicing physicians. S. 597 would justify the Government in supporting the subsidization or encouragement of such a project. It could perhaps be enlarged and perhaps published on a yearly basis. There could also be prepared subdivisions. A division dealing solely with cardiovascular diseases would be of particular interest to the American Heart Association.

On page 11 of the bill, beginning with line 12, we see a section which should be reworded somewhat. As it presently stands, this section would simply permit the Surgeon General of the Public Health Service to establish fellowships to physicians for the kinds of medical and scientific activities which are now adequately subsidized elsewhere. This section should be made to refer specifically to work directly dealing with biochemical communications.

All in all, I think this is a good piece of legislation and one which pays belated attention to an extremely important area of medical activity.

U.S. SENATE,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
June 12, 1965.

HON. LISTER HILL,

Chairman, Subcommittee on Labor and Public Welfare, U.S. Senate, Washington, D.C.

DEAR LISTER: I am writing in support of S. 597, which would authorize funds to improve medical library facilities. I am sorry that I am unable to testify personally at the hearings on June 14 and 15. My own committee responsibilities will take me out of town on field hearings to evaluate progress under the Federal Water Pollution Control Act on the days when S. 597 is under consideration.

I am advised by Dr. Kenneth B. Castleton, dean of the College of Medicine at the University of Utah, that one of the greatest needs at the university medical center is a medical library. At the time the medical center was planned, no plans were made for the library. No funds were available at that time, and it was hoped funds might become available later.

Currently the university medical school uses the main University of Utah library, which is on the lower campus some distance from the medical center. This library is very small and crowded. Although the university hopes to build a new library in the near future, it is not contemplated that the new library will contain a medical library.

It is essential that the college of medicine have a library in or immediately adjacent to the medical center in order to receive accreditation as a medical school, and also accreditation of the new hospital which has been constructed.

Funds are now being sought for a medical library, but because of recent drives for money for both the medical center and for the new hospital, the College of Medicine is finding it difficult to raise the amount needed. The availability of Federal funds on a matching-grant basis would undoubtedly make it much easier for the college to secure the remainder of the necessary money. Passages of this bill is, therefore, most important, and I want to record my strong support.

Before closing, I would like to mention that the University of Utah College of Medicine is the only functioning medical school between Denver and the Pacific coast and between the Canadian and Mexican borders. It is the center of medical training for a number of States, and it has established an enviable record of excellence in all three major phases of medical school activities, namely education, research, and patient care. It makes a great contribution to the health and welfare of the people of the entire area and it is essential that its standards be kept high and that it is assured all of the facilities it needs.

Sincerely,

FRANK E. MOSS,
U.S. Senator.

U.S. SENATE,
COMMITTEE ON LABOR AND PUBLIC WELFARE,
April 23, 1965.

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

DEAR SENATOR HILL: I am forwarding the enclosed letter from Dr. John R. Amberg, chairman of the library committee of the Milwaukee County General Hospital, for your information. I would appreciate the committee's full consideration of Dr. Amberg's comments in its deliberations on S. 597, the Medical Libraries Assistance Act.

As you know, I am a dedicated supporter of sound education legislation. I believe improved library facilities are vital to the development of our medical professions and increased knowledge in such special fields as heart disease, cancer, and stroke. I hope all the members of the committee will recognize the importance of this legislation and will act promptly on S. 597.

Thank you for your efforts in this field.

Sincerely yours,

GAYLORD NELSON,
U.S. Senator.

MILWAUKEE COUNTY GENERAL HOSPITAL,
Milwaukee, Wis., April 9, 1965.

HON. GAYLORD NELSON,
U.S. Senate, Washington, D.C.

DEAR SENATOR NELSON: I am writing to you as chairman of the library committee at Milwaukee County General Hospital which has studied the bill to improve medical libraries and most thoroughly endorses the proposals therein.

In the operation of a library in a hospital such as ours there are no entries on the income side of the ledger only those on the expense side. For this reason it is rather difficult to hope to obtain the funds we need to automate our library and to provide it with the books, journal, and staff that it needs. Within our hospital we have a large nursing school, the students from Marquette University School of Medicine, interns, residents, and other paramedical trainees. The overall influence that a modern library would have on the education of these people is immeasurable.

While I know that you are well aware of the need for this legislation I hope you can assure the other members of your committee that there is a real problem here. The fact that this was so specifically mentioned in the report of the President's Commission on Heart Disease, Cancer, and Stroke is another indication that many people are concerned about this matter.

Sincerely yours,

JOHN R. AMBERG, M.D.,
Chairman, Library Committee.

THE AMERICAN PUBLIC HEALTH ASSOCIATION, INC.,
June 18, 1965.

HON. LISTER HILL,
*Chairman, Senate Committee on Labor and Public Welfare,
New Senate Office Building, Washington, D.C.*

DEAR MR. CHAIRMAN: I am pleased to inform you of the support of the American Public Health Association of the principles and objectives of S. 597, the bill which you have introduced relating to medical libraries. The statement of

declaration of policy in S. 597 wherein the needs of medical libraries are enumerated is fully subscribed to by the APHA. The proposed course of remedial actions appears to us to be both logical and necessary.

We are delighted to note that under the definitions the term "sciences related to health" includes public health and fundamental and applied sciences related thereto. We believe, you will agree, that public health schools and departments should be clearly eligible to participate under all applicable sections of the bill. The language of section 394 is explicit in this respect, but we believe it would be very helpful to clarify the language of the remaining portions of the bill in this respect.

May I reiterate, Senator Hill, our support of S. 597 and urge passage after the minor amendments referred to above.

Sincerely yours,

BERWYN F. MATTISON, M.D.,
Executive Director.

AMERICAN HOSPITAL ASSOCIATION,
June 14, 1965.

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

DEAR SENATOR HILL: In this statement to you we wish to express the views of the American Hospital Association in respect to S. 597, "Medical Library Assistance Act of 1965." The bill amends the Public Health Service Act so as to provide for a program of grants to assist in meeting the need for adequate medical library services and facilities.

The American Hospital Association approves the general purposes of the bill. There exists a vast unmet need for the dissemination of information in the health sciences. The very rapid advancements now being made in health research and in the treatment of illness have outpaced existing means of communication. There is also a failure to support the growth of library facilities and materials commensurate with the development of major health research. Adequate library and communication facilities and services are also necessary in all of the schools and educational programs directed to the training of health personnel.

The Congress has already enacted legislation looking toward a rapid acceleration in the training of physicians, dentists, public health workers, nurses, and others. It is imperative to the success of these efforts that we direct attention now to the sources of fundamental knowledge and toward the dissemination of such knowledge. Your committee is presently considering S. 596, a bill with far reaching implications for the health care of the American people. The kinds of proposals which are embodied in S. 597 are of vital concern to the successful implementation of the "Heart Disease, Cancer, and Stroke Amendments of 1965."

For many years the health field has been aware of the problems developing because of the unmet needs for adequate health science libraries. We believe perhaps the most urgent need is that of training more people in library science. At present libraries are often staffed largely by either untrained or inadequately trained personnel. The overall objectives of the bill will be seriously handicapped without major emphasis on training. We sincerely hope that the Congress will move ahead rapidly in making available the assistance proposed in S. 597. Our general approval of the bill is limited only by what we believe are limitations in the language of the bill.

RECOMMENDATIONS ON SPECIFIC PROVISIONS

We would strongly urge that the title of the act which cites overall intent be broadened beyond its present limited language and that the act may be cited as the "Health Science Library Assistance Act of 1965." The term "medical" is far too limited in light of the essentially broad purposes of the act. We urge that the appropriate language changes be made throughout the bill to accomplish this purpose.

Section 390(b) (3) provides for special fellowships for the creation of written matter. The purpose of the provision is not at all clear. However, written material in any way essential to research is part of research projects. We, therefore, do not support the inclusion of this provision in the bill.

(1) Section 391 should be broadened so as to include the term "hospital administration" following the term "public health" on line 22. There are at the present time 16 university programs providing master's degrees in hospital administration. We believe the bill should provide assistance in its various purposes to such libraries and programs.

Paragraph (3) of this section, line 4, should be amended by deleting the word "medical" and insert the phrase to any "health science" library.

We recommend that section 393, "Assistance for Construction of Facilities"; section 397, "Grants for Improving and Expanding the Basic Resources of Medical Libraries and Related Instrumentalities" should clearly provide for assistance to all teaching hospitals and other hospitals maintaining such essential health science information on behalf of their staffs and students.

In section 399(a) we question both the necessity and desirability of the section. We believe it will tend to promote the unnecessary publication of material. It can further burden libraries with materials in an area which appears to be adequately served. There is the definite likelihood of publishing materials that recognized scientific channels and publications will not carry because they deem it to be inadequate.

Section 3, part (h) of title III of the "Public Health Service Act" which deals with the National Library of Medicine is amended so as to provide regional branches of the National Library.

We would urge that this section not be limited, as it appears to be at present, so to make it essential that such extended facilities be separate and independent facilities. The bill should provide that insofar as possible, such "regional branches" be located in existing hospitals and medical centers which may serve a large geographic area.

We appreciate this opportunity of submitting to you the views of the American Hospital Association on S. 597. We would appreciate your making this statement a part of the record of the hearings on this bill.

Sincerely yours,

KENNETH WILLIAMSON,
Associate Director,
American Hospital Association.

STATEMENT IN SUPPORT OF S. 597, MEDICAL LIBRARIES ASSISTANCE ACT OF 1965,
TO THE SUBCOMMITTEE ON HEALTH OF THE SENATE LABOR AND PUBLIC WELFARE
COMMITTEE, JUNE 15, 1965

I am Dr. Frederic H. Barth. I have long been interested in the field of education as a member of the board of education of the city of Philadelphia and president of the Philadelphia College of Osteopathy.

I am president of the American Association of Osteopathic Colleges, which consists of the five schools of osteopathic medicine and surgery, all of which are nonprofit and accredited by the American Osteopathic Association, on whose behalf I am privileged to express enthusiastic support for all parts of the pending Medical Libraries Assistance Act of 1965, S. 597.

The principal objective of the American Osteopathic Association is the maintenance and improvement of standards of education in osteopathic colleges. The association's standards for accreditation require that the school must maintain a medical library which shall include current texts, reference books, and the periodicals needed in the teaching and research program, and that a qualified librarian shall be employed to supervise and develop the library.

Association standards for approval of teaching hospitals require that the hospital shall provide a professional library which must contain modern texts and current periodicals on anatomy, anesthesiology, bacteriology, chemistry, dermatology, diagnosis, internal medicine, laboratory diagnosis and technique, neurology, obstetrics and gynecology, ophthalmology, orthopedics, otorhinolaryngology, pathology, pediatrics, physics, physiology, practice of osteopathy, proctology, psychiatry, radiology, surgery, syphilology and urology, and additional current texts and other professional periodicals of a general and specialty nature. Nonteaching hospitals accredited by the association are also required to provide and maintain a professional library to meet the professional needs of the institution.

There is a wide variation in the facilities and equipment provided in the schools and hospitals. Little or no facilities are provided by most State osteopathic societies notwithstanding the urgent needs of practitioners for more ready

access to the growing body of new medical information, and the number of States which require annual registration of physicians following refresher courses.

As stated in the special report of the Subcommittee on Facilities contained in volume II of the report of the President's Commission on Heart Disease, Cancer, and Stroke, the disrepair of the medical library system, so essential to the transmission of medical knowledge across time and space, constitutes a major weakness in both Federal and private health and medical programs.

The special report emphasized that the need for space in which to maintain their collections and to carry out necessary day-to-day operations is perhaps one of the most critical needs of the medical libraries, and cited the following table of medical library space requirements:

Medical library space requirements

	Present average size (square feet)	Average additional square footage needed	Estimated cost	
			Average per school	Total cost
Medical schools:				
87 established-----	18, 115	32, 921	\$1, 316, 840	¹ \$106, 664, 040
12 new-----		37, 736	1, 509, 440	18, 113, 280
Dental schools:				
21 separate-----	1, 430	9, 797	391, 880	8, 229, 480
5 new-----		9, 000	360, 000	1, 800, 000
Osteopathic colleges, 5 colleges-----	2, 637	11, 803	472, 120	2, 360, 600
Total-----				137, 167, 400

¹ 6 of the established medical schools state they do not need additional space. Therefore, the estimated total cost is for 81 schools.

The above table reflects the square footage employed, and needed, by the 113 established schools of medicine, dentistry, and osteopathy, and the 12 developing new medical schools and 5 new dental schools. For the purposes of this table, information was sought also from public health schools but was not available.

The medical school library data have been derived in part from a survey conducted early in 1964 by the Association of American Medical Colleges together with estimates by the National Library of Medicine. The Division of Dental Public Health and Resources, BSS, PHS, provided the information on the dental school libraries. Data on the libraries of the osteopathic schools was obtained directly from those libraries or schools.

Estimated costs were obtained by studying space requirements and applying the figure of \$40 per square foot based on data developed by the General Services Administration from its experience in constructing public buildings.

Section 393 of S. 597 authorizes a 5-year program of assistance for the construction of medical library facilities. The amount of any grant would not exceed 75 percent of the necessary construction cost. Priority would be given to applications evidencing the greatest need.

Section 394 authorizes a 5-year program of grants for training in medical library sciences. Grants would be made to individuals to support traineeships and fellowships in the field of medical library science, in related fields pertaining to sciences related to health and in the field of the communication of information. Grants would also be made to individuals who are librarians or specialists in information on sciences relating to health to enable them to attain intensive training and retraining. This should help reduce the deficit of professional librarians and persons adequately trained at the subprofessional level.

Section 395 authorizes a 5-year program of grants for special fellowships to be awarded to physicians and scientists for the compilation of existing, or writing of original, contributions relating to scientific advancements in sciences related to health.

Section 396 authorizes a 5-year program of grants for projects of research and investigations in medical library science and the development of new techniques, systems, and equipment for processing, storing, and retrieving and distributing information on sciences related to health.

Section 397 authorizes a 5-year program of grants for improving and expanding the basic resources of medical libraries. According to the Subcommittee on Facilities above referred to, one of the most significant inadequacies of the Nation's medical libraries "is that they have only about half the books, journals, and other resources they need." Information provided by the osteopathic colleges shows that their holding of volumes ranges from 6,000 to 23,225, and their annual budgets range from \$10,500 to \$23,500. Obviously, none of the colleges has a desirable number of volumes or adequate budget. Section 397 provides funds for acquisition of books, journals, photographs, motion picture and other films, and for cataloging and binding, and for acquisition of duplication devices, and new technological equipment to facilitate the use of the library. As pointed out in the Medical Education Facilities, PHS Publication No. 1180-A-1b, budgeted expenses for books, subscriptions, and other supplies are as high for 64 students per class as for 96. A smaller class and a smaller faculty do not reduce the need for library reference material. However, the increase in class size will call for more services or larger library staff and the library facilities will be more fully utilized.

An estimate of what the program envisaged in this bill can mean as applied to the Philadelphia College of Osteopathy is provided in the following comment by Dean Sherwood Mercer:

(a) A long-term program of construction, beginning with a \$7 million hospital project now under construction, includes a new college building in which will be a greatly enlarged library for a student body to be expanded from about 350 to 575 (based on increasing the first year class from 100 to 150). The new library can be made an even more effective instrument in support of learning than is now possible under present plans, if we could enjoy the additional support as projected in S. 597.

(b) The library system of the college will be built around the main collection at the new City Line Campus where the building cited above will be located. A satellite collection will be housed in the presently used (and to be entirely renovated) college and hospital building at 48th and Spruce Streets; another satellite collection will be located at our 20th and Susquehanna Avenue hospital. As is presently our practice, departmental libraries will be developed in all three locations.

(c) Because the college is located in Philadelphia and in close proximity to some of the world's finest collections in medical libraries, our plans call for a more efficient intercommunication system with area libraries and we hope, through regional library facilities with the entire county. Clearly, the intent of S. 597 seems to support these projections.

(d) We have begun the search for professional leadership for the library complex. Our discussions always included an exploration of our interest in training people for careers in medical libraries. Here again we are fortunate in being close to the Graduate School of Library Science at Drexel Institute of Technology.

(e) We are aware of the role of electronic equipment in the management of libraries more effectively to make them vital teaching centers. Because of costs we can do little other than to plan space into the new library where this equipment could be housed and used. S. 597 would make possible application for support for this and other equipment, personnel and facilities to make our new library a better one than we can now afford to plan.

(f) In our discussions with candidates for the post of librarian we have outlined ideas for the education of faculty and students alike in the communication of ideas, new knowledge and new techniques, so that the whole body of physicians will know how better to be informed and to inform.

We appreciate this opportunity of presenting our views on S. 597, and the hope for early enactment of the legislation.

AMERICAN NURSES' ASSOCIATION, INC.,
New York, N.Y., June 17, 1965.

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

DEAR SENATOR HILL: The American Nurses' Association wishes to record its support of S. 597, the Medical Library Assistance Act of 1965. We believe the provisions in this bill will do much to meet the current and ever-increasing need for trained medical librarians, adequate space, equipment, books, and journals.

The growth in scientific research and writings requires a systematic accumulation of the valuable information and an orderly, speedy method of retrieval if the health of the Nation is to be advanced.

The report of the President's Commission on Heart Disease, Cancer, and Stroke emphasized what was generally known, that medical libraries are inadequate in terms of space, trained staff, and essential volumes and the Commission recommended immediate attention to this by the Congress.

It is our belief that nursing education will benefit greatly by the program proposed in the Medical Library Facilities Act of 1965, especially since a comprehensive index to nursing periodical literature is to be published in cooperation with the National Library of Medicine, using the facilities of MEDLARS. We call your attention to the important part well trained medical librarians will play in the dissemination and intelligent use of this material which will be retrieved from MEDLARS. Therefore, we give strong support to the training-grant program proposed in this legislation.

In order to insure the continued inclusion of nursing school libraries in all provisions of the bill we wish to recommend that section 391(1) of S. 597, be amended to include the word "nursing" after "public health" (line 22, p. 3).

Although we believe it desirable that schools of nursing share library facilities with other disciplines in the health field, it is a fact that two-thirds of the schools maintain independent facilities and desperately need the quality and numbers of volumes increased, as well as adequate physical plants. It is estimated that the number of volumes in libraries of schools of nursing is less than half of what is considered the essential minimum. If nursing is to keep abreast of the advances in science, educational materials must be readily available.

We welcome this opportunity to lend our support to this very significant legislation and urge you to act favorably on our recommended amendment.

Very sincerely,

Mrs. JUDITH G. WHITAKER, R.N.,
Executive Director.

AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY,
Philadelphia, Pa., June 18, 1965.

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

DEAR SENATOR HILL: The executive committee of the American Association of Colleges of Pharmacy is pleased to have this opportunity to submit for the record this statement in support of S. 597, the Medical Library Assistance Act. While this action is taken in the name of the executive committee, I am confident that the administrators of our 73-member colleges would give full endorsement to the legislation if time permitted a solicitation of their views.

The several programs embodied in S. 597 provide a broad-based approach to an often neglected but an extremely important and essential part of the total educational program of the health sciences. For the past several years, Federal legislation has provided much-needed support for the development of new knowledge through support programs for facilities and research. The programs provided for through S. 597 will give impetus to the distribution of this knowledge to the researchers, to the educators, and to the practitioners of the health professions. The ultimate objective of all health research is the improvement of the health of the public, and unless the results of the research are translated into practical procedure for treatment and distributed to the practitioners the objective cannot be achieved.

Federal assistance in the form of health-research facility grants and research grants from the National Institutes of Health has served as a pronounced stimulus to the graduate programs of schools of pharmacy. In fiscal 1964 grants totaling \$820,000 were awarded to 5 schools of pharmacy, and a recent survey, with 59 of our schools reporting, showed that during the decade ending June 1974, funds in excess of \$20 million, based on the total cost of construction, will be required for new research facilities.

During fiscal 1964, Public Health Service-supported research projects in schools of pharmacy totaled 182 with a dollar value of \$2,834,000. Since 1961 the annual growth rate of the amount of support has been 44 percent; during the past 10 years, the dollar value has increased a hundredfold. Inasmuch as about 56 percent of all funds expended for research in fiscal 1964 came from the National

Institutes of Health, the growth rate figure exemplifies the growth of the research programs in schools of pharmacy.

In addition to the greatly increased amount of information coming from our educational institutions, all of us are well aware of the vast amount of information on new drugs coming from the research laboratories of the pharmaceutical houses, all of which is essential to the research programs and to the educational programs of our schools of pharmacy. It is quite safe to state that the availability of funds for the expansion of facilities and of resources in the libraries of our schools has not kept pace with the availability of new knowledge essential for the total educational program for pharmacy students. It can also be said that to ask students to provide for this essential program through increases in student fees would place an impossible burden upon such students, both now and in the future.

It should be pointed out that pharmaceutical education is concerned with the physical sciences and with the biological sciences, from both the basic and applied viewpoints, and thus the library resources which must be available to our undergraduate and graduate programs are quite extensive.

The inadequacy of many of our libraries was emphasized in a recent survey in which information was requested on the availability, on a percentage basis, of 1,000 books and reference works relating to the professional curriculum. When the pharmacy library and university library were the bases for the percentage estimation, 71 schools reported a range of 3 to 100 percent, the average was 60 percent of the listed books and reference works, and the median was 62 percent.

In a second test designed to determine the effectiveness of the libraries readily available to schools of pharmacy, librarians were asked to choose one or two review articles from the *Journal of Pharmaceutical Sciences* and to determine from the bibliographies whether or not the articles could have been written by the use of the combined holdings of the pharmacy library, the university library, and nearby libraries. Twenty-three said they could not have prepared the articles from the pharmacy and the university libraries. However, 12 of the 23 said that nearby libraries would have provided the holdings essential to the preparation of the articles.

Pharmacy, like the other health professions, is becoming increasingly aware of the need for continuing education programs for its practitioners; a few persons have advocated attendance at such programs as requisite to renewal of the professional license. As these continuing education programs take on increased significance, the ready availability of current information to all community practitioners will be essential. Thus, methods of distribution of information and of the communication of information will need increased attention. In short, the resources of its library are the heart of any institution of higher learning. While the problem of maintaining adequate facilities is critical in all institutions, it is particularly significant in areas related to health because of the tremendous volume of research achievement and the primary importance which must be attached to the widest dissemination of knowledge at the earliest moment possible. Extensive rehabilitation of facilities and increased capability for handling acquisitions can make this possible.

The discussion in this statement of individual sections of the legislation is deemed unnecessary inasmuch as they were covered by several of the witnesses during the hearings. However, it is our opinion that each of the proposed programs supplements the other and that all are essential in strengthening this important area of the health sciences programs.

Respectfully submitted.

JOSEPH B. SPROWLS,
Chairman, Executive Committee.

STATEMENT OF V. EUGENE MCCRARY, PRESIDENT-ELECT, AMERICAN OPTOMETRIC ASSOCIATION

Mr. Chairman and members of the committee, I am V. Eugene McCrary, president-elect of the American Optometric Association. I reside and practice my profession at 4500 Beechwood Road in College Park, Md.

Our association represents the profession of optometry, which consists of something more than 17,00 practicing optometrists in the 50 States and the District of Columbia. There are 10 schools and colleges of optometry located in the United States. They are:

Massachusetts College of Optometry, Boston, Mass.; Pennsylvania School of Optometry, Philadelphia, Pa.; Ohio University School of Optometry, Columbus, Ohio; Southern College of Optometry, Memphis, Tenn.; Illinois College of Optometry, Chicago, Ill.; Optometry Division of the University of Indiana, Bloomington, Ind.; School of Optometry, University of Houston, Houston, Tex.; Los Angeles College of Optometry, Los Angeles, Calif.; School of Optometry, University of California, Berkeley, Calif.; School of Optometry, Pacific University, Forest Grove, Oreg.

There is a great need for new schools and colleges of optometry and plans are being formulated to establish them. Some of these will be affiliated with existing universities and others will be institutions separate and apart from any existing college or university. While it is impossible to give any meaningful estimate as to the amount of expenditures for optometric purposes out of the funds which would be authorized by the various sections of S. 597, it is nevertheless of vital importance that the definition contained in part I of the bill be amended so as to specifically include optometry as one of the sciences related to health. There can be no question that this is a fact, but unfortunately, it is not always recognized as such by Federal administrative agencies. It is, therefore, both advisable and in the public interest that Congress make clear its intent by including the word "optometry" in the statute itself. We therefore recommend that on page 3, line 22 of the bill, the word "optometry" be inserted after the word "osteopathy."

Assistant Secretary Dempsey in his testimony before the committee stated: "Today it is essential that personnel responsible for the operation and future planning of medical libraries have special training over and above traditional librarianship. This training must be related to the specialized communication problems of the medical community. They must be well grounded in the biomedical sciences." The Medical Department of the Air Force recently established a new Corps known as the Biomedical Sciences Corps. All of the optometry officers in the Air Force have been transferred from the Medical Service Corps to this new Biomedical Sciences Corps and comprise the largest single professional section. These optometry officers provide professional services in direct clinical patient care.

Alfred N. Brandon, president of the Medical Library Association and director of the Welch Medical Library, Johns Hopkins University, in discussing the bill said: "Administered wisely, this provision (sec. 397) can in some way reach every aspect of the medical community: Student, researcher, and practitioner of *all health professions*." (Emphasis supplied.)

On several occasions Congress has recognized the importance of optometry as one of the health professions. There is no question that the conservation and improvement of vision is one of the prime factors in our national security, as well as our economic prosperity.

The adoption of the suggested amendment will not necessitate increasing the various authorizations contained in the bill. Under these circumstances, we strongly urge the adoption of the amendment.

Respectfully submitted.

AMERICAN LIBRARY ASSOCIATION,
Washington, D.C., May 24, 1965.

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

DEAR SENATOR HILL: The American Library Association is interested in S. 597, the bill introduced by you, to provide a program of grants to assist in the need for adequate medical library services and facilities. We would appreciate it, therefore, if the attached statement in support of the measure could be incorporated in the record of the hearings.

It is our belief that S. 597 is an important supplement to S. 600, the Higher Education Act of 1965, which includes significant provisions relating to college library resources and the training of all types of librarians.

Sincerely yours,

GERMAINE KRETTEK, *Director,
ALA Washington Office.*

STATEMENT BY GERMAINE KRETTEK, ASSOCIATE EXECUTIVE DIRECTOR, AMERICAN LIBRARY ASSOCIATION

The American Library Association supports the Medical Library Assistance Act of 1965 (S. 597) as essential in the national interest to insure the welfare and health of the United States. The association considers this proposed legislation as an important supplement to the pending Higher Education Act of 1965 (S. 600), which we think is basic and thus of first priority in helping to solve fundamental higher education problems and to provide the essential training for sorely needed professional librarians.

The American Library Association, it might be added, is the oldest and largest organization devoted to the development of libraries in the United States, and covers all facets of librarianship. It has among its constituent organizations two important ones: the Association of College and Research Libraries and the Association of Hospital and Institution Libraries, which, as their names indicate, represent higher education libraries and also libraries of medical, nursing, and other staffs in hospitals.

Our organization has observed and has studied the various reports and documents compiled by medical libraries, societies, and committees relating to the existing deficiencies in medical library literature, library services, and library buildings in the fields of medical research, medical teaching, and medical practice. The shortcomings are serious.

We believe that those interested in the development of adequate medical library services and facilities are justified in urging, among other things, Federal legislation for the construction of buildings for library purposes; the education of librarians for service in medical libraries; the conduct of research in the field of medical library science; the improvement and strengthening of library resources, including the processing of materials and retrieval of information; and the establishment of regional medical libraries.

Recent reports bear out strongly the sad state of the relative amount of funds allotted by the Department of Health, Education, and Welfare to medical library service. For example, in 1964 the Department received in appropriations \$55 billion, of which \$36.1 million, approximately 0.65 of 1 percent, were devoted to scientific and technical information, but less than \$1 million was assigned directly or indirectly to the support of medical library activities.

Again, taking medical research alone, the growth in funds rose from \$45 million in 1940 to \$148 million in 1950; to \$715 million in 1960; and will rise to a projected \$3 billion in 1970. This tremendous increase must be accompanied by similar growth in the amount spent for medical library book and periodical resources, services, and buildings to support such a program vital to the health and welfare of the Nation. But this has not been the case. Research in medicine and allied fields must be bulwarked by a sound foundation in library resources and the quick retrieval of the information stored.

The magnitude of the problem may be comprehended somewhat when we realize that there are some 4,000 libraries maintained by medical schools, hospitals, medical societies, schools of nursing, pharmacy, veterinary medicine, and osteopathy, public health, and other segments of the medical and health community. These libraries and their importance to the Nation have a justifiable claim for assistance from the Federal Government.

The American Library Association, therefore, endorses the Medical Library Assistance Act of 1965, and urges the favorable consideration of it by this committee.

STATEMENT OF THE NEW YORK ACADEMY OF MEDICINE

The great medical library collections in this country have in the past been built and maintained by medical societies. The greatest of these are the collections of the Boston Medical Library, the College of Physicians of Philadelphia, the Medical Society of the County of Kings, in Brooklyn, and the New York Academy of Medicine, in Manhattan. The pressures of 20th century science have now compelled private organizations to look for support in collecting resources and servicing them to the best advantage for the use of research scientists, practicing physicians, biomedical scientists in related fields, and students who will be the scientists and physicians of tomorrow. The proliferation of scientific literature, the tremendous increase in indexes and abstract journals which new automative processes have made possible, the rising costs of publication, and the greater

needs of research have put the acquisition of necessary resources beyond the means of a group of private individuals.

The New York Academy of Medicine Library which is supported by the Fellowship of the Academy, a group of 2,500 members, has already assumed a financial burden for the library of an annual budget of \$437,360, and this despite a regrettable limitation of its acquisitions program. Even with the expenditure of these funds, the collection cannot be maintained with the high standards of the past. Such a library serving the community shares its resources with other libraries and welcomes the varied clientele seeking information. This clientele represents all those in the health professions, and those in other professional disciplines, as well as the general public and the important student population of this area. To meet the increasing demands for resources and services, financial support is urgently required.

READERS IN THE LIBRARY

Surveys of readers in the library have been made in November 1957, in March 1958, March 1963, and March 1965. There is remarkably little change from year to year, but there have been a few very gradual differences in the type of readers using the library in person. The percentage of use by fellows remains at approximately 15 percent; use by physicians who are not fellows has dropped a few points, and the use by scientists other than physicians increased. Use by students (other than medical, dental, or nursing) was 12.6 percent in March 1958, but by March 1963 has risen to 21.5 percent, just about what it was in 1965.

	1963	1965
Fellows, physicians, representatives of health professions, scientists, free lance workers-----	54.4	55.65
Students ¹ (other than medical, dental, or nursing)-----	21.5	21.35
Miscellaneous, professional ² -----	14.1	13
Laity ³ -----	10	10

¹ Graduate, 8.5; college, 8.8; high school, 3.6. The latter are chiefly from the excellent High School for Science in the Bronx.

² The category "Miscellaneous" includes engineers, advertising men, lawyers, professors, teachers, artists, musicians, accountants, editors, writers, newspapermen, philologists, historians.

³ Laity covers a number of readers who said that they were using the library for "research," but would not clarify. There was a policeman (reading about narcotics), a fireman, a graphologist, and one who insisted that he was a bartender, although he uses the library fairly often and was obviously being facetious. We take the word of the readers, so there are, no doubt, some errors in our totals.

MEDICAL LIBRARY ASSOCIATION,
June 11, 1965.

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

DEAR SENATOR HILL: Enclosed is a statement on Senate bill 597, the Medical Library Assistance Act.

We understand that hearings are being held on this bill during the week of June 14 and ask that the enclosed statement of the New York Regional Group of the Medical Library Association be made part of the official record.

Thank you very much for your courtesy.

Respectfully,

ELEONOR E. PASMIK,
Chairman, New York University Medical Center Library.

STATEMENT ON THE MEDICAL LIBRARY ASSISTANCE ACT

The New York Regional Group of the Medical Library Association draws its 250 members from medical libraries in the Greater New York area which includes New Jersey and parts of Connecticut. These 3 States include 65 hospitals, 12 medical schools, 9 academy and medical societies, 9 pharmaceutical companies, 6 State and city health departments, 3 pharmacy colleges, 3 nursing schools, 2 dental colleges, 1 veterinary college and 12 science voluntary health agencies, commercial, podiatry and research institute libraries. (1)

As librarians we are dedicated to serving readers. What we seek in respectfully asking for a favorable recommendation on S. 597 is the means of improving

our profession and our libraries so that we may better serve not only our researchers but paramedical personnel, medical, dental, and nursing students, and the busy practicing physicians who conscientiously try to keep up-to-date on new therapies and techniques. The needs of these latter groups should not be overlooked.

The demands made by the heavy concentration of medical teaching, research and patient care personnel coupled with the proliferation of medical and scientific literature, rising book and periodical prices, higher processing costs, inadequate equipment, lack of bookshelf space, shortage of trained personnel and inadequate budgets have created acute problems in libraries in the New York area.

Current statistics show that Federal support of medical and health-related research has grown from \$105 million in 1951 to an estimated \$1.3 billion in 1965 (2). National Institutes of Health research grants supported 1,695 projects in 1951 (3). By 1964 NIH granted funds for 15,242 projects (4). Of the total national public and private expenditures for health-related research in 1964 the Federal Government provided 65 percent, industry 23 percent, and other non-Federal sources 12 percent of the funds (5). In 1964 the Public Health Service made grants to over 100 institutions and organizations in New York City (6). All of the researchers in these institutions need and use libraries.

The Federal Government provides two-thirds of the support for medical research and should rightly be concerned with seeing to it that the scientists performing this work have available to them needed tools and equipment including adequate libraries. The terms of research grants heretofore have provided a certain percentage for overhead. Libraries have sometimes received a portion of such funds.

The number of professional workers engaged in medical and health-related research rose from 19,000 in 1954 to almost 40,000 in 1960 (7). By 1970 the number of researchers is estimated to be 77,000 (8). More research being done automatically means more articles being published with a resulting publications explosion.

The vital education role of libraries has been recognized by organizations such as the Joint Commission on Accreditation of Hospitals, the American Nurses Association, the American Medical Association, the American Dental Association, and the Association of American Medical Colleges, each of which requires the existence of a library meeting minimum standards for accreditation of an institution by the respective association. The recommendations in the "Guidelines for Medical School Libraries," published in January 1965 by the Association of American Medical Colleges, is expected to have wide influence in raising the standards in medical school libraries (9).

Proposed library standards for a developing medical school recommend a collection of 100,000 volumes and 1,600 current scientific journals (10). Of 86 medical school libraries only 14 have collections of 100,00 or more, 22 schools receive more than 1,600 journals (11).

The average price of American medical books has risen from \$8.20 in 1957-59 to \$11.22 in 1964 (12). There were a total of 1,211 medical books published in 1964 of which 876 were new books and 336 new editions (13). Medical libraries are also finding that they must acquire new books in the physical, biological, and behavioral sciences.

A survey by the Association of American Medical Colleges published in April 1965 reports that 79 medical schools libraries need an average of 32,000 additional square feet of space, an average of 18,000 additional volumes and periodicals, and an average of \$132,000 for cataloging, binding, and other equipment or instructional media (14). Steps must be taken to assist school and other types of medical libraries so that they will come up to satisfactory standards of quality.

In the area of regional cooperation between New York medical libraries there have been studies and some progress. A New York State survey several years ago presented recommendations for the improvement of medical library service based upon two reservoir libraries and the strengthening of individual medical libraries. Unfortunately the plan has not been implemented due to lack of funds.

The survey of medical library resources of Greater New York, a 3-year study which began in September 1963, has as its purpose "to delineate the present and future library needs of the research community of New York and, from the knowledge thus gained, to develop a plan for the programing of

existing facilities toward meeting those needs; to study the use of machines as tools in the implementation of certain needs of the programing." One phase of this study, interlibrary loan requests of 217 libraries, is nearing completion. It may be that excellent and constructive recommendations will result from this survey but unless funds are available to put these suggestions into practice we will have just another survey on the shelf.

The Medical Library Center of New York, which began actual operation in January 1964, represents a cooperative measure supported by 10 New York City medical institutions. The center houses the older, less used materials deposited with it by these 10 libraries and provides ready access through a daily delivery service. This has eased the overcrowding to some extent but in most libraries there is still a serious space problem.

The union catalog of medical periodicals, a part of the medical library center, is a computer-produced composite record of the medical and paramedical periodical and serial holdings of some 70 libraries in the New York metropolitan area. This enables a borrowing library to quickly locate a periodical needed on interlibrary loan.

The medical library center and union catalog of medical periodicals have proven a boon but the \$10,000 which sponsoring libraries are assessed annually is a great burden on limited budgets.

Funds are urgently needed for new construction and expansion of existing facilities to bolster inadequate library collections, to train medical librarians, to conduct research in new techniques such as the application of automation to libraries, and for the establishment of regional medical libraries and branches of the National Library of Medicine.

Without Federal assistance the country's medical libraries cannot hope to keep up with the demands made on them. The inevitable result will be poorer service to the physicians who treat us and to the researchers who hope to conquer our major killing and crippling diseases.

In the words of the late President Kennedy, "The accumulation of knowledge is of little avail if it is not brought within the 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 researchers to practicing physician, so that new knowledge can save lives as swiftly as possible; and from the health professions to the public, so that people may act to protect their own health."

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- (1) Medical Library Association Directory, 1961.
- (2) U.S. National Institutes of Health. Resources Analysis Branch. Resources for Medical Research. Report No. 5, October 1964. Table I, p. 3, app. table I, p. 17.
- (3) J. Med. Educ. 38 : 147, 1963.
- (4) U.S. National Institutes of Health. Division of Research Grants. Public Health Service Grants and Awards, Fiscal Year 1964 Funds. Part I. Research Grants. Table I, p. 1.
- (5) U.S. National Institutes of Health. Resources Analysis Branch. Resources for Medical Research. Report No. 5. October 1964. Chart 2, p. 2.
- (6) U.S. National Institutes of Health. Division of Research Grants. Public Health Service Grants and Awards, Fiscal Year 1964 Funds. Part I. Research Grants.
- (7) U.S. National Institutes of Health. Resources Analysis Branch. Resources for Medical Research. Report No. 3. January 1963, table 9, p. 8.
- (8) Ibid., table 15, p. 15.
- (9) J. Med. Educ. 40(1) part I, January 1965.
- (10) U.S. Public Health Service. Medical Education Facilities, 1964, p. 34.
- (11) JAMA 190 : 614, November 16, 1964.
- (12) Pub. Weekly 187 : 82, January 18, 1965.
- (13) Ibid., p. 56.
- (14) Assn. Amer. Med. Coll., Datagrams 6, No. 10, April 1965.

AMERICAN MEDICAL WRITERS' ASSOCIATION,
April 20, 1965.

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

DEAR SENATOR HILL: The executive committee of the American Medical Writers' Association has asked me to convey to you its approval and support of the principles and purposes embodied in Senate bill 597, "To provide for a program of grants to assist in meeting the need for adequate medical library services and facilities." I am confident that in this expression we truly reflect the views of the great majority of the 1,800 members of our association.

The development of our medical library system has not kept pace with the growth of medical literature. The resulting problems in medical communications present a very real threat to the quality of medical research and to the teaching and practice of modern medicine.

The medical library is, of course, the heart of medical communication. During the past two decades, the Federal Government has spent more than \$10 billion for medical research and the Nation as a whole has spent nearly \$100 billion for health and medical services. But the medical libraries have been largely ignored. In 1964, less than \$1 million of Federal funds accrued directly or indirectly to the support of medical libraries.

Yet the past two decades have witnessed a veritable explosion of new medical information to be published, cataloged, indexed, stored, and, hopefully, made readily retrievable through modern methods of library operation and information science.

There are at present only about 3,000 trained medical librarians available to serve the more than 6,000 medical libraries in the United States. Medical school libraries are reported to be suffering from an average deficit of 23,000 volumes, representing about one-fourth of the recognized minimum requirement of 100,000 volumes. Most medical libraries cannot subscribe to more than one-sixth of the recognized periodicals in the field.

We earnestly hope that your committee will give favorable consideration to the medical libraries bill now before you. We shall be glad to make ourselves available for further comment if you so desire.

Sincerely yours,

EDWARD C. ROSENOW, Jr., M.D., *President.*

THE UNIVERSITY OF ARIZONA,
Tucson, Ariz., February 12, 1965.

HON. PAUL FANNIN,
U.S. Senate, Washington, D.C.

DEAR SENATOR FANNIN: On Tuesday, January 19, Senator Lister Hill introduced Senate bill 597. It has since been read twice and referred to the Committee on Labor and Public Welfare. This legislation is known as the Medical Library Assistance Act of 1965 and is designed to assist in meeting the need for adequate medical library services and facilities. It is a good bill and can be stoutly defended without fear of opposition. I have reason to believe that the American Medical Association's board of trustees will endorse this bill; the Association of American Medical Colleges already has. The American Heart Association, the Society of University Surgeons, and other private and professional agencies have either already endorsed the legislation or will shortly.

In the State of Arizona, a new college of medicine is being developed on the campus of the University of Arizona in Tucson. This is the first college of medicine to be developed in our State. As you have doubtless heard, an eminently successful fundraising campaign has produced in excess of \$2,600,000 for the purpose of building the basic medical sciences building of this college of medicine. Under Public Law 88-129 it will be possible for us to secure some Federal participation in the construction of all aspects of this building. Unfortunately, although it is essential that we include a medical library in the building, the medical library is not matchable under the Health Professions Research Facilities Act. In order to accommodate to this need, Senate bill 597 was introduced.

All of us here will be very grateful to you if you will keep Arizona's interests in mind when you are considering this legislation. Its successful passage is of some consequence to our State.

Very sincerely yours,

MERLIN K. DUVAL, Jr., M.D., *Dean.*

THE UNIVERSITY OF CALIFORNIA,
Berkeley, Calif., March 15, 1965.

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

DEAR SENATOR HILL: The deans of the University of California Schools of Dentistry, Medicine, Nursing, and Pharmacy, and the Health Sciences Graduate Divisions wish to join with me in conveying to you our enthusiastic support of S. 597 and H.R. 3142. We are most pleased with the effort you are making to remedy the alarming deficiency which exists in our Nation's medical libraries.

The President's Commission Report on Heart Disease, Cancer, and Stroke, aptly describes the situation in saying that, "unless major attention is directed to improvement of our national medical library base, the continued and accelerated generation of scientific knowledge will become increasingly an exercise in futility."

The passage of your well-designed bills will preserve our scientific efforts and make them available for the greater benefit of all mankind.

Sincerely yours,

CLARK KERR, *President.*

UNIVERSITY OF CALIFORNIA,
Los Angeles, Calif., March 30, 1965.

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

DEAR SENATOR HILL: I strongly support your bill, Medical Library Assistance Act of 1965, S. 597. As dean of the UCLA School of Public Health, I can attest to the demands being made on medical library facilities by community health leaders, research, and teaching faculty and students. With medical and public health advances of the next decade will come increasing demands on facilities and library science in general.

As in the past, I wish to express my personal appreciation for your leadership in forwarding the health aims and objectives of our Nation.

Sincerely,

L. S. GOERKE, M.D., *Dean.*

UNIVERSITY OF CALIFORNIA,
Los Angeles, Calif., February 24, 1965.

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

DEAR SENATOR HILL: I am writing to tell you that I believe that your bill, Medical Library Assistance Act of 1965, S. 597, is excellently designed to meet our country's critical need for adequate medical library services and facilities.

Schools of nursing across the country are largely dependent upon medical library services and facilities for the urgently needed expansion and development of their undergraduate and graduate nursing programs. Moreover, investigations leading to improved patient care of the Nation's sick and handicapped can continue to accelerate only if the rapidly accumulating scientific information in nursing, medicine, and other health fields can be made readily accessible.

I want to take this opportunity to tell you how much my colleagues and I have appreciated your continued and material support to medical libraries during the past several years.

Very sincerely yours,

LULU WOLF HASENPLUG, *Dean.*

UNIVERSITY OF CALIFORNIA, SAN DIEGO,
SCHOOL OF MEDICINE,
La Jolla, Calif., February 10, 1965.

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

DEAR SENATOR HILL: I should like to indicate my strong support of the Medical Library Assistance Act of 1965, which you introduced to the Senate as S. 597, on Tuesday, January 19, 1965.

I can appreciate very well the special problem of medical libraries from my position as dean of a developing school of medicine. It is perfectly clear that we must improve our methods of information storage and retrieval in order to meet the needs of medical research, education, and practice.

Yours very truly,

JOSEPH STOKES III, M.D., *Dean.*

STANFORD UNIVERSITY SCHOOL OF MEDICINE,
Palo Alto, Calif., April 1, 1965.

Re bill S. 597.

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

DEAR SENATOR HILL: I became aware recently of bill S. 597 which you have introduced into the Senate, and which proposes to establish Federal aid for the building and development of medical libraries. This is, of course, a subject of great concern to schools of medicine for reasons which extend beyond their deans and faculties to the medical profession generally, for such libraries serve as major service facilities, usually without charge, for physicians who practice within a wide radius of a medical school. Hence, such libraries are extremely valuable assets to the practitioners of medicine and allied health fields in this country. Nonetheless, it is a paradoxical fact that efforts to obtain gift funds for the support of libraries are relatively unrewarding, at least in our experience.

In view of these facts, and in view also of the provisions for very desirable developments in library techniques which are elaborated in your bill, this proposal for Federal assistance is of utmost importance to the health and related professions of this country.

May I thank you on behalf of this school for your introduction of this bill, and for your efforts in moving it through the Congress.

Sincerely yours,

SIDNEY RAFFEL, M.D., *Acting Dean.*

UNIVERSITY OF COLORADO MEDICAL CENTER,
Denver, Colo., February 4, 1965.

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

DEAR SENATOR HILL: I am in receipt of a copy of Senate bill 597, your proposal for a "Medical Library Assistance Act of 1965." A more basic, forward-looking legislative proposal scarcely could be conceived as a contribution to the continued progress of medical education, biomedical research, and the health care of American citizens.

Medical libraries lie at the heart of the modern system of medical science. Without them, it would be impossible to maintain, much less to advance, the high standards of education and scientific investigation upon which the practical, everyday medical care of people depends. Your proposed legislation indicates your keen awareness of the dilemma now facing medical libraries.

The enormous and rapid progress of biomedical knowledge, increasing yearly at geometrical rates, is confronting medical libraries with problems of expansion, staffing, and processing which are close to overwhelming. Unless immediate solutions are found to these problems, much new knowledge will be effectively lost, since medicine is a cumulative and scholarly science which builds upon all that has gone before. Every effective means must be sought to assist medical libraries in their vital and Herculean labors of information collection, preservation, and retrieval.

It is greatly encouraging that this legislation has been proposed, and I am delighted to take this opportunity of expressing my support for it and my appreciation to you and your associates for developing and sponsoring it.

Sincerely,

JOHN J. CONGER, Ph. D.,
*Vice President for Medical Affairs
and Dean, School of Medicine.*

VETERANS' ADMINISTRATION HOSPITAL,
Denver, Colo., March 12, 1965.

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

DEAR SENATOR HILL: I wish to communicate my deep appreciation for your sponsoring bill S. 597. Its passage will directly and importantly assist all phases of medical research in a manner which currently obtainable research funds cannot do. This view is shared by all of us at this medical center who do medical research either part time or full time.

I hope that you will bend every effort toward winning support for your extremely worthy bill.

Very respectfully yours,

HAROLD ELRICK, M.D.,
Director, VA Human Protein Hormone Bank; Chief, Radioisotope Service,
VAH; Associate Professor of Medicine; Assistant Professor of Pharmacology; University of Colorado School of Medicine.

YALE UNIVERSITY SCHOOL OF MEDICINE,
New Haven, Conn., February 2, 1965.

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

DEAR SENATOR HILL: It gives me great pleasure to endorse with enthusiasm S. 597, a bill which provides for grants to assist in meeting the need for adequate medical library services and facilities.

Although we have an excellent medical library at Yale we are rapidly approaching the point at which it will not be adequate to serve our expanding staff and student body. In visits to many other medical schools I find the need even more urgent and without doubt the quality of medical education and research can be tremendously improved by the provision of better library facilities.

Your interest in this program is appreciated by all of us who are interested in the advancement of the medical sciences.

Sincerely yours,

VERNON W. LIPPARD, M.D., Dean.

UNIVERSITY OF MIAMI,
Coral Gables, Fla., February 25, 1965.

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

DEAR SENATOR HILL: We were very pleased at the University of Miami to learn of the introduction of S. 597 to the Congress as a proposal to aid in the building and development of medical libraries.

We want to congratulate you on your sponsorship of this legislation as we feel it will take care of what is currently an urgent need in our rapidly developing schools of medicine. We certainly want to add our voice to the many others we know will support this legislation.

It is extremely timely for us, as you will see from the attached brochure describing our golden anniversary development program. One of the major units with which we are concerned within our medical school program is our library, which is presently woefully inadequate and housed in temporary facilities.

We hope this legislation will pass the Congress.

Sincerely yours,

HENRY KING STANFORD, President.

EMORY UNIVERSITY, SCHOOL OF MEDICINE,
Atlanta, Ga., March 1, 1965.

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

DEAR SENATOR HILL: I have been very much interested in the news that you have undertaken to sponsor legislation dealing with the support of medical libraries. As one who has been in medical administration for nearly 10 years and has had to struggle with the problem of creating the proper balance between

resources and facilities, I can tell you that one of the most urgent needs which medical schools have today is the updating and expansion of our medical libraries. Aside from the general problem of manpower this is perhaps our most urgent need, and it is most unfortunate that in all the programs which have been sponsored during the last decade, somehow or other the attitude has been adopted that library support will come from some other source and that it will take care of itself. This is not the case.

The hour is already late and it will do us no good to go on accumulating additional new knowledge unless we have the mechanism of storing this information and of making it readily available to other investigators and finally, to those on whom we depend for delivery of health care to our general population. I, therefore, commend you for your foresight in approaching this problem directly and I stand ready to help you in any way in presenting the case for adequate support for medical libraries at an early moment.

Very sincerely yours,

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

THE UNIVERSITY OF CHICAGO,
DIVISION OF THE BIOLOGICAL SCIENCES,
Chicago, Ill., February 18, 1965.

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

DEAR SENATOR HILL: Those of us who have major responsibilities for the health of the people of the United States because of our duties in medical education, in the training of physicians, and in medical research, are gratified to find a staunch ally who understands the needs of the people and who is willing courageously to work for national measures which will permit the people of our country to achieve their health goals. Your sponsorship of the Hill-Burton Act, your wise and responsible support of the research program of the NIH, your dedicated concern on many issues for the health of our people, gives us encouragement and strength.

We are particularly grateful to see that you have introduced a bill to support biomedical libraries. A copy of this bill, S. 597, has reached me. I have read it carefully and consider it to be a statesmanly start which, if enacted, would embark our Government on responsibilities directed toward insuring that the vast accumulated knowledge of medicine is available for physicians, scientists, and the public in useful form in our libraries.

You are quite right in your surmise that our libraries have suffered from lack of proper support. Many of the strong Federal grant programs have required non-Federal matching funds which have, in many instances, been devoted to research facilities or to training facilities in order to make a proper display of university backing for worthy scientific effort of Government interest. Similar federally backed incentive has not been available to stimulate non-Federal support of biomedical libraries. As a consequence, libraries have been suffering from acute and chronic financial malnutrition for many years and are greatly in need of the type of assistance which is envisioned in S. 597. In my view, only the Federal Government has resources to save these priceless resources of information and learning for the people of this country.

I wish, therefore, to record my strong support for bill S. 597 and to ask that you call on me if you see any way in which I can help its passage.

With best wishes,

Sincerely yours,

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

THE UNIVERSITY OF IOWA COLLEGE OF MEDICINE,
DEPARTMENT OF MICROBIOLOGY,
IOWA CITY, IOWA, February 23, 1965.

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

DEAR SENATOR HILL: Your bill (S. 597), and its companion (H.R. 3142) introduced in the House by Congressman Harris, has been studied carefully. I appreciate greatly your efforts in promoting this legislation.

For nearly 30 years I have been teaching and doing research in one of the basic medical sciences. In addition I was editor of one of our learned scientific periodicals for 11 years, and I have been a member of our University Library Committee and several national scientific committees. Thus, I feel I have some understanding of the problems associated with libraries and the documentation of scientific literature.

Although science and technology have grown tremendously during the past 25 years, libraries have been neglected. As a result, many of our libraries are so overcrowded, and the librarians are so overburdened, that future progress in the biomedical sciences may depend on what Congress does with your bill. Because your bill provides for the present critical needs (especially construction, and training of specialized librarians) it is of a superior nature, and it shows that you understand the problem.

I hope your hearings are successful on this bill and that it will be enacted.

With kind regards,
Sincerely yours,

J. R. PORTER,
Professor and Chairman.

UNIVERSITY OF LOUISVILLE,
Louisville, Ky., February 15, 1965.

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

DEAR SIR: I have read with great interest and enthusiasm the Medical Library Assistance Act of 1965 bill 597 which you introduced into the Senate. As you have noted, such support has been urgently needed for many years. Members of the medical library profession as well as medical educators are following the progress of this legislation with great hope.

As a librarian for a university medical library and a library that serves a county medical society I know well the problems of inadequate space and limited services. In the hope that it will aid you in obtaining support, I am enclosing photographs that appeared Wednesday, February 10, 1965, in the Louisville Times which show the antiquated building and crowded conditions of this library.

Thank you for the preparation and support of this legislation. Its enactment will add another to the list of famous acts which you prepared.

Very truly yours,

JOAN TITLEY,
*Librarian and Assistant Professor of Medical Bibliography, Chairman,
Biological Sciences Division, Special Libraries Association.*

LOUISIANA STATE UNIVERSITY,
New Orleans, La., March 4, 1965.

Re S. 597 and H.R. 4132.

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

DEAR SENATOR HILL: Speaking for the Louisiana State University Medical Center, I am delighted that you and Representative Oren Harris have introduced the proposed legislation of reference. It seems important to us that someone has finally proposed some action that will assist the Nation's medical educational efforts in a very direct manner.

The medical center library is the hub of teaching and research for the health professions. Despite its important role, the library has been almost completely neglected in past Federal legislation. As a result, with ample Federal support, research and teaching programs have greatly overtaxed the libraries in almost all schools of medicine, nursing, dentistry, pharmacy, etc.

At this medical center, the situation is acute. Our greatest need, as regards the library is for additional space and the bills of reference would enable us to obtain the funds requisite to such expansion.

Again, may I commend your interest in this problem and hope your efforts will prove fruitful to medical education.

Sincerely yours,

WILLIAM W. FRYE, Ph. D., M.D.,
Chancellor, Medical Center.

BOSTON UNIVERSITY,
Boston, Mass., February 17, 1965.

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

DEAR SENATOR HILL: I am writing in support of bill, S. 597, H.R. 3142, the Medical Library Assistance Act of 1965.

The medical library is, of course, the intellectual heart of any medical school. Across the country and in almost every university, funds for the proper support of the medical school libraries are seriously inadequate. This inadequacy is not only a problem for the present. It is even more grave a problem for the future, because present developments in the library field will make libraries obsolete unless funds are available to keep pace with these developments.

The Medical Library Assistance Act of 1965 is also of great importance, since under the Professional Facilities Act, medical libraries can be supported only if they are part of classroom buildings.

Please accept this letter as evidence of my strong support for the act and my belief in the urgent need for its approval.

Sincerely yours,

HAROLD C. CASE, *President.*

THE JOHNS HOPKINS UNIVERSITY,
Baltimore, Md., February 12, 1965.

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

DEAR SENATOR HILL: To those of us working in medical libraries, it has been apparent for quite some time that medical research, with its practically unlimited supply of funds, has outstripped the libraries created to serve scientists.

It was with considerable interest and pleasure that I read the Senate bill S. 597, the Medical Library Assistance Act of 1965. I heartily endorse this bill and wish you success in its passage.

Sincerely yours,

AGOTA GOLD, *Interlibrary Loan Department.*

BOSTON, MASS., March 22, 1965.

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

I am strongly in support of H.R. 6001 and S. 597.

PAUL DUDLEY WHITE.

BOSTON UNIVERSITY, February 2, 1965.

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

DEAR SENATOR HILL: I am writing with regard to bill S. 597 introduced into Congress by yourself to provide a program of grants to assist in meeting the needs for adequate medical libraries, services, and facilities. I believe this bill to be of utmost importance to medical education in this country since the library is the heart of any medical school and in most medical schools, badly neglected in terms of adequate funds of its support.

Sincerely,

FRANKLIN G. EBAUGH, Jr., M.D., *Dean.*

MICHIGAN STATE UNIVERSITY,
East Lansing, February 5, 1965.

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

DEAR SENATOR HILL: Michigan State University is in the process of developing a new medical school, and in the forefront of resources for medical education is a proper medical library.

I urge you, therefore, to support S. 597, which would indeed be extraordinarily helpful to the development of medical education in general, and the health of the American people.

Yours very sincerely,

ANDREW D. HUNT, Jr., M.D., *Dean.*

THE UNIVERSITY OF MICHIGAN,
Ann Arbor, Mich., March 2, 1965.

HON. LISTER HILL,

Chairman, Senate Committee on Labor and Public Welfare, Senate Office Building, Washington, D.C.

DEAR SENATOR HILL: I should like to express my personal thanks to you for introducing and sponsoring Senate bill 597, the Medical Library Assistance Act of 1965. As director of one of the largest and most heavily used university libraries in the United States, a library, or rather an extensive library system, which endeavors to serve colleges of medicine, nursing, public health, dentistry and pharmacy, as well as all the basic sciences that support the health sciences, I am made aware almost daily of the shortcomings of our efforts to provide library resources and bibliographical services adequate to aid rather than impede the instructional and research activities in these disciplines of knowledge on our campus.

As you are well aware university research in the health sciences, so strongly supported by the Public Health Service, has long since outrun the capability of university libraries to provide the necessary bibliographic support. Moreover, we have witnessed, during the past 10 years, the introduction of instructional techniques in schools of medicine, nursing, and dentistry that require the student to work in the library much more intensively than ever before and to draw his information from recent scientific publications rather than from textbooks. To use only one illustration of the effect of this change in pedagogical technique, home circulation of publications from our medical library has increased 43 percent in the past 3 years. Home circulation from our dentistry library has increased 68 percent during the same brief period and the use of books and journals within both these libraries has increased even more dramatically. All indications are that this experience is representative rather than abnormal and that it is duplicated in the health science libraries of other universities.

To contend with the unprecedented, rapid rise in demand for library books, journals, reference service, personnel, and space for literature searches, the health science libraries of the country are woefully short of space. It is estimated that the schools of medicine, dentistry, and osteopathy alone need approximately $3\frac{1}{2}$ million square feet of additional library space. Our medical libraries need many more librarians than are now available or are likely to become available within the foreseeable future unless a strong effort is made to strengthen and accelerate our programs for training in medical librarianship. The increase in publication in the life and health sciences as a consequence of the exponential increase in knowledge in these fields has made both the acquisition budgets of our libraries and the funds available for the work of acquiring and cataloging publications sadly inadequate. This same increase in the volume of published vital information imposes on us in the library profession the obligation to undertake long-range investigations into new methods whereby we may make use of recent developments in electronic technology and information theory in providing bibliographic control over the growing and changing mass of knowledge produced by the accelerated research programs. For such endeavors we have almost no funds at all.

I believe you can see therefore why I am moved to applaud your farsighted effort to strengthen our medical libraries and librarianship in each of the areas where our facilities, personnel, and resources are so inadequate as to form a critical obstacle to medical research and instruction. I think it safe to say that there are few if any fields of knowledge where teachers, researchers, and administrators agree so completely with librarians on the importance of the library for the success of their endeavors.

Allow me to add one more observation. The National Library of Medicine has over the past decade exercised remarkable and praiseworthy leadership in the profession of medical librarianship. Its bibliographic services, researches, counsel, and day-by-day practical assistance to our local programs are unparalleled in any other field of the sciences. I warmly applaud your inclusion in your bill of provisions to aid the enlightened proposal of the National Library of Medicine to extend its great national services further through the establishment of regional branches where they are needed and would make a significant contribution to the growth of medical science and the health of our people.

Respectfully yours,

FREDERICK H. WAGMAN,
Director, University of Michigan, University Library.

UNIVERSITY OF MINNESOTA,
Minneapolis, Minn., February 25, 1965.

Re bill S. 597.

Hon. LISTER HILL,

U.S. Senate, Washington, D.C.

DEAR MR. HILL: It was my privilege in the spring of 1963 to appear before your subcommittee on appropriations relative to the proposals of the U.S. Public Health Services's application for support of research. I write you now concerning the bill which you introduced into the Senate which will provide for a program of grants to assist in meeting medical school needs for more adequate library services and facilities.

As a young surgical aspirant in 1928, I stood in awe of what the German Government had done in providing outstanding German scientists research opportunities at the Kaiser Wilhelm Institute at Dahlenheim in the immediate environs of Berlin. Like a little boy looking at goodies in the window of a bakery shop, I wondered whether we would ever have anything like that in the United States. The largesse of the American people energized by the Congress after World War II made what seemed like an idle dream in 1928 a reality. In fact, the United States, in consequence of the liberal support which its research scientists have had now for almost two decades, has assumed the primary role of productive leadership in medicine in the world, a position which can only be maintained by a continuing energetic and well supported research program. Research will always be the life blood of progress.

It is equally as important that medical libraries too get support and help from the Federal Government. During my tenure as a member of the Research Facilities Council a few years ago, the urgent need of most, if not all, medical schools for grants as well as support to permit construction, development and maintenance of adequate library facilities was brought sharply into focus. It became increasingly evident to the Council that granting moneys for medical library construction from moneys allotted for construction of research facilities would eventuate in such a serious drain by the 80-odd medical schools then in existence (1959) upon funds available to the Council that its effectiveness to provide adequate research facilities for medical schools would be gravely impaired, thereby enfeebling their primary responsibility.

The need of medical schools for adequate library facilities continues therefore to be a very pressing problem. The medical library is the doctor's consulting room. It is there that the investigator acquaints himself with what other research scientists have done in the area of his own interest. Having spent my entire professional life within the halls of a university, I can add the personal testimony of experience and observation of the great importance of the library in lending accelerated impetus to research and the search for new knowledge.

It is a thrilling and rewarding experience to enjoy the wonderful privilege of studying in the presence of great books, whose pages preserve the permanent and immortal legacy of great ideas. Many a medical student and graduate student in the many disciplines of medicine who avail themselves of this privilege find their sights lifted and the nature of their dedication increased by contact with the inspiring stimulus of a fine library. The atmosphere of the library works silently upon the mind, uplifting the spirit and enlarging the student's vision. Sometimes I feel it is like the stirring urge of the Divine at work within the student's mind.

As a teacher, I can say it has been a revelation to have the opportunity of observing how students grow and mature in an atmosphere friendly to learning, surpassing the accomplishments of their teachers. Perhaps more than all other influences, a great library lends zest and impetus to research and to scholarship, nurturing and quickening the entire learning process, recreating the student's motivation, which in the final analysis is the catalyst which makes all burdens light.

It may interest you to know that during the 4 years of our medical library's existence, the turnstiles at the point of entry to the library record 1,504,758 visits. This is indeed an astounding figure which reflects the utility of a medical library when placed at the very center of a university medical center complex. Our own medical library cost us \$2 million to build, which probably reflects the needs of most schools. Moreover, we have large unmet needs for additional support for the purchase of books, the development and maintenance of an adequate library staff and facilities.

When John Shaw Billings made his famous address on our medical literature at the International Medical Congress held in London in 1881, he said: "There are 180,000 medical men scattered through the world, of which 2,800 are in the United States." Today the Directory of the World Health Organization and the World Directory of Medical Schools (1963) indicate there are 1,513,147 physicians in the world, of which number 234,294 are in the United States. There are today therefore more physicians in the United States than there were in the entire world in 1881. Billings added that for the calendar year 1879, the Index Medicus Catalogue of the Surgeon General's Office listed 1,643 books published throughout the world, of which 310 originated in the United States. There were 635 current journals on the shelves of the Army Medical Library (now the National Library of Medicine), when Billings reported upon his Survey in 1881. Today there are well in excess of 6,000 current medical periodicals and most Libraries like our own carry on their shelves at least 1,500 current numbers. Altogether in the biomedical field there are almost 9,000 medical serials. It is quite obvious, therefore, that the medical sciences too have paralleled the population explosion in publication.

The famous German physiologist, DuBois Reymond, more than 80 years ago, emphasized the importance of historical approach to all studies, whether it concerned organizations, politics, language, or the sciences. The famous French medical historian, Emile Littré, had some years previously pointed out that Medicine must occupy itself with its history and develop a spirit of caring for monuments inherited from the past. Study of the History of Medical Disciplines provides scientists with an orientation they cannot otherwise acquire. Study of Medical History enlarges the Investigator's knowledge, broadens and strengthens his judgment, providing him with rich mines of the neglected. It also stimulates a respect and veneration for ideals and in the truest sense makes for better doctors. With the constant acceleration of the growth of knowledge, it is important that we not abandon the study of the lessons of the past. A Study of Medical History teaches the prospective doctor as well as the Investigator how to separate wheat from the chaff. As Oliver Wendell Holmes said almost a century ago, "Dead medical literature is not all ancient and the live is not all modern."

It is a source of great distress with many of us that the director of our National Library a few years ago, in the interest of living within his meager budget, found it necessary to abandon continuance of the Surgeon General's Catalog which John Shaw Billings began more than 80 years ago. Those marvelous volumes, begun by that famous American bibliographer and medical historian certainly deserve to be continued. Some means should be found to reinstitute this important activity of the National Library of Medicine which has been so helpful to research workers and students of medical history everywhere.

There is great need to accelerate development and establishment of support for professorships of medical history in all our medical schools. At the moment, only a handful of medical schools have such departments. Serious thought must be given to rescue this aspect of the training of scientists from neglect and accord it the attention it richly deserves.

A study of medical history is not to be thought of as a delightful pastime for those contemplating the disengagement of retirement. Historical analysis is a most useful device in bringing into sharper focus the thoughts, considerations and theories which have advanced or retarded medical progress. It is eminently important that medical history become an integral part of the curricula of medical schools and a definitive component of the activities of our medical libraries.

All the items listed in bill S. 597 deserve the wholehearted support of the Congress. Enactment of this proposed legislation will make an excellent beginning in achieving the objectives outlined therein. The United States must continue to maintain its leadership in medical research. It must also begin to nurture a more serious interest in admiration for and appreciation of scholarship, the cultivation which will make for better scientists, as well as doctors. I would like to join in the urgent plea that our Congress give wholehearted support to this bill, the enactment of which will mean a great deal for the advance of medicine, not alone in this country but throughout the world.

With sincere admiration and esteem,

Respectfully submitted,

OWEN H. WANGENSTEEN, M.D.,
Professor and Chairman, Department of Surgery.

UNIVERSITY OF MISSOURI,
St. Louis, Mo., March 8, 1965.

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

DEAR SENATOR HILL: I am writing to recommend your support of bill S. 597, to amend the Public Health Service Act to provide additional funds for medical library services and facilities.

During the past 2½ years, with the support of Governor John Dalton, and now, Governor Warren Hearnes, the Division of Mental Diseases of the State of Missouri has established a research and training center in St. Louis. This center is dedicated to studying the problems of the severe mentally ill, and in the training of psychiatrists for public service. We have been able to develop our facilities with the support of the legislature of Missouri, the public through their direct contributions, and the Public Health Service which has made available to us funds under the Health Facilities Act for the completion of our laboratory.

During this growth period, we have not been able to obtain the funds necessary to establish library facilities adequate to the needs of our scientists. While we have made a pilot effort to provide an information retrieval system in our computer center, to enlarge our library so that it now has 5,000 volumes, to expand our journal subscription lists so that we make available to our scientists and students 180 journals in psychiatry, the services are still inadequate.

There is great need for the expansion of library facilities, both at this center and in the other medical centers in the Midwest. We are establishing a documentation center for the behavioral sciences, and this center will seek support not only from the legislature of Missouri, but as it will be a regional facility, from the Federal Government as well.

Realizing the needs for research in the health disciplines, the Congress during the past two decades has expanded funds for research and training so that many worthwhile programs have been launched and are now producing data and training personnel so that the health care of the American public is among the best in the world. However, such specialized facilities as libraries have not received the support they need. Senate bill S. 597 will do much to correct this need. My associates in these laboratories join me in commending your favorable review of this bill.

Sincerely yours,

MAX FINK, M.D.,
Head, Division of Research, Professor of Psychiatry.

WASHINGTON UNIVERSITY,
St. Louis, Mo., February 16, 1965.

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

DEAR SENATOR HILL: As a physician, a teacher in a medical center, and now as vice chancellor for medical affairs and president of the Washington University Medical School and Associated Hospitals, I have been concerned for many years with the gap between what has been reported in the medical literature and what most biomedical practitioners and research workers have access to. This gap has widened as a result of the proliferation of published scientific information, which the traditional biomedical libraries have not been able to obtain, house, or index adequately for useful retrieval. The large amount of grant funds now available from the Federal Government is adding to the volume of the literature; and this is as it should be, since making available the results of research is a responsibility of all who undertake such work.

Nevertheless, our medical libraries need help, and need it urgently, if they are to provide the aid needed to keep American medicine in the forefront of international scientific advances. They need money for buildings, for the contents of the literature, for staff to manage this literature in meaningful ways, and for research into new ways to bring the recorded knowledge and the user of it together efficiently.

For these reasons, I am writing to you in support of your excellent bill, "Medical Library Assistance Act of 1965," S. 597, which you introduced into the Senate on January 19, 1965. I hope that the members of the Committee on Labor and Public Welfare will act on this bill speedily and positively, and that the Congress will pass it at this session of Congress.

If there is any background information I can supply for your committee, or if you should desire to have a member of the administrative staff of the Washington University Medical Center testify, I hope you will let me know.

Sincerely yours,

CARL V. MOORE, M.D.,
Vice Chancellor for Medical Affairs.

WASHINGTON UNIVERSITY,
St. Louis, Mo., February 8, 1965.

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

DEAR SENATOR HILL: I am heartened to learn that you have introduced Senate bill 597, "Medical Library Assistance Act of 1965," which has as its object the alleviation of some of the problems of biomedical research, teaching, and patient care through making the medical libraries of our Nation better able to serve the needs of American medicine.

As chairman of one of the National Institutes of Health Advisory Committees, as a teacher and research worker in a great clinical center, and as a physician, I have been acutely aware of the need to strengthen the means for communication of biomedical information. I have worked for some time now with officials of the MEDLARS project at the National Library of Medicine, and I am much impressed by the power of this system. But this is just a beginning. More needs to be done in this field, both by the National Library of Medicine in Bethesda, and by local biomedical libraries throughout the country, which can act as the first bastions of information for people they serve directly.

The interrelationship of a centralized and a decentralized network of scientific intelligence has seemed to me to be so important that I have been working for several years now as chairman of the Washington University School of Medicine Library Committee to obtain more budget, more space, more well-trained staff, and more experimental equipment for our own local needs. This experience has led me to believe that only the aid of the Federal Government can bring about the desired result. The cooperation of Federal and local groups is as essential to medical advances as similar cooperation is to building interstate roads.

I am writing, therefore to urge prompt and favorable action on S. 597. We cannot have a Great Society unless it is also a healthy society.

Sincerely yours,

SOL SHERRY, M.D.,
Professor of Medicine and
Chairman, Library Committee, Washington University School of Medicine.

STATE OF NEBRASKA,
Lincoln, May 25, 1965.

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

DEAR SENATOR HILL: This letter is in reference to Senate bill S. 597 and House bill H.R. 3142 known as the Medical Library Assistance Act of 1965. It seems to me that this is a very necessary and laudable piece of legislation. One of the things that is very often overlooked in our planning for colleges of medicine is the medical library, and many of them are totally inadequate in furnishing resource material for medical students and residents.

In Nebraska we have a valuable library collection that is kept in an extremely poor facility for the purpose, with inadequate space for students, staff, and equipment. We have also found that it is difficult to secure properly trained people to staff medical libraries. I am sure there is a constantly increasing knowledge in the field of medicine that needs to be housed in medical libraries, not only for the medical students, but for doctors and others in the health field in the whole area served by the colleges of medicine.

I just want you to know that I heartily endorse this bill, and I hope Congress will pass it, as it will fill one of the basic needs in the area of human health and development.

Sincerely,

FRANK B. MORRISON, *Governor.*

YOUNG DEMOCRATIC CLUBS OF NEBRASKA.

Omaha, Nebr., April 11, 1965.

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

DEAR SENATOR HILL: I am pleased to inform you that I have secured endorsement of your bill, S. 597, the Medical Library Assistance Act, from three organizations in the recent weeks.

Enclosed find copies of resolutions passed unanimously by the Young Democratic National Committee and by the National Executive Committee of the College Young Democratic Clubs of America, at simultaneous meetings held at Kansas City this weekend.

The same resolution was adopted by the Student American Medical Association chapter at the University of Nebraska College of Medicine, and will be proposed by the chapter at the SAMA national convention in Chicago next month.

I am a senior medical student at the above-named institution due to receive my M.D. degree June 13, 1965. I am assistant to the president of the Nebraska S.A.M.A. chapter, and I am a member of the National Executive Committee of the College Young Democratic Clubs of America. Incidentally, I represent the only medical college Young Democratic club in the United States.

Please know that we appreciate your continued interest in advancement of medical education, research, and practice in America.

Yours very sincerely,

F. JAY PEPPER,

Executive Secretary, Young Democratic Clubs of Nebraska.

(Unanimously adopted by the Young Democratic National Committee, meeting at Kansas City, Mo., Apr. 10, 1965)

Resolution: The Medical Library Assistance Act of 1965:

Whereas (1) the unprecedented expansion of knowledge in the health sciences within the past two decades has brought about a massive growth in the quantity, and major changes in the nature of, biomedical information, materials, and publications, and (2) there has not been a corresponding growth in the facilities and techniques necessary adequately to coordinate and disseminate among health scientists and practitioners the ever-increasing volume of knowledge and information which has been developed in the health science field, and (3) much of the value of the ever-increasing volume of knowledge and information which has been, and continues to be, developed in the health science field will be lost unless proper measures are taken in the immediate future to develop facilities and techniques necessary to collect, preserve, store, process, retrieve, and facilitate the dissemination and utilization of, such knowledge and information; and

Whereas the "Medical Library Assistance Act of 1965 (S. 597 in the Senate and H.R. 3142 in the House of Representatives of the United States) is proposed and would provide the means, to (1) assist in the construction of new, and the renovation, expansion, or rehabilitation of existing medical library facilities, (2) assist in the training of medical librarians and other information specialists in the health sciences, (3) assist, through the awarding of special fellowships to physicians and scientists, in the compilation of existing, and the creation of additional, written matter which will facilitate the distribution and utilization of knowledge and information relating to scientific, social, and cultural advancements in sciences related to health, (4) assist in the conduct of research and investigations in the field of medical library science and related activities, and in the development of new techniques, systems, and equipment for processing, storing, retrieving, and distributing information in the sciences related to health, (5) assist in improving and expanding the basic resources of medical libraries and related facilities, (6) assist in the development of a national system of regional medical libraries each of which would have facilities of sufficient depth and scope to supplement the services of other medical libraries within the region served by it, and (7) provide financial support to biomedical scientific publications: Be it therefore

Resolved, That the Young Democratic Clubs of America hereby endorse the Medical Library Assistance Act of 1965, and commend it to our elected representatives in the Congress for early passage.

(Explanatory note: Identical bills were introduced simultaneously: S. 507 in the Senate by Hon. Lister Hill of Alabama, and H.R. 3142 in the House of Representatives, by Hon. Oren Harris of Arkansas. Committee hearings will take place in the near future.)

Submitted by F. Jay Pepper, for the Young Democratic Clubs of Nebraska, April 10, 1965.

(Unanimously adopted by the National Executive Committee of the College Young Democratic Clubs of America, meeting at Kansas City, Mo., Apr. 10, 1965)

Resolution: The Medical Library Assistance Act of 1965:

Whereas (1) the unprecedented expansion of knowledge in the health sciences within the past two decades has brought about a massive growth in the quantity, and major changes in the nature of biomedical information, materials, and publications, and (2) there has not been a corresponding growth in the facilities and techniques necessary adequately to coordinate and disseminate among health scientists and practitioners the ever-increasing volume of knowledge and information which has been developed in the health science field, and (3) much of the value of the ever-increasing volume of knowledge and information which has been, and continues to be, developed in the health science field will be lost unless proper measures are taken in the immediate future to develop facilities and techniques necessary to collect, preserve, store, process, retrieve, and facilitate the dissemination and utilization of, such knowledge and information; and

Whereas the Medical Library Assistance Act of 1965 (S. 597 in the Senate and H.R. 3142 in the House of Representatives of the United States) is proposed and would provide the means, to (1) assist in the construction of new, and the renovation, expansion, or rehabilitation of existing medical library facilities, (2) assist in the training of medical librarians and other information specialists in the health sciences, (3) assist, through the awarding of special fellowships to physicians and scientists, in the compilation of existing, and the creation of additional, written matter which will facilitate the distribution and utilization of knowledge and information relating to scientific, social, and cultural advancements in sciences related to health, (4) assist in the conduct of research and investigations in the field of medical library science and related activities, and in the development of new techniques, systems, and equipment for processing, storing, retrieving, and distributing information in the sciences related to health, (5) assist in improving and expanding the basic resources of medical libraries and related facilities, (6) assist in the development of a national system of regional medical libraries each of which would have facilities of sufficient depth and scope to supplement the services of other medical libraries within the region served by it, and (7) provide financial support to biomedical scientific publications: Be it therefore

Resolved, That the College Young Democratic Clubs of America hereby endorse the Medical Library Assistance Act of 1965, and commend it to our elected Representatives in the Congress for early passage.

(Explanatory note: Identical bills were introduced simultaneously: S. 597 in the Senate by Hon. Lister Hill of Alabama and H.R. 3142 in the House of Representatives by Hon. Oren Harris of Arkansas. Committee hearings will take place in the near future.)

Submitted by F. Jay Pepper, for the Young Democratic Clubs of Nebraska, April 10, 1965.

MEDICAL AND CHIRURGICAL FACULTY
OF THE STATE OF MARYLAND,
Baltimore, Md., April 15, 1965.

Senator LISTER HILL,
Labor and Public Welfare Committee,
U.S. Senate, Washington, D.C.

DEAR SENATOR HILL: The medical and chirurgial faculty of the State of Maryland is interested in S. 597 and H.R. 3142, concerning the Medical Library Assistance Act of 1965 which have been introduced in Congress by you and Mr. Harris.

Because of our pride in our own medical library which is one of the oldest in the country, and our conviction that adequate and comprehensive libraries are an integral part of the medical profession, we commend your efforts in this area.

If the medical faculty can be of any assistance to you in any way please do not hesitate to call on us.

Sincerely,

JOHN SARGEANT,
Executive Secretary.

SOUTH JERSEY MEDICAL RESEARCH FOUNDATION,
Camden, N.J., March 24, 1965.

Re S. 597.

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

MY DEAR SENATOR HILL: The Medical Library Assistance Act of 1965, S. 597, should be enacted into law. I have read the bill carefully and can vouch for the great need of improving medical library facilities.

As director of a private, nonprofit medical research institute, and as a professor of pediatrics at the University of Pennsylvania, School of Medicine, I am constantly reminded of the need for improved library facilities and related services which are necessary to modern research and application of medical advances through the treatment of disease.

I hope you will support this bill and I urge you to do so. With kind regards and appreciation for your understanding and continued support of efforts to improve our knowledge of the unsolved medical problems.

Sincerely yours,

LEWIS L. CORIELL, M.D., *Director.*

THE UNIVERSITY OF NEW MEXICO,
Albuquerque, N. Mex., February 4, 1965.

HON. LISTER HILL,
*U.S. Senate,
New Senate Building,
Washington, D.C.*

DEAR SENATOR HILL: I am writing concerning your recently introduced Senate bill, S. 597, to provide a program of grants to assist in meeting the need for adequate medical library facilities and services. I am strongly in favor of this bill. As a physician interested in medical education I believe that adequate library resources are of the utmost importance to the effective practice of medicine and to medical education. As dean of a developing medical school, I can state without equivocation that the development of the library is perhaps the most critical single factor in the establishment of a new school.

I have every hope that S. 597 will receive early and favorable consideration.

Yours sincerely,

REGINALD H. FITZ, M.D., *Dean.*

JOSIAH MACY, JR., FOUNDATION,
New York, N.Y., January 25, 1965.

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

DEAR SENATOR HILL: During the years since World War II there has been a remarkable growth in medical research in the United States. The medical schools have expanded the size of their classes and a number of new schools have been opened to meet the urgent need for more doctors.

Unfortunately there has not been a comparable development in facilities and materials for medical libraries, so that now the need is urgent. Medical research and the education of physicians will benefit strikingly if library facilities are made available through the passage of S. 597, "to amend the Public Health Service Act to provide for a program of grants to assist in meeting the need for adequate medical library services and facilities."

I hope that the Members of the Congress will assure speedy passage of this important measure.

Very truly yours,

JOHN Z. BOWERS, M.D., *President.*

NEW YORK UNIVERSITY MEDICAL CENTER,
New York, N.Y., February 25, 1965.

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

DEAR SENATOR HILL: The Medical Library Assistance Act (S. 597) introduced by you on January 19, deserves the full support of the Committee on Labor and Public Welfare. Federal assistance for the construction and improvement of medical library facilities, grants for training personnel and conducting research in new library techniques, the development of regional medical libraries, and the support of biomedical scientific publications, is very much needed and should be provided.

Sincerely,

GEORGE E. ARMSTRONG, M.D., *Director.*

THE NEW YORK ACADEMY OF MEDICINE,
New York, N.Y., February 5, 1965.

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

DEAR SENATOR HILL: The New York Academy of Medicine would like to express its wholehearted support of your bill to provide a program of grants to assist in meeting the needs of adequate library services and facilities. The tremendous increase in scientific literature and the need to supply it quickly has brought incalculable difficulties to medical libraries throughout the country. The proposals made in the Senate bill 597, if implemented, would be of enormous significance in serving medicine and medical research. We urge that this bill be facilitated.

Sincerely yours,

HOWARD REID CRAIG, M.D., *Director.*

NEW YORK UNIVERSITY,
New York, N.Y., March 10, 1965.

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

DEAR SENATOR HILL: I strongly recommend positive consideration of S. 597 and H.R. 3142, which provides much needed grants-in-aid for medical library services and facilities. The expansion of medical libraries and the services they provide are key to the progress and development of medical education in the United States.

Rapidly expanding techniques and scientific knowledge make it mandatory that every effort be made to strengthen and support the orderly collection, documentation, and ready access of critical and essential data to students, teachers, scientists, and clinicians. I can think at this time of few items of legislation more important to the medical sciences and education than the passage of these bills.

I know the faculty at New York University School of Medicine supports this contention.

Sincerely yours,

SAUL J. FARBER, M.D.,
Professor of Medicine, Acting Dean.

ST. PETER'S HOSPITAL,
Albany, N.Y., March 3, 1965.

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

DEAR SENATOR HILL: As administrator of St. Peter's Hospital, may I urge you to do all in your power to see that Senate bill S. 597, the Medical Library Assistance Act of 1965, be passed. It is of vital importance to all of us in the field of medicine.

Respectfully,

Sister MARY JANET, *Administrator.*

ALBERT EINSTEIN COLLEGE OF MEDICINE,
YESHIVA UNIVERSITY,
New York, N.Y., February 3, 1965.

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

DEAR SENATOR HILL: Your bill S. 597, introduced in the Senate on January 19, 1965, as the Medical Library Assistance Act of 1965, will receive our enthusiastic support.

Federal funds are sorely needed to supplement the budgets of medical colleges for expansion of library facilities, acquisition of costly information-storage-and-retrieval equipment, and training of library personnel in new techniques.

Sincerely yours,

MARCUS D. KOGLER, M.D., Dean.

THE ACADEMY OF MEDICINE OF NEW JERSEY,
Bloomfield, N.J., April 30, 1965.

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

DEAR SENATOR HILL: At a recent meeting of the board of trustees of the Academy of Medicine of New Jersey, it was moved and passed that the academy, on behalf of its library, urge the support of the Medical Library Assistance Act of 1965.

We are writing the Congressmen from New Jersey, requesting their support of this act.

Respectfully,

ARTHUR F. MANGELSDORFF, M.D., President.

COLUMBIA UNIVERSITY,
SCHOOL OF PUBLIC HEALTH AND ADMINISTRATIVE MEDICINE,
New York, N.Y., May 3, 1965.

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

DEAR SENATOR HILL: As chairman of the Department of Preventive and Administrative Medicine of Columbia University College of Physicians and Surgeons, I would like to express my support of the Medical Library Assistance Act of 1965 (S. 597 and H.R. 3142), introduced in the Senate by yourself and in the House by Congressman Oren Harris.

Medical libraries today face a great responsibility in meeting the demands placed upon them by the community they serve. This community includes individuals involved in education, research, and patient care. The Medical Library Assistance Act provides much needed legislation and enables the Federal Government to play an important role in medical communication and in the improvement of the health of the Nation.

May I respectfully urge that you lend your support to the Medical Library Assistance Act of 1965.

Sincerely yours,

RAY E. TRUSSELL, M.D., M.P.H., Director.

AMERICAN THORACIC SOCIETY,
New York, N.Y. March 9, 1965.

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

MY DEAR SENATOR HILL: The committee on medical education of the American Thoracic Society recognizes the importance of adequate medical library facilities and personnel in medical education and research and also recognizes the serious shortage of such facilities and personnel in the Nation at this time.

The committee, therefore, at its meeting on February 9, 1965, recommended that the American Thoracic Society go on record as endorsing and supporting the bill introduced by you in the U.S. Senate, S. 597, to provide a remedy for this

deficiency and recommended that notice of its action be forwarded to you, to the White House, and to other individuals as appropriate.

The executive committee of the American Thoracic Society unanimously approved this action of its committee on medical education at its meeting on March 1, 1965.

I wish, therefore on behalf of the American Thoracic Society to bring these actions to your attention and to express our earnest hope that your efforts to improve medical library services in the United States both qualitatively and quantitatively will meet with complete success.

Sincerely yours,

JAMES W. RALEIGH, M.D.,
Medical Director, American Thoracic Society.

RESOLUTION

ATS COMMITTEE ON MEDICAL EDUCATION, FEBRUARY 9, 1965

On motion it was voted that the committee on medical education of the American Thoracic Society approve the bills S. 597 and H.R. 3142 and recommend to the American Thoracic Society executive committee that they likewise endorse and support the bills, and that a copy of this endorsement be sent to Senator Lister Hill, Representative Oren Harris, and to other appropriate persons.

Endorsed by ATS executive committee, March 1, 1965.

DUKE UNIVERSITY MEDICAL CENTER,
Durham, N.C. February 4, 1965.

Senator LISTER HILL,
*Congress of the United States,
Washington, D.C.*

DEAR SENATOR HILL: I would like to add a strong word of support for the bills pending before Congress, S. 597 and H.R. 3142, which are designed to provide support for medical libraries in universities throughout the Nation. I believe that this is an extremely important piece of legislation and it is quite necessary for the growth for medical schools throughout America.

I would be most happy to testify in behalf of the legislation at the hearings for the bill.

Yours truly,

MORTON D. BOGDONOFF, M.D.,
*Professor of Medicine,
President, American Federation for Clinical Research.*

THE UNIVERSITY OF NORTH CAROLINA,
Chapel Hill, February 5, 1965.

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

DEAR SENATOR HILL: I am writing to indicate my hearty support of the bills which have been introduced into Congress for support of medical school libraries. These bills are S. 597 and H.R. 1342. The assistance which these bills will provide for medical education and medical care is urgently needed and its importance cannot be overstated. I hope the bills will have your support.

Sincerely yours,

ISAAC M. TAYLOR, M.D., *Dean.*

UNIVERSITY OF CINCINNATI,
Cincinnati, Ohio, February 12, 1965.

Senator FRANK LAUSCHE,
Senate Office Building, Washington, D.C.

DEAR SENATOR LAUSCHE: As you are no doubt aware, Senator Lister Hill has recently introduced a bill, S. 597, the "Medical Library Assistance Act of 1965," designed to improve the medical library services of the Nation. On behalf of the

University of Cincinnati Medical Center I would like to emphasize our belief that this legislation is greatly needed; good medical libraries are essential to the support of medical education and research, as well as to the improvement of patient care. Your efforts are thus directed toward an important and meaningful goal.

The libraries of the Cincinnati Medical Center consist of five separate units over a wide area. The two main ones, the College of Medicine Library and the Cincinnati General Hospital Library are about three city blocks apart. As the Medical Center grows it becomes more and more necessary to plan for a centrally located library into which our numerous collections can be consolidated. This will require either new construction or extensive renovation of existing buildings. We have recently appointed a Medical Center librarian to plan for the eventual centralization and consolidation as well as to improve as much as possible facilities and services now existing in such scattered form. We will, obviously, be watching the progress of your bill with interest since it represents the only source of funds of which we are presently aware. We will also be interested in applying for funds to improve the collections of the libraries.

We would like to call your attention to an article by Harold Bloomquist, "The Status and Needs of Medical School Libraries in the United States," which appeared in the *Journal of Medical Education*, volume 38, pages 145-163, March 1963. This article points out quite graphically that the medical libraries of the United States are in need of the kind of support which would be provided by the bill introduced by Senator Hill. A copy of the report is enclosed for your information.

If there is anything we can do to provide more concrete information of the needs for financial assistance for medical libraries, either at the University of Cincinnati Medical Center or generally, do not hesitate to call on us. We urge you to give your support to speedy passage of this important bill.

Yours truly,

CLIFFORD G. GRULEE, Jr., *Dean.*

WESTERN RESERVE UNIVERSITY,
Cleveland, Ohio, February 16, 1965.

HON. FRANK J. LAUSCHE,
Senate Office Building, Washington, D.C.

MY DEAR SENATOR: I have recently had the opportunity to study carefully a copy of S. 597, a bill submitted by Senator Lister Hill on January 19, 1965, to amend the Public Health Service Act to provide for a program of grants to assist in meeting the need for adequate medical library services and facilities. I am taking the liberty of writing to you to express my personal views on this proposed legislation and hope that they may be of interest to you.

You are aware, as I am, of the fact that we live in a time of exploding knowledge and of a fantastic output of research which gives us both new knowledge and in incredibly short periods of time new skills and services. In no area is this more dramatically true than those of the health sciences, or perhaps one would better yet say the area of biomedical sciences. To insure that our citizens receive directly and promptly the fruits of new knowledge and new skills in order that both private and public health may be continuously improved, it is necessary that we make a radical and rapid improvement in the dissemination of knowledge in the biomedical field. Thus the role of the medical library, its services and facilities, become of extremely central importance.

It is my considered opinion, as one who has devoted himself for two decades to the study of the health professions, the education of the practitioners of the future, and to the enhancement of biomedical knowledge, that I can attest to the inadequacy of our present health library facilities, both in the city of Cleveland and throughout the United States. Senator Hill's proposal makes a statesmanlike approach to the whole problem and would, if enacted, bring about a remarkable amount of progress. In fact, I think I can say that the modest amount of money involved in the appropriation to implement the bill would have a more dramatic and more permanent effect upon the well-being of our people than the expenditure of this sum in any other way of which I know.

I respectfully urge that you study this bill carefully and that, should you be persuaded of the validity of its aims, that you will lend your personal support to its passage by the Congress.

With kind personal regards,
Sincerely yours,

JOHN S. MILLIS, *President.*

WESTERN RESERVE UNIVERSITY,
Cleveland, Ohio, February 19, 1965.

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

MY DEAR SENATOR HILL: May I write you in regard to my support of S. 597 concerning the support and development of medical libraries.

May I say as a dean of a medical school that libraries have played an important part in medical education and that although we have enjoyed international reputation as leaders in medical education, we have perhaps as poor a library as exists in this country. We have made plans to improve this and have acquired some support. I am not speaking for our school on this but rather as someone from the field who has a conviction that first-class libraries are absolutely essential to the proper conduct at all levels.

May I say that I am delighted that you have had the foresight to introduce S. 597 to the Congress.

Very truly yours,

DOUGLAS D. BOND, M.D.,
Dean, School of Medicine.

THE UNIVERSITY OF NEW MEXICO,
Albuquerque, February 9, 1965.

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

DEAR SENATOR HILL: As a medical librarian, may I thank you for introducing Senate bill S. 597 to provide a program of grants to assist in meeting the need for adequate medical library facilities and services. As one who serves the medical profession, may I state my realization of the importance of this bill to the medical profession of the United States. The problem of medical library service is now the most critical single need of the medical profession in the United States.

I have every hope that S. 597 will receive early and favorable consideration.

Respectfully yours,

ROBERT T. DIVETT, Librarian.

UNIVERSITY OF CINCINNATI,
Cincinnati, Ohio, February 11, 1965.

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

DEAR SENATOR HILL: I have read with great interest a copy of your bill S. 597 which, if approved, will provide assistance in the form of grants to the medical libraries of the Nation. On behalf of the University of Cincinnati Medical Center I would like to emphasize our belief that this legislation is greatly needed; good medical libraries are essential to the support of medical education and research, as well as to the improvement of patient care. Your efforts are thus directed toward an important and meaningful goal.

The libraries of the Cincinnati Medical Center consist of five separate units over a wide area. The two main ones, the College of Medicine Library and the Cincinnati General Hospital Library are about three city blocks apart. As the medical center grows it becomes more and more necessary to plan for a centrally located library into which our numerous collections can be consolidated. This will require either new construction or extensive renovation of existing buildings. We have recently appointed a medical center librarian to plan for the eventual centralization and consolidation as well as to improve as much as possible the facilities and services now existing in such scattered form. We will, obviously, be watching the progress of your bill with interest since it represents the only source of funds of which we are presently aware. We will also be interested in applying for funds to improve the collections of the libraries.

You are no doubt aware of the report by Harold Bloomquist, "The Status and Needs of Medical School Libraries in the United States," which appeared in the Journal of Medical Education, vol. 38, pp. 145-163, March 1963. This, it seems to me, should be an excellent argument in favor of increased support for medical library facilities. A copy of this article is enclosed, in case you can use it to solicit support among your fellow Senators for the bill.

If there is anything we can do to provide more concrete information on the needs for financial assistance for medical libraries, either at the University of

Cincinnati Medical Center or generally, do not hesitate to call on us. We are indeed hoping for a speedy passage of the bill.

Yours truly,

CLIFFORD G. GRULEE, Jr., *Dean.*

THE OHIO STATE UNIVERSITY,
Columbus, Ohio, March 10, 1965.

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

DEAR SENATOR HILL: This letter is submitted to indicate our support of S. 597, called the Medical Library Assistance Act of 1965. I am writing at this time because our needs have come to my attention acutely in the annual report of the librarian of this medical school, which arrived on my desk this morning.

As you know, the library is certainly the heart of a hospital-medical school complex, and if it is inadequate to support students learning, it is not only the students and faculty who suffer, but their patients in later days.

Two statistics quoted from our librarian's report regarding the inadequacies of our Health Center Library here are that, "whereas a library should be able to seat at least 75 percent of its patrons, ours seats less than 2 percent. It is often impossible to find any place to sit." The other statistic which I would like to quote is that "it has been necessary to have an overflow room in the form of a classroom at some distance from the library." This, of course, makes for inconvenience and ineffective study, inasmuch as the student cannot spread the library material before him on the arm of a lecture-room chair.

I know there are other medical school libraries which are also in need of this assistance, and I wish you to know our earnest desire that this bill receive favorable consideration.

Thank you for the fine things you are doing to help medical education and the general health of our people.

Sincerely yours,

RICHARD L. MEILING, M.D., *Dean.*

UNIVERSITY OF PITTSBURGH,
Pittsburgh, Pa., March 29, 1965.

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

DEAR SENATOR HILL: I wish to thank you for your support of medical education evidenced by introduction of S. 597, which gives support from Federal funds to the building and development of medical libraries. This certainly is one of the most important things that we must do if we are to upgrade medical education. Thus, I am particularly grateful to you for taking leadership in this important matter.

Yours sincerely,

F. S. CHEEVER, M.D., *Dean.*

TEMPLE UNIVERSITY SCHOOL OF MEDICINE,
Philadelphia, Pa., February 23, 1965.

HON. LISTER HILL,
*Committee on Labor and Public Welfare,
New Office Building, Washington, D.C.*

DEAR SIR: As one of the 87 medical school librarians in the United States, I urge you to support S. 597.

The Medical school libraries and the regional supporting medical libraries have been neglected in the program for medical research. Yet it is in the library that many research projects are started, and it is the library that sustains and nourishes these projects.

The medical school libraries in the United States need financial support to further the growth of medicine, and the regional medical libraries need financial support to supplement the collections of the medical libraries.

Medical libraries cannot continue to provide good service without the support of this bill.

Very truly yours,

MRS. RUTH DIAMOND, *Librarian.*

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA,
Philadelphia, Pa., February 23, 1965.

Hon. LISTER HILL,
*U.S. Senate, Committee on Labor and Public Welfare,
New Office Building, Washington, D.C.*

DEAR SENATOR HILL: You should know that I favor the passage of S. 597—The Medical Library Assistance Act of 1965, which you introduced in the Senate recently.

You have the commendation of the medical school librarians especially, because you have written into your bill, provisions for aid not only to the medical school libraries, but also to the private nonprofit medical libraries which provide assistance to and supplement our collections. We have come to depend on these institutions for regional services through the interlibrary loan arrangements we carry on with them. It is most important that their collections in the related sciences expand and keep pace with new developments in resources and communication facilities.

My best wishes for a favorable reception of your bill and its passage without undue delay.

Sincerely,

IDA J. DRAEGER, *Medical Librarian.*

THE DEVEREUX FOUNDATION,
Devon, Pa., March 23, 1965.

Hon. LISTER HILL,
*Committee on Labor and Public Welfare,
New Office Building, Washington, D.C.*

DEAR SENATOR HILL: I wish to advise you of our strong hope that favorable consideration will be given to bill S. 597 and bill H.R. 3142, which provide for the expansion of medical library facilities.

With the tremendous increase in the literature of the health sciences and the increased public and private resources being devoted to research and training in this and related areas, fundamental library functions, vital as they may be to such activities, are hard pressed to maintain adequate services.

It is my understanding that existing legislation restricts Government support of medical library facilities to medical colleges, whereas much significant work is being done in other settings, such as nonprofit research organizations.

It is obvious that the significance of the work could depend, in large measure, on the availability of appropriate libraries. The fact that library services are not supported and encouraged constitutes, we feel, a weak link in the forward movement of scientific progress, which in so many other ways has benefited from Government support.

May I, therefore, request your thoughtful consideration of the above-named bills in terms of the effective results which will be forthcoming from the passage of this legislation in providing support for needed new and renovation of existing medical library facilities, as well as assisting in the training of medical librarians, facilitation of the distribution and utilization of scientific knowledge through the awarding of special fellowships, and other important aspects of this total sphere of endeavor.

Thank you very much for your support.

Sincerely yours,

EDWARD L. FRENCH, Ph. D.,
*President of the Devereux Foundation and President of the
Clinical Biochemistry and Behavioral Research Institute.*

THE PENNSYLVANIA STATE UNIVERSITY,
MILTON S. HERSHEY MEDICAL CENTER,
Hershey, Pa., February 12, 1965.

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

DEAR MR. HILL: I was delighted to note that on January 19, 1965, you introduced a bill for support of medical libraries which has been numbered S. 597. (I am sure I need not tell you of the needs of medical libraries.

As you will note from the above letterhead, I have moved from the University of Florida to establish the new Pennsylvania State University College of Medicine in the Milton S. Hershey Medical Center at Hershey. We at Hershey will be particularly interested in the construction features. As I have visited other medical schools over the country on accreditation and other site visits, I have been quite impressed with the inadequacy of medical libraries. I am most pleased that you have introduced this bill on behalf of medical education. For whatever my small support is worth, you have my complete backing. If there is anything I can do to help in any way, just call on me. At the recent executive council meeting of the Association of American Medical Colleges the bill was discussed, but I am sure that you will have direct official testimony to that effect coming to you from the officers.

Should you ever be in the Hershey area, we would love to have you stop by and say hello. I think you would be interested in the broad liberal approach we are taking in the planning of the new school here.

Cordially,

GEORGE T. HARRELL, M.D., *Dean.*

THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA,

February 11, 1965.

Senator LISTER HILL,
*Labor and Public Welfare Committee,
New Office Building, Washington, D.C.*

SIR: As you no doubt are aware, the College of Physicians of Philadelphia has one of the great medical libraries of the world. This is equally available to fellows of the college and to all medical scientists, medical educators, medical students, and others, particularly in the Philadelphia area. With the greatly increased cost of medical publications and the expansion in our medical knowledge, it has become financially impossible for the College of Physicians of Philadelphia to purchase the total numbers of journals, textbooks, monographs, and other volumes sorely needed by our medical community. The college has recently raised its membership dues by 50 percent and has made valiant efforts to obtain philanthropic and other support.

It is, therefore, of the greatest significance to us that you kindly introduced S. 597 and that Congressman Oren Harris introduced H.R. 3142 into the Congress. We believe that this legislation could provide support to the College of Physicians of Philadelphia that would make it an even greater regional resource.

On behalf of my own personal utilization of this library, the utilization of it by the medical students of Jefferson Medical College, as well as the more than 5,000 physicians in the immediate Philadelphia area, I urge the mobilization for support for passage of this important legislation.

Sincerely yours,

E. HAROLD HINMAN, M.D.,
Professor and Head of the Department of Preventive Medicine.

LIBRARY OF THE
COLLEGE OF PHYSICIANS OF PHILADELPHIA,
Philadelphia, Pa., February 24, 1965.

Senator LISTER HILL,
*Labor and Public Welfare Committee,
New Office Building, Washington, D.C.*

DEAR SENATOR HILL: May I congratulate you for the introduction of S. 597 (H.R. 3142). This proposed Medical Library Assistance Act is an answer to a critical need.

May I particularly endorse the fact that support is not limited to institutions of higher learning. There are other nonprofit medical libraries which are freely offering their resources and services to the medical community in support of the national service of the National Library of Medicine.

The library of the College of Physicians has been serving all of medicine since 1787. It derives no direct support from the State or National Government although it freely loans its books and journals to State and Federal agencies. The rising costs of library operations have outstripped the ability of a relatively small number of members to support this service library adequately.

The value of this library has been recognized by local support from medical schools and industry but costs have now reached a level when national as well as local assistance is needed to insure the survival of this library as an effective link in the chain of medical communication.

The strengthening of existing institutions which have eloquently demonstrated their desire to serve, is logical and economically sound. The Medical Library Assistance Act has our unqualified support.

Yours very truly,

ELLIOTT H. MORSE, *Librarian.*

[From the Philadelphia Inquirer, Thursday morning, June 3, 1965]

RAVDIN BOOSTS HEALTH LIBRARIES

Government support is badly needed for libraries serving physicians and other health professionals, Dr. I. S. Ravdin, vice president for medical affairs of the University of Pennsylvania, said Wednesday night.

"While the Federal Government has provided more and more funds for research," he said, "it has been extraordinarily difficult to obtain Federal funds for the building and maintenance of medical libraries."

THE NEED IS GREAT

Dr. Ravdin spoke at a dinner of the 64th annual meeting of the Medical Library Association to the Bellevue Stratford.

He said, "the need is great for expanded and improved library facilities serving not only physicians and medical students, but paramedical professions such as dentistry and nursing and also medical scientists."

MUST BRING PRESSURE

"The time has come when we must bring pressure on the Congress to support such projects," Dr. Ravdin said.

"A few great libraries will not meet the need," he added, saying that there should be a fine library associated with every medical school and accessible to every health professional. "This is not the case today," Dr. Ravdin said.

The association, which meets through Friday, has been on record supporting the medical libraries assistance bills now before Congress, which would be the first Federal legislation addressed specifically to the needs of medical libraries.

MEDICAL CLINIC OF THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA, *February 12, 1965.*

Subject: Bill S. 597.

Hon. LISTER HILL,
*Labor and Public Welfare Committee,
New Office Building, Washington, D.C.*

SIR: I wish to give my unqualified support for bill S. 597, a bill which has been introduced to support nonprofit medical libraries which are performing a regional service.

The library I have in mind particularly as an example of such an institution is the library of the College of Physicians of Philadelphia. This is one of the great medical libraries in America, and it has been extremely difficult to find enough money to support all its activities adequately. This library is of tremendous importance not only to medicine in Philadelphia and to all its medical schools, whose students and faculties use it extensively, but for the country as a whole. There are many valuable items in this library that are not duplicated anywhere else.

It is imperative that such an institution and others like it be supported in a way that allows them to function most effectively.

Sincerely yours,

FRANCIS C. WOOD, M.D.,
Chairman, Department of Medicine.

THE UNIVERSITY OF TENNESSEE,
Memphis, Tenn., April 28, 1965.

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

MY DEAR SENATOR: Allow me to take this opportunity to express appreciation on behalf of our particular institution for your interest in strengthening our science libraries. Provisions of S. 597 which you introduced into the Senate will do much to assist these resources to fulfill their very important supportive role in the total teaching, service, and research activities of our institutions in the health fields.

Of recent years, the expansion of science information has imposed overwhelming burdens on our libraries and librarians. If such information is to be useful in the further development of knowledge, it must be readily available to students, faculty, and researchers in our institutions. Our libraries have found it impossible to acquire and house this information in view of the large and increasing number of science publications in the fields of health. By the same token, our librarians find it impossible to render effective and efficient service in the management of such publications. It has been unfortunate that in the development of Federal programs to assist in the development of new knowledge through research, the means for adequately managing the science information which has come out of our research programs has been seriously overlooked.

I should like also to applaud the efforts to provide adequate financial assistance to the National Medical Library and to provide funds whereby that institution may support programs of study in the storage and retrieval of science information.

Speaking for my own and other institutions, I hope that S. 597 will receive favorable consideration by the committee studying it, and eventually will be approved by the Senate. I know you will give it your attention.

Thanking you for your past and continuing efforts on behalf of legislation concerned with all aspects of health, and extending to you my sincere regards, I am,

Cordially yours,

HOMER F. MARSH, Ph. D., *Vice President.*

THE UNIVERSITY OF TEXAS,
Dallas, Tex., February 9, 1965.

HON. LISTER HILL,
Senate of the United States,
Washington, D.C.

DEAR SENATOR HILL: We have recently learned of the bill designed to assist in the development and expansion of medical school libraries. It is my understanding that this is S. 597 and H.R. 1342.

I am taking the liberty of writing this letter to you to indicate the keen interest of the faculty of our medical school in this proposed program. Medical school libraries are urgently in need of support for physical plant expansion, modernization of equipment, and research in the field of information retrieval, and also for increasing the more traditional type of library holdings. It should be mentioned that there is also an increasing need for training of several categories of library personnel. The enormous growth of scientific information in recent years has made it necessary for medical schools to expand and modernize and to increase training and research efforts in the library field. Part of the problem is due to the fact that medical schools are now involved in teaching and research programs in many areas which were virtually unknown a few years ago. This requires additions to library holdings far beyond the traditional areas and has greatly strained the resources of many schools of medicine.

I wanted you to know of our feeling of urgency and to express the hope that favorable consideration will be given to the proposed programs.

With best good wishes, I am,

Sincerely yours,

A. J. GILL, M.D., *Dean.*

BAYLOR UNIVERSITY,
COLLEGE OF MEDICINE,
Houston, Tex., February 16, 1965.

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

MY DEAR SENATOR HILL: I am writing to give my personal view that the needs in the field of medical communication are indeed great and that one of the limiting factors in the further advancement of medical education and medical research is the present inadequate state of our medical libraries.

The legislation you have introduced in support of medical library services and facilities is comprehensive and reflects the careful thought and study you have given this problem.

The National Library of Medicine has given leadership to the field of library science and is in a position to provide continued leadership. The needs of medical research for improved communication are so acute at the present time that we cannot delay in moving constructively to improve the situation at once. The special needs in the field of medicine are such that they are not likely to be well served if support for medical libraries is incorporated in legislation designed to support libraries generally.

I believe the legislation you and Representative Harris have sponsored will meet the needs of medical education and research, and I should like to urge its enactment.

Yours sincerely,

STANLEY W. OLSON, M.D., *Dean.*

THE UNIVERSITY OF TEXAS,
THE SOUTH TEXAS MEDICAL SCHOOL,
San Antonio, Tex., February 11, 1965.

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

DEAR SENATOR HILL: As the dean of a medical school early in its developmental stages, I should like to request that you give strong consideration to the support of S. 597, the Medical Library Assistance Act of 1935. The maintenance and development of medical libraries have been a much neglected aspect of the enormous program of medical education which has been observed in this country in the last 20 years. Physical structures in some medical schools are poor and construction funds are vitally needed. Perhaps more important than this, however, is a need to develop skilled personnel who will be available to apply modern technology of information retrieval to the medical library field.

I should like to commend your support to this measure, and thank you for your consideration.

Sincerely yours,

F. C. PANNILL, M.D., *Dean.*

THE UNIVERSITY OF TEXAS,
SOUTHWESTERN MEDICAL SCHOOL,
Dallas, Tex., February 8, 1965.

HON. LISTER HILL,
*Senate of the United States,
Washington, D.C.*

DEAR SENATOR HILL: I am writing in connection with the bill pending before Congress which is designed to expedite the construction of libraries for medical schools. The bill is listed as S. 597 and H.R. 1342.

I think the passage of this bill would enormously expedite both medical research and medical education. Library facilities are critical to both these activities, and I can assure you that many areas of the country do not have access to adequate libraries within a very wide geographical area. This is certainly true of our own medical school. It is, moreover, extremely difficult to get adequate funds to support library construction, especially in view of the pressing demands made upon the university for other kinds of educational facilities.

I do believe, therefore, that the bills before Congress would fill a major gap and greatly expedite both education and research.

Sincerely yours,

DONALD W. SELDIN, M.D.,
*Professor and Chairman,
Department of Internal Medicine.*

AMERICAN PSYCHIATRIC ASSOCIATION,
Washington, D.C., February 18, 1965.

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

MY DEAR SENATOR HILL: I could hardly exaggerate the widespread enthusiasm in the ranks of our profession for your "Medical Library Legislative Proposal" (S. 597). Our governing council met here this past weekend and every one of them registered their extreme enthusiasm for the bill and directed me to express their sentiments to you.

Any proposal that would have significantly assisted the growth and development of medical (and therefore psychiatric) libraries in this country would have been welcomed. But this bill is cogently imaginative beyond anything we had expected.

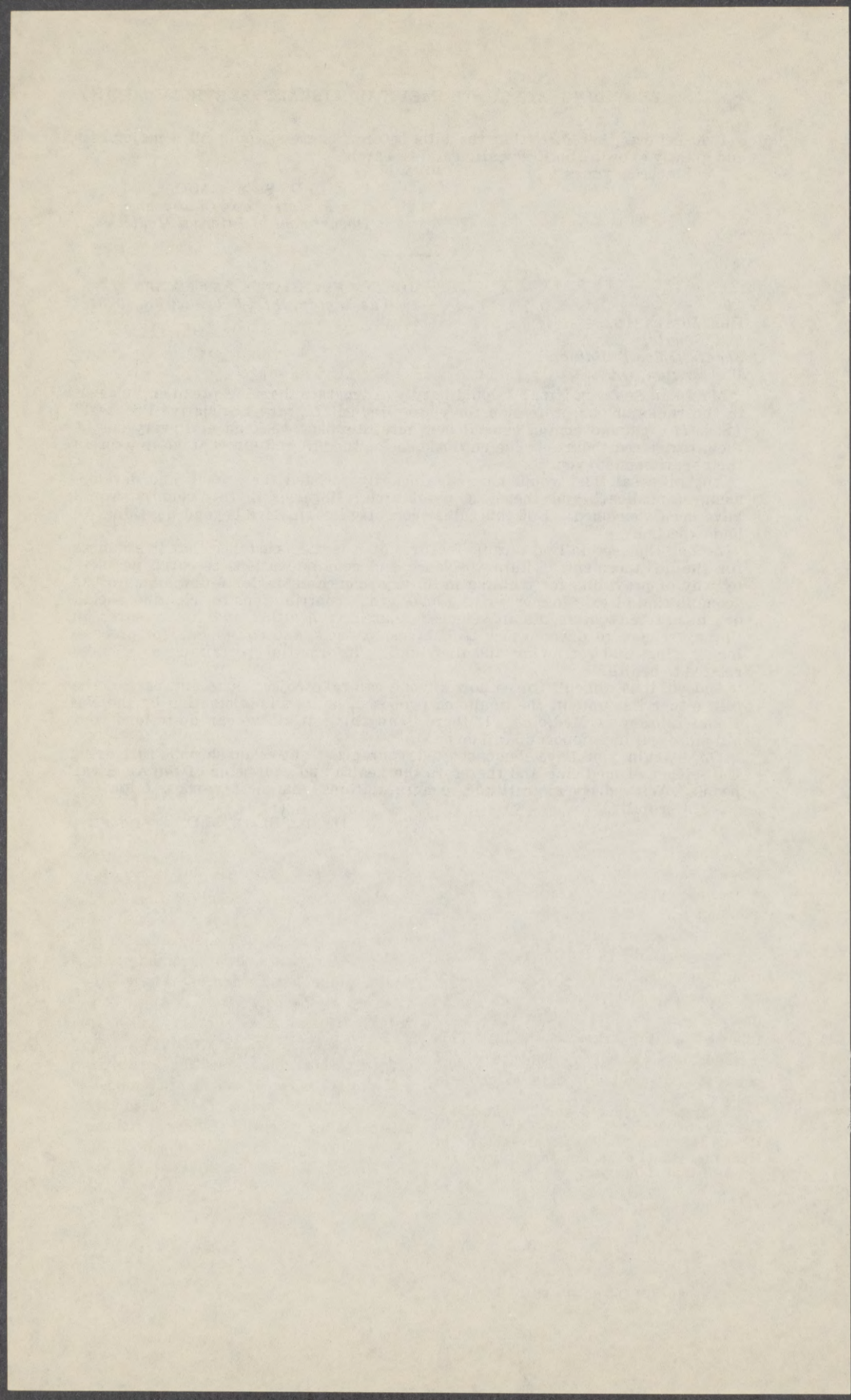
Among the especially desirable features of it is the assistance that it promises for the advancement of library science and communications research per se—by way of providing for training in library science fields, for fellowships for the "compilation of existing, or writing of original, contributions to scientific, social, or cultural advancements in sciences related to health," and for research in library science to develop new techniques, systems, and equipment, for processing, storing, and retrieving and distributing information pertaining to sciences related to health.

Indeed, it is difficult to see how anyone can take objection to any part of the bill, either its content, the financing proposed, or its administration by the National Library of Medicine. If there is anything at all we can do to lend your bill more specific support do call on us.

Once again you have demonstrated your great statesmanship in furthering the science of medicine and therefore the health and well-being of the American people. With deepest gratitude, congratulations, and best wishes, I am,

Cordially,

DANIEL BLAIN, M.D., *President.*



APPENDIX A

The Journal of MEDICAL EDUCATION

VOLUME 38 • NUMBER 3 • MARCH, 1963

The Status and Needs of Medical School Libraries in the United States*

HAROLD BLOOMQUIST†

Harvard University Schools of Medicine and Public Health
Boston, Massachusetts

This paper, prepared at the request of the National Library of Medicine, is the result of a study of the status and needs of the libraries of 86 medical schools and schools of basic medical sciences which are institutional members of the Association of American Medical Colleges and are approved by the American Medical Association. It is intended to summarize the impact of changing requirements in medical research, education, and practice on the collections, services, housing, and staffs of medical school libraries.

Such data as are presented have been gathered from source materials in the files of the National Library of Medicine and the Library Services Branch, U. S. Office of Education, and from replies to a specially prepared questionnaire. The questionnaire sent annually to institutions of higher education by the Library Services Branch, U. S. Office of Education, was modified to apply specifically to medical school libraries and was mailed to the 86 libraries and vigorously followed-up by telephone calls. This methodology yielded a response of 97 per cent and resulted in data which seem

to be the most comprehensive and reliable to have been collected for medical school libraries. The fiscal year 1960-61 was chosen as the most recent year for which complete statistics would be available.

THE INCREASING REQUIREMENTS OF RESEARCH, EDUCATION, AND PRACTICE

A word about the homogeneity of the population: it is true that these 86 libraries serve institutions of greatly varying size and constitution. There are libraries of great urban medical centers and those of smaller, so-called free standing medical schools, not connected with a university. The clientele differs in that many of these libraries are the libraries of schools of public health, nursing, dentistry, rehabilitation, and other related health fields as well as medicine. Some serve undergraduates in biology, and some serve graduate students in the basic sciences. These differences in the population, however, are not significant. Each library exists to perform services to an institution concerned with medical education, research, and patient care. If we have standards in these three areas, then there are standards, or potential standards for the libraries serving all medical schools in the United States. These standards are

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not affected by size of clientele, nor in these days of "comprehensive medicine," in which the concern is with the whole individual in his setting, are they significantly affected by diversity of interest in the health fields. In the medical center library (that library which serves a medical school together with its associated research and patient care facilities) it is not possible to differentiate between library resources and services needed to support education, research, or patient care.

The characteristics of the scientific revolution can be stated briefly as these: the growth of research and new knowledge, specialization, and multi-disciplinary science. The importance and magnitude of the revolution in medicine in the United States have been duly noted in several government publications, notably the Bayne-Jones Report (1) of 1958, the Bane Report (2) of 1959, and the Jones Report (3) of 1960. External social and economic changes are these: (a) a greater birth rate and a longer life expectancy; (b) the cumulation of new knowledge, thus increasing the possibilities for further investigation; (c) national economic growth and change making medical care available to more people—the growth of hospital utilization. All this shows itself in an increased need to train physicians and medical investigators. In the United States today there is an acute shortage of physicians. The Bane Committee estimated that medical school admissions must increase by 50 per cent over the present number by 1971 if we are to maintain the present ratio of physicians to population. This increase has and will continue to result in new schools of medicine, in expanded student enrollments, and in accelerated curricula. New knowledge begets more new knowledge which adds to the flood of new research results and will produce thousands of new investi-

gators to use the information; hence, the exponential growth curve.

As great as these quantitative changes are, there have been important qualitative changes in medical education. Curricula have broadened in scope and depth. New subject areas have been incorporated as knowledge increases. Undergraduates are more involved in research. The student must absorb the total body of science and then be responsible for keeping up with new knowledge. Continuing education has increased in importance. It is no longer the medical undergraduate alone who must be educated, but the practicing physician, whether by formal or by informal programs. "The gap between scientific knowledge and application grows wider each year because of at least four reasons: the rapid advances of research; the maldistribution of opportunities for continuing medical education; educational inadequacies even in those places where opportunities do exist; patterns of educational organization and dissemination of knowledge which are not efficient in terms of the physician-students' needs" (4).

The total national expenditure for medical research has been increased from \$45 million in 1940 to \$148 million in 1950 to \$715 million in 1960. Projections for 1970 give \$3 billion for total national expenditure for medical research. In terms of a constant value dollar this increase is still great.

The number of professional workers engaged full or part-time in medical research has risen from over 19,000 in 1954 to nearly 40,000 in 1960—more than a 100 per cent increase. The dominant characteristics of this growth can be summarized briefly: (a) The largest increase has taken place in universities and research institutes; (b) The number engaged full-time in medical research has been rising, and those working part-time are devoting a larger share of their energies to research; (c) Research op-

portunities combined with teaching and/or service responsibilities have become increasingly attractive to M.D.'s; (d) Participation of Ph.D.-trained manpower has been rising rapidly, accompanied by the growing involvement of the physical and social and behavioral sciences in medical research; (e) The underlying supportive force in their development has been the substantial enlargement of national programs for private and public support of research, research training, and construction of research facilities (5).

The Bayne-Jones Committee estimated that there would be some 25,000 new medical researchers by 1970 and that the necessary annual expenditure per man would have risen by 40 per cent between 1958 and 1970.

The significance of the federal government in this picture is made graphic by the Jones Committee which found that federal support of medical research has risen from 7 per cent of the total in 1940 to 53 percent in 1960. Federal outlays for the performance of medical and health-related research amounted to \$494 million in 1960; in 1962 the outlay will be \$857 million, an increase of nearly 75 per cent in only two years. The estimate for 1963 exceeds \$1 billion, an increase of almost 20 per cent in only one year (6).

The impact on the university, and on the medical school, is dramatic. Nearly three-fourths of the federal expenditure is spent through grants and contracts to research performers, largely universities (6). As an example, of the \$17,011,000 spent for sponsored research at New York University in the academic year 1960-61, 013,837,000, or 81.3 per cent, was federal funds, and \$6,880,000, or 49.7 per cent, of these federal funds went to their medical center (7).

The research grants program of the National Institutes of Health, Public Health Service, supported 1,695 projects in 1951. In 1961 the NIH granted funds

for 13,500 projects. These research projects reach into a large number of subject areas. The most recent subject matter index to the grants program (8) lists grant titles under approximately 7,000 subject headings. This publication is itself a document of 681 pages.

The changes and growth rates enumerated above have had a profound effect on bio-medical communications. Communication is the interchange of information—the very life blood of the medical sciences. The quality of medical research and medical care is largely dependent on the efficiency of this communication.

Three factors have worked together to complicate the communications picture: the exponential growth of the scientific literature; the difference in the kind of requirements for communications due to the rapid growth of multi-disciplinary research; the requirement for speed in dissemination and retrieval.

Scientists approach information in different ways and use different sources. Voigt has summarized studies on the information gathering habits of scientists as follows: The most important source of information is obtained from printed sources that were "come upon . . . as part of a regular or irregular practice of browsing through or reading the most important journals in the immediate field of interest. The second most important means of locating printed information appears to be the result of the recommendations of colleagues" (9). The researcher's own memory is next in importance, followed by citations found in books and periodical articles. The next is published indexes and abstracts.

The medical library is the traditional and best established agency for the storage and dissemination of medical information in the United States. This country's aggregate medical school libraries possess a collection of almost 6 million books, periodical volumes, and other li-

TABLE 1
DISTRIBUTION OF LIBRARY VOLUMES OF MEDICAL SCHOOLS IN THE UNITED STATES, 1960-61

Informational Item	Number of Institutions Included	Maximum Number Reported By Any Institution	Third Quartile	Median	First Quartile	Minimum Number Reported By Any Institution
Volumes at end of year	84	340,446	77,083	54,779	36,000	12,000
Volumes added during year	83	11,840	4,276	2,647	1,251	400
Periodicals currently received	82	4,120	1,223	992	779	236

brary materials. This vast resource represents an investment of approximately \$270 million (10). It is estimated that these libraries occupy space worth approximately \$26 million. In the fiscal year 1960-61, the total operating budgets of these libraries was in excess of \$5 million.

MEASUREMENTS OF LIBRARY RESPONSE

To what extent have medical school libraries kept pace with the increased requirements demanded of them? It is clear that the medical library is very much involved, or is potentially very much involved, in biomedical communication. In the following sections it will be shown that, as a result of chronic inattention, the medical school library is woefully inadequate to meet the demands placed upon it as an agency of biomedical communication, and that the major investment made by society in these libraries is in jeopardy. Financial support has not kept pace with the increased demands; indeed, there is evidence that the library's share of support is shrinking. The quality of medical education, research, and patient care is thereby threatened.

Collections.—Table 1 presents quantitative data gathered for this report on the present status of library collections. No set of standards for the composition of medical library collections has been developed. The precise contents of these collections will differ somewhat from one institution to another. One can, however,

cite certain broad criteria which should apply to all medical school libraries. Three medical librarians have recently offered suggestions as to size of library collections. Rogers of the National Library of Medicine wrote, "A reasonable standard for a medical library capable of supporting research at its present accelerated level would be 100,000 volumes" (11). Esterquest of the Harvard Medical School stated the following: "At present, the middle group of medical school libraries of the state . . . falls short of national standards, which suggest collections of approximately 100,000 volumes as being necessary to meet the needs of a medical school community of good quality" (12). Meyerhoff of the Medical Library Center of New York states the following: "Generally there is some consensus among medical librarians that a medical school collection should have a minimum of 100,000 volumes and 1,200 to 1,500 journals currently received" (13).

Table 1 shows that fewer than 25 per cent of the libraries have met the suggested standard for number of volumes. In fact, half of the libraries only meet the standards half-way. We also see that only 25 per cent of the libraries approach the suggested standard for periodicals currently received.

It should be stressed that these suggested standards are merely minimum. A book collection of 100,000 volumes is not a large library, and a subscription list of 1,500 journals is small when one

realizes the total output of medical periodicals. The National Library of Medicine recently issued a list of biomedical serials published between 1950 and 1960 (14). The list contains 8,939 titles, and at that, it is a selected list—from the 18,500 titles in the NLM. It is estimated that 5,711 of these titles were live and being published at the end of 1960. Since the beginning of the century, the number of medical journals published has quadrupled.

These suggested standards also apply only for today—1962. In a year the requirements will have changed again. Not only is there a spiraling increase in the literature output but there is a steady increase in the price of library materials. The average annual price for a U. S. medical periodical has increased as follows (15):

1950-	\$ 7.74
1951-	8.09
1960-	10.28
1961-	11.19

Medical books have increased in price as follows (15):

1947-1949-	\$ 6.36
1960-	8.41
1961-	9.40

There is no end in sight for this trend toward increased production and cost. Library support which is insufficient one year will be compounded the next year.

The selection of items to be added to library collections becomes increasingly complex. Modern medicine and the related health professions embrace both the physical sciences (chemistry, physics, mathematics, engineering), the biological sciences, and the behavioral sciences (psychology, sociology, anthropology). A current usage study at Yale (16) shows that a surprisingly large use (455 books circulated in 1961-62) is being made of materials in their relatively small sociology collection (503

books), surprising in that it is somewhat out of proportion to the use of the rest of the collection. Hetzner of the University of Nebraska reports, "One of the ways in which we notice the impact of increased research and changing methods of medical education is the inability of the University of Nebraska College of Medicine Library to meet requests for widely varying materials in a multitude of subject fields. For instance, in the academic year 1953-54, we borrowed 97 items from other libraries that we could not supply from our own shelves. In 1957-58, we requested 107 references. Last year, 1961-62, we had to ask for 777 items" (17). The complexity of book selection means that well trained personnel must be added to library staffs to cope with this activity. It means larger collections and collections broader in scope. Nineteenth century medicine as a well-defined discipline no longer applies in the mid-twentieth century. It means that planning and coordination must take place among the libraries of a geographic area in order to avoid needless duplication. It means that communications systems must be improved to the point of rapid retrieval, or universities, for example, will be forced to duplicate their physical, biological, and behavioral science collections in the medical school as well as in subject departments, if they are geographically separated.

The bibliographic apparatus necessary to control the huge and ever expanding literature is being taxed to the breaking point, both from the standpoint of sheer size and from the financial burden that this size brings. "Seventy-five thousand scientific and technological journals are being published in 65 different languages and more are being born daily. The total number of articles these journals print annually exceeds a million. Over 3,000 abstract journals attempt to com-

press the materials into manageable proportions. For example, the decennial index of *Chemical Abstracts* for the period 1947-57 is contained in 19 volumes of 1,200 pages each—this only the index to the chemical literature for this decade. This decennial index to *CA* costs \$500. For the previous 10 years, the index consisted of 6 smaller volumes. In the field of chemistry, the literature is actually doubling every 7 years—that is, in the next 7 years there will be more pages published than in all the years that have gone before" (18).

Two striking examples will illustrate the threatened break-down in scientific bibliography. The first is the case of *CA*, a tool which is essential in medical libraries. In 1960 the price per year of *CA* to colleges and universities was \$80. In 1961 the price was raised to \$200 per year, the price which prevailed through 1962. Now, for the year 1963, colleges and universities must pay \$500 per year.

The officers of the American Chemical Society, as publishers of *CA*, are simply responding to economic realities. *CA* in 1907 published 7,975 abstracts; in 1962, 165,000 abstracts were published. It will take \$4,500,000 to produce *CA* in 1963; this rate is increasing by \$500,000 per year. By 1972, *CA* may cost \$10,000,000 to produce.

For 1963, a subscription to *CA* will cost the same for personal ACS members as it does for colleges and universities—\$500. For hospitals or independent libraries which do not qualify as colleges and universities, the yearly rate will be \$1,000. What happens to the hospital library whose entire budget for books and periodicals is \$4,000 per year? What happens even to a medical school library such as Harvard, which must subscribe to 6 copies of *CA* for its various departmental libraries and branches? This means \$3,000 in 1963 as

opposed to \$1,200 in 1962, and \$480 in 1960.

The second example is a new work, *Encyclopaedia Chimica Internationalis*, a cumulation of *Index Chemicus*, which is a bi-weekly index. The *ECI*, in 6 volumes, covers the chemical literature of slightly more than 2 years. It does not supersede or replace *CA*; it will have to be purchased by medical libraries which purport to be first-class libraries. It costs \$1,200 for the 2-year cumulation with a 50 per cent discount for educational institutions.

It seems inevitable that the bibliographic apparatus essential to the pursuit of medical research will be, within a matter of a very few years, impossibly expensive.

Progress has been made in the area of improving the traditional bibliographic tools. The mechanization of *Index Medicus* and the plans for the MEDLARS program at the National Library of Medicine is a case in point. These measures will increase speed of production and will increase coverage of the medical literature in *Index Medicus*. The scope of *Index Medicus*, however, reflects medicine in its narrow sense, not as it exists today in its multi-disciplinary form. A great deal of coordination is needed among the indexes and abstracting tools of the various inter-related disciplines, i.e. *CA*, *Biological Abstracts*, *Bibliography of Agriculture*, *Psychological Abstracts*. Medical school libraries look to the National Library of Medicine for leadership in making progressive improvements.

Housing.—In 1957 a survey of medical school libraries (19) showed that about 55 per cent of the 45 libraries reporting were filled to capacity or had exceeded their capacity. Of the 45 per cent with space for growth, the area was so small that normal growth would

have filled up this space between 1957 and 1962.

Only a handful of new medical school libraries has been built during the years since 1957. Much more commonly, libraries have found it necessary to store large portions of their working collections in other locations, often at a distance. In one typical situation, a library has had to store all of its medical journals prior to 1900. Another library stores all of its books prior to 1920. The increased expenses involved in servicing a stored collection at a distance are obvious; the inconveniences to readers are detrimental to medical progress. Worst of all, in spite of these radical measures, the libraries are still running out of space. The Fry survey states that "there are 300,000 volumes of medical material in our libraries that seemingly are not on the shelves of the libraries owning them" (19).

American medical school libraries double in size every 12 years. Seventy per cent of medical school libraries were built more than 10 years ago; 50 per cent were built more than 30 years ago. The crowded and makeshift space in which these libraries are housed presents great inefficiencies for library users and ultimately creates unwarrantable expenses for the institution, just as any activity costs more to perform in inefficient quarters than it does in efficient quarters. The problem of damage to library collections should not be ignored either. The crowding, dirt, and improper heating, ventilating, and lighting in ill-housed libraries significantly diminishes the life of the library materials. Newer features of medical libraries, such as space for storage and use of audio-visual materials, microfilm and photocopy service, and electronic data-processing equipment, must be planned for in building renovation or construction.

The Jones Committee stated "one urgent need almost all medical schools have in common is the improvement of their libraries which are essential to the functions of education, research, and good medical care. The school administrators have not considered it possible to spare sufficient general operating funds for this purpose, and support by private gifts has been meager." The Jones Committee made specific recommendations for the modernization and supplementation and the renovation and construction of medical libraries. The Fry survey showed that 88 per cent of the libraries responding were planning significant alterations. Thirty-one per cent needed entirely new buildings. Unfortunately the *planning* for significant alterations or new buildings often bears little relation to actual *construction*. One major library has been through 4 different sets of architectural plans over a period of nearly 20 years with never a spade turned nor a brick laid. State supported schools often plan their building construction in phases. The first phase provides the shell of the building, still highly inadequate for the job to be done. Completion may take from five to fifteen years, during which time services are curtailed and needs will have increased greatly. Beatty, in a 1962 survey of medical school libraries, found that 75 per cent of the libraries surveyed had an acute lack of work space (20).

Fry showed that the median need for space was for approximately 11,300 square feet at a cost of about \$340,000. From a sample of 19 medical schools reported to the Association of American Medical Colleges in 1958, 7 reported a need for space of 10,000 to 30,000 square feet. Letters from 24 libraries, inquiring about the Research Facilities Construction Program of the NIH, expressed acute building needs ranging in cost from \$43,000 to \$1,459,000. No grants

have been made under the Program. The Bayne-Jones report of 1958 recommended the establishment by 1970 of from 14 to 20 new medical schools. At the new University of Kentucky Medical School, space for the library cost in the neighborhood of \$700,000. The first 70,000 volumes purchased cost \$500,000. This total figure of \$1,200,000 provides for library space and about 75 per cent of the basic minimum book collection. Personnel and operating expenses, which are higher than usual during the period of initial library establishment, would increase the cost substantially.

The 6th Annual Report of the Surgeon General, Public Health Service, stated that, "Another critical area need and yet one which has had to be deferred up to the present time, is that of medical school library construction. Such libraries are indeed a 'specialized resource' for which provisions must be made in the coming years" (21).

This volume of need for physical facilities is both massive and critical. It represents a deferment of needs over the past 30 years, which has inevitably reached a point of desperation. Clearly, a way must be found to meet the present emergency.

One relatively recent development which shows some promise of tempering the great need for physical expansion of libraries is the development of the regional reservoir library. In this scheme there is created a large central resource library which bears the responsibility for collecting materials in depth and which makes its resources and services available to a broad geographic area, both to smaller medical libraries who can thus limit their collecting scope to the most-used class of materials, and to the general medical community, whether urban or rural. These reservoir libraries often are or can be created by the merging of two or more smaller libraries in

geographic proximity. Examples of this kind of merger are the Rudolph Matas Medical Library in New Orleans, which combines the libraries of Tulane University Medical School and the Orleans Parish Medical Society; the Louisville Medical Library, supported by the University of Louisville Medical School and the Jefferson County Medical Society; and the proposed merger of the library of the State University of New York, Downstate Medical Center and the Medical Society of the County of Kings Library. The largest and most influential of these merged libraries will be the proposed Francis A. Countway Library of Medicine, combining the library of the Harvard Medical School and the Boston Medical Library. Examples of regional libraries serving rural areas are seen in the projected plans of the Universities of Kentucky, Nebraska, and Wisconsin. New York State is considering a formalized plan for state-wide medical library coordination with a reservoir library located in New York City.

Expenditures.—Table 2 provides quantitative data gathered for this report on the present status of library expenditures.

Deitrick and Berson reported that between 1941 and 1951 general expenditures of medical schools (excluding research) had more than doubled. Library expenditures had also more than doubled. Expenditures of funds restricted to research, however, had increased eightfold.

With an eightfold increase in expenditures on research, and the indirect costs of that research being absorbed largely by the instructional budget of the school and charged to administration and maintenance, it would seem that the libraries have not been provided with sufficient funds to meet demands placed upon them by the research expansion. When knowledge is sought increasingly, the

libraries will be used increasingly . . . It would seem that an eightfold increase in research expenditures should be accompanied by much more than a doubling of the library expenditures.

The demands placed upon the libraries by research projects have not been recognized by the administrative officers of medical schools or by agencies granting funds to support such projects. It is estimated that, in 1950-51, the allocation to the libraries of 2 per cent of the funds restricted to research would have resulted in an average increase of approximately 40 per cent in the total funds available for the libraries in the 59 schools.

Little evidence was found by the survey of attempts to meet the libraries' increased needs during a period of tremendous expansion in the research and other activities of the schools. Faculty members, research workers, and students will be severely handicapped unless the new demands placed upon libraries are met by careful administrative and budgetary planning. In a nation dependent upon medical research to a greater degree than ever before, surprisingly little is being expended on the housing of the reports of that research and on making those reports available (22).

As we can see from our statistics, more than 50 per cent of the medical school libraries have not reached the two-plus per cent ratio mentioned in the Deitrick-Berson study 10 years ago. The New York State Education Department recently named the figure, 5 per cent, as the recommended percentage of the total general and educational costs for minimum support of college library service (23). This coincides with the American Library Association standards. In the same publication the Department estimates the cost for good library service to *college undergraduates* at about \$50 per person annually. "It is estimated that the cost for good library service to *graduate students* is about \$500 [per person] annually. This is because they need a far greater variety of books, and many books which are rare and expen-

TABLE 2
DISTRIBUTION OF LIBRARY EXPENDITURES OF MEDICAL SCHOOLS IN THE UNITED STATES 1960-61

Informational Item	Number of Institutions Included	Maximum Dollars Reported By Any Institution	Third Quartile	Median	First Quartile	Minimum Dollars Reported By Any Institution
Total salaries and wages	79	\$ 175,953	\$ 54,945	\$ 35,573	\$ 19,300	\$ 7,290
Books and other library materials	82	89,887	27,000	19,160	11,052	4,032
Binding	80	24,561	5,000	3,700	2,370	500
Other operating expenditures	73	66,603	4,993	2,584	1,250	200
Total operating expenditures	74	259,374	94,532	51,882	20,247	9,476
Total expenditures of medical school for educational and general purposes	71	24,514,332	5,560,000	3,500,000	1,686,277	400,000
Expenditure ratio*	68	19.	2.5	1.7	1.3	.3

* Library operating expenditures as a percentage of total institutional expenditures for educational and general purposes.

sive" (23). By these suggested standards, medical school libraries as libraries for graduate students, do not even begin to approach minimum support of their readers.

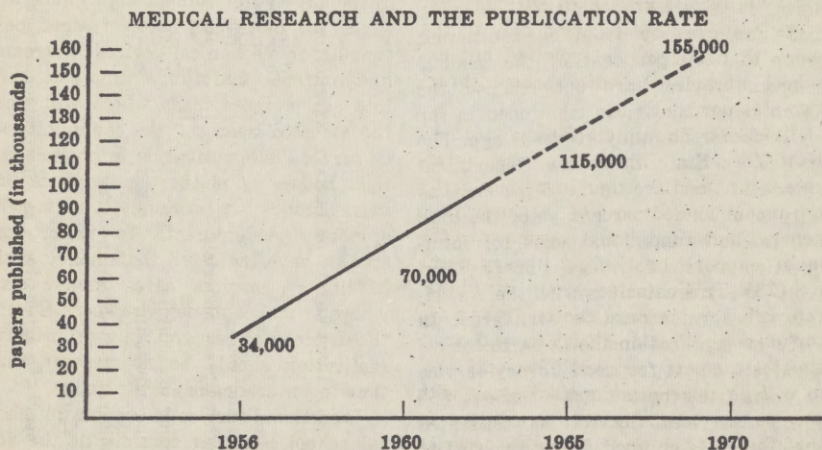
Not only is the percentage of support low, but as was mentioned earlier in this paper, it is shrinking. At Yale University School of Medicine, university appropriations to the library have shrunk from 1.9 per cent in 1952-53 to 1.2 per cent in 1959-60 of the total medical school expenditures (24). The University of Nebraska's Statistical Report, 1959-60, shows a shrinkage of from 3.34 per cent in 1953-54 to 2.75 per cent in 1959-60. The State University of New York, Upstate Medical Center, reports the library's share of the Medical Center's total operating and research expenditures as 1.8 per cent in 1958-59 and 1.5 per cent in 1959-60 (25).

Concurrent with shrinking support, we are faced with the increase in publication rates presented in the following graph (26):

Eleven of the twelve librarians personally interviewed were asked how much their total operating budget would have to be raised in order for them to be able to provide first-class library service in their situation. One librarian was satisfied with his budget as it stands. This is, however, the library of a new medical school, and a school which has taken its library responsibilities quite seriously. Another of the librarians would not raise his annual budget but would like a non-recurring sum of \$200,000 for the purchase of back-files of journals. This is another recently established school. Nine librarians expressed a desire for an annual increase. The most common request was to double their present budget. These requests ranged from \$100,000 to \$250,000 per year.

When asked what the requested sum would be used for, the librarians gave the following answers.

1. All of the services enumerated



Research grants by the National Institutes of Health in 1960 approximated 715 million dollars and were productive of about 70,000 papers. This contrasts with an estimated 34,000 papers published in 1956. If NIH research grants continue to increase at the current rate, the number of research papers published in 1970 will approximate 155,000. (After Adams)

in the Services section of this paper

2. Personnel
3. Back-files of journals
4. More journal subscriptions
5. Reference tools
6. Funds to support a library internship program
7. Equipment, such as a microfilm reader-printer, photocopy equipment, teletype, etc.
8. Space
9. Duplication of heavily-used journals

When asked if there were any large projects in their libraries which remained unfinished due to lack of funds, the following were enumerated:

1. Reclassification of book collections
2. Cataloging backlog
3. Work on history of medicine collections
4. Revision of serial record
5. Binding backlog

Each of these needs was stated several times. It is reasonable to assume that these needs are not common only to the group of librarians interviewed but express the needs of medical school libraries in general.

Services.—The chief librarians of 12 medical school libraries were interviewed at length, either in person or by telephone. The purpose of the interviews was to elicit a subjective response to the question of medical school library needs from a representative group of librarians. The twelve were chosen from a variety of types of institutions and from a variety of geographical locations.

Most of the topics discussed dealt with library services. Service to readers in libraries is a difficult thing to describe either quantitatively or qualitatively, yet it is of fundamental importance. It is here that the art of librarianship manifests itself. It is dependent upon the

desire and the ability of the librarian to bring the reader and his sought-for information together at the time that he requires it. Scientific and technical libraries have developed a certain sophistication in the area of reader services. This is in response to a greater sense of urgency of need in these libraries than there is in general libraries or libraries in other subject areas. The size and complexity of the literature and of the bibliographic apparatus creates a necessity to interpret and exploit the body of information. The best medical librarians are virtuosos in the area of services to readers. Training, the desire to serve, and imagination are the prime requisites.

The librarian's imagination is put to effective use only when it is supported by sufficient funds to bring ideas into reality. The medical libraries of pharmaceutical houses, for example, have exhibited greater sophistication in services generally than have the libraries of medical schools. The reason is that they are financially better supported. There are funds for more and better trained personnel, for mechanical devices to streamline routines, and funds simply to turn into action those ideas which will meet the assessed needs of the community to be served. The motivation in pharmaceutical houses is neither benevolence nor extravagance; it is simply a matter of economic self-interest. To them, cost studies have indicated that money spent in library services saves money elsewhere or makes money elsewhere. Surely, the urgency of research in a proprietary institution should be no greater than that in an academic institution.

Traditional service to readers in medical school libraries consists of the following: circulating books and journals, borrowing un-owned material from other libraries, physically locating library materials, answering short infor-

mation questions from reference books, answering longer reference questions from the literature (limited), compiling short bibliographies for readers (limited), verifying references (limited), photocopying (limited), circulating lists of recent acquisitions (limited), preparing displays and exhibits (limited), instruction on use of the library (limited). This service varies from library to library depending upon the amount of time that the staff has available and the training and imagination of the staff members.

The following enumeration represents services which the 12 medical school librarians stated that they do not now offer but would like to offer if sufficient funds were available. Very few of these services are being offered by any medical school library to any extent. By way of contrast, many of these services are offered in the libraries of pharmaceutical houses.

1. Continuous bibliographic service. A reader wants to be kept up to date on the literature of a particular subject. The library undertakes the searching of current indexes and abstracting journals and new issues of the important journals in the subject field, as they appear. References to the articles or photocopies of the articles are provided for the reader as they are found.

2. On-demand bibliographies. A reader needs a retrospective bibliography on a particular topic. The library undertakes the search using the appropriate bibliographic tools. The reader is provided with a copy of the bibliography.

3. Translation service. A reader needs information from an article written in a language he cannot read, or wishes to know if the article is pertinent. The library has on its staff persons who can undertake spot translations of a summary or a few paragraphs of text. Or if a formal, full translation is needed,

the staff member can undertake it himself or can locate an appropriate translator.

4. Abstracting service. A reader needs an epitome of the literature on a particular subject. The library undertakes the preparation of such an epitome, perhaps in conjunction with numbers 1 or 2 above.

5. Audio-visual service. A reader needs a film or sound tape or recording dealing with a particular subject. The library can identify and locate, can buy or rent the item for him, and can provide the equipment to use it, the personnel to run the equipment, and perhaps the place to show or listen to the item. The library can also maintain an up-to-date collection of these items.

6. Delivery service. A reader at a relatively short distance from the library needs an item from the library's collections. The library is able to provide immediate delivery of the item, whether by a boy on a motor-scooter, closed-circuit television, telefacsimile, or some other modern communication device.

7. Extension service. A reader in a place remote from the library (mainly rural areas) needs an item from the library's collections. The library is able to provide rapid delivery of the item or a photocopy of the item by mail (or conceivably by one of the newer devices mentioned in number 6).

8. Rapid copying service. The library is able to provide for a reader, while he waits, a reproduced copy of the item he needs so that he can carry it away with him. The latest copying machines are available to give him the kind of copy he requires.

9. Teaching the use of the literature. The library is able to undertake appropriate teaching and instruction of readers on the effective use of the medical literature and library services. This applies to students, faculty members, research workers, hospital house staffs,

and other groups. The instruction can take the form of anything from orientation tours, to occasional lectures to subject groups, to formal courses in the medical literature.

10. Services to hospitals. The library is able to perform all of its services for personnel deployed in teaching or other hospitals in a city or in a region or state. The library coordinates the purchase of library materials in the hospitals to avoid useless duplication, and in turn, provides rapid service such as that described in number 6.

11. Editorial service. The library maintains a service whereby all papers being submitted for publication pass through the library where the references are verified, the citations are checked for uniformity, and format, grammar, illustrations, etc. are checked before submission.

12. Literature assistance staff. The library is able to assign a competent staff member to any research group in the institution, as needed, to work on the literature end of any project. This could vary from full-time participation in a project to occasional consultation.

13. Liaison service. The library is able to assign a staff member with subject background and bibliographic training to act as a regular contact with various groups in the community (nurses, medical students, occupational therapists), to assess the needs of each group in the way of services and materials.

The services outlined above could be performed on a paid, self-supporting basis, or they could be partially or fully subsidized by the institution. The services could be performed with any degree of intensity. The usual difficulty is, however, that a library attempts to inaugurate one or more of these services without sufficient financial support. The result is that the service is watered-down, very selective in its performance, or downright bad. Any inauguration of

library service is based on the assumption that it is something that can best be performed in a library-centered situation where well trained librarians undertake the tasks as well or better, and certainly more economically, than the busy investigator himself. If this is true, then the institution must be prepared to pay the price. In a recent fund-raising effort the Harvard Medical Library put a price-tag on what it considered to be an effective, modern reference, information, and bibliographic service, embodying numbers 1, 2, 3, 4, 9, 11, 12, and 13 of the services enumerated above. The annual budget for this service provided for 4 senior librarians, 3 junior librarians, and one clerk-typist, at \$49,300. per year. This figure is just short of the median total operating expenditures of our country's medical school libraries.

Several of the services mentioned above which involve literature searching might be more efficiently handled with electronic data processing equipment. Eight of the 12 librarians interviewed said that they had access to such equipment, and several had or are making use of this equipment in a limited way for library purposes: serial records, book charging, new book lists, experiments with the card catalog. The librarians were eager to participate in the proposed plan of the National Library of Medicine to distribute regionally duplicate magnetic tapes produced in its MED-LARS program.

Shaw has summed up very nicely the kind of service to readers which medical school libraries should be providing:

The front office should be designed to get each research worker what he needs where he needs it, and in the form in which it is most useful to him, regardless of what we have to do behind the scenes to achieve this, and regardless of how we do it. Only insofar as we achieve this objective currently and continuously can scientific information serv-

TABLE 3
DISTRIBUTION OF LIBRARY PERSONNEL OF MEDICAL SCHOOLS IN THE UNITED STATES
1960-61

Informational Item	Number of Institutions Included	Maximum Number Reported By Any Institution	Third Quartile	Median	First Quartile	Minimum Number Reported By Any Institution
Total professional employees	79	11	4	3	2	1
Total non-professional employees	79	20½	6	4	2	½
Total hours of student assistance during year	79	10,208	3,200	2,060	1,162	0

ices contribute to the advancement of science (27).

The fact that medical libraries have not, by and large, achieved this objective is causing scientists to seek other ways by which to satisfy their information needs. One of these is the proposal for the development of information centers, specialized centers whose purpose it would be to provide many of the services enumerated above. The following quotation shows the scientists' disenchantment with present library services:

Biologists as well as other scientists, have encountered so many difficulties in working with the traditional library system that they have tended to neglect the use of formal published information sources and have developed a number of other devices to obtain the required information. Some biologists are not aware of the literature problem. Most biologists do not have any detailed knowledge of the new profession encompassing documentation, specialized library science, and information storage and retrieval (28).

There is a real danger here that this disenchantment with libraries, based upon frustrations generated by the literature explosion, will result willy-nilly in the creation of a brand new information network uselessly duplicating the resources of existing libraries and springing into being largely to provide the kinds of services that existing libraries should and would perform if they had proper financial support. Certainly it would be folly to create a new facility

without exploiting to the highest degree the institutions which now exist for the same purpose.

Staffs.—Table 3 presents quantitative data gathered for this report on the present status of personnel in medical school libraries.

In 1960, Brodman estimated that there are approximately 1000 medical librarians in the U. S. today (29). The 1962 questionnaire, prepared for the present study, shows that there were 324 professional librarians employed in U. S. medical school libraries in 1961. "Professional librarian" is defined as an employee who "performs work requiring education, training, and skill in the theoretical or scientific aspects of library work as distinct from its merely mechanical and clerical aspects" (30). Almost all of these employees has a Master's or fifth-year degree from a library school accredited by the American Library Association or its equivalent. Many have graduate instruction in specific subject areas, and a small but growing number has a doctoral degree in a subject specialty or in advanced librarianship.

In medical school libraries, "a normal attrition level of 5 per cent occurs, due to retirements, deaths, and permanent withdrawal from medical librarianship" (29). The expansion of medical schools' programs of education, research, and patient care, and the founding of new libraries also influence the manpower

needs of libraries. It has been estimated that 40 new medical librarians are needed now, merely as replacements, and over 100 medical librarians could be absorbed annually, including the accumulated attrition. In 1951 the median total professional librarians employed in medical school libraries was 3 (31). In 1961 it still was 3, in spite of the fact that the number of volumes which it is necessary for librarians to acquire, process, and service has risen 57 per cent during the same period.

Any young, promising medical librarian today receives possibly 4 to 6 job offers per year. As the individual advances, these offers become more and more attractive, and he will inevitably accept one. Most medical school librarians are forced by economic reality to think of their junior assistants as nothing more than trainees whom they are fortunate enough to have for a brief period before they leave to accept one of the many job openings at a better salary. The mobility of personnel in this relatively small library field is alarming; the libraries suffer greatly from the resulting loss of continuity of service.

The need is hardly being met today by the recruitment and training of only 35 medical librarians per year, leaving a deficit of 65 medical librarians annually. In five years time this will result in a cumulative deficit of 325, which is almost one-third of all the medical librarians in the U. S. today.

Medical librarianship does not attract talented young people as easily as some other scientifically-related professions appear to. A good recruitment program might help to alter this. There is little or no attempt to acquaint young scientists or science students with the opportunities and satisfactions to be gained from a career in medical librarianship. There are only 9 schools in the U. S. giving courses in some aspect of medical librarianship. These are mostly summer

courses, and some are offered only on alternate years.

We accept the premise that good library service is integral to medical research and education and that it is an essential support factor in good medical care. Limiting the relationship of the present status of education for medical librarians to that of medical research we find that there is not the slightest resemblance . . . Commendable and praiseworthy as these recommendations [Jones Report] are, they will not have real meaning unless there are trained, capable and efficient librarians to place them in operation . . . This is truly a dismal picture (32).

There is not only the need to recruit and teach new medical librarians, but there is the need to develop standards for medical librarianship and to keep medical librarians already in the field up to date with recent advances in some kind of an effective program of continuing education. The Medical Library Association has experimented recently with several types of refresher courses, workshops, seminars, and institutes. A great deal more of this is needed. Since the programs mentioned above are usually held in conjunction with the Association's annual meeting, they do not reach the grass roots of medical librarianship (approximately one-third of the country's medical librarians attend the annual meetings of the MLA) where such continuing education is probably most needed.

It is all very well to discuss recruitment, training, and continuing education of medical librarians, but in order to recruit you must have something to offer; in order to train properly you must have someone who can be properly trained, and in order to educate continuously you must have someone who can learn. The following table (Table 4) presents quantitative data gathered for this report on the present status of salaries of full-time personnel in medical school libraries.

TABLE 4
DISTRIBUTION OF SALARIES OF FULL-TIME PERSONNEL OF MEDICAL SCHOOL LIBRARIES IN THE UNITED STATES, 1960-61

Informational Item	Number of Institutions Included	Maximum Dollars Reported By Any Institution	Third Quartile	Median	First Quartile	Minimum Dollars Reported By Any Institution
All professional librarians (chiefs and professional assistants)	79	\$14,500	\$7,500	\$6,000	\$5,100	\$3,000
Chief librarian	79	14,500	9,500	7,680	6,500	4,500
All professional assistants*	68	8,730	6,032	5,400	4,800	3,000
Beginning library school grad. without experience	61	6,500	5,220	5,000	4,500	3,270
All non-professional assistants	76	4,864	3,583	3,223	3,000	2,070

* Determined from the mean of all professional assistants of each institution.

This table also suggests qualitative data on medical school library personnel. One medical school pays its chief librarian \$4,500. One school pays a professional assistant \$3,000. Although there are 17 medical schools who pay a librarian \$10,000 or more per year, there are 42 who pay \$5,000 or less per year and 7 who pay less than \$4,000 per year.

The median annual salary of all professional medical school librarians is \$6,000. The median annual salary of U. S. college and university faculty members, all ranks, all institutions, is \$7,486 (33). The approximate annual salary of secretaries in San Francisco is \$5,278 (34). More than 25 per cent of the professional medical school librarians in the U. S. make less per year than secretaries in San Francisco.

These salaries reflect directly the amount of concern that the medical school administration or the university library administration have in the library. The salaries also reflect the amount of responsibility delegated to the librarian and, inevitably, the quality of the librarian's performance. The chronic exasperation aroused by this state of affairs caused the following statement by a librarian who was engaged in setting up an in-service training program: "It is recommended that no attempt be made to provide workshops for poorly equipped persons employed as medical librarians. Such persons and their employers are too apt to conclude that such courses qualify participants as 'trained' medical librarians. It seems harsh, but necessary, to let these people learn the hard way the difference between their kind of library service and the service a qualified medical librarian can provide."

Deitrick and Berson in their 1953 survey of medical education stated:

These research workers require also the services of highly trained librarians who are skilled in searching all the published literature for material of value to specific

research problems, and are able to judge what material to purchase, what to borrow and where it can be obtained, and how to spend the limited funds that are available (22).

This was true ten years ago. It is even more true today. Yet, ironically enough, we find ourselves haggling over the pitiful salaries paid to the majority of medical librarians. Would that we were over that elementary hurdle. What we should be spending our time on is the recruitment and training of talented young librarians with backgrounds in Russian and Chinese, chemistry, physics, sociology, and statistics, providing them with realistic salaries, and letting them get started on the job that is waiting to be done.

CONCLUSIONS

Medical school and university library administrators in the United States are in the process of learning the fact that the medical literature is important and that the proper management of it is complex, expensive, and essential. We are thirty years late, and some have not yet learned. Because there has been no demand for well-trained, imaginative medical librarians, there has been little formal training available, and there is no reservoir from which to pluck likely candidates for the new jobs opening up. Because expenditures have been made so frugally, medical school library collections at this time fall far short of what they should be. Catching up will be very dear, if the availability of materials makes it possible at all. Because proper maintenance has been deferred for so long, medical school library quarters are in a state of deplorable inefficiency, and the collections housed in them are being physically destroyed daily. Because of the lack of foresight, the bibliographical apparatus which is the key to information in the medical sciences has become

sufficiently cumbersome and expensive as to be breaking down.

Is this not the time for dramatic action before the rates of growth with which we all must live succeed in inundating us? What we need is inspired leadership, imaginative aid, and money.

RECOMMENDATIONS

Federal funds should be made available to both existing and new medical schools for the purpose of building up their collections to a minimum adequate standard. It is suggested that this standard in 1962 be 100,000 volumes and the current receipt of 1,500 journals. If these funds were to be made available over a period of several years, an adjustment would have to be made to compensate for the rising standard. Serious consideration should be given to the limit of time for grants-in-aid. The availability of older materials, e.g., back runs of journals, will clearly determine when the money can be effectively spent.

Federal granting agencies should take realistic responsibility for the support of their grant programs in terms of the literature, library staff, and library services required, just as it does in terms of equivalent technicians and laboratory services required. These programs should take into account not only the impact of quantity of materials needed, but also quality. A research program in a new medical-related area will require more dollar-support than a program in a better established subject area. Under these programs, funds should be made available directly to the institutional library.

Federal funds should be made available for the support of the essential bibliographic apparatus needed in medical research. This apparatus today is breaking down. The National Library of Medicine should take national leadership in medical bibliography in its multi-disciplinary aspects.

A system of regional reservoir libraries should be established in the United States, encouraged and supported by the National Library of Medicine through the granting of funds, the development of an improved bibliographic apparatus, and the development of an improved communications network. The systems already proposed in Kentucky, Massachusetts, Nebraska, New York State, and Wisconsin should act as pilots.

If science information centers develop with the aid of federal funds, maximum advantage should be taken of existing library resources in order to minimize useless and costly duplication.

Federal funds should be appropriated to initiate a vigorous program of recruitment, education, and training of medical librarians aimed at raising the standards of medical librarianship and creating a manpower pool. These funds should support and expand the Medical Library Association's present programs of scholarships, fellowships, internships, and continuing education. In addition, funds should be made available to qualified academic institutions for the initiation or improvement of their training facilities in this area.

Federal matching funds should be made available for the constructing, equipping, and renovating of medical school library facilities under the Research Facilities Construction Program. Federal grants to new medical schools for library construction and equipment should be provided under the proposed Educational Facilities Construction Program.

A program should be established whereby non-recurring federal grants for special projects would be made available directly to medical school libraries. These would tend to be small in amount and for the purpose of catching up with existing backlogs.

Experimentation in new electro-mechanical and reproductive devices relevant to library problems should be encouraged and funded.

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Medical Library Resources and Their Development*

SCOTT ADAMS†

National Library of Medicine

Ten years ago the Survey of Medical Education in its report, *Medical Schools in the United States at Mid-Century* (1), discussed the plight of the medical libraries. The Deitrick report noted that all was not well. In the ten years preceding the report, expenditures for research had increased eightfold whereas the amounts spent on libraries by the 59 schools had but doubled. This lag had a depressing effect on the services which the libraries could provide in support of medical research. The report concluded that "little evidence was found by the Survey of attempts to meet the libraries' increased needs during a period of tremendous expansion in the research and other activities of the schools. "Faculty members, research workers, and students," it continued, "will be severely handicapped unless the new demands placed upon the libraries are met by careful administrative and budgetary planning. In a nation dependent upon medical research to a greater degree than ever before, surprisingly little is being expended on the housing of the reports of that research and on making those reports available."

Today, ten years and some hundreds of millions of research dollars later, it is stated with increasing frequency that the medical libraries are worse off than ever before. Last November the National Advisory Health Council submitted a resolution to the Surgeon General. "The medical library network," the resolution

reads, "which has been designed to make the published record of medicine available, is in dire trouble. During a period of intensive development of research institutions, medical schools, and other medical facilities, their essential library support has been seriously neglected. In recent years the needs for adequate library working and storage space, for more trained library personnel, and for new methods of handling and disseminating the growing scientific medical literature have become acute."

The National Advisory Health Council is but one of several groups which have described the medical library situation as critical. For years medical librarians have pointed out the deficiencies in their institutions, medical educators in many instances have joined with them, and research administrators are increasingly concerned.

Where does the school library in fact stand today in its efforts to service the twin requirements of medical education and research? Have the libraries kept pace or lagged? Are they, or are they not, adequate for the purposes of modern biomedical research? In order to provide some current data from which an estimate of progress, or lack of it, over the past ten years could be made, the National Library of Medicine asked the Assistant Librarian of the Harvard University Schools of Medicine and Public Health, Mr. Harold Bloomquist, to collect data. His study, which will be available shortly, collected information from 84 schools as compared to the 59 schools covered by Deitrick. Within the time limitation it could not be an extensive

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inquiry; the selected data offered here must be considered preliminary.

LIBRARY SUPPORT

We might first look at the resources available for library development. The total amount spent in 1961 by the schools on their medical libraries was \$5,030,000. This compares to the \$1,377,000 spent in 1951 by 59 schools. Over the same period, the total expenditures of the schools grew from \$91,347,000 to \$328,158,000. The average library's share of the total expenditures has therefore remained constant at 1.5 per cent. One important school, however, reported a decrease from 1.9 per cent to 1.2 per cent. Compared to the increase of funds spent for sponsored research, however, the average library share has declined. Research funds increased fourfold during the same period to a 1961 total of \$135,000,000. The proportion of research funds devoted to library support decreased from 4.1 to 3.7 per cent.

Several points can and should be made. First, 1.5 per cent of the total expenditures was not adequate in the opinion of the 1951 Survey to meet the current needs of 1951, much less to repair the then accumulated deficits. Second, this percentage is even less adequate today. The median spent by universities for their general research libraries is 3.3 per cent of the university budget. Third, the granting agencies have not yet found a mechanism to provide that an "adequate portion of the funds restricted to research is made available for the strengthening of the library," as recommended by the Survey group ten years ago.

COLLECTIONS

The largest collection held by a school library was 340,446 volumes, the smallest 12,000, and the median of 84 libraries 54,779. The total book and journal resources represented by the school libraries

represent a capital investment by society of approximately \$270,000,000. The highest amount spent for books and journals in 1961 was \$90,000, the lowest \$4,000, with a median expenditure of \$19,000. The median number of volumes added during the year was 2,647. Again, I should like to make a few points.

First, the median of 54,779 is about one-half the total collection generally agreed on as minimal for the support of a comprehensive biomedical research program. The target should be set at 100,000 volumes now. Second, contemporary biomedical research requires a difference in kind of material collected, as well as a difference in amount. In general, the libraries are sadly lacking in the basic literature of scientific disciplines from which biomedicine derives its concepts, methodologies and data: the physical and chemical sciences, engineering, and the social sciences. We are in a multidisciplinary revolution in medical research, and the libraries are not prepared to cope with the new types of demands.

LIBRARY BUILDINGS

Seventy per cent of the school libraries currently occupy buildings more than ten years old; 50 per cent of the buildings are 30 years old or older.

In 1957, a survey (2) disclosed that over half of the libraries were either filled to capacity, or exceeded it. The warehousing of books and journals with all the attendant problems of inaccessibility and inefficient service, is a common practice.

This same survey showed that 88 per cent of the libraries responding were in need of significant alterations; 31 per cent needed entirely new buildings.

Some general comments follow. First, too many of the facilities were planned years ago by architects and administrators with limited understanding of the

organic functions and growth rates of libraries. In general, book stack areas, work space, reader space were all underplanned to accommodate normal library growth, much less the abnormal pressures of an increasing literature. This is not to be construed as a universal condemnation of architects. It is easy to understand these shortcomings in retrospect, but how many of us can visualize the impact of the trends toward miniaturization and computer installations on the planning of tomorrow's libraries?

Second, the space needs are both universal and critical, and except in isolated instances, local resources have not been found to satisfy them; nor has the federal government yet made grants for the construction of medical library facilities. The last Congress considered two bills, both of which failed to be enacted. Both H.R. 4999 (the Health Professions Educational Assistance Act) and H.R. 8900 (the College Academic Facilities Act) included authorization for school library construction.

The Research Facilities Construction Program however, was, approved by the Congress for three more years. New administrative regulations have been written which define "research and related purposes" [the hitherto limiting feature of this Act] as "research and activities having related purposes (including research training and the use for medical libraries to the extent that they support research and research training)."

This change would appear to admit medical libraries to the competition for federal research facility construction funds, insofar as they can demonstrate support for research and research training. The question which has concerned many of us lies in this competitive status. At the school level, how effectively will the libraries compete with new labora-

tory buildings? This question is for the medical schools to answer.

LIBRARY PERSONNEL

We might next look at the manpower resources available to the medical libraries. At present the medical schools employ a total of 324 professional librarians. The largest number employed in any one library is eleven; the smallest, one. The median number of professional personnel for the 79 libraries is three.

The highest salary paid to a chief librarian is \$14,500; the lowest, \$4,500, with a median of \$7,680. The median salary paid to professional librarians by the schools is \$5,400.

The problem of manpower resources is simultaneously one of quantity and quality. It is difficult to believe that medical research conducted in this country at schools of medicine depends upon a pitifully small national pool of 324 persons for its library information services. Still more shocking is the median salary of \$5,400 paid to a professional librarian presumably with a graduate degree, and hopefully with a background in the sciences.

All indications point to a critical national shortage of well qualified medical librarians. With job opportunities so restricted it is no wonder that there have been acute difficulties in attracting qualified personnel.

SERVICES

The Bloomquist study did not collect data on the services offered by the medical libraries. Invariably, however, the librarians expressed a desire to enlarge both the scope and the volume of their services to the school community. They have felt inhibited by lack of budget, lack of personnel, lack of journal and equipment resources in providing the following types of service to researchers, educators, and students: continuous bib-

liographical service to research groups, on-demand bibliographies, translation services, abstracting services, audio-visual services, loan and delivery services, rapid copying services, extension services to rural physicians and community health centers, provision of courses in medical bibliography, and the like. There is obviously a potential for developing the utilization of library resources which, because of the depressed state of affairs, has not been realized.

This recent survey of school medical library resources appears to confirm the earlier conclusions that the medical library network is in dire trouble. There were accumulated deficits in 1951. Like the Red Queen, the libraries have been running like mad to stay in the same relative position they were in ten years ago. In the meantime the rapid growth of medical research has placed a new kind of load on the libraries with differences both of quantity and character. A basis of support related to increase of research funds has yet to be found.

Under these depressed circumstances, the libraries are being unfairly blamed for not accommodating themselves to burgeoning research. There has yet to come recognition that the library, as it has evolved through the centuries, is as efficient an institution for storing and retrieving information as society has yet devised. The printed word, recorded and condensed between covers, organized for future retrieval, and economically stored, will be with us for many hundreds of years to come. I, for one, do not doubt the survival value of the library in our society.

On the other hand, a stereotype seems to be developing which describes the library as an institution which is antiquated, inefficient, and unworthy of survival. Libraries as we know them, it is alleged, are a thing of the past. They should be replaced by some new institu-

tional form made possible by modern technology.

NEW INSTITUTIONAL FORMS

In recent years, there has been much agitation for the establishment of two new types of information servicing institutions: the mechanized storage and retrieval system, and the science information center. The case for striking off the shackles of tradition and achieving a dramatic breakthrough commensurate with the capabilities and the requirements of an electronic age is strong. The technologies are well-developed, social concern with the problem of managing the outpourings of new research information is urgent, and large-scale funding is now available.

Since these proposed systems are advanced either to replace or to coexist with libraries under cooperative planning, and hence have their impact on the conventional medical library, it would be helpful to examine their possible roles.

MECHANIZED STORAGE AND RETRIEVAL

Several of the medical schools conduct research projects relating to the mechanized storage and retrieval of published information. Others have gone so far as to dream of the day when their computer facilities, already established, will "manage" the research literature for the benefit of local researchers.

Research and development in this area is uncoordinated, and is lacking in a common philosophical or sociological underpinning. We are deficient in the fundamentals for the organization of knowledge (especially in the "soft science" areas of medicine), and in our understanding of the information needs of researchers. Technical feasibility makes possible but does not guarantee acceptance of mechanized retrieval systems.

We believe at the NLM that we have a solution to the orderly development of

this field, and that this solution does include both the perpetuation and the strengthening of medical libraries.

With the coming of MEDLARS—which will be described later—the problem of machine retrieval of information at the level of citations to the published literature appears to us to be no longer a technical one. At this level, the computational and manipulative requirements of the computer are rudimentary. The purpose in employing a computer is one of handling volume, not sophisticated calculations.

The unsolved problems ahead of computer applications are socio-economic. What are the patterns of organization required to process computer input, e.g., in terms of coverage of significant information, and excellence of indexing techniques? What do we really know about user requirements? Who benefits? How? How much does it cost?

The computer, intelligently used, can be of great value in association with a medical library complex in solving the problem of access to the scientific literature. It is important, however, to understand what is involved in access.

Let's look more closely at bibliographic access. The NLM is indexing 145,000 papers from 2,000 journals at a cost of \$2.20 per unit, or \$319,000 per year. From this centralized operation, we produce the *Index Medicus* which is distributed to all the medical libraries. It does their indexing for them, and this and similar Library publications have done so for 80 years.

The same (or higher) unit costs will be involved in the intellectual preparation of input for a computer. Let us suppose there are 10 library centers, each engaged in preparing index copy for computer input at half this rate—1,000 journals, 72,500 entries. It would cost each \$159,500 apiece each year, an amount in excess of the entire library

budget of all but a handful of schools. Further, the manpower to do this indexing is in very short supply. And finally, the work of the 10 libraries would have a high degree of duplication with each other, and of course with the NLM.

The indexing which provides bibliographic access must remain a centralized function; the literature indexed must be strongly decentralized for local availability.

The Library is applying this logic to the further development of the MEDLARS project (3). As you are aware, MEDLARS (Medical Literature Analysis and Retrieval System) is an effort to computerize the Library's indexing operations with the threefold objective: (1) of producing an enlarged *Index Medicus* directly from magnetic tape (2,500 journals, 250,000 citations, annually cumulating to a five-year store of 1,250,000 references, each with an average 10 subject headings), (2) of providing 50 recurring specialized indexes for research fields, and (3) of providing a demand search and retrieval facility capable of handling 100 queries daily.

We are in midstream with this General Electric contract, with operational status scheduled next fall. MEDLARS will provide a primary centralized screening effort for a larger segment of the scientific literature than is covered by any other service in the world.

MEDLARS will provide bibliographic access to the literature of medicine on an unprecedented scale. But who is to provide physical access—not the power of retrieval, but the thing retrieved?

Local availability of the literature is absolutely essential if the national capabilities of MEDLARS are to be realized. The libraries of the schools in our fifty states must be built up, so that they can supply, without inordinate delays, the reading matter to which the

new *Index Medicus* and the other MEDLARS products will guide them.

The foregoing suggests that it will be unnecessary for any one institution to conduct the expensive development work incident to establishing an independent system; in addition, the previously described costs of input make the maintenance of separate, duplicative and incompatible systems undesirable.

This does not mean that further research and development should not be attempted. On the contrary, the MEDLARS product will provide a new base for future work. In many instances, in special fields and for special purposes the need for more intensive machine exploitation of the information contained in scientific papers has economic justification. The relationship of MEDLARS to such projects is supportive, not competitive.

Among the possibilities for further development affecting other medical libraries is one in which the Library itself is interested. It is technically possible to duplicate MEDLARS tapes for searching in other computer centers. A preliminary feasibility study suggests, however, that it would be more economical per unit search to expand the centralized facility. There are many unanswered questions, and we believe it advisable to conduct a controlled demonstration with some one institution to get firm data as a precondition to further consideration of a national decentralized system.

SCIENCE INFORMATION CENTERS

The science information center, as proposed, is a selective depository of published and unpublished information bearing on research problems (4). Controlled by scientists, it functions to collect, evaluate, store, and service data to the benefit of the categorical research area on a national scale. It operates a "current awareness" service, collects unpublished as well as published data, provides

reference services, and prepares "state of the art" reports. It is, in effect, a specialized library with a scientific evaluation and review function added.

Where it differs from a library is in its orientation to one research field. It is "mission" oriented, and as such is a child of the multidisciplinary revolution which is so dominant an influence in science today. It has a planned obsolescence; it lasts as long as the mission lasts, and may be disassembled in future time.

The essential operating differences between the science information center and the research library are:

1. The former collects selected data, published and unpublished, relating to the needs of a single research field; the latter collects broadly in many fields.
2. The former provides national service to a small decentralized group; the latter local services to a comprehensive central group.
3. The former has an active dissemination program of abstracts, review papers, news bulletins, etc., for its limited group, which the latter lacks.
4. The former is staffed by individuals trained in the sciences; the latter by librarians who may or may not have scientific backgrounds.

Both libraries and science information centers are concerned with the application of computers to information problems; both are concerned with lending, photoduplication, and reference services. Both types of institutionalized information service have their strong points and their limitations.

The medical library, with its philosophic base in the universality of biomedical science, its "browsability," its collections in historic depth, has enduring values for free investigation. These

must not be sacrificed for temporary advantage.

The effect of the information center concept on library evolution has not been carefully studied. Need there be competitive development, for example, or should we rather accelerate the pace of library development, so that one information processing organization can perform both functions? Certainly, where a library and an information center co-exist in the same academic environment, good management practice suggests that a close organizational relationship is highly desirable to hold possible duplication of functions to a minimum.

This, then, is the situation today. Support for the medical library has not kept pace with the growth of biomedical research. It would not be an exaggeration to say that of all the school resources supporting research programs, the traditional library is the weakest.

The library's primary functions—those of acquiring, storing, and retrieving information—have overnight become a matter of deep social concern, so much so that society is inventing new instruments to perform these same functions.

The pace of library evolution, held back by inadequate funding for so many years, has in truth been too slow, but this circumstance does not call for revolution. There is too large a capital investment and too many proven values at stake; the new mechanisms are untried, and have major elements of risk.

But this discussion does point up the critical position of medical library development today. Either the medical libraries undertake a major program of rehabilitation so that they can adapt their programs, first, to the needs of contemporary biomedical research, and second, to the onrushing new technologies, or they may not survive as functioning institutions.

The libraries are truly at a crossroads. If they continue, with inadequate support, inadequate housing, inadequate collections, and inadequately prepared personnel, they may wither and decay. If they are provided with major reinforcement in each of these respects, they can then speed their evolution, become co-partners with mechanized retrieval systems and science information centers, both functioning to control and utilize the flood of new research information.

The latter alternative calls for a quantum jump from a depressed state to performance at a new level. I might spend my remaining time in suggesting how this can be accomplished.

A LIBRARY DEVELOPMENT PROGRAM

The foregoing suggests clearly the need for a large-scale national effort to rehabilitate the medical school libraries. New concepts of the importance of managed information supply to medical research call for new standards for personnel, for collections, and for performance. A temporary solution will not suffice; what we are here concerned with is the attainment in minimum time of a plateau well above the present depressed levels. Only then can the library begin to provide research support for the future.

No one agency can take the job on singlehanded. The medical schools cannot, the federal government cannot, nor can the state governments or private foundations. The job must be a cooperative one.

A program to revitalize the libraries must be developed in two stages. First, the libraries, as they now exist, must be strengthened; second, only after the foundations have been well-laid, must the library potential for supporting mechanized storage and retrieval systems and science information centers be exploited.

The NLM has proposed extramural

programs to help develop the medical libraries. These programs have not received Congressional authorization, nor appropriations, and are still under advisement. (5)

In an education and training program, the Library has proposed academic-year support for students in medical librarianship and documentation, short-term institutes to update the skills of personnel on the job, support of the training institutions to enable them to do a better job, and an expanded intern program to give new graduates quality work experience.

Under a library resources development program, the Library has proposed a system of matching grants, calculated on a 50 per cent increase of the school library's annual operating budget, up to a maximum of five years. The federal funds could be used for a variety of purposes: journal procurement, reduction of backlogs, personal services, and the like. Such funds would be conditioned on the maintenance or increase of the school budgets.

In connection with more adequate housing for medical libraries, we are as much interested as you in achieving a prompt solution to this continuing problem. We expect to work closely with the National Institutes of Health and other agencies in the Public Health Service to develop a support program commensurate with the needs.

In closing, I should like to make a practical suggestion. I submit that this matter of medical libraries, including measures for their support, minimal standards for their establishment and performance, and planning for their futures, is a topic of immediate concern to medical education and medical re-

search. To the best of my knowledge, the Association of American Medical Colleges has never charged a committee with the continuing responsibility of planning, monitoring and evaluating developments in this field.

I should like to suggest the establishment of such a committee. I should like to suggest further that this proposed committee establish liaison with the professional organization of medical librarians, the Medical Library Association, for technical consultation. There are very practical and immediate problems to be solved, as well as long-range planning to be done.

The librarians and the school administrators have common cause. It will take the wisdom and experience of both groups to plan for the development of library resources, and to accommodate this development to the needs of medical research and education in the years to come.

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2. FRY, A., and ADAMS, S. Medical Library Architecture in the Past Fifty Years. *Bull. Med. Libr. Ass.*, 45:471, 1957.
3. General Electric Company, Defense System Division. *The MEDLARS Story*. Bethesda: General Electric Co., 1962.
4. SIMPSON, G. S., Jr. Scientific Information Centers in The United States. *Amer. Documentation*, 13:43, 1962.
5. U.S. Senate Committee on Appropriations. Labor, Health, Education, and Welfare Appropriations for 1963. Part I: 766, Washington: G.P.O., 1962.

The CHAIRMAN. At this point I will insert in the record the report of the Department of Health, Education, and Welfare.
(The report follows:)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
April 21, 1965.

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

DEAR MR. CHAIRMAN: This letter is in response to your request of January 25, 1965, for a report on S. 597, a bill to amend the Public Health Service Act to provide for a program of grants to assist in meeting the need for adequate medical library services and facilities. The popular title of this bill is "Medical Library Assistance Act of 1965."

The bill would provide the basis for a coordinated attack on a number of serious, interrelated problems with which medical libraries are confronted today.

The plight of the Nation's medical libraries is critical. During a period of intensive development of health research institutions, medical schools, and other medical facilities, support for medical libraries has been seriously neglected. The condition of medical libraries has steadily deteriorated under the pressures of rapid development of other programs and activities of medical institutions, most of which make increasing demands upon the medical library. In addition, the broadening base of medical research and practice, calling for literature from many ancillary fields, has added to the magnitude and complexity of medical literature. Medical libraries are cramped for space, critically deficient in trained manpower, deplorably inadequate in resources and desperately in need of new methods for handling the growing medical literature. A large-scale national effort is needed now to rehabilitate medical libraries.

The President's Commission on Heart Disease, Cancer, and Stroke, reacting to this situation, stated: "The Commission feels strongly that unless major attention is directed to improvement of our national medical library base, the continued and accelerated generation of scientific knowledge will become increasingly an exercise in futility."

The Commission recommended that "not less than \$30 million per year for 5 years be authorized and appropriated to the National Library of Medicine for a program of grants and contracts to support improved medical library services in the United States—including facilities, resources, training of personnel, secondary publications, and library and communications research" and that "broadly conceived legislation be initiated clearly authorizing the National Library of Medicine to assist medical libraries in the ways recommended." Enactment of this bill would be a major step in carrying out the Commission's recommendations.

Facilities

The bill would authorize the Surgeon General to make grants of up to 75 percent of the costs of constructing, renovating, expanding, or remodeling medical library facilities. In acting upon applications for grants, consideration would be given to the relative effectiveness of the proposed facilities in meeting demonstrated needs for additional or improved medical library services and priority would be given to projects for construction of facilities for which the need is greatest. For these purposes, the bill would authorize appropriations not to exceed \$10 million a year for a 5-year period beginning with fiscal year 1966.

One of the most critical needs of medical libraries is for space in which to maintain their collections and to carry out their necessary day-to-day operations. The chronic shortage of shelf space precludes the acquisition of essential additional books and materials each year. Crowding obstructs and often completely prevents access to the volumes on hand. Working space for library staffs is so restricted as to be a real barrier to effective operations (many medical libraries are so crowded that there is not even space for desks for the staff), and many libraries lack the space for up-to-date processing and labor-saving equipment. The need for space is desperate and of great magnitude. However, in order to make the most effective use of the funds that will be available for this program, we believe that initiation of the construction program should be preceded by a study of the kinds of facilities which will be most suited for meeting present and future requirements in the light of rapid technological advances.

To allow time for such a study, and at the same time achieve the full objective of the construction program envisaged by the bill, we recommend that this provision of the bill be amended to provide for a 4-year construction program, beginning with fiscal year 1967, with annual appropriation authorizations of \$12.5 million.

Training

The bill would authorize the Surgeon General to make grants to assist in the training of medical librarians and other information specialists in the health sciences. Not to exceed \$1 million a year would be authorized for 5 years, beginning with fiscal year 1966. Sums made available under this section shall be used by the Surgeon General to make grants (1) to individuals to enable them to accept traineeships and fellowships leading to postbaccalaureate academic degrees in the field of medical library science, in related fields pertaining to sciences related to health, or in the field of communications; (2) to individuals who are librarians or specialists in information on sciences related to health, to enable them to undergo intensive training or retraining to attain greater competence in their occupations (including competence in the fields of automatic data processing and retrieval); (3) to assist appropriate public and private nonprofit institutions in developing, expanding, and improving training programs in (medical) library science and the field of communications of information pertaining to sciences relating to health; and (4) to assist in the establishment of internship programs in medical libraries meeting standards prescribed by the Surgeon General.

There is a critical shortage of professional personnel trained to meet the special needs of medical libraries and the medical community they serve. There are approximately 6,300 medical libraries in the country, staffed by only about 3,000 professionals. The annual attrition from this professional group is approximately 150.

There is urgent need for specialized training over and above the general librarianship for professional persons to staff medical libraries. The type of professional needed to deal with the medical science communications problems is not being trained at the present time. Training programs must go beyond the basic, traditional training in library science and provide advanced training specifically related to the communication needs of the medical community, with a heavy emphasis on the biomedical sciences, the existing patterns of communication in the medical community (including familiarity with the medical library system), and such specialties as systems engineering, linguistics, and the like as they relate particularly to medical communication.

S. 597 would authorize the kinds of training assistance particularly suited to the development of this specialized competence. Postbaccalaureate support of selected trainees and fellows in programs directly related to the problems of medical science is essential. Centers of excellence could be developed in which comprehensive interdisciplinary advanced training could be furnished persons preparing for careers in medical library science. This would require medical direction and leadership.

Many of those presently staffing medical libraries need intensive specialized training in order to increase and update their competence. The training of biological scientists as information specialists and the training of scientists in information techniques in relation to medical problems also constitute important segments of a farsighted effort to upgrade the quality of service of medical libraries to the student, the investigator, and practitioner of the health professions. Internship programs in outstanding medical libraries would assist greatly in training of new librarians and in updating the skills and increasing the competency of persons already in the field.

Resources

The bill would authorize the Surgeon General to make grants of money, materials, or both to public or other nonprofit medical libraries and related scientific communication instrumentalities to expand and improve their basic medical library or related resources. Not to exceed \$3 million a year would be authorized for these purposes for a 5-year period, beginning with fiscal year 1966.

No grant in any year could exceed \$200,000 or, if lesser, 60 percent of the annual operating expense of the library for the first year; 50 percent (or, if lesser, five-sixths of the first-year grant) for the second year; 40 percent (or, if lesser, four-fifths of the second-year grant) for the third year; 30 percent (or, if lesser, three-fourths of the third-year grant) for the fourth year; and 20 percent (or, if lesser, two-thirds of the fourth-year grant) for the fifth year.

Grants could be used for (but not limited to) acquisition of books, journals, films, and other materials; cataloging, binding, and other services and procedures for processing library resource materials for users of the library; acquisition of duplication devices, recording equipment, and other equipment to facilitate the use of the resources of the library by those it serves; and introduction of new technologies in medical librarianship.

The medical library resource need is of great magnitude and so directly related to medical research, to the training of medical manpower, and the information essential to the practicing medical community that it requires special, intense attention immediately if fundamental responsibilities in the health area are to be fulfilled.

Neglect of support of the resources of the Nation's medical libraries has been chronic and cumulative to the point where they now have only about half the books, journals, and other resources they need. In addition to these shortages a larger majority of the medical libraries have large backlogs of tasks such as cataloging and indexing necessary for the effective use of the literature and are in critical need of new and additional types of equipment (such as photoduplication) to speed the processing of materials. Significant Federal assistance is essential to build up collection to minimum standards and to support necessary bibliographic apparatus. In this connection, it is important to note the vital role to be played by regional medical libraries to be established under another provision of the bill. These regional libraries will collect materials in depth and make their resources and services available to other medical libraries in a broad geographic area so that the resources of the smaller libraries can be limited to the most-used classes of materials. Even with the efficiency and economy which the regional medical library mechanism will foster, the need for basic resources is tremendous.

The descending scale of Federal grant support for these essential resources would encourage the upward revision of medical library budgets over the 5-year period, and serve to stimulate substantial, continued institutional support for the medical library function in the future.

Regional medical libraries

The bill would add a new section 398 to the Public Health Service Act which would authorize the Surgeon General to make grants to existing public or other nonprofit medical libraries to enable them to serve as regional medical libraries for the geographical areas in which they are located. Not to exceed \$2.5 million a year would be authorized to be appropriated for these purposes for a 5-year period beginning fiscal year 1966.

Grants could be made only to medical libraries which agree to provide supportive services to other medical libraries in the region, provide free loan service to qualified users, and make available photoduplicated or facsimile copies of biomedical materials which qualified requestors may retain. Priority would be given to medical libraries having the greatest potential for fulfilling the needs for regional medical libraries. In determining priorities consideration would be given to such factors as the need for a regional medical library (assessed in terms of the levels of research, teaching, and medical activities of that library in relation to other medical library services in the region); the adequacy of the library (in terms of collections, personnel, equipment, and facilities) as a basis for a regional medical library; and the size and nature of the population to be served in the region in which the library is located.

Grants under this section for basic resource materials could not exceed 50 percent of the library's annual operating expense for the preceding year (exclusive of Federal financial assistance under this bill). Construction, renovation, or expansion of the physical plant necessary for the carrying out of functions as a regional library would be authorized in the same manner and subject to the same terms as other construction grants authorized in the bill. Grants could also be used for equipment, staff, and services necessary for the functions of a regional medical library.

Need for regionalization has become acute with the growth in the magnitude of the medical literature and the speed with which information is required. At present, the National Library of Medicine is serving as the "libraries' library" in meeting the needs for increasing amounts of material which local medical libraries do not have on their shelves. Assistance in meeting the need for basic

library resources will help materially in relieving this problem, but it is neither economically feasible nor necessary for each medical library to seek to build its own collection to try to encompass even a sizable proportion of the whole of the medical literature.

The development of a system of regional medical libraries, locally operated and controlled but with Federal assistance in the collection of materials in depth and of the equipment and staff necessary for an effective regional service, would do much to meet the needs of individual medical libraries in the region, and at the same time assure rapid, quality medical library service throughout the Nation. It would also contribute greatly to the effective utilization of scarce, skilled manpower, since the services and knowledge of highly qualified staff would be available throughout the region served.

In some regions of the Nation there may be no medical library adequate to serve such area as a regional medical library. The bill would add a new section (sec. 378) to part H of title III of the Public Health Service Act (relating to the National Library of Medicine) which would authorize the Surgeon General in such cases to establish, as branches of the National Library of Medicine, regional libraries of medicine to serve the needs of such regions. Not to exceed \$2 million annually would be authorized to be appropriated for this purpose for a 5-year period, beginning fiscal year 1966. Sums so appropriated would remain available until expended.

We strongly endorse these complementary authorizations as providing the flexibility necessary for the most rapid and efficient deployment of medical library resources and services throughout the Nation.

Special scientific projects

The bill would add a new section 395 to the Public Health Service Act which would authorize not to exceed \$500,000 a year for a 5-year period beginning with fiscal year 1966, to be used by the Surgeon General to assist, through awards to physicians and scientists, in the compilation of existing, or the writing of original, contributions relating to scientific, social, and cultural advancements in the sciences related to health which will facilitate the distribution and utilization of such knowledge and information. The Surgeon General would be authorized to make appropriate arrangements whereby the facilities of the National Library of Medicine and of other institutions would be made available in connection with the projects for which the awards are made.

With the tremendous increase in the volume and complexity of the literature in the biomedical sciences there is an urgent need for preparation of critical reviews, articles, abstracts, and other compilations or original contributions of a high degree of excellence and reliability to make more readily available to the medical community knowledge of advancements in the medical sciences. Such reviews, by physicians and scientists of stature, can serve as one of the most important keys to the literature, by providing practitioners, teachers, scientists, students, and others with access to, and appropriate perspectives on, significant aspects of scientific developments.

Research and development in medical library science and related fields

The bill would add a new section 396 to the Public Health Service Act which would authorize appropriations of not to exceed \$3 million a year for a 5-year period beginning with fiscal year 1966, for grants or contracts for research or investigations in the field of medical library science and related activities, and for the development of new techniques, systems, and equipment for processing, storing, retrieving, and distributing information pertaining to sciences related to health.

The magnitude and diversity of the requirements of the Nation's corps of health workers for the information in the medical literature is tremendous. The information resources of the Nation's biomedical libraries must be made available to its corps of health practitioners, to researchers in the health fields, and to students being trained in the health professions, in ways which are commensurate with their urgency, variety, and volume.

The volume and character of the published biomedical literature are such as to pose peculiar problems of storage, retrieval, and transmission of the information contained therein. The uses to which the information is put are of such

vital importance in terms of the health needs of the Nation that the urgency of improving these aspects of its handling cannot be too strongly emphasized. Nearly all aspects of current medical library science need to be reassessed to develop more efficient skills and technologies. In addition, research is needed in related areas such as the uses of information by scientists, teachers, and practitioners and their searching techniques and attitudes; medical terminology and classification; machine indexing; graphic image storage and retrieval, and the like. Such research will not only provide answers to many immediate problems of medical information handling, it will also provide important guidelines for the future.

Support of biomedical publications

The bill would add a new section 399 to the Public Health Service Act which would authorize appropriations of not to exceed \$1.5 million a year for a 5-year period beginning with fiscal year 1966 for grants or contracts with non-profit institutions of higher education or individual scientists for support of non-profit biomedical scientific publications and to procure the compilation, writing, editing, and publication of reviews, abstracts, indexes, handbooks, bibliographies, and related matter pertaining to scientific works and scientific developments. No grant for support of any periodical publication could be made for more than 3 years.

Effective access to the medical literature requires a variety of secondary publications, including abstracts, indexes, handbooks, critical reviews, and the like. This is particularly true as the volume, magnitude, and complexity of the literature increases. The support authorized by this section would be limited in duration and could serve as a stimulus to the initiation and successful maintenance of a few carefully selected publications which have potential for making a special contribution to the biomedical community.

National Medical Libraries Assistance Board

The bill would provide that the Board of Regents of the National Library of Medicine shall constitute and serve as the National Medical Libraries Assistance Board to advise and assist the Surgeon General in the preparation of regulations and with respect to policy matters relating to the administration of the programs which the bill would authorize. The Board would also review all construction applications, and would advise the Surgeon General on support of biomedical scientific publications and on establishment of regional medical libraries. (Note that, in its capacity as Board of Regents of the National Library of Medicine, the Board would also advise the Surgeon General on the establishment of branches of the National Library of Medicine to serve as regional medical libraries.)

We strongly endorse the use of the Board of Regents of the National Library of Medicine as the advisory council for the programs authorized under this bill. This would assure maximum coordination and continuity between the new programs and the ongoing activities and responsibilities of the National Library of Medicine. We would suggest however that, in line with the advisory role of the Board in the construction program, the introductory phrase in the proposed section 393(b) (p. 6, lines 5 to 7) be changed to read: "A grant under this section may be made only if the application therefor is reviewed by the Board and is approved by the Surgeon General * * *".

Section 4 of the bill would provide for an increase in the authorized ceiling for per diem pay of members of the Board of Regents of the National Library of Medicine from \$50 to \$75. This would bring the authorized ceiling for the per diem of members of the Board of Regents to the same level as that authorized last year for the Federal Hospital Council and the National Advisory Council on Nurse Training.

In summary, the medical library is an essential instrument in the training of medical personnel, the conduct of medical research, and the practice of medicine. Yet in recent years the Nation's medical libraries have been seriously neglected and today are in critical condition. The difficulties of medical libraries and the effect of their weaknesses on medical training, research, and practice must now be recognized as a problem of national proportions, and one which ultimately could pose a threat to the health of the American people. The needs are extensive and urgent. An intensive, comprehensive program directly related to meeting these needs should be initiated without further delay. S. 597 would provide the basis for such effort.

We would therefore strongly recommend enactment of S. 597. (We suggest however that a clarifying amendment, along the lines enclosed herewith, be included in the bill to make clear that nothing in the bill is intended to limit any authority existing under present law. It should also be noted that favorable action on this bill will make unnecessary the references in the proposed Higher Education Act of 1965 to the "biomedical" field. See S. 600, p. 20, lines 13-14; p. 23, lines 10-11.)

We are advised by the Bureau of the Budget that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely,

ANTHONY J. CELEBREZZE, *Secretary*.

The CHAIRMAN. The subcommittee is adjourned.

(Whereupon, at 11:45 o'clock a.m., the subcommittee adjourned.)



