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OF
PROGRAM ACTIVITIES

NATIONAL INSTITUTES OF HEALTH

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CLINICAL CENTER

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PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

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CLINICAL CENTER

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PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

OFFICE OF THE DIRECTOR

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GENERAL

The Clinical Center is the research hospital for the National Institutes of Health. Its mission, in support of the clinical investigation activity of the categorical Institutes, is to provide the optimum in patient care. It also supplies facilities for its professional staff for pursuit of research projects pertaining to better methods of diagnosis and patient care. Another important objective is to provide the most favorable circumstances for medical progress by combining outstanding services and modern facilities with opportunities for young physicians and other professionals to prepare for careers in medical or related research or in academic medicine. The contiguity of hospital beds and well-equipped laboratories, together with the focusing of the attention of representatives of many disciplines on a single patient or a single disease entity, make the Clinical Center a national resource for the advancement of medicine.

The administration of the Clinical Center plans and directs all services (except physician care) related to patient care activities. In carrying out this responsibility the Office of the Director utilizes the skills of many specialists in these departments: Nursing, Diagnostic Radiology, Pharmacy Service, Anesthesiology, Clinical Pathology, Blood Bank, Pathologic Anatomy, Social Work, Medical Records, Nutrition, Rehabilitation, Spiritual Ministry, Environmental Sanitation Control, Radiation Safety, and Employee Health Service.

PATIENT CARE STATISTICS

1. Admissions

In FY 1966, 4,155 patients were admitted to the Clinical Center, about the same as the preceding year. Bed occupancy was 71 percent.

During the period, 2,422 individuals registered as outpatients, an increase of 250 over FY 1965. These patients made almost 44,000 visits to the Clinical Center--an increase of 7,000 over the previous year. This increase was partially attributable to new programs of NIMH and NCI.

Average length of stay for inpatients was 33 days, comparable to the experience of previous years. Only 41 percent of inpatient admissions were from the Maryland, Virginia, and District of Columbia areas. One out of every

five patients was under 17 years of age. Total admissions to the Clinical Center since its opening in 1953 approached the 42,000 mark.

PATIENT STATISTICS, FY 1966

Number of admissions	4,155
Number of discharges (includes 177 deaths)	4,138
Outpatients (first registration)	2,422
Average daily census, inpatients	367
Percentage of bed occupancy	71%
Average length of stay (days)	33
Total number of patients admitted to Clinical Center from July 6, 1953 to June 30, 1966	41,678

PEDIATRIC PATIENT STATISTICS, FY 1966

Number of admissions, age 16 and under	914
14 and under	805
Percentage of total admissions, age 16 and under	22%
14 and under	19%
Average length of stay, age 16 and under (days)	23
14 and under	22

2. Ambulatory care programs

The increase in number of outpatients was partly related to ambulatory care programs inaugurated by the National Cancer Institute. These programs were prompted by the fact that combination drug therapy increased periods of remission in children with acute leukemia, and that some of these patients, as well as others with certain forms of cancer, can be treated on an ambulatory basis for extended periods of time. Thus it is reasonable that they live outside the Clinical Center and report frequently for treatment. This arrangement conserves hospital bed space and makes it possible for more patients to be studied.

NCI initiated a Special Ambulatory Care Program (SACP), in which patients are housed in commercial accommodations near the Clinical Center. NCI has also treated, on an outpatient basis, an increased number of acute leukemia patients whose homes are in nearby areas. The program for the latter is nicknamed "POMP," from the initial letters of drugs that are used in chemotherapy.

SACP and POMP placed additional demands on Clinical Center personnel in FY 1966. For example, 7-day coverage and longer working days became necessary in the Admissions and Followup Nursing Service. The Pharmacy Department's Central Sterile Supply Section was affected. Laboratory work performed by the Clinical Pathology Department's Hematology Service for outpatients increased by 20 percent. (The staff was able to compensate partially by using a semiautomated method for counting platelets and by other improvements.) Both children and adults involved in SACP were assisted by Rehabilitation

and Social Work Departments' personnel, to help them adjust to motel living while receiving daily treatment, and to provide an outlet for emotional stress and tension.

3. Normal control volunteer program

Investigators continued to focus their interest during FY 1966 on older, male, normal control volunteers. This is a group that is difficult to recruit. Consequently, the number of volunteer patient days dropped by about 6 percent, to 22,521.

Total number of volunteer outpatients also dropped, but the number of clinic hours at the Clinical Center jumped by 270 hours, to a total of 1,977 hours, and clinic hours away from the reservation more than doubled, from 4,700 to 11,000. Volunteers ranged in age from 18 to 95. More than 90 percent of the younger volunteers took advantage of the Career Development Program. In this program, they work daily under preceptors who introduce them to scientific research and related fields.

The Prisoner Volunteer Program continued at the usual pace of 24 volunteers every 5 weeks for the investigation by NIAID of viral upper respiratory diseases, and 2 volunteers every 10 weeks for NIAID's study of the clinical features of familial Mediterranean fever and recurrent fever of unknown origin. By the end of the fiscal year, a total of more than 1,350 Federal prisoners had participated in this 6-year-old program. Statistical tabulations are given in Tables 1 and 2.

ORGANIZATION

1. Personnel

A reorganization in the Office of the Director during the first quarter of 1966 established two Associate Director positions. Dr. Robert M. Farrier and Dr. Roger L. Black were appointed to these posts.

Dr. C. K. Himmelsbach, Clinical Center Associate Director from 1959 to 1965, retired from the PHS.

Other changes included the appointment of John F. Roatch as chief of the Social Work Department, to replace Mrs. Ellen J. Walsh Ferris who resigned. Dr. Howard L. Andrews resigned as chief of the Radiation Safety Department, and Joseph M. Brown, Jr., was appointed Radiation Safety Officer. A new position, Advisor on Hospital Computer Systems to the Clinical Center Director, was established, and Dr. Scott I. Allen was appointed to fill this post.

2. Changes in nomenclature

Action was initiated during the Fiscal Year to change the names of two Clinical Center departments. The Diagnostic X-ray Department became the Department of Diagnostic Radiology. This redesignation made it clear that

the activities of the department encompass the use of all forms of radiant energy for purposes of diagnosis, but did not involve budgetary or staffing changes.

The Clinical Center administration proposed in April 1966, that the Chaplaincy Service be renamed the Department of Spiritual Ministry. This would formalize a designation that has been in informal use since the Clinical Center opened in 1953. This service is staffed by four chaplains, one part-time chaplain, and two assistants.

The Clinical Center adopted the American Red Cross's change in title for the valuable members of the community who serve as volunteers. Individuals formerly known as Gray Ladies or Gray Service Workers became "Red Cross Hospital Volunteers."

3. Bed allocations

As of January 16, 1966 the National Institute of Child Health and Human Development was allocated 13 beds on the 12-East nursing unit. These were transferred to NICHD from NCI. This was the first addition to the Clinical Center of an Institute clinical investigation program in 10 years.

Thus, as FY 1966 ended, eight of the nine Institutes of Health were allocated patient beds and laboratory space in the Clinical Center. The following tabulation traces the apportionment of bed space from 1953, the year the Clinical Center opened, until 1957, when the capacity of 516 beds was reached. It also shows the distribution after NICHD was added.

CLINICAL CENTER BED COMPLEMENT INCREASE, ON A SEMIANNUAL BASIS

DATE	*NCI*	*NHI*	*NIDR*	*NIAMD*	*NIAID*	*NIMH*	*NINDB*	*TOTAL*
December, 1953	26	26	....	26	26	31	26	161
June, 1954	52	52	....	39	26	44	37	250
December, 1954	76	62	....	48	36	58	52	332
June, 1955	89	72	....	48	39	58	67	373
December, 1955	91	72	2	52	39	73	67	396
June, 1956	104	76	5	55	52	73	78	443
December, 1956	104	102	5	55	52	73	78	469
June, 1957	139	102	5	61	52	73	78	510
July 3, 1957	139	102	5	61	52	79	78	516

The 516 total bed capacity has remained to date. The January 1966 reallotment resulted in the following:

NICHD	*NCI*	*NHI*	*NIDR*	*NIAMD*	*NIAID*	*NIMH*	*NINDB*	*TOTAL*
13	121	100	5	66	52	79	78	516

Plans were considered during FY 1966 to add more bed space to the Clinical Center. One-and-one-half floors are to be added to the hospital's D Wing. When this is completed, probably in Calendar Year 1968, offices now located on the north side of the 13th floor will become patient bedrooms, and the personnel in those offices will move to the new facilities. The patient bedrooms will constitute a new nursing unit, to be known as "13-North," and will be allocated to NICHD. The number of patient beds in the Clinical Center will then be increased by 24, to a total of 540.

MEDICAL BOARD; PANEL OF CONSULTANTS

In January 1966, the following were named to the Medical Board to serve during the calendar year: Dr. Maitland Baldwin, NINDB; Dr. Nathaniel I. Berlin, NCI; Dr. Roger L. Black, CC; Dr. Eugene Braunwald, NHI; Dr. Phillippe V. Cardon, Jr., NIMH; Dr. John L. Decker, NIAMD; Dr. Edward J. Driscoll, NIDR; Dr. Robert M. Farrier (Executive Secretary), CC; Dr. Donald S. Fredrickson (Chairman), NHI; Dr. Robert S. Gordon, Jr., NIAMD; Dr. Harold A. Greenberg, NIMH; Dr. Vernon Knight, NIAID; Dr. Jack Masur, CC; Dr. Griff T. Ross, NICHD; Dr. Paul J. Schmidt, CC; and Dr. George Z. Williams, CC.

During FY 1966, the Medical Board's Clinical Research Committee recommended 73 projects involving normal volunteers. All were approved by the NIH Director. There were 745 visits by medical care consultants to the Clinical Center. Three medical care consultants were added to the roster, the total number being 158 at the end of the year.

CLINICAL AND PROFESSIONAL EDUCATION

The NIH Associate program office mailed more than 1100 applications to medical students and young physicians in answer to inquiries, as contrasted with about 900 the year before. From those who applied, 360 were invited to NIH for interviews, and half--184--were selected in July 1965 for Associate positions. Most of these will begin their service at NIH in 1967, generally for 2 years.

Appointees are designated as Clinical Associates, Research Associates, and Staff Associates. Each is assigned in one of the Institutes of the Clinical Center to a preceptor, under whose direction he participates in a research program. Didactic exercises complement the associateships, and postgraduate education is available on the NIH campus. Clinical Associates spend one-third to one-half their time in clinical care of patients.

Clinical Center professional departments continued their residency programs at about the same level as in previous years, with 17 residents training in Anatomical Pathology, Clinical Pathology, and Radiology. The Department of Diagnostic Radiology elected to discontinue its residency program in the future and, instead, will provide specialty training in specific areas to physicians who have completed residencies.

NINDB, NIMH, and NCI continued to offer partial residency training, with 17 physicians in training for periods of one to two years in Neurology, Psychiatry, and Dermatology. However, at the beginning of the Fiscal Year

the Public Health Service endorsed only full residency training programs. Such partial programs as remain are arranged directly between preceptors and the appropriate specialty boards.

THE COMPUTER RESEARCH PROGRAM

1. Analysis phase begun in computer use for hospital communications

In January 1966 an Advisor on Hospital Computer Systems to the Clinical Center Director was named. This appointment was preceded by extended observation and study by Clinical Center officials of prototype systems in other hospitals. Department heads and selected staff members were indoctrinated through a 9-hour basic computer orientation course conducted by Charles Austin, of the National Library of Medicine MEDLARS program. In addition, at separate staff meetings, Charles S. Campbell, Assistant Director of the Akron Childrens Hospital, and Dr. Octo Barnett, who is in charge of the Massachusetts General Hospital computer program, explained the development and current status of computer programs at their institutions.

The Clinical Center program has begun with studies in pharmacy, medical records, and patient scheduling areas through cooperation with DCRT's staff. Such studies were needed to identify data adaptable to computer input-output methodology, so that program writing could begin.

The orderly nature of the approach is illustrated in the fact that, at least initially, no attempt will be made to create a totally automated medical record. Others have found that a self-imposed task of such magnitude tends to stop a computer research program before it really starts.

Clinical Center research is to be centered on the use of the computer as an aid to internal communication. However, information will be put into forms that will be usable by investigators of the various Institutes in studying diseases. The Institutes will be expected to write their own programs for making use of the data.

2. Clinical Pathology Department utilizes CDC 3200 computer

Demands in American hospitals for laboratory measurements on patients are doubling every 5 years. Six years ago, the Clinical Center's Clinical Pathology Department staff began to explore the possibilities of automation and use of the computer.

The first phase--analysis--was completed and, at the beginning of FY 1966, a CDC 3200 computer was installed. Faulty shielding of a controller cable and faulty electrical installation caused troubles over a 9 months' period.

A second phase was completed during the fiscal year. This was the demonstration that the efficiency, accuracy, and speed of a limited number of chemical analyses can be significantly improved by the digital computer and its program. The staff operated in real-time mode six chemical analyses on blood. These include four electrolytes, blood sugar, and blood urea nitrogen. Manual methods were retained while evaluating and debugging the new system.

A supplementary budget had an accelerating effect on the third phase, which was initiated during the Fiscal Year. By the end of Calendar Year 1966, 17 or 18 routine chemical tests are scheduled to be on-line. Another aspect was the completion of specifications for an on-line entry system for hematology. Still another development in this third phase was to be the production of a group of processing routines for comparing a given patient's current test result with the most recent previous laboratory data on his same test. Provision was to be made for the print-out of an alert code. This will warn laboratory personnel and the patient's attending physician when a significant change has taken place. Also included were to be specific programs to quality control laboratory analytical operations.

A fourth phase is to be a development of automation and data processing in microbiology.

INCREASE IN USE OF RADIOACTIVE MATERIALS

A striking rise in the use of radioactive materials for Clinical Center patients has been noted over the past 5 years. For example, the Pharmacy Department's Radiopharmaceutical Service--which is responsible for preparation and development of radioisotope drug dosage forms and their pharmaceutical safety--recorded a fivefold increase in number of units developed and issued over the 5-year period. Other departments affected by the increase include the Department of Radiation Safety and the Department of Diagnostic Radiology. More information on this trend is included in the departmental annual reports.

COMMITTEE STUDIES CERTAIN ASPECTS OF RESEARCH PROCEDURES

Formal guidelines concerning clinical research and investigation involving human beings have been in effect since the Clinical Center opened. These guidelines have been reviewed periodically. In FY 1965 an ad hoc committee began another such review. The committee made its preliminary report to the Clinical Center Director during FY 1966. The draft was reviewed by the Clinical Directors and will be reviewed by other interested groups at NIH. When all comments have been considered, a final document will be issued. Any new guidelines will continue to be supplementary to the dependence placed on the integrity, conscience, and conscientiousness of the physician in charge of the patient.

TELEVISION ENGINEERING UNIT

The staff continued to utilize television's capability of image intensification to reduce radiation dosage. In cardiac catheterization and in fluoroscopy such intensification meant a reduction in radiation dosage to the patient of about 30:1. The staff also used videotape recordings to provide immediate playback, permanent storage, playback in slow motion so that fleeting events could be timed with accuracy, and stop-motion for detailed analysis.

Split-screen technique permitted such presentations as recording and showing an oscilloscope tracing simultaneously with the information from which it was derived. Thus the image from a close-up camera in neurosurgery, showing

electroencephalographic lead placement, could be combined with a recording of the significant EEG channels. A third channel could be provided to show the EEG delayed in time. A further use of television involved "Line Selection" techniques by which one line of information could be extracted from the picture and displayed as a function of density. A collaborative study was undertaken with NHI to use these techniques in studying the dynamics of heart action.

Other aids to research included an ultraviolet television system used in cellular research by the Clinical Pathology Department, and television surveillance to record operating room traffic patterns in a correlation study of bacteria counts.

PATIENT ACTIVITIES SECTION

About 600 new books were added to the Patient Library. The library staff cultivated a stronger liaison with the patient-care professional staff. Circulation figures, which had held steady for the two preceding years, jumped sharply to 20,500.

A program of recreation activities (social, music, arts and crafts, adapted sports and dramatics), off and on the NIH campus, was offered to patients. For some, the programs assisted in redirection of interests and pursuits when this was indicated by medical limitations. For others, the programs made hospital life more bearable or enjoyable.

"Active" programs are those in which patients participate. There were about 1,600 of these during the Fiscal Year. In "passive" programs, patients are spectators. There were about 360 of this type of program. (See Table 3.)

HOSPITAL VOLUNTEERS

Nearly 100 Red Cross Hospital Volunteers served at the Clinical Center during FY 1966, contrasted with 80 the preceding year. In addition to the increase in size, this group of assistants to the patient care staff assumed additional responsibilities. Their new duties include providing escort services to patients, feeding special patients, and assisting patients in and out of wheel chairs and beds. To expedite the expanded services, the volunteers attended a short-term training program conducted by the hospital's professional staff.

Red Cross Hospital Volunteers were particularly helpful during evening hours. Sixteen such volunteers aided the staff recreation specialists. Three years previously, only three volunteers had served on evening duty.

Late in 1965, the Hospital Volunteers implemented a "Pictures for Patients" program. This had been initiated by Mrs. Luther Terry with assistance from the USPHS Officers' Wives' Club. "Pictures for Patients" later became an incorporated organization, guided by interested members of the community. By the end of FY 1966, Red Cross Hospital Volunteers had placed in Clinical Center patient rooms more than 200 reproductions of paintings by renowned artists. (Table 4 provides statistics on the Hospital Volunteers' activities.)

PUBLIC INFORMATION OFFICE

The information and public relations aspects of the Clinical Center's program are handled by the Information Office.

During Fiscal Year 1966 the staff continued to manage all inquiries from communications media and to assist representatives of the press, radio, and TV in conveying to the public accurate and useful information about the clinical research program and hospital functions.

To keep physicians informed of the diagnostic requirements, purposes and methods of those NIH clinical studies for which patients are currently needed, two editions of the brochure "Current Clinical Studies and Patient Referral Procedures" and 24 announcements of special studies were issued. In addition, the Clinical Center's exhibits were shown at six state and national medical meetings. (See Table 5.)

Among programs of internal information designed to directly benefit Clinical Center patients, two were notably successful. NIH employees donated 2,400 pints of blood--a record amount. Patient Welfare Fund receipts also reached the highest level on record; donations during the pre-Christmas season alone were $2,400.

The Information staff edited the proceedings of six Combined Clinical Staff Conferences for publication in the Annals of Internal Medicine, and continued to provide editorial assistance to members of the hospital's professional staff in the preparation of articles and papers for publication in technical journals or for presentation at professional meetings. (See Table 6.)

Other aspects of the Information Office activities included handling a great variety of public inquiries, and the production of leaflets and brochures to meet specific Clinical Center program needs. (See Tables 7 and 8.)

As the year ended, a revised Patient Press Code, reflecting the long-standing Clinical Center emphasis on the patient's right of privacy, and a "Disaster Manual for Public Information Staff" were in preparation.

SPECIAL EVENTS SECTION

The staff emphasized selectivity in scheduling visits to NIH by foreign and domestic personnel. This meant that the total number of visitors was 4,200, a drop of 7 percent from the previous year. The proportion of science-oriented visitors increased, and the Special Events staff set up individual schedules for them, tailored to fit their specific interests. On approximately 900 occasions, NIH staff members received these visitors to discuss such interests. Assistance was also provided by Special Events for 95 scientific and clinical meetings, attended by 18,000 persons. (See Tables 9 and 10.)

PREADMISSIONS UNIT

The Unit processes patient referrals, is the contact point for physicians' inquiries, and serves as liaison between members of Congress and the NIH on patient care. During the year, the staff processed almost 9,000 inquiries: 5,741 physician, 2,632 lay, and 523 congressional.

SELECTED STATISTICS

Table 1

NORMAL CONTROL VOLUNTEERS BY INSTITUTE, FY 1966

Institute	*Volunteers*			*Days*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*
NIAID	256	11	267	9,913	502	10,415
NIAMD	47	35	82	2,819	2,115	4,934
NCI	16	8	24	710	209	919
NHI	30	33	63	1,517	1,437	2,954
NIMH	38	28	66	1,779	1,097	2,876
NICHD	0	15	15	0	423	423
NINDB	0	0	0	0	0	0
NIDR	0	0	0	0	0	0
TOTALS	387	130	517	16,738	5,783	22,521

Table 2

NORMAL CONTROL VOLUNTEER OUTPATIENT VISITS, FY 1966

Institute	*Clinic visits*	*Away from reservation*	*Hours*
NIMH	520	-	1,977
NIMH	-	5,206	11,189
NIAMD	1	-	-
TOTALS	521	5,206	13,166

Table 3

PATIENT ACTIVITIES

Patient Library

	FY 1966	*FY 1965*
Books circulated	20,545	17,459
Patients contacted	13,277	13,471
Patients visiting the Library	4,245	3,965
Personnel visiting the Library	4,809	3,523

Recreation Programs, FY 1966

Adults

Scheduled active programs	1,087
Scheduled passive programs	223
Average number of programs (active and passive) per day, based on a 6-day workweek	4.2

Children

Scheduled active programs	521
Scheduled passive programs	140
Average number of programs (active and passive) per day	2.5

Table 4

RED CROSS HOSPITAL VOLUNTEERS AT NIH
HOURS OF SERVICE, FY 1966

Adult Volunteers

Captain of the day		1,721
Chapel		283
Rehabilitation Department		
Occupational therapy (children)	1,277	
Arts and crafts (adults)	1,639	
Physical therapy	562	3,478
Patient Activity Section		
Library	2,173	
Recreation (children and adults)	899	3,072
Unit Visits (specials)		4,455
Blood Bank		95
Administration		539
TOTAL		13,643

Student Volunteers

Library	4
Recreation	1,286
Physical therapy	426
Children's occupational therapy	725
TOTAL	2,441

TOTAL HOURS OF SERVICE (adults and students) 16,084

Table 5

EXHIBIT SCHEDULE, FY 1966

CURRENT CLINICAL RESEARCH AT NIH

Sept. 21-23	Kentucky State Medical Association	Louisville, Ky.

EVERY PHYSICIAN'S HOSPITAL

July 1- Aug 6	COSTEP and Commissioned Officers Orientation and other special groups	Bethesda, Md.
Sept. 21-24	Pennsylvania Medical Society	Atlantic City, N.J.
Oct. 21	MEND Program	Bethesda, Md.
Nov. 15-17	Association of Military Surgeons of the United States	Washington, D.C.
Nov. 22-24	Medical Society of the District of Columbia	Washington, D.C.

Table 6

CLINICAL CENTER CONTRIBUTIONS TO PROFESSIONAL LITERATURE, FY 1966

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Black, R. L.: Arthritis--General considerations. Chapter for International Encyclopedia of Pharmacology.

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Bronson, W. R., DeVita, V. T., Carbone, P. P., and Cotlove, E.: Pseudohyperkalemia due to release of potassium from white cells during clotting. New Eng. J. Med.

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Doppman, J., and Ommaya, A. K.: Unilateral cranial bruits: Two unusual causes with a note on radiographic technique. Ibid.

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Fitzwater, J.: Every hospital needs an ICU. Amer. J. Nurs.

Holland, P. V., Menken, M., Berlin, N. I.: Autoimmune hemolytic anemia and acute leukemia after P^{32} treatment for polycythemia vera. New Eng. J. Med.

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Hosford, B. I.: Employee training in the Clinical Center Department of Environmental Sanitation. Executive Housekeeper.

Jones, E. A.: Abstract: Convenience foods--criteria for their use in institutional feeding. Presentation at the American Dietetic Association, Cleveland, Ohio, November 1965.

Kerney, L. G.: The complementary ministry of hospital chaplain and parish pastor. Paper read at meeting of the Bethesda Council of Churches, May 1965, and submitted to Pastoral Psychol.

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Table 7

PUBLIC INFORMATION ACTIVITIES, FY 1966

Month	Announcements	Inquiries: Press	Inquiries: Public	Inquiries: Congressional	Publications distributed	Exhibits presented	Reports	Films
1965								
July		2	958	57	7,177	1	3	48
August	4	29	817	59	3,086	1	1	63
September	1	18	201	5	3,086	2	1	66
October	4	13	1,332	48	3,316	1	1	57
November	1	17	826	63	3,980	2	17	49
December		11	553	53	1,763		1	32
1966								
January		5	606	36	2,736		2	29
February	2		658	71	19,334		1	48
March	3	11	1,020	61	6,531		1	30
April	4	2	1,246	67	7,165		1	63
May*	3	15	901	62	4,018		17	48
June*	2	16	923	65	4,311	—	1	53
TOTALS	24	139	10,041	647	66,503	7	47	586

**Estimated*

Table 8

CURRENT PUBLICATIONS, FY 1966

New publications

Temperature, Pulse and Respiration Measurement: A Programed Notebook for Nursing Assistants

The Gift of Time: Red Cross Gray Service Volunteer Recruitment Folder

Control, Summer 1965: Normal Volunteer Yearbook

Revised and reprinted publications

Current Clinical Studies and Patient Referral Procedures

Handbook for Staff Physicians

Handbook on the Normal Volunteer Patient Program of the Clinical Center

Clinical Center of the National Institutes of Health

Handbook for Employees of the Clinical Center's Department of Environmental Sanitation Control

Associate Training Programs in the Medical and Biological Sciences at NIH

The Nurse in Research

Religious Services at the Clinical Center

Protestant Chapel Holy Communion

Protestant Chapel Order of Worship

Reprints of magazine articles

Combined Clinical Staff Conferences published July 1, 1965 - June 30, 1966, in the Annals of Internal Medicine were reprinted and distributed to physicians on request:

Breast Cancer

Hydroxyproline and Collagen Metabolism

Homocystinuria Due to Cystathionine Synthase Deficiency

Basal Cell Nevus Syndrome

Congestive Heart Failure: Biochemical and Physiological Considerations

Cholera

Other reprints made available through the Information Office:

Comprehensive monitoring of the surgical patient at NIH. Anesth. Analg. (Cleveland).

The embroiled family: A blueprint for schizophrenia. Family Process.

Operating room nursing--Is it professional nursing? Amer. J. Nurs.

Patient monitoring in the hospital. Ann. N. Y. Acad. Sci.

Project patients must be fit. Wash. Post POTOMAC.

Protein abnormalities in neuromuscular diseases. JAMA.

A simple method for direct arterial pressure measurement. Anesthesiology.

The systemic mycoses. Amer. J. Nurs.

Miscellaneous

Posters

Associate Training Program in the Medical and Biological Sciences
Associate Training Program in Pharmacology
Blood Donor Recruitment
Nursing Assistant Recruitment

Press announcements

Programs for nursing and medical staff conferences

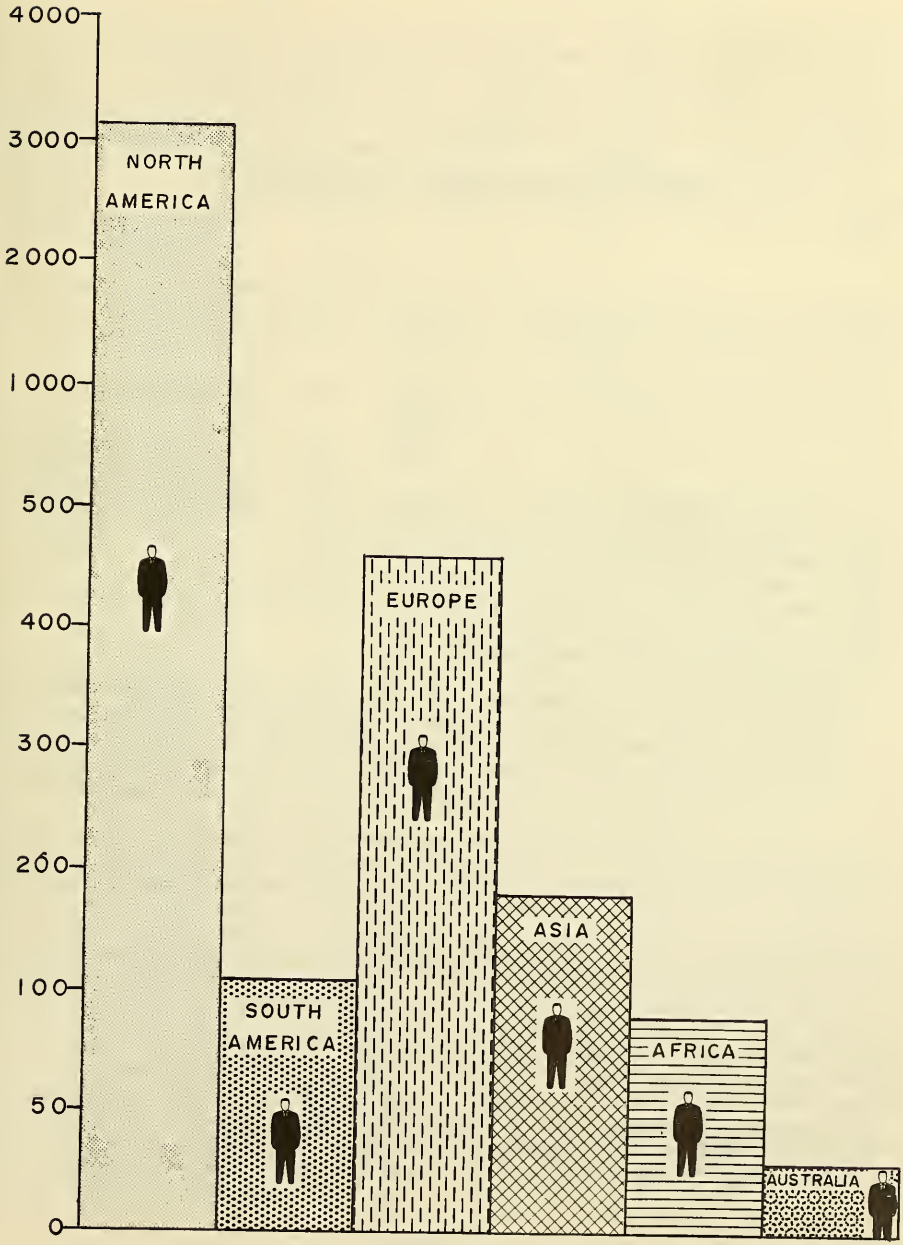
Table 9

SPECIAL EVENTS SECTION ACTIVITIES, FY 1966

Month	Visitors			Meetings		Tours		NIH movie showings		Appointments with staff	Req. for speakers	Pubs. distributed	Inquiries	
	For.	Dom.	Total	No.	Attendance	No.	Attendance	No.	Attendance				Pub.	Congress
July	87	219	306	8	1,402	27	106	47	334	88	0	2,527	120	0
Aug.	43	231	274	1	50	33	83	56	254	67	4	2,149	115	2
Sept.	192	186	378	8	2,022	46	230	65	298	77	1	2,719	150	1
Oct.	124	258	382	9	1,731	43	184	57	323	143	7	2,400	176	0
Nov.	69	212	281	7	1,671	27	128	48	262	94	2	1,374	165	4
Dec.	31	120	151	6	1,618	19	57	32	128	47	1	724	75	0
Jan.	32	102	134	7	1,102	16	79	29	119	29	5	915	120	0
Feb.	43	130	173	8	2,132	23	117	48	201	59	1	1,125	150	0
March	75	287	362	9	977	15	133	29	209	73	4	2,111	225	0
April	191	311	502	10	1,700	40	200	55	350	95	6	2,550	200	2
May	200	640	840	15	2,550	45	260	45	365	75	3	2,645	150	1
June	105	315	420	7	1,430	50	250	62	400	80	4	3,505	125	0
TOTAL	1,192	3,011	4,203	95	18,385	384	1,827	573	3,243	927	38	24,744	1,771	10

Table 10

DISTRIBUTION of VISITORS by CONTINENTS



Section II

HIGHLIGHTS OF DEPARTMENTAL ANNUAL REPORTS

ANESTHESIOLOGY

Administration of anesthesia and supportive therapy was carried out in more than 1,400 instances. As in preceding years, most surgical operations fell into three categories: major excision procedures for treatment of cancer; operations on the open heart or great vessels to correct congenital and acquired defects, supported by extracorporeal circulation; and operations on the brain to localize and remove irritative epileptogenic foci, to remove tumors with or without hypothermia techniques, and to treat syndromes of abnormal movement and tonus by stereotaxic techniques. The number of surgical operations increased by 10 percent over the previous year, and was at a new yearly high.

Anesthesia time exceeded 3 hours in 610 operations, 5 hours in 325 operations, and 6 hours in 189 operations. Department personnel administered anesthesia and related supportive therapy, and operated extracorporeal apparatus (heart-lung machine).

TYPE OF SURGERY, FY 1966

Thoracic	266
Neurosurgical	185
General (abdominal, pelvic & inguinal)	153
Dental	128
Other	335
TOTAL	1,067

Diagnostic studies with the aid of anesthesia numbered 352, about the same as in previous years.

Changes in inhalation therapy included a noteworthy increase in the use of oxygen administration (double that of the preceding year) and a moderate reduction in the use of long-term respiratory assistance. Further refinements were made in processing and sterilization of inhalation therapy equipment by means of ethylene oxide. The addition of two Engström respirators provided respiratory support and nitrous oxide analgesia, which were helpful in postoperative care of open heart surgical patients. Newly introduced ultrasonic nebulizers provided an advance in provision of high humidity atmospheres for certain patients, particularly those with tracheotomies.

In research, increased emphasis was placed on the Anesthesia Research Unit. (Under an agreement with NHI, laboratory space and materials are made available in Building 3 for use by the Department.) Projects included a study to investigate the response of anesthetized dogs to vasopressors at normal and elevated pH levels; an investigation of the influence on the pressor effect of unopposed beta-adrenergic blockade in animals having increased circulating catecholomines; and a determination of the effect of high humidification on oxygen toxicity. In other research activity, projects carried out in conjunction with clinical activities included a long-range study of the physiological changes following use of various anesthetic agents and techniques for ambulatory patients undergoing multiple dental extractions; continuing studies of the clinical effect of droperidol and fentanyl as agents for premedication and anesthetic supplementation; and a study of the anesthetic management of patients undergoing surgery for pheochromocytoma, using halothane anesthesia and employing two antiarrhythmic agents, lidocaine and propranolol, to control adverse cardiac reactions.

The number of transfusions continued at a pace of about 21,000 a year. If the fourth-quarter projection proves accurate, use of blood components will have increased by 1,000 units over FY 1965, while use of whole blood will have decreased by about 500 units. This trend to a higher proportion of blood components is striking when it is recalled that in the early years of the Blood Bank, the use of blood components was so small as to be scarcely worth recording. The increase in use of components means that more units can be transfused than were obtained as whole blood.

UTILIZATION OF WHOLE BLOOD

	Jul. thru Dec. 1964	*Jan. thru June 1965*	*Jul. thru Dec. 1965*	*Jan. thru June 1966*
Net accession	9,375	9,686	9,757	10,176
Transfusions*	10,261	10,664	10,256	11,166
Utilization	109%	110%	105%	109%

**This is defined as the number of 500 ml (1 pint) units used for transfusion purposes.*

Two new blood components were introduced for clinical trial. Antihemophilic (Pool's) cryoprecipitate is a plasma precipitate, which, as an NIH grantee discovered, can be retrieved by thawing plasma slowly. This sterile byproduct of the transfusion operation was prepared by the Blood Bank staff in large amounts for use by NIAMD investigators.

A technique developed by the Blood Bank staff permitted harvesting platelets from unmodified whole blood as a true byproduct. This technique is called the "SPLIT ACD" method. It yields platelets so concentrated that 25 ml (.84 fl. oz.) is equal in effectiveness to 250 ml ($\frac{1}{2}$ pint) of platelet-rich plasma. The platelet concentrate is used for patients with leukemia who are bleeding during relapse of their disease. The blood from which the platelets is taken is as useful as any other blood stored in a blood bank and is used routinely for transfusions.

Tests on blood used for transfusions and observation of the clinical effects of transfusion provided basic information on immunosuppression and tissue transplantation. Study on the I blood group system showed correlations in several areas between genetic disease, infection with mycoplasma and the red cell antigens.

The Blood Bank staff had previously adapted a simple, relatively inexpensive data retrieval system, the Termatrix, for rapidly finding in the files the names of donors whose blood precisely matched that of patients. In FY 1966, American Association of Blood Banks (AABB) officials decided to adopt the

Blood Bank's system. Also in FY 1966, four Blood Bank technologists were trained for AABB Certification in Blood Banking. This was the largest number so trained at any center in the country.

CLINICAL PATHOLOGY

The clinical pathology laboratory has become central in the application of medical research to everyday health maintenance and patient care, and an almost explosive expansion of these laboratories' capabilities and facilities is foreseen for the future. Indicated, therefore, is a major program for automation of analytical techniques and instrumentation, and computerized processing of scientific laboratory data. In the Clinical Pathology Department, development of automation and data processing was accelerated during FY 1966. This is described in detail in Section I of this report.

Manual methods were retained while research on automation proceeded through various phases. This meant double work in clinical chemistry tests in many instances: once manually and once with the new system, followed by a comparison of results.

Additional demands were placed on Department personnel by the "Life Island" study, outpatient leukemia treatment and follow-up (SACP and POMP), and initiation of clinical studies by NICHD. Therefore it was necessary to restrict laboratory services such as special tests and bacteriological surveillance of patient care staff. Other compensatory efforts were directed at improving efficiency of laboratory procedures. The workload was held to only slightly higher than the preceding year: about one million work units. Nevertheless, this was higher than in any previous year.

Continued accumulation of laboratory data on normal (healthy) patients provided an important tool in quality control and normal base line definition basic to an adequate laboratory service.

The staff continued consultative collaboration with patient care physicians in problems of diagnosis, therapy, and clinical research. Both collaborative research and independent research in methodology and patient care problems continued at the same high levels as in previous years.

DIAGNOSTIC RADIOLOGY

The number of patient visits in the Department of Diagnostic Radiology was 24,000, which was very close to the number the preceding year. An increase was noted in the number of radioactive isotope studies. These had numbered 1,184 in FY 1965, and jumped to 1,917 in FY 1966.

The isotope studies reflected newer techniques to meet the needs of NHI, NCI and, to a lesser extent, NINDB. Bone scanning with radioactive strontium revealed early, malignant bone lesions. Splenic scans were helpful in evaluating for splenic abcess as a complication of leukemia as well as neoplasms of the spleen.

Use of colloidal technetium 99 resulted in a tenfold decrease in radiation when it was used instead of colloidal gold 198 in providing definition of the liver.

About 1,500 X-ray series, performed on prospective or former Clinical Center patients, were received from other institutions and interpreted. Some of these series contained as many as 100 films each, and the radiology staff evaluated each film.

Contribution to research included the initiation of five primary radiological research studies, seven new collaborative research projects, and the continuation of five collaborative research projects begun earlier. Advancement in techniques, modification of equipment to satisfy research requirements, and advisory services for research activities made a contribution to the research community.

The Department continued its series of 2-year courses for X-ray technicians, graduating its third class (4 persons) in October 1965. FY 1966 was the first in which the Department of Diagnostic Radiology accepted a physician, who had completed his residency, for a one-year fellowship in special diagnostic X-ray studies.

The sum of $58,000 was saved by buying film and equipment through a Veterans Administration contract. A tomographic chair, designed by the Department's radiological research technician, was completed and became operative.

EMPLOYEE HEALTH SERVICE

With a constant NIH employee force, it was to be expected that the number of patients seen in the Employee Health Service would be about the same as in preceding years. The staff of 2 physicians and 11 nurses, plus one part-time physician and one part-time nurse, handled 26,000 visits during FY 1966.

FISCAL YEAR 1966 STATISTICS

Total visits	26,050
Visits for occupational injuries and diseases	2,230
Immunizations	9,300
Pre-employment physical examinations	2,680
Laboratory examinations	14,500
Referrals to personal physicians	1,500

The chief of the department described the health program as reasonably successful but pointed to President Johnson's statements in announcing to the Cabinet details of a revitalized "strong preventive health service program." The President's aims to avoid "the waste that results from sickness and disease" followed a reinterpretation (Budget Circular A-72) of enabling legislation.

In summary, the Chief, Employee Health Service, advocated a continuing and orderly development of the NIH occupational health program, with particular emphasis on physical examinations and preventive medicine.

In occupational disease surveillance, the Employee Health staff found that the zoonoses were becoming more significant. After lymphocytic choriomeningitis was discovered in mouse colonies of certain infectious disease laboratories, serological surveys and physical examinations were conducted among employees, and eight were found to have the disease. After an outbreak of salmonella among inbred animals, a survey revealed one employee with positive salmonella, and now a program is in effect to obtain periodic cultures for enteric pathogens on all staff members working with susceptible colonies of animals.

Hepatitis following international travel was recognized as having become a problem, and gamma globulin will be offered to all employees traveling to epidemic and endemic areas.

Health education activities among employees were expanded during the year. Plans were developed to repeat a glaucoma survey of 5 years before, in which 84 cases of suspected or proven glaucoma were found. An NIMH psychiatrist aided the staff two days a week, and plans were developed to offer to personnel officers a seminar on occupational mental health.

For medical emergencies, the Employee Health Service continued to enlist the aid of the NIH Fire Department (for first aid, rescue, and transportation) and the Clinical Center medical officer of the day (for after-duty-hour emergencies). Following a restudy of cardiac emergency procedures, and with NHI advice, the staff ordered electro-shock and cardiac monitoring equipment to cope with cardiac arrest and ventricular fibrillation.

ENVIRONMENTAL SANITATION CONTROL

The accomplishment of the Department was the continued maintenance of a clean hospital. Twenty-nine supervisors and labor leaders divided a sustained superior work performance group award of $1000. The award in part recognized the Department's continuing programs of classroom and on-the-job training.

The Development and Training Section staff expanded its capability to evaluate cleaning methods through sampling. Rodac plates were used to sample smooth surfaces before and after cleaning. Air sampling and bath-water sampling were conducted for the "Life Island" project. Filtration efficiency of vacuum cleaners was evaluated. A procedure was developed to evaluate the cleanliness of carpet or matting.

Automated cleaning and new procedures made it possible to cut former time requirements, in some cases to as low as half the previous time. Explanations of some of these procedures are being incorporated in a training manual, which was first published in FY 1965.

NURSING

Efforts of the Nursing Department staff continued to be directed to providing capable nursing care to patients and to recruiting sufficient personnel.

Retention of nurses was aided by improvements in grades and salaries made by the U. S. Civil Service Commission, establishment of extension courses on the NIH campus by the University of Maryland, an even greater emphasis than before on inservice training, and an effort to improve vertical communications. Turnover of nursing personnel continued to average less than that for hospitals in general, and an even level of professional nurses was maintained. Nevertheless, there were unfilled positions.

The use of two "Life Islands" increased the demand for professional nurses by 10, and the NCI outpatient program (SACP and POMP) made it necessary to staff the outpatient nursing service longer hours.

The recruitment program for professional nurses was modified, so that the younger Clinical Center staff nurses visited graduating seniors in schools of nursing. Workshops were held to prepare the nurses for their new recruitment role. Requests for information from prospective nurses suggest that the program will be successful; a definitive judgment can be made during the summer and fall, 1966.

The shortage of male nursing assistants, continued to be vexing, and, for the first time, the number of practical nurses was not maintained.

In September 1965, the Nursing Department administration inaugurated the "Clinical Nurse Expert" position. By the end of the fiscal year, eight nurses had been appointed. They provide expert nursing care to difficult patients and adjust their own hours to the patients' needs. They work out nursing problems with physicians and orient new personnel to selected nursing units.

A study of new personnel and their adjustment to the Clinical Center continued. A series of four workshops on evaluation of personnel led to a better understanding of this among head nurses. These various steps helped in placing nurses in assignments where they could use their abilities most effectively.

NUTRITION

The staff of the Nutrition Department continued to make use of the inherent ability of a hospital food service department to boost the morale of the patient. Patients who were quite ill were visited before each meal by staff members and encouraged or coaxed to eat; diets were rewritten and recalculated to accommodate food preferences; new patients were interviewed to assure that such preferences were considered in their diets; special foods were bought and served to encourage patients to eat.

The nature of a research Hospital demands more control over the dietary intake of the patient than in the general-care hospital. In FY 1966, the Nutrition Department provided 372,975 patient meals; calculated and recorded 24,294 patient daily food intakes which involved weighing 145,764 trays of food, and gave individual discharge or follow-up diet instructions in 447 appointments.

Employees staffed a main kitchen, 12 floor kitchens, a "Life Island" service kitchen, and three metabolic kitchens.

The Pharmacy Department's output, measured in number of units issued, increased notably over the 5 years ending with FY 1966. For example, the number of units issued by the Pharmacy Service went up over the 5-year period by more than 100,000 items, to a total of 483,000 in FY 1966. Number of units developed and issued by the Radiopharmaceutical Service (which is responsible for the preparation and development of radioisotope drug dosage forms) quintupled during the same 5-year period.

PHARMACY DEPARTMENT WORKLOAD, FY 1966

Pharmacy Service: *Prescriptions, I.V. additives, drug vials reconstituted for I.V. additives, prepackaged items issued, and other items*	482,602
Pharmaceutical Development Service: *Units developed and issued*	52,763
Radiopharmaceutical Service: *Units developed and issued*	8,366

The increased use of radioactive materials brought with it problems of testing in addition to their issuance. While it took 5 years for the number of such units issued to quintuple, it took only 2 years for the number of control tests to quintuple. Control testing is necessary because manufacturers of radiochemicals cannot legally warrant such materials to be of pharmaceutical or medicinal quality, and because radiopharmaceuticals (which can be legally warranted) are often not manufactured to the specifications necessary for clinical research.

Short half-life compounds, sometimes used as basic radioisotopes but more frequently as tagged compounds, are not as suitable for control testing as other materials. This meant that pilot batches had to be prepared and tested to standardize formulation processes.

In the Pharmacy Service (responsible for general issuage of drugs) two illuminated laminar-flow hoods were added and contributed to the quality and quantity of I.V. additive service. This additive service, which is conducted in many hospitals in areas other than Pharmacy, was well accepted by physicians, who appreciated the advice that pharmacists were able to offer on compatible and incompatible mixtures.

The Pharmaceutical Development Service completed 20 analytical data sheets on methods and controls in preparing and packaging investigational drugs. A storage stability research program continued. A renewed working relationship with the NCI Cancer Chemotherapy National Service Center was established at the beginning of FY 1966, and 20 projects involving formulation, development, assay, stability studies, labeling and packaging were conducted. This involved 10,500 bottles and vials.

In Central Sterile Supply, use of disposables saved some time but increased the need for storage space. Also, an increased outpatient load meant additional demands for service.

RADIATION SAFETY

Acquisitions of radioactive nuclides continued the previous 14-18 percent yearly growth rate. More than 55,000 millicuries were purchased. In addition, a single source of 9,000 curies of cobalt-60 was received for a new Theratron teletherapy unit installed in the Clinical Center during December 1965.

Use of radioactive nuclides for diagnostic tests in patients increased by 50 percent. More than 3,100 radio-isotope assays, purity checks, and bioassays were performed on 26 nuclides. All bioassays revealed that body burdens thus determined were well below accepted limits.

With the Whole-Body Counter, more than 1,300 counts for a variety of gamma emitting nuclides were made on patients. Body potassium determinations continued to be the most frequently requested counts. Extensive studies were, however, made with six other nuclides. Considerable effort went into updating standards and recalibrating phantoms.

The film monitoring unit processed and evaluated 10,500 film badges. New equipment provided a suitable source of x-radiation for film calibration and instrument calibration. A total of 500 new isotope workers were placed on badge service during the year. New thermoluninescent radiation detection equipment was in the process of being adapted to personnel monitoring and dosimetry problems as the year closed. It will be used to monitor units such as Panorex dental x-ray apparatus, narrow beam tomographic x-ray units, and x-ray diffraction units.

The staff surveyed about half of the 115 registered radiation-producing machines that are under Departmental supervision. It continued to inspect all the 277 radioactive sealed sources and foils at 3- to 6-month intervals. It surveyed 350 laboratory areas.

AEC inspection and licensing was routine.

REHABILITATION

The staff continued to use recognized methods of physical, occupational and speech therapy; and to evaluate functional ability and progress so that effectiveness of drug and other therapy could be determined.

The accompanying tabulation shows the workload. Among programs, use of plaster casts to help patients with rheumatoid arthritis continued. In 8 years, about 1,200 such casts have been applied. They have been most effective in the correction of knee flexion contractures and the relief of pain in the hand and wrist. In evaluating treatment of patients with amyotrophic lateral sclerosis, the staff continued to use a quantitative muscle test apparatus; by March 1966, 25 different patients had been tested 288 times in the 1½-year-old study. These were typical examples of ongoing programs.

New programs included evaluation of drug therapy on patients with Parkinson's disease; supportive occupational therapy for leukemic children and their parents to help them adjust to motel living while the children were being treated at NIH (Special Ambulatory Care Program); similar occupational therapy for adult outpatients receiving radiation therapy from NCI; and speech evaluation, pre- and postoperative, for patients undergoing stereotaxic procedures by NINDB.

REHABILITATION DEPARTMENT, FY 1966

	Different patients treated	*Treatments given*
Physical Therapy Section		
Inpatients	1,351	17,909
Outpatients	476	3,375
Occupational Therapy Section		
Inpatients	4,931	31,713
Outpatients	234	534
Speech Therapy Section*		
Inpatients	71	81
Outpatients	19	30
TOTALS	7,082	53,642

**Speech therapist on leave part of year.*

SOCIAL WORK

1. Clinical practice

Social workers during FY 1966 responded to the need for more intensive clinical services. Because care of patients and their families was believed to be the basic mission of the Social Work Department, independent research was reduced. Administrative changes were made for improved methods of reporting clinical activities, and monthly case presentation meetings were introduced.

Sixty-nine percent of all inpatients were served. This worked out to an average of about 430 inpatients provided with social work services each month. In addition, 340 relatives of patients were provided with social work services each month. There were no major changes in service foci. Four Institute social work sections, those serving NINDB, NIAMD, NHI AND NCI, again reported that the greatest demand for services was focused on helping patients and relatives adjust to illness and disability. The NIMH social work section, with a primary research interest in family involvement in mental illness, reported the major service as help with family relationships.

2. Patient Welfare Fund

The Patient Welfare Fund continued to provide funds to meet emergency expenses which could not be paid from appropriated Government funds. The NIH Recreation and Welfare Association increased its contribution, and NIH employees were especially generous in their pre-Christmas donations to the fund. Thus a total of about $16,000 was available to meet patient needs during the year. Three-quarters of this was used for allowances to relatives who came to the Bethesda area to be close to patients in the Clinical Center. A large proportion of these relatives were parents of children with leukemia.

SPIRITUAL MINISTRY

Clinical Center chaplains continued to help patients and their families find meaning and courage in the face of problems such as loneliness, grief, fear, guilt, anxiety, loss of spiritual meaning, and boredom. Patterns of ministry varied according to the faiths--Catholic, Jewish, and Protestant--but the chaplains were together in their concern for patients, were integrated as a staff, and their methods were similar: pastoral conversations, sacraments, blessings, prayer, scripture, and worship.

The Clinical Center was approved by the Council for Clinical Training Inc., as an accredited clinical pastoral training center. Three Methodist seminarians participated in a part-time training program during the Spring 1966 semester, and four Episcopal seminarians began an 11-week, full-time course in May 1966.

July 1, 1965 through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

ANESTHESIOLOGY DEPARTMENT

CC-34
Serial No.

General

The Anesthesiology Department as its primary mission provides anesthesia and related services for all Clinical Center patients requiring such care. The relatively small staff, averaging 24 in number, is comprised of qualified anesthesiologists, nurse anesthetists, inhalation therapists and technicians with special knowledge and skills, and secretarial help. Anesthetist personnel are primarily concerned with the administration of anesthesia and related supportive therapy for patients undergoing major operative surgery or diagnostic procedures, requiring either general or local anesthesia in situations where close medical surveillance is necessary. Anesthesia technicians provide support for anesthetist personnel. Inhalation therapists are responsible for the conduct of all types of inhalation therapy including the care of patients requiring respiratory assistance. Extracorporeal apparatus specialists are concerned with the operation of the pump oxygenator for support of respiration and circulation during open heart surgery. Research studies are carried out by staff anesthesiologists when not engaged in clinical duties. Laboratory facilities are provided by NHI.

The numbers and types of personnel on duty during fiscal year 1966 may be categorized as follows: (The figures are based on the yearly average)

Clinical Anesthesiologists [1]	7.5
Visiting Program Anesthesiologist	1
Research Anesthesiologist [2]	1
Nurse Anesthetists	3
Inhalation therapists	4.5
Extracorporeal Apparatus Technicians	2
Anesthesia Technicians	3
Secretaries [3]	2

The services of an outside consultant was used on an occasional basis.

Anesthesiological Procedures

The administration of anesthesia and supportive therapy was carried out in a total of 1419 instances. Of this group surgical operations numbered 1067,

1. Devoted on the average of one day per week to research projects.
2. Served as clinical anesthesiologist on emergency call rotation and for scheduled surgery whenever services were required.
3. One secretary employed on a part time basis (3 days per week).

while diagnostic procedures accounted for 352 anesthesia administrations. In addition, there was a total of 71 miscellaneous services consisting of diagnostic nerve blocks, consultations, and emergency resuscitation treatments.

A large portion of the surgical and diagnostic procedures was of a complex nature performed on seriously ill patients. The procedures were of unusually long duration from the standpoint of time. Anesthesia time exceeded three hours in 610 operations (43%), five hours in 325 operations (23%), six hours in 189 operations (13%).

Surgical operations classified according to the type of surgery and the use of special adjunctive techniques are as follows:

1.	Thoracic (cardiac, pulmonary, great vessels, superficial chest)	
	a. with extracorporeal circulation technique	171
	b. closed technique	95
2.	Neurosurgical	
	a. craniotomy	98
	b. craniotomy, utilizing hypothermia technique	4
	c. sterotaxic procedures, including thalamotomies	66
	d. spinal cord operations	14
	e. others	3
3.	General surgical (abdominal, pelvic and inguinal)	153
4.	Kidney operations, including bladder and adrenal gland	33
5.	Perineal (gyn-61, genito-urinary-15, others-10)	86
6.	Head, neck, and face	75
7.	Eye, ear, nose, and throat	48
8.	Dental (105 of these operations were done with detailed physiological monitoring)	128
9.	Orthopedic	27
10.	Miscellaneous procedures	66
	Total	1067

As in previous years most of the operations performed fell into the following categories:

1. Major excision procedures for treatment of cancer
2. Operations on the open heart of great vessels to correct congenital and acquired defects, with the aid of extracorporeal circulation.
3. Operations on the brain to localize and remove irritative epileptogenic foci, to remove tumors with or without hypothermia techniques, and to treat syndromes of abnormal movement and tonus by stereotaxic techniques.

Perineal operations included diagnostic culdoscopy for the study and photographing of adnexal abnormalities including surgical biopsy.

There was an increase of 10% in the number of surgical operations performed, which brought the total higher than in any previous year. The number of cardiac procedures requiring the use of extracorporeal circulation remained the same, but there was a significant rise in the number of other types of

surgery, including craniotomies, general surgical, perineal procedures, and eye, ear, nose and throat operations.

A team of two anesthesiologists, or an anesthesiologist and a nurse anesthetist, with an anesthesia technician were usually assigned to manage patients undergoing extensive surgery. The complexity and duration of the procedure and the need for assistance in the operation of anesthetic equipment, physiological monitoring apparatus, thermal devices and blood transfusion equipment requires extra personnel. Three trained anesthesia technicians acted as technical assistants to the anesthesiologist in the assembly, maintenance and operation of sophisticated equipment used in the anesthetic management of the patient. One anesthesia technician, in addition to his regular duties, assumed responsibility for the operation of the blood gas laboratory maintained by NHI in Building 10-A. He performed periodic blood gas and other studies necessary for monitoring of respiratory function during extracorporeal circulation procedures.

Two technicians, (Extracorporeal Apparatus Specialists) have the responsibility for assembly, maintenance and operation of the heart-lung machine, used to support the patient during open heart surgery. Considerable time is required to process and sterilize components of the pump oxygenator which is employed four days per week. This work requires careful attention to detail, as well as a background of knowledge of medical principles involved in open heart surgery. Many hours of work beyond the regular working schedules were required to accomplish the 171 successful extracorporeal perfusions which were done during the year.

Diagnostic studies done with the aid of anesthesia totaled 352, essentially the same as in previous years. Many of the patients were small children who could not be suitably managed with local anesthesia. Controlled sedation of children over periods of several hours were required for cardiac catheterization studies. Many diagnostic studies done on adults required general anesthesia and complete respiratory control during selective periods.

Seriously ill patients are subjected to certain manipulations during diagnostic tests which are capable of causing circulatory or respiratory derangements. Careful surveillance of vital signs is an essential component of the anesthetic management of such patients.

Diagnostic tests done under general anesthesia are tabulated below:

Pneumoencephalograms	42
Cerebral angiography	75
Special eye or ENT examinations	19
Cardiac catheterization procedures	89
right heart catheterizations	51
trans-septal or percutaneous left heart catheterizations	3
right heart catheterizations and angiography	26
angiography or aortography	9
Cystoscopy, including 7 renal function tests	39

Culdoscopy (does not include culdoscopy in which tissue was removed for microscopic study)..... 7
Cardioversions.....56
Miscellaneous.....25

The following table indicates the Institutes responsible for the admission of surgical patients requiring anesthesia. The first four Institutes listed have surgical services.

Sponsoring Institute	Procedures	Percent
NHI	464	33.0
NCI	373	26.0
NINDB	382	27.0
NIDR	118	8.0
NIAMD	56	4.0
NIAID	17	1.0
NIMH	5	.4
NICHD	4	.3

Surgical and diagnostic procedures requiring the services of anesthetists were divided between the four Institute surgical services as follows:

Institute	Procedures	Percent
NCI	448	32.0
NHI	442 [1]	31.0
NINDB	402 [2]	28.0
NINDR	127	9.0

Inhalation Therapy Activities

Inhalation therapy treatments were administered by four trained inhalation therapists. Consultation service was provided by an anesthesiologist when necessary. The numbers and types of treatments during fiscal year 1966 were:

Oxygen therapy (tent, mask, catheter).....6,752 hours
Humid atmosphere therapy.....44,373 hours
Aerosol therapy..... 8,335 treatments
Intermittent positive pressure breathing with aerosols.....25,193 treatments
Long-term respiratory assistance..... 9,833 hours
Short-term resuscitation and assisted respiration... 1,704 hours
Administration of oxygen combined with other gases (carbon dioxide, helium)..... 264 treatments

1. Includes 89 cardiac catheterization procedures
2. Includes 117 radiographic diagnostic procedures

Significant changes from last year's report include noteworthy increases in the use of oxygen administration by means of tent, mask or catheter, and intermittent positive pressure breathing utilizing aerosols. The number of these treatments was double that of the previous year. There was a moderate reduction in the use of long term respiratory assistance.

Further refinements were made in the processing and sterilization of inhalation therapy equipment by means of ethylene oxide. This work increased to the point that the full time services of one technician are required to maintain equipment.

Significant improvements in the effective use of long term respiratory ventilatory devices were made, by the addition of two Engström respirators to our armamentarium. These units were helpful in the postoperative care of open heart surgical patients by providing respiratory support and nitrous oxide analgesia so that the patient could be managed without heavy reliance on narcotics.

Other advances were made in respect to the administration of high humidity atmospheres to certain patients, particularly those with tracheostomies, where the accumulation of dried respiratory secretions can become a serious problem. Ultrasonic nebulizers, newly introduced for this purpose, were given thorough trials, and after some modifications, were used successfully in treatment of Clinical Center patients. Eight units are now in operation.

Educational activities carried out by the inhalation therapists included the conduct of orientation and teaching sessions for 130 new employees of the Nursing Department. Special monthly teaching sessions were held for the purpose of demonstrating resuscitation and positive pressure breathing techniques for 133 professional nurses. At the request of the Clinical Director, NHI, similar demonstrations were held for 22 clinical associates.

During half of the year, only three trained and experienced technicians were available for emergency call assignments. At considerable personal inconvenience, this small group of inhalation therapists maintained telephone contact with the Clinical Center and were available for emergency calls for the installation and operation of inhalation therapy apparatus after regular working hours. An average of four to six emergency calls were received each month during the year.

Research Activities

Progress was made in reactivating the Anesthesia Research Unit, which had been established in 1962 through an agreement with the Surgical Branch, NHI. Under this agreement, laboratory space and materials are made available in Building 3 for use by members of the staff. Dr. Philip Mann devoted about half his time to work in this area with the collaboration of other clinical associates. Investigations in the Anesthesia Research Unit are listed as follows: Project reports are attached where indicated.

1. A study to investigate the response of anesthetized dogs to vasopressors at normal and elevated pH levels was undertaken by Dr. P. E. Mann and Dr. L. H. Cooperman. No statistically significant difference in response was noted in the two states, indicating that respiratory alkalosis would be of no advantage. Publication of results are planned. A project report is included.

2. A project for the investigation of the influence on the pressor effect of unopposed beta-adrenergic blockade in animals having increased circulating catecholamines was initiated by Dr. P. E. Mann and Dr. L. H. Cooperman. A project report is included.

3. A project for the determination of the effect of high humidification on oxygen toxicity, produced by long term ventilation of the lungs of experimental animals with 100% oxygen, was begun by Dr. P. E. Mann and Dr. L. H. Cooperman. A project report is included.

Projects of a research nature carried out with conjunction with clinical activities included:

1. General Anesthesia for Ambulatory Dental Patients. A long range study of the physiological changes which occur following use of various anesthetic agents and techniques for ambulatory patients undergoing multiple dental extractions was continued during the first ten months of the year, at which time the study was terminated because of the scarcity of clinical material, among other reasons. The project, sponsored by NIDR, requires the collaborative services of two anesthesiologists and one anesthesia technician. The average patient accepted for this study undergoes four sessions of surgery utilizing Nitrous Oxide and intravenous methohexital anesthesia. Halothane is used in addition to the other two agents during two of the procedures. Various physiological parameters are measured, including blood pressure, pulse, arterial blood oxygen saturation, electrocardiogram, electroencephalogram, and respiratory excursions of the chest. 105 of these procedures were carried out during the twelve month period ending April 1, 1966. Data accumulated during the past five years, since the last publication of findings, are in the process of being analyzed for future publication. Dr. E. J. Driscoll, NIDR, and Dr. C. L. Hebert are the principal investigators. Project report is being submitted by Dr. E. J. Driscoll. Dr. R. F. Albrecht, Dr. W. M. Dixon, and Dr. R. B. Duncan worked on the anesthesia team, which has been noted previously, as consisting of two anesthesiologists.

2. The Clinical Effect of Droperidol and Fentanyl as Agents for Premedication and Anesthetic Supplementation. Continuing studies were made to ascertain if these agents have any advantages over more conventional methods of anesthesia. Droperidol is a drug of of interest to anesthesiologists in that it produces sleepiness and tranquilizing effects, minimizes rises in blood pressure

caused by epinephrine as well as protecting against ventricular arrhythmias produced by this hormone. Fentanyl is a potent analgesic approximately a hundred times more powerful than morphine. A combination of these two agents should ideally, produce an anesthesia light state with desirable attributes. However, in our hand the combination possesses certain limitations which have not made it attractive. In view of the limited use no formal project report is being prepared. Dr. N. M. Barton and Dr. C. L. Hebert were the investigators during the current year.

3. The Anesthetic Management of Patients Undergoing Surgery for Pheochromocytoma. Dr. P. E. Mann and Dr. L. H. Cooperman completed an initial study of the feasibility of using halothane anesthesia in these patients and employing two antiarrhythmic agents, lidocaine and propranolol, to control adverse cardiac reactions. Two papers are in the process of preparation following experiences in 10 patients. A project report is attached.

Major Problems Encountered

While there were no outstanding problems during the period of the report, considerable time and effort were expended to overcome situations which appear to be chronically associated with the operation of the department.

The recruitment of trained personnel continued to require a disproportionate amount of time for the number of persons involved. Also continuing was the problem of meeting demands of the several surgical services for anesthesia coverage during several days each week when the surgical schedules tended to peak.

1. Personnel recruitment. Trained anesthesiologists in adequate numbers were secured by the means of previously arranged deferments through the PHS CORD Program. Salary scales were responsible for our failure to attract anesthesiologists with research background and interests. The addition of a senior staff man with these qualifications would immeasurably improve our program.

   We were hard put to recruit trained inhalation therapists to fill vacancies arising from the loss of two experienced technicians. Attempts to interest qualified technicians in positions at the Clinical Center by writing to twenty members of the American Association for Inhalation Therapists, who had indicated they were seeking employment, were extremely disappointing. Respondents indicated that they were unable to accept salaries offered at the GS-5 ceiling.

2. Logistics problem. With a staff of eight or nine anesthesiologists, supported by three nurse anesthetists and three technicians, it might appear that there would be no difficulty in handling the relatively small number of surgical procedures performed at the Clinical Center. However, several unique factors explain and justify the need to maintain the current level of personnel.

First, and foremost, the surgical schedules tend to peak two or three days out of the five operating days each week. Each of the three major surgical services--NCI, NHI, and NINDB--have staffs consisting of three or more senior surgeons who may schedule cases independently. Thus, each of these services may wish to perform two or more procedures simultaneously. In addition, we are called upon to supply anesthesia services to two Cardiac Catheterization Laboratories, located in two separate buildings, for X-ray studies performed in the Diagnostic Radiology Department, special eye examinations done in the Eye Clinic, and for surgery performed in the Dental Clinic. Many of the surgical procedures require the attendance of more than one anesthetist, particularily during critical phases of the anesthetic and surgical procedure. This problem of supply and demand of essential personnel is solved only by careful attention to scheduling. The number of anesthetic procedures conducted simultaneously have to be limited to no more than can be safely managed under the existing circumstances.

Nevertheless, days of intense activity are often followed by days where no surgery is performed due to the fact that the operating surgeons are busy with conferences, meetings, and laboratory projects. Because of the nature of the research programs and the organization of surgical activities into separate surgical services sponsored by separate Institutes no solution of this problem can be foreseen.

Changes and Improvements

No outstanding changes or improvements are expected during the coming year. However, efforts are constantly being exerted to improve the standards of patient care so that seriously ill patients receive the best anesthesiological management that is possible with the existing knowledge and techniques.

Future Objectives

The strengthening and improvement of research activities, especially as they relate to patient care is our primary objective of the future. Some reorientation of policies as they apply to the Clinical Center professional service departments will be necessary to achieve this objective.

Publications

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Suutarinen, T.: [1] Cardiovascular Response to Changes in Arterial Carbon Dioxide Tension. Helsinki, Mercatorin Kirjapaino, 1966, 76 pp. (Also published as Supplement No. 226 to Vol. 67 of Acta Physiologica Scandinavica 1966.

1. Dr. Suutarinen served as Visiting Associate 1962-1963.

Serial No. CC-34
Anesthesiology Dept., CC
Anesthesia Research Lab.
Bethesda, Maryland

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Response to Vasopressors at Elevated and Normal Blood pH

Principal Investigator: Lee H. Cooperman, M.D.

Other Investigator: Philip E. G. Mann, M.D.

Cooperating Units: None

Man Years

Total:	0.2
Professional:	0.2
Others:	0.0

Project Description:

The literature contains some evidence for the hypothesis that vascular reactivity is diminished when blood pH is reduced. However, comparatively little evidence exists for altered vascular reactivity in the presence of increased pH.

Changes in pressor response to epinephrine were measured in dogs at normal and at increased tension of arterial CO_2 obtained by ventilation with carbon dioxide mixtures. There was no statistically significant difference in the response in the two states, indicating respiratory alkalosis to be of no advantage to normocarbia in this respect.

Publications: Publication of these results are planned.

Serial No. CC-34
Anesthesiology Dept., CC
Anesthesia Research Lab.
Bethesda, Maryland

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Influence on Pressor Effect of Unopposed Beta-Adrenergic Blockade in Animals Having Increased Circulating Catecholamines

Principal Investigator: P. E. G. Mann, M.D.

Other Investigator: L. H. Cooperman, M.D.

Cooperating Units: None

Man Years

Total:	0.2
Professional:	0.2
Others:	0.0

Project Description:

The object of the investigation is the accumulation and evaluation of data on the pressor effects of propranolol, a beta-adrenergic blockade agent, given to animals with increased catecholamines.

Darnhorst's hypothesis suggests that beta-adrenergic blockade in increased catecholamine states will result in severe and excessive pressor effects. Data acquired by studying the pressor effects of propranolol in animals receiving norepinephrine will point to a preclinical assessment of the validity of Darnhorst's postulate as directed toward patients with increased catecholamine states, e. g. pheochromocytoma.

The project is in process of design with the end in view of acquiring sufficient data to make a critical assessment of the hazards of B-adrenergic blockade in patients with pheochromocytoma and the states of increased circulating catecholamines.

Publications: Publication of the data discussion of the clinical implications will follow.

Serial No. CC-34
Anesthesiology Dept., CC
Anesthesia Research Lab.
Bethesda, Maryland

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Assessment of the Effects on the Pulmonary Alveolar Membrane in Experimental Animals of the Addition of High Humidity to 100% Oxygen Respiration

Principal Investigator: P. E. G. Mann, M.D.

Other Investigator: L. H. Cooperman, M.D.

Cooperating Units: NHI (Laboratory facilities)

Man Years

Total:	0.5
Professional:	0.5
Others:	0.0

Project Description:

The object of the investigation is to study physiological changes effected by respiration of anhydrous gases versus humidified gases in experimental animals. A new form of humidification employing an altrasonic nebulizer is being utilized.

Data is being assembled showing alveolo-arterial oxygen gradient in two groups of experimental animals who are given anhydrous oxygen over an appropriate length of time and the other group to consist of animals who are given oxygen that has been effectively humidified by means of an ultrasonic nebulizer.

The sequential mechanism of action of anhydrous gases on the alveolar lining is unknown. Demonstration of change in the alveolo-arterial gradient after humidification of gases would point to significant physiological alterations of clinical importance.

Project is underway but no statistically significant accumulation of data has yet been obtained. It is proposed to continue this investigation until statistically valid results are obtained.

Publications: Publication of the data and discussion of the clinical implications will follow.

Serial No. CC-34
Anesthesiology Dept., CC

Bethesda, Maryland

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Anesthetic Management of Pheochromocytoma. A Clinical Study in Man

Principal Investigator: L. H. Cooperman, M.D.

Other Investigators: P. E. G. Mann, M.D., Karl Engleman, M.D.

Cooperating Units: Experimental Therapeutics Branch, NHI

Man Years

Total:	0.1
Professional:	0.1
Others:	0.0

Project Description:

The project is designed to provide clinical data in the use of halothane, an inhalation anesthetic along with the two anti-arrhythmic drugs, lidocaine and propranolol, in the anesthetic management of a continuing series of adrenal explorations for pheochromocytoma.

Halothane offers promise of being a useful agent in the anesthetic management of patients with pheochromocytoma, especially, when used with the anti-arrhythmic drugs, lidocaine and propranolol.

Halothane has been commonly regarded as an unsuitable anesthetic agent for the patient with increased circulating catecholamines. Recently published studies using halothane in patients with pheochromocytoma have met with great interest. This present project has continued experience with this agent in increased catecholamine states and has attempted to assess the efficacy of lidocaine and propranolol in preventing the catecholamine-induced arrhythmias previously seen with halothane in such procedures.

Publications: This is a continuing study and early publication is planned.

ADDENDUM

An Anesthesia Department, after Alexander Pope

These fundamental goals we strive to gain:
To relieve the short of breath and smother pain.
We never shun to act the humble part
In watching wily wizards scan the heart.
We freeze and shake and stamp our feet with cold
While men with probes, the brain waves do behold
To humble tasks of health, we fall not short,
But Heaven save us from the Annual Report.

W.M.D.

July 1, 1965 through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

BLOOD BANK DEPARTMENT

CC-38
Serial No.

Summary of Accomplishments

Patient care service was provided at a high level of activity slightly over that for FY 1965, without a break in quality or safety of the blood and blood products provided for transfusion. The systematic approach to blood component collection, preparation and transfusion continued to be successful. During the first nine months of the fiscal year, the net accession was 14,345 donated units (pints) and the total patient care usage was 15,839 blood and blood component units; a utilization rate of 107%. Two new blood components were introduced into clinical trial: Antihemophilic Cryoprecipitate and Split-ACD Platelet Concentrate; the latter a product developed in this Department.

Analysis of data collected incidentally from tests on samples from patients and as a followup to the clinical effects of transfusion have supplied some basic information on immunosuppression and tissue transplantation. Study on the I blood group system has shown correlations in several areas between genetic disease, infection with mycoplasma and the blood groups.

Patient Care Contributions

Table 1 shows that the number of transfusions given at the Clinical Center totaled about 21,000 per year. If the fourth-quarter projection proves accurate, the use of whole blood will have dropped by 500 units while blood component usage will increase by 1000 units. There is continuing evidence that our goal of increasingly improving processing methods for maximal utilization of all the parts of that irreplaceable resource, human blood, will continue. This is striking when it is recalled that in the early years of the Blood Bank, starting in 1954, the use of blood as components rather than as whole blood was so small as scarcely to warrant recording. It was not until 1962 that the usage of components approached that for whole blood and now in FY 1966, as Table 1 shows, it is more than two to one in favor of components.

The increase in use of components means that more units can be transfused than were obtained as whole blood (Table 2). This trend of utilization is difficult to achieve in a blood bank serving a single hospital and it is only possible because of the multiple interests of the various clinical research teams working at the Clinical Center. New varieties of blood components are being pioneered and used in clinical trials as a pilot operation to prove the feasibility of maximal utilization in a national blood program. Any residual material not utilizable for human transfusion is used as a byproduct source for NIH-wide laboratory research.

Table 1

Number of Transfusions (units*)

	July - Dec. 1964	Jan. - June 1965	July - Dec. 1965	Jan. - July** 1966
Whole blood	3543	2953	3309	2744
Blood Components	6718	7711	6947	8422
Transfusions	10261	10664	10256	11166

*A unit of blood or blood component is that derived from a one-pint donation.
**Figures for the final quarter of FY 1966 are estimated.

Table 2

Utilization of Blood (units*)

	June - Dec. 1964	Jan. - June 1965	June - Dec. 1965	Jan. - July** 1966
Net accession	9375	9686	9757	10176
Transfusions	10261	10664	10256	11166
Utilization	109%	110%	105%	109%

*A unit of blood or blood component is that derived from a one-pint donation.
**Figures for the final quarter of FY 1966 are estimated.

Many Blood Bank procedures are manufacturing steps, and these are reflected in the number of work units (Table 3). Work units are calculated only for laboratory personnel and use the same test-oriented base as the Clinical Pathology Department for measuring production time. The optimum is 60. The problem of maintaining a staff of highly qualified technical personnel equal to the demands of peak periods, despite the variations in program of the several institutes, has been partially solved by the utilization of authority for shift staffing. The work week during which staff is on duty was lengthened from 67.5 to 76 hours per week. As a result of this, the mean load of work units per technologist per day began to approach the optimum of 60 (although during July of 1965 it was 81). There was significantly less use of overtime pay.

Miscellaneous services offered by a hospital Blood Bank include availability of supplies and diagnostic services. Among the contributions to the overall NIH intramural program was the collection of 2052 blood samples for laboratory research by institute investigators in the first nine months of the fiscal year. This service was up 20% from FY 1965.

Table 3

Work Units*

	July - Dec. 1964	Jan. - June 1965	July - Dec. 1965	Jan. - June** 1966
Work units	60444	62118	61175	59420
Mean Work units/ Technologist/day	72	74	69	68

*A work unit is a test-based time unit
**Figures for the final quarter of FY 1966 are estimated.

Consultations and Collaborative Contributions

Laboratory medicine practiced in a Blood Bank is unique, since the pathologist decides what tests need to be done and also evaluates the result of these tests. This allows for a large area of interpretation and necessitates frequent consultation with the patient-care physician.

When an NIH grantee first reported the results from a plasma precipitate which could be made by thawing plasma slowly in the blood bank (Pool's cryoprecipitate), we offered to prepare this material for intramural use by NIAMD. The program has been successful and the material has been prepared in large quantity as a sterile byproduct of the transfusion operation. An improvement of the grantee's original method has been developed which permits the ice in partially thawed plasma to act as a filter to concentrate the cryoprecipitate.

A new method for acidification of platelet-rich plasma without additives was developed, then introduced experimentally and finally routinely into our operation. By collecting blood into a minimal amount of the usual preservative (ACD) anticoagulation was achieved and the final material was brought to the correct acidity by adding ACD to the plasma component. This "Split-ACD" method permits collection of platelets from unmodified whole blood as a true byproduct. An experimental plan has been evolved with NCI for usage of the platelets and NHI for usage of the residual blood.

Another byproduct, red cell stroma, has been prepared for a series of experiments on antigen-antibody complexes and blockage of the reticuloendothelial (phagocytic) system done in collaboration with NIAMD. Basic information on the role of the kidney in handling such complexes has been obtained.

Serologic work has been performed with investigators of the NIAID on the role of mycoplasma in human disease. A causal relationship has been established between these organisms and the classic diagnostic cold hemagglutinins of primary atypical pneumonia.

Joint studies with the NCI on diagnostic and therapeutic problems in chondrosarcoma and hypernephroma were reported from analysis of laboratory procedures and tests in the area of transfusion. These studies provide typical examples of the progress in clinical research that can be achieved from careful performance of routine laboratory work.

Improvements in Service and Developmental Research

The significant advances relate to production of blood and blood components of predictable potency for utilization in clinical research protocols.

An enormous simplification of the support for the platelet transfusion program of NCI was made by the introduction of our "Split-ACD" method for preparing platelet concentrates. The clinical effectiveness of a platelet concentrate of 25 ml volume now approaches that of 250 ml of platelet rich plasma. This has resulted in more efficient platelet therapy in support of

patients bleeding during relapse of acute leukemia as well as in more efficient utilization of all parts of donor blood.

The data retrieval system (Termatrex) adapted at the Clinical Center Blood Bank for use in maintaining and analyzing Blood Bank records was adopted by American Association of Blood Banks officials for use in their National Registry of Rare Donors. In support of the national effort for a cooperative blood program, almost 100 NIH employees with rare inherited blood groups were asked for permission to enter their names in this Registry. One of these employees, of a very rare Rh type found in only one of 30,000 people, donated his blood for a patient in Australia. Work continues on automated equipment for serologic testing and a satisfactory system for the complement fixation test was perfected jointly with the Clinical Pathology Department.

Training

A national shortage in trained laboratory personnel exists. The facilities of this Blood Bank have been made available both for increasing the knowledge of our own employees and for training personnel from other centers.

We trained four of our technologists for Certification in Blood Banking by the American Association of Blood Banks which made us the largest training center in the country for this key category of personnel.

In addition to a number of visitors who observed our operation, groups representing universities, research institutes and the military services of the United States, Europe and the Orient each spent several days learning, observing, and doing hospital blood banking in this Department.

Future Plans

A continuing need exists for better means of extracting correlations with health and disease from research quality laboratory data performed in support of research patient care. Date collection and retrieval geared to other automatic data processing (ADP) activities at the Clinical Center are an urgent challenge for which several proposals are under consideration.

Better utilization of blood and blood components will result in a saving of these vital and irreplaceable tissues, reduced exposure to hepatitis, and a source of control data for clinical research. This can best be done by correlation of the donor and laboratory resources with patient needs. Continued effort expended on managing and maintaining both donor medical records and donor recruitment will pay in information gain as well as better clinical care.

Serologic study of the physiology and pathophysiology of the immune reaction and human disease are properly a function of the Blood Bank in the research hospital. Exploitation of the unique findings in immunohematology made in this Department has precise application to infectious and neoplastic disease.

The facilities of this working hospital Blood Bank will continue to be made available as a teaching resource for pathologists and other physicians interested in blood transfusion in clinical medicine as well as auxillary medical personnel.

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SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

CLINICAL PATHOLOGY DEPARTMENT

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INTRODUCTION

In this era of rapid advances in science and technology and popular preoccupation with health, the role of the clinical pathology laboratory has become central and all important in application of medical research to everyday health maintenance and patient care. The subjective physical senses of the physician must be amplified and extended by the objective and scientific tools of the modern laboratory. His medical experience, intuition and judgment must be better supported by usable correlated profiles of laboratory data too numerous and tedious for customary mental calculation.

Society is demanding the benefits of modern advanced medicine and preventive health protection by legislation of "Medicare", "Preventicare" and Heart, Cancer and Stroke clinics. These cannot be implemented without an explosive expansion of clinical laboratory capabilities and facilities. The inhibitory costs of simple expansion by duplication of existing manual methods, equipment and technical personnel mandates the alternative course of a "crash program" of development for automation of analytical techniques and instrumentation and computerized processing of scientific laboratory data.

Being a part of the National Institutes of Health, the Clinical Pathology Department has as a major part of its mission the pioneering of automation, computer processing and application of research advances to everyday practice. Ultimately this must include exploitation of bio-mathematical models and computer-aided logic programs for serial monitoring of an individual person's or patient's state of health by periodic laboratory tests and computation of resultant guidelines for his medical management.

Therefore, rapid development of automation and computer data processing in the laboratory is more urgent and demands acceleration of our developmental programs. Training of young physicians in modern clinical pathology must be greatly expanded and intensified. There already is a shortage of clinical pathologists, clinical chemists, medical bacteriologists and trained technologists. The additional demands of an extensive nationwide program of Medicare and for diagnosis of stroke, heart disease and cancer will overwhelm laboratory facilities and be extremely costly.

At the Clinical Center, we initiated development of automation and data processing in the laboratory six years ago. Our progress was accelerated in

FY 1966 through a supplementary budget to DCRT. But if we are to retain our position of leadership and contribute to nationwide needs, our programs of developmental research and residency training must be expanded still more and continued for several years.

Another area in which we should assume leadership is that of health conservation. In the Clinical Center, the leading research hospital of the Public Health Service and the United States Government, no periodic health examination opportunity is offered employees. Today "executive health examinations" are provided periodically for career employees, especially those in executive and important supervisory positions in the Pentagon, Air Force, many industries and a number of universities, but not at NIH. Yet, we have the facilities and knowledge to furnish comprehensive health evaluation to the individual and guide him in continuing conservation and protection of his health, which is so fundamental to the cultural and economic security of our society. In this department we have studied individual laboratory test patterns on a group of normal persons to determine the individual's continuing pattern and reveal early abnormalities which may warn of early or impending disease. Such a service would be invaluable to career employees and of long-term benefit not only to the NIH and the USPHS, but to the nation.

SUMMARY OF ACCOMPLISHMENTS

The workload for the department for FY 1966 was very slightly more than FY 1965 and was held at this level (1,034,256 work units; see Table 1) in spite of the additional demands for the Life Island study, the outpatient leukemia treatment and follow-up program and initiation of clinical studies by the Institute of Child Health and Human Development. Compensatory restrictions were placed on other laboratory services, such as special tests, bacteriological surveillance of patient care staff, etc. Although major improvements were developed in automation and data processing, the necessity to retain the older manual methods while evaluating and "debugging" the new system prevented reduction of the workload per technologist which remained at a level well above that compatible with optimum performance. The workload statistics in work units do not reflect the large amount of double work required of our technical and professional staff in performing clinical chemistry tests twice on many days, once for routine production of the service for patient care and again for operation of the new system to enable a comparison of results. This dual effort has been necessary to avoid interference with patient care service.

Although development of automation and parallel operations for evaluation required additional space and personnel, we were able to improve efficiency of laboratory operations step by step and take advantage of this in assignment of staff and space.

Under general direction of Dr. Ernest Cotlove, Dr. George Brecher and Dr. Viola Young, Assistant Chiefs of Clinical Chemistry, Hematology and Microbiology Services, (Dr. William Kirkham, Dr. William Bronson and Dr. George Douglas, respectively) maintained excellent supervision of these laboratories as well as providing invaluable consultative collaboration with patient care physicians in problems of diagnosis, therapy and clinical research. Collaborative

research constituted an integral part of the clinical pathology effort as did independent research in methodology and patient care problems by each of the laboratory Service Chiefs and their professional staffs. Dr. Donald Young, Visiting Scientist in Chemical Pathology, contributed invaluably to our development of automatic instrumentation and computer processing of data in clinical chemistry. This research and developmental productivity is documented in the attached bibliography.

Continuing accumulation of accurate laboratory data on normal individuals provided an important tool in quality control and normal base line definition basic to the highest level of laboratory service. It is becoming apparent that individual profiles of laboratory measurements must be interpreted on the basis of the patient's own base line pattern. For this purpose normal base line patterns are required to establish and maintain information concerning individual ranges and test method sensitivity and limitations.

Research and development in automation and laboratory data processing has progressed more rapidly than first planned due to the added support made available by a supplemental budget through the DCRT and Clinical Center. This acceleration permitted supplementing both our contract and in-house efforts and purchase of additional hardware components. Additional test channels were included, increasing the 6 tests per year which could be automated and integrated on-line into the basic system to double that number, so that by the end of calendar year 1966 we will have a total of 17 or 18 chemistry tests automatic and handled in the real-time mode by our computer. Additional analytical and programming staff in DCRT and CDPB permitted their collaboration in the Clinical Pathology data processing project and considerably accelerated our program writing and debugging operations. Nevertheless, serious failures due to no fault of the R & D contractors or NIH data processing staff substantially delayed installation of the system and initiation of parallel evaluation operation in the laboratory. The major difficulties requiring 9 months and thousands of manhours of needless debugging efforts resulted from faulty installation of main power line cables by electrical subcontractors in preparing the computer room and in inadequate cable shielding in accessory equipment. Thus, completion of program debugging and initiation of parallel laboratory operations were delayed until late April, and full operation of the automated system for patient care cannot be expected before July 1.

It was found necessary for several of our medical staff to devote major effort and time to the programming and analysis, both of the delivered system and in plans for continuing development. Dr. Cotlove devoted almost full time to this. Dr. Mervyn Stein is assigned full time and Dr. Donald Young and Dr. Kirkham about 50%.

Further analytical explorations in hematology and microbiology involved Dr. Lester Goodman of BEIB and his staff and Dr. Robert Bowman of NHI and several of his staff. Several promising leads are being developed, and specifications have been completed for an on-line data entry system for hematology. Studies in microbioloby indicated exciting possibilities for automatic identification of bacterial colonies (on culture plates) and rapid detection of early bacterial growth for measurement of antibiotic sensitivities.

The reputation of the Clinical Center in automation of clinical pathology has extended abroad, and we were invited to participate in an international conference/development of automation and data processing systems for hospitals in Copenhagen in late April. Dr. Kirkham, with two reports, represented the Clinical Center as guest of the conference.

In exploration of approaches to solution of our problems we maintained close touch and frequent exchange of information and visits of personnel with the Massachusetts General Hospital project and automation and computer processing of laboratory data at the University of Missouri, University of California in Los Angeles, Childrens Hospital of Akron, Kaiser-Permanente Hospital in Oakland, and Yale University.

Dr. George Brecher, Chief of Hematology and Deputy Chief of Clinical Pathology, retired from 20 years' service in the USPHS and 13 years in the Clinical Pathology Department on April 30 to accept chairmanship of the Clinical Pathology Division, University of California Medical School, San Francisco.

PATIENT CARE CONTRIBUTIONS

Workload

Total work units performed FY 1965	1,010,000
Total work units performed FY 1966	1,034,000

The work output by the laboratory in FY 1966 increased only 2.4% over the previous year, while the average patient census remained about the same as the previous year (Table 1). This very slight increase in workload is much smaller than our past experience and that generally observed in major hospital laboratories in recent years. Our space and staff limitations forced us to curtail several study and surveillance protocols, which had produced increasing workloads per technologist and impaired the performance of essential patient services. In spite of major progress in the automation of additional laboratory procedures, and expansion of laboratory data processing, the workload borne by the individual technologist still remains at such a high level that constant vigilance is required to correct errors and assure a satisfactory level of quality control. However, this "holding the line" in workload is preventing introduction of desirable new tests and reinstitution of important surveillance activities such as periodic bacteriological cultures of patient care staff.

Hematology Service

The over-all workload remained the same as that of the previous year but specific areas felt a substantially increased demand. The demand for bone marrow service increased from 2100 preparations per year to 2500. This increase was handled by setting aside Monday a.m. and Friday p.m. for bone marrow aspirations in the leukemia outpatient clinic exclusively and by assigning two technologists to assist the physicians there. In this way as many as 12 bone marrow specimens were obtained and processed in a single morning, allowing the patient-care physicians to follow the leukemic patients more closely. The increased load also caused an added burden of interpretation

which required more time from the professional staff. We were aided to some extent by a monthly rotation schedule for NCI Clinical Associates through our Hematology Service. During his rotation on the Service, the Clinical Associate examines an assigned portion of the bone marrow preparations and checks them out with a senior staff member. In this way an improved liaison with the patient-care physicians also is achieved.

Other service areas had increased workloads as well. The outpatient department showed a 20% increase in workload over the previous year. This is attributed in part to the new program to treat and follow increasing numbers of patients with leukemia as outpatients. While it is difficult to organize the outpatient laboratory service in a way that allows batch processing of specimens, efficiency was improved by the introduction of several dilution devices as well as a semiautomated method for counting platelets, which was developed by Dr. Brian Bull of this Department. This method has already been used in the main hematology laboratory for a year and has proven very successful. Another improvement in the Hematology Service was the use of volumetric disposable capillary tubes for the determination of hemoglobin, white blood cell, and red cell counts. This change led to greater accuracy and precision in these determinations and eliminated the expense of washing pipettes.

Microbiology Service

A modest decrease in workload was accomplished by terminating our participation in protocol studies, such as the Fever Study on leukemic patients and the Staphylococcus Infection Study on patients of cancer surgery. Specimens from the Life Island project were reduced by employment of a technician by NCI but still accounted for increases in our culture and antibiotic sensitivity services. However, the net result in daily workload per technologist was a reduction from 77 to 69 (optimum 60), so that the essential work could receive better attention. A program was initiated to automate certain tests and to develop an effective data processing system for Microbiology in line with that of our other services. Although our Nurse Epidemiologist, Mrs. M. Lamson, has assumed most of the responsibility of constant surveillance of hospital infections, we still participate professionally and provide her with office space and secretarial assistance. Through this change, Mrs. Lamson and the Microbiology Service have been able to advise the Clinical Center Infections Committee more ably on potential infection problems and improve surveillance reporting.

Weekend coverage in the Microbiology Service was extended so that a technologist is available in the laboratory from 8:30 a.m. to 5:00 p.m. Saturday and Sunday. This significantly improved the efficiency of both microbial identification and antibiotic sensitivity testing for the Friday through Monday period. A problem common to all three Services was the lack of secretarial assistance during the weekend which led to numerous interruptions of the technologists' work. Therefore, a secretary was assigned to overtime duty Saturday mornings in the Microbiology Service to screen phone messages and requests, prevent unnecessary interruptions and catch up on record work.

Quality control of laboratory results is essential for patient care, and

increased efforts were made during the year in this area. We participated in the Laboratory Evaluation Program of the Communicable Disease Center. In addition, we studied a number of serologic, bacteriologic and parasitology specimens sent to us as control material by the Maryland State Department of Health. At the request of the Microbiology Service a representative of the Venereal Disease Research Laboratory, Communicable Disease Center, visited our laboratory and evaluated the serologic testing for syphilis. As a result of this consultation, several technical improvements were made.

Chemistry Service

The workload continued to increase in Chemistry and was 8.7% greater than during the preceding year. This was not accompanied by a corresponding increase in technologist staff, and the daily workload per technologist rose from 69 to 75, which must be considered an excessive rate. Demands increased particularly for the enzyme and ultramicro analyses. It became necessary to transfer technologists to the latter section from other laboratories to handle the work as the number of physicians making use of this service increased. Some of the impact of the increased workload was offset by converting two more tests to an AutoAnalyzer method, namely phosphorus and uric acid. Lactic dehydrogenase and transaminase assays were speeded up by a semiautomated procedure using a Gilford recording spectrophotometer while retaining the kinetic principle of assay.

Consultations

Professional consultation on the individual patient is one of our most important roles. The professional staff is immediately alerted to bizarre or otherwise abnormal laboratory results by the technologists, utilizing an "early warning system". We also advise concerning unusual combinations or sequences of test results. In this way close liaison between the patient-care and laboratory physicians is maintained, and the experience and knowledge of both can be merged for the patient's benefit. In special cases more detailed laboratory study is required and members of our staff provide suggestions and professional assistance as in cases of bleeding disorders or instances of refractory electrolyte disturbances. The microbiology staff has the unique opportunity of having the data on hospital infections accumulated and organized in a way that allows detection of significant trends or incipient epidemics, and therefore we are often the first to call to the attention of responsible patient-care physicians dangerous infections situations.

Examples of Contributions to Patient Care

Large and complex laboratories such as ours cannot contribute the ultimate to patient care without a competent and devoted staff of medical technologists and laboratory physicians. Problems and emergencies frequently occur during off-hours, when there are few personnel on duty. On these occasions judicious imagination and initiative are called for and often well-demonstrated by our on duty technologists and residents.

As examples the following may be cited. Following a difficult heart operation, a young patient continued to lose blood through the chest drainage tube during

the evening for a much longer period than expected. The thrombin and prothrombin time tests, coagulation time, and platelets were within normal limits, but it was noted that the formed blood clot had an abnormally loose structure and that it appeared to decrease in size on standing. The Clinical Pathology resident on call, who had followed the case along with the Clinical Associate on the Cardiac Surgery Service then suggested that the patient might have impaired hemostasis secondary to intravascular fibrinolysis, and that this could best be verified by a euglobulin clot lysis time, a test which is rarely requested. The technologist remained overtime for several hours to complete this test and obtained a decidedly abnormal value, thus confirming the clinical suspicion. Specific therapy with EACA, an inhibitor of fibrinolysis, was then instituted, and the bleeding was immediately controlled, avoiding the necessity of further surgery.

In another unusual case, rickettsiae from a laboratory employee of DBS were identified as R. tsutsugamushi by an alert technologist and confirmed by serologic and morphologic studies on guinea pigs and mice. This permitted definitive treatment with tetracycline and led to rapid recovery.

A middle-aged man with a fever of unknown origin and intestinal malabsorption was thought to have a lymphoma involving the intestine and was already scheduled to have an exploratory laparotomy. However, he had a puzzling anemia, and a Hematology consultation was obtained. As a result several additional hematology tests were performed, on the basis of which Whipple's disease was suggested as a diagnostic possibility. This was confirmed with an intestinal biopsy, and the patient was saved from an unnecessary major operation. He recovered quickly on a medical regimen.

Collaborative Contributions

Hematology

Dr. W. Bronson and Dr. J. Block, (NCI), have been studying the influence of the number and maturity of the white blood cells on blood viscosity, in an attempt to elucidate the pathogenesis of leukostatic hemorrhages of the brain, as seen in leukemic patients. They also studied lactic acid metabolism in a patient with Burkitt's lymphoma.

Dr. W. Bronson, Dr. V. DeVita, (NCI), Dr. P. Carbone, (NCI), and Dr. E. Cotlove described and explained pseudohyperkalemia due to release of potassium from white blood cells during clotting.

Dr. H. Gralnick, Dr. J. Washington and Dr. J. Resnick (NINDB) are studying cation flux in red cells from patients with Familial Periodic Paralysis.

Dr. B. Bull collaborated with Dr. R. Lees (NHI) in studies on fat transport and morphology of natural and synthetic chylomicra as revealed by electron microscopy. Dr. Bull also is working with Dr. W. Rosse (NCI) on the mechansim of antibody lysis of red blood cells.

Chemistry

Dr. J. Washington, in collaboration with Dr. J. Holland and Dr. W. Weems (NCI, Surgery Branch) investigated urine oxygen tension in unilateral renal ischemia. He also joined Dr. E. Cotlove and Dr. W. Butler (NIAID) in a study of the effect of amphotericin on the electrolyte composition of red blood cells. A third collaborative project concerns the effects of thyrocalcitonin on hypercalcemia in rabbits, produced by a transplantable tumor. The other contributors to this study are Dr. S. Wells and Dr. K. Orme (NCI).

Microbiology

Dr. V. Young contributed to several studies. In one, patients with fever of unknown origin were studied intensively with Dr. S. Wolff (NIAID), with particular attention to serological changes and isolation of Mycoplasma species. Together with Dr. V. Knight (NIAID), she characterized the normal bacterial flora of normal volunteers.

Mr. D. Hochstein collaborated with Dr. P. Carbone and Dr. W. Fishbein (NCI) in a study of urease producing bacteria and the effects of a urease inhibitor in reducing blood ammonia levels in patients with liver failure.

DEVELOPMENTAL RESEARCH

Research and development continued at a restricted pace due to limited space. Only 4 modules and a few bench corners in service laboratories can be devoted to this important intradepartmental effort. However, this has been supplemented by cooperative projects by the BEIB engineers (Dr. Goodman), Laboratory of Technical Development (Dr. Bowman), and industrial contracts funded through NCI and DCRT.

Efforts to design efficient automatic analytical instrumentation demand appropriate modifications of the assay methods in chemistry, hematology and especially in microbiology and, often, completely new physical, chemical and biological tools and approaches (such as X-ray spectrography, completely different culturing vessels and media for bacteria, etc.). Much more effort in this direction would assure more effective, improved and economic automation.

Intradepartmental explorations have accomplished simultaneous assay of total and direct bilirubin and of total protein and albumin by Autoanalyser on the same samples. Improved methods for assay of calcium and magnesium are under study (colorimetric, fluorimetric, atomic absorption). Combinations of several tests on the same small sample are being developed.

In Hematology, methods are being explored for rapid and automatic entry of test results, directly from the measuring instrument or by operator, into the computer for processing.

A major effort is being made to shorten the length of time required to obtain results in Microbiology. The shorter this interval can be made, the simpler the task of streamlining data processing and delivering the report to the

physicain promptly. Various media are being studied in the search for rapid growth conditions and characteristic morphology. A rapid method for measuring serum hemagglutination titers, using a micro-technique, was developed. Other studies were concerned with methods for detection and cultivation of Mycoplasma and L-forms of bacteria; measures to increase the efficiency and shorten blood culture techniques and methods for assessing the pathogenicity of anaerobic corynebacteria and optimal media for their isolation.

Based on preliminary observations of Glass and Wattenburg at U. of California, we began exploring the possibility of rapid identification of 4 - 6 hour bacterial colonies by their optical density profile, detected by television ultraviolet microscopy, with promising early results.

The Control Data Corporation 3200 Computer, as well as the accessioner and samplers (2) built by Airborne Instruments Laboratory, were delivered to the Clinical Pathology Department in mid-July, 1965. Two major computer malfunctions severly hampered AIL's programming progress in the development of our Data Processing System and forced us to postpone conversion of the present EAM system to the computer system until July 1966. The first malfunction was due to failure to shield the controller cable to the Disk Drives and caused innumerable difficulties for over seven months before we discovered and corrected the defect. The other major fault occurred after the computer was installed at the NIH in mid July, 1965 and was faulty installation of the main power cables by the electric contractor. This caused repeated undetected sparking and disastrous current surges until it was discovered and corrected in November 1965. Since correction of these two defects there have been no significant computer failures.

In November 1965 the AIL Contract was supplemented through DCRT so as to complete all work delayed by the computer failures and to add new modifications which were found necessary. This work was completed on May 1, 1966.

The Computation and Data Processing Branch, Division of Computer Research and Technology also were enabled by supplemental funds from Congress to add personnel which permitted them to participate in our system development. They developed a back-up system to operate on their IBM 360 Computer in the event of failure of our CDC 3200 Computer. They are writing a patient data retrieval program, which will provide periodic routine cumulative laboratory reports of individual patients.

These new programs developed by AIL and CDPB required enlargement of the computer configuration. The computer's core capacity was enlarged from 8 K to 16 K, and two tape drives were added. It was found necessary to substitute a high speed printer for the slow printer originally delivered with the computer.

The computer system is being run in parallel operation with the existing EAM punch card system for checkout purposes. Full conversion to the computer system for daily patient care operation is scheduled for July, 1966.

CDPB, in cooperation with our department, will develop computer programs to

correlate clinical data with our laboratory data on cancer patients to generate periodic drug response reports for the NCI chemotherapy service.

The AIL contract was renewed by NCI for FY 1967. This will include the continued development of automatic and semiautomatic equipment for the processing of additional on-line chemistry and hematology tests. The automated enzyme assay equipment will be delivered in September, 1966. Two more chemistry sampling units will be delivered in late 1966.

STAFFING

Technical Staff

The growing proportion of critically ill patients during FY 1966 markedly increased demands for our services during the night hours. This need was partially met by technologists on duty in the Hematology and Microbiology laboratories till 9:00 p.m. and in Chemistry till 1:00 a.m. The remaining hours of the night were covered by on-call personnel on an overtime basis. This part-time coverage cannot adequately meet the needs, and we must recruit technologists to cover our three services on a 24-hour basis. The weekend coverage was expanded, and a technologist is on duty 8:30 a.m. to 5:00 p.m. Saturday and Sunday, both in Chemistry and Microbiology and from 8:30 a.m. until the work is completed both Saturday and Sunday in Hematology.

There was no essential change in the size of the technical staff due to limitations on employment. With a record high workload of over 1,000,000 work units this year, the work units/tech/day remained at 71 (Table 1), a substantial overload above 60, which is regarded as optimal if consistent and accurate test results are to be maintained.

Attrition of the technical staff was 22%, 16 members transferred or resigned. The reasons were: Marriage or family reasons 9; to further education or professional development 6; and retired 1. It is gratifying that we lost none due to conditions of employment.

Professional Staff

Dr. George Brecher completed 20 years of Commissioned Service in the PHS. He retired in April to become Chairman and Professor of the Clinical Pathology Division of the University of California School of Medicine, San Francisco. Dr. William Bronson, Dr. William Kirkham and Dr. George Douglas are the Assistant Chiefs of Hematology, Chemistry and Microbiology respectively. Dr. Bronson is leaving in June to take charge of the Hematology Laboratory of Hartford Hospital, Hartford, Conn.; and Dr. Douglas will leave to assume duties as Assistant in Charge of Enteric Bacteriology at CDC, Atlanta, Georgia. Dr. Douglas Morningstar and Dr. Leo von Euler are completing their third years of residency in Clinical Pathology. Dr. Morningstar will go with Dr. G. Brecher to the University of California, and Dr. von Euler will transfer to the Nutritional Biochemistry Section of NIAMD.

Dr. Thomas Dutcher, former resident of this department and presently Associate

Professor in Pathology at the Southwestern Medical School, Dallas, Texas has accepted appointment and will join our staff on July 1st as Chief of the Hematology Service.

Dr. Harvey Gralnick, who was assistant to Dr. Brecher, was appointed Assistant Chief of the Hematology Service effective July 1. He has studied the peptide composition of hemoglobin Zurich; worked on a reliable, semiquantitative assay of fibrinolysis; and been engaged in the production of rabbit anti-erythropoietin.

Dr. Brian Bull will continue research on automation in Hematology, as well as basic electron microscopic studies of platelet membranes.

Dr. Leo von Euler spent part of the year studying the effects of anoxia and erythropoietin on iron absorption from the gut of the rat. An attempt was also made to devise a reproducible method for producing circulating nucleated red blood cells in the rabbit.

Dr. Howard Sussman, assistant to Dr. Cotlove, has been studying alkaline phosphatase isozymes and their possible application in differential diagnosis.

Dr. Andrew Vargosko joined the Microbiology Service in March, 1966, as Microbiologist in charge of the Diagnostic Virology Laboratory.

Dr. Mervyn Stein has been engaged in adapting computer programs to the needs of the Department and will continue in this vital role next year.

Dr. Thomas Sparrow, Dr. John Washington, Dr. Joseph Wilson and Dr. Louis Wright continue their training next year as second year residents. Dr. Robert Chambers, Dr. James MacLowry, Dr. Behzad Mohit and Dr. Nathaniel Young have been appointed first year residents effective July 1, 1966.

Visiting Scientist

Dr. Donald Young, Chemical Pathologist from Hammersmith Hospital, Postgraduate Medical School, London, England remained with our Chemistry Service and continued to provide superior consultative service in both research and development. He concentrated on detailed studies of the characteristics of continuous flow systems, which are essential before such methods can be incorporated into on-line computer systems. He also evaluated the computer performance, with particular reference to on-line analysis. A valuable computer capability will be the retrieval of stored data, and Dr. Young has been particularly interested in formulating programs for study of normal ranges of test results.

Training

The residency training program continued to be sought by a large number of outstanding applicants, but space limitations and the massive workload borne by the staff have not yet permitted expansion of the program in spite of the fact that there is a deplorable lack of well-trained clinical pathologists among the physicians of this nation.

Bi-weekly detailed review of current problem cases at Laboratory Rounds continued to be a most effective teaching and learning experience for senior and resident staff. More didactic weekly teaching sessions are conducted by the Laboratory Chiefs. Twice monthly there is a meeting of the entire departmental staff for new announcements, to keep the laboratory personnel informed on departmental policy and progress, and to present a program which relates laboratory scientific information to patient care, usually in the form of a report of research progress in one or more of the Institutes. In each of the Services weekly classes for all laboratory personnel provide an opportunity for detailed exploration of technical problems pertaining to that laboratory service. These serve as a continuing education process for the technologists and offer residents an opportunity to teach. These conferences also permit expression of grievances or dissatisfaction and in so doing alert the senior staff to pending problems so that appropriate action can be taken to preserve morale.

Opportunities for original research projects by the resident staff are severely limited by the lack of space, and the research effort must to a large extent be limited to the night and week-end hours, when the service laboratories are less active. Nevertheless, the resident staff has made significant research contributions, as indicated by their publications.

Several of the supervisory laboratory personnel pursue courses of study that will not only lead to advanced degrees but also that enhance their value to the Clinical Pathology Department by extending their scientific knowledge in areas where it may be applied to the development and operation of patient care laboratory facilities.

Four Chemistry, three Hematology and eight Microbiology technologists completed graduate courses on subjects related to their respective areas of work. As a result they are better equipped to keep abreast of modern developments in fields that change rapidly, even from year to year. (See Table 2).

In March, two of our residents, Drs. Morningstar and von Euler were examined and certified by the American Board of Pathology.

FUTURE PLANS

Research and development in automation of laboratory assays and high-speed processing of results will be continued at the maximum pace permitted by available support. This will include a small amount of exploration of new ideas and methods in chemistry, hematology and microbiology by our staff as space limitations and time permit, and developmental contracts with industry. CDPB will assign analysts and programmers to supplement the Clinical Center data processing staff to form a core of staff thoroughly familiar with our system and to assist us in monitoring and controlling integration of modifications and new software into the Clinical Pathology system.

Based upon the knowledge and experience acquired in developing and programming the existing real-time DP system it is apparent that a much more efficient and flexible overall program can be written to accommodate new additions of automatic assay instruments and simultaneously release a large proportion of computer operating time for other work. For instance, under the existing computer control routine, it is not possible to obtain summary reports of all laboratory work on a particular patient during the real-time operation of the computer. This could be done with a more efficient new control routine. It is scheduled for completion about December 1967.

Analyses have been started by the CDPB program-analysts and our staff to determine the best design of a patient data tape file and retrieval program to best suit clinical use and retain compatibility with the future Clinical Center system and the IBM 360 processing programs.

The Airborne Instruments Laboratory contract has been renewed by NCI for development and delivery of additional automated test equipment and the necessary software to integrate them into our system. By December 1966, our schedule calls for automatic on-line processing of 18 or 19 chemical tests, on-line processing of 5 or 6 hematology tests and off-line semiautomatic keyboard entry of other hematology tests into the system.

Exploration of integrating microbiology into the DP system disclosed that much basic work is required in microbiological techniques suitable for automation. Most current methods are tedious manual operations necessary to the very nature of bacterial growth and identification. New approaches to measurement of growth and detection of identification parameters are needed. Although efforts are being started in such explorations by our staff, little effective work can be done on these fundamental problems until some space becomes available for 3 or 4 R & D laboratories staffed by capable microbiologists who can be protected from routine service responsibilities and devote full time to research in this area. In the meantime, fixed-price contract purchase of specified instrumentation for automatic antibiotic sensitivity determination and bacterial colony growth and detection will be pursued.

In the area of training, it is important that we increase our training of clinical pathologists and include an advanced postgraduate type of training experience with specialization for 1-2 years in clinical chemistry, hematology,

microbiology, laboratory management and laboratory automation and computerized processing. However, again, despite the great need for this training opportunity and our unique position to offer such, space limitations severely restrict our capacity to accept these people.

Because of the expanding importance of computer operations in the laboratory and the department-wide implications of data processing responsibilities and the relations to other departments in the Clinical Center it is apparent that a separate R & D Section for Automation and Data Processing must be organized under the Chief of Clinical Pathology. Plans for reorganization of the CPD are under way and will be submitted to the Director, Clinical Center for approval.

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TABLE 1

Work Load Statistics for the Clinical Pathology Department FY 1966

	July 1965	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1966	Feb.	Mar.	Average	Total 12 month Projection
Average Pat. Census	379	376	363	365	376	344	366	391	396	373	
Total Pat. Days	7953	8274	8479	7668	7511	7214	7678	7436	9107	7924	95,093
Available Tech Days	1100	1053	1105	1186	1222	1266	1239	1154	1434	1195	14,345
Total Work Units	82,422	88,459	88,760	76,980	86,598	84,160	84,436	86,754	97,124	86,188	1,034,256
Work Units/ Tech/Day	70.0	78.5	80.4	65	71	66.5	68.1	75.2	67.7	71.4	
Work Units/ Patient/Day	10.3	10.7	10.5	10.0	11.5	11.7	11.0	11.7	10.7	10.9	
Tests/Patient/ Day	5.1	5.4	5.1	5.0	5.8	5.7	5.8	6.0	5.7	5.5	
Procedures/ 100 Work Units	47	47	46	47	48	46	49	48	50	48	

TABLE 2: List of Formal Training Courses Completed by Staff FY 1966

Name of Employee	Title of Course	Dates	Location
Dr. Leo Hans von Euler	Lec. Course in Comp. Biochemistry	9/20/65 - 1/21/66	FAES
Dr. John A. Washington	Med. 200 Correlations Between Internal Medicine and basic Sciences	9/20/65 - 1/21/66	FAES
Dr. Mervyn R. Stein	Math 103: Introd. to Exp. Statistics	9/20/65 - 1/21/66	FAES
Dr. Joseph T. Wilson	Gen. 12: Reading Improvement	9/22/65 - 11/24/65	FAES
Dr. William Thomas Sparrow	Gen. 12: Reading Improvement	9/22/65 - 11/24/65	FAES
Dr. Mervyn R. Stein	Math 103: Int. to Exp. Statistics	2/7/66 - 5/27/66	FAES
Dr. Douglas A. Morningstar	Adv. in Instrument Analysis	3/21/66 - 3/29/66	AFIP
Dr. William R. Kirkham	Adv. in Instrument Analysis	3/21/66 - 3/29/66	AFIP
Dr. Brian Stanley Bull	Adv. in Instrument Analysis	3/21/66 - 3/29/66	AFIP
Dr. Leo Hans von Euler	Neuropathology	1/31/66 - 2/4/66	AFIP
Helene Schiff	Genetics 11: Pr. of Genetics	9/65 - 2/66	FAES
Roberta Bateman	Bio. 10: Int. & Gen. Bacteriology	9/20/65 - 1/21/66	FAES
Miriam B. Bowman	Biochemistry 110	9/65 - 2/66	FAES
Evelyn D. Casper	Genetics 11	9/20/65 - 1/21/66	FAES
Cynthia O'Connor	Gen. 12: Reading Improvement	9/22/65 - 11/24/65	FAES
Mari M. Haupt	Biochemistry 100	9/20/65 - 1/21/66	FAES
Marcia Lee	Microbiology 201	9/20/65 - 1/26/66	Univ. of Md.
Marcia Lee	Microbiology 160	9/20/65 - 1/26/66	Univ. of Md.
Charles Webster	Botany 231-02: General Bacteriology	9/13/65 - 1/24/66	Howard Univ.
Charles Webster	Math 10: Introd. Coll. Mathematics	9/13/65 - 1/24/66	FAES
Adams, Betty	Biochem. 100: Introd. Biochemistry	2/7/66 - 5/27/66	FAES
Joyce M. Bagley	Biology 11: Introd. Virology	2/7/66 - 5/27/66	FAES
Roberta Ann Bateman	Biology 10: Introd. & Gen. Bacti.	2/7/66 - 5/27/66	FAES
Louis D. Bourgeois	Radioisotopes in Biology	2/3/66 - 6/3/66	Catholic U.
Diane J. Bremer	Organic Chemistry	2/7/66 - 5/27/66	FAES
Theora J. Lechner	Biology 11: Introductory Virology	2/7/66 - 5/27/66	FAES
Marcia R. Lee	Virology & Tissue Culture Lab.	2/7/66 - 6/3/66	Univ. of Md.
Marla R. Paul	Physics 105: Radioisotopes and Apl.	2/7/66 - 5/27/66	FAES
Charles Webster, Jr.	Immunology	1/31/66 - 5/18/66	Howard Univ.
Zierdt, Charles H.	230 Statis. of Micro; Biochem. of Enzymes; Proteins & Amino Acids	1/31/66 - 5/18/66	G. Wash. U.

July 1, 1965 through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

CLINICAL & PROFESSIONAL EDUCATION BRANCH

CC-02
Serial No.

General:

The Clinical & Professional Education Branch assists the medical and scientific staff of the Institutes administratively and procedurely by (1) conducting a Matching Program whereby the junior staff members are recruited and selected for appointment to Associateships (with interim deferment from military service), (2) providing assistance in residency training and related programs, and (3) providing general liaison for such programs.

The Residency Programs

The Clinical Center professional departments which have complete residency training are:

Service	Approval	Residents Currently in Training
Anatomical Pathology 1/	3 years	6
Clinical Pathology 1/	3 years	8
Radiology 2/	3 years	3

1/ Combined 4-year program in Clinical and Anatomical Pathology is offered.
2/ The Diagnostic Radiology Department has elected to discontinue its residency training, in lieu of which it will provide specialty training in specific areas to individuals who have completed their Radiology residency training.

Partial residency training programs offered by the Institutes are:

Service	Institute	Approved	Residents Currently in Training
Internal Medicine 1/			
Neurology	NINDB	2 years	10
Psychiatry	NIMH	1 year	4
Dermatology	NCI	1 year	3

Effective July 1965, the position of the Public Health Service with respect to residency training is that henceforth it will officially endorse only full residency training programs. Therefore, although residency training credit for lesser periods may be arranged between respective preceptors and the appropriate specialty boards for partial residency training, the Office of Personnel, PHS, will not officially approve them and such residencies will no longer be listed in the Directory of Approved Internships and Residencies of the AMA.

The CORD Program

The Commissioned Officer Residency Deferment Program, developed and conducted by the PHS with the cooperation of the Selective Service System, permits a limited number of draft-eligible physicians (1) to become Inactive Reserve Officers in the PHS, and (2) to complete one or more years of formal residency training before serving on active duty. The mechanisms established in this program have been successfully incorporated into the selection process for Clinical, Research and Staff Associates. Deferments are arranged by this office through official channels.

NIH exhausted its CORD quota for the deferment year beginning July 1, 1966. A ceiling of 210 deferments for the year beginning July 1, 1967, has been allocated to the Institutes by the Director of NIH.

NIH Associate Matching Program

The NIH Associate Matching Program was developed in 1958 to provide an orderly operational plan for the selection of Clinical, Research and Staff Associates by the various Institutes. It is designed to minimize unproductive processing of applicants. This system also makes it possible for those candidates not selected for appointment at NIH to be recruited by other Services of the Public Health Service.

1/ Effective January 1965 the American Board of Internal Medicine discontinued approval of all 1-year programs.

After review of all candidates' qualifications by the Institutes, a limited number of candidates are selected for personal interviews, which are arranged through this office. Following interviews, candidates are requested to indicate their preferences for specific Associate positions, which are kept in confidence and used exclusively for matching against the Institutes' nominations. Successful candidates are notified by telephone and are given an opportunity to accept or reject the positions for which they were matched.

Selections are usually made two years in advance and successful candidates are considered for residency deferment through the PHS CORD Program until their effective date of appointment.

TABLE 1: STATISTICS ON THE MATCHING PROGRAM

1965

Application forms distributed on request		1,093
Applications received		497
Non-eligibles	31	
Withdrew after filing application	7	
Invited for interviews		360
Total selected for appointment		184

	TOTAL	1966	1967	1968	1969	1970
Clinical Associates	88	2	64	6	14	2
Research Associates	45	2	42	1	-	-
Staff Associates	30	2	28	-	-	-
OIR	4	-	4	-	-	-
CC-ANES.	1	-	-	-	1	-
CC-RAD.	3	-	-	1	2	-
OTHER	13	2	7	3	-	1
	184	8	145	11	17	3

TABLE 2: APPLICATIONS RECEIVED PER INSTITUTE, 1965

	TOTAL	CA	RA	SA	CA-RA	CA-SA	RA-SA	SA-RA-SA
NCI	260	101	13	1	117	4	2	22
NHI	310	133	19	1	118	6	5	28
NIAID	144	27	9	-	84	1	3	20
NIAMD	213	54	15	1	111	2	3	27
NICHD	68	7	7	3	20	10	2	19
NIDR	20	-	1	-	11	-	-	8
NIMH	125	21	13	-	55	9	3	24
NINDB	149	36	20	2	68	6	1	16
DBS	13	-	-	-	5	-	1	7
OIR	37	2	1	1	17	1	2	12
CC-ANES.	1	-	-	1	-	-	-	-
CC-RAD.	3	-	-	2	-	-	-	-
TOTAL	1,343	381	98	12	606	39	22	183

TABLE 3: TABULATION OF MEDICAL SCHOOLS, APPLICANTS, AND APPOINTEES, 1965

Schools	Applicants	Appointees
Alabama		
Medical College of Alabama	1	-
California		
Univ. California School of Medicine, L.A.	5	4
Univ. California School of Medicine, S.F.	8	1
Univ. Southern California Sch. of Medicine	2	1
California College of Medicine - Los Angeles	1	1
Stanford University School of Medicine	10	8
Colorado		
University Colorado School of Medicine	5	2
Connecticut		
Yale University School of Medicine	9	6
District of Columbia		
Georgetown University Sch. of Medicine	5	1
George Washington Univ. Sch. of Medicine	5	3
Florida		
Univ. of Florida College of Medicine	4	1
Univ. of Miami School of Medicine	4	1
Georgia		
Emory University School of Medicine	3	1
Illinois		
The Chicago Medical School	2	1
Univ. of Chicago School of Medicine	10	5
Northwestern Univ. Medical School	1	1
Univ. Illinois College of Medicine	4	2
Iowa		
State Univ. of Iowa College of Medicine	2	1
Kansas		
Univ. of Kansas School of Medicine	3	2
Kentucky		
Univ. of Kentucky College of Medicine	1	-
Louisiana		
Louisiana State Univ. School of Medicine	1	1
Tulane Univ. School of Medicine	7	1
Maryland		
Johns Hopkins Univ. School of Medicine	28	7
Univ. Maryland School of Medicine	1	1
Massachusetts		
Harvard Medical School	56	26
Boston University School of Medicine	1	-
Tufts University School of Medicine	11	6
Michigan		
University of Michigan Medical School	7	2
Wayne State Univ. School of Medicine	2	-

TABLE 3 - continued

Schools	Applicants	Appointees
Minnesota		
University of Minnesota Med. School	4	1
Missouri		
St. Louis Univ. School of Medicine	5	1
Washington Univ. School of Medicine	15	6
Univ. Missouri School of Medicine	1	-
Nebraska		
Univ. of Nebraska College of Medicine	1	-
New York		
Albany Medical College	4	-
Albert Einstein College of Medicine	14	6
Columbia Univ. College of P & S	29	8
Cornell University Medical College	12	3
New York Medical College	1	-
New York University School of Medicine	30	10
State Univ. N.Y., Downstate Med. Center	15	8
State Univ. N.Y., Upstate Med. Center	2	-
State Univ. N.Y., at Buffalo Sch. of Med.	6	1
Univ. Rochester School of Med. & Dentistry	11	5
North Carolina		
Duke University School of Medicine	9	5
Univ. North Carolina School of Medicine	9	3
Ohio		
Ohio State Univ. College of Medicine	5	1
Univ. Cincinnati College of Medicine	1	-
Western Reserve Univ. School of Medicine	5	1
Oklahoma		
Univ. Oklahoma School of Medicine	1	-
Oregon		
Univ. Oregon Medical School	2	-
Pennsylvania		
Hahnemann Medical College	3	-
Jefferson Medical College of Philadelphia	4	-
Univ. Pennsylvania School of Medicine	17	10
Univ. Pittsburgh School of Medicine	7	2
Temple University School of Medicine	1	-
Tennessee		
Univ. Tennessee College of Medicine	3	2
Vanderbilt University School of Medicine	6	1
Texas		
Baylor Univ. College of Medicine	3	1
Univ. Texas School of Medicine	1	-
University Texas Southwestern Med. Sch.	4	2

TABLE 3 - continued

Schools	Applicants	Appointees
Vermont		
University of Vermont College of Medicine	1	1
Virginia		
Univ. of Virginia Medical School	5	2
Medical College of Virginia	1	-
West Virginia		
West Virginia Univ. School of Medicine	1	-
Wisconsin		
Univ. Wisconsin Medical School	5	2
Marquette University School of Medicine	1	-
University College - Dublin, Ireland	1	-
College of Osteopathic Medicine & Surgery (received D.O.)	1	-

TABLE 4: TABULATION OF HOSPITALS PROVIDING INTERNSHIP TRAINING FOR CURRENT CANDIDATES AND APPOINTEES

Hospitals	Applicants	Appointees
Alabama		
Univ. of Alabama Hospital	2	-
California		
Highland Alameda County Hospital	1	-
San Francisco General Hospital	4	-
Palo Alto-Stanford Hosp. Center	4	-
Santa Barbara Cottage Hospital	1	-
Univ. California Hospital, L.A.	7	1
Univ. California Hospital, S.F.	6	-
Children's Hospital, L.A.	1	1
Los Angeles County General Hosp.	6	2
Los Angeles County Harbor Gen. Hosp.	1	-
Colorado		
Univ. Colorado Hospital	3	1
Connecticut		
Yale-New Haven Hospital	17	9
St. Vincent's Hospital	1	-
District of Columbia		
D.C. General Hospital	1	1
Georgetown Univ. Hospital	3	2
George Washington Univ. Hospital	3	2
Florida		
Univ. of Florida Hospital	1	-
Jackson Memorial Hospital	3	1
Georgia		
Eugene Talmadge Memorial Hospital	1	-
Grady Memorial Hospital	1	-
Illinois		
Univ. Chicago Hospital & Clinics	4	1
Chicago Wesley Memorial	1	-
Passavant Memorial Hospital	1	1
Univ. Illinois Research & Educational Hosp.	1	-
Presbyterian - St. Luke's Hospital	2	-
Michael Reese Hospital	3	1
Iowa		
Univ. of Iowa Hospital	1	1
Kentucky		
Univ. of Kentucky Medical Center	2	-
Louisiana		
Charity Hospital - New Orleans	4	-
Maryland		
Johns Hopkins Hospital	21	5
University Hospital, Baltimore	1	1
Baltimore City Hospital	1	-

TABLE 4 - continued

Hospitals	Applicants	Appointees
Massachusetts		
New England Center Hospital	3	2
Massachusetts General Hospital	19	12
Boston City Hospital	13	7
Children's Hospital Med. Center, Boston	2	1
Peter Bent Brigham	10	6
University Hospital, Inc.-Boston	1	-
Beth Israel - Boston	7	2
Michigan		
Univ. Hospital - Ann Arbor	2	-
Harper Hospital - Detroit	1	-
Univ. of Michigan Hospital	1	-
Sinai Hospital of Detroit	1	-
Minnesota		
Hennepin County Gen. Hospital	1	-
Univ. of Minnesota Hospital	8	2
Missouri		
Univ. of Missouri Medical Center	2	1
St. Louis Univ. Group of Hospitals	1	-
Barnes Hospital	13	4
Jewish Hospital - St. Louis	2	1
New Jersey		
Jersey City Medical Center	2	-
New York		
St. Luke's Hospital	2	1
Mary Imogene Basset Hospital	2	1
Presbyterian Hospital	11	2
Buffalo General Hospital	5	2
Kings County - Brooklyn	14	3
Bronx Municipal Hospital Center	11	5
Bellevue Hospital	26	7
New York Hospital	11	6
St. Vincent's Hospital	1	1
Strong Memorial Hospital	9	3
Brooklyn Jewish Hospital	1	-
Roosevelt Hospital	1	-
Albany Medical Center Hospital	1	-
Montefiore Hospital	6	3
State Univ. New York Upstate Med. Center	5	2
Mount Sinai	6	4
S.U.N.Y. Downstate Medical Center	1	1
Beth Israel Hospital	4	1
North Carolina		
Duke University Hospital	13	6
North Carolina Memorial	8	4

TABLE 4 - continued

Hospitals	Applicants	Appointees
Ohio		
Cleveland Metropolitan Gen. Hospital	4	2
Cincinnati General Hospital	1	-
Children's Hospital	1	-
University Hospitals - Western Reserve	3	1
Cleveland Clinic Hospital	1	1
University Hospitals of Cleveland	7	2
Veterans Administration Hospital	1	-
Oregon		
Univ. of Oregon Hospital	4	-
Pennsylvania		
Hospital of the Univ. of Pennsylvania	10	5
Hahnemann Hosp. - Philadelphia	2	-
Temple Univ. Hospital	1	-
Jefferson Hospital	1	-
Philadelphia Children's Hospital	1	-
Philadelphia General	3	3
Univ. of Pittsburgh	2	-
Graduate Hosp. of Univ. of Pennsylvania	1	-
Tennessee		
Vanderbilt Univ. Hospital	6	-
Texas		
Methodist Hospital	1	1
Baylor Univ. Hospital	1	-
Parkland Memorial Hospital	2	-
Utah		
Univ. of Utah Affiliated Hosps.	1	1
Virginia		
Norfolk General Hospital	1	1
Medical College of Virginia Hospitals	2	-
Univ. of Virginia Hospital	2	-
Virginia Mason Hospital	1	-
Washington		
King County Hospital - Seattle	3	1
University Hospital - Seattle	1	-
West Virginia		
Univ. of West Virginia Hospitals	2	-
Wisconsin		
Univ. of Wisconsin Hospital	2	2
Hawaii		
Queen's Hospital - Honolulu	1	-
Canada		
Royal Victoria Hospital - Montreal	2	-

July 1, 1965, through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
THE CLINICAL CENTER

DEPARTMENT OF DIAGNOSTIC RADIOLOGY

CC-35
Serial No.

Program Goals

The primary program goal of the Department of Diagnostic Radiology will continue to be the provision of the highest quality possible and most complete diagnostic radiological service for Clinical Center patients. Vigilance will be maintained to attain maximal efficiency in our program consistent with the greatest comfort and well-being of the patients entrusted to our care.

Additional goals include further efforts to stimulate the most desirable academic environment to encourage the maximal motivation and contribution from our professional staff as well as to attract the highest quality radiologists to our program. Technical improvements in the animal research area will provide a better opportunity for basic research. Greater utilization of consultants; continuation of the visiting scientist program for exchange of ideas; and continuation of the special studies fellowship will significantly contribute to this objective.

Completion of the replacement of obsolete equipment in the Department is an important aim in the coming year, as well as completion of the plan for a neurodiagnostic room for all neuroradiological procedures.

Developments and Trends

Rapid X-ray film processors have increased the speed of development to 3 minutes as opposed to 6 minutes, and recently the Eastman Kodak Company has marketed a 90-second developing unit. We have an option to add the modification for 3-minute developing to our old unit and our new unit purchased in FY 1966. Disadvantages would include a considerable increase in heat production in our film library area because of higher developing temperatures. The maximal heat dissipation is being utilized in this small area now, without this additional burden. Also, these units require the use of Kodak film, which would increase film costs by $8000 per year.

A new neurodiagnostic unit has recently become available on the market. It includes a complete unit with image intensified fluoroscopy, cineradiographic camera, and tomographic unit all attached to a somersaulting chair in which the patient is secured and positioned as desired for ventricular air localization. The cost, as might be inferred from the listing of component parts, is in the range of $45,000.

Speeds of cineradiographic cameras have been increasing. The previous 30 frames per second have been increased to 80 and may be increased to 200 in the future. The 80-frame-per-second camera will be a component of the new 7th floor catheterization equipment.

Biplane image intensified fluoroscopy units, allowing the simultaneous viewing of two body planes, are recent developments and will be a part of the new equipment for the 7th floor heart catheterization area.

The high current generators, 1000 milliamperes, recently installed in the 10A heart catheterization laboratory are also recent in use throughout the country, although they have been popular in Europe for several years.

In the radioisotope field, the autofluoroscope has been marketed by the Baird Atomic Company recently. This unit utilizes 293 individual crystals 1 x 1 x 3.3 centimeters in size, permitting count rates to be recorded over many small areas of an organ or structure and excellent resolution. It is not as versatile for clinical service use as the gamma camera but is an excellent research tool.

The Picker television subtraction unit has been available for the past year but has certain instabilities which have not been completely eradicated. The Siemens unit marketed 8 months ago has not been available to date. The delivery time is now estimated at one year. This unit is much more stable. These units permit one to subtract out extraneous structures on an X-ray study, leaving the structures of maximal interest to be studied. This is particularly valuable in contrast studies of blood vessels which are obscured particularly by adjacent bony structures. We had approval for funds for the Picker unit but canceled the order on finding that problems were atill being experienced with the unit. With our television engineers we plan to try to design a unit for this purpose. If unsuccessful, the time will allow for improvements on those already available.

Progress Achieved

There was a decrease in all phases of the workload except radioisotope studies, which increased by 733 examinations. Although some of the decrease reflected in the accompanying comparative Tables 1 through 4 is real, a certain amount is a reflection of changes instituted in counting procedures in FY 1966, as well as the shutdown of the 10A heart catheterization laboratory for 6 weeks to install new equipment components.

Radioisotope scanning of bones and the spleen were added to the available studies in the Radioisotope Clinic as well as the improvement of some studies by decreasing radiation. With respect to the latter, colloidal technetium 99 was utilized in place of colloidal gold 198 with a tenfold decrease in radiation despite use of greater quantities of the short-lived isotope which permitted better definition of the liver.

The third class of X-ray technicians was graduated from the 2-year training course in October and we were able to employ three out of the total of four.

The fellowship program in special studies proved to be a contribution to our program and will be of benefit to the professional community by providing training in an area that is deficient in almost all institutions.

Major equipment replacements were approved and will update the most problematic areas of the Department. A considerable saving of time and repair costs should be realized from these improvements in the coming year.

The Department's contribution to research included the initiation of five primary radiological research studies, seven new collaborative research projects, and the continuation of five collaborative research projects begun prior to this year. In addition to project developments, advancements in techniques, modification of equipment to satisfy research requirements, and advisory services for research activities made a significant contribution to the research community.

The staff presented a number of local lectures and conferences for medical and paramedical groups throughout the year, as well as contributing to many of the weekly Institute conferences.

A number of visiting radiologists were received from the United States and foreign countries, remaining with us from a few hours to two weeks.

The tomographic chair designed by our radiological research technician continued to receive very favorable attention throughout the year, and the refined model was completed and became operative in the Department.

Approximately $58,000 was saved by purchasing X-ray film and equipment through a Veterans Administration contract.

Basic plans were formulated for the function of diagnostic radiology in event of a disaster. Consideration is being given to the possible installation of a xeroradiographic unit, which would exclude the need for X-ray film. Notable improvements have been made in these units in the past 2 years.

NCI contributed funds in the range of $43,000 for the purchase of a gamma camera and new body scanner for the Radioisotope Clinic, and NINDB is in process of contributing $60,000 for an autofluoroscope for that area.

The process of organization of separated employees' X-ray studies has been initiated and these will be stored at the Alexandria depot. We received a donated 70 mm. camera and hood to set up our microfilming program for Employee Health Service films. However, we do not plan to discard the films until there ceases to be any possible site for storage.

Major Problems Encountered

Attracting and retaining the highest quality personnel continues to be a problem, with a constant turnover rate. Another personnel problem is that of the excessive use of sick leave by some employees and the recurrent problem posed by 6-month pregnancy leaves. It is hoped that some corrective legislative action will be forthcoming to solve these problems.

X-ray technicians are in short supply throughout the country, and it is becoming increasingly difficult to find well-qualified technicians to replace those who leave. We are conducting an advertising program in an attempt to attract technicians from other areas of the country.

Equipment problems were major throughout the year, but approval for the purchase of new equipment should do much to alleviate this situation.

A very real problem posed by the installation of newer equipment with higher energy demands is the borderline power supply now available to the Department. The Electrical Design Section is now cognizant of this need for more reserve power; however, the attainment is quite complex.

The elevation in grade for Nursing Assistants poses a threat to our ability to maintain long-term, reliable, and responsible film library clerks, since these GS-3 Clerks earn less than the housekeeping employee earns as a Wage Board Grade 3

Honors, Awards, and Publications

Dr. John L. Doppman was appointed assistant editor of Investigative Radiology and a contributing book reviewer for the Journal of the American Medical Assocaition.

Mrs. Bessie Sanders was elected vice president and Mr. Joseph Morel appointed chairman of the Education Committee of the D. C. Society of Radiologic Technologists.

Dr. Allan Simon received the Cum Laude Award for an exhibit, Angiography in Pulmonary Embolism, at the annual meeting of The Radiological Society of North America.

Sixteen publications were authored or co-authored by members of the staff of the Department. These publications include:

Farrell, W. J.: Deformity of the bladder secondary to pelvic lymphoma. Radiology 85: 898-903, Nov. 1965.

Malawista, S.E., Seegmiller, J.E., Hathaway, B.E., and Skoloff, L.: Sacroiliac gout. J.A.M.A. 194: 954-956, Nov. 1965.

Wolff, S.M., Hathaway, B.E., and Laster, L.: The gastrointestinal system in familial Mediterranean fever. Arch. Int. Med. 115: 565-568, May 1965.

Shapiro, R., Doppman, J.L., Cobb, R., and Kneisel, J.J.: Major segmental renal arterial constriction: an experimental study in the dog. Radiology 85: 462-469, Sept. 1965.

Doppman, J.L., Rubinson, R., Rockoff, S.D., Vasko, J., Shapiro, R., and Morrow, A.G.: Mechanism of obstruction of the infradiaphragmatic portion of the inferior vena cava in the presence of increased intra-abdominal pressure. Invest. Radiol. 1: 37-53, Jan. 1966.

Doppman, J.L.: Baker's cyst and the normal gastrocnemio-semimembranosus bursa. Am. J. Roentgenol. 94: 646-652, July 1965.

Shapiro, R., Doppman, J.L., and Gabriel, O.: The radiologist and the problem of renal vascular hypertension. Am. J. Roentgenol. 95: 389-402, Oct. 1965.

Doppman, J.L., and Wilson, G.: Cystic pulmonary hamartoma. Brit. J. Radiol. 38: 629-631, Aug. 1965.

Doppman, J.L., and Dichiro, G.: Subtraction-angiography of spinal cord vascular malformations: report of a case. J. Neurosurg. 23: 440-443, Oct. 1965.

Rockoff, S.D., Doppman, J.L., Kreuger, T.P., Thomas, L.J., and Ommaya, A.: Improved non-selective opacification of the external carotid artery: a clinical application of lowered and expiratory carbon dioxide tension. Invest. Radiol. Mar.-Apr. 1966.

Doppman, J.L., and Ommaya, A.: Unilateral cranial bruits: two unusual causes with a note on radiographic technique. Radiology 86: 696-700, Apr. 1966.

Lemmon, W.T., Jr., Ketcham, A.S., and Herdt, J.: Lymphatic stasis induced by chlorophyllated ethiodol. Surg. Forum 16: 116-117, 1965.

Simon, A.L., Hipona, F.A., and Stansel, H.R.: Dissecting aortic aneurysm in Marfan's syndrome. J.A.M.A. 193: 150-152, July 1965.

Simon, A.L., and Greenspan, R.H.: Magnification coronary arteriography: Part 1, Normal. Clin. Radiol. 16: 414-416, Oct. 1965.

Simon, A.L., and Greenspan, R.H.: Magnification coronary arteriography: Part 2, Experimental pathology. Clin. Radiol. 17: 89-91, Jan. 1966.

Callahan, W., and Simon, A.L.: Posterior mediastinal hemangioma associated with vertebral hemangioma. J. Thorac. and Cardiov. Surg. 51: 283-285, Feb. 1966.

Table 1

NUMBER OF X-RAY EXAMINATIONS
FISCAL YEARS 1965 & 1966

3/31/64 - 3/31/65				3/31/65 - 3/31/66				
INSTITUTE	NUMBER OF INPATIENTS	NUMBER OF OUTPATIENTS	TOTAL	INSTITUTE	NUMBER OF INPATIENTS	NUMBER OF OUTPATIENTS	TOTAL	CHANGE
NCI	7,555	3,999	11,554	NCI	7,416	3,963	11,379	- 175
NHI	7,353	1,440	8,793	NHI	6,400	1,404	7,804	- 989
NIAID	2,453	165	2,618	NIAID	1,992	100	2,092	- 526
NIAMD	3,462	1,749	5,211	NIAMD	3,229	746	3,975	- 1,236
NIMH	524	24	548	NIMH	403	14	417	- 131
NINDB	5,759	1,035	6,794	NINDB	5,266	858	6,124	- 670
NIDR	183	304	487	NIDR	133	351	484	- 3
NICHD	-----	-----	------	NICHD	71	59	130	+ 130
EHS	-----	7,388	7,388	EHS	-----	7,656	7,656	+ 268
TOTALS	27,289	16,104	43,393	TOTALS	24,910	15,151	40,061	- 3,332

Table 2

RADIOACTIVE ISOTOPE STUDIES
FISCAL YEARS 1965 & 1966

3/31/64 - 3/31/65				3/31/65 - 3/31/66				
INSTITUTE	NUMBER OF INPATIENTS	NUMBER OF OUTPATIENTS	TOTAL	INSTITUTE	NUMBER OF INPATIENTS	NUMBER OF OUTPATIENTS	TOTAL	CHANGE
NCI	219	35	254	NCI	432	88	520	+ 266
NHI	179	14	193	NHI	460	11	471	+ 278
NIAID	34	1	35	NIAID	34	9	43	+ 8
NIAMD	251	58	309	NIAMD	310	53	363	+ 54
NIMH	11	--	11	NIMH	37	5	42	+ 31
NINDB	272	35	307	NINDB	411	56	467	+ 160
NIDR	2	--	2	NIDR	7	1	8	+ 6
EHS	---	73	73	EHS	---	3	3	- 70
TOTALS	968	216	1,184	TOTALS	1,691	226	1,917	+ 733

Table 3

SPECIAL DIAGNOSTIC X-RAY PROCEDURES
FISCAL YEARS 1965 & 1966

3/31/64 - 3/31/65				3/31/65 - 3/31/66				
INSTITUTE	NUMBER OF INPATIENTS	NUMBER OF OUTPATIENTS	TOTAL	INSTITUTE	NUMBER OF INPATIENTS	NUMBER OF OUTPATIENTS	TOTAL	CHANGE
NCI	385	104	489	NCI	365	17	382	- 107
NHI	643	---	643	NHI	687	2	689	+ 46
NIAID	27	---	27	NIAID	13	2	15	- 12
NIAMD	291	4	295	NIAMD	97	3	100	- 195
NIMH	1	---	1	NIMH	10	--	10	+ 9
NINDB	455	4	459	NINDB	347	3	350	- 109
NIDR	19	69	88	NIDR	14	24	38	- 50
NICHD	---	---	---	NICHD	6	1	7	+ 7
EHS	---	3	3	EHS	---	1	1	- 2
F.D.A.	---	59	59	F.D.A.	---	--	---	- 59
TOTALS	1,821	243	2,064	TOTALS	1,539	53	1,592	- 472

Table 4

SUMMARY OF ACTIVITY

FISCAL YEARS 1965 & 1966

	3/31/64 - 3/31/65	3/31/65 - 3/31/66	CHANGE
TOTAL NUMBER OF PATIENTS EXAMINED	24,344	24,024	- 320
TOTAL NUMBER OF X-RAY EXAMINATIONS	43,393	40,061	- 3,332
NUMBER OF X-RAY EXAMINATIONS PER PATIENT	1.78	1.66	- 0.12
TOTAL NUMBER OF RADIOISOTOPE STUDIES	1,184	1,917	+ 733
TOTAL NUMBER OF X-RAY SPECIAL PROCEDURES	2,064	1,592	- 472

Serial No. CC-35
Diagnostic Radiology
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Pancreatic Opacification.

Previous Serial Number: None

Principal Investigator: John L. Doppman, M.D.

Other Investigators: Robert Johnson, M.D., Surgery Branch, NCI

Cooperating Unit: Surgery Branch, NCI

Man Years

Total: 75 hours

Professional: 50 hours

Other: 25 hours

Project Description: To evaluate methods of increasing pancreatic blood flow as an adjunct to pancreatic arteriography.

Honors and Awards: None

Publications: Too early for any definite results.

Serial No. CC-35
Diagnostic Radiology
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Embolization of Spinal Arteriovenous Malformations.

Previous Serial Number: None

Principal Investigator: John L. Doppman, M.D.

Other Investigator: Ayub Ommaya, M.D., Surgical Neurology Branch, NINDB

Cooperating Unit: Surgical Neurology Branch, NINDB

Man Years:

Total: 125 hours

Professional: 100 hours

Other: 25 hours

Project Description: To develop technique for introducing embolic pellets through selective arterial catheters.

Honors and Awards: None

Publications: Too early for any definite results.

Serial No. CC-35
Diagnostic Radiology
The Clinical Center
Bethesda, Maryland

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Visualization of Optic Canals.

Previous Serial Number: None

Principal Investigator: Peter Cook, M.D.

Other Investigator: Giovanni DiChiro, M.D., Medical Neurology, NINDB

Cooperating Unit: Jesse Roth, M.D., Clinical Endocrinology Branch, NIAMD

Man Years:

Total: 35 hours

Professional: 30 hours

Other: 5

Project Description: Oblique linear tomography--Transverse axial tomography-in visualization of carotid canals.

Honors and Awards: None

Publications: Too early for evaluation. Commenced March 1966.

Serial No. CC-35
Diagnostic Radiology
The Clinical Center
Bethesda, Maryland

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Chest X-ray in Hodgkin's Disease and the Malignant Lymphomas.

Previous Serial Number: None

Principal Investigator: Peter Cook, M.D.

Other Investigators: None

Cooperating Unit: None

Man Years:

Total: 80 hours

Professional: 70 hours

Other: 10 hours

Project Description: An evaluation of the chest X-ray appearances in the above conditions.

Honors and Awards: None

Publications: Too early for evaluation. (Commenced April 1966)

Serial No. CC-35
Diagnostic Radiology
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Pantopaque Lymphography.

Previous Serial Number: None

Principal Investigators: Peter Cook, M.D., Diagnostic Radiology, CC;
and Kirby Orme, M.D., Surgery Branch, NCI

Other Investigator: Alfred Ketcham, M.D., Surgery Branch, NCI

Cooperating Units: None

Man Years:

Total: 35 hours

Professional: 30 hours

Other: 5 hours

Project Description: Intralymphatic injection of Pantopaque into dogs to assess toxicity, node reaction and value as lymphographic contrast medium.

Honors and Awards: None

Publications: Too early for evaluation. (Commenced February 1966)

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

EMPLOYEE HEALTH SERVICE BRANCH

CC-12
Serial No.

A Revitalization of Occupational Medicine

Public Law 658 of the 79th Congress, which officially recognized Occupational Health within the Federal Government, authorizes four categories of Occupational Health services:

1. Treatment of on-the-job illness and dental conditions requiring emergency attention.

2. Pre-employment and other examinations.

3. Referral of employees to private physicians and dentists.

4. Preventive programs relating to health.

The enabling legislation has been reinterpreted during the past year through issuance of Budget Circular A-72, which placed more positive emphasis on Preventive Medicine in Occupational Health activities. President Johnson personally announced to his Cabinet the details of the revitalized program, stating that "a strong preventive health service program" was necessary to avoid "the waste that results from sickness and disease." He further stated that "if we can reduce the amount of sick leave taken by the average employee by just one half day, it means the equivalent of over one million man-days per year." He added, "Private industry in the United States discovered long ago that a good employee health maintenance program is a paying proposition. The Federal Government has not kept up with the example set by private employers. I want that situation changed." Over the years, the NIH program has met its basic responsibilities reasonably well. However, signs of aging have appeared, paradoxically, at the time when the program that we once thought desirable has been achieved and is stable.

With the revitalized directives of Budget Bureau Circular A-72, we can no longer remain satisfied with the progress we are making in two areas--examinations and preventive programs. We advocate a gradual improvement in the services we offer to management and the individual employee, to bring to both the benefits of preventive medicine. All proposals are consistant with guidelines developed by the Council of Federal Medical Directors for Occupational Health, the Industrial Medical Association, and the Council on Occupational Health of the American Medical Association; and they do not infringe upon the private practice of medicine.

To better understand modern Occupational Medicine, a rather striking comparison can be made between our program and that of a community Public Health department. In essence, the Chief, Employee Health Service, is the Health Officer for the NIH community, and administers programs within the occupational setting, dealing with environmental health, communicable disease control, health education, chronic disease prevention and control, mental health promotion, and accident prevention. As the local Health Department must meet the needs of the community and the individual citizen, so does the Employee Health Service recognize the dual responsibility it has to serve both the needs of management and those of employees in a mutually acceptable fashion. Management shares in the benefits of the program through control of sickness absenteeism and occupational disease hazards. Employees benefit as a result of efforts to maintain their health at an optimum level through the provision of accepted preventive health measures.

Treatment of On-The-Job Illnesses and Dental Conditions Requiring Emergency Attention

Prompt and effective management of the medical emergency involving an NIH staff member, whenever or wherever it may occur, is of primary concern to us. Continued reliance has been placed upon the NIH Fire Department and the Clinical Center Medical O.D. for supporting services. Fire Department personnel provide first-aid, rescue, and transportation assistance, primarily at the scene of an injury; and participate in instruction and refresher courses under our supervision. The Medical O.D. assumes responsibility for emergency medical care during the hours that the EHS medical staff is absent from the reservation. Although a few problems arise from the fact that Institute physicians have the O.D. responsibility rather infrequently and therefore are not too well acquainted with some of the administrative considerations peculiar to emergency medical care in Government, this arrangement has been successful in the overall view.

Emergency equipment and procedures are reviewed periodically and improved when indicated. We have recently studied procedures relating to the care of cardiac emergencies and, with the advice of National Heart Institute, have requisitioned electro-shock and cardiac monitoring equipment to cope with cardiac arrest and ventricular fibrillation. With arrival of this new equipment we will be as well equipped as the Admissions and Follow-up area, both to enable our own staff to respond effectively to cardiac emergencies and to have adequate equipment for Heart Institute specialist who may be called as consultants to assist us in cardiac emergencies. Efforts will be made in the future to maintain our emergency equipment and supplies as similar to those in the Admissions and Follow-up Department as possible,to avoid confusion in the event that Institute clinicians are called upon to use our facilities.

Occupational disease surveillance is of continuous concern to us. Our physicians and nurses must remain alert to the hazardous conditions to which employees are exposed in their work, and particularly to the possibility that these employees may be showing early symptoms of the sometimes rare and exotic diseases to which they are exposed. It is necessary, for example, to determine whether an employee who reports to the Health Unit with a febrile illness is exposed to patient-care or infectious disease hazards, and secondly, whether or not this particular febrile illness could be related to the disease exposures. A significant development during the past year was the assignment of our former Chief Nurse, Mrs. Margaret Lamson, to the newly created position of Nurse Epidemiologist for the Clinical Center. As part of her new responsibilities, she is able to provide the Employee Health Service with epidemiologic data to assist us in investigating suspected occupational diseases. Although she has directed her work primarily to infections control within the Clinical Center, it is expected that we will seek her assistance in evaluating suspected occupational diseases which arise outside of the Clinical Center and patient-care environment.

The zoonoses are becoming more significant in our infectious disease surveillance activities. An outbreak of lymphocytic choriomeningitis was discovered in the mouse colonies of the Infectious Disease Laboratories in Bldg. 7. Concern was expressed both for the safety of exposed employees and for the deleterious effects on the research projects utilizing the mice. Extensive serological surveys were conducted among the employees, as well as clinical examinations. During the outbreak, eight employees were diagnosed as having lymphocytic choriomeningitis, with two staff members admitted to Baltimore PHS Hospital for evaluation and treatment.

Another problem involving laboratory animals centered itself in the animal production areas of the Laboratory Aids Branch. A widespread outbreak of salmonella endangered animal production facilities, particularly among some of the valuable inbred colonies. Surveys for enteric pathogens among employees of the unit revealed one individual with positive salmonella. History revealed that he had had transient diarrhea several weeks earlier, and it was presumed that he had been a convalescent carrier at that time. Whether he had acquired the disease from the infected animals or was himself responsible for the outbreak could not be determined. Extensive efforts were directed to educating the staff in the pathogensis of salmonella infections. As a follow-up to this outbreak, a program is now in effect to obtain periodic cultures for enteric pathogens on all staff members working with susceptible colonies of laboratory animals.

A third incident involved the unusual occurrence of tuberculosis in opposums. Tuberculosis was discovered at autopsy in two opposums which were being raised at the Poolesville Animal Farm for use in research in Bldg. 3. At first, human tuberculosis was considered a possibility, and T.B. contact studies were begun on employees. Cultures eventually revealed that the tuberculosis in the opposums was caused by an avian strain, which relieved the minds of all concerned.

Hepatitis following international travel has become a problem. Because of the difficulty in diagnosing hepatitis through virus isolation and the highly variable incubation periods, it was difficult to determine whether three cases of hepatitis in individuals returning from foreign travel were directly related to exposures they may have encountered overseas. Because of significant hepatitis exposures that individuals traveling to epidemic and endemic areas have, particularly in Southeast Asia, Africa, and South America, gamma globulin will be offered to all NIH employees who will be traveling to these areas. This policy is in accordance with recommendations of the Director, NIAID.

Pre-employment and Other Examinations

Pre-employment physical examinations, fitness for duty examinations, disability retirement examinations, and evaluations of those returning to duty after illnesses, constitute the bulk of examinations that we provide. These medical functions are delegated to us by the Civil Service Commission to assure that applicants and employees are medically qualified to perform their duties. Rather formal relations exist between us, the Personnel Management Branch, and the Board of Civil Service Examiners in meeting these obligations. Efforts are made to encourage Personnel Officers, with whom we work closely, to refer individuals to us prior to serious disruption of work performance so that remedial preventive medical measures may be instituted early to assist a particular employee to regain his usual level of productivity. Whereas emotional problems seem to be the principal underlying cause of impaired health-related work performance, the whole gamut of chronic disease is likewise involved.

The Presidential Policy Statement, A-72, clearly authorizes periodic physical examinations. We must carefully consider the fact that we perform no periodic physical examinations except a relatively small number of partial examinations for occupational exposures. Our absence of activity in this important area of preventive medicine has caused us to lag behind other Occupational Health programs, both Government and private industry. The Federal Employee Health Program of the Division of Hospitals, which services approximately 40 Government agencies in the metropolitan Washington area, has a well-developed periodic health examination program for executives. As individuals in key positions transfer to NIH from downtown agencies, it is becoming more difficult to explain why NIH is unable to provide periodic health examinations similar to those which they were obtaining downtown. With an additional physician added to our staff, we would be able to perform a limited number of periodic examinations. Without an additional physician it is not possible to perform any periodic examination, including those which we formerly performed for a Clinical Pathology pilot study. To maintain the health of key personnel at an optimum level would have a direct influence on the continuity and quality of the NIH research effort through the early detection of disease. With the opportunities for prompt and effective treatment enhanced, one could hopefully look forward to increased productivity and decreased absenteeism. There are also many beneficial side effects to the periodic health examination program, including a better understanding by the individual staff member of the services and responsibilities of the Employee Health Service.

Services rendered the Board of Civil Service Examiners have increased during the past year. In addition to the Chief, EHS, serving as a member of the Board, our Chief Nurse, Mrs. Frances Daly, was appointed to the Nursing Panel. Although the work involved in determining the medical suitability of applicants for employment nas been at times demanding, the opportunities to become better acquainted with the Civil Service regulations and procedures have provided ample compensation. The organizational structure of the Board of Civil Service Examiners was under revision as FY 1966 ended, and appeared likely that Boards would become direct operating responsibilities of the Civil Service Commission. What effect this will have on the NIH Board is now known, nor can we anticipate how our own role may be changed. However, services rendered by the NIH Board have been outstanding, and the recipients of these services, the Governmental scientific community, are eager to maintain the NIH Board as close to its present operating format as possible.

Referral of Employees to Private Physicians and Dentists

No major changes occurred in the procedures that we follow in referring employees to private physicians and dentists for non-work connected conditions. We continued to have splended cooperation with the local medical profession and community health facilities, and maintained reasonably close contact with the Montgomery County Medical Society, the TB and Heart Association, and the Montgomery County Health Department. This interest in community affairs may have been influential in the fact that Montgomery County refrained from expressing concern when the Presidential Policy on Improving Occupational Health Programs for Federal Employees was issued. The presidents of both the District of Columbia Medical Society and the Arlington Medical Society sent strong letters of protest to the Surgeon General and the Civil Service Commission, necessitating meetings with the Surgeon General and the Chairman of the Civil Service Commission. Both groups were assured that the revitalized directives contained no startling innovations and no encroachments on the private practice of medicine. The facts were presented once again that the private medical community nas no reason to fear interference with their private practice or loss of patients; and that in actuality, they will receive more referrals than they would normally have received without active Occupational Health programs in the community.

As NIH operations continue to expand off the Bethesda reservation, particularly in areas remote from the Washington metropolitan area, increasing attention will be directed to the services that private physicians will be expected to render NIH staff. The recently revised Occupational Health Guidelines provide for contract services from private physicians to provide occupational health services to isolated groups of employees. To insure reasonable equity, the health needs of these remotely located NIH employees must be considered more thoroughly in the future. We propose to conduct a survey during FY 1967 of the occupational health needs of NIH employees located off the Bethesda reservation, in hopes of assembling information on the current means of providing emergency medical care that may be needed as well as possible means of providing the other elements of an Occupational Health program, including examinations and preventive medical services. Some experience has been obtained in our

relationships with Rocky Mountain Laboratory, which has required relatively little attention because of its efficient, self reliant administration. We are more concerned with the rapidly developing operations, such as the Poolesville Farm and the possible large research activity in the Carolinas, which will require the best in Occupational Health services because of the nature of the environmental hazards to which staff will be exposed. It is proposed that the survey include employees stationed in foreign areas, such as Panama, Puerto Rico, South America, Europe and Asia.

Preventive Programs Relating to Health

Immunization continues to be one of our primary preventive health services. We provide all of the accepted immunizations, including yellow fever, which are given both for international travel and for work-related exposures. Smallpox, tetanus and influenza immunizations are offered to all employees. In addition, gamma globulin is offered to individuals who are planning foreign travel to endemic or epidemic hepatitis areas.

Health education activities expanded during the year, with greater emphasis being placed upon the opportunities that occur each time an employee is seen in the Employee Health Service for any reason. Building upon the movie experience, we are also planning to develop group sessions with expert discussion leaders from among the NIH scientific staff, on a gamut of health problems and subjects ranging through hypertension, diabetes, weight control, smoking, glaucoma, aging and retirement, mental hygiene, etc. Individuals will be recommended for these sessions depending upon their expressed interests and needs and, of course, anyone may volunteer to attend if he feels he could benefit from such health education. Well organized and controlled sessions of this kind should contribute much to preventive medicine and minimize future disability which could well affect an individual's work performance. In the last quarter of 1966, details were being worked out for pilot projects and, in addition, assistance was being requested form the Employee Health Service of the Social Security Administration which has had considerable experience in using new techniques in health education. An invitation was extended to the Health Education and Training staff of the Social Security Employee Health Service to visit NIH and demonstrate the methods they have developed.

Personnel surveillance of occupational disease hazards has continued. Although no significant health problems were discovered, we believe that this objective evidence of our interest in the health of particular employees encourages them to be more cautious in the performance of their duties. In a sense, this is another form of health education and preventive medicine. The fact that individuals exposed to the Laser Beam receive semi-annual eye examinations indicates to these staff members, in a positive way, the concern we have for their health protection. In turn, we hope they will do their share to protect their eyes during the critical phases of the Laser Beam experiments. Fortunately, we had no reports of eye injuries during FY 1966.

Radiation exposures are monitored by the Radiation Safety Office, and over the years we have not had to concern ourselves with this problem. However, on several occasions we called upon the Radiation Safety Office to monitor skin exposures when individuals had accidental chemical spillages of radioactive material. Again fortunately, we had no illnesses or injuries related to radiation exposure.

Plans were considered to repeat the glaucoma detection survey which was conducted five years before. At that time 2217 employees over the age of 40 years received glaucoma detection tests with 15 cases of proven glaucoma detected, and 69 of suspected glaucoma uncovered. Again, we believe that these individuals' work productivity has been preserved to the benefit of NIH.

Of continuous concern to us is the high incidence of emotional health problems which plague the staff, and which directly or indirectly, influence performance of duties. Whereas individuals with active psychotic problems create the most disruption and receive the greatest attention, undoubtedly there is even greater loss of efficiency and productivity created bys the more common emotional health problem, ranging from long-standing personality defects to the whole gamut of neurotic disorders which prevent complete job satisfaction. Whereas most of these so-called neurotic and adjustment problems originate in the domestic and community setting, these individuals do bring their problems to work with them, and it is impossible to isolate that 8-hour portion of the day devoted to work from the rest of one's life. We have a bona fide interest in attempting to help these individuals because of the adverse effects that their illness produces in their work, and we have enthusiastically accepted the offer of NIMH to provide a psychiatric consultant to us on a part-time basis. Not only was Dr. Allan Belden, the psychiatrist assigned to us two days a week, willing to help us meet the so-called emergency mental health problems which arose, including fitness for duty examinations, but he also took an active interest in the more important preventive medical aspects of occupational psychiatry.

As a pilot project, Dr. Belden is developing, in cooperation with the Training Section of the Personnel Management Branch, a seminar in occupational mental health for Personnel Officers. Depending upon the success of this program, the seminar, or variations, may be extended to other interested groups.

Although we made no significant progress during the past year applying computer technology to meet some of our needs, we became more convinced that this is the direction in which we must proceed. We had assurances that our needs and aspirations would be critically examined by the experts. We believe that a vast amount of morbidity and epidemiological data, relating to those diseases and medical problems which impair normal functioning, is buried in our medical records. We need to develop a capability of retrieving significant medical information, not only to observe trends that may be occurring, but also to have a better impression of the effectiveness of our preventive medical efforts. At this time we have no concept of the incidence of diseases in the employee population or even a rough estimate on the extent of absenteeism due to illness. We need the help of the computer to prove that modern occupational medicine can contribute to the knowledge needed to understand the progression of the chronic degenerative diseases.

During the year, efforts were made to coordinate the activities of individuals and groups at NIH who are interested in intramural environmental health problems. An Environmental Health Committee was formed which plans to meet regularly under rotating chairmanship and to which staffs of the Plant Safety Section, Environmental Services Branch, DRS, Employee Health Service, Radiation Safety Branch, the Chairman of the NIH Safety Committee, and the Nurse Epidemiologist, would be invited. The initial goal of the Committee is to assist the various groups to meet regularly and discuss mutual problems and overlapping interests. In the future, joint projects such as surveys and studies may be undertaken as well as sponsorship of special lectures and seminars. It is expected that an active NIH Environmental Health Committee will assist the various activities listed above to carry out their assigned functions through improved mutual understanding and collaboration when indicated.

Through mutual agreement, we continued to rely heavily upon Institute specialists and clinicians for advice and assistance in the area of a particular individual's competence. We are aware of the many experts at NIH who are well qualified to deal with environmental problems which may occur in their own areas and who can provide us with advice when we need to deal with similar problems in other areas. In turn we recognize a responsibility to protect the time of research personnel, particularly the clinicians who are frequently subjected to requests for "corridor consultations." We have many informal agreements with Institute clinicians whereby they refer to us all requests for help from employees that they receive, with the assurance that they are willing to help in any way at our request. In addition, we remain alert for particular research material among employees so that they may be included, at the request of their private physicians, in ongoing clinical research projects.

Recognizing our primary responsibility of providing service, we were not able to engage in any type of clinical research. We therefore avoided any commitments to NIH scientists to provide any type of clinical care which is primarily research in nature.

Space continues to be a critical problem for us. We anticipate that this problem will become more critical, particularly if we are to develop reasonable preventive medical programs such as innovations in health education and periodic examinations, described above. It is impossible for us to hold conferences involving more than four people and this has made it difficult to discuss critical employee health problems with Personnel Officers and supervisors. A more suitable waiting room and laboratory are also needed. Again, we bring to the attention of our superiors that fact that the only suitable space available for our expansion is the space at the opposite end of the B2 corridor which, at the present time, is occupied by NIMH. We also have need for an addition to our medical staff, which in FY 1966 consisted of two full-time physicians and one part-time physician. An additional half-time physician, or a full-time physician to replace the present half-time physician, is needed.

Table I: SELECTED STATISTICS

General	FY 1966	1965	1964	1963
Total visits	26,050	25,405	27,035	25,653
Visits for occupational injuries and diseases	2,230	2,190	2,349	2,544
Immunizations	9,300	5,284	10,188	8,475
Pre-employment physical examinations	2,680	2,432	2,744	2,880
Laboratory examinations	14,500	12,005	17,782	18,489
Referrals to personal physicians	1,500	1,381	1,440	1,757
Staff				
Physicians	2½	2½	2½	2½
Nurses	11½	11½	11½	10
Clerical	4	4	5	5
Laboratory	2	2	2	2

July 1, 1965, through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

ENVIRONMENTAL SANITATION CONTROL DEPARTMENT

CC-71
Serial No.

Program Goals

1. Administration

   a. Continue to provide a sanitary, safe and esthetic environment consistent with the welfare of the patients, employees, and visitors as well as the activities of the various Institutes and auxiliary services in the Clinical Center and Building 10-A.

   b. Continue to develop an organization to cope with day-to-day environmental problems within the Clinical Center to study the overall environment as it relates to an institutional setting.

   c. Continue to recruit or train personnel to staff technical and supervisory positions in the department.

   d. Continue to request the allotment of reasonably adequate space in the Clinical Center for the department's:

      (1) Operations Section Office
      (2) Development and Training Section Office
      (3) Centrally issued supplies and equipment
      (4) Battery charging and equipment maintenance activity
      (5) Classroom training activities
      (6) Equipment and materials testing program

2. Technical Services and Environmental Studies

   a. Continue to identify and provide solutions to environmental problems within the Clinical Center.

   b. Study and develop methods for evaluating Clinical Center environment.

   c. Establish new and evaluate present minimum levels of cleanliness throughout the Clinical Center which are compatible with the requirements of the patient care and laboratory research activities.

d. Provide technical services to Clinical Center programs as needed.

3. Production Improvement (quantity and quality)

a. Continue to study the manpower requirements of the Operations Section and formalize and standardize as many of its work procedures as possible.

b. Continue to develop, publish, and implement standard work procedures.

c. Continue to investigate new products and equipment that might improve the sanitation and appearance in the Clinical Center.

d. Develop or accept available written specifications for detergents and floor dressings.

e. Continue to search the literature for cleaning systems and methods used successfully at other institutions, and adopt for use in the Clinical Center.

4. Training

a. Inaugurate an in-service supervisor development program. The program to include remedial work for currently employed supervisors who cannot read or write, and elementary supervisory training courses for those non-supervisory personnel who can read and write and have a potential for future supervisory positions.

b. Revise the departmental training policy and guideline to incorporate a supervisor development program.

c. Continue the formalization of orientation and training program for new employees.

d. Continue to provide "outside the Service" as well as "inside the Service" training opportunities for the professional and nonprofessional staff to enable them to keep abreast of the latest information in the bioengineering and housekeeping fields.

Progress Achieved

1. Administration

a. New position descriptions were approved and made effective for all WB-02 and WB-03 employees.

b. Stock levels were revised for all standard storeroom items. This has resulted in fewer emergency-type requisitions.

c. A form to show the cost of supply items issued to the Operations Section on a monthly, quarterly, and annual basis was developed. Further modification of the form is being contemplated to provide information in a more useful form for management needs.

d. The fourteenth floor assembly hall and gymnasium, and the east waiting room, main lobby wood floors were sealed and refinished by Operations Section personnel.

e. Many work orders (342) were initiated for repair of Clinical Center structure and equipment. Many additional emergency type telephone work orders were submitted on a day-to-day basis.

f. One hundred sixty-five custodial applicants were interviewed and fifty-five were hired. In addition, the on-the-job performance record of each new employee was reviewed by the Chief, Operations Section and the unit supervisor. The time required for interviewing and evaluation by the Chief, Operations Section, was approximately 89 hours.

g. Twenty-four employees were promoted.

h. The Clinical Center was cleaned from top to bottom on a "crash" basis in 24 hours preparatory to a visit by President Johnson.

i. All of the supervisors of the Operations Section shared in a $1000 group award for their efforts in maintaining the Clinical Center in a high state of cleanliness despite acute labor shortages during the year.

j. The assignment of a supervisor from the Operations Section to the Development and Training Section was completed and the supervisor was then reassigned to the Operations Section. This supervisor will continue to serve as a major instrument in the training activities in the Operations Section, applying the experience and knowledge gained while helping to develop the training approach and the standardized cleaning procedures of the department.

k. A labor leader from the Operations Section was detailed to the Development and Training Section to augment the environmental study and production improvement phases of the section responsibilities.

2. Environmental Studies

The Development and Training (D & T) Section experienced a significant expansion of capability to investigate and evaluate the bacteriology and other characteristics of the environment. This development of capabilities evolved

in a natural manner in conjunction with the other functions of the section. The sampling activities which form the basis for many of the environmental studies undertaken during the year fall into three sub-headings as follows:

a. Rodac plates.

During the reporting period, a considerable amount of experience was accumulated in the use of agar-filled Rodac contact plates for the sampling of smooth, flat surfaces. The D & T Section cooperated with the Environmental Services Branch of DRS in an APHA study of the sampling of surfaces before and after cleaning in patient rooms. This experience led to additional consideration of the Rodac sampling method. It was concluded that the use of Rodac plates is desirable for sampling surfaces in the Clinical Center.

b. Air sampling.

The availability of air sampling equipment and the responsibility for air sampling for the National Cancer Institute "Life Island" project provided the opportunity for the D & T Section to obtain considerable experience in air sampling for viable organisms. Additional air sampling equipment was obtained, broadening our capabilities to conduct environmental studies. Modified Detrick slit samplers are available on short notice to collect eight-hour samples wherever desired. The section also obtained several pieces of equipment needed to support environmental studies. These pieces of support equipment include: a small refrigerator, incubator, and colony counter. The effect is that the section can now store media for limited periods, thus having some media available on short notice. After samples are collected, the section is able to grow them out in the incubator and count them on the colony counter. These capabilities do not begin to approach the scale of services available in a good bacteriology laboratory, but the flexibility provided by these capabilities within the section constitutes a major step toward improved studies of the environment.

d. Specialty sampling.

The great variety of factors and variables encountered in environmental studies continues to be a major consideration of any study undertaken. The Development and Training Section encountered several environmental studies during the year which are indicative of the variation to be expected. Examples of these studies are as follows:

(1) Patient Area Unit 12W, Staphylococcus aureus control. This nursing unit was yielding high numbers of the organism on Rodac plate samples collected from the floors. It was realized that corrective steps were

needed to bring the number of organisms within acceptable limits. Sampling of the floors before and after the corrective steps revealed that reasonable limits were obtainable with the steps taken. A set of samples was taken over a 24-hour period to demonstrate the daily fluctuations in the numbers of organisms recovered from the floor by the sampling method. In this study, a selective egg yolk media was used in the Rodac plates to accentuate the presence of the Staphylococcus aureus organisms.

(2) Evaluation of the filtration efficiency of vacuum filters. The quality of exhaust air from vacuum machines is always subject to question, if for no other reason than that the filter may be improperly installed. A method was devised to collect samples from the exhaust air. Simultaneous samples were collected of the room air for comparison. The results indicated that the filters do a good job of removing most of the viable organisms. It was found, however, that after incubation of the media plates for several days, a mold organism appeared on the media in relatively low numbers. This appearance of mold was unexpected and calls for additional investigation.

(3) Air sampling for the "Life Island" project. In addition to the routine air sampling activities of the "Life Island" project, several supplementary investigations were conducted during the year. These included a comparison of the effect of sampling tube size on the results obtained when pulling samples through plastic tubes. It was found that a 3/4 inch I. D. plastic tube provided greatly improved results over a smaller diameter tube. The sampling equipment used in the "Life Island" project was changed to reflect this information. A close liaison was established with the several groups involved in the "Life Island" project, and several interesting studies evolved. Sterile items which are stored for extensive periods were sampled after 60 days of shelf life and were found still to be in a sterile condition. Samples were collected from within the ultraviolet light compartments of the "Life Island" unit during periods of activity intended to demonstrate the possibilities for transfer of contaminants into the "Life Island." No viable organisms were recovered from the compartments. It was concluded that the ultraviolet light compartments are a valuable part of the "Life Island" enclosure system and that the ultraviolet features provide active protection for the sterile enclosure.

The experience with the "Life Island" air samples in FY 1966 led to an appreciation for the need to consider carefully the laboratory handling of samples. It has been demonstrated that at least 48 hours of incubation time is needed to give slow-growing organisms a chance to appear. Longer times are desirable if possible. The organisms recovered in

the air samples included several fungi species which are of interest to the clinical investigators. The question of media selection for isolation of specific organisms remains a controversy, with several possible answers. It is anticipated that efforts will be made to determine the characteristics of the anaerobe population in the "Life Island." Bath water samples were collected from the "Life Island" unit in an attempt to obtain a comparison for the air sample plates. These bath water plates yielded fungi species which suggest that some correlation is possible. The possibilities will be investigated in the coming year.

(4) Wash basins - Pseudomonas aeruginosa. A large proportion of wash basins in the patient area yielded Pseudomonas aeruginosa. Attempts were made to reduce this occurrence, with only limited success. In the process, a selective media was employed, which is called Wensinck's broth. The use of this media allows some streamlining of the laboratory procedure for identification of positive samples and makes the processing of increased numbers of samples possible. This improved capability to handle the samples will allow a more detailed investigation of the Pseudomonas problem in the future.

(5) Sampling of dirt walk-off mats for suspended solids. A sampling procedure was developed to evaluate the cleanliness of carpet or matting. This sampling method gives results in terms of milliliters of settleable solids recovered from a given area of carpet. Samples are being collected on a routine basis from the carpet in the main lobby. It is believed that this data will provide a basis for determining the rate of soil buildup in the carpet and will lead to a more accurate evaluation of the condition of the carpet at any given time.

(6) Preliminary work was initiated on several questions involving the bacteriology of certain cleaning functions and operations. One series of samples indicated that the battery powered scrubber-vacuum machines reduce viable organisms on the floor by 80%. This contrasts with a reduction of 60% observed in some mopping results. The variables associated with these cleaning methods suggest closer investigation is appropriate.

Air samples were also taken around the battery powered scrubber-vacuum machines and their vacuum exhausts in an attempt to determine the extent of aerosol produced by the units. The results of this sampling were generally negative. Further study of the machines may be appropriate.

3. Production Improvement

a. Good progress was made in the preparation of standardized procedures. Revision and up-dating will be required on a continuous basis with additional procedures being generated as needed. Expanded comments on the procedures will be found in the discussion of training achievements.

b. A study of a typical work area was initiated during the year. The area on 12N-200 block was selected for trial. Initial investigation indicated that plastic liners for wastepaper baskets would be advantageous. The liners are being slowly integrated throughout the Clinical Center and will result in a noticeable improvement in the appearance, sanitation and maintainability of the waste baskets.

c. A trial is underway to determine the suitability of expanding the usage of treated dust mops in the Clinical Center. Preliminary results indicate that properly treated dust mops are suitable for usage in many areas of the building. Work is in progress with the NIH laundry to reach an understanding on the method of cleaning and retreating the dust mops. It would appear that the system could produce considerable labor savings for the department.

d. A spray system of floor maintenance between major refinishing operations is being considered for application in the Clinical Center. This system would appear to offer some advantages which have not been available previously.

e. A field trial was made of a type of wall-mounted waste receptacle in utility rooms on two nursing units. It was found that the receptacles were too small and would not satisfy the needs of the nursing unit. The search continues for a satisfactory receptacle.

f. Evaluations were initiated on several maintenance products available from General Services Administration specifications. Additional investigation is necessary before definite conclusions can be drawn. It was concluded that the germicidal detergent carried by GSA is not as effective as the product being used in the Clinical Center. This rating of effectiveness is based on laboratory test procedures conducted by ESB.

g. A floor finish from GSA was evaluated on a limited basis. This floor finish requires further investigation. It was observed that the floor finish streaked when applied to the floor. It was also observed that the finish did not hold up as well as expected on the floor.

h. A concentrated detergent was evaluated, and appeared to offer a savings in cost. It was thought that this product could also serve as a floor

finish remover. The results of the evaluation demonstrated that the detergent foamed excessively at the concentrations required for stripping and was difficult to remove from the floor prior to refinishing. The detergent was also more viscous than considered desirable for handling in the detergent packaging system used by the department.

i. To facilitate the evaluation of products from GSA and elsewhere, the Development and Training Section initiated the collection and assembly of all GSA specifications and standards which apply to maintenance products used by the department. Approximately 20 specifications are on hand with most of the remainder on order. It is believed that the assembly of these specifications will contribute to the quality of the maintenance products used by the department.

j. A system was established whereby the Development and Training Section checks out all general cleaning requests of laboratories received by the Operations Section in order to evaluate potential environmental hazards to the maintenance personnel. Items screened include: the use of radioactive, biological and chemical agents, and the presence of any critical or sensitive pieces of laboratory equipment. The check-out procedure is usually carried out with the Operations Section supervisor, who handles the general cleaning request. This system serves the double purpose of uncovering certain potential environmental hazards and also protects the personnel of the department from potential unrecognized hazards.

k. Automated cleaning made it possible to cut time requirements. For instance, the automatic scrub-vaccum machine cut time required for wet mopping 46,402 sq. feet of tile floor from 20.5 MH to 6.25 MH, or for damp mopping from 11.25 MH to 6.25 MH. The machine does a superior job because only clean water is put onto the floor, brushes scrub the surface, and the loose soil and dirty water are picked up immediately. Other time saving systems inaugurated are as follows:

   (1) An ultrasonic light-fixture washer cut down the time required for washing "egg crates" (fluorescent light baffles) from about 4 minutes to 45 seconds.

   (2) Newly established mopping procedures cut time requirements from 7 minutes to 5 minutes per room.

   (3) A window washing procedure cut the time from an average of 15 minutes to 7 minutes per window.

l. Time-saving equipment was purchased, consisting of two 32" combination scrubbing-vacuum machines, three 21" floor scrubbing and polishing machines

two back-pack vacuum cleaners, one carpet shampoo machine, 250 linear feet of vinyl backed nylon dirt-stopping floor matting, and 32 mopping units.

m. The drum material repackaging system was in operation for the entire reporting period and proved to be a highly efficient means of dispensing liquid materials. The only problem has been the inability of the equipment to handle highly viscous material such as stripper. For all other materials we realized a 50% savings in the time required for packaging and dispensing drum material.

n. A continuing program was initiated to replace where possible floor standing equipment with wall-mounted equipment. Wall-mounted coat racks were installed in the Admissions and Follow-Up unit, and Employee Health Service.

o. The procedures for handling infectious waste material were in operation for the full year and no complaints were received about improper packaging during the year.

p. The Night Service Unit formed a floor finish stripping crew to operate on weekends. We hope to expand this crew to a seven-night a week operation.

4. Training

a. A considerable part of the manpower available in the D & T Section was concentrated on the implementation and improvement of the training capabilities of the department. The Operations Section emphasized during the year "employee training and development." Formalized training programs for supervisory personnel, custodians, and the review and certification in work procedures and equipment for supervisory personnel were well established during the year. Now the training efforts by the supervisors are being primarily directed toward on-the-job task training for all custodians.

b. The first phase of a Clinical Center Custodian Training Manual was finalized and printed during the year. This manual has become the foundation of a strong effort to up-date all employees on standardized procedures. The training manual has been well accepted. A formal training program was built around it, and all supervisors are being certified as to their knowledge of the specific procedures and their ability to instruct others on these procedures. This formal training program in procedures was transferred to the Operations Section for continuation and broadening application to all employees.

c. Fourteen additional work procedures were prepared by the Development and Training Section and are in the process of being reviewed and incorporated with the first phase of the training manual. The responsibility for future

preparation of work procedures has been transferred to the Operations Section. The preparation of these work procedures is believed to be an excellent training tool in itself and should give the Operations Section staff the opportunity to expand their supervisory capabilities and experiences.

d. A training schedule was prepared for calendar year 1966 in accordance with the departmental training policy. The schedule for the year emplasized the involvement of the Operations Section supervisory personnel and tends to encourage their participation in the presentation of materials and in discussion groups. Other NIH organizations were utilized where appropriate to provide discussion leaders and demonstrations for specialized subjects.

e. The department continued to make use of the facilities available at NIH for the preparation of visual aids. Photographs were obtained on the following items:

(1) Mopping sequence
(2) Trash system
(3) Air sampling equipment
(4) Carpet/mat sampling
(5) Ultrasonic unit
(6) Carpet/mat cleaning process
(7) Employee uniforms
(8) Vacuum usage
(9) Bacteriology samples
(10) Repackaging system
(11) Scrubber-vacuum assembly

Many of these photographic sets are related to specific training items and were used in group presentations. They are valuable assets to the training activities of the department.

The emphasis on training evolving around the training manual included a major portion on the care and maintenance of many pieces of equipment. This portion of the training needs of the department was augmented by the assembly of an equipment display board in the department training room. This display includes all pieces of equipment used by the Operations Section which are of a size to allow mounting on the board. This display encourages a standardization of terminology and an understanding by all personnel of the language of equipment. The display board is being used by the supervisors in their orientation of new employees, and in their training of all employees.

f. Four Youth Opportunity Employees were trained for one week on basic procedures and were utilized in the labor force for eight to twelve weeks.

g. The Chief, Development and Training Section attended a one-week course on the Principles of Epidemiology at the Communicable Disease Center, Atlanta, Georgia. Two employees of the department attended a three-day orientation session on computers, which was given for Clinical Center personnel.

h. During the year the department was represented at the meetings of the APHA, National Association of Sanitarians, and conference of Federal Sanitary Engineers. The Chief of the Operations Section, DESC, attended the National Hotel and Motel Exposition (cleaning equipment and materials) and a meeting of the American Hospital Association on Advanced Hospital Housekeeping.

i. Throughout the year, magazines and journals dealing with environmental sanitation were reviewed in order to maintain an up-to-date awareness of developments in the field. Five short training films were reviewed for possible use in the departmental training program. It was felt that these films were too advanced for training of the labor force.

5. Miscellaneous

a. The department participated in discussions with visitors to the Clinical Center. These visitors come from government and private groups including: Veteran's Administration, Saint Elizabeth's Hospital, PHS Division of Indian Health, World Health Organization, Kent Company, University of Minnesota, Health Department of Costa Rica, and the Birmingham (Eng.) Accident Hospital.

b. Letters of inquiry were answered on technical topics including: the process of disinfection by aerosols in hospitals, the concept of permanently installed house vacuum systems, and the method of air sampling used in the "Life Island" project.

c. Progress was made on the solution of problems of "soap" suds back-up in plumbing lines. The problem on Nursing Unit 2-West was corrected after several changes in the plumbing. Other problems remain in some areas of the building. The location and control of the suds is often difficult and time consuming. It appears that plumbing changes are sometimes the only practical answer unless non-sudsing detergents are made mandatory in the Clinical Center.

d. A controversy has developed between the carpet and floor tile industry over the comparative costs of these two floor coverings. The department was represented at a press conference given by the Armstrong Cork Company, at which a National Carpet Institute study was discussed. There does not appear to be a clear favorite in the controversy at this time.

e. Approximately 100 square feet of space was assigned to the D & T Section from the Operations Section for storage of the air sampling equipment used in the "Life Island" project.

f. A trial of nylon furniture glides is in progress on the furniture in the main lobby. These glides appear to be superior to the chrome plated steel glides previously used.

g. Samples of the floor finish remover used by the department were analyzed for ammonia content. It was found that the stripper contains less than one part per million of ammonia.

h. Samples of the GSA general purpose detergent were analyzed for viscosity and were found not to meet specifications. Two drums of the detergent were returned.

i. A plastic replacement for vacuum tool felts was obtained for evaluation in vacuum cleaning dry floors. A limited evaluation by the Operations Section found that the tool performed satisfactorily and was easy to clean after use, but the cost of the units appears to be prohibitive unless some mass producer can be attracted.

j. To reduce noise levels we have converted to rubber dust pans in all patient areas instead of metal dust pans.

k. Non-slip safety treads were installed in all patient bathtubs, replacing rubber bath mats, to improve patient safety and simplify cleaning.

l. New furniture was placed in certain patient solaria as part of a general up-grading of furniture in patient areas. A program for installation of new draperies in patient solaria is in progress.

m. The emergency assistance program of the section operated satisfactorily during the year. Regular briefings were given to elevator operators on emergency procedures. All employees were trained to operate a water pickup vacuum. The following emergencies were encountered during the year:

Floods	31 calls for 70 man-hours
Fire	4 calls for 2 man-hours
Acid Spills	2 calls for 1 man-hour
Miscellaneous	3 calls for 2 man-hours
Total	40 calls for 75 man-hours

Problems

Problems continue, but many of them can be solved in intradepartmental action. However, some major problems are beyond our control and are the responsibility of and require action by a higher echelon. Many of the following problems have been reported in previous reports.

1. Hazards and Production Slow-down

a. Equipment in corridors of the Clinical Center. Besides being fire and accident hazards and present a disorderly appearance, equipment in the corridors prevents proper cleaning of the floors, walls, and ceilings. In addition, equipment stored there is subject to damage from power cleaning equipment. To efficiently use power equipment to clean corridors, it is necessary for the corridors to be clear.

b. Construction work is scheduled but not always reported to us. Cleaning time could be saved if we were notified and could plan our activities in light of the construction plans.

c. Furniture is being bought which requires an excessive amount of labor to maintain and is difficult to move, such as conference room chairs which cannot be stacked and arm chairs which have large dust collecting surfaces. The Procurement Section was advised of this problem.

d. Materials selection. Problems arise in the cleanability and maintenance of various surfaces throughout the Clinical Center. Various surface materials and finishes continue to be specified without adequate consideration of the cleaning problems involved. The use of flat paint in areas that require frequent cleaning constitutes our major problem. Plant Engineering was advised of this problem and some improvement has been noted.

2. Personnel

a. The Operations Section was consistently short of personnel, both in the office and in the labor force. The labor shortage ranged from 12 to 30 persons. This shortage amounted to 4717 man-days lost. Certain cleaning activities were restricted due to this shortage. In addition, the make-up of our labor force changed from 75% male and 25% female laborers on duty on April 1, 1965, to 64% male and 36% female on March 31, 1966. All indications are that this trend to a high proportion of female employees will continue.

b. The seven-day rotating shift is unpopular among the department's employees. Many of our good employees (potential supervisors) transfer to other jobs that offer a five-day Monday through Friday work week.

c. From April 1, 1965, to March 31, 1966, approximately 888 employees visited the Employee Health Service to receive medical attention.

d. With the increase in capabilities of the D & T Section to investigate the various factors of the environment comes an increasing need for technical

support of the investigations. The required support includes bacteriological, chemical and allied laboratory facilities. The section's experience with the available Environmental Services Branch, DRS laboratory services indicates that the environmental investigations will continue to be limited. An example of difficulties is the supply of bacteriology media for air samples or Rodac plate samples. In some cases, studies were run with old or left-over media from the Environmental Services Branch lab. This media is received on an "as available" priority. In other cases, media was requested and samples collected, but the counting of the plates after incubation was delayed until the information was unreliable because of confluent growth of the colonies. As long as the section is dependent upon laboratory services from Environmental Services Branch, unpredictable complications will result from the lack of control.

b. Of continuing concern to the section is the large number of samples needed to provide a statistically valid evaluation of the environment. The limiting factors of support and staff available limit the investigations of the section to those problems which are "fire fighting" type of problems. The contribution of a technician or technical assistant would allow a needed flexibility in the capabilities of the section by freeing the professional staff to concentrate on the more professional aspects of the studies.

3. Space Problem

a. Office space is still inadequate. NIH space standards are 125 square feet per person. The Operations Section office now has only 70 square feet per person. In addition, about 200 employees use the office to sign "in" and "out" daily. The Development and Training Section shares office space with the department's administrative staff. Six employees use a space of 289 square feet, i.e. 48 square feet per person.

b. The Operations Section storeroom space continues to be inadequate for the cleaning operation that is carried out in the Clinical Center. Supplies are stored in more than seven other locations throughout the Clinical Center. Control of supplies is difficult. A minimum of 500 additional square feet is required to store equipment and supplies securely. A space for charging battery-powered equipment (150 square feet) was removed from the storeroom, which compounded our problem. In addition, it was necessary to assign 100 square feet of Operations Section's storage to D & T Section to store "Life Island" air sampling equipment.

c. Space for employee training activities continues to be inadequate. The room presently used is small and has no ventilation.

d. Space to start a small workshop, which should adjoin the main storeroom, continues to be needed for minor maintenance and repair - oiling, greasing,

and cleaning of Operations Section equipment plus wheel chairs, stretchers, and other small equipment items. Work that cannot be done on the nursing unit would be done here. About 250 square feet should be satisfactory for this operation at this time.

e. Employee lockerrooms are not adequately ventilated and need to be air conditioned.

Plans for Fiscal Year 1967

1. Concentrate on the evaluation of the Clinical Center environment.

2. Explore various methods of dust sampling.

3. Evaluate new products and equipment.

4. Continue to work towards the improvement of cleaning methods.

5. Continue to revise and formalize current cleaning schedules and establish up-to-date schedules for all other areas of the Clinical Center. Establish simplified record-keeping methods to assure thorough cleaning of all parts of the Clinical Center on a regular basis.

6. Continue to develop, publish and implement standard work procedures.

7. Continue to urge the Clinical Center Personnel Officer to maintain our staff at levels which will enable us to carry out responsibilities.

8. Continue to orient and train all employees to up-grade and standardize performance criteria.

9. Inaugurate a search and development program for future supervisors for the Operations Section.

TABLE 1

DEPARTMENT OF ENVIRONMENTAL SANITATION CONTROL
OPERATIONS SECTION

FORMAL TRAINING - CLASSROOM

April 1, 1965, through March 31, 1966

Course	Total Man-Hours
Supervisory Training	869
All Employee Training	2,251
Procedure & Certification, Supervisors and Labor Leaders	3,021
Procedures - Employees	102
Educational Tour - NIH Incinerator and Laundry	59
Executive Housekeeping	40
Business English	40
Orientation - New Employees	99
TOTAL	6,481

INFORMAL TRAINING, ON-THE-JOB

All Employee Task Performance Training		
DSU - 10,990 MH PAU - 23,704 MH NSU - 12,727 MH	TOTAL	47,470
	GRAND TOTAL	53,951

TABLE 2

POSITIONS FILLED BY RECRUITMENT

DEPARTMENT OF ENVIRONMENTAL SANITATION CONTROL
OPERATIONS SECTION

April 1, 1965, through March 31, 1966

MONTH	WB-4 and Above	WB-3	WB-2	WB-1	GS-2 and Above	Total
April						0
May			1			1
June				4*		4
July			3			3
August			7		2	9
September			2			2
October			7		1	8
November			6			6
December			1		1	2
January		1	6			7
February		1	9	1		11
March			2			2
TOTAL		2	44	5	4	55

* Youth Opportunity Program Employees

TABLE 3

NUMBER OF SEPARATIONS, RESIGNATIONS, ETC., BY MONTH & GRADE

DEPARTMENT OF ENVIRONMENTAL SANITATION CONTROL
OPERATIONS SECTION

April 1, 1965, through March 31, 1966

MONTH	WB-4 and Above	WB-3	WB-2	WB-1	GS-2 and Above	Total
April		1	1		1	3
May		5	5		1	11
June		2	4			6
July		3	3			6
August		4	2	2*		8
September		2	1	2*		5
October	1	3			1	5
November		1	1			2
December		1	1			2
January	1	2	1		1	5
February		4				4
March		5			1	6
TOTAL	2	33	19	4	5	63

* Youth Opportunity Program Employees

TABLE 4

REASON FOR PERSONNEL LEAVING

DEPARTMENT OF ENVIRONMENTAL SANITATION CONTROL
OPERATIONS SECTION

April 1, 1965, through March 31, 1966

Resignations	Transfers	Retirement	Terminations	Deceased
Resigned when faced with possible disciplinary action or separation 2	Transportation Problems 2	Retirement Disability 2	Failure to report for duty 0	Death 1
Drew retirement to pay debts 1	Better chance for promotion 6	Retirement 1	Conduct unbecoming a gov't. employee 1	
Health 3	Moving away 1		Falsified 57 1	
Sentenced 1	Outside NIH - Higher pay, Monday-Friday schedule, less travel 2		Expiration of temporary appointment 11	
To seek other employment 11	Within NIH - Monday-Friday schedule, day only 7		During probation 1	
Moving away 2	Military furlough 2			
Married 1				
To return to school 4				
Sub-Totals 25	20	3	14	1
TOTAL 63				

TABLE 5

MATERIALS ISSUED

DEPARTMENT OF ENVIRONMENTAL SANITATION CONTROL
OPERATIONS SECTION

April 1, 1965, through March 31, 1966

ITEM	UNIT	AMT.
Ash tray, metal	each	449
Bag, paper, non-treated 40 lb.	pkg.	689
paper, treated	pkg.	1,646
polyethylene, large	pkg.	551
polyethylene, small	pkg.	106
Broom, push, 18"	each	38
push, 24"	each	39
push, 36"	each	10
Brush, counter	each	56
corner	each	4
deck	each	3
nail, scrub, hand	each	24
pot, short handle	each	9
pot, long handle	each	10
radiator	each	42
test tube	each	1,361
test tube, vents	each	211
toilet	each	2,378
Cleaning agents and supplies		
Bucket, rubber	each	31
Detergent, general	gal.	5,184
germicidal (cut)	gal.	7,281
wall wash	gal.	32
Foam-xit	gal.	171
Powder, scouring	can	4,180
Shampoo, rug, Glamorene (dry)	gal.	2
rug, Textra	lbs.	25
Soap, Ivory, bar	each	31,485
liquid, hand, cut	gal.	1,550
Sponge, cellulose	each	711
Window squeegee	each	40

TABLE 5 (continued) Materials Issued, Operations Section, DESC

ITEM	UNIT	AMT.
Door, silencer	each	12
stop	each	23
Floor care products		
Dust pan, metal and rubber	each	43
Finish, Style	gal.	40
Tile Tite	gal.	311
Triple Life	gal.	2,422
Velour	gal.	653
Wash n Ware	gal.	8
Handle, mop, 54"	each	14
mop, 60"	each	93
Knife, scraping	each	94
Mop, dust, 23"	each	150
dust, 36"	each	45
wet, 16 oz.	each	157
wet, 24 oz.	each	156
wet, 32 oz.	each	543
Pad, polishing, 19" 3M	each	89
polishing, 21" 3M	each	24
scouring, hand, nylon	each	1,542
scrubbing, 19" 3M	each	130
scrubbing, 21" 3M	each	28
stripping, 19" 3M	each	568
stripping, 21" 3M	each	153
Steel wool rolls	each	3
Stripper	gal.	3,595
Varsol	gal.	29
Vinegar	gal.	57
Furniture tips	each	10
Gloves, rubber, small, medium and large	pr.	1,838
work	pr.	617
Hand lotion	btl.	413
Safety strips, bathtub	each	270
Oil, machine, 3-in-1	can	10
Paper Items		
Rag, paper, wiping	each	7,034
Tag, Infectious material	each	12,220
regular, white	each	810
Toilet tissue	roll	41,244

TABLE 5 (continued) Materials Issued, Operations Section, DESC

ITEM	UNIT	AMT.
Paper Items (continued)		
Towel, paper, C-fold	case	2,323
paper, single	case	4
terry cloth	each	397
Polish, furniture	btl.	80
furniture, Lackawanna	gal.	3
furniture, Old English	btl.	2
furniture, Shine-up	btl.	46
Trays, plastic	each	120
Twine	ball	3
Vacuum parts, bags	each	116
filters	each	77
Waste, basket, gray	each	652
can, torpedo	each	8

July 1, 1965, through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

MEDICAL RECORD DEPARTMENT

CC-46
Serial No.

Objectives

The Medical Record Department has the major responsibility of insuring the completeness, accuracy, safekeeping, and availability of medical records and maintains the following internal controls: (1) Continuing appraisal of the medical records of patients registered at the Clinical Center, in order to maintain the standards established by the Clinical Center and accrediting agencies. (2) Maintenance of required indexes; namely, the analysis of discharged patients and the diseases and operations index with a view toward providing adequate basic data to physicians participating in medical research. (3) Maintenance, compilation, and distribution of statistical data concerning patient care for utilization by administrative, clinical, and research directors. (4) Maintenance of a systematic arrangement of medical records to insure their immediate accessibility for purposes of patient care service and medical research. (5) Maintenance of a system whereby the quantity and quality of dictated medical record reports are controlled. (6) Maintenance of an adequate control system with regard to the release of medical reports, medical information, and medical records to authorized recipients. (7) Maintenance of perpetual patients' index (Soundex) and patient registry.

Major Progress

Education and Training: Orientation of new employees of this Department, other Clinical Center departments, and the Institutes was accomplished. Lecture tours continued to be given to Public Health Service medical record librarian students and other visitors to the Clinical Center.

Key personnel attended seminars, institutes and the Annual Convention of the American Association of Medical Record Librarians on subjects relating to medical record organization, management, automatic data processing, and coding systems.

Personnel: The number of employees on duty from July 1965, through March 1966, averaged 69; of this number an average of 13 served on a part-time basis.

Departmental Activities

The Medical Record Department functions to maintain and improve the standards of service it renders to the Clinical Center in particular and to the National Institutes of Health in general. Therefore, it is necessary to

estimate, appraise and execute systems and procedures, and concurrently, to maintain an adequately trained staff to program these efforts. Revised working procedures for all Sections enable the Department to render more accurate and faster service.

The Medicolegal and Transcribing Sections are now signing, for attending physicians, form transmittal letters which accompany medical reports to be released to authorized recipients. This procedure eliminates long delays in obtaining physicians' signatures and insures the prompt release of medical information.

Administrative and statistical reports were revised to reflect the addition of the National Institute of Child Health and Human Development to the patient care program.

Medical records of Dental Services Branch patients are being transferred to that Branch. Upon completion of a patient's treatment, the medical record is marked inactive by the Dental Services Branch and returned to the Medical Record Department. Inactive records are then transferred directly to the Overflow Storage Area in Building 31. This procedure eliminates the maintenance of the split medical record system.

An Electrowriter system of communication was installed between the Files & Registration Unit and the Admissions Unit.

The information published on the A & D was re-evaluated and much of the unnecessary data was eliminated from the publication. As a result the final report is released much more quickly to authorized recipients and the need for published corrections has been minimized.

Approval was received to discontinue collecting and publishing research statistics. Effective January 1, 1966, only actual statistics are being maintained, compiled, and reported.

Recommendations were made and adopted regarding a revision for the Nursing Census Report.

Review and audit of all patient care statistics is being undertaken for the period from 6 July 1953 to the present.

A bed activation summary table was prepared for the period from 6 July 1953, to the present. This shows the number of beds activated by date, nursing unit and Institute.

Major Problems

The Department continued to be plagued by the lack of an adequate photocopy machine. The service rendered by the Clinical Center Xerox 914 and operator is unreliable and inaccurate. Reproduction of medical and administrative reports is an integral part of the work performed by this Department, and delays in reproduction service are a costly waste.

Lack of a sufficient number of personnel in all Sections created serious hazards and made it necessary to curtail some of the extra services generally rendered by a medical record department, such as selecting medical records for studies.

A backlog of uncoded medical records was, in part, created by a lack of cooperation from physicians in noting all pertinent diagnoses.

Inaccurate reporting of patient activity on the nursing census report.

Proposed Future Objectives

Encourage an awareness on the part of the Institutes of the need for an orientation of new physicians by medical record personnel.

Reduce the number of medical records to be coded and indexed by securing an outside contract.

Provision of single tabular listing as a resume of all laboratory test results performed for each patient. (Current status: awaiting authorization from Clinical Pathology Department.)

Institute a microfilm program to insure security and availability of medical records and relieve critically needed space.

Over a period of years, repeated discussions have been held with regard to adapting Medical Record Department systems to computer; these were reopened in Fiscal Year 1966, hopefully with worthwhile results in prospect.

The Transcribing Section's work production is summarized as follows:

	1. FY 1965	2. FY 1966	3. Percentage decrease
Discs received	9,527	9,294	.02
Discs transcribed	9,558	9,285	.03
Material transcribed (pages)	31,288	30,058	.04
Remaining work	27	23	.15

The Control & Processing Section's work production is summarized as follows:

Review and circulation of incomplete medical records was performed daily. There were 66 medical and statistical studies completed. Coded and indexing for the period from July 1953 through April 1962 was completed, with the exception of nine medical records which were reported as lost.

Table I: Patient Statistics, Fiscal Year 1966 *

I. Registration	
A. Patients	6,609
Inpatients	4,155
First registration	1,536
Readmission	2,619
Follow-up patients (first registration)	2,422
Walk-in	13
Emergency	19
B. Employee registration	2,017
II. Patient Care Statistics	
Total number of admissions	4,155
Total number of discharges (includes 177 deaths)	4,138
Total number of deaths	177
Percentage of deaths	4
Total number of autopsies	162
Percentage of autopsies	92
Available bed days	188,340
Total inpatient days	133,989
Average daily census	367
Percentage of bed occupancy	71
Discharged patient days	135,535
Average length of stay	33
Total number of patients admitted to the Clinical Center from 6 July 1953 through 30 June 1966	41,678
Percentage of patients admitted to the Clinical Center from Maryland, Virginia and the District of Columbia during the Fiscal Year 1966	41
Pediatric Statistics	
Number of admissions - 16 and under	914
14 and under	805
Percentage of total admissions - 16 and under	22
14 and under	19
Pediatric inpatient days - 16 and under	20,483
14 and under	17,093
Percentage of total inpatient bed days utilized by pediatrics - 16 and under	15
14 and under	13
Total number of pediatric discharges - 16 and under	912
14 and under	808
Total pediatric discharged patient days - 16 and under	20,676
14 and under	17,689
Average pediatric length of stay - 16 and under	23
14 and under	22

*These are projected figures, with the final quarter's statistics estimated.

July 1, 1965, through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

NURSING DEPARTMENT

CC-51
Serial No.

Program Goals

To provide, with the staff available, the best possible nursing care to patients.

To provide the necessary competent nursing assistance to the clinical investigators to further the planned clinical research.

To explore the total nursing program at the Clinical Center to establish an organized system of improvement in patient care, personnel morale, and general administrative practice.

To evaluate the study of newly employed staff nurses to justify either the continuation or discontinuance of the study.

To establish a high-level staff nurse position in order to provide individualized expert care for the critically ill patient and to improve the interpretation of nursing responsibility to the total nursing community at the Clinical Center.

To improve the motivation for accomplishment by planned programs for development of all categories of nursing personnel.

To carefully analyze deficiencies in communication and attempt to achieve a better system of within-department cooperation.

To review the organization of nursing unit activity with the aim of determining ways to better accomplish goals through the use of nonprofessional personnel.

To vitalize a recruitment program by using the head nurse and staff nurse group for the interpretation of nursing at the Clinical Center.

Progress Made

A review of accomplishments for FY 1966 brings certain satisfactions despite the continued shortage of all categories of nursing personnel. The demands for expert nursing care continued to increase while the available manpower became less and less. At the time of writing this report, there were more than 100 vacancies in the Nursing Department. It must be recognized that

essential nursing care was accomplished, and the exacting requirements for nursing participation in clinical research were met, but many of the considerations for patient comfort had to be reduced. Only through the cooperative attitudes of nursing personnel, overtime, and employment of part-time nurses were minimal requirements met. Because of recognition of the very fine attitude of nursing personnel, recommendations for group awards were made for various nursing units.

The inception of the Clinical Nurse Expert position in September 1965 provided a flexible avenue of assistance for nursing service problems and, with the exception of the mental health area, proved to be very beneficial. The purpose for creating this role was to provide expert nursing care for the most difficult patients by a skillful nurse assigned to the office of the chief, nursing service, and available upon request of the head nurse. Eight nurses are presently assigned to this role, and they adjust their working hours to the needs of the patients. In addition, they are available to work out any nursing problems with physicians who are developing new protocols and also to orient new personnel to individual units.

The establishment of extension courses on the campus of the National Institutes of Health by the University of Maryland was a major achievement in meeting some of the problems of nursing personnel. The appreciation for this arrangement was evident on many occasions, and we hope the cooperative arrangements can be continued.

The revision of the nurse series by the U. S. Civil Service Commission provided some improvements, grade- and salary-wise, for the staff nurse but did not accomplish all that was needed in relation to existing shortages. It is evident that a less skilled worker than the professional nurse or the practical nurse will have to be introduced into nursing service. In a research situation, accompanying hazards related to accuracy exist when an employee of limited training is utilized.

The recruitment program for the Nursing Department was revamped to provide for the use of the younger professional nurses in interpreting the Clinical Center nursing activities to graduating seniors in schools of nursing. This direct approach cannot be evaluated until the summer and fall of 1966, but, judging from the requests for information that were received, it would appear that the present system is superior to the previous one. This activity also helped improve the morale among the staff nurses. A workshop was held in August 1965 to prepare the participating nurses for their visits to schools of nursing, and the workshop will be repeated during the summer of 1966.

An effort was made to improve communications with all categories of nursing personnel, and the established policy now is to discuss items of concern directly with the group affected. This procedure, in part, combats the "grapevine," and a decided effort has been made to increase the sense of belonging by stressing the importance of the work.

Four workshops were conducted during the year, and tangible results were achieved. The subject was that of evaluation of personnel, and a day spent in analysis of this problem resulted in better evaluations by the head nurse

group and better understanding of the purpose of evaluation by personnel. Attempts are being made to bring all staff nurses into supervisory situations to a greater degree to improve the understanding of their professional role.

The study of new personnel and their adjustment to the Clinical Center continued. This study was checked for validity by Dr. Eugene Levine of the PHS Division of Nursing, and he indicated interest in the study and approval of the method. We expect to continue the study for another year.

The degree of cooperation which exists among the Chiefs, Nursing Services, deserves special mention. Were it not for their willingness to exchange personnel and their tolerance of problems, it would not have been possible to maintain the number of patients cared for over the year.

Developments and Trends

During FY 1966 a decided increase in demands for nursing service occurred, especially in the Cancer Nursing Service. Recruitment of professional nurses resulted in maintenance of an even level, but the filling of positions vacated by nonprofessional personnel was decidedly less than in previous years. For the first time since the Clinical Center opened, the number of practical nurses needed for patient care was not maintained. The number of male nursing assistants markedly decreased, and it was increasingly difficult to obtain competent clerical personnel. The following examples will indicate the complexities of problems:

1. The purchase of two so-called "Life Islands" increased the need for professional nurses by ten. It was demonstrated that a minimum of five staff nurses, plus the supporting personnel, was needed to maintain one "island" for a week. The results of working with the life island are very gratifying, and personnel met all requirements with graciousness. However, it is physically very taxing to work with the life island, and a variety of nurses must be trained in order to avoid over-burdening the original five.

2. The current National Cancer Institute program whereby patients are housed in nearby motels and treated in the Admissions and Follow-up Nursing Service area necessitated 7-day coverage in this area, and nursing coverage was extended to 10:30 p.m., 5 days per week. The degree of activity with other institutes also increased, and there is every indication that the coming year will be more demanding of nursing time than is the situation at present. If such is the case, it will be necessary to further increase the hours of coverage in the follow-up area.

3. Because of the shortage of male nursing assistants, it was necessary to establish a central messenger service composed of untrained women located in the Admissions and Follow-up Nursing Service area. The training for

messenger work must be done on-the-job. This system provided as good a substitute for the unit assignments as was possible.

4. Since a sufficient number of practical nurses to meet needs cannot be recruited, it was decided that a concentrated training program for female nursing assistants must be established. This program will encompass some of the basic nursing needs on the more routine nursing units and will release practical nurses now assigned to these units for the more demanding area.

5. A general trend exists in the direction of the 2-year programs for basic nursing education. In anticipation of an increasing number of 2-year graduates, plans are being made for a program of scheduled experience by rotation of nursing services for the first year of employment of these nurses.

6. The turnover of personnel is a continuing problem, and although the turnover rate at the Clinical Center is less than the national average, this fact provides little comfort. The extension courses on the campus have helped to retain some personnel, but Washington is an area where moving is associated with Government employment. Fortunately, a number of nurses, who are married to Armed Forces personnel, move and return periodically, which provides interrupted employment at the Clinical Center but fills a need.

7. Because of the shortage of nursing personnel it was necessary to increase the number of part-time nurses, many of whom are married and can only work during the day tour when their children are in school. The regular staff nurses, therefore, worked many more tours of evening and night duty than they did in previous years. The increase in evening and night duty is a decided morale factor which is prominent in the retention of professional nurses.

8. Because of the increased turnover rate of personnel and of the increased use of untrained personnel, the importance of inservice education is emphasized, and the need for long-range planning for nursing service needs becomes more important every year. The training offices will be increased by two persons during the coming year and all training activities for all services will be centralized.

Major Problems

1. The major problem, of course, is the shortage of personnel.

2. The problem of adequate space for patient care and in-service education is another problem that will be greater in the coming year due to an anticipated increase in training activities.

3. Parking problems are numerous and are a real morale factor with nursing service personnel. It would be helpful if a designated area could be utilized for employees who must of necessity be scheduled for odd hours.

4. The understanding of nursing service problems with all their complexities appeared to have improved over the past year. However, there still remains room for improvement in communication between medical and nursing groups, and efforts will be increased in this direction.

5. A main source of discontent among all categories of personnel is the need for adequate coverage on the evening and night tours of duty. The major problem facing the various nursing services in the coming year is the revamping of routines to attempt a change in time scheduling. It is obvious that adequate coverage on all tours must be provided for a safe environment for patients and for adequate help for clinical research. A staggered time schedule may be possible and is being contemplated.

6. Comparison of pay scales for nursing personnel with those of other departments is a frequent topic of conversation, which has become more defined in the past year. Answering probing questions is a routine part of every nursing service chief's day.

7. The need for more detailed orientation of incoming clinical associates is becoming increasingly evident. This creates a problem for the Nursing Department, because nurses are requested to do a variety of duties that are not part of Clinical Center routine, and head nurses must often be the source of information which logically belongs to the senior physician. Under normal circumstances the foregoing do not present major disruptions, but because of the shortage of personnel any extra requirements assume large proportions.

Accomplishments

1. Functioning of an intensive inservice education program directed toward a better understanding of the professional aspects of nursing at the Clinical Center.

2. Development of the senior staff nurse for better and more direct supervision of the subprofessional group of employees.

3. Arrangement with the University of Marland for extension courses in the clinical center.

4. Creation of the Clinical Nurse Expert position, resulting in improved orientation of professional nurses, superior nursing care for the very sick patient, and concentrated nursing assistance in planning protocols for new studies.

5. Institution of a revised recruitment program, which utilizes professional nurses in all categories for contact with diploma schools of nursing, colleges, and universities.

6. Continuation of a study to evaluate new professional staff nurses in order to place them in assignments which will utilize their abilities most effectively.

7. Publications:

Anderson, Louise C.: The clinical nursing expert. Nurs. Outlook. (Accepted for publication.)

Benson, Margaret: Infection control. In Infection Control. Washington, D. C., U. S. Public Health Service Manual 930-C-14, 1966. (In press)

Ellis, Geraldine L.: Communications and interdepartmental relationship. Nurs. Forum. (Accepted for publication.)

Lunceford, Janet: Nursing care of patients in a life island isolator. Amer. J. Nurs. (Accepted for publication.)

Marshall, John R., and Andersen, Lillian M.: Progress in culdoscopy. Amer. J. Nurs. (Accepted for publication.)

Seidler, Florence: Adapting nursing procedures for reverse isolation. Amer. J. Nurs. 65: 108-111, June 1965.

Subcommittee on the Control of Infectious Diseases in General Hospitals: Top, Franklin, Chairman. Benson, Margaret E., Bond, Richard G., Borman, Earle K., Brachman, Philip, Chadwick, Ward L., Chapman, John M., Feemster, Roy F., Gezon, Horace M., Himmelsbach, C. K., Jolley, Madeleine P.: Handbook on Control of Infections in Hospitals. American Public Health Association. (In press.)

Utz, John P., O'Rourke, Mary E., and Benson, Margaret E.: Systemic mycoses: medical and nursing aspects. Amer. J. Nurs. 65: 103-110, Sept. 1965.

Vernick, Joel, and Lunceford, Janet: The milieu management of the adolescent acute leukemia patient. Amer. J. Nurs. (Accepted for publication.)

TABLE 1
HOURS OF CONTINUOUS NURSING CARE
PROVIDED BY EACH NURSING SERVICE
July 1, 1965 - June 30, 1966

Nursing Service	Fiscal year 1966
	Hrs.
Allergy and Infectious Diseases Nursing Service	3,623.00
Arthritis and Metabolic Diseases Nursing Service	3,039.00
Cancer Nursing Service	16,793.50
Heart Nursing Service	23,248.75
Neurology Nursing Service	13,567.50
Psychiatric Nursing Service	2,379.00
Total	62,650.75
Number of man days	7,831.34
Number of man years	30.01

TABLE 2

NUMBER OF HOURS OF NURSING CARE GIVEN
BY PART-TIME PROFESSIONAL NURSES (WAE)
ON EACH NURSING SERVICE
July 1, 1965 - June 30, 1966

Nursing Service	Fiscal year 1966
	Hrs.
Admissions and Follow-up Nursing Service	2,306.00
Allergy and Infectious Diseases Nursing Service	794.75
Arthritis and Metabolic Diseases Nursing Service	5,393.00
Cancer Nursing Service	19,207.50
Heart Nursing Service	12,351.50
Neurology Nursing Service	6,409.00
Psychiatric Nursing Service	1,942.00
Education and Training (orientation)	1,152.00
Total	50,706.75
Number of man days	6,338.34
Number of man years	24.28

TABLE 3
NUMBER OF HOURS OF NURSING CARE GIVEN
BY PART-TIME PROFESSIONAL NURSES (WAE)
ON EACH NURSING SERVICE

Fiscal Years 1965 and 1966
(For comparison)

Nursing Service	Fiscal Year 1965	Fiscal Year 1966
	Hrs.	Hrs.
Admissions & Follow-up Nursing Service	408.00	2,306.00
Allergy & Infectious Diseases Nursing Service	1,479.00	794.75
Arthritis & Metabolic Diseases Nursing Service	729.00	5,393.00
Cancer Nursing Service	18,697.25	19,207.50
Heart Nursing Service	11,566.25	12,351.50
Neurology Nursing Service	4,853.00	6,409.00
Psychiatric Nursing Service	2,289.50	1,942.00
Education & Training (orientation)	852.00	1,152.00
Total	40,874.50	50,706.75
Number of man days	5,109.31	6,338.34
Number of man years	19.65	24.28

TABLE 4
NUMBER OF HOURS OF OVERTIME BY SERVICE
July 1, 1965 - June 30, 1966

Nursing Service	Fiscal year 1966
	Hrs.
Admissions and Follow-up Nursing Service----------	551.25
Allergy and Infectious Diseases Nursing Service---	554.50
Arthritis and Metabolic Diseases Nursing Service--	509.75
Cancer Nursing Service----------	2,156.50
Heart Nursing Service----------	420.00
Neurology Nursing Service----------	1,121,25
Psychiatric Nursing Service----------	1,382.00
Surgical Nursing Service----------	1,438.00
Total----------	8,133.25
Number of Man Days----------	1,016.66
Number of Man Years----------	3.90

TABLE 5
DAILY AVERAGE PEDIATRIC CENSUS
BY AGE GROUPS
July 1, 1965 - June 30, 1966

Age group	Fiscal year 1966
	Average
Under 16 years	55.60
Under 14 years	42.25
Under 6 years	16.85
Under 2 years	3.47
2 to 5 years	13.33
6 to 13 years	25.45
14 to 16 years	13.35

TABLE 6
DAILY AVERAGE PEDIATRIC CENSUS
ON EACH NURSING SERVICE
July 1, 1965 - June 30, 1966

Nursing Service	Fiscal year 1966
	Average
Allergy and Infectious Diseases Nursing Service	1.16
Arthritis and Metabolic Diseases Nursing Service	7.29
Cancer Nursing Service	19.64
Heart Nursing Service	8.47
Neurology Nursing Service	16.66
Psychiatric Nursing Service	2.39

TABLE 7
ACCESSIONS AND SEPARATIONS BY GRADE
July 1, 1965 - June 30, 1966

Grade	Accessions	Separations
	No.	No.
Supervisor GS-11 and above----------	0	2
Head Nurse GS-9----------	1	3
Staff Nurse GS-7----------	11	34
Staff Nurse GS-6 and GS-5----------	118	91
Secretary GS-5 and GS-4----------	7	6
Unit Clerk GS-4, -3, and -2----------	25	30
Practical Nurse GS-4 and GS-3----------	5	21
Nursing Assistant GS-2, -3, and -4 ----	51	66
Total----------	218	253

TABLE 8
STATISTICS, OPERATING ROOM
Fiscal Year 1966

Cardiac catheterizations		Diagnostic X-ray procedures	
	No.		No.
July	70	July	52
August	51	August	30
September	60	September	42
October	78	October	50
November	71	November	52
December	67	December	46
January	56	January	42
February	56	February	52
March	46	March	43
April	52	April	52
May	41	May	30
June	53	June	42
Total	701		533

NUMBER OF PATIENTS GOING TO SURGERY
Classified by Institute

National Institute of Allergy & Infectious Diseases	36
National Institute of Arthritis & Metabolic Diseases	87
National Institute of Child Health & Human Development	4
National Cancer Institute	539
National Institute of Dental Research	14
National Heart Institute	368
National Institute of Mental Health	4
National Institute of Neurological Diseases & Blindness	490
Total	1542

July 1, 1965 through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

NUTRITION DEPARTMENT

CC-61
Serial No.

Contributions to the Clinical Research Program

Because of the research mission of the Clinical Center, the role of its nutrition department is necessarily unique. The Nutrition Department assumes responsibility for providing dietary services to support a wide variety of research programs as well as full responsibility for food service to patients.

The Nutrition Department's contribution to the research program involves the control of patient dietary intake, as ordered by research investigators, and the provision to investigators of precise and complete patient intake data.

Examples of the many and varied research dietary services the Nutrition Department provided during fiscal year 1966 and the research activities for which they were provided are listed below:

	Research Activity	Dietary Service
A.	A study of mechanism in relation to catecholamine and sodium interfering with or inhibiting laboratory tests of body products (urine, feces, blood).	To determine the normal role of catecholamines in the renal control of sodium; patients having various types of disorders involving formation of edema were placed on sodium controlled diets to which beta adrenergic blockers and alpha adrenergic blockers were added. Inasmuch as weight loss interferes with the interpretation of the data, each patient's calorie intake was adjusted as necessary to maintain his weight. (Most of these patients were somewhat overweight and were difficult to convince that they must eat enough to maintain weight.) Studies were repeated many times but with different beta and alpha blockers so that patients were usually kept on the diets about 90 days.
B.	Interpreting the mode of action of new drugs.	Patient was male, 29 years old, from Turkey, and had had Mediterranean fever since age 11. Investigators tried new medications to lessen attacks of fever and pain.

Diet Order: Regular (150 to 1200 milligrams calcium)
Replace refused foods
High calorie--to increase weight

The patient checked his own menus, but many foods were added to his menu to make his diet more palatable for him, as his tastes for food were much different than American tastes. The patient gained 5.5 kilos.

C. Seeking additional knowledge of certain diseases for the purpose of developing new treatment.

The study was designed to evaluate serum cholesterol and triglyceride levels of a patient on the Joslin Clinic Diet, a 300 gram carbohydrate diet. The dietitian reviewed the diet instructions with the patient. The patient selected his own menu and three between meal nourishments. The dietitian re-edited the menus to assure high carbohydrate selections. Trays were checked back and any carbohydrate refusals were replaced.

D. Evaluating the course of a disease or the status of a patient.

A study of amyotrophic lateral sclerosis. Two constant diets were planned and alternated--60 mEq. potassium, 5 grams salt (weighed and provided in a shaker), high calorie. Study was divided into three 28-day periods. The last two periods, calories as desired were provided. Food refusals were replaced. Throughout the study, caloric, potassium, and sodium intakes were posted daily in the patient's chart.

E. Diagnosis

To study a patient for aldo steroid tumor.

Diet Order: 9 mEq Na
9 mEq Na + 100 mEq Na added
9 mEq Na + 240 mEq Na added
Normal potassium, calories to maintain weight.

Patient was sick and vomiting at times. Food refusals were collected and sent to the laboratory for analysis.

The Nutrition Department continued to support the research program through diet therapy, provided as an integral part of medical care to assist the physician in treating the patient for a specific disease, or in helping the patient adjust to a disease or post-surgical condition. Individually calculated diets were provided to meet physicians' orders and patients' food preferences. These diets were as time consuming and, in many cases, as complicated as those more directly related to research studies.

Accomplishments, Changes, and Improvements

The care and attention given to patients as individuals is one of the Nutrition Department's most important accomplishments. Very ill patients are visited before each meal by Nutrition Department personnel and are encouraged or coaxed to eat; diets are rewritten and recalculated to accommodate food preferences and whims of patients: new patients are interviewed by dietitians to assure that their food preferences are allowed in their diets; special foods are purchased and served to encourage eating; the department covets the inherent ability of a hospital food service department to boost the morale of the patient.

In fiscal year 1966, the Nutrition Department provided 372,975 patient meals; calculated and recorded 24,294 patient daily food intakes which involved weighing 145,764 trays of food, and gave individual discharge or follow-up diet instructions in 447 appointments.

Increased interest in fluid balance was evidenced by investigators again during fiscal year 1966, as fluid intakes measured by the Nutrition Department increased over the preceding year.

Twelve floor kitchens, a "life island" service kitchen, a formula room, the main kitchen, 3B (NCI) and 9th (NIAMD) metabolic units operated the full twelve months of fiscal year 1966. The 8th (NHI) metabolic kitchen operated only eleven months since it was closed during August 1965 for staff vacations.

A metabolic conference was held in October 1965 for two visiting metabolic dietitians from the Medical College of Virginia, Richmond, and Duke University Medical Center, Durham, North Carolina. Due to multiple changes in the Nutrition Department professional staff, these conferences have been discontinued until fiscal year 1967.

During fiscal year 1966, the Nutrition Department provided a three-week affiliation period for each dietetic intern enrolled in the American Dietetic Association approved internship course of the United States Public Health Service Hospital, Staten Island, New York. Two weeks of the affiliation were devoted to a learning experience in cafeteria management to meet ADA requirements. The third week, dietetics in research, as opposed to general medical care, was demonstrated. Interns came to the Clinical Center in five groups of two interns each. Three groups attended October through December and two, February through March.

Under contract, a former Patient Dietetic Service dietitian revised the Dairy, Formula, and 75% of the Dessert portions of the Nutrition Department Diet Calculation Book. The revision cost approximately $1,050.

With the consent of National Heart Institute, Miss Jeanne Tillotson, former Assistant Chief, Patient Dietetic Service, assisted on a part-time basis in organizing material for the revision process.

Major Problems Encountered

The Nutrition Department suffered an intense loss in the sudden and tragic death of the Chief of the Patient Dietetic Service on January 8, 1966.

Inasmuch as the former assistant chief had left the department only eight months before, no one on the Patient Dietetic Service staff was trained to assume the responsibility of chief. The Patient Dietetic Service was operated for about three and one-half months under the direction of the Office of the Chief, Nutrition Department.

The Nutrition Department's fluctuating and unpredictable workload continued to be one of its greatest problems. As indicated below, a wide variation occurred from month to month in the volume of highly specialized research diets provided:

Categories III* and IV** Diets Provided in Fiscal Year 1966

July	4,202	December	4,303 (-298)
August	4,188 (-14)	January	4,812 (+509)
September	4,044 (-144)	February	4,743 (-69)
October	4,591 (+547)	March	5,383 (+640)
November	4,601 (+10)		

*Category III diets are planned for individual patients by professional staff; physicians are provided information for interpreting their projects.

**Category IV diets require extensive professional time and care in planning and are integral parts of research studies.

An even wider variation occurred in the types and kinds of diets requested. Clinical Center patients in general were more gravely ill than those of previous years and required more therapeutic diets for their medical care needs as well as more dietary adjustment as part of their treatment. The volume of diet changes requested for individual patients continued at a high rate on nearly every service.

Although cost figures are available for this report only through February 1966, increases in patient ration costs were evident. Annual increases in wage schedules of prevailing rate system employees (approximately 80% of the staff), as well as generally rising costs of raw food and other supplies, were contributing factors. Limited utilization of the 3B metabolic kitchen for balance study diets (only 21% of the diets served in 3B were for balance studies) also contributed to the high cost of Clinical Center patient rations.

Patient Ration* Costs

Fiscal Year:	1962	1963	1964	1965	As of 2-28-66
Personnel	$ 8.23(80%)	$ 8.63(80%)	$ 9.76(82%)	$10.23(82%)	$10.92(82%)
Raw Food	1.65	1.70	1.79	1.82	1.89
Sup.& Other	.46	.44	.39	.45	.46
Average Cost per Ration	$10.34	$10.77	$11.94	$12.50	$13.27

*A ration is defined as the equivalent of three meals.

The dietary workload of Heart Nursing Service Units--7th and 8th floors--and the NIAMD Nursing Service Units on the 9th floor continued to be so extensive and constant that not enough kitchen floor space, office space, or personnel was available to adequately meet the demands of the research projects. A stove with an oven, a larger bun warmer, and the relocation of a toaster brought only slight relief to the situation.

The personnel cafeteria deficit, through February 28, 1966 was $30,951 and is estimated to reach approximately $46,000 by June 30, 1966. It is anticipated that the cafeteria operation will be transferred to Government Services Incorporated sometime in calendar year 1968. Construction changes were to begin before June 30, 1966. Although the change is a desirable one, the transition will bring its problems to the Nutrition Department. The staff will be reduced by 45 positions over the next 18 months; approximately 25 Food Production Service employees will be retrained for transfer to the Patient Dietetic Service in both supervisory and food service worker positions; new job routines and descriptions for all main kitchen positions will be reconstructed and reclassified; and purchasing procedures will be revamped to convert to purchasing and issuing approximately 150 items in smaller quantities.

The Nutrition Department's formal training program for nonprofessional supervisors was curtailed again in fiscal year 1966 because of a shortage of professional staff. However, a generalized program was maintained for morale purposes.

The accommodation of visitors interested in learning Nutrition Department "Life Island" techniques placed an additional burden on the department.

Procuring canned food items which meet NIH specifications was increasingly difficult. Vendors were reluctant to have their deliveries subjected to our inspection system. In addition, since many items ordered were in short supply and therefore in demand elsewhere, the companies were not especially interested in our patronage.

The Chief and Assistant Chief, Nutrition Department, devoted approximately 12 hours a week to negotiating a nonprofessional staff union contract. Anticipated goals of the department were set aside for want of time to accomplish them.

Long-term illnesses of nonprofessional supervisory staff in key positions presented a major problem in the Patient Dietetic Service.

Honors and Awards

Miss Jeanne Reid, Metabolic Dietitian, was detailed for approximately two months, beginning November 8, 1965, to the National Aeronautics and Space Agency at Cape Kennedy where she fed the two Gemini Six astronauts and their two "back-ups" metabolic balance diets for two weeks prior to "lift-off" and for a period of time after "splash down."

Miss Reid and her staff of the 9th Metabolic Kitchen were extended acknowledgment in the following publications:

Vought, R. L. and London, W. T.: Estimation of iodine excretion in nonhospitalized subjects. J. Clin. Endocr. 25: 157, Feb. 1965.

Vought, R. L. and London, W. T.: Iodine intake and excretion in healthy nonhospitalized subjects. Amer. J. Clin. Nutr. 15: 124, Sept. 1964.

Proposed Future Objectives

Two metabolic conferences per year will be held for dietitians staffing research units operating under NIH grants.

The Nutrition Department plans to initiate a combined nursing and nutrition conference for the purpose of explaining the techniques developed here for the Life Island project to nurses and dietitians of other hospitals who are initiating such projects.

Miss Merme Bonnell, who has assumed the position of Chief, Patient Dietetic Service, will study the patient area program with a view to refining some of our present procedures.

If, as anticipated, a contract is signed with the nonprofessional staff employees' union, effective June 30, 1966, the Nutrition Department will develop a program for orienting dietitians and nonprofessional supervisors to the terms of the contract.

July 1, 1965 through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

PHARMACY DEPARTMENT

CC-40
Serial No.

General

The Pharmacy Department is composed of the following services: the Pharmacy Service, responsible for general issuances of drugs and prescriptions to both inpatients and outpatients; the Central Sterile Supply Service, responsible for the processing of sterile and clean supplies used in the administration of medication or treatments and other activities; the Pharmaceutical Development Service, responsible for the registration and processing of investigational drugs and the development and assay of investigational drug dosage forms; the Radiopharmaceutical Service, responsible for the preparation and development of radioisotope drug dosage forms and their pharmaceutical safety; and the Office of the Chief, responsible for the administration of the Department as well as the provision of centralized purchasing activities for the Services.

During FY 1966, the Pharmacy Department's activities increased in scope. New areas of responsibility were added, and the normal workload increased, as it did each previous year, without an increase of personnel.

Radiopharmaceutical Service -- Increases in measureable workload for the Radiopharmaceutical Service were again noted. The number of requests for service increased by a factor of 1.4 while the number of units formulated increased by a factor of 1.5 over levels indicated for FY 1965. Of the more than 2300 requests for service in FY 1966, 13% were in the research and development category, 27% in quality control, and 60% in routine service activities. The continually rising use of this Service has been accomplished with the same number of personnel and amount of space--however, with considerable difficulty.

It has become apparent that the need for adequate control testing of radioactive materials for use in humans is increasing each year. For example, in calendar year 1965, more than 500 radiochemical dosage forms were utilized in Clinical Center patients. The manufacturers of these radiochemicals (in contrast to radiopharmaceuticals) will not--indeed, according to the Federal law, cannot--warrant these materials to be of pharmaceutical or medicinal quality. The burden of proof of pharmaceutical quality is on the user: in this case, the National Institutes of Health. There has been a five-fold increase in two years in the number of such quality control tests. With existing personnel, space and equipment, it has been possible to provide only the barest minimum of quality control on these products.

As one example of the necessity for quality control tests to be performed on radiochemicals intended for human use, tritium labeled thymidine might be cited. On August 23, 1965, the NIH contracted (Contract No. PH 43-66-379) with a radiochemical supplier for thymidine-methyl-^{3}H to be supplied with a maximum radiochemical contaminant of 1%. Over a period of four weeks, the Radiopharmaceutical Service tested 8 incoming shipments of this product. Numerous paper chromatographic determinations were made, the strips were scanned, and, in many cases, these strips were sectioned and counted in a liquid scintillation counter. In no case did the product which was supplied meet the NIH specifications. Upon the advice of the Radiopharmaceutical Service, and with the concurrence of the NCI investigator who wished to use the material, the contract was canceled and a new source of supply for the product obtained. These tests can continue to be performed by the RPS only if certain changes in personnel and facilities become available quickly. Without these services and tests, each investigator must bear the responsibility of quality suitable for clinical use.

There is another facet of radiopharmaceutical quality control beyond that involved in testing radiochemicals. Due to the sophisticated uses to which radioactive drugs are put at the NIH and the extremely fine sensitivity of the instrumentation available to our clinical research personnel, manufacturing specifications on commercially available radiopharmaceutical products in many cases are not sufficiently tight to permit their satisfactory use at NIH. Although pharmaceutical manufacturers validly warrant these products to be suitable for clinical use in routine diagnostic applications, the needs of a clinical research program frequently exceed these requirements. For example, radiopharmaceutical manufacturers market radioiodinated human serum albumin with maximum level of non-organically-bound radioactive iodine of about 3%. The needs of clinical research physicians at the NIH in certain kinetic studies using this product dictate a maximum allowable unbound iodide level of 1%. Thus, the Radiopharmaceutical Service must either establish that a commercially-procured product fulfills this requirement, or, as is frequently the case, the compound must be tagged to this specification in our own laboratory. In either case, the identical quality control tests must be employed.

In the area of product development, there is a trend in nuclear medicine toward the use of short half-life compounds, sometimes as basic radioisotopes, but more frequently as labeled, or tagged compounds. The obvious intent in the use of these radionuclides is to lower the radiation dose to the patient in the diagnostic procedures involved. However, much development work is required before clinical use of these materials is possible. Because of the very short physical half-life of the radioisotopes involved (sometimes as little as 2 hours), very little in the way of quality control testing of a final product is possible prior to the administration of the dose to a patient. In order for maximum patient safety to be maintained, numerous pilot batches must be prepared and adequately tested prior to clinical use of the material to assure that the product can be properly formulated by the Radiopharmaceutical Service for use in patients. Frequently, during the course of this pilot program, changes in procedure become necessary before a final production method can be established. With the continual increase in requests for use of these short half-life radioisotopes, investigators will need to locate a commercial source to supply the clinical dosage forms, unless additional space, personnel, and equipment are made available to the Radiopharmaceutical Service.

SELECTED EXAMPLES OF RECENT PROGRESS

^{125}I Labeled Microaggregated Human Serum Albumin

Several years ago, a clinical research project was undertaken by NIAID investigators to study and measure the phagocytic capacity of the reticuloendothelial system in patients with acute viral infections. Previous observations had indicated that in certain bacterial infections, the phagocytic capacity of the human RES is increased, while infections of viral etiology led to an inhibition of this phenomenon. The test agent first used in this project was ^{131}I Labeled Aggregated Human Serum Albumin provided for investigational purposes by a radiopharmaceutical manufacturer. However, it became apparent after the project had been carried out for some time that the short physical half-life of ^{131}I limited the study of a patient to a period of several weeks, if only one batch of the test agent were to be used.

The Radiopharmaceutical Service was consulted by the Senior NIAID Investigator and requested to develop a test agent of longer shelf life. This was accomplished by preparing a relatively large batch of diluted human serum albumin, and under carefully controlled conditions of pH and temperature, forming small protein aggregates which could then be tagged in our laboratory with ^{125}I. This radioisotope of iodine has a much longer physical half-life than ^{131}I. Thus, with identical material, studies on patients could be carried out over a period of 3 to 5 months. To date, more than 100 studies have been carried out on Clinical Center patients and 25 at the USPHS Hospital, Carville, La., using this material, which is not available from any other source.

^{99m}Tc Labeled Sulfur Colloid

At the Clinical Center, rectilinear scans of the liver to detect space-occupying lesions had been, until quite recently, of limited value, particularly in lesions involving the thicker aspects of the organ. The restrictions imposed by the radiation doses of the two commonly-used agents, colloidal ^{198}Au and Rose Bengal-^{131}I, as well as the time required to scan in multiple planes, have been circumvented by the production of ^{99m}Tc Sulfur Colloid in the Radiopharmaceutical Service. The use of this compound has resulted in much more definitive liver scanning at a radiation dose to the patient which is considerably lower than that delivered by the previously used test agents. In addition, scanning time has been considerably reduced.

A preliminary meeting was held to explore the possibility of moving the laboratory functions of this Service to the proposed new wing to be added to Building 21. In attendance at this meeting were Dr. Roger L. Black, Associate Director, CC: Dr. Jack D. Davidson, Chairman, NIH Radiation Committee; Joseph M. Brown, Jr., Radiation Safety Officer; Milton W. Skolaut, Chief, Pharmacy Department, CC; and William H. Briner, Chief, Radiopharmaceutical Service, Pharmacy Department, CC. It was the consensus that such a move would be in the best interests of the NIH, in that the variety and complexity of procedures currently undertaken by this Service demand more suitable space. The continued necessity for the Chief, Radiopharmaceutical Service, to maintain an office in the Clinical Center for professional consultation with investigators, as well as to carry out administrative responsibilities, was also agreed upon at this meeting.

Central Sterile Supply Service -- The number of items issued increased by 10%. However, this does not accurately reflect the increase in workload caused by changes in procedures. Several changed procedures greatly affected the workload; for example: (a) Wall suction units are now changed every 8 hours; previously this change occurred at monthly intervals; (b) Special procedures were instituted in which patients are at the Clinical Center on an outpatient visit, when previously they had to be hospitalized for procedures; and more patients can be scheduled for outpatient visits than can be admitted to the hospital; (c) A new tracheotomy suctioning procedure was developed, resulting in the utilization of a sterile catheter for each suction, which may increase the number used to 30 catheters per hour per patient.

In no case was the Pharmacy Department consulted concerning their ability to support the increased supply needs necessary; in personnel or budgetary funds. This type of one sided method of determining needs cannot be continued. Although the hospital capacity has not changed, the manner of doing things has. The result is increases such as 120% in the number of catheterization trays over 1963, and 117% in the number of trachea nursing care trays.

The staffing pattern with two Civil Service Supervisors assisting the Chief, Central Sterile Supply Service with the daily operation of the Service was instituted in July, 1965, and has proved to be a successful venture. However, workload and personnel problems have hampered fulfillment of these designated jobs.

The most significant accomplishments contributing to the relief of personnel problems are the use of disposable gloves and the removal of O.R. scrub materials. The use of disposable gloves should free about two persons and they will be placed in the needle area in an attempt to reduce its lagging workload. The removal of the O.R. material from the Department serves to compensate for the employee lost from that area to a supervisory position.

The addition of disposable gloves, stopcocks, connecting tubes, etc. eliminates the need to prepare them; however time is still needed to issue and order them. Attempting to maintain a systematic inventory control system has been a problem for several years.

The increased use of disposables has also created a storage problem. To store a six-week supply of gloves, about 75 cu. ft. of space is needed; of mid-stream catch trays, about 42 cu.ft. of space is needed; of gastric lavage, about 84 cu. ft. is needed; and there are others. With the limited space, the stock clerk frequently must shift supplies from one spot to the next in an attempt to find space for all of them.

The Department has resolved a few of the long-standing problems such as; why the ink will not remain permanently on the spinal manometer; finding a source for metal syringe baskets; and replacing the mixed-matched trachea tube parts with interchangeable trachea tubes. A catheter storage bin has been constructed to assure stock rotation and to speed dispensing; relative success has been achieved in affixing inflatable cuffs on nylon trachea tubes; hand-washing of large volume syringes has been eliminated by utilizing the closed utility baskets and cleaning the syringes in the ultrasonic machine; and a high vacuum, high pressure sterilizer has been checked out and accepted. Presently, we are working

with a new type closure for irrigating fluids to increase yields on production runs.

Pharmacy Service -- During the course of the year, the I.V. Additive Area was relocated from the B1 level to the pharmacy proper on the first floor. This was a marked improvement. This move consolidated Pharmacy Service personnel in one area, making possible a more efficient operation. The addition of two illuminated and highly effective laminar-flow hoods contributed much to quality and quantity of I.V. additive service rendered. The addition of an indirectly-illuminated inspection box for macroscopic examination of finished I.V. products also contributed to patient safety by insuring a safer end product. The relocating of this I.V. Area enabled the Pharmacy to better utilize available manpower.

The complexity of requests for service directed to the Pharmacy Service increased considerably during FY 1966. This is exemplified by the current trend to use extemporaneously prepared sterile solutions for irrigations. In the past, the use of clean Neomycin-Bacitracin Irrigating Solutions seemed adequate, but now clinicians specifically request sterile solutions. We are currently being asked to prepare and dispense four additional types of irrigations to be used by various routes of administration (drip or flush), and for volumes to 20 liters at times. The pharmacist is called upon to decide whether a sterile or clean solution is indicated, the type of container to use, volume per container to dispense, and method of sterilization to employ. To further complicate the picture, the pharmacist is not permitted to prepare this solution in advance, according to FDA antibiotic regulations.

No serious problems of unavailability of drugs emerged. The albumin supply, while still of critical concern, was not depleted. The medical staff was cognizant of the short supply and cooperated. The stocking of a sterile 5 Gm. vial of Neomycin Sulfate as opposed to previously stocked 0.5 Gm. vials on a competitive price basis, as well as 0.5 Gm. vials of Prednisolone reduced the effort and time required for reconstitution both for I.V. and irrigating solutions.

The Pharmacy Service experienced problems with commercially available material marketed as sterile injectables. It was discovered that many of these were unfit for human use because of contamination with particulate foreign matter. Additional time was required in the I.V. Additive Section to avoid using these potentially hazardous pharmaceuticals in large volume parenteral admixtures.

There appeared to be very good rapport between pharmacy, medical and nursing service. The I.V. Additive Section is now an accepted fact -- physicians appear to welcome not only the mixing service, but also the professional assistance offered by the pharmacists relative to compatible and incompatible mixtures. The physicians involved with the Life Island Project also seek pharmacy service consultations relative to methods of administering, the sterilizing of various drugs and containers, etc., for their patients.

A memo issued from the Office of the Chief, Pharmacy Department, simplified and clarified the status of drugs insofar as prescription requirements were concerned. Further avenues of communication were established by the creation of a Pharmacy-Nursing Committee. The furtherance of communications and increasing the

frequency of personal contacts between pharmacy, nursing, and medical staffs should be encouraged to foster a better understanding of the needs and problems of all concerned with patient care.

It was stated in the last annual report that one of the greatest problems is morale. This problem still existed in 1966 for the same reasons. The O.D. continued to be burdened with routine rather than bona fide emergency calls, despite the fact that it was well publicized during the year in a Pharmacy Bulletin that the O.D. is available for emergency service only.

Pharmaceutical Development Service -- The Pharmaceutical Development Service is one of the four services of the Pharmacy Department. This service has always been concerned with the registration, regulation and dispensing of all non-radioactive investigational drugs used in Clinical Center patient care. However, in recent years the major responsibility of PDS has shifted to the development, formulation and stability of dosage forms used by clinical investigators in phase I, II, III studies, as defined in FDA regulations.

All dosage forms formulated and developed require initial and final assaying and accelerated storage stability studies. Often times assay methods must be worked out for the (intact) drug since the drug is new and no information on the assay and stability of the drug is available. To carry out all assay methodology and accelerated storage stability studies, PDS established an Analytical & Quality Control Laboratory.

All drugs received are fingerprinted via infrared spectroscopy. Nujol mulls and/or potassium bromide wafers are prepared for the drugs and infrared spectra recorded; also all bulk powder is checked to see that the product is what the manufacturer or organic chemist claims it is.

PREPARATION OF ANALYTICAL DATA SHEETS BY THE PDS FOR THE FDA

The PDS continues to supply the Clinical Research Committee with all necessary information for confirmation of the identity and purity of investigational drugs which are sponsored by the National Institutes of Health.

Information on the degree of purity, identification, assay and stability studies are recorded on "analytical data sheets." Analytical data sheets are then forwarded by the Office of the Director, NIH, to the Federal Food and Drug Administration.

The Analytical & Quality Control Laboratory, responsible for all information submitted in the ADS, proved to be an extremely important area in PDS. With the FDA requiring more tests and controls, this Laboratory's workload increased.

The PDS completed for FY 1966, twenty analytical data sheets which were submitted to the Office of the Director. Many of these analytical data sheets were stimulated by Dr. Frances O. Kelsey's prompting the principal clinical investigator to furnish to the Investigational Drug Branch of the FDA "information concerning the methods and controls employed on your behalf by the Clinical Center Pharmacy in preparing and packaging the final dosage form of the drug as you employ it in your study."

STORAGE STABILITY SECTION

The PDS devoted considerable attention to the problem of drug stability. During FY 1966 a Storage Stability Section pursued an intensive program of stability research and testing. Since 1938, the Food and Drug Administration has required the submission of stability data in new drug applications. Stability data is also required by the Food and Drug Administration in connection with the certification of antibiotic-containing preparations. The 1962 amendments to the Federal Food, Drug & Cosmetic Act spell out the technical data to be included in the submission and also elaborate on the importance of stability testing as part of current good manufacturing practice. In an effort to obtain knowledge in this area of storage stability, the PDS puts all investigational drugs, formulated and developed, on testing for a minimum of two years.

THE RELATIONSHIP OF PDS WITH THE NCI CANCER CHEMOTHERAPY NATIONAL SERVICE CENTER

A renewed working relationship between the Drug Development Branch, CCNSC and PDS was established at the start of the 1966 fiscal year.

This cooperative enterprise of CCNSC and the Clinical Center Pharmacy was set up whereby the PDS facilities may be utilized for CCNSC work in exchange for the services of a "pharmacist position" supported by the Drug Development Branch, CCNSC.

Specifically a facility was needed (1) to accomplish routine quantitative analyses of dosage formulations and (2) for the preparation of small production lots of dosage formulations not expediently formulated by NCI's present contractors due to conflict of interest and other conditions.

From July to March 1966, twenty different projects were completed by PDS involving some 10,500 vials and bottles. All projects involved formulation, development, assay, stability studies, labeling, and packaging. Additional personnel from NCI are needed in this program if it is to continue its large output and quality of work.

COMMENTS ON PDS STATISTICAL DATA

Although there was a small reduction in the number of requests processed for FY 1966, there was an increase in the number of units developed and issued, and in the number of investigational drugs processed.

The following are a few examples of products formulated and developed by the Pharmaceutical Development Service and presently being used in research programs throughout the country:

	Institute
Cytosine Arabinoside Injection	NCI
Adenosine Diphosphate Injection	NCI
Lipexal Injection	NCI
Chlorethylnitrosourea Injection	NCI
Methyl Gag Injection	NCI
Tryptophan Mustard Injection	NCI
6-Mercaptopurine Injection	NCI

PHARMACY DEPARTMENT STATISTICAL DATA

	1962 (Fiscal)	1963 (Calendar)	1964 (Fiscal)	1965 (Fiscal)	1966 (Fiscal)
Total number of units issued	4,204,384	4,348,298	4,528,914	4,849,272	unavailable
Pharmacy Service					
Prescriptions	31,867	30,685	31,700	33,232	35,636
I.V. Additives (Bottles)				32,220	37,359
Drug vials reconstituted by I.V. Additive Service				42,276	36,731
Other items	268,057	289,844	301,994	266,671	314,272
Prepackaged items	73,121	59,013	53,199	62,825	58,604
Total	373,045	379,542	386,893	437,224	482,602
Central Sterile Supply Service					
Units issued	3,785,547	3,923,710	4,100,580	4,358,298	unavailable
Pharmaceutical Development Service					
Units developed and issued	44,113	41,796	37,536	48,423	52,763
Requests processed	1,911	1,959	2,148	1,715	1,639
Investigational drugs registered	358	702	722	595	645
New investigational drugs processed				101	134
Radiopharmaceutical Service					
Units developed and issued	1,679	3,250	3,905	5,327	8,366
Requests processed	453	938	1,130	1,583	2,309
Pharmacy Officer of the Day					
Number of requests for service	1,268	1,658	1,867	2,796	3,811
Mail-Out Prescriptions					
Number of prescriptions mailed				725	773

Publications

Skolaut, M. W., Hare, Donald B.: A system for processing cardiovascular catheters. Amer. J. Hosp. Pharm. 22: 120-121, Feb. 1965

Skolaut, M. W.: Hospital pharmacy's responsibilities to sponsors of investigational drugs. Hospital Topics: 91-95, Aug. 1965

Skolaut, M. W.: Hospital Pharmacy. In Martin, Eric (Ed): Husa's Pharmaceutical Dispensing, Easton, Pa., Mack Publishing Co., 1966.

Briner, W. H.: Quality control, sterilization and pyrogen testing of radioactive pharmaceuticals. In Andrews, G. A., Kniseley, R. M., and Wagner, H. N., Jr., (Eds.): Radioactive Pharmaceuticals, Symposium in Medicine No. 9. Washington, D.C., Division of Technical Information, USAEC, 1966, in press.

Briner, W. H.: Radiopharmaceuticals. In Sprowls, J. B., Jr. (Ed.): Prescription Pharmacy, Philadelphia, J. B. Lippincott, 1965.

Professional Activities

Milton W. Skolaut

For American Society of Hospital Pharmacists, 1965-1966:
Chairman, Committee on Nominations.
Chairman, Committee on Publications.
Chairman, Committee on 25th Anniversary Observance.
Member, Committee on Laws and Regulations.

William H. Briner

Trustee, The Society of Nuclear Medicine.
Member, Advisory Panel of the National Formulary.
Chairman, Committee on Radiopharmaceuticals of the American Society of Hospital Pharmacists.
Member, Joint Committee of the American Association of Colleges of Pharmacy and the American Society of Hospital Pharmacists.
Faculty Member, course in Basic Radiological Health for Pharmacists.

Joseph F. Gallelli, Ph.D.

President, District of Columbia Society of Hospital Pharmacists.
Member of NCI Chemotherapy Contract Review Committee for 1966-1967.

Courses Attended:

Introduction to Automatic Data Processing Systems, conducted by the Training Branch, Division of Radiological Health, Rockville, Md., Nov. 29-Dec. 3, 1965.

Seminar on Hospital Information System
Multihospital Operational Demonstration, conducted by the Lockheed Missile & Space Co., June, 1965.

Robert M. Cooper, Pharm. D.

Attended inaugural meeting of the Drug Information Association, Washington, D.C., Oct. 9, 1965.

Thomas H. Hodges

Courses attended:

Introduction to Automatic Data Processing Systems, conducted by the Training Branch, Division of Radiological Health, Rockville, Md., Nov. 29-Dec. 3, 1965.

July 1, 1965, through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

RADIATION SAFETY DEPARTMENT CC-87
Serial No.

Increase in Use of Radioactive Materials

Excluding large sealed sources, both the millicurie amount and dollar value of radioactive nuclides have increased by 14-18% over the past year. This is in keeping with the yearly growth rate maintained since 1955. Over 55,000 millicuries in 3,173 shipments were purchased at a cost of $355,276. A total of 109 orders were shipped to other licensed installations.

A single source of 9,000 curies of cobalt-60 was received in the new Theratron teletherapy unit installed in the Clinical Center during December 1965. The test and survey information on this installation was submitted to the Licensing Division of the Atomic Energy Commission, which issued a license to place the unit into full operation as planned.

During the year, 480 licensed investigators used radioactive materials in approximately 530 areas.

As FY 1966 closed, there were 115 registered radiation-producing machines with 123 x-ray tubes under Radiation Safety Department surveillance. Approximately 55 of these units were surveyed during FY 1966. In addition, 277 radioactive sealed sources and foils were under surveillance. All sealed sources were inspected for leakage at 3- to 6-month intervals in accordance with license requirements.

The waste disposal group transferred to Edgewood Arsenal 70 drums and 8 boxes of radioactive waste, having an activity of 10,297 millicuries. One shipment of 4,310 millicuries was made through the U.S. Coast Guard as in the past.

Use of Radioactive Nuclides in Patients Rises by 50%

The use of radioactive nuclides in diagnostic tests in patients increased at the phenomenal rate of more than 50%. Over 3,100 radioisotope assays, purity checks, and bioassays were performed on 26 nuclides by the department in FY 1966. The short-lived isotopes, such as technetium-99m, were the greatest contributors to the growth. A total of 47 technetium-99m generators and 25 iodine-132 generators were purchased and tested; these short-lived isotopes were supplied for use in over 200 patients.

Whole-Body Counter

More than 1300 counts for a variety of gamma emitting nuclides were made on patients during 1966. As in the past, body potassium determinations were the most frequently requested counts. In addition, extensive studies were done involving chromium-51, iodine-131, cobalt-57, iron-59, cesium-137, and sodium-22.

Considerable time and effort went into updating standards and recalibrating phantoms. One of the highlights of this effort was the participation in an intercomparison study sponsored by the AEC's Biology and Medicine Division involving all of the major whole-body counting facilities. The final results of this study involving cesium-137 and potassium-40 were not released at the time of this report, but we have every reason to feel confident in the results submitted.

AEC Inspections, Licenses

The application for renewal of the AEC-NIH Broad License was completely updated, rewritten, and submitted to the AEC in February 1965. On the basis of this application, the Broad License, 19-296-10, was renewed for a 2-year period, effective February 28, 1966.

In December 1965, the National Institutes of Health underwent a thorough 4-day AEC inspection of its radiation safety program involving four of the NIH licenses. It is gratifying to report that only three minor non-compliance items were cited on only one of these licenses; these items were promptly corrected.

Personnel and Equipment Monitoring

The film monitoring unit processed and evaluated 10,500 film badges. A total of 500 new isotope workers were placed on badge service during FY 1966. The acquisition of a 250 KVP x-ray unit, and its subsequent installation in the third basement level of Building 10, made available for the first time a suitable source of x-radiation for film calibration and instrument calibration purposes. This unit will also be used for thermo-luminescent dosimeter calibrations.

Eighty bioassays for carbon-14, hydrogen-3, and phosphorus-32 were performed on radioisotope users during the year. All body burdens thus determined were well below accepted limits. However, the number of bioassays performed was below the level of good health physics practice and efforts will be made to substantially increase the total number of bioassays performed during FY 1967. One hundred and forty-four measurements were made by means of the whole-body counting facility on employees who were working with relatively large quantities of gamma emitters. Although some weaknesses in techniques were revealed by measurable uptakes, in no case did a body burden approach the maximum permissible level. Efforts were increased to improve the sensitivity of bioassay methods and to encourage responsible investigators to utilize these personnel monitoring services to a greater extent.

A thermoluminescent radiation detection system was purchased, tested in part, and is being adapted to personnel monitoring and dosimetry problems at NIH. This system will be used to monitor units such as Panorex dental x-ray apparatus, narrow beam tomographic x-ray units, and x-ray diffraction units. Because of its wide exposure range, long dose storage time, and ease of processing, the system will give additional support to existing monitoring procedures.

A study involving the use of data processing to generate monthly reports for use by the NIH Radiation Committee and to facilitate the Department's records systems was begun during FY 1966. The first monthly Committee report generated in this manner was submitted on April 1, 1966.

Problem Area; Plan for Future

Although AEC license approvals were gratifying, we felt that the 350 laboratory areas that we surveyed during FY 1966 did not represent a high enough percentage of the 530 areas where radioactive materials were being used. Additional personnel are to be recruited during FY 1967. With these, it is hoped that a significant increase in monitoring work can be attained.

The large number of personnel being monitored by the film badge and bioassay groups makes it necessary to explore the use of data processing in these areas. This will be explored in detail in FY 1967.

Space in the Isotope Laboratory, Building 21, which has been in increasingly short supply for a number of years, is becoming acute. It is hoped that the presently needed extension to the building budgeted for FY 1968 will proceed without delay and that construction can start shortly after July 1968.

Serial No. CC-87
Radiation Safety Dept.
Clinical Center
NIH

PHS-NIH
Individual Project Report
July 1, 1965, through June 30, 1966

Project Title: Localization Studies with the Whole-Body Counter.

Previous Serial No. CC-87

Principal Investigator: Howard L. Andrews, Ph.D.

Other Investigators: Dorothy C. Peterson
E. June Myers
R. E. Murphy

Cooperating Units: Clinical Hematology Branch, NIAMD
Metabolism Laboratory, NHI

Man Years

Total 1
Professional 1
Other 0

Project Description: The localizing ability of the NIH whole-body counter is being used to determine the distribution of radioactive nuclides in the body. Particular emphasis is being placed on the spleen-liver localization of chromium tagged platelets, and upon the distribution of potassium in active muscles.

Publications:

Andrews, H. L., Peterson, D. C., Murphy, R. E., and Myers, E. J.: An organic plastic, localizing whole-body counter. J. Nucl. Med. 6: 667-678, Sept. 1965.

Kossmann, R. J., Peterson, D. C., and Andrews, H. L.: Studies in neuromuscular disease. I. Total body potassium in muscular dystrophy. Neurology 15: 855-865, Sept. 1965.

Serial No. CC-87
Radiation Safety Dept.
Clinical Center
NIH

PHS-NIH
Individual Project Report
July 1, 1965, through June 30, 1966

Project Title: Determination of Body Potassium.

Previous Serial Number: CC-87

Principal Investigator: Howard L. Andrews, Ph.D.

Other Investigators: E. June Myers
Katherine S. Davis
Raymond E. Murphy

Cooperating Units: None

Man Years:

Total 1
Professional 1
Other 0

Project Description: To utilize the whole-body counter for determining the total potassium content of normal humans as a function of age, sex, and any other pertinent parameters.

Publications: None

Serial No. CC-87
Radiation Safety Dept.
Clinical Center
NIH

PHS-NIH
Individual Project Report
July 1, 1965, through June 30, 1966

Project Title: Studies of Automatically Controlled Washing Procedures for Iodine-132 Generators.

Previous Serial Number: None

Principal Investigator: John R. Howley

Other Investigators: None

Cooperating Units: No formal cooperation although the need for the study was stimulated by clinical needs for this particular nuclide.

Man Years: Very difficult to separate the research effort from the service function.

Total 1
Professional 1/2
Other 1/2

Project Description: The development of an automatic device that enables iodine-132 generators to be automatically washed at specific times and with specific volumes, thereby enabling one to obtain a daughter product with a considerably lower contaminant level.

Honors and Awards: None

Publications:

Howley, J.R.: An automatically controlled washing procedure for I-132 generators. J. Nucl. Med. 6: 220-222, March 1965.

Serial No. CC-87
Radiation Safety Dept.
Clinical Center
NIH

PHS-NIH
Individual Project Report
July 1, 1965, through June 30, 1966

Project Title: Monitoring and Assay Procedures for Krypton-85 used in Circulatory Tests.

Previous Serial Number: None

Principal Investigators: Joseph M. Brown, Jr. and Kenneth D. Williams

Other Investigators: None

Cooperating Units: No formal cooperation although the need for the study was stimulated by clinical needs for this particular nuclide.

Man Years:

Total 1/2
Professional 1/2
Other 0

Project Description: The increased use of krypton-85 in the diagnosis of cardiac shunts required the development of improved monitoring and assay procedures for krypton-85 used in circulatory tests.

Honors and Awards: None

Publications:

Brown, J. M., Jr., Williams, K. D.: Monitoring and assay procedures for krypton-85 used in circulatory tests, in Proceedings of International Colloquium on Radioactive Polution of Gaseous Media. Paris, France, French University Press, 1965, pp. 517-521.

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

CC-39
Serial No.

REHABILITATION DEPARTMENT

Introduction

During the period July 1, 1965, through June 30, 1966, as in previous years, the Rehabilitation Department continued to carry out its basic function of patient treatment, using recognized, effective measures of physical, occupational, and speech therapy. Again, a large number and wide variety of tests and measurements were carried out for Institute physicians primarily for evaluation of functional ability and progress, but also in connection with diagnosis and determination of effectiveness of drug and other therapy.

Services provided by the Rehabilitation Department

Physical Therapy Service

1. Tests and measurements:
   - Manual muscle evaluation
   - Quantitative muscle testing
   - Joint range of motion measurements
   - Electrodiagnostic testing, including chronaxie measurements and strength-duration curves
   - Self-care evaluation (activities of daily living)
   - Vital capacity determinations
   - Progressive resistance exercise evaluation
   - Pulmonary function studies (Collins respirometer)
   - Girth, length and volumetric measurements
2. Heat, including:
   - Superficial -- hot packs, infrared, paraffin bath, whirlpool
   - Deep -- shortwave diathermy, microwave, ultrasound
   - General body heat -- Hubbard tank, Moistaire cabinet
3. Therapeutic exercise:
   - General exercise -- passive, active assistive, and resistive
   - Muscle re-education
   - Ambulation training
   - Pre- and postoperative thoracic surgery program
   - Pre-prosthetic and prosthetic training
   - Training in self-care activities
   - Breathing exercises and postural drainage instruction

4. Miscellaneous:
   General and local application of ultraviolet light
   Cervical traction
   Pelvic traction
   Application of splints and casts to maintain joint in good anatomical and functional position
   Instruction to patients and family in home care program (application of heat, exercise, use of self-care aids)
   Fitting and dispensing canes and crutches
   Prescription and procurement of corrective shoes, braces, corsets, splints, and prostheses

Occupational Therapy Service

1. Physical and functional restoration:
   Maintain or regain joint range of motion
   Increase muscle strength
   Improve coordination
   Develop work tolerance
   Train in activities of daily living
   Train in development of substitute skills (visual loss)
   Make splints and provide self-care aids
2. Testing and evaluation:
   Activities of daily living, including self-care and homemaking evaluation
   Record patient's behavior patterns for use in evaluation of patient's reactions in specific research studies
   Pre- and postoperative performance tests of stereotaxic patients
3. Psychological adjustment:
   Substitute constructive interests for the insecurity and anxiety which may develop during research studies
   Provide normal developmental learning experiences for children
   Promote relaxation and acceptance of bed rest
4. Psychiatric adjustment:
   Provide activities in relation to needs of research studies and report observations of patient's behavior
   Aid patient in making acceptable social adjustment
   Aid patient in preparing for community living and carrying home responsibilities
   Place patient in industrial therapy program as a step toward post-hospital employment
5. Prevocational exploration:
   Explore skills, interests and work habits
   Increase work tolerance
   Maintain special skills required by patient's job
   Make recommendations on patient's performance and aptitudes for use in vocational planning.

Speech Therapy Service

1. Speech production:
   Dysarthria, dysphonia, speech disorders related to neuromuscular

disease, post-laryngectomy, functional articulation problems
2. Language:
Delayed speech, aphasia (including related reading and writing disabilities)
3. Speech reception:
Hearing loss

Office of Chief

1. Evaluation of Institute patients, referred for physical medicine and rehabilitation; prescription and supervision of therapy.
2. Electromyography, including conduction velocity, and repetitive stimulation studies.

Program development and changes

Continuing Programs

1. Evaluation of the use of plaster casts and splints in the treatment of patients with rheumatoid arthritis. Review of data covering 8 years' experience, through March, 1966 reveals that a total of 1,205 casts or splints have been applied. Casting has been most effective in the correction of knee flexion contractures and the relief of pain in the arthritic hand and wrist. A total of 575 long-leg cylinder casts have been applied. Of these, 512 were for correction of knee flexion contractures, and 63 were applied for reasons other than contracture. Other types of casts and splints included: 308 functional wrist casts; 141 wrist resting splints; 100 half-shell leg splints; 33 walking casts or splints; and 48 other miscellaneous splints.

2. Pre- and postoperative evaluations of patients having stereotaxic operative procedures in neurosurgery; the evaluations consist of specific objective tests and measurements (previously determined for the testing regimen in collaboration with the neurosurgeon). An increase in postoperative evaluations has been noted, particularly for those patients now referred one or two years postoperatively.

3. Manual muscle evaluation and range of motion measurements as base-line information and for later comparisons with patients having lupus erythematosis.

4. Evaluation and treatment of patients having cystic fibrosis, including vital capacity measurements (or more detailed pulmonary function tests), postural drainage, and full explanation and instruction to parents in a home treatment program.

5. Quantitative muscle testing in the NINDB drug study on patients having ALS; testing involves use of the quantitative muscle test apparatus described in last year's report. There were 288 tests performed through March 1966 on the 25 different patients who have participated in this study for varying time intervals during the past 1 1/2 years. The study was to end in June 1966. Charts and graphs, prepared in Physical Therapy

Service and complete to date, reveal the changes in the patient's muscle strength during the various control or drug-use phases of the study. When charts and graphs are completed in June, they will be included with the clinical investigator's findings and report.

6. Pulmonary function evaluations for referred patients having cardio-pulmonary conditions and all NIAMD patients having acromegaly.

7. Pre- and postoperative evaluation and treatment of heart surgery patients. These patients are referred for orientation preoperatively and are seen again postoperatively to prevent joint range of motion losses and to help them achieve normal functional capacity.

8. "Life Island:" The Occupational Therapy Service continued to treat all National Cancer Institute patients placed in the Life Island. Since January, 1966 two Life Islands have been in operation.

9. Speech Therapy Services consist primarily of speech, language and hearing evaluations; short-term therapy for inpatients; parent counseling; and making referrals to speech clinics in the patients' hometowns.

10. Electromyography, measurement of nerve conduction velocity and repetitive nerve stimulation continued as services of the Rehabilitation Department. From July 1, 1965 through June 30, 1966 (April, May and June of 1966 are estimated), we saw 289 patients for the electromyographic study of a total of 641 muscles; 224 patients for measurement of conduction velocity of 325 nerves; and 13 patients for stimulation studies. As expected, the majority of consultation requests were received from NINDB (282). All other Institutes sent a total of 63 consultation requests (37 from NCI, 16 from NIAMD, 5 from NIH, 1 from NIMH, and 4 from EHS). It is estimated that one EMG study averages 2 1/2 hours of time on the part of one of the Rehabilitation Department's medical officers; a nerve conduction velocity study averages 1 1/2 hours; and a stimulation study averages 3 hours. Included in these estimates is the time it takes to inspect the film record of the procedure and make the necessary measurements and calculations preparatory to the report.

New Programs

1. A new special program, in which the Rehabilitation Department collaborates with an NINDB clinical investigator, is concerned with vincristine and its effect on Parkinsonism. Objective tests and measurements, carried out by Physical Therapy, Occupational Therapy, and Speech Therapy Services were developed with the investigator. Each patient was tested before drug use, and tests have been repeated at periodic intervals during this still on-going study.

2. The Occupational Therapy Service has been treating outpatients with leukemia who are in the NCI Special Ambulatory Care Program (SACP). Both children and adults are referred to the occupational therapy program, which is mainly a supportive one, to assist patients in adjusting to motel

living away from home while they receive daily treatment on NCI, and to provide an outlet for emotional stress and tension.

3. National Cancer Institute patients who are receiving radiation therapy on outpatient basis have also been referred to the Occupational Therapy Service. These adults from out-of-town live in rented rooms in private homes near NIH. The occupational therapy program for them is also a supportive one; many of them spend from four to five hours daily in the clinics of the Occupational Therapy Service.

4. Speech Therapy Service participated increasingly in research projects of NINDB. This Institute utilized the service extensively for evaluations. The pre- and postoperative evaluations of patients undergoing stereotaxic procedures continued with some changes in the testing format to allow for greater objectivity. Speech testing during electrical stimulation of the cortex, temporal lobe, and occipital lobe was also provided with a test devised by the speech therapist.

Changing Emphasis and Workloads

1. Rheumatoid arthritis

Reports of the past two years noted the marked decrease in physical therapy referrals of patients having rheumatoid arthritis. Reactivation of the study, which occurred in September, 1965, following the appointment of a clinical administrator for this program, resulted in an increased number of Institute admissions and subsequent referrals to Physical Therapy Service. While the number of referrals did not at the time of writing this report equal that of former years, it was increasing, and it is anticipated that the physical therapy program for rheumatoid arthritis (and other related metabolic diseases) may approach its former scope and significance.

2. Neurology patients

NINDB patient referrals continued to exceed those of other Institutes, a contrast from the former greater number referred from NIAMD. However, some of the NINDB patients were referred only for assessment of muscle strength on a one- or two-visit basis. Although the number of patients from other Institutes was smaller, they usually received daily treatment for extended periods.

3. Occupational Therapy outpatients

The number of outpatients referred to the Occupational Therapy Service increased greatly during FY 1966 because of 1) the beginning of the Special Ambulatory Care Program, NCI, 2) the increase in the NCI radiation therapy program for outpatients, 3) the increase in the number of NINDB patients who had had stereotaxic procedures and were being brought back for one- and two-year postoperative testing, and 4) the addition of six outpatients on a special NINDB drug study. All but number 3 have been described in the preceding paragraphs.

Staff training

For Physical Therapy personnel:

1. Periodic in-service training sessions for Physical Therapy staff.
2. Clear-Writing Course: 30 hours, Miss Vida Jo Niebuhr, January 1966.
3. Report Writing Course: 30 hours, Miss Niebuhr, March-April 1966.
4. Review of and planning for future in-service training for the Physical Therapy Service staff, with emphasis on training in the assigned role in care of disaster casualties.

By Physical Therapy personnel:

1. Two education courses for Practical Nurses by Miss Niebuhr, with emphasis on posture and body mechanics in the nursing arts, and bed positioning and transfer activities.
2. Lecture and demonstration (2 sessions) for Clinical Center Nursing personnel on posture and body mechanics, and patient bed positioning and transfer activities, by Miss Niebuhr, with assistance from Mr. Mario Salvanelli and Mr. Ronnie E. Townsend in the demonstration session. The presentations were given at the request of the Clinical Center Nursing Department for their in-service training program.
3. Gray Service volunteer orientation on the function and scope of the Physical Therapy Service and ways in which the Gray Services apply in the physical therapy program, by Miss Niebuhr.
4. Once-monthly tour through Physical Therapy Service area of newly assigned nursing personnel and orientation about the function and scope of the physical therapy program, by Mr. Salvanelli.

For Occupational Therapy personnel:

1. Weekly staff meetings of the Occupational Therapy Service personnel included presentations and discussions of medical conditions of patients treated by the Service, research programs, developments in the field of occupational therapy, and reports on institutes and conferences attended. These were presented by occupational therapists and staff members from other Clinical Center services.
2. Miss Mary Beach, Chief, Occupational Therapy Service, attended a three-week course (two hours daily) on "Clear Writing" given at NIH March 28 to April 15, 1966.
3. The D. C. Occupational Therapy Association held its October 1965 meeting in the Occupational Therapy Service. The program on "Children with Leukemia" was presented by members of the Clinical Center staff: Dr. Fredrik Lottsfeld, Clinical Associate, NCI; Mrs. June McCalla, Head Nurse, 2East; Mrs. Myrna Cobbledick, Social Worker; and Mrs. Cynthia Board, occupational therapist.

By Occupational Therapy personnel:

1. Orientation to the Occupational Therapy Service was provided periodically for new personnel of the nursing and social service staffs, for new volunteers of the Gray Service and Junior Red Cross and for many professional visitors from this country and abroad.

2. Miss Carole Lawrence, occupational therapist, participated in the filming for television of the procedures to be followed and the treatments which may be given to patients in the Life Islands. Miss Lawrence demonstrated occupational therapy for such patients.
3. Lecture-demonstration of occupational therapy for the chronically ill patient was given twice by Miss Beach as part of the Advanced Course for Practical Nurses.

Participation of personnel in professional activities off the campus

Physical Therapy Service

1. Dr. Fried and Miss Niebuhr: visit to USPHS Hospital, Baltimore, Maryland, where Dr. Fried lectured to the medical staff on principles and practices in medical rehabilitation, and where he evaluated two patients.
2. Mr. Lamont B. Smith: attendance at Annual Conference of the American Physical Therapy Association in Cleveland, Ohio.
3. Mr. Smith and Mr. Townsend: lecture at Walter Reed General Hospital by Miss Margaret Rood, UCLA, on "Neuromuscular Facilitation Technics."
4. Mr. Townsend: observation of pulmonary function procedures at Georgetown University Hospital.
5. Miss Niebuhr: attandance at a joint session of the VRA's Occupational Therapy and Physical Therapy Panels at HEW: Miss Mary Switzer, VRA Commissioner, spoke on the medical programs approved by Congress and the impact the programs would have on medical and para-medical personnel.
6. Miss Niebuhr: monthly meetings at HEW of the Therapist Category CO Board, and of the Therapist Career Development Committee.
7. Mr. Salvanelli: presentation of a paper "Use of Plaster Casts in the Treatment of Rheumatoid Arthritis" at the Tri-State Physical Therapy meeting at Georgetown University Hospital; the paper was followed by viewing of a color film. This 20-minute film was produced by NIH Medical Arts and Photography Branch, under the direction of Dr. Fried and Mr. Salvanelli, to demonstrate application of the corrective knee cast and the functional wrist splint. It will be used for teaching purposes and lecture accompaniment.
8. Mr. Townsend: attendance at the PHS Orientation Conference as NIH representative for discussion of function and scope of the Physical Therapy Service at NIH.

Occupational Therapy Service

1. Miss Eleanor Stapin, occupational therapist on 3-East Nursing Unit, NIMH, attended the American Occupational Therapy Association's "Third Regional Institute on Group Processes", held at Wilkes Barre, Pennsylvania, August 1-6, 1965. As a follow up, she also attended the Association's "Institute on Human Relations for Psychiatric Occupational Therapists", held in Boston, Massachusetts, March 6-11, 1966. Advanced work was given for those who had attended the previous institute.

2. Mrs. Cynthia Board, occupational therapist in charge of the children's program, attended the seminar for occupational therapists on "Normal Growth and Development with Deviations in the Perceptual-Motor Areas", given by the Occupational Therapy Department, Washington University, St. Louis, Missouri, March 13-18, 1966.
3. Miss Ruth Singleterry, Assistant Chief, Occupational Therapy Service, attended the American Hospital Association's "Institute on Hospitals and Rehabilitation: Behavior in Staffing Conferences", held in Washington, D. C., May 25-27, 1966.
4. In January 1966 Miss Mary Beach, Chief, Occupational Therapy Service, was appointed as the occupational therapy and Civil Service representative on the Therapist Career Development Committee, Public Health Service.
5. Miss Beach continues to serve on the Occupational Therapy Panel of the U.S. Board of Civil Service Examiners, Public Health Service.
6. Miss Beach has been appointed Chairman of the Grants Committee, Council on Finance, of the American Occupational Therapy Association.
7. Miss Beach attended the Annual Conference of the American Occupational Therapy Association in Miami Beach, Florida, October 3, 1965 to November 6, 1965.

Publications

Smith, Lamont B.: Platform Crutches with Functional Handgrip. J. Amer. Phys. Ther. Ass. 45:877-878, Sept. 1965.

Staffing and personnel changes

Office of the Chief

1. Appointments: none
2. Resignations: none
3. Current staffing pattern

Chief, Rehabilitation Department	1
Assistant Chief, Rehabilitation Department	1
Speech Therapist	1
Secretary	1
	4

Physical Therapy Service

1. Appointments: none
2. Resignations: none
3. Transfers:

Ronnie Townsend, Therapist, to BSS, DCD, Washington, D. C., effective date 4/4/66

Neal Hartman, SA Therapist, from BMS, PHS-OPC, Washington, D. C., effective 4/4/66 for a 2-year appointment

4. Current staffing pattern

Chief, Physical Therapy Service	1
Assistant Chief, Physical Therapy Service	1
Supervisory Physical Therapist	1
Staff Physical Therapists	5
Physical Therapy Assistants	2
Secretary	1
	11

Occupational Therapy Service

1. Appointments:

Mrs. Rosa M. Materson	GS-7	7/12/65
Marian Kullen, Student Assistant	GS-4	7/12/65
Mary Clare Nuss	GS-6	3/28/66

2. Resignations:

Marian Kullen	GS-4	8/28/65
Mrs. Harriet C. Zenick	GS-8	4/8/66

3. Current staffing pattern

Chief, Occupational Therapy Service	1
Assistant Chief, Occupational Therapy Service	1
Staff Occupational Therapists	7
Occupational Therapy Assistant	1
Secretary	1
Vacancy	1
	12

Space

Unmet space needs could be solved by removal of the unused therapeutic pool. A critical need still exists for space where we can place the equipment used for pulmonary function testing (now in a corner of the pool), and for quantitative muscle testing (now maintained in the "neurology rounds room" on 5East).

Table 1 : Statistical Report, by month
July 1965 thru June 1966
(Estimates for April, May and June 1966)

Month	No. of working days	No. of different patients treated*		No. of patient visits**		No. of treatments given	
		IP	OP	IP	OP	IP	OP
July 1965	21	111	37	651	142	1305	205
Aug. 1965	22	109	67	599	178	1132	344
Sep. 1965	21	127	39	723	139	1415	288
Oct. 1965	21	129	48	780	164	1501	321
Nov. 1965	20	110	36	728	156	1445	301
Dec. 1965	21	106	39	742	148	1543	279
Jan. 1966	21	95	38	690	136	1312	276
Feb. 1966	19	106	34	787	137	1627	257
Mar. 1966	23	114	45	881	115	1671	256
Apr. 1966	21	112	38	747	162	1633	343
May 1966	21	120	30	650	157	1615	295
June 1966	22	112	23	798	145	1710	210
TOTAL		1351	476	8776	1779	17909	3375
		1827		10555		21284	

*Of the total number of different patients treated, 547 were seen on one-time visits only.

**There were 2002 patient visit cancellations.

Table 2: Number of different patients treated, by months and Institutes
July 1965 thru June 1966
(Estimates for April, May and June 1966)

Month	NHI	NIAMD	NCI	NIAID	NINDB	NIDR	NIMH	NICHD	TOTAL
July 1965	40	23	27	5	53	-	-	-	148
Aug. 1965	41	30	29	4	74	-	-	-	178
Sep. 1965	38	31	30	6	61	-	-	-	166
Oct. 1965	42	40	24	9	62	-	-	-	177
Nov. 1965	34	33	23	8	48	-	-	-	146
Dec. 1965	28	31	27	8	50	-	1	-	145
Jan. 1966	14	30	27	8	54	-	-	-	133
Feb. 1966	24	35	22	6	52	-	-	1	140
Mar. 1966	27	31	28	6	65	-	1	1	159
Apr. 1966	29	32	28	11	50	-	-	-	150
May 1966	28	36	25	6	54	-	-	1	150
June 1966	20	35	25	5	50	-	-	-	135
Total	365	387	315	82	683	-	2	3	1827

Table 3: Number of new inpatient admissions, by Institute; Comparative statistics, Fiscal years 1962 - 1966*

F.Y.	NHI	NIAMD	NCI	NIAID	NINDB	NIMH	NIDR	NICHD	TOTAL
1962	250	183	125	47	197	5	-	-	807
1963	255	288	133	42	242	4	1	-	965
1964	263	352	121	39	304	11	2	-	1092
1965	275	280	314	47	355	5	-	-	1276
1966	226	300	179	38	497	3	-	2	1245

*Statistics for April, May, and June 1966 are estimated.

Table 4: Comparative statistics
Fiscal years 1962 - 1966*

Fiscal Year	No. of Different Patients Treated	No. of Patient Visits**	No. of Treatments Given***
1962	1,777	11,575 (2116)	23,968 (428)
1963	1,775	11,743 (1894)	23,679 (419)
1964	1,780	11,195 (1931)	24,155 (470)
1965	1,818	11,263 (1593)	22,857 (506)
1966	1,827	10,555 (2002)	21,284 (547)

*Based on estimated figures for April, May, and June 1966.

**Number of visit cancellations indicated in parenthesis.

***Number of one-time visits only indicated in parenthesis.

Table 5: Percentage of inpatients treated (average) exclusive of NIMH and NIDR Comparative, Fiscal years 1962 - 1966*

Fiscal Year	NHI	NIAMD	NCI	NIAID	NINDB	All Five Institutes
1962	22.8	35.0	9.9	9.8	22.1	19.0
1963	23.8	32.4	10.1	12.2	23.2	19.0
1964	21.6	30.8	7.5	7.2	33.1	18.6
1965	20.5	27.8	6.3	8.8	35.8	18.4
1966	18.7	23.8	8.1	8.5	39.7	18.9

*Statistics for April, May, and June 1966 are estimated.

Table 6: Consultant visits
Fiscal year 1966*

Rehabilitation Dept. Consultant:	5 visits for 10 patient examinations
Orthotist:	48 visits for 98 patient examinations
Shoe Fitter:	30 visits for 48 patient examinations

*Based on estimated statistics for April, May, and June 1966.

Table 7: Number of patient evaluations by the physiatrists, Dr. Fried and Dr. Cornman
Fiscal years 1962 - 1966*

F.Y.	NHI	NIAMD	NCI	NIAID	NINDB	NIMH	NIDR	NICHD	TOTAL
1962	92	344	243	58	407	2	-	-	1146
1963	65	309	192	48	368	1	-	-	983
1964	63	319	141	27	374	14	1	-	939
1965	67	230	150	33	433	4	-	-	917
1966	88	176	133	38	457	2	-	1	894

*Based on estimated statistics for April, May and June 1966.

OCCUPATIONAL THERAPY SERVICE

Table 8: Fiscal Year 1966
Patients admitted to Occupational Therapy
including Out-Patients & SACP

	NCI			NHI	NIAID	NIAMD		NICHD	NIDR	NIMH	NINDB		TOTALS		
	IP	OP	SACP	IP	IP	IP	OP	IP	IP	IP	IP	OP	IP	OP	SACP
July 1965	67	2	1	46	7	30				8	30		188	2	1
August	66	2	3	37	6	31			1	13	38	5	192	7	3
September	64	3	5	53	7	33			1	9	27	6	194	9	5
October	63	2	2	37	6	25				8	27	4	166	6	2
November	64	1	1	40	3	30				4	35	2	176	3	1
December	57	1	2	30	2	32				3	30		154	1	2
Jan. 1966	60		6	72	2	39		6*	1	13	35		228		6
February	62		5	46	7	23		5		8	26	1	177	1	5
March	65		5	63	6	32		8	1	28	34	7	237	7	5
April	60	3	4	50	7	34	1	7		8	35	4	201	8	4
May	65	2	5	45	6	32		5	1	10	33	3	197	5	5
June	58	1	4	47	4	30		6	1	9	35	2	190	3	4
Totals	751	17	43	566	63	371	1	37	6	121	385	34	2300	52	43

*Includes 4 transfers from NCI

OCCUPATIONAL THERAPY SERVICE

Table 9: Fiscal Year 1966
Number of Different Patients treated by months and Institutes, including Out-Patients & SACP

	NCI			NHI	NIAID	NIAMD		NICHD	NIDR	NIMH		NINDB		TOTALS		
	IP	OP	SACP	IP	IP	IP	OP	IP	IP	IP	OP	IP	OP	IP	OP	SACP
July 1965	127	6	1	94	20	66			2	43	1	58	1	410	8	1
August	122	4	3	86	20	78			2	50	1	65	6	423	11	3
September	112	4	7	99	17	67			3	52	1	62	12	412	17	7
October	117	5	6	97	19	53			3	47	1	61	10	397	16	6
November	124	6	7	89	19	62			2	42		66	9	404	15	7
December	117	7	7	76	16	61	1			41		64	9	375	17	7
Jan. 1966	103	7	10	100	11	61	1	6	1	40		57	10	379	18	10
February	113	6	11	100	14	65		8	1	38		59	7	399	13	11
March	121	5	13	109	20	71		12	1	63		62	13	459	18	13
April	115	6	5	95	18	68	1	10	2	55		60	4	423	11	5
May	118	5	4	92	20	70		8	1	50		62	3	421	8	4
June	120	6	3	97	17	72		10	1	48		65	2	429	8	3
Totals	1409	67	77	1134	211	794	3	54	19	569	4	741	86	4931	160	77

OCCUPATIONAL THERAPY SERVICE

Table 10: Fiscal Year 1966
Summary Report by Institutes

Institutes	Number of Different Patients Treated			Number of Patient Treatments			Number of Treatment Hours		
	IP	OP	SACP	IP	OP	SACP	IP	OP	SACP
NCI	1,409	67	77	8,348	224	215	5,558	230	231
NHI	1,134			4,912			4,724		
NIAID	211			1,070			1,028		
NIAMD	794	3		4,820	3		2,800	3	
NICHD	54			164			164		
NIDR	19			80			45		
NIMH	569	4		8,052	6		9,870	6	
NINDB	741	66		4,267	86		4,174	90	
Totals	4,931	160	77	31,713	319	215	28,363	329	231

OCCUPATIONAL THERAPY SERVICE

Table 11: Comparative Statistics
Fiscal Years 1962 - 66

Fiscal Years	Number of Different Patients Treated			Number of Patient Treatments			Number of Treatment Hours		
	IP	OP	SACP	IP	OP	SACP	IP	OP	SACP
1962	4,444	4		30,338	152		30,377	94	
1963	4,796	6		29,951	61		31,057	71	
1964	4,822	8		29,665	91		28,154	122	
1965	4,886	25		26,628	144		25,910	114	
1966	4,931	160	74	31,713	319	215	28,363	329	231

Table 12: Fiscal Year 1966
Percentage of In-Patients Treated

	NCI	NHI	NIAID	NIAMD	NICHD	NIDR	NIMH	NINDB	TOTAL
July 1965	60.4	52.8	25.9	74		66	76.7	65.9	58.5
August	57.7	52.4	23.2	89.6		66	76.9	63	58.7
September	54.4	63	20.7	74.4		75	77.5	63.2	58.5
October	57.4	56	23.5	63.8		100	64.3	57	34.7
November	58.4	56.3	34.5	68.8		100	66.6	67.3	59.7
December	58.5	57.5	19.4	77.2		0	67.2	71.9	57.9
Jan. 1966	54.2	72.5	14.3	79.2	100	25	63.5	64.9	58.9
February	54.6	64.5	17.1	72.2	61.5	25	70.3	60.8	57.7
March	57.6	61.6	22.7	70.3	57	16.6	76.8	61.4	58.4
April	58.4	63.4	20.1	72.4	60.2	66.6	73	62	59.5
May	55.3	61.3	19.8	71.3	74.3	25	70.4	64.3	55.2
June	56.1	60.8	21.2	74.2	78.4	33.3	71.2	65.2	57.6
Monthly Averages	56.9	60.1	21.8	73.9	71.9	49.8	69.6	63.9	57.0

OCCUPATIONAL THERAPY SERVICE

Table 13: Percentage of In-Patients Treated
Comparative Statistics - Fiscal Years 1962 - 66

Fiscal Year	NCI	NHI	NIAID	NIAMD	NICHD	NIDR	NIMH	NINDB	TOTAL
1962	49.9	43.5	35.5	68.4		53.1	67.2	55.5	51.5
1963	55.5	53.5	33.6	72.6		20.5	67.2	56.1	55.6
1964	58.7	57.8	25	78.6		22.6	69	62.1	58
1965	55.7	57.7	26.5	83.1		66.1	69.9	58.6	55.9
1966	56.9	60.1	21.8	73.9	71.9	49.8	69.6	63.9	57.0

SPEECH THERAPY SERVICE

The work load figures are included for July 1, 1965 - June 30, 1966. Table 14 does not include patients who were admitted before July 1965 and who were carried over beyond that period.

Table 14: Number of New Admissions

Institute	Inpatients	Outpatients
NINDB	49	22
NCI	22	1
NIAMD	1	0
Total	72	23
	(95)	

Table 15 below reflects some duplication from month to month and includes both old and new admissions as well as those carried over from the previous month.

Table 15: Work-Load Statistics

Month	No. of Patients Treated		No. of Patient Visits		No. of Treatment Hours	
	IP	OP	IP	OP	IP	OP
7/65	1	3	1	7	1	7
8/65	8	2	9	6	9	6
9/65	11	1	13	1	13	1
10/65	9	3	9	3	9	3
11/65	5	0	5	0	5	0
12/65	5	0	9	0	10	0
1/66	11	4	11	4	11	4
2/66*	0	0	0	0	0	0
3/66*	0	0	0	0	0	0
4/66**	7	2	8	3	8	3
5/66**	7	2	8	3	8	3
6/66**	7	2	8	3	8	3
	71	19	81	30	82	30
	(90)		(111)		(112)	

*Therapist on maternity leave February 1 to April 6.

**These figures are estimated figures based on the preceeding 7-month work load.

Table 16: Number of Patients by Institutes and Month (reflects some duplication from month to month)

Month	NINDB		NCI		NIAMD	
	IP	OP	IP	OP	IP	OP
7/65	1	2	0	1	0	0
8/65	6	1	1	1	1	0
9/65	8	1	3	0	0	0
10/65	5	3	4	0	0	0
11/65	3	0	2	0	0	0
12/65	3	0	2	0	0	0
1/66	7	4	4	0	0	0
2/66*	0	0	0	0	0	0
3/66*	0	0	0	0	0	0
4/66**	5	1	2	0	0	0
5/66**	5	1	2	0	0	0
6/66**	5	1	2	0	0	0
	48	14	22	2	1	0

*Therapist on maternity leave from February 1 to April 6.

**These figures are estimated figures based on the preceeding 7-month period.

Table 17: Comparative Statistics for 1962 - 1966

Year	No. of Patients Treated	No. of Patient Visits	No. of Treatment Hours
1962	212	1,373	1,035
1963	110	307	296
1964	160	361	344
1965	125	298	284
1966*	90	111	112

* Therapist on duty 16 hours a week only

July 1, 1965 through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

SOCIAL WORK DEPARTMENT

CC-21
Serial No.

MAJOR TRENDS

The year was marked by considerable change and stress. A competent staff, with an average of 12 years' work experience after receiving the Masters degree, has demonstrated versatility and flexibility. Despite the loss of a Department Chief who had been with the Clinical Center almost from its opening, the inability to recruit an Assistant Chief, several resignations and chronic staff shortages, the Department was able to maintain a superior level of social work practice and continued to meet expectations for a full range of services to the various Institutes conducting clinical investigations.

In contrast to previous years, staff members devoted a higher percentage of time to clinical practice and a reduced percentage to research. The strengthened focus on clinical activities reflected the practical necessity of meeting growing demands for more intensive services in the time available and the necessity of emphasizing our basic mission of providing social work services in support of the Institutes conducting clinical investigations. An ongoing review of our practice was initiated by selected members of the staff and some sound recommendations were made for improvement of our case recording methods. Administrative changes were also introduced to improve methods of reporting clinical activities. In the area of staff development, the long-range goal of maintaining a strong emphasis on clinical practice was furthered by establishing a series of monthly Case Presentation Meetings in which different staff members present a full discussion of casework with selected patients and/or family members.

Throughout the year Department staff members were active in sharing their accumulated practice knowledge through consultations with other programs in the Public Health Service, other hospital social work departments, community agencies, and through presentations at professional meetings. In addition to the pride which the Department takes in receiving an increasing number of requests for information about its clinical program, it is apparent that staff members derive satisfaction from the opportunity to enrich their own professional background by an exchange of professional thinking.

SOCIAL WORK SERVICES RENDERED

A brief discussion of figures on inpatient coverage, categories of patients served, and clients' principal problems is offered below to indicate the direction of service activity in the Department. In addition, Table 1 presents a summary of staff time not used in direct work with clients but which was necessary for effective participation in the total treatment program. Examples of such activity are - participation in studies, attendance at ward rounds, Department assignments and meetings, team evaluation conferences, nursing conferences, community work, and attendance at professional meetings. Projected figures for FY 1966 indicated that the staff would spend about 14,000 hours in such related activities, or about 28% of the total available time.

Inpatient Coverage

The Department computes its percentage of coverage each month for all inpatients who were in the hospital for any part of the month (See Table 2). Despite staff shortages on most of the Sections for part of the year, it was possible to maintain an average monthly coverage rate of 69% for the Department during the first nine months of the fiscal year. Ability to provide a consistently high level of coverage clearly depends on the presence of a stable staff. The Neurological Social Work Section for example had a full staff for the first nine months and its stability is reflected in an 86% coverage rate. The Mental Health Social Work Section, with only one position vacant for a period of four months, had the second best coverage rate of 81%. Arthritis and Metabolic Diseases Social Work Section, which operated at about 50% of staff strength during the year, showed the lowest coverage rate of 51%.

An average of 431 inpatients were provided with social work services each month, and in addition, 339 relatives of patients were given services each month. Expressed in a different way, for every two inpatients given service, service was also provided for one family member. The range and kinds of services provided are outlined in the narrative reports of the various Sections.

Categories of Patients Served

In terms of the relationship to the Clinical Center reporting system, services to patients fall within five principal categories: (1) Screening - exploration to determine suitability for admission to the NIH Clinical Center; (2) Preadmission - services between acceptance for admission to a project and Clinical Center outpatient or inpatient admission; (3) Inpatient - person occupying a bed in the Clinical Center; (4) Clinic - person under outpatient treatment

who has never been an inpatient; and (5) Follow-up - outpatient contact with former inpatient. A breakdown of the total number of patients served within these categories is provided below.

Service Categories	Patients Served July 1965-March 1966	% of Total
Screening	340	6.7
Preadmission	61	1.2
Inpatient	3,872	75.5
Clinic	451	8.8
Follow-up	398	7.8
	5,122	

As was true in FY 1965, the above figures show that nearly 25% of all Clinical Center patients served are in outpatient categories. These outpatient services are furnished by social workers regularly assigned to inpatient work. It appears likely that the demand for outpatient services has shown a steady increase over the years. Long-range, the Department may have to plan more definite assignments of staff to outpatient work rather than merely extending the services of inpatient staff.

Clients' Principal Problems

Table 3 is presented in the Appendix to show the main category of service problems dealt with on each of the major Institutes using social work services at the Clinical Center. Compared to FY 1965, there were no major changes in the principal service focus of each Institute. Four Institute Sections, NINDB, NIAMD, NHI and NCI, again reported the greatest demand for services focused on helping patients and relatives to make a more satisfactory adjustment to the presence of illness and disability. The NIMH, with a primary research interest in family involvement in mental illness, not surprisingly reported the major social work service as help with family relationships. Overall these figures emphasize the significant role that the Social Work Department plays in helping such a sizeable proportion of troubled clients cope with emotional attitudes and feelings that interfere in a major way with recovery from illness.

STAFFING AND RECRUITMENT

The Department experienced considerable turnover in staff during the year, with the addition of three members and the resignation of seven. Much staff time was spent in recruiting, and it appears

that it will be possible to fill remaining vacancies by August. Like all other disciplines in the health field, social work faces a serious manpower shortage, and it is becoming increasingly difficult, expecially in the winter months, to recruit superior level candidates.

Mrs. Ellen J. Ferris, former Department Chief, resigned September 1, 1965, following her marriage in June. She subsequently accepted a part-time teaching position at the Howard University School of Social Work. Mr. John F. Roatch, former Department Research Consultant, was appointed as her successor.

Miss Barbara J. Feroe, Clinical Social Worker, Cancer Social Work Section, resigned in October to accept a position with the Veterans Administration Hospital, Washington, D. C.

Mrs. Dorothy W. Oberdorfer, Clinical Social Worker, Mental Health Social Work Section, resigned in November to be married. Her position on the project "Multi-Dimensional Study on Psychosis" was filled in March by Miss Grace N. Minagawa, former Acting Chief of the Child Guidance Clinic, Department of Public Health, Washington, D. C.

Mrs. Myrna R. Cobbledick, Clinical Social Worker, Cancer Social Work Section, resigned in December to join her husband who is teaching at Skidmore College, New York. Her position on the Pediatric Service was filled in January by Mrs. Karen K. Tomar, formerly of the Social Work Department, Barnes Hospital, St. Louis, Missouri.

Mrs. Ellen S. Lee, Clinical Social Worker, Heart Social Work Section, resigned in December to assume added responsibilities at home.

Mr. Thomas G. Gallagher, Clinical Social Worker, Cancer Social Work Section, resigned in February to accept a position as Assistant Director of the Lackawana County Welfare Council, Scranton, Pennsylvania.

Mrs. Rebecca F. Griffin, Clinical Social Worker, Neurological Social Work Section, resigned in April to accept a position with the Montgomery County Schools.

STAFF DEVELOPMENT

As a part of most monthly Administrative Staff Meetings, visiting speakers presented discussions of a variety of programs in other agencies. The year's presentations included guest speakers from the Group Work Program at Howard University, Office of Economic Opportunity, Veterans Administration, Psychiatric Evaluation Project, and the Health and Welfare Council.

The Department instituted a series of monthly Case Presentation Meetings in January 1966. Different Social Work Sections take responsibility each month for one staff member to present in detail his casework treatment of a patient and/or family member. These meetings appear to have been successful in stimulating discussion of new developments in casework treatment and in improving staff members' awareness of variations in treatment approaches pursued by the different Institutes.

Effective September 1966, Mr. Lawrence D. Burke, a Commissioned Corps Officer assigned to the Cancer Social Work Section, will be detailed for a year to attend the Social Work Doctoral Program at the Catholic University of America, Washington, D. C. This training is sponsored by the Clinical Center as part of the Public Health Service Career Development Plan for Commissioned Officers.

During the year, three staff members - Mrs. Charlotte H. Wilkie, Mr. Lawrence D. Burke and Mr. A. Robert Polcari - pursued courses at the School of Social Work Doctoral Program, Catholic University of America.

The Department was represented at all national meetings of importance in the field of social work. Approximately 40% of the staff attended one or more out-of-town meetings.

Despite staff shortages, it was possible to continue providing a good level of educational supervision on a weekly basis to the three staff members with less than three years experience, and case consultation to all other members of the staff responsible for clinical care duties.

It is planned that all members of the staff will have an opportunity to attend some of the meetings of the International Conference of Social Work to be held in Washington, D. C., next September. This is the first international conference to be held in this country.

PRACTICE ORIENTED STUDIES

During the past 13 years, staff members have published more than 40 articles in social work and medical journals based on studies of practice in the Clinical Center. Although the heavy service demands of FY 1966 reduced the time available to conduct such studies, three articles were published during the fiscal year. Miss Carol F. Hoover's article "The Embroiled Family: Blueprint for Schizophrenia" was published in the September issue of Family Process. Mrs. Myrna M. Weissman's article "The Part-Time Practitioners - An Untapped Resource for Social Work" was accepted in October for publication in the National Association of Social Work-Personnel Information. Mr. John F. Roatch was co-author with

Dr. William E. Bunney, Dr. John W. Mason and Dr. David A. Hamburg of the article "A Psychoendocrine Study of Severe Psychotic Depressive Crisis" published in the American Journal of Psychiatry, July 1965.

In addition, Department members had three other articles approved by the Editorial Board, Clinical Center, and are seeking publication for them. The value of the Department's publications to the field of social work is attested by the large number of requests for reprints received from schools of social work and other agencies.

Reports of individual projects and publication lists furnish only a partial account of the Department's contribution to the research program of the various Institutes and the ongoing evaluation of its own professional practice. Additional evidence of the Department's contribution to the research effort are present in an increasing number of requests from various medical investigators for social work collaboration in studies reflecting increased recognition of the value of social data obtained in the course of day-to-day clinical work with patients and families. It is gratifying too that the acceptance of the social work program on all the Institutes has made it almost standard procedure for many medical investigators to turn to the social work staff for consultation as various research investigators begin related studies of social and emotional problems effecting a given variable.

RESEARCH CONSULTATION

The Department has been fortunate in continuing to have the services of Dr. Geraldine L. Conner, Associate Professor at Smith College School for Social Work, Northampton, Massachusetts, as visiting Research Consultant. Although it was hoped that she would make monthly visits to the staff, her teaching commitments have not permitted this. In four visits, spaced at approximately two month intervals, Dr. Conner offered consultation to eight staff members on practice-related studies which are described elsewhere under the heading of Individual Project Reports. In addition, she has been generous in permitting staff members to mail her written material for review and comment between visits. Dr. Conner's own outstanding practice background and her former position as a staff member of this Department combine to make her effective in helping staff members to conceptualize their practice experience in relation to study questions.

PATIENT WELFARE FUND

This Fund, administered by the Department Chief, continues to serve a critical need in providing a variety of services and emergency expenses for patients and relatives which cannot be paid out of appropriated Government funds.

During the first nine months of the fiscal year, $12,193.81 was spent from the Patient Welfare Fund so it appeared that expenditures would exceed $16,000.00 for the year (Table 4). The largest category of expenditures was for financial assistance to family members (Allowance to Relatives) who must be present during critical emergencies of patients and it appeared that over $11,000.00 would be spent for this over the fiscal year (Tables 4 and 5). The presence of parents is crucial for child patients, and about 60% of all Allowances to Relatives are paid to them - particularly parents of those children hospitalized for leukemia on the Cancer Institute.

In a year when this Fund had the highest expenditures in its history, it was fortunate that it has received a record contribution from both its sustaining supporter, the Recreation and Welfare Association, and donations from private individuals (Table 6). For the first time since it was founded, the Fund achieved a comfortable balance; however, it is apparent that this kind of a "cushion" is essential if the trend toward higher expenditures continues. Only the continuation of a high volume of voluntary contributions from individuals will enable the Fund to stay solvent on a long-term basis if demands for expenditures continue at the present rate.

The Fund benefited markedly from the generous response of NIH employees to the "Davis Plan" suggestion that they contribute to the Patient Welfare Fund in lieu of mailing Christmas cards to fellow employees. The total amount received from this Plan was $2,490.42. A significant fringe benefit of the helpful NIH Record publicity stories about the "Davis Plan" was that it increased awareness among employees of the necessity for a Patient Welfare Fund. Another source of increased funds is noted in two individual gifts of $1,000.00 each and two memorial funds to which more than $1,000.00 was contributed.

INSTITUTE PROGRAMS

NEUROLOGICAL SOCIAL WORK SECTION (Chief, Miss Evelyn Walker)

The intramural program of NINDB embraces in its three Branches study of more than 20 groups of chronic illnesses. These illnesses are, for the most part, of so physically disabling and of so emotionally disturbing a nature that severe disruption of social functioning is almost universal among patients and often has disasterous repercussions on families. The diseases tend to be rare and progressive. Sensory deprivation, communication problems, distortions of body, and illness-related behavioral deviations - all of which strike at or undermine personality integration and functioning - have a high incidence.

Readjustment of roles, of patterns of living, of attitudes toward illness and disability, and the resolving of problems of resources and needs for physical aides, are the prime areas in which social work intervention may be effective. The turnover rate of inpatients raises the incidence of initial contact and discharge planning. Hospitalization at the Clinical Center is often regarded as a last resort, and many may use it as a period for "agonizing reappraisal" of their situations with the social worker; a period of coming to terms with realities and of building a bridge to resources at home.

Medical Neurology Branch

This service was assigned on a full-time basis to Mrs. Rebecca F. Griffin until her resignation in April. Most of the inpatients on this service have some medical-social problems observed by the staff, but distress of many is not apparent at the time of hospitalization - perhaps because of the insidious nature of the diseases. Their relatives, however, who see the patients decline, who are making or foresee the need to make changes in environment and in roles, who are concerned about methods of caring for the patient, or who need someone with whom they can share their own emotional distress, seem most receptive to casework services. Conferences while here may lead to referral to community resources for continued emotional support, for nursing care, evaluation and instruction, for assistance in finding suitable placement.

Distinctive to this particular service is help in securing for the patient physical aids which increase his functioning ability or enable the family to care for him more easily. Wheel chairs, Hoyer lifts, suction equipment, etc., may be made available through special foundations in some cases.

Surgical Neurology Branch

This service, assigned on a full-time basis to Mr. A. Robert Polcari, admits predominantly patients with temporal lobe epilepsy, with involuntary movements (those with Parkinson's disease predominate), with severe head injuries, and with advanced brain tumors. The temporal lobe epileptic patients usually have severe disruption of normal growth experiences, behavior patterns, and may have communication problems. A social work evaluation is part of this workup and constitutes an expected contribution to the team approach. In a continuing relationship, the social worker next helps the patient adjust to hospital experiences and, after surgery (depending on outcome) plans educational, vocational, or future living arrangements which may reduce social disadvantages. Counseling around family and inter-personal relationships may be an important part in enabling young adults, particularly, to find a fuller life situation.

Parkinson patients receive a social evaluation prior to surgery. They tend to be older people near retirement age and have begun some adjustment to a less active life or a different role in the family. Difficulties in mobility and communication may exist, and occasionally some confusion is present post-surgically. Social work includes helping the patient and his family with anxieties related to rather stringent tests and surgery, and after discharge helping with any related social problems.

Service with head injury and brain tumor cases is mainly provided to families because the patients often have reduced mentality or are comatose. Characteristically it includes planning for the patient's admission to the hospital. At time of discharge, plans are made for suitable continued care at home, in an institution, or nursing home.

Ophthalmology Branch

This service is covered on a part-time basis by Mrs. Elizabeth G. Schumann. Patients range from youngsters to oldsters; from those with beginning loss of vision to those essentially blind; from those whose treatment offers hope of arresting or reversing the visual loss through those for whom great uncertainty of prognosis exists to those already handicapped with no hope of improvement. The social work services must be tailored to the particular situation and the stage in life and visual handicap of the patient.

Blindness or threat of it is greatly feared and with almost all patients anxiety is activated or increased by hospitalization and treatment procedures. Much concern exists as to how they can cope with a changing reality with the least emotional traumas to themselves and to their families. The social worker finds her visit frequently focuses on the patient's or family's attitude toward illness and disability. Through her understanding and informed interest she often helps them tolerate the immediate strain, opens new doors to better ways of adjustment, helps the patient work through grief and resentment of his loss.

Parents ask for guidance in dealing with a handicapped child and in educating the child appropriately. Children are helped through homesickness and false fears both through substitute mothering and through arrangements for parents to visit or for the child to go and come on weekends. Adults consult about vocational adjustment, financial planning, ways of learning how to handle details of everyday living, and seek constant reassurance. The social worker must be particularly adept in locating resources in the hospital and the community.

MENTAL HEALTH SOCIAL WORK SECTION (Chief, Mr. Stanley I. Hirsch)

As in past years, this program continued to emphasize family treatment in social work assignments to psychiatric research projects. On a number of projects, the social worker may function as a co-therapist. The focus of the social worker is the assessment of personalities and their functioning in the family in its social relationships and for specialized knowledge of the psycho-social factors and forces which infringe on the family, such as cultural role in the community, environmental pressures, factors of health, finances, and employment. In these family therapy sessions, the social worker helps the family understand and resolve social, emotional, and reality pressures. He helps mobilize their strengths and resources towards more constructive functioning of the family group. The social worker frequently sees couples together or individual family members to obtain history and background data, to reinforce and supplement family therapy, and to improve self-understanding.

A summary report of this nature can only provide a sketchy outline of the full-range of social work services offered by staff on the various projects, including recruitment, screening for patient selection, preadmission evaluation, outpatient treatment and long-term follow-up. Highlights and trends of the activities of individual social workers are presented to indicate the diversity and involvement of staff in all phases of the NIMH program.

Section on Twin and Sibling Study

Miss Barbara J. Spillman continued her assignment in this study of normal twins and twins either concordant or discordant for schizophrenia. Fifteen to twenty families have been hospitalized at various periods from all over the country. The social worker interviews family for social history and background data, provides casework treatment to the family members who have to remain in the area during the observation and study period, and continues casework services to the hospitalized twin when the family returns home.

In FY 1966 a follow-up on all families was undertaken. As the social worker had been the liaison person between the patient, hospital, and family, she was considered the most appropriate one to make the visits to the home and community for additional data from the family in the home environment and from meaningful collaterals in the community.

Behavioral and Endocrinological Study of Severely Depressed Patients

Mrs. Melitta J. Leff reported increased participation in family therapy, with the social worker conducting joint sessions with the psychiatrist. Whereas family treatment was once viewed on this project as an adjunct to individual treatment, especially useful in discharge planning, it is now much more a planned part of the treatment and is used in all stages of the patient's hospitalization. Mrs. Leff is also participating with Dr. Jan A. Fawcett, Adult Psychiatry Branch, NIMH, in a collaborative study of the predictability of suicidal risk, collecting data from patients who have attempted suicide or seriously contemplated it.

Project on Multi-Dimensional Study of Psychosis

Effective in March, Miss Grace N. Minagawa was assigned to this project replacing Mrs. Dorothy W. Oberdorfer who resigned in November. This study is characterized by intensive involvement of family members in the group process and maximum attention to all facets of interaction in the ward milieu. The social worker functions as family group therapist in addition to individual casework treatment which supplements group treatment. This summer, the social worker will begin follow-up interviews for approximately 125 patients who have been admitted and discharged since the project began.

Clinical Investigations

Mrs. Yolande B. Davenport was particularly active on the project "Study of Biological and Adoptive Parents of Schizophrenic Subjects." In addition to providing the usual casework services, she had a major role in the selection of adoptive and control families. The contributions of heredity and environment to the development of schizophrenia are evaluated in this study by contrasting the genetic and rearing family. As more than half of all adoptive placements in this country are made by social agencies, this study has particular relevance to the social work field. In addition to her work on this study, Mrs. Davenport is completing work on an independent study of the "Psychosocial Aspects of Adaptations to Chronic Illness."

Project on Difficulties in Growth and Adaptation in Adolescent Personality Development

Mrs. Carmen Amoros Cabrera continued to carry a major role as co-therapist in all family treatment sessions. In addition to offering consultation to a number of professional persons in psychiatry and social work about her work in family treatment, Mrs. Cabrera and her Project Director led a workshop in Family Therapy at the University of Puerto Rico in October 1965.

Family Relations in Schizophrenia Project

Miss Carol F. Hoover received considerable recognition for her paper "The Embroiled Family: A Blueprint for Schizophrenia" published in the journal Family Process. She has numerous inquiries about her work and was asked to present her study at an NIMH Adult Psychiatry Section Meeting.

Milieu Therapy in the Treatment of Psychosis

Mrs. Charlotte H. Wilkie continued to carry a major responsibility as a liaison person between patients, family members, and staff for this project. Following joint admission interviews with the Unit Administrator, family members and the patient, the social worker usually interviews family members intensively and interprets to staff this data in the context of an understanding of the patient gained from ongoing observations in the ward milieu.

HEART SOCIAL WORK SECTION (Chief, Miss Barbara A. Murphy)

The Heart Institute under the aegis of five Clinical/Research Branches has continued to admit more than a thousand patients a year, as well as conducting an extensive outpatient program in the Admissions and Follow-up Department. Patients include all age groups and represent a cross-section of socioeconomic, educational, religious, social, and geographic backgrounds, including a significant number of foreign-born and non-English speaking persons. Included in the Institute's patient population are prisoner patients and normal volunteers.

The staff of the Heart Social Work Section are assigned clinical social work responsibility within the five Clinical/Research Branches. In FY 1966 these included: Cardiology Branch - Miss Karen R. Schulman; Surgery Branch - Miss Roberta E. Peay; Experimental Therapeutics Branch - Mrs. Laura G. Lunn; Clinical Endocrinology Branch - Mrs. Laura G. Lunn; and Lipid Metabolism Section - Miss Barbara A. Murphy.

Cardiology Branch

This is a 26-bed unit admitting an average of 8 to 10 patients a week for evaluation of congenital and acquired heart disease. The usual length of stay for evaluation is generally a week to 10 days, although this time may be prolonged for patients requiring special preparation - for example, referral for cardiac catheterization. The limitation of time places considerable demand upon the social worker for quick psychosocial evaluation of the patient and family formalization of short-term treatment goals. Even the best adjusted manifest considerable anxiety in relation to stress and crisis situations. Maladaptive coping patterns such as magical

thinking, excessive fantasy, regression, somatization, withdrawal, and denial are dealt with during hospitalization through helping the patient to correct his cognitive perceptions to discharge tension, and gain mastery of affect through awareness of his feelings and appropriate verbalization.

Surgery Branch

This is the other swift-moving service where the social worker is involved in helping patients and families cope with life-threatening stress and crisis. On both Cardiology and Surgery there are a significant number of children (over a six-month period, 100 patients from a few months to 16 years of age, and 27 from 16 to 21 years of age) and on Surgery usually at least one family member is here, if not more. The social worker must be aware of the threat of cardiovascular surgery to the patient's and family's established adaptive patterns, where anticipatory fears of death, pain, body change, and loss are inevitable, and the surgical experience itself produces loss of control, regression pain, and in some cases postsurgical delirium. The social worker is frequently called upon to help with grief reactions and it has been found that one often must deal with feelings of utter helplessness, guilt, anger, and hopelessness in order to alleviate the family's pain and to prevent immobilization.

Experimental Therapeutics Branch

This is an 18-bed unit which generally admits four main diagnostic groups; i.e., patients with scleroderma, malignant carcinoid syndrome, essential hypertension, and pheochromocytoma. Here, the universal aspects of illness are worked with, such as a decrease in self-esteem, varying degrees of depression, heightened dependency needs, fear of loss, and anxiety. Palliative treatment of scleroderma may require amputation; disability and disfigurement may become extreme, and there is no known cure. These patients are most concerned about the loss of their intact body and body image, fear of loss of acceptance by family members and others, changes in activities because of the limitations of the disease, and the ultimate course of this illness. The patient with malignant carcinoid syndrome, depending on the stage of his illness, is basically concerned with fear of abandonment, loss, and separation.

Surgery for the pheochromocytoma patient fortunate enough to have a benign tumor effects a complete and dramatic cure, and frequently the patient returns to an improved level of social functioning. Prior to surgery, the patient is encouraged to express his anxiety, fears, and fantasies in relation to the operation, as well as the fear of possible malignancy, in order to provide the opportunity to reduce the distortion and to give recognition to the importance of his subjective feelings. The essential hypertensive patients

are difficult to reach in a problem solving relationship as they take considerable time to involve themselves and anxiety is so frequently somatized. The medication for the control of hypertension acts as a depressant, making the patients feel lethargic, dull and apathetic. Casework emphasizes help with reality problems, encouragement of independence, more creative use of aggression, and helping these individuals to know and to experience both positive and negative feelings.

Clinical Endocrinology Branch

This is a complex 18-bed unit and represents very clearly the two kinds of research patients; i.e., the person whose basic motivation for hospitalization is for diagnosis and treatment of an illness; and the other, the "true" research patient who returns for continued study, although the disease itself is well controlled. The latter group is particularly interesting as the behavior of these patients is apt to be more manipulative, and they are inclined to try to set up bargaining relationships with the physicians and staff. On the other hand, their role as research patients seems to enhance their feelings of worth and importance. Over the years, this service has been particularly interested in the study of the Edema patients. These women patients are preoccupied with aging, being unattractive, and tend to use maladaptive defense patterns of denial and withdrawal. Casework is focused on helping patients to function in a less constricted way.

Lipid Metabolism Section

In general, diet studies and weight reduction are in order for a large number of the patients who remain for relatively long periods of time. These patients have fears related to "heart attack" and early death (many have such family histories). Because of the interest in the familial aspects, there is an opportunity on this section to work with various family members who are also admitted for study. This aspect is being stressed, particularly within the hyperproteinemia group, and has many implications for increased understanding of how an "American family" manages a recommended regimen for the family diet as a preventive measure towards the development and control of heart disease in the future.

ALLERGY AND INFECTIOUS DISEASES SOCIAL WORK SECTION
(Chief, Mrs. Lucia N. Mason)

Mr. David W. Callagy had responsibility for this program after September 1965, when the previous social worker, Mr. Thomas G. Gallagher, was transferred to the Cancer Social Work Section.

Allergy and Infectious Diseases Social Work Section has three separate services on one nursing unit, each with its own medical chief and clinical associates: Fungal Disease Study; The Fever of

Unknown Origin and Familial Mediterranean Fever Study; and the Infectious Disease Study which includes the prisoner group and Leprosy study. For example, the Familial Mediterranean Fever patients are hospitalized for 2-3 months; the chronic Fungal patient is here over a year; and the patient seen for follow-up remains less than a week. Less time is spent with the newly admitted Familial Mediterranean Fever and Fever of Unknown Origin patient in the early stages of his hospitalization, but intensive services are given when typical crisis periods arise. Long-term chronic patients needing steady supportive services account for half of the time invested.

Fungal disease patients, the largest group admitted to the NIAID, present a variety of special problems in adjusting to the hospitalization experience which require the social worker to be skillful in "reaching out" to insure that their needs are met. They are typically a middle-aged, culturally unsophisticated people of rural background, or individuals whose intellectual functioning is impaired by illness. Consequently, they have a difficult time understanding hospital routine and medical procedures. They often isolate themselves, make few requests and do not become involved with other patients or hospital patient activities. A specific social work responsibility has been to increase staff awareness of the patient's possible confusion and the need to improve patient-staff communication. Long-range, it appears that Fungal patients would benefit from group treatment focused on: (1) helping them ventilate feelings about long-term illness; and (2) insuring more systematic discussion of attitudes toward hospitalization and staff.

Major problems with the Mexican leper patients have been depression, loneliness and complicated medical situations. Activities outside NIH, such as tutoring service in the community, were unavailable in FY 1966. However, this lack was partially compensated for by special services from the Nursing and Patient Activities Departments, Mrs. Carmen Amoros-Cabrera, of the Mental Health Social Work Section, a Spanish-speaking social worker, continued weekly casework interviews with the Leprosy patients and is occasionally requested by the medical staff to assist when acute management problems arise with these patients.

ARTHRITIS AND METABOLIC DISEASES SOCIAL WORK SECTION
(Chief, Mrs. Lucia N. Mason)

Arthritis and Rheumatism Service

Patients with several different collagen disorders are studies on this Service. Rheumatoid Arthritis patients typically fall into two groups: (1) the compulsive, perfectionistic over-doers who struggle furiously to maintain their level of functioning; and

(2) the patients who use illness for gratification of dependency needs. With the first group, the social work task is to reduce the overactivity and help the patient accept necessary limitations of his illness. With the second group, work tends to focus on helping the patient separate from the hospital and planning for the post-discharge period.

Patients with Disseminated Lupus Erythematosus, in whom effects of severe organic illness, medication and premorbid personality problems often combine to produce severe depression, emotional lability and impaired ability to test reality or to form interpersonal relationships, especially need casework help in maintaining a sense of identity in the face of their symptoms.

Endocrinology Service

Mrs. Myrna M. Weissman reported much demand for social work with patients with various sexual abnormalities. The social worker's involvement with patients was usually of two kinds: (1) obtaining historical and social information to determine personality, genetic background and/or social functioning resulting from the disorder; and (2) dealing with social and emotional problems resulting from the disorder - for example, difficulty in feeling oneself truly a man or a woman, fears and misconceptions about the marital role, the emotional unbalance produced by successful treatment in marriages which were contracted when the ill partner's libido was at low ebb.

Metabolism Service

With its focus on the study of calcium metabolism, this Service admits chiefly middle-aged female patients or normal volunteers. Characteristically their problems center around the stress of living in rigidly controlled metabolic study situations for months at a time. Useful social work techniques in improving patient's toleration for the study and reducing the likelihood of the patient's usually unconscious sabotage of the study are: to enhance the patient's identification with the research goals; to allow ample opportunity for ventilation; and to minimize, by support to patient and interpretation to staff, the occurence of the disruptive interpersonal situations which are so prone to develop when patients remain for long periods on the restrictive and infantilizing metabolic regimen.

Gout Service

This Service studies the classical tophaceous gout as well as cystinosis, an inborn error in cystine metabolism, which causes severe progressive renal damage and usually results in death before the child reaches puberty. Social work assistance to the gout

patient, who can be helped dramatically by medical treatment lasting at least six months, is usually concentrated on the resolution of various home and environmental problems so that he can remain in treatment. With Cystinotic patients, the chief social work charge has been the development of adequate resources for medical care after discharge. Patients on the experimental diet need extremely close and knowledgeable medical supervision, parents may need a great deal of help in management. Thus, in one case where the financial situation and the inaccessibility of medical supervision precluded adequate management, the worker was asked to help the entire family relocate in a community close to NIH.

Gastroenterology Service

A number of diseases which produce malabsorption are under study on this Service. Studies and treatment are time-consuming; a 6-months hospitalization is not unusual. Common disabilities are blindness, severe CNS involvement, chronic diarrhea, problems with infection, weight loss, lassitude, depression, transient psychotic phenomena and mental retardation. Often patients must be seen daily to deal with depression and the management difficulties their demands on the hospital environment create. Retarded patients further need special school arrangements, recreational arrangements, and detailed discharge planning. Vocational problems are commonplace for many patients, as are the painful struggles to deal with a progressively severe disability and eventual early death.

Hematology

The study of blood disorders such as Hemophilia, Idiopathic Thrombocytopenic Purpura, Autoerythrocyte Disorder, etc., are the work of this Service. The Hemophiliac patient frequently comes with a history of vocational problems; the worker can be helpful by making a referral to or reinvolving Vocational Rehabilitation facilities. Pain and the consequent dependence on analgesics frequently create acute difficulties in hospital management. Social work intervention is especially concentrated on using the total hospital environment - people, program, resources - as a demonstration to patients that they can indeed function more usefully.

Pediatric Metabolism Service

The primary emphasis of this Unit is on the study of Cystic Fibrosis. Certain other "failure-to-thrive" disorders are studied and the CF-like syndromes. The medical team on this Service is greatly concerned with psychosocial aspects of this illness for both patient and family and unusually vigorous attention is given to problems of living with the disease. There is extensive use of psychiatric consultation. The social worker is asked to provide much direct casework service to parents and participates with the physician in

many joint interviews with patient and family. It is apparent that the late adolescent patient with severe chronic illness faces a real crisis in moving into adult life and needs much social work help in securing vocational resources, in dealing with feelings about maintaining a complicated treatment regimen away from home, and in contemplating the effect of the illness on marriage and parenthood.

CANCER SOCIAL WORK SECTION (Chief, Mrs. Kathryn K. Himmelsbach)

The Cancer Social Work Section experienced a particularly stressful year. In addition to continuing to furnish social work services for an Institute which admits over one hundred patients per month, the Section assumed responsibility for a special group of outpatients and relatives admitted to the Cancer Institute's newly created Special Ambulatory Care Program. Additional pressures for service were generated by a rapidly growing outpatient load and the request in January for this Section to furnish social work services to a new group of patients being admitted to a Cancer Nursing Unit by the Institute of Child Health and Human Development. Three staff resignations necessitated a considerable investment of time in recruitment and orientation of personnel. One position remains unfilled. This Section reports that its work has been markedly enhanced by the opportunity to have regular psychiatric consultation on cases from Dr. Marion Richmond.

Endocrinology Branch

In January 1966, 12-East was divided statistically and 13 beds were assigned to patients of the Institute of Child Health and Human Development, Endocrine and Metabolism Branch. Thirteen beds remain with NCI, Endocrine Branch. Mrs. Belvin R. Blandford is responsible for both Services.

The NCI patients (the majority have adrenal carcinoma, pituitary carcinoma or gestational trophoblastic disease) are usually hospitalized for a number of months. During FY 1966, two "old timers," young women with metatastic gestational trophoblastic disease (one hospitalized 2½ years and the other 2 years) died, saddening the staff. This had repercussions for all the patients but especially for those of like diagnoses.

The NICHD patients are usually not acutely ill physically, but all suffer emotionally from being "different." They radiate great anxiety about themselves and put tremendous faith in what will be accomplished when they are in the Clinical Center. For those who cannot be treated, the disappointment is often severe and they require frequent interviews for emotional support and clarification of treatment procedures.

Solid Tumor and Chemotherapy Branch

Following the resignation of Mr. Thomas G. Gallagher in February 1966, Mrs. Kathryn K. Himmelsbach, Chief, continued to take responsibility for 19 beds of this Service. This section continued its study of patients with Hodgkin's Disease, utilizing combined chemotherapy and radiation, as well as chronic myelogenous leukemia, in addition to its effort to extend knowledge in other areas of solid tumor. Common problems include need for help in dealing with the depressive reaction of patients, loss of status and impending death. Due to the long-term hospitalization of most of those patients, intensive casework is possible both for them and with their families in those situation.

Outpatient demands of this Service expanded greatly, as many now undergo treatment while living in local motels as part of the Cancer Institute's Special Ambulatory Care Program. Common problems for this SACP group are loneliness, under utilization of Clinical Center facilities, poor motivation to return to the hospital in the evening for diversional activities and the voiced and unvoiced concern on the part of some patients as to why they are not hospitalized.

Dermatology Branch

This 7-bed Service continued to be covered by Mrs. Katherine K. Himmelsbach, Chief. Emphasis was maintained on research in mycosis fungoides, a debilitating, disfiguring lymphoma which originates in the skin and infiltrates, resulting in death. Long-term, intensive work with these patients requires close team relationships with the Nursing Staff. All patients are routinely seen by Dr. Marion Richmond, Psychiatric Consultant, in order to insure a comprehensive understanding of the patient as well as to assist staff in verbalizing some of their own anxieties arising out of constant contact with these distressed patients.

Surgery Service

This Service, covered by Miss Kathleen T. Lundy, continued to be an extremely active one, because patients have an average 28-day hospital stay, with emphasis largely on those patients whose conditions are amenable to cure through surgery. In addition, there is an active outpatient clinic. Because the trend on this Service is to accept a high incidence of cases where there is considerable probability of effecting a cure, tremendous emphasis is placed on the rehabilitation aspect, involving continued speech therapy, physiotherapy, cosmetic considerations, academic training, job retraining, and proper job placement for patients following discharge from the hospital. A high percentage of surgery patients are either from economically impoverished backgrounds or have

become medically indigent due to their inability to continue work, and their mounting medical bills prior to admission here.

Because of the nature of their illness, the majority of these patients cannot leave the unit. Increased emphasis, therefore, was placed during the year on bringing diversional activities to them, including recreation, library and occupational therapy. Continued efforts are being made on the part of the social worker to enlist ancillary help, such as that of the Red Cross Gray Ladies, in further diverting patients who are either in a state of anxiety awaiting surgery or recovering.

Pediatric Service

This Service was covered by Mrs. Karen K. Tomar following the resignation of Mrs. Myrna R. Cobbledick in January. It is a highly stressful service devoted chiefly to the treatment of childhood Leukemia. Intensive casework with parents continued as well as weekly meetings with the parents. This Parents Group, led by the pediatrician and social worker, continues to be of great assistance to relatives in clarifying medical questions and in draining a good deal of the anxiety precipitated by the diagnosis of Leukemia and the hospitalization of their children. Efforts are being made to reestablish more diversional activities for the mothers of patients through utilization of the local YWCA representative and other community organizations.

Metabolic Service

Miss Kathleen T. Lundy reported that this 11-bed unit continues to present special problems of patients faced with the anxiety of enforced isolation and monotony of food in addition to their basic anxieties regarding the disease and the impact of the hospitalization. Many of the diseases studied on this Service are of a non-malignant nature. Particular importance is attached to the social worker's history material for clues as to the possible inter-relationships which may exist between ther personality factors of the patient and the illness.

Radiation, Immunology and Hematology Service

One of the major changes in program was the addition of a second Life Island Unit in January 1966. The social worker, Mr. Lawrence D. Burke, is particularly active in the evaluation of Life Island patients for their ability to tolerate the stress of living in a "germ free" but isolated existence. Patients require careful preparation for the emotional impact of this experience and there is interest in the possibility that Mr. Lawrence D. Burke may publish an article on his experience in working with this unique patient group.

PROBLEM AREAS

1. The Department suffered a severe loss in experience administrative and staff education leadership with the resignation of its Research Consultant in September 1964; the Assistant Chief in October 1964; the only Group Worker in March 1965; and the Chief in August 1965. In addition, six experienced social workers (three to assume family responsibilities and three to accept advanced positions) resigned within seven months. As FY 1966 closed, only the Chief's position was filled (by promotion), and two staff members were recruited. With the exception of the Assistant Chief's position, prospects appeared good for filling all vacancies in the forthcoming summer months; however, the year's staff shortage unquestionably placed much stress on staff as they continued to cover needed services.

2. There is a growing need for certain staff members to acquire more specialized knowledge of group treatment methods. Special groups of patients who would benefit especially from such a treatment approach include children, adolescents, parents of children with life-threatening illnesses, patients and their parents living in local motels under the Special Ambulatory Care Program of the National Cancer Institute, patients facing major vocational readjustment problems and patients who tend to view themselves as isolated from the larger society.

3. Evaluation of the Department's method of providing outpatient coverage is indicated. The Clinical Center services to outpatients have multiplied in recent years; however, our Department has continued to furnish coverage almost entirely on the basis of special referrals from physicians to social workers having a full-time assignment to inpatient work. Generally, this has meant that physician's tend to make referral to social work chiefly for crisis situations. This method does not usually permit the social worker to become active in much of the early preventive work which is possible through prompt identification of social and emotional problems. Long-range, as staffing permits, the assignment of one or more social workers to full-time outpatient work seems indicated.

4. As a result of ongoing review of the Department's mission in Clinical Center and some limitations on the amount of emphasis which can be given to research activities, an administrative decision was made in FY 1966 not to continue the position of Research Consultant with the Department on a full-time basis. It is hoped that it will be possible to recruit an Assistant Chief who can continue to offer appropriate consultation to staff. So far, we have not been successful in attracting such a person with the unique combination of training in research, experience in staff development, administrative ability and a solid practice background.

5. Unlike most hospitals with a large social work department, our staff does not engage in training activities, such as teaching in a medical school or supervising students from schools of social work. The lack of designated assignments to participate in a training program severely limits the Department's ability to provide staff members with experience in education, supervision and administration. All these experiences can contribute markedly to a social worker's professional growth and help a department to retain personnel.

FUTURE OBJECTIVES

1. Improvement of our in-service staff education program, which is curtailed due to losses of experienced administrative and staff educational leadership. Because of the wide range in experience present in the staff, it is essential that training be focused on the needs of selected groups of staff members rather than offering the same fare for all.

2. Continued evaluation of the Department's statistical system, with special attention to the need for identifying more satisfactory "indexes" to account for our services. In a hospital setting where interview contacts may vary in length from ten minutes to two hours, it is evident that the traditional practice of reporting a given number of interviews may have very little meaning as a measure of either magnitude or intensity of services.

3. The recruitment of an experienced group worker who can offer consultation to casework staff in group treatment would assist in identifying areas of special need for group work. Such a worker would carry responsibility for special group projects of his own on different Institutes or across Institute lines. For example, hospitalized children and adolescents would benefit markedly from group treatment.

4. Recruitment of a full staff adequate to provide total coverage in depth for all patients.

5. Increased coverage of the growing Outpatient Department, preferably through an increase in the number of staff members in order to provide staff for one or more full-time assignments to this area. There is also a need for a social worker to be given at least part-time responsibility for coverage of the patients and families living in the community under the Special Ambulatory Care Program (SACP).

6. Increased flexibility of staff assignments to permit selected staff members some opportunity to carry selected cases outside their particular service.

7. Recruitment of an Assistant Chief with training in research sufficient to enable him to offer necessary research consultation to staff in practice-related studies.

8. Assignment of a full-time social worker to patients admitted to the Clinical Center by the Institute of Child Health and Human Development. This unit is presently covered by a staff member from the Cancer Social Work Section.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Peer Group Phenomena in Hospital Adaptation

Previous Serial Number: None

Principal Investigator: Belvin R. Blandford

Other Investigators: Dr. Geraldine L. Conner
Research Consultant
Dr. Marion Richmond
Psychiatric Consultant

Cooperating Units: None

Man Years

Total	:	290 Hours
Professional	:	250 Hours
Others	:	40 Hours

Project Description: Objectives - The purpose of this study was to describe a natural formed peer group of hospitalized patients, how it functioned, its strengths and weaknesses, and its utilization by the staff.

Method - The records of the patients with gestational trophoblastic disease who were treated by the Endocrine Branch, NCI, from November 1, 1961 through April 30, 1965, were reviewed. All of these patients had been known to the investigator.

Patient Material - One hundred patients with gestational trophoblastic diseased housed on a NCI Unit at the Clinical Center, NIH, Bethesda, Maryland, were considered.

Major Findings - This was a heterogeneous group of women who were aggressive in perpetuating a natural formed peer group they found mutually supportive. However, there were patients who were excluded by this peer group. It sometimes encouraged the acting out of regressive, infantile behavior, and there were areas of concern that the group did not discuss together. Limitations of the group had to be recognized in order to know when its action required staff supplementation, negation or intervention.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Effect of Cystic Fibrosis on the Social Functioning of Adolescent and Young Adult Patients

Previous Serial Number: None

Principal Investigators: David W. Callagy
Thomas G. Gallagher

Other Investigators: Dr. Robert H. Schwartz
Pediatric Metabolism Branch, NIAMD
Dr. Geraldine L. Conner
Research Consultant

Cooperating Units: None

Man Years

Total	:	238 Hours
Professional	:	178 Hours
Others	:	60 Hours

Project Description: Objectives - Cystic Fibrosis has been called a disease of childhood because its victims seldom live to adulthood. At present, however, many patients known to have the diseases are approaching adulthood. This project, still in the beginning stage, will evaluate the social functioning of adolescent and young adult Cystic Fibrosis patients. These patients appear to have educational, economic and social relationship difficulties that conflict with their overall future potential. What kinds of resources are available and what kinds of help are needed are questions to be evaluated.

Method - Twelve taped interviews have been completed with adolescent Cystic Fibrosis patients. Examination and analysis of this material is being done to determine the current problems, universal characteristics, and future needs. The model of the normal adolescent role developed by Erik H. Erikson will be utilized to compare Cystic Fibrosis patients to the normal adolescent and young adult.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: A Study of Modes of Adaptation to Chronic Illness by Parents of Children with Familial Dysautonomia

Previous Serial Number: None

Principal Investigator: Yolande B. Davenport

Other Investigators: None

Cooperating Units: NIMH Project - Disposition and Metabolism of Catecholomine Hormones in Familial Dysautonomia

Man Years

Total	:	195 Hours
Professional	:	175 Hours
Others	:	20 Hours

Project Description: Objectives - Familial Dysautonomia is a genetically determined life threatening illness occurring in children which affects the autonomic nervous system. The emotional instability of many of these children, essentially the result of a basic physiological dysfunction, results in disturbed behavior which has profound and often catastrophic effects upon family functioning. Emphasis in the research will be upon the psychosocial aspects of the illness with the intent of studying behavioral management techniques conducive to optimal adjustment.

Method - A self administered questionnaire designed to elicit information regarding variances in adjustment as well as differences in parental attitudes and reactions was mailed to parents of children whose names appeared on a list of the known cases of Familial Dysautonomia in this Country.

In addition, child-parent pairs admitted to the Clinical Center to participate in biological research studies were interviewed in order to secure comprehensive social histories. Data regarding parent-child interaction was systematically collected from observations charted on the ward by nursing staff, and psychological testing of

children and parents, both projective and intelligence will provide an additional method of assessing the relative degree of adjustment and disturbance in the groups.

Major Findings - A preliminary report of the characteristics of the patients and parents is in the final stages of revision prior to submission for publication.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Perception of Roles, Closeness Patterns and Capacities by Members of Families in Normal and Other Categories

Previous Serial Number: None

Principal Investigator: Carol F. Hoover

Other Investigator: Yolande B. Davenport

Cooperating Units: None

Man Years

Total	:	250 Hours
Professional	:	150 Hours
Others	:	100 Hours

This Project is closely allied with "Patterns of Family Interaction: The Family Rorschach Study of Normal Families."
Principal Investigators: Dr. Nathene T. Loveland
Adult Psychiatry Branch, NIMH
Dr. Lyman C. Wynne
Adult Psychiatry Branch, NIMH

Project Description: Objectives - To evaluate (1) Possible differences in acknowledged roles, closeness, and expectations of one another, in normal families as compared to families containing at least one neurotic or schizophrenic member; (2) Any variation between families of these diagnostic categories in the degree of explicit awareness or ability to present clearly the different perceptions; (3) Comparative impressions by the investigator of unacknowledged social relationships and mutual expectations within families of these types based on clinical observation and history material; and (4) Degree of sibling variation in functioning within families of the different categories.

Method - (1) An interview with both parents during which they are asked questions about themselves and all members of the immediate family group regardless of age; (2) A brief interview with

adolescent or other siblings during which the same questions, where applicable, are asked of them; (3) In the case of normal families, these interviews are supplemented by history material; (4) Each parent is asked to prepare a Social History Form R (in standard use on the Family Studies and the Adolescent Projects) to facilitate possible more limited comparisons with families on these projects at some future date. In addition, parents are asked to assess the health of each of their children on a separate but similar form; and (5) Summary evaluation of each family is prepared after a careful review of transcribed interviews and other material to form the basis for further study.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Does Surgical Success in Children with Heart Disease in the Latency and Adolescent Age Groups Result in Significant Positive Changes in Social Functioning?

Previous Serial Number: None

Principal Investigator: Barbara A. Murphy

Other Investigator: Vincenza Bowles

Cooperating Units: Clinical Social Workers
Cardiology Branch, NHI

Man Years

Total	:	407 Hours
Professional	:	335 Hours
Other	:	72 Hours

Project Description: Objectives - The purpose of this Study is to learn whether children who have been physically improved by cardiac surgery experience concomitant changes in social functioning as measured by their ability to perform age-appropriate tasks before and after surgery.

The Project will study the functioning of two groups of children: (1) Those in latency period (6 through 10 years); (2) Those in the adolescent period (14 through 17 years), who were admitted to the Heart Institute of the Clinical Center, NIH. The children will have been judged by the surgeon as physically improved following operation.

Method - The developmental theories of Freud, Erikson, Josselyn, and others have been used as a basic frame of reference for determining the significant life tasks of childhood. The theoretical developmental tasks have been translated into a series of perceivable behaviors. From these a schedule has been devised, containing a series of questions concerning life tasks as they relate to latency and adolescence.

Barbara A. Murphy Serial No. CC-21

Does Surgical Success in Children with Heart Disease in the Latency and Adolescent Age Groups Result in Significant Positive Changes in Social Functioning?

The children will be used as the primary source of data. The schedule will be administered in an interview situation at two different points of time: before surgery and following a medically appropriate period after surgery. A supplementary schedule for the available parent will also be administered in an interview situation at two different points in time - prior to and following surgery.

A pre-test was conducted for the purpose of determining whether the questions in the interviewing schedule were understandable and nonthreatening to the latency-age child. This involved interviewing a group of twelve healthy children between the ages of six and ten. Thereafter, the latency schedule was revised, and the schedules for the adolescent and the parent groups were formulated.

Major Findings - Data collection was initiated in January 1964, and to date 44 patients and 44 parents have been interviewed. Of these, a total of 17 patients have had or will have surgery; of these, 11 are in the latency group and 6 are in the adolescent group.

Pre- and post-operative schedules have been devised to provide information related to the patient's functional capacity and whether corrective or palliative surgery was performed.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Evaluation of Social Functioning of Male Patients Following Replacement of their Aortic or Mitral Valves

Previous Serial Number: None

Principal Investigator: Roberta E. Peay

Other Investigator: Dr. Andrew G. Morrow
Surgical Branch, NHI

Cooperating Unit: Surgical Branch, NHI

Man Years

Total	:	340 Hours
Professional	:	300 Hours
Other	:	40 Hours

Project Description: Objectives - Since 1963 there have been over 56 men who have had either their mitral or aortic valves replaced with a Starr Edwards or other type of artificial prosthesis.

Method - It is the plan of the investigators to evaluate with a post-surgical questionnaire, the social functioning - particularly in the area of employment - of these patients at lease one year following their operations. This social functioning will be correlated with the post-operative evaluations done by the cardiologists and cardiac surgeons.

Major Findings - The data collection through the questionnaire has not begun because the necessary approval of the Bureau of the Budget has not been received. This request was sent in March 1965.

Serial No. CC-21
Social Work Department
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: Social Factors in Parkinsonians

Previous Serial Number: None

Principal Investigator: A. Robert Polcari

Other Investigators: None

Cooperating Units: Section on Clinical Psychology
Surgical Neurology Branch, NINDB
Nursing Staff (5-West), NINDB

Man Years

Total	:	161 Hours
Professional	:	157 Hours
Others	:	4 Hours

Project Description: Objectives - This exploratory study of Parkinson patients is to determine common social elements among this group of patients that may be peculiarly identified with them, and to determine if among these factors there might be some element which would indicate successful post-surgical adjustment.

Method - The methods of obtaining information are: (1) Social history from patient and available relative; (2) Selected scores on the MMPI (obtained from the Psychology Department which routinely administers these tests); (3) Self attitudes questionnaire (Greater Kansas City Mental Health Foundation; and (4) Pre- and post-surgical ratings (by nursing staff and social worker) of patient's motivation in functioning independently in dressing, eating, walking and toilet activities.

Problems Encountered - It has been difficult to follow through with the above methodology because there have been few Parkinsonians admitted this year; fewer remain when those who cannot write or who cannot be tested for physical and mental reasons are excluded; hence, the information wanted is not consistently available.

Major Findings - Data is still being collected. It appears that the wife of a couple in which only one has this disease is the most controlling, more dominant person, regardless of which spouse has the disease.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Part-Time Practitioner - An Untapped Resource for Social Work

Previous Serial Number: Same

Principal Investigator: Myrna M. Weissman

Other Investigators: None

Cooperating Units: None

Man Years

Total	:	30 Hours
Professional	:	15 Hours
Others	:	15 Hours

Project Description: Objectives - The Social Work Department of the Clinical Center, NIH, has, as a way of meeting its staffing needs, begun to hire a limited number of part-time social workers. This study was undertaken to determine the effect part-time work has on the worker and her relationship to the patients and other members of the team.

The use of the part-time practitioner has significance for the field of social work, a profession predominated by women and suffering a chronic personnel shortage. If more part-time employment were available, more married women who are trained social workers and otherwise lost to the field, might be willing to work. Little investigation so far has been undertaken to determine objectively the pros and cons of part-time social work.

Method - As a way of getting data on the problems on part-time work over a period of four months, the investigator noted all incidents which occurred with patients and other staff members which appeared to be directly related to her position as a part-time practitioner at the Clinical Center, NIH. In conjunction with this study, a sampling of the literature was compiled on the personnel crisis in social work, recommendations for recruitment to the field, and trends in the employment of married women.

Myrna M. Weissman Serial No. CC-21

The Part-Time Practitioner - An Untapped Resource for Social Work

Major Findings - Part-time employment of social workers is possible in a hospital if certain accommodations are made. The study notes some of the problem areas and some ways these can be handled.

Honors and Awards: Included in the "Survey of Current and Recently Completed Research on High-Level Manpower Utilization in the United States" by Thomas N. Chirikos, Human Development and Educational Planning Project, Division of Research, College of Commerce and Administration, The Ohio State University, March 1965.

Publication: "The Part-Time Practitioner - An Untapped Resource for Social Work." Accepted for publication by National Association of Social Workers-Personnel Information.

Serial No. CC-21
Social Work Department
The Clinical Center
Bethesda, Maryland 20014

PHS-NIH
Individual Project Report
July 1, 1965 through June 30, 1966

Project Title: The Recent Social Work Graduate in a Medical Research Setting

Previous Serial Number: Same

Principal Investigator: Myrna M. Weissman

Other Investigators: None

Cooperating Units: None

Man Years

Total	:	34 Hours
Professional	:	22 Hours
Others	:	12 Hours

Project Description: Objectives - There has been some recognition in the field of social work of the need for an internship program of at least one year for recent graduates. Although this need has not been formally structured in the field, most agencies that hire recent graduates provide some in-service training for them. The Social Work Department of the Clinical Center, NIH, has in the last five years hired some recent graduates and has been concerned about the best way to meet their educational needs in this setting.

Method - As a way of obtaining data, these workers were asked to keep a diary of their first six months' experience as a social worker at NIH. A content analysis of this material was done which showed some consistent themes and problems. A sampling of the social work literature was made in order to determine if these themes were consistent with the expectations by social work educators of problems and performances of the recent graduate.

Major Findings - Findings have been compiled, and an article has been submitted for publication.

PROFESSIONAL ACTIVITIES

Mrs. Carmen Amoros-Cabrera

Attended Family and Child Services Conference. Subject: "Family Therapy: Family of Disturbed Adolescents." Baltimore, Maryland. October 1965.

Co-leader of Workshop on Family Therapy. University of Puerto Rico, San Juan, Puerto Rico. October 1965.

Attended Family Therapy Institute. Big Sur, California. November 1965.

Attended Meeting of Academy of Psychoanalysis. New York, New York. December 1965.

Mr. Lawrence D. Burke

Participated as Panel Member in Medical and Health Services Council. Subject: "Work with the Dying Patient and his Environment." Metropolitan Chapter, National Association Of Social Workers. April 1966.

Mr. David W. Callagy

Attended Conference of Social Workers in Sponsored Clinical Research Centers, New York, New York. October 1965.

*Mrs. Myrna R. Cobbledick

Elected to Academy of Certified Social Workers (1965) National Association of Social Workers

Participated in Panel Presentation of D. C. Association of Occupational Therapy. Subject: "Casework with Dying Children." Washington, D. C. October 1965.

Mrs. Yolande B. Davenport

Member, Social Policy and Action Committee
Member, Committee on Community Organization Practice
Washington Metropolitan Chapter
National Association of Social Workers

* Former Member of the Social Work Department

*Miss Barbara J. Feroe

Elected to Academy of Certified Social Workers (1965)
National Association of Social Workers

*Mrs. Ellen J. Ferris

Member, National Education and Practice Committee,
Health and Medical Social Council
Chairman, Subcommittee on the "Study of Early Intervention"
National Practice Committee, Medical Social Work Section
National Association of Social Workers

Instructor, Seminar on "Theory of Supervision"
The Catholic University of America, National Catholic School
of Social Work

*Mr. Thomas G. Gallagher

Membership Chairman, Medical and Health Services Council
Recruitment Committee
Washington Metropolitan Chapter
National Association of Social Workers

Mrs. Kathryn K. Himmelsbach

Member, Inter-Agency Services Conference of the Health and
Welfare Council
Member, Program Committee of the Health and Welfare Council
Metropolitan Area of District of Columbia

Keyman, Washington Metropolitan Chapter
National Association of Social Workers

Attended 25th Annual Conference of the Maryland-District of
Columbia-Delaware Hospital Association. Washington, D. C.
November 1965.

Participated in Panel Presentation. Subject: "A Clinical
Study in Complimentary Ministry." Maryland Council of
Churches. Bethesda, Md.

* Former Member of the Social Work Department

Mr. Stanley I. Hirsch

Member, Technical Advisory Committee
Jewish Social Work Agency
Washington, D. C.

Attended National Association for Mental Health Annual Meeting.
New York, New York. November 1965.

Attended American Orthopsychiatric Association Meeting.
San Francisco, California. April 1966.

Miss Carol F. Hoover

A preliminary version of a published paper, "The Embroiled Family: A Blueprint for Schizophrenia," was presented at a Meeting of the Adult Psychiatry Branch, NIMH. National Institutes of Health. Bethesda, Maryland.

Co-leader of Discussion of Family Interviewing at a Meeting of the Medical and Health Services Council, National Association of Social Workers. Washington, D. C.

*Mrs. Ellen S. Lee

Elected to Academy of Certified Social Workers (1965)
National Association of Social Workers

Mrs. Melitta J. Leff

Attended Meeting of American Psychiatric Association.
Atlantic City, New Jersey. May 1966.

Mrs. Lucia N. Mason

Chairman, Medical and Health Services Council
Washington Metropolitan Chapter
National Association of Social Workers

Attended National Conference on Social Welfare. Chicago, Illinois. May 1966.

Miss Barbara A. Murphy

Attended National Conference on Social Welfare. Chicago, Illinois. May 1966.

* Former Member of the Social Work Department

Miss Roberta Peay

As Area Representative of Metropolitan Washington Chapter, National Association of Social Workers, attended Meeting of Committee Planning Eastern Regional Institute Program. Pittsburgh, Pennsylvania. January 1966.

Mr. A. Robert Polcari

Attended 25th Annual Conference of the Maryland-D.C.-Delaware Hospital Association. Washington, D. C. November 1965.

Mr. John F. Roatch

Attended Council of Social Work Education Meeting, New York, New York. January 1966.

Attended National Conference on Social Welfare. Chicago, Illinois. May 1966.

Miss Karen R. Schulman

Elected to Academy of Certified Social Workers (1965)
National Association of Social Workers

Miss Barbara J. Spillman

Elected to Academy of Certified Social Workers (1965)
National Association of Social Workers

Attended Meeting of American Psychoanalytic Association. New York, New York. December 1965.

Attended Meeting of American Psychiatric Association. Atlantic City, New Jersey. May 1966.

Miss Evelyn Walker

Member, Women's Board, Columbia Hospital, Washington, D.C.

Chairman, Nominating Committee
Chairman, By-Laws Committee
Member, Executive Committee
Member, Health and Medical Council
Washington Metropolitan Chapter
National Association of Social Workers

Member, Civil Service Examiners Board

Member, Task Force, Civil Service Establishing New Social Work Services

Miss Evelyn Walker (Continued)

Member, United States Public Health Service Board Induction and Promotion

Member, Abstract Committee, National Association of Social Workers

Attended Meeting of Council on Social Work Education. New York, New York. January 1966.

Mrs. Charlotte H. Wilkie

Member, National Committee on Abstracts in Social Work National Association of Social Workers

TABLE 1
GROUP ACTIVITY REPORT
FISCAL YEAR 1966*

INSTITUTE	RESEARCH ACTIVITIES		PRACTICE-PROGRAM ACTIVITIES		SOCIAL SERVICE DEPARTMENTAL ACTIVITIES		COMMUNITY AND PROFESSIONAL ACTIVITIES		CORPS, AND OTHER RELATED ACTIVITIES		TOTAL HOURS
	HOURS	%	HOURS	%	HOURS	%	HOURS	%	HOURS	%	
NCI	228	9	1,213	50	805	34	157	7	-	-	2,403
NHI	132	10	779	59	378	28	30	2	3	1	1,322
NIMH	2,166	46	1,452	31	820	18	241	5	-	-	4,679
NIAMD NIAID	101	12	472	54	236	27	40	5	21	2	870
NINDB	187	17	358	33	377	35	146	14	5	1	1,073
TOTAL	2,814		4,274		2,616		614		29		10,347

*July 1965 through March 1966 (9 Months)

TABLE 2
INPATIENT COVERAGE BY PERCENTAGE SERVED EACH MONTH
FISCAL YEAR 1966*

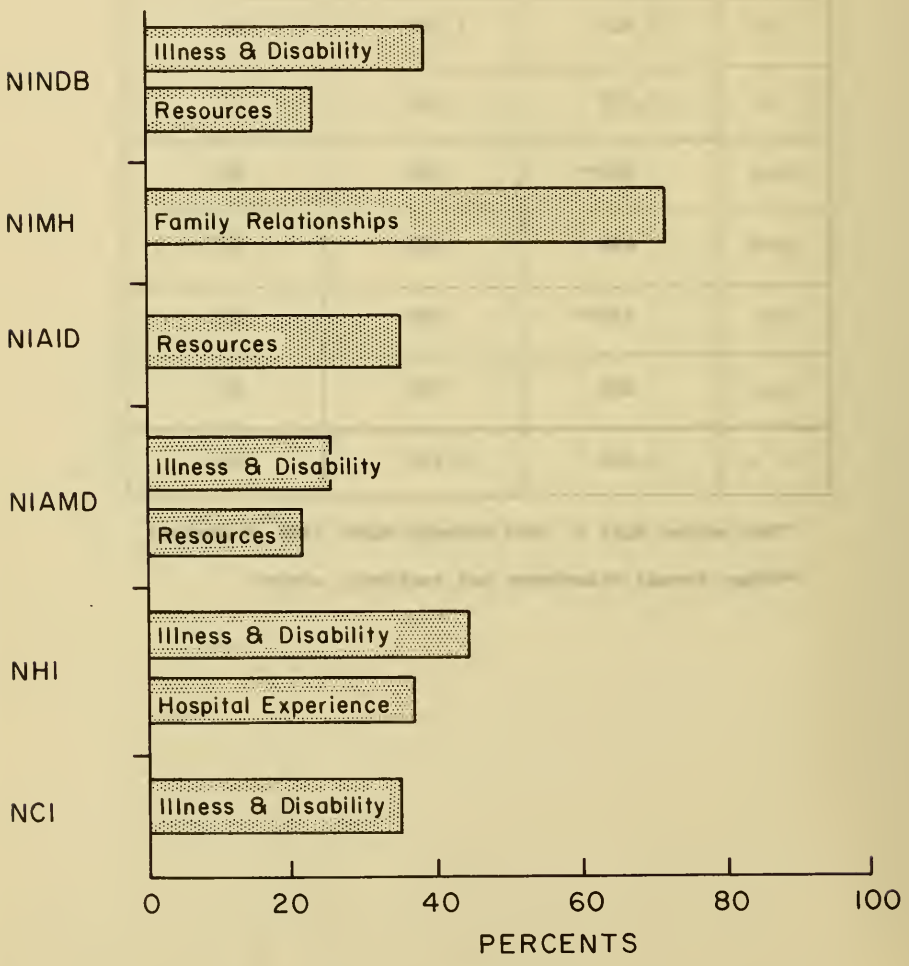
INSTITUTE	TOTAL IN-PATIENTS CENSUS	IN-PATIENTS SERVED	PERCENT COVERAGE
NCI	1,921	1,222	64
NHI	1,433	1,016	71
NIAID	261**	181	69
NIAMD	638	327	51
NIMH	478**	389	81
NINDB	869	743	86
TOTAL	5,600	3,878	69

*For period July 1, 1965 through March 1966 (9 Months)

**Minus Normal Volunteers not routinely served.

TABLE 3

MAJOR CONCENTRATION OF PROBLEMS ON EACH INSTITUTE BY PERCENT OF TOTAL SERVICES TO PATIENTS AND FAMILIES FISCAL YEAR 1966*



* For Period July 1965 through March 1966 (9 months)

TABLE 4
PATIENT WELFARE FUND EXPENDITURES
FISCAL YEAR 1966*

YEAR AND MONTH		PATIENT ACTIVITIES GRAY LADIES, O.T., etc.	PATIENT TRANSPORTATION	ALLOWANCE TO RELATIVES	PATIENT MISCELLANEOUS EXPENDITURES, PHONE, CLOTHS, MEALS SPECIAL DEVICES, etc.	BASIC NECESSITIES	TOTAL WITHDRAWN
1965	July	$ 57.35	$ -	$ 354.10	$ 104.20	$ 210.80	$ 726.45
	August	55.00	84.00	342.50	69.30	179.00	729.80
	September	20.80	33.00	356.00	41.00	225.00	675.80
	October	67.70	32.00	834.90	139.10	225.00	1,298.70
	November	40.00	88.20	996.50	40.00	246.50	1,411.20
	December	85.90	125.00	1,101.04	148.49	316.10	1,776.53
1966	January	31.20	36.00	1,250.00	119.36	204.50	1,641.06
	February	15.60	64.15	1,347.00	94.25	256.00	1,777.00
	March	15.00	115.03	1,437.00	264.74	325.50	2,157.27
	April						
	May						
	June						
TOTAL		$ 388.55	$ 577.38	$ 8,019.04	$ 1,020.44	$ 2,188.40	$12,193.81

RECAPITULATION	
Balance brought forward July 1, 1965	$ 2,470.76
*Fiscal Year 1966 (Deposits)	19,713.92
	$ 22,184.68
*Fiscal Year 1966 (Withdrawn)	12,193.81
*Total - July 1965 through March 1966 (9 Months) . . .	$ 9,990.87

TABLE 5

COMPARATIVE EXPENDITURES FOR ALLOWANCES TO RELATIVES FOR NCI, NHI AND OTHER INSTITUTES COMBINED FY '62-'66*

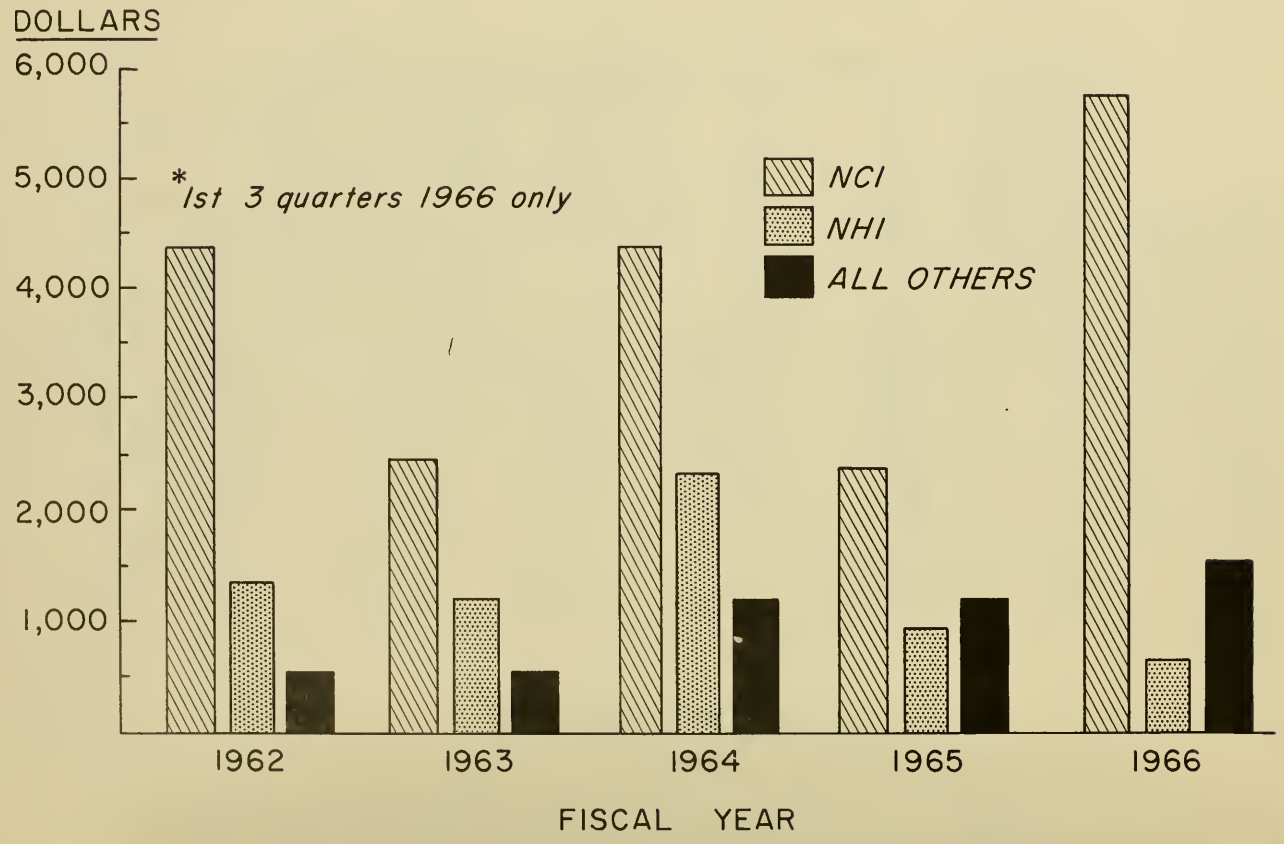


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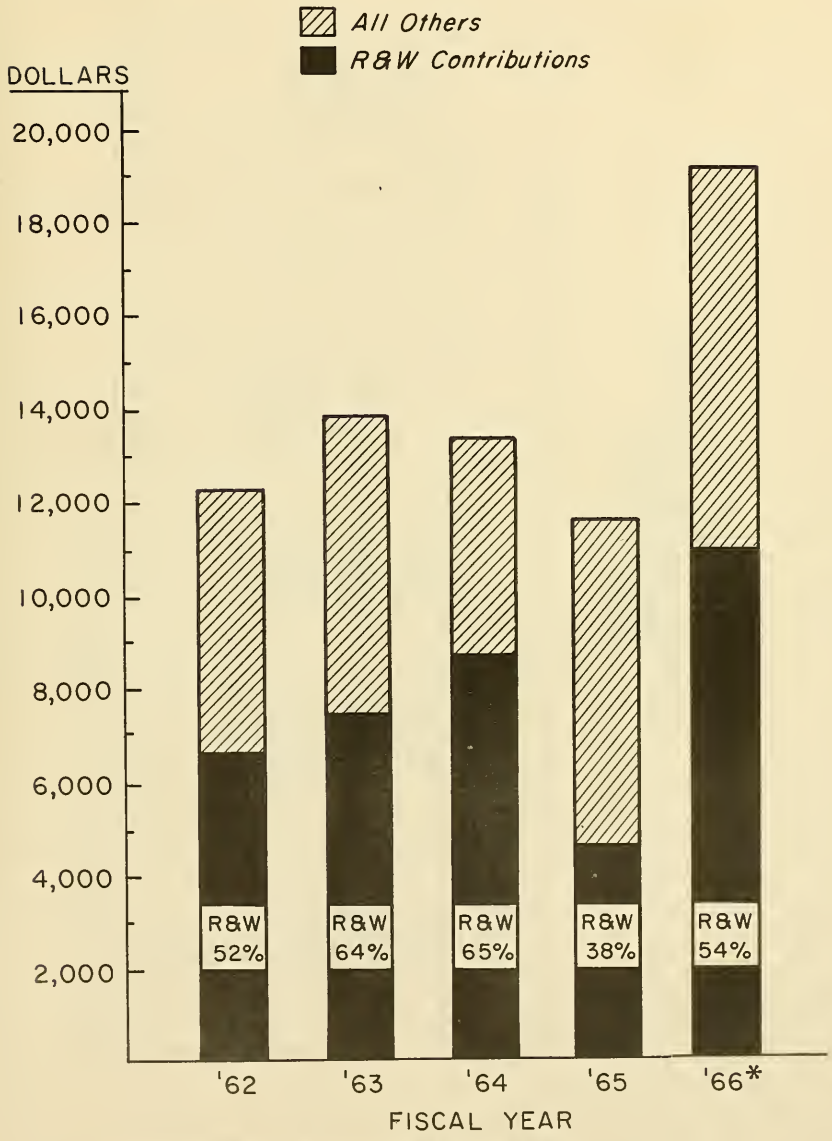
TABLE 6

PATIENT WELFARE FUND INCOME
COMPARISON OF R&W CONTRIBUTIONS TO
ALL OTHER CONTRIBUTIONS FY '62-'66*



*Total as of the first three quarters.

TABLE 7
PATIENT WELFARE FUND EXPENDITURES
RELATIVE ALLOWANCE
FISCAL YEAR 1966*

YEAR AND MONTH		NCI	NHI	NIAID NIAMD	NIMH	NINDB
1965	July	$ 180.00	$ 106.00	$ -	$ -	$ 68.10
	August	232.00	86.00	-	-	24.50
	September	84.00	-	36.00	-	236.00
	October	431.00	20.00	54.00	-	329.90
	November	604.00	151.00	-	-	241.50
	December	973.25	15.00	58.29	-	54.50
1966	January	996.00	152.00	102.00	-	122.00
	February	1,006.00	75.00	144.00	-	-
	March	1,278.00	79.00	80.00	-	-
	April					
	May					
	June					
TOTAL		$ 5,784.25	$ 684.00	$ 474.29	$ -	$1,076.50

*Total for first three quarters (July 1965 thru March 1966)

July 1, 1965, through June 30, 1966

PUBLIC HEALTH SERVICE, NATIONAL INSTITUTES OF HEALTH

SUMMARY ANNUAL REPORT OF PROGRAM ACTIVITIES
CLINICAL CENTER

CC-06
Serial No.

DEPARTMENT OF SPIRITUAL MINISTRY

Overview

In keeping with the Clinical Center's goal to bring the best that modern medicine and its ancillary services have to offer to the care and rehabilitation of patients, it is recognized that the spiritual welfare of the patient is an important factor in the care of the sick. Meeting the spiritual and religious needs of individual patients and their families is the primary mission of the Department of Spiritual Ministry.

Through formal and informal contacts, members of the department have come to work together as an integrated staff. It is interesting to note that the Protestant and Catholic Chaplains sent out a joint Christmas greeting.

A significant beginning has been made in developing the training aspects of the total program. Three Wesley Theological Seminary students participated in a part-time course in the spring of 1966. Four students from Virginia Theological Seminary began a full-time summer course in May 1966.

The training programs cause the staff to examine critically their work with patients and their families. Hopefully, this will lead to research studies in the field of hospital ministry, the writing of journal articles and manuals, and increase the over-all effectiveness of the department in service to patients.

Students participating in the programs come as "Guest Workers". Academic or professional accreditation is worked out by the student through his own seminary and/or training agency. The Clinical Center has been approved by the Council for Clinical Training, Inc. as an accredited clinical pastoral training center. It is hoped that seminarians and clergy from all the major faith groups will seek participation in training programs offered at the Clinical Center. By the very nature of the Clinical Center, the participants will be limited in number and carefully selected.

There is a continuing need for additional staff help to minister to Protestant patients. There is a need to explore the possibility and the desirability of a religious group program for children in the hospital. Consideration is being given to additional worship services for Protestant patients. Record keeping in the department is being revised. Work with community clergy is being reviewed.

Chapel Service

Regular Chapel Services were held during the year by the various Chaplains. These services were:

PROTESTANT: Sunday, 10:00 a.m. Holy Communion Service the first Sunday of each month.

CATHOLIC: Sunday, 7:15 a.m. and 8:30 a.m., and weekdays, 7:00 a.m. Daily distribution of Communion to bedridden patients.

JEWISH: Friday, 1:30 p.m.

In addition to these regular services, special services were also held, including:

PROTESTANT: World Wide Communion - 1st Sunday in October
Thanksgiving Day Service
Christmas Carol Service
Good Friday Service

CATHOLIC: Holy Days of Obligation - 2 Masses
Daily Rosary Services - during the month of October and May
Distribution of Ashes (Ash Wednesday)
Stations of the Cross - Fridays during Lent

JEWISH: Rosh Hashanah, Yom Kippur, Sukkoth, Chanukah, Purim, Passover, Shavuoth

Additional changes in the Liturgy were introduced by Father Guicheteau. A small group of girls from St. Ursuline Academy help to lead the singing and play the organ in the 8:15 a.m. Mass.

The Chapel of the Blessed Sacrament, located on the 13th floor was redecorated. Vestments for the Chapel were given in memory of a patient from 2E, a new statue of the Virgin Mary was given by a Greek Orthodox family, and a rug was given by a non-Catholic family. Other gifts include a chalice and a ciborium given by the Jesuits and a second ciborium by the family of a former heart patient.

A New Order of Worship for the Sunday Protestant Chapel Service was tried and is being printed. In the service, the Prayer of Dedication is understood as the congregation's response to God as the gift of themselves. It is an attempt to help the patient see his illness and his participation in the research programs from a religious point of view. A baptismal bowl was given in memory of a former patient by the parents.

Chaplain LeRoy G. Kerney wrote a series of five meditations for use in the Good Friday Protestant Service.

Rabbi Brandriss had an attendance of 23 persons at a Purim Service. He commented, "We have never had so many for a service."

Pastoral Ministry to Patients and Their Families

The heart of the work of the Department of Spiritual Ministry is the ministry to individual patients and their families. Patterns of ministry vary according to the traditions of the major faiths. Pastor, Priest, and Rabbi each have their unique approach to meet the spiritual needs of their patients. Methods in ministry also vary according to the ratio of patients to individual chaplains.

All Catholic patients are contacted through the sacramental ministry of the Catholic Chaplain. Because of the small number of Jewish patients, the Jewish Chaplain is able to see all patients of the Jewish faith. The Protestant Chaplains are not able to visit every Protestant patient. Priority is given to the terminally ill, the seriously ill, and those going to surgery. All referrals by staff, relatives, pastors or self are seen. As many other patients are visited as time permits. Clergymen from the community are called upon to minister to special patients, e.g., patients requesting special rites from a clergyman from their own denomination.

Pastoral problems which the chaplains encounter include: loneliness, grief, fear, guilt, anxiety, loss of spiritual meaning, and boredom. Pastoral methods include pastoral conversations, sacraments, blessings, prayer, scripture, and worship. On occasion, the chaplains have been involved in helping patients and their families resolve the dilemmas of conscience over granting permission for autopsies, accepting blood transfusions, and in relating "faith healing" and competent medical care.

A small number of employees sought out the chaplains for counsel in FY 1966. Those who needed extended help were referred to appropriate resources. Others found help in one or two sessions.

Pastoral Training for Clergy

Chaplain Kerney and Chaplain Robey were approved as "Associates in Clinical Pastoral Care" by the faculty of Wesley Theological Seminary.

Three seminarians from Wesley Theological Seminary participated in a course on "Introduction to Clinical Pastoral Experience" at the Clinical Center during the Spring Semester 1966 as a part of their theological education. The students spent twelve Monday afternoons in the hospital participating in seminars and visiting assigned patients.

Steps were taken to accredit the Clinical Center as a training center by a national clinical pastoral training agency. The Council for Clinical Training, Inc. granted provisional accreditation to the Clinical Center on March 31, 1966.

Four seminarians from the Virginia Theological Seminary, Alexandria began a full-time summer course in clinical pastoral training at the Clinical Center on May 23, 1966.

Orientation to Staff

The Department of Spiritual Ministry has welcomed the opportunity to participate in the various orientation programs of the Clinical Center. These include: nursing personnel, clinical associates, social workers, and American Red Cross Volunteers.

Much of the orientation process takes place on an informal basis at the nursing station, the lunch table, and in consultation with staff personnel. The chaplains have made "rounds" with staff physicians and have attended a number of clinical conferences.

Monthly Chaplain Seminars

A joint monthly seminar, from October to June, was held for all the chaplains from the Clinical Center, National Naval Medical Center, and Walter Reed Medical Center. The place of meeting rotated among the hospitals. Topics discussed and seminar leaders were:

"The Hospital as the Context of the Chaplain's Ministry" - Chaplain Kerney

"Illness as a Spiritual Crisis" - Chaplain Kerney

"The Chaplain's Role, Goals, and Methods" - Chaplain Kerney

"The Grief Process" - Chaplain Bentley, Navy

"Ministering to Surgical Patients" - Chaplain White

"Ministering to Patients with Life-Threatening Illnesses" - Chaplain Kerney

"Ministering to Rehabilitative Patients" - Chaplain Thompson, Army

"Organizing One's Hospital Ministry" - Chaplain Robey

Professional Meetings

Fall Conference of the Council for Clinical Training, Inc.
Miami, October 18-22, Chaplains Robey and Kerney
Symposium on Grief and the Funeral, Sibley Hospital,
Washington, D.C., November 23, Chaplains Robey and White
Committee on Basic Ideas Underlying Religion and Health
New York, National Council of Churches, Nov. 27-28, May 21-22, Chaplain Kerney
Consultation on Clinical Pastoral Education, National Council of Churches,
Washington, D.C., December 18, Chaplain Robey
Joint Committee on Standards of the Council for Clinical Training and the
Institute of Pastoral Care, Chicago, Jan. 6-8, April 14-16, Chaplain Robey
Pastoral Seminars on the Ecumenical Council, Washington, D.C.
Weekly during February, March, and April, Father Guicheteau
Chaplains' Division of the American Protestant Hospital Association,
Chicago, February 13-16, Chaplain Kerney

Mid-Atlantic Spring Regional Meeting of the Council for Clinical Training, Inc., Baltimore, March 6-7, Chaplain Robey
Executive Committee of the Chaplains' Division of the American Protestant Hospital Association, Chicago, March 24, Chaplain Kerney
Research Committee of the Council for Clinical Training, Inc. Richmond, Virginia, May 16, Chaplain Kerney

Chaplain Kerney was honored by being elected secretary of the Chaplains' Division of the American Protestant Hospital Association.

Community Contacts

The various community contacts by the chaplains are too numerous to list. They include attendance at ecclesiastical meetings, Council of Churches meetings, discussions with visiting chaplains, and informal conferences with community clergy. It would appear that the majority of the community clergy who visit patients in the hospital do not seek out members of the Department of Spiritual Ministry for help and consultation. Those who have, reported that they found it helpful in making their ministry more effective.

Father Guicheteau gave the invocation at a United Fund Luncheon for keymen of Federal Agencies. Chaplain Kerney gave an invocation at a luncheon and fashion show sponsored by the Commissioned Officers' Wives of the U.S. Public Health Service.

Chaplain Robey and Chaplain Kerney helped in the screening process for students from Virginia Theological Seminary, Alexandria, Virginia, who were seeking placement in clinical pastoral training centers across the country.

Chaplain White served on a committee to plan the Easter Sunrise Service held at the National Naval Medical Center. Chaplain Kerney served as a workshop leader on "Institutional Chaplaincy" at a meeting of the Prince George's County Council of Churches. He also gave a talk at the fall retreat of the workers from the Washington Metropolitan Y.W.C.A. and led a seminar on "Ministering to the Dying Patient" at Walter Reed Medical Center for area Army Chaplains.

PROTESTANT CHAPLAINS

Helping the patient as a person to find meaning and courage in the face of chronic illness and death requires individual attention. This is a time-consuming and important part of the chaplain's duties. Because of the limitation of staff, the Protestant Chaplains find it necessary to concentrate their services mainly on the very sick and critically ill. From these visits, contacts are made with patients' roommates as well as through referrals by doctors, nurses, social workers, relatives, and others.

General Summary of Services Provided by the Protestant Chaplains

1. Protestant Chapel Services for patients, their relatives, and their friends on Sunday at 10:00 a.m. A Holy Communion Service is held the first Sunday of each month.

2. Special religious services - Thanksgiving, Good Friday, World Wide Communion Sunday, Christmas Eve Carol Service.

3. Bedside Communion upon request from the patients.

4. All seriously ill patients are visited.

5. All surgical patients are seen prior to surgery and follow-up visits are made.

6. Chaplains meet with the family of deceased patients at the time of death, unless there is no family or the family has its own minister.

7. At least one-third of the ministry of the chaplains is to the families of the patients who undergo surgery, face death situations, or experience serious illness.

8. Religious literature is made available to patients upon request.

9. Consultations with medical, nursing, and social work staffs regarding welfare and rehabilitation of patients.

10. Participation in programs of the Patient Activities Section.

11. Participation in orientation program for all new Nursing and Social Work Staff.

12. Participation in the Gray Service Training Program.

13. Consultation with members of the NIH staff on request.

14. On call for emergency service 24 hours a day.

TABLE 1: PROTESTANT CHAPLAINS' ACTIVITIES

July 1, 1965 through June 30, 1966

1. WORSHIP SERVICES

Chapel Services	55
Sermons	55
Attendance	6,485
Average	60

2. ADMINISTRATION OF SACRAMENTS

Holy Communion	12
Chapel	518
Bedside	80
Baptisms	1

3. PASTORAL MINISTRY

Initial Religious Contacts	1,514
Surgery	1,162 visits
Seriously Ill	2,527 visits
Counseling	1,643
Rounds	1,422
Relatives	3,089
Deaths	55
Funerals	1
Post Discharge	178

4. PATIENT REFERRALS

Doctors	284
Nurses	508
Social Workers	115
Clergy	31
Family	69
Self	85
Other	11

5. STAFF RELATIONS

Conferences	1,651
Staff Meetings	32
Lectures	15
Counseling	46

6. COMMUNITY

Clergy Contacts	192
Addresses	8
Services	7
Meetings	30
Professional Conferences	15

7. ADMINISTRATION

Correspondence	157
Planning (hrs.)	321
Conferences	567
Study (hrs.)	507
Records & Reports(hrs.)	299

8. OFF-DUTY CALLS

Emergencies	67
Overtime (hrs.)	105

9. PERCENT OF PROTESTANT PATIENT POPULATION SEEN 32%

CATHOLIC CHAPLAIN

The religious needs of the Catholic patients at the Clinical Center are provided for by one Catholic Chaplain on full-time basis. The Catholic patient census continues to maintain an average of 25% of the total patient census, which amounts to an average of 75 to 80 patients.

The Catholic Chaplain's ministry begins with hearing confession and distributing Communion to the patients. His ministry broadens out from these contacts to include pastoral counseling, instruction, work with families and consultation with staff members. Although priority is given to patients and their families, a significant amount of time is devoted to work with hospital personnel.

Services provided by the Catholic Chaplain at the Clinical Center are summarized below in a general manner, followed by a detailed statistical summation of daily activities.

General Summary of Services Provided by the Catholic Chaplain

1. Divine Worship Service (Mass) for patients, relatives, and N.I.H. personnel daily. (Two services on all Sundays and Holydays.)
2. Special religious services daily during months of May and October.
3. Special religious services during seasons of Advent and Lent.
4. Sacraments administered to patients daily (about 30 patients).
5. All patients visited each Friday or Saturday for confession.
6. All patients visited at least every two days, except in Mental Health when this is contraindicated. Seriously ill patients visited every day.
7. All patients visited on regular schedule for counseling.
8. Consultations with medical, nursing and social service staffs regarding welfare and rehabilitation of patients.
9. Participation in programs of the Patient Activities Section.
10. Participation in the Gray Service Training Program.
11. Consultation with members of the N.I.H. staff on request.
12. Participation in orientation program for all new Nursing and Social Service personnel.
13. On call for emergency service 24 hours a day - either personally or through priests at St. Jane Francis de Chantal Church.
14. Religious literature made available to patients on request.

TABLE 2: CATHOLIC CHAPLAIN'S ACTIVITIES

July 1, 1965 through June 30, 1966

1. WORSHIP SERVICE

Services	444
Attendance	6,221
Sermons	108
*Devotions	36 - Attendance 819

2. ADMINISTRATION OF SACRAMENTS

Holy Communion	7,489
Chapel	3,870
Bedside	3,619
Confessions	212
Baptisms	1
Confirmations	0
Last Rites	88

3. PASTORAL MINISTRY

Initial Religious Contacts	909
Surgery	488 visits
Seriously Ill	508 visits
Counseling	118 hours
Rounds	1,504
Relatives	1,295
Instructions	0
Deaths	43
Funerals	0
Post-Discharge	23

4. PATIENT REFERRALS

Doctors	55
Nurses	87
Social Workers	46
Clergy	15
Family	86
Self	73
Other	2

5. STAFF RELATIONS

Conferences	155
Staff Meetings	20
Lectures	12
Counseling	25 hours

6. ADMINISTRATION

Correspondence	92
Planning (hrs.)	109
Conferences	93
Study (hrs.)	168
Records & Reports (hrs.)	68

7. COMMUNITY

Clergy Contacts	Numerous
Addresses	2
Meetings	6
Professional Conferences	1

8. OFF-DUTY CALLS

Emergencies	31
Overtime (hrs.)	250

9. PERCENT OF CATHOLIC PATIENT POPULATION SEEN 95%

* Stations of the Cross
Rosary

JEWISH CHAPLAIN

Jewish Chaplaincy service is on a contract basis providing for 12 visits per month. Rabbi Joseph M. Brandriss has been serving as Jewish Chaplain since November 27, 1956. Approximately 7% of the patients admitted to the Clinical Center are Jewish.

Summary of Service

Sabbath services on Fridays and special services for the various major and minor Holidays for the Jewish calendar, including some socials after the celebrations.

Visits to patients.

Counseling of patients and families.

Religious education when requested and/or needed.

On call for emergency service 24 hours a day.

TABLE 3: JEWISH CHAPLAIN'S ACTIVITIES

July, 1965 through June 30, 1966

1. WORSHIP SERVICE

Chapel Services	46
Sermons	46
Attendance	182
Average	4

2. SPECIAL JEWISH HOLIDAY SERVICES

*Services	7
Sermons	7
Attendance	61

3. PASTORAL MINISTRY

Initial Religious Contacts	238
Surgery	53 visits
Seriously Ill	34 visits
Counseling	7
Rounds	263
Relatives	203
Deaths	18
Funerals	0
Post-Discharge	1

4. PATIENT REFERRALS

Doctors	20
Nurses	30
Social Workers	21
Clergy	3
Family	43
Self	14
Other	0

5. STAFF RELATIONS

Conferences	42
Staff Meetings	0
Lectures	0
Counseling	11

6. COMMUNITY

Clergy Contacts	Numerous
Addresses	Numerous
Services	Numerous
Professional Conferences	3

7. ADMINISTRATION

Correspondence	43
Planning (hrs.)	54
Conferences	25
Study (hrs.)	64
Records & Reports (hrs.)	26

8. OFF-DUTY CALLS

Emergencies	19

9. PERCENT OF JEWISH PATIENT POPULATION SEEN 97%

* Purim
Chanukah
Yom Kippur
Succoth
Rosh Hashanah
Shavuoth

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