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Medical Bulletin

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THE MINNESOTA MEDICAL FOUNDATION

AND THE MINNESOTA MEDICAL ALUMNI

ASSOCIATION

IN THIS ISSUE:

Hospital Report

Cholesterol Synthesis

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UNIVERSITY OF MINNESOTA
Medical Bulletin

OFFICIAL PUBLICATION OF THE UNIVERSITY OF MINNESOTA HOSPITALS, MINNESOTA MEDICAL FOUNDATION, AND MINNESOTA MEDICAL ALUMNI ASSOCIATION

VOLUME XXVIII

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UNIVERSITY OF MINNESOTA

Staff Meeting Report

University of Minnesota Hospitals Annual Report

Ray M. Amberg, Ph.C.*

The University Hospitals

Introduction

The University of Minnesota Hospitals was established to furnish a means for the University of Minnesota to train students in the multiple fields of medical care. Training is given in the Hospitals under the direct supervision and guidance of a competent staff made up of a full-time and part-time faculty. The staff is responsible to the State through the University for both the instruction of the students and the care of the patients. This arrangement has proved satisfactory not only in the training of students but also as an economical means for the State to care for many of its indigent sick.

University of Minnesota Hospitals Admission Policy

In applying for admission to the Hospitals, it is required that the patient be referred by his family physician or by a physician in his local community. This rule avoids the criticism that the Hospitals and its clinics are taking patients who should be seen by private practitioners. This same policy holds true for patients admitted to the Variety Club Heart Hospital or any other unit of the Hospitals.

Patients are classified according to their ability to pay as County, Per Diem, Teaching and Research, Sixty Fund, Eustis, Rehabilitation, Multiple Sclerosis, Muscular Dystrophy, Private, and, in the case of the Heart Hospital, the Variety Club of the Northwest Fund. There is no distinction made between the various classes in the treatment or privileges afforded.

County patients are those who are totally unable to pay. Their expenses are shared equally by their county and the State. When applying for either outpatient or hospital care, these patients must present

* Director, University Hospitals, and Professor, Hospital Administration, School of Public Health.

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county papers filled in by both their physician and their county commissioner (or his representative).

Per Diem patients are those who cannot afford to pay for the services of both a private physician and a private hospital. When applying for either out-patient or hospital care, these patients must present a special form filled in by themselves and their family physicians. They are required to pay their clinic or hospital expenses only, no charge being made for the professional services of the staff. From the standpoint of money received by the Hospitals, there is no difference between a county patient and a per diem patient; consequently, the services and privileges tendered both are identical.

Teaching and Research patients are primarily destitute unmarried obstetrical patients who are unable to avail themselves of county papers.

The *Sixty Fund* is a special grant from the state legislature which is used to hospitalize indigent psychiatric patients for treatment, teaching and research purposes.

The *Child Psychiatric Fund* is a special grant from the state legislature which is used to hospitalize indigent children with psychiatric problems for treatment, teaching, and research purposes.

The *Eustis Fund* was set up by William Henry Eustis to care for indigent children under 16 years of age.

The *Rehabilitation Fund* is a fund provided by the legislature for the use of the Hospitals, through the Department of Rehabilitation and Physical Medicine, to aid in the physical rehabilitation of patients. Referral by a physician is required.

The *Multiple Sclerosis Diagnostic Fund*, in the sum of \$15,000, was provided for each year of the past biennium to assist in financing the multiple sclerosis clinic. Referral by a physician is required.

The *Muscular Dystrophy Fund*.—Funds were provided by the Muscular Dystrophy Association of Minnesota to assist in the diagnosis and treatment of people afflicted with muscular dystrophy. Referral by a physician is required.

Private patients, limited in number, are admitted as a convenience to the senior staff. They are referred by other physicians in the state. They are afforded the same treatment and privileges as are private patients in any private hospital.

The *Variety Club of the Northwest Fund* is a special annual gift

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from the Variety Club to assist in the care of patients from any of the communities in the Club area which includes Minnesota, North Dakota, South Dakota, parts of Wisconsin or any other area indicated by the Club. Patients may be admitted for care on this fund on the usual recommendation of a physician. The Variety Club itself may at times wish to indicate and request service for certain patients in which they have a special interest, care to be paid for through this fund. No charge will be made for the professional services of the staff—only for clinic or hospital expenses.

Student Health Service patients are not considered as being Hospitals patients even though a Hospitals intern is assigned to that service. The Student Health Service has its hospital quarters in the University Hospitals but is not a part of the University Hospitals. It is a service institution maintained by the University with a director, staff and budget of its own. The new Student Health Service is located on Church Street west of the Hospitals. This provides out-patient care only. The infirmary occupies the fourth floor of the North wing of the Hospitals.

In-Patient Department

The number of patients admitted for the year 1954-55 was 12,571, and for the year 1955-56, the number was 14,028. The total number of days of hospital treatment aggregated 173,393 for 1954-55, and 188,284 for 1955-56, an increase of 14,891 patient days. The average stay in the Hospitals was 13.7 days in 1954-55 and 13.4 in 1955-56. Deaths for the year numbered 607. Of this number 110 occurred within 48 hours after admission, and 137 deaths occurred in the Heart Hospital. This is a net mortality of 2.5 per cent. Post mortems for the year 1954-55 numbered 402, an average of 81.8 per cent, and in 1955-56, the number was 465, an average of 82.4 per cent. The daily average number of patients in 1954-55 was 475.04, and in 1955-56, the number was 514.4. The daily cost of operating the In-Patient Department was \$24.47 per patient in 1954-55 and \$28.18 in 1955-56, an increase of \$3.71 per patient-day. Surgical operations performed during the year 1955-56 aggregated 8,785 as against 8,076 during 1954-55.

The Psychopathic Department of the Hospitals admitted 525 patients during 1955-56 and 392 in 1954-55. In the Psychopathic Hos-

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pital the total number of patient days of hospital care was 19,009 in 1955-56 as against 18,342 in 1954-55.

The waiting list of the Hospitals showed 92 patients on July 1.

Out-Patient Department

The number of new patient visits in 1954-55 was 18,175, and in 1955-56, 19,623. Total patient-visits for 1954-55 were 108,944, and for 1955-56, 116,369, an increase of 7,425 visits. The cost of operating the Out-Patient Department was \$5.33 per visit in 1954-55, and \$5.78 in 1955-56, an increase of 45c per patient-visit.

The X-ray Department reported 79,564 procedures for the year 1955-56 as against 73,613 for the year 1954-55.

The Department of X-Ray Therapy gave 12,995 deep therapy treatments in 1955-56 as against 11,892 in 1954-55. There were 5,790 treatments given on the cobalt machine in 1955-56 as against 5,183 in 1954-55. The number of superficial therapy treatments given in 1955-56 was 1,000 as against 960 in 1954-55. There were 210 radium treatments given in 1955-56 as against 232 in 1954-55. The total number of strontium (beta ray) treatments given in 1955-56 was 59 as against 107 in 1954-55. In the isotope laboratory 1,074 tracer studies and treatments were given in 1955-56 as against 952 in 1954-55. There were 10 patients treated with radioactive gold and a total of 1,140 millicuries used in 1955-56. In 1954-55, 10 patients were treated and 810 millicuries used. There were 71 radioiodine human serum albumin blood volume studies in 1955-56 as against 24 in 1954-55. There were 41 radioactive chromium red cell survival studies in 1955-56 and 9 in 1954-55. The past year also showed 27 Co⁶⁰-B¹² studies, 2 Fe⁵⁹ studies and 496 conversion ratio studies.

The number of prescriptions filled was 184,028 in 1955-56 as against 160,646 in 1954-55.

The Hospital Laboratory made 545,907 determinations during the year 1955-56 as against 496,948 the previous year.

Physical Medicine and Rehabilitation Department

The current year shows a significant increase in the program of the Department of Physical Medicine and Rehabilitation in all areas. The patient load increased approximately 35 per cent over the previous year. There was an increase in the types of service and the adequacy

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of services of rehabilitation as well as in the number of patients. There was an increase in the number of students in the Courses in Occupational Therapy and Physical Therapy. The increased facilities have made it possible to provide a more adequate teaching program to a larger number of students in medicine and in physical and occupational therapy. There was an increase in the amount of research done in the department in the past year; however, the lack of completion of several of the clinical research laboratories has delayed the clinical diagnostic and research programs.

The year 1955-56 showed a decided increase both in the number of patients treated and in the number of treatments over the previous year. The maximal patient load occurred in March and the minimal load occurred in July, 1955. From July 1, 1955 through June 30, 1956 there was a total of 2,812 patients treated in the Department of Physical Medicine and Rehabilitation. About thirty per cent were outpatients and seventy per cent were inpatients. There was a total of 48,844 visits made by these 2,812 patients, an average of 17.3 visits per patient. A total of 89,147 treatments were given, an increase of 25,482 treatments over the previous year. A comparison of this past year with 1954-55 is shown in the table below.

TREATMENTS	OUT-PATIENT		IN-PATIENT		TOTAL	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Physical Therapy --	11,516	17,546	19,685	30,822	31,201	48,368
Occupational Therapy						
Rehabilitation Center	1,174	1,743	8,382	13,272	9,556	15,015
Special Services ---			19,936	18,682	19,936	18,682
Prevocational ----	93	437	503	1,339	596	1,776
Speech Therapy ----	723	1,834	339	829	1,062	2,663
Vocational Counseling	539	1,497	775	1,146	1,314	2,643
Total Treatments --	14,045	23,057	49,620	66,090	63,665	89,147
Patient Visits -----	6,822	9,312	33,018	39,532	39,840	48,844
Patients -----	415	509	1,612	2,303	2,027	2,812

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Nursing Services

Summary

The Nursing Service Department has made progress in several areas this past year. Some of the most significant are:

- (1) *Institution of Team Method of Assignment on Some Stations.* This method gives more responsibility to general staff nurses as team leaders and improves the supervision of non-professional personnel giving direct nursing care to patients.
- (2) *Addition of Ward Clerks to Several Stations.* Studies have shown that a large percentage of the time of head nurses and assistant head nurses is spent in clerical work. The Nursing Service Department has found it effective to replace the assistant head nurse with a ward clerk on some of the smaller stations. Our experience with a head nurse and ward clerk, to date, has been generally satisfactory.
- (3) *Increased Stability of Staffing in the Operating Rooms.* The efforts of the nursing staff in the operating rooms, as well as the assistance of the operating room committee composed of medical, nursing and administrative staff, have been major factors in the accomplishment of increased stability of staffing in this area.
- (4) *Improvements in Orientation Programs for All Nursing Service Personnel.* Mr. Frank Pieper, Training Coordinator at the University, has assisted the staff in making improvements.
- (5) *Formation of Nursing Service and X-ray Inter-Departmental Committee.* A committee composed of head nurses and X-ray staff, with the guidance of Mr. Mitchell, Hospital Administration Resident, worked on problems common to both departments.
- (6) *Further Developments on Patient Teaching.* a. A series of eight classes for expectant parents has been given to 55 couples since October, 1955. b. A total of 960 patients with diabetes have attended classes conducted by the Medical Nursing Supervisor in cooperation with staff from the Nutrition Department. c. Patients in the adult psychiatric service have held meetings with hospital personnel to discuss ways of improving their care while in the Hospitals.

Recruitment of nursing staff has not been difficult, but maintaining desirable stability of staffing continues to be a problem. An average

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of 4.1 hours of nursing care per patient per day on all services was given in 1955-1956 as compared to 4.8 hours the preceding year. The decrease in the amount of nursing care given was due to the increased patient census.

One hundred eighty-three (183) practical nurses and professional nurses resigned from July, 1955, to July, 1956. The lowest number of resignations occurred in November and the highest number in June. The reasons, as stated on the resignation forms, were as follows:

Pregnancy and Family Responsibilities.....	22%
New Position	21%
Marriage	19%
Leaving State	19%
Attend School	5%
Working Conditions	4%
Personal and Other.....	4%
Illness	3%
Travel	3%
	100%

Variety Club Heart Hospital

Summary

Heart Hospital patients came from as far as Australia and South America during the past year. During the year 1955-56 there were:

Admissions	1,233	Out-Patient Visits	5,026
Discharges	1,272	(New and Revisits)	
X-ray Procedures	4,817	Patient Days	23,813
Heart Catheterization		Average Census	65
and Laboratory	635	Percentage of Occupancy	84%
Laboratory Procedures	27,881	Average Length of Stay.....	19 da.

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Service and Supply

Fire Committee

The committee completed the "Emergency Fire Manual" and several drills were held during the year. It is appropriate here to express the committee's thanks to the members and staff of the University of Minnesota Medical Center for cooperation given to the fire committee during the fire drills.

Housekeeping

There were seven areas under remodeling. Five areas were completed and occupied. Eight stations were completely painted and all walls washed except for newly painted areas. A total of 65,963 pieces of new linen were put in service during the year. The unit girls cleaned and prepared 7,309 beds.

Maintenance Department

Engineers had a busy year. Working closely with the Fire Committee they tried to remove and eliminate fire hazards. During the fire drills it was discovered that within 3 to 4 minutes after the alarm the Maintenance Department's fire brigade was at the scene of the fire ready to go into action.

During the year the Maintenance Department established a "Zone Cart Preventive Maintenance" program and installed fans in every patient room and inspected and repaired the old fans. The department has been active in the remodeling program providing temporary service to the affected areas.

Telephone and Telegraph

During this year the telephone service was improved considerably. A new Tele-Fax unit was installed for quicker and better telegraph service.

The outlook for the future is good and we hope by next year to have all Hi-Lo beds in the Hospitals, new furniture, partial remodeling of the kitchens and completion of the areas that are under remodeling now.

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Medical Record Department

Chart Service

The gradual increase in services rendered by the Medical Record Department for the past five years is shown in the following table:

	<u>1951-52</u>	<u>1952-53</u>	<u>1953-54</u>	<u>1954-55</u>	<u>1955-56</u>
Insurance Reports					
Completed -----	3,821	4,616	5,063	5,364	6,408
Number of Charts					
Pulled for Studies ----	17,550	25,538	26,046	14,474	31,794
OPD Charts Pulled					
Including Clinic					
Visits and Fails -----	112,102	108,129	112,458	119,999	126,813
Charts Pulled for					
Hospital Admissions --	11,444	10,279	11,836	12,571	14,028

Research Projects

This past year 31,794 charts were pulled for studies and follow-up. This figure represents 92 completed studies, 16 temporarily discontinued, 4 reactivated, and 11 long-term studies. (Those which will continue for several years have been classified as long-term studies.)

There are two factors which have made it possible to complete more studies which require pulling of a large number of charts, the excellent cooperation of the staff in using the charts in the research area and the use of cardineer for indexing of diseases and operations.

Stenographic Department

A new program was initiated in January in hiring of personnel for the Stenographic Department. The program in the Stenographic Department involving full time dictaphone transcribers has been classified as the Senior Medical Typist Training Program, and the girls are being given a course of on-the-job training in basic medical terminology, basic systems and organs of the body, laboratory terms, pathological terms, and X-ray terms and a general course in gross anatomy to enable them better to know the parts and workings of the human body thus giving them a better understanding of the terms used in their work.

The course has been very successful. It is of course, too early to

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know the ultimate value of such a course but, basically, the results have been most gratifying. It has been found that by giving the employees a better understanding of the work they do and by giving them a chance for merit advancement the program has increased their interest, reduced the errors in transcription, and increased their speed.

The Annual Report of the Stenographic Department is as follows:

July 1, 1955 through June 30, 1956:

Letters Transcribed:	20,412
Out-Patient -----	9,783
Discharge -----	9,982
Miscellaneous -----	647
Copy Work (Autopsies, Charts, Forms, Etc.)*	7,859
Operations Transcribed:	9,920
General Surgery -----	6,180
Cystoscopies -----	3,740
Pathological Tissues -----	9,256
Autopsies -----	1,215

Volunteer Service

Summary

An average of 101 volunteers serving at least four hours a week in clinics, Information and Mail Desks, Central Supply Room, the Heart Hospital, Pediatrics, Blood Bank and many other special services gave 18,127 hours to the University of Minnesota Hospitals in 1955-1956. Their work has found a place in every department where assistance to patients is needed. Twelve of these volunteers have now given over five years of service, while 38 volunteers have completed one year of service. Twenty-seven women earned the American Hospital Association volunteer pin this year which is awarded upon the completion of 100 hours of work.

Organizations and service groups including the University Hospital Auxiliary and the International Sunshine Society contributed many hours in sewing garments, towels and other hospital supplies. Toys, games and play material were contributed by the Red Cross, Girl Scouts, Boy Scouts, Campfire Girls, Variety Club Auxiliary and various Sunday

*This includes copying the rough forms of autopsies that have been transcribed, copies of discharge letters from the records for new referring doctors, insurance forms, written letters from the Volunteer Director, Pharmacy, and various other departments.

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school and sorority groups. Funds for patient needs and gifts, such as aquariums, record players and radios were contributed by various sections of the Faculty Women's Club, Variety Club and other groups and individuals.

The volunteer visitors program in nursing homes, which is supervised jointly by the Hospitals Volunteer Service and the Social Service Department, now has an average of 89 volunteers working once a week in 22 homes. These volunteers gave 4,012 hours of service in 1955-56. This year eight nursing home volunteers have earned the American Hospital Association volunteer pin for 100 hours of service.

T h a n k s

The Administration of the Hospitals wishes to thank the Variety Club for its support to the Variety Club Heart Hospital; members of the University Faculty Women's Club who have continued their generous efforts in behalf of our patients; the Crippled Child Relief; the Minnesota Society for Crippled Children and Disabled Adults; the State Division of Social Welfare and the County Welfare Boards for their assistance; the various Nursing Homes for their cooperation; the Traffic Club which year after year continues to provide entertainment, gifts and cheer to our patients at Christmas; the Sunshine Society for its contributions; the Camp Fire Girls; the Girl Scouts; the Needlework Guild; the Junior League; the Minneapolis Council of Church Women; the Minneapolis and Hennepin County Chapter of the American Red Cross; the Volunteer Service Bureau; and many other organizations and individuals who have contributed to the welfare of our patients.

We wish to express our sincere appreciation to our corps of Volunteers working at the information desks and in patient areas. We wish to thank the many people throughout the state who have contributed to the Heart Fund and the Cancer Fund during the past year. To all members of the professional and service staffs of the Hospitals, the Administration wishes to extend the appreciation of the Hospitals for their loyal devotion to duty and considerate care of the patients.

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APPENDIX
TABLE 1

UNIVERSITY OF MINNESOTA HOSPITALS
STATEMENT OF INCOME & EXPENDITURES
June 30, 1956

INCOME

County & State Reimbursement	\$2,281,944.28	
Pay Bed	2,131,762.72	
Minnesota Hospital & Home for Crippled Children	65,000.00	
Psychopathic Hospital	469,966.00	
Child Psychiatry	160,000.00	
Rehabilitation	265,000.00	
Out-Patient Department	225,041.31	
Student Health Service	111,546.05	
Variety Club Heart Hospital	25,000.00	
University Funds	171,233.00	
Other Funds	55,499.33	
Multiple Sclerosis	<u>15,000.00</u>	\$5,976,992.69

EXPENDITURES

Salaries & Wages	\$3,696,444.18	
Supplies & Expense	<u>2,281,303.68</u>	<u>5,977,747.86</u>

OVERDRAFT

\$ -755.17

COST OF OPERATION

Year	Out-Patient Dept.	In-Patient Dept.	Out-Patient Visit	Hospital Day
1951-52	\$433,190.27	\$3,331,177.99	\$4.35	\$21.74
1952-53	452,797.47	3,629,971.84	4.67	22.75
1953-54	489,676.01	3,803,470.24	4.84	24.36
1954-55	580,225.05	4,241,477.74	5.33	24.47
1955-56	672,898.91	5,304,848.95	5.78	28.18

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TABLE 2

COMPARATIVE TWELVE-MONTHS REPORT IN-PATIENT DEPARTMENT

	1954-55	1955-56		1954-55	1955-56
Total Pts. Admitted			Average Days Per Pt.		
County (A)	4,330	4,089	County (A)	18.1	19.1
Pay & Per Diem (B, D, C)	6,062	7,467	Pay & Per Diem (B, D, C)	11.0	10.5
Student Health Serv.	1,149	1,393	Student Health Serv.	3.1	3.4
Psychiatry	213	269	Psychiatry	60.5	44.4
Psychiatry (Pay & Per Diem)	179	256	Psychiatry (Pay & Per Diem)	30.3	27.6
Child Psychiatry	62	85	Child Psychiatry	32.3	30.7
Child Psychiatry (Pay & Per Diem)	94	88	Child Psychiatry (Pay & Per Diem—B, D)	13.6	13.9
Free	241	217	Free	8.2	7.3
Eustis	169	154	Eustis	12.1	18.3
Variety Club Fund	65	9	Variety Club Fund	13.3	6.2
Rehabilitation	7	1	Rehabilitation	18.7	14.5
	12,571	14,028			
Total Patients Treated (Discharged)			Average Length of Stay Per Patient	13.7	13.4
County (A)	4,475	4,640			
Pay & Per Diem (B, D, C)	5,867	6,904	Daily Average No. of Patients		
Student Health Serv.	1,150	1,391	County (A)	215.4	212.9
Psychiatry	243	335	Pay & Per Diem (B, D, C)	176.5	213.9
Psychiatry (Pay & Per Diem)	147	208	Student Health Serv.	10.0	12.8
Child Psychiatry	63	98	Psychiatry	35.3	32.7
Child Psychiatry (Pay & Per Diem)	92	83	Psychiatry (Pay & Per Diem—B, D)	14.9	19.3
Free	247	226	Child Psychiatry	5.5	7.1
Eustis	174	168	Child Psychiatry (Pay & Per Diem—B, D)	13.8	3.4
Variety Club Fund	59	9	Free	5.4	4.3
Rehabilitation	6	2	Eustis	5.6	7.7
	12,523	14,064	Variety Club Fund	2.3	.2
Total Days Hospital Care			Rehabilitation	.3	.1
County (A)	78,635	77,944			
Pay & Per Diem (B, D, C)	64,451	78,293	Daily Average Census for Hospital	475.04	514.4
Student Health Serv.	3,658	4,695			
Psychiatry	12,904	11,944			
Psychiatry (Pay & Per Diem—B, D)	5,438	7,065			
Child Psychiatry	2,009	2,613			
Child Psychiatry (Pay & Per Diem—B, D)	1,279	1,250			
Free	1,973	1,582			
Eustis	2,046	2,813			
Variety Club Fund	869	56			
Rehabilitation	131	29			
	173,393	188,284			

TABLE 3
COMPARISON OF LENGTH OF STAY

	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56
General Surgery	14	15	14	14	14	13	14	14.5	15.3	14.0
Urology	13	12	12	11	12	11	10	9.7	10.3	10.4
Orthopedics	39	22	28	24	27	25	25	23.5	20.6	18.5
Neurosurgery	16	12	13	12	11	11	15	11.7	14.3	14.3
Tumor Surgery *	10	12	10	12						
Reconstruction Surgery *	41	23	19	25						
Chest Surgery *			24	25						
<i>* Included in General Surgery since 1950.</i>										
Anesthesia										1.0
Physical Medicine									33.3	16.8
Medicine	21	18	17	18	21	21	17	15.5	15.7	16.3
Neurology	16	17	14	16	17	16	16	15.0	13.6	15.3
Dermatology	18	19	21	21	22	20	22	19.3	19.9	17.9
Psychiatry	35	32	29	26	34	30	34	34.3	46.8	36.2
Child Psychiatry							19	22.3	21.1	22.3
Ophthalmology	16	15	15	12	15	14	19	13.5	15.4	12.6
Otolaryngology	7	7	8	8	9	8	7	6.0	6.4	6.6
Gynecology	11	11	8	11	8	8)	9)	14.3)	14.3)	16.6)
Tumor Gynecology	57	35	18	19	11	11)))))
Obstetrics	14	12	11	10	9	8	7	6.3	6.6	6.3
Newborn Pediatrics	10	11	9	9	9	8	8	6.6	6.3	5.9
Pediatrics Specialties	18	16	14	14	16	18	17	16.8	15.8	15.8
Health Service	4	4	4	5	4	4	3	3.4	3.2	3.3
Totals	15	14	13.2	12.7	13	14	13	13.2	13.8	13.4

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TABLE 4
COMPARATIVE TWELVE-MONTHS REPORT
IN-PATIENT DEPARTMENT

Service	Admissions		Patient Days		Avg. Length Stay	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Surgery (general)	1,776	1,854	27,136	25,998	15.3	14.0
Urology	800	835	8,201	8,660	10.3	10.4
Orthopedics	234	255	4,825	4,710	20.6	18.5
Neurosurgery	<u>485</u>	<u>488</u>	<u>6,946</u>	<u>6,951</u>	14.3	14.2
Totals	3,295	3,432	47,108	46,319		
Medicine	1,940	2,113	30,458	34,408	15.7	16.3
Dermatology	<u>135</u>	<u>142</u>	<u>2,688</u>	<u>2,548</u>	19.9	17.9
Totals	2,075	2,255	33,146	36,956		
Psychiatry	392	525	18,342	19,009	46.8	36.2
Neurology	588	543	7,968	8,284	13.6	15.3
Child Psychiatry	<u>156</u>	<u>173</u>	<u>3,288</u>	<u>3,863</u>	21.1	22.3
Totals	1,136	1,241	29,598	31,156		
Ophthalmology	165	168	2,541	2,112	15.4	12.6
Otolaryngology	<u>407</u>	<u>394</u>	<u>2,602</u>	<u>2,607</u>	6.4	6.6
Totals	572	562	5,143	4,719		
Gynecology	557	611	7,978	10,162	14.3	16.6
Obstetrics	807	955	5,299	6,033	6.6	6.3
Newborn Pediatrics	671	799	4,214	4,721	6.3	5.9
Pediatrics & Specialties	2,111	2,357	33,401	37,169	15.8	15.8
Health Service	1,239	1,444	3,915	4,810	3.2	3.3
Rehabilitation	<u>108</u>	<u>372</u>	<u>3,591</u>	<u>6,239</u>	33.3	16.8
TOTALS	12,571	14,028	173,393	188,284	13.8	13.4

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TABLE 5

COMPARATIVE TWELVE-MONTHS REPORT
OUT-PATIENT DEPARTMENT

Service	New Patients		Revisits		Totals	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Medicine						
General	3,019	3,009	8,535	7,359	11,554	10,368
Allergy	38	63	861	942	899	1,005
Arthritis	83	96	2,115	1,929	2,198	2,025
Cardiac (adult)	304	238	1,792	2,060	2,096	2,298
CMC (Combined Medical Clinic)	---	1	283	279	283	280
Chest	13	38	314	388	327	426
Diabetes	19	94	754	921	773	1,015
Gastro-intestinal	15	35	265	336	280	371
Hematology	12	52	882	900	894	952
Metabolism	43	94	916	995	959	1,089
Dermatology & Syphilology	464	438	3,339	2,776	3,803	3,214
Neurology						
General	496	515	731	770	1,227	1,285
Convulsive Disorder	4	1	682	840	686	841
Multiple Sclerosis	40	21	216	189	256	210
Muscular Dystrophy	64	61	68	93	132	154
Parkinson	---	---	290	363	290	363
Psychiatry	409	458	2,964	5,068	3,373	5,526
Surgery						
General	562	715	3,853	4,228	4,415	4,943
Plastic	44	59	459	446	503	505
Proctology	381	358	1,843	1,510	2,224	1,868
Tumor	265	279	2,946	2,719	3,211	2,998
Orthopedic	365	341	1,514	1,588	1,879	1,929
Urology - Female	184	175	993	657	1,177	832
Urology - Tumor	---	---	---	5	---	5
Urology - Male	307	352	1,973	1,668	2,280	2,020
Urology - Tumor	---	---	---	25	---	25
Neurosurgery	103	110	554	539	657	649
Eye						
General	890	777	4,204	3,723	5,094	4,500
Refraction	---	---	866	904	866	904
Squint	---	---	231	228	231	228
Ear, Nose & Throat	693	624	2,811	3,095	3,504	3,719
Audiology	200	431	279	466	479	897
Gynecology						
General	508	455	1,415	1,437	1,923	1,892
Gynecology - Tumor	39	60	1,476	1,467	1,515	1,527
Gynecology - Proctology	---	2	---	41	---	43
Obstetrics	376	452	2,362	3,079	2,738	3,531
Night Obstetrics	3	1	290	188	293	189

(CONT'D)

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TABLE 5 (Continued)

COMPARATIVE TWELVE-MONTHS REPORT OUT-PATIENT DEPARTMENT

Service	New Patients		Revisits		Totals	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Pediatrics						
General	1,103	1,131	4,634	3,857	5,737	4,988
Allergy	33	7	353	192	386	199
Cardiac	338	217	1,283	1,311	1,621	1,528
Convulsive Seizure	61	35	340	365	401	400
Endocrine	8	9	153	159	161	168
Child Psychiatry	186	194	358	776	544	970
Pediatric Neurology	—	13	—	28	—	41
Speech	35	25	181	145	216	170
Well Baby	8	11	320	261	328	272
Emergency W-212	2,544	2,791	11,832	13,699	14,376	16,490
Nutrition	547	637	516	718	1,063	1,355
Dental	123	116	1,960	1,856	2,083	1,972
Polio	4	3	147	60	151	63
North	2,450	3,061	12,929	15,714	15,379	18,775
Miscellaneous (Private)	578	653	2,156	2,883	2,734	3,536
Vocational Rehabilitation	214	315	531	501	745	816
TOTALS	18,175	19,623	90,769	96,746	108,944	116,369

TABLE 6 COMPARATIVE TWELVE-MONTHS REPORT NORTH CLINIC

Clinic Attendance	New Patients		Revisits		Totals	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Medicine	501	534	2,021	2,504	2,522	3,038
Neurology	217	255	778	1,091	995	1,346
Dermatology	1	5	53	48	54	53
Surgery	434	358	3,424	3,704	3,858	4,062
Urology	212	203	999	1,037	1,211	1,240
Neurosurgery	297	315	609	661	906	976
Deep X-Ray	72	94	1	8	73	102
Orthopedics	63	62	244	278	307	340
Physical Medicine	38	61	18	50	56	111
Dental	0	1	1	2	1	3
Eye	0	3	46	55	46	58
Ear, Nose & Throat	20	379	68	461	88	840
Obstetrics	165	261	2,207	2,483	2,372	2,744
Gynecology	256	282	1,426	1,787	1,682	2,069
Pediatrics	158	220	990	1,332	1,148	1,552
Psychiatry (Child)	2	1	5	—	7	1
Psychiatry (Adult)	14	27	39	213	53	240
TOTALS	2,450	3,061	12,929	15,714	15,379	18,775

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TABLE 7
COMPARATIVE TWELVE-MONTHS REPORT
X-RAY

Parts Examined	1954-55	1955-56
Abdomen	2,228	3,234
Angiography (cerebral)	205	245
Angiocardiogram	81	127
Ankle and Foot	689	751
Aortogram	41	55
Arm, Forearm, Elbow	336	414
Arteriogram	8	30
Bronchogram	143	119
Breast Study	990	1,286
Chest	19,138	22,832
Cholangiogram	266	353
Colon	4,001	4,339
Cystogram, urethrogram	482	478
Encephalogram	260	258
Facial Bones	218	290
Injection of Sinus Tract	---	2
Gall Bladder	758	721
Heart Catheterization	281	321
Heart	2,266	2,397
Hip Nailing	23	45
Hysterosalpingogram	34	31
Pancreatogram	---	6
Pelvimetry	134	126
Pelvis and Hip Joints	2,271	2,490
Planigraphy	402	331
Ribs and Sternum	181	209
Pneumoperitoneogram	---	6
Shoulder Girdle	417	453
Sinuses, Paranasal and Mastoids	495	545
Skull, Orbits, Sella Turcica	2,183	2,557
Small Bowel	134	172
Spine (entire)	2,912	3,388
Spinogram	179	213
Stomach, Duodenum, Esophagus	5,660	5,444
Tube Passing (3 Mos.)	---	21
Thigh, Leg, Knee	1,140	1,157
Urinary Tract	899	926
Isolated Kidney	24	5
Urography, Excretion	1,369	1,646
Urography, Retrograde	408	518
Venacavagram	2	---
Ventriculogram	68	45
Venogram	31	25
Wrist and Hand	693	692
Total Radiographic Examinations	52,050	59,303

(CONT'D)

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TABLE 7 (Continued)
COMPARATIVE TWELVE-MONTHS REPORT
X-RAY

Parts Examined	1954-55	1955-56
Photofluorography		
Employees	1,811	1,256
Admission Cases	<u>6,398</u>	<u>5,355</u>
	8,209	6,611
Fluoroscopy		
Diagnostic	<u>13,354</u>	<u>13,650</u>
Total Departmental Procedures	73,613	79,564
Patients		
Cancer Detection Center	6,279	6,518
Hospital	14,402	18,022
Heart Hospital	4,319	4,817
Out-Patient Department	11,766	12,461
Urology X-Ray (5 mos.)	683	1,656
Out-Patient X-Ray	<u>1,525</u>	<u>1,359</u>
	38,974 *	44,833 *
<i>* Students Health Service patients, private patients, and employees included in "Total Patients"</i>		
Radiographic Examinations:		
Heart Hospital X-Ray		5,056
Out-Patient X-Ray		1,761
Urology X-Ray		2,049
Main X-Ray		<u>50,437</u>
		59,303

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TABLE 8

COMPARATIVE TWELVE-MONTHS REPORT X-RAY THERAPY DEPARTMENT

Type of Treatment	1954-55	1955-56
Deep X-Ray Treatments		
New Patients	597	646
Patients Retreated	<u>143</u>	<u>183</u>
Total Number of Patients Treated	740	829
Hennepin County Patients	90	89
Ramsey County Patients	35	37
Patients from Other Counties	<u>196</u>	<u>197</u>
Total County Patients	321	323
Out-Patient Treatments	6,816	7,074
House-Patient Treatments	<u>5,076</u>	<u>5,921</u>
Total Number of Treatments	11,892	12,995
Average Number of Treatments per Patient	16.1	15.7+
No. Treatments on 250 Machine	3,935	4,154
No. Treatments on 400 Machine	2,774	3,051
No. Treatments on Cobalt Machine	5,183	5,790
Superficial X-Ray Treatments		
140 KV	222	199
Out-Patient Treatments	890	931
House-Patient Treatments	<u>70</u>	<u>69</u>
Total Number of Treatments	960	1,000
Phillips Contact Therapy	108	113
Radium		
Total Number of Treatments	232	210
New Patients Treated	198	171
Strontium (Beta Ray)		
Total Number of Treatments	107	59
New Patients Treated	16	8
Isotope Laboratory Report		
Total Number Tracer Studies & Treatments	952	1,074
Number New Patients Given Tracer Study	663	765
Number Patients Given Repeat Tracer Study	207	216
Number Patients (New) Given Treatment	63	62
Number Patients Given Retreatment	19	31
Total Number Millicuries	551.5	980.81

(CONT'D)

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TABLE 8 (Continued)
COMPARATIVE TWELVE-MONTHS REPORT
X-RAY THERAPY DEPARTMENT

Type of Treatment	1954-55	1955-56
Phosphorus Report		
Total Number Treatments	57	59
Number New Patients Given Treatment	19	30
Number Retreatments	28	21
Eye Tumor Diagnosis Studies	---	19
Total No. of mc. used for treatment and eye tumor studies	----	173.75
 Radioactive Gold Report		
Number of Patients Treated	10	10
Total Number of Millicuries	810	1,140
 RIHSA Blood Volume Studies		
	24	71
 Radioactive Chromium Red Cell and Survival Studies		
Blood Volume Studies	9	26
Survival Studies	---	15
 Co⁶⁰ - B¹² Studies		
Number of Studies	---	27
 FE⁵⁹ Studies		
	---	2
 Conversion Ratio Studies		
Number of Studies		496

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TABLE 9
COMPARATIVE TWELVE-MONTHS REPORT
HOSPITAL LABORATORIES

Laboratory	Number of Determinations	
	1954-55	1955-56
Bacteriology	23,002	23,714
Blood Bank	106,712	100,568
Cancer Detection	22,214	23,737
Chemistry	58,265	70,277
Clerks	7,636	7,011
Dispensary	50,651	51,821
Electrocardiography & Basal Metabolism	8,485	9,623
Electroencephalography	1,073	1,370
Heart Catheterization	695	1,041
Heart Hospital	22,518	24,951
Hematology	84,194	112,552
Hematology, Special	1,357	1,426
North Clinic	7,503	8,839
Parasitology	(Inc. in Serology)	609
Serology	1,804	7,293
Tissues		
Specimens:		
Autopsy	434*	470*
Surgical	4,887*	5,003*
Blocks:		
Autopsy	8,670	8,789
Surgical	14,558	15,205
Cytology	—	212
Special Stains, etc.	—	165
Urinalysis	<u>77,611</u>	<u>76,704</u>
Totals	496,948	545,907
<i>* Specimens not included in totals</i>		

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TABLE 10
COMPARATIVE TWELVE-MONTHS REPORT
OPERATING ROOMS

Service	Major		Minor		Totals	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Department of Surgery						
General Surgery	2,017	2,184	445	539	2,462	2,723
Neurosurgery	450	420	86	117	536	537
Urology	215	199	45	47	260	246
Orthopedics	211	244	204	271	415	515
Department of Gynecology	197	203	217	209	414	412
Department of Ear, Nose & Throat	216	268	530	523	746	791
Dentistry	32	25	6	7	38	32
Department of Ophthalmology	187	223	66	79	253	302
Totals	3,525	3,766	1,599	1,792	5,124	5,558
Cystoscopy Department						
Majors	365	411	---	---	365	411
Cystoscopies	---	---	959	1,324	959	1,324
Minors	---	---	853	770	853	770
X-Rays	---	---	775	722	775	722
Totals	365	411	2,587	2,816	2,952	3,227
Combined Totals	3,890	4,177	4,186	4,608	8,076	8,785
Summary						
	<u>1954-55</u>	<u>1955-56</u>				
Majors	3,890	4,177				
Minors	<u>4,186</u>	<u>4,608</u>				
Totals	8,076	8,785				

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TABLE 11
COMPARATIVE TWELVE-MONTHS REPORT
PHARMACY

Month	Out-Patient Department, Health Service, Heart Hospital Rx		Hospital Rx (Including Heart Hospital)		Total Rx	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
July	3,344	3,105	10,147	10,232	13,491	13,337
August	3,514	3,706	10,250	12,288	13,764	15,994
September	3,395	3,576	9,005	10,592	12,400	14,168
October	3,347	3,689	9,295	11,130	12,642	14,819
November	3,537	3,906	9,285	10,337	12,822	14,243
December	3,405	3,786	9,926	11,667	13,331	15,453
January	3,403	3,753	9,570	11,048	12,973	14,801
February	3,061	3,594	8,456	11,099	11,517	14,693
March	3,960	4,035	11,255	12,765	15,215	16,800
April	3,538	4,079	10,571	11,974	14,109	16,053
May	3,599	4,175	11,396	13,016	14,995	17,191
June	3,304	4,215	10,083	12,261	13,387	16,476
Totals	41,407	45,619	119,239	138,409	160,646	184,028

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TABLE 12

DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

Treatments	Out-Patient		In-Patient		Totals	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Rehabilitation Center						
Physical Therapy:						
Diathermy	1,853	2,394	264	406	2,117	2,800
Electric Stimulation	121	290	247	589	368	879
Hot Packs	338	878	841	978	1,179	1,856
Hubbard Tank	—	87	614	974	614	1,061
Massage	2,265	3,232	2,170	3,606	4,435	6,838
Paraffin	294	521	389	332	683	853
Radiant Heat	767	508	1,406	695	2,173	1,203
Therapeutic Examination	4,619	8,161	11,563	19,534	16,182	27,695
Ultra-violet	586	238	1,474	2,425	2,060	2,663
Whirlpool	667	1,213	618	1,275	1,285	2,488
Miscellaneous	6	24	99	8	105	32
Totals	11,516	17,546	19,685	30,822	31,201	48,368
Occupational Therapy:						
A.D.L. Training (Activities Daily Living)	57	11	263	458	320	469
Diversional	308	90	4,066	6,833	4,374	6,923
Functional	719	1,642	3,905	5,981	4,624	7,623
Mental Hygiene	90	—	148	—	238	—
Prevocational	93	437	503	1,339	596	1,776
Totals	1,267	2,180	8,885	14,611	10,152	16,791
Speech Therapy:						
Speech Evaluation	34	47	35	59	69	106
Speech Training	689	1,787	304	770	993	2,557
Totals	723	1,834	339	829	1,062	2,663
Vocational Rehabilitation						
Counseling	207	1,470	625	1,146	832	2,616
Placement	332	27	150	—	482	27
Totals	539	1,497	775	1,146	1,314	2,643
Total Treatments	14,045	23,057	29,684	47,408	43,729	70,465
Occupational Therapy — Special Service Units:						
Pediatrics	—	—	3,950	5,468	3,950	5,468
Child Psychiatry	—	—	2,461	1,987	2,461	1,987
Psychiatry	—	—	13,525	11,227	13,525	11,227
Totals	—	—	19,936	18,682	19,936	18,682
PM&R Department						
Total Treatments	14,045	23,057	49,620	66,090	63,665	89,147

(CONT'D)

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TABLE 12 (Continued)

DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

Census—Patients Treated	Out-Patient		In-Patient		Totals	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Rehabilitation Center						
New Patients	415	469	639	913	1,054	1,382
Total Patient Visits	6,822	9,312	13,082	20,850	19,904	30,162
Total Treated	439	509	658	1,004	1,097	1,513
Pediatric O.T.						
New Patients			484	811	484	811
Total Patient Visits			3,950	5,468	3,950	5,468
Total Treated			495	832	495	832
Ped. Psych. O.T.						
New Patients			87	113	87	113
Total Patient Visits			2,461	1,987	2,461	1,987
Total Treated			96	121	96	121
Psychiatry O.T.						
New Patients			341	302	341	302
Total Patient Visits			13,525	11,227	13,525	11,227
Total Treated			360	346	360	346
PM&R Department						
Total New Patients	415	469	1,551	2,139	1,966	2,608
Total Patient Visits	6,822	9,312	33,018	39,532	39,840	48,844
Total Treated	439	509	1,609	2,303	2,048	2,812
PM&R Service						
	New		Revisits		Totals	
	1954-55	1955-56	1954-55	1955-56	1954-55	1955-56
Out-Patient Clinic	355	394	578	543	933	937
Polio Clinic	9	2	164	106	173	108
In-Patient Consults	<u>322</u>	<u>866</u>	<u>376</u>	<u>378</u>	<u>698</u>	<u>1,244</u>
Totals	686	1,262	1,118	1,027	1,804	2,289

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TABLE 13
WAITING LIST

Service	1951-52	1952-53	1953-54	1954-55	1955-56
Male Surgery	18	14	21	7	0
Female Surgery	11	18	14	13	5
Neurosurgery	2	6	5	0	0
Plastic Surgery	0	0	1	0	7
Urology	28	5	10	22	8
Tumor	2	0	1	0	0
Orthopedics (Pediatrics)	3	2	5	1	4
Plastic Surgery	3	1	1	1	6
Surgery (Pediatrics)	0	0	0	0	0
Urology (Pediatrics)	3	0	0	0	2
Orthopedics	17	23	24	23	5
Medicine	1	4	3	1	0
Medicine (Pediatrics)	1	1	0	0	0
Neurology	30	32	11	52	41
Neurology (Pediatrics)	1	0	0	0	0
Psychiatry (Adult)	7	21	13	19	2
Psychiatry (Pediatrics)	0	14	11	7	5
Dermatology	24	6	7	0	0
Pediatrics	0	0	0	0	0
Ophthalmology	0	0	0	0	0
Ophthalmology (Pediatrics)	0	2	2	0	0
T & A	1	0	0	0	0
Physical Medicine (Adult)	0	2	3	6	7
Totals	<u>152</u>	<u>151</u>	<u>132</u>	<u>152</u>	<u>92</u>

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TABLE 14

SOCIAL SERVICE DEPARTMENT

STATISTICAL REPORT

7-1-55 - 7-1-56

1. Total Number of Cases under Care during Year		10,182
2. Added to Caseload during Year		4,159
a. New	2,621	
b. Old	463	
c. Recurrent	521	
d. Transfer from MSW	351	
e. Transfer from PSW	203	
3. Subtracted from Caseload during Year		4,158
a. Transfer to MSW	378	
b. Transfer to PSW	263	
c. Closed	3,517	
4. Number of Cases in which Action Completed during Year		1,110
5. Joint Cases	129	
a. MSW	6	
b. PSW	123	
6. Miscellaneous Cases		3,492

TABLE 15 - DIETARY DEPARTMENT

	July	August	September	October	November	December
Raw Food Costs						
Patients	16034.74	15715.40	15094.77	16636.64	15334.31	15634.03
House	<u>11517.44</u>	<u>10581.22</u>	<u>9737.62</u>	<u>11475.14</u>	<u>10426.16</u>	<u>10310.72</u>
Totals	27552.18	26296.62	24832.39	28111.78	25760.47	25944.75
Meals Served						
Patients	46284	46059	44097	46371	45759	45606
House	29348	28331	27588	33299	30809	28629
Staff Luncheons			<u>133</u>	<u>816</u>	<u>532</u>	<u>485</u>
Totals	75632	74390	71818	80486	77100	74720
Distribution of Raw Food Dollar in Percentage						
Patients:						
Staples	1.7	2.0	1.8	1.6	1.7	1.8
General Diets	33.8	35.8	34.3	35.0	34.5	32.4
Special Diet Laboratory	16.7	15.5	18.2	17.3	17.9	18.9
Milk Laboratory	1.4	1.1	1.1	0.8	0.6	1.2
Floor Orders	4.1	4.9	4.9	3.3	4.0	5.1
Parties - Adult	0.3	0.2	0.3	0.4	0.3	0.3
Parties - Children	0.0	0.1	0.1	0.2	0.2	0.0
Metabolic	0.2	0.0	0.1	0.2	0.2	0.3
Others	<u>0.0</u>	<u>0.1</u>	<u>0.1</u>	<u>0.3</u>	<u>0.0</u>	<u>0.2</u>
Totals	58.2%	59.7%	60.9%	59.1%	59.4%	60.2%
House:						
Nurses-Interns	41.2	39.7	38.3	39.0	39.3	37.8
Operating Room Nourishment	0.6	0.6	0.6	0.5	0.4	1.0
Staff Luncheon			<u>0.2</u>	<u>1.4</u>	<u>0.9</u>	<u>1.0</u>
Totals	41.8%	40.3%	39.1%	40.9%	40.6%	39.8%
Grand Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per Capita Cost						
Patients per Day	1.041	1.026	1.029	1.077	1.005	1.029
Patients per Meal	0.347	0.342	0.343	0.359	0.335	0.343
House per Day	1.179	1.122	1.053	1.008	1.002	1.062
House per Meal	0.393	0.374	0.341	0.336	0.334	0.354
Raw Food Classification (%)						
Meat, Cheese, Eggs	37.5	37.9	39.2	37.3	37.9	35.4
Canned Goods, Fruit, Vegetables	24.7	25.0	24.3	22.1	20.4	23.1
Milk and Cream	18.9	20.2	21.1	21.1	21.0	21.3
Fat and Oil	4.4	2.6	0.9	4.9	4.7	5.2
Miscellaneous	<u>14.5</u>	<u>14.3</u>	<u>14.5</u>	<u>14.6</u>	<u>16.0</u>	<u>15.0</u>
Grand Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(CONT'D)						

TABLE 15 (Continued) - DIETARY DEPARTMENT

	January	February	March	April	May	June
Raw Food Costs						
Patients	15881.33	16332.70	15900.18	16485.17	17007.49	16274.27
House	<u>10944.93</u>	<u>10668.51</u>	<u>11001.89</u>	<u>11301.64</u>	<u>11368.88</u>	<u>10317.47</u>
Totals	26826.26	27001.21	26902.07	27786.81	28376.37	26591.73
Meals Served						
Patients	47112	48134	51014	49143	50900	47977
House	32556	30600	30303	30581	30861	29424
Staff Luncheon	<u>968</u>	<u>849</u>	<u>745</u>	<u>510</u>	<u>613</u>	<u>303</u>
Totals	80636	79582	82062	80234	82374	77704
Distribution of Raw Food Dollar in Percentage						
Patients:						
Staples	1.5	1.9	2.5	2.7	3.3	3.3
General Diets	33.7	31.3	30.4	30.9	29.4	30.7
Special Diet Laboratory	17.2	19.6	19.0	18.4	20.0	20.6
Milk Laboratory	1.4	0.9	1.3	1.6	1.5	1.5
Floor Orders	4.5	5.8	5.2	4.8	4.8	4.3
Parties - Adult	0.2	0.2	0.2	0.2	0.2	0.4
Parties - Children	0.0	0.1	0.0	0.1	0.2	0.0
Metabolic	0.0	0.0	0.0	0.0	0.4	0.2
Others	<u>0.6</u>	<u>0.6</u>	<u>0.5</u>	<u>0.5</u>	<u>0.2</u>	<u>0.2</u>
Totals	59.1%	60.4%	59.1%	59.2%	60.0%	61.2%
House:						
Nurses-Interns	38.3	37.0	38.3	38.2	37.7	37.1
Operating Room Nourishment	1.3	1.3	1.2	1.3	1.2	1.2
Staff Luncheon	<u>1.3</u>	<u>1.3</u>	<u>1.4</u>	<u>1.3</u>	<u>1.1</u>	<u>0.5</u>
Totals	40.9%	40.6%	40.9%	40.8%	40.0%	38.8%
Grand Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Per Capita Cost						
Patients per Day	1.011	1.002	0.936	1.008	1.002	1.017
Patients per Meal	0.337	0.340	0.312	0.336	0.334	0.339
House per Day	0.981	1.017	0.984	1.092	1.083	1.041
House per Meal	0.327	0.339	0.328	0.364	0.361	0.347
Raw Food Classification (%)						
Meat, Cheese, Eggs	36.6	33.8	34.8	34.5	33.6	33.9
Canned Goods, Fruit, Vegetables	21.7	24.8	24.7	23.0	24.0	26.3
Milk and Cream	21.6	21.5	22.8	21.2	21.8	19.3
Fat and Oil	4.9	4.7	1.1	5.1	3.1	3.3
Miscellaneous	<u>15.2</u>	<u>15.2</u>	<u>16.6</u>	<u>16.2</u>	<u>17.5</u>	<u>17.2</u>
Grand Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(CONT'D)						

TABLE 15 (Continued) - DIETARY DEPARTMENT

	Annual Totals	Annual Averages	Annual Percentages
Raw Food Costs			
Patients	\$192,331.03	\$16,027.58	59.7
House	129,651.61	10,804.30	40.3
Totals	\$321,982.64	\$26,831.88	100.0%
Meals Served			
Patients	568,456	47,371	60.7
House	362,329	30,194	38.7
Staff Luncheons	5,953	496	0.6
Totals	936,738	78,061	100.0%
Distribution of Raw Food Dollar			
Patients:			
Staples	\$ 6,978.64	\$ 581.55	2.2
General Diets	105,183.38	8,765.28	32.7
Special Diet Laboratory	58,915.24	4,909.60	18.3
Milk Laboratory	3,876.16	323.01	1.2
Floor Orders	14,915.96	1,243.01	4.6
Parties - Adult	855.57	71.30	.3
Parties - Children	222.41	18.53	.0
Metabolic	1,008.04	84.00	.3
Others	375.62	31.30	.1
Totals	\$192,331.03	\$16,027.58	59.7%
House:			
Nurses-Interns	\$123,884.09	\$10,323.66	38.5
Operating Room Nourishment	3,025.36	252.11	.9
Staff Luncheon	2,742.16	228.51	.9
Totals	\$129,651.61	\$10,804.30	40.3%
Grand Totals	\$321,982.64	\$26,831.88	100.0%
Per Capita Cost			
Patients per Day		\$ 1.015	
Patients per Meal		\$ 0.339	
House per Day		\$ 1.052	
House per Meal		\$ 0.351	
Raw Food Classification (Cost)			
Meat, Cheese, Eggs	\$115,904.44	\$ 9,658.70	36.0
Canned Goods, Fruit, Vegetables	76,240.50	6,353.38	23.6
Milk and Cream	67,522.51	5,626.87	21.0
Fat and Oil	12,142.40	1,011.87	3.8
Miscellaneous	50,172.79	4,181.06	15.6
Totals	\$321,982.64	\$26,831.88	100.0%

Staff Meeting Report

Sterol Intermediates in the Synthesis of Cholesterol*

Ivan D. Frantz, Jr., M.D.,¹ Elinor D. Dulit,²
and Ann S. Davidson³

Historical Summary

Cholesterol ($C_{27}H_{46}O$), first isolated from gallstones, is a non-saponifiable, high molecular weight alcohol. Its synthesis *in vivo* has been confirmed in experimental animals numerous times. Isotope techniques have demonstrated that the concentration of deuterium in cholesterol from mice fed heavy water for 60 days is about half that of the body fluids, indicating that cholesterol formation involves coupling of many small molecules. Evidence points to the derivation of cholesterol hydrogen from water and acetic acid and of cholesterol carbon from acetic acid.

The squalene hypothesis, while not universally accepted, provides a good working base for our understanding of cholesterol synthesis. Definite evidence exists pointing to the hydrocarbon squalene as an intermediate. With this hypothesis, reactions in cholesterol synthesis may be divided into those preceding squalene and those following it. Neither part is as yet thoroughly worked out. Acetoacetic acid is thought to be formed first. Another molecule of acetic acid is then thought to be added to the carbonyl, yielding β -methyl- β -hydroxyglutaric acid. Elimination of a water and a CO_2 molecule presumably yields β,β -dimethyl acrylic acid. Condensation of six molecules of the latter gives squalene, which has 30 carbons.

Beyond squalene, cyclization probably leads first to the formation of a C_{30} sterol. Experiments with cell-free preparations have indicated

* This is an abstract of a report given at the Staff Meeting of the University of Minnesota Hospitals on October 5, 1956. A copy of the complete report, including tables, graphs, and references, may be obtained by writing to the Editor, UNIVERSITY OF MINNESOTA MEDICAL BULLETIN, 1342 Mayo Memorial, Minneapolis 14, Minn.

1. George S. Clark Research Professor, Department of Medicine.

2. Junior Scientist, Department of Medicine.

3. Laboratory Technologist, Department of Medicine.

that such a compound, lanosterol, can be synthesized from acetate and is convertible to cholesterol. Three methyl groups found in lanosterol but not in cholesterol are located in the molecule in accordance with the squalene hypothesis. No other compound between squalene and cholesterol is well established.

Experimental

Our investigations have been concerned with the nature of the intermediates between lanosterol and cholesterol. This transformation requires the removal of three methyl groups, the hydrogenation of the double bond in the side chain, and the shift of the nuclear double bond from the 8-9 to the 5-6 position. The order of these changes and the number of steps involved are not known. By chromatography on silicic acid we have isolated two compounds which are probably intermediates. One is identical with or closely related to a previously undescribed sterol from rat skin; the other is similar to lathosterol (Δ^7 -cholestenol), whose best source is also rat skin.

Methods of Isolation of Sterol Intermediates

Isolation of sterol intermediates is difficult because of low concentration and structural similarities. Our technique is a chromatographic method which permits separation of three of the "higher counting companions" of cholesterol. A slurry of two parts silicic acid with one part "Supercel" was prepared in benzene. The column was poured and allowed to settle under positive pressure. The mixture of sterols was added in benzene solution and eluted from the column with benzene. With rat skin sterols, two prominent peaks plus cholesterol emerged. One followed cholesterol; i. e., it is more polar than cholesterol. This is lathosterol. The other compound preceded cholesterol.

When rat liver slices were incubated for three hours in C^{14} -labeled acetic acid, most of the radioactivity in the digitonin precipitable sterols was actually present as cholesterol. With our chromatographic method, however, three small additional peaks of radioactivity appeared. Unlabeled skin sterols were added to the labeled sterols obtained from the liver slices to demonstrate the mobility of the labeled compounds in relation to that of lathosterol and the unknown skin sterol. Two of the radioactive compounds corresponded rather closely to the skin compounds and may be identical with them.

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When slices were incubated for only a few minutes in the labeled acetate, the relative size of the small peaks was greatly increased, constituting almost forty per cent of the total radioactivity. The *weight* of the material in these peaks, in contradistinction to radioactivity, is extremely small. Thus the specific activity is very high, hence the term "higher counting companions."

Conversion of Higher Counting Companions to Cholesterol

When liver slices were incubated for varying times with C^{14} -labeled acetate, the amount of radioactivity in cholesterol increased for hours. The activity moving chromatographically with lathosterol began to fall after one hour. The activity moving with the less polar companion followed a similar curve. A third companion is a digitonin precipitable sterol of mobility similar to lanosterol. This compound is less polar than any of the higher counting companions except squalene.

These time relationships suggest that the higher counting companions are intermediates. Another possibility, that they represent additional metabolically unrelated sterols with high rates of turnover, must also be considered. Experiments were designed, therefore, to demonstrate the conversion to cholesterol of the companion substances when added directly to surviving liver tissue. First, a slice experiment was carried out with 2 millicuries of C^{14} -labeled acetate, and the companions were separated on a preparatory scale. When the two less polar companions were solubilized with "Tween" and added to slices, they were converted efficiently to a compound which behaved chromatographically like cholesterol. Similar experiments were conducted in cell-free preparations, solubilization being achieved with propylene glycol. Conversion to cholesterol of the radioactive companion resembling the new fast-acting skin sterol was demonstrated. The companion resembling lathosterol was also converted, in yields of about fifty per cent.

Identity of the Less Polar Intermediate with the Corresponding Skin Sterol

An attractive working hypothesis is the assumption that the radioactive contaminants are intermediates in cholesterol synthesis and that they are identical with their chromatographic counterparts in skin. More evidence is needed. Careful recrystallizations of the less polar of the skin sterols, mixed with radioactive material from the liver,

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showed no detectable change in specific activity after four recrystallizations. A check of the specific activity of the small amount of material remaining in the supernatant after each recrystallization showed in one instance a specific activity 14 per cent *lower* than that of the crystals. This is a significant difference, much greater than the experimental error. One explanation might be that a small amount of non-radioactive impurity in the carrier was left behind in the supernatant. An alternative explanation is that the two compounds are not identical and that they form a molecular complex which is effectively precipitated by the large excess of carrier, a phenomenon observed with mixtures of cholesterol and cholestanol.

Properties of the Less Polar Skin Sterol

The melting point is 140-141° in an evacuated capillary and 10° lower in air. It is dextrorotatory and gives an immediate purplish-blue color with the Liebermann-Burchard reaction, resembling qualitatively in this regard dehydrocholesterol and lathosterol. The compound gives no specific absorption in ultraviolet at wave-lengths higher than 200 millimicrons, ruling out the presence of conjugated double bonds. The infrared spectrum resembles that of lathosterol and cholesterol, with small differences in the finger-print region. Attempted hydrogenation, with palladium on charcoal as catalyst, gives practically no uptake of hydrogen. Analysis for carbon and hydrogen is identical with that of cholesterol.

Identity of the More Polar Intermediate

At the beginning of these studies, inconclusive evidence was already at hand pointing to lathosterol as a possible intermediate. Fractional crystallization of our more polar intermediate with synthetic lathosterol indicated homogeneity, within the experimental error. Careful chromatography, however, revealed slight inhomogeneity of even the purest preparations. Therefore, we must reserve judgment, pending further experiments.

We synthesized tritiated lathosterol of very high specific activity, and were able to demonstrate its conversion to cholesterol, both in intact animals and in cell-free homogenates.

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Summary

We have made an extensive study of two of the sterol intermediates in cholesterol synthesis. We have shown that one of these closely resembles an apparently previously undescribed sterol of rat skin which probably has 28 or 29 carbon atoms and a double bond at 7. The other closely resembles lathosterol, but may not be identical with it. We have demonstrated the conversion of lathosterol to cholesterol *in vivo*, as well as *in vitro* with a cell-free system.



Editorials

Greetings to the Staff

The beginning of another school year brings the privilege of extending greetings to the staff. To some of you I say for the first time, "Welcome to our University of Minnesota Medical School and Hospitals!" You have been invited to be members of our medical family because we believe that you have the professional and personal qualifications to contribute to the high standards of scientific and humanitarian medical services which we have set for our Medical Center. To others I extend a "Welcome back!" after what I hope has been an interesting and profitable summer. You are the ones who have set the standards and made the reputation for our Medical School of which we are justifiably proud.

The Medical School and the University Hospitals have responsibilities for teaching, research, and service. Of these, teaching comes first because it is primarily to train physicians, nurses, and other health service personnel that the people of Minnesota established and support our Medical School and Hospitals. Effective teaching, therefore, is our paramount responsibility and should be so considered by every member of the staff. Furthermore, it is teaching, formal and informal, which assures high standards of medical service to patients in the Hospital and Out-Patient Department. Also, the interchange of ideas makes for intellectual growth not only for the student but also for the teacher.

Research also is a major objective of our School, for the spirit of inquiry is the very life blood of a progressive institution as well as the foundation upon which better teaching and service are built. We are proud of the contribution which our staff is making in research as well as in teaching.

Service to patients, although a secondary objective, represents the ultimate purpose of both teaching and research. The best of medical service, with consideration of the patient as an individual as well as a medical problem, is essential for good teaching and research.

Essential also are good communications and rapport with the physicians of the state who refer patients to our care. Thoughtful and considered communications with the physicians of these patients and

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the avoidance of careless, critical comments about them are imperative on the part of staff members. Our Hospitals want and need the good will and the support of the physicians of the state. The best way to get them is to be certain that every physician who refers a patient to this Hospital receives the same consideration as he would expect to receive from a specialist to whom he had referred a private patient.

Over the years the University of Minnesota Medical School and the University Hospitals have been pleasant and satisfying places to work. This has been largely due to the spirit of cooperation and good will that have existed among departments and among the various groups of professional, administrative, and service personnel. This is the key also to good medical service. We look forward to the continuation of this spirit over the year ahead.

HAROLD S. DIEHL,
Dean, College of Medical Sciences.

BULLETIN Readership Survey

During the latter part of the summer readers of the BULLETIN were given an opportunity to express their opinions about the publication. Cards with check-off items for indicating preferences were sent to all readers, and space was also provided on these cards for criticisms and suggestions. Approximately three hundred cards have been returned to us to date.

Respondents were asked to indicate a preference either for the present printed format or for the mimeographed format in which the BULLETIN appeared prior to last year. The preference was overwhelmingly in favor of the printed format by a six-to-one margin.

Readers were also asked whether they favor the publication of the abridged reports of staff meetings, i. e., the type which appeared last year, or whether they would prefer publication of the complete staff meeting reports if that were feasible. Here the stated preference was less clear-cut, but more than sixty per cent of the respondents favored the abridged versions.

During the coming year the printed format will, of course, be continued. For the most part abridged versions of the staff meeting reports will be published, and those readers desiring a copy of the

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complete manuscript of a given paper may obtain one by writing the editor, as was the case during the last year. From time to time, however, we will publish the complete report. Readers will thus have a further opportunity to compare the abridged reports and the complete reports, and a similar survey will be conducted again next year.

A number of our readers made specific comments, most of which were very favorable. Only one frankly unfavorable comment was received. Several worthwhile suggestions were made, and an attempt will be made to incorporate those which are feasible. There were several readers who suggested that the BULLETIN should contain more "clinical" or "practical" material. This perhaps deserves further comment and clarification. The scientific material in the BULLETIN comprises the reports of the various Departments and Divisions of the Medical School concerning studies being carried out. Sometimes these studies are distinctly "clinical"; at other times they are purely "fundamental". Most frequently, perhaps, the studies reported combine "clinical" and "fundamental" features—the line of distinction, after all, is frequently not sharp. As we see it, it is the function of the BULLETIN to inform its readers of results of studies, investigations, and other activities carried on in the Medical School. In no sense does it attempt to compete with or to furnish the same type of information as the many excellent clinical medical journals available today. We believe strongly that we should adhere to this concept of the BULLETIN'S function.

We wish again to thank our readers for their cooperation and helpful comments. We hope they will feel free to write us at any time with news items, suggestions, or criticisms.

Minnesota Medical Foundation

Minnesota Medical Foundation Day

Monday, October 1, the opening day of school was Minnesota Medical Foundation Day. Activities began at 11:00 a. m. in the Mayo Memorial Auditorium when DR. WESLEY W. SPINK, *Foundation President*, presented scholarships to the following medical students:

Freshman

GARY BAAB, New York Mills	VINCENT R. HUNT, Anoka
JOSEPH T. ECKERT, Gibbon	CHARLES R. PETERSON, Jackson
BARBARA FORD, Mankato	ODEAN SEVERSEIKE, Belmond, Ia.

Sophomore

WILLIAM J. BROUSSARD, Lafayette, Louisiana	GERALD RATINOV, Minneapolis
MARK D. HAUFERMANN, Lindstrom	JOHN D. RILEY, Stephen
STEPHEN A. KIEFFER, St. Paul	FRANKLIN ROLLER, Rochester
MILES I. LANE, St. Paul	GEORGE SKAFF, Albert Lea
CHARLES B. LUNDQUIST, Minneapolis	THOMAS O. SWALLEN, Minneapolis
RICHARD A. MELAND, Minneapolis	JAMES R. THOMPSON, Bemidji

Junior

GORDON L. ADDINGTON, St. Paul	EUGENE T. O'BRIEN, Hopkins
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Senior

LAVONNE B. BERGSTROM, Wadena

All awards were based on both scholarship and need. Mark D. Hafermann received a \$750 scholarship, the others \$500 scholarships.

Several of the above scholarships were specifically contributed by the following organizations: Minnesota Academy of General Practice, (John D. Riley); Minneapolis Chapter, American Academy of General Practice, (James R. Thompson); Minnesota Academy of Medicine, (Thomas O. Swallen); and Minneapolis Guild of Catholic Physicians, (Charles B. Lundquist). Other contributors to the Scholarship Fund included: Nicollet-LeSueur County Medical Society, Minnesota Academy of Ophthalmology and Otolaryngology, Kandiyohi-

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Swift-Meeker County Medical Society, Minnesota Surgical Society, Minneapolis Society of Internal Medicine, Interstate Clinic of Red Wing, and Nu Sigma Nu Medical Foundation.

Following presentation of the scholarships, DR. WILLIAM F. MALONEY, *Assistant Dean*, College of Medical Sciences, gave the annual Foundation Day Lecture. His address, "A Report on Medicine and Medical Education in South Korea," was received most enthusiastically.

The annual membership meeting was held in the Junior Ballroom of Coffman Memorial Union following the exercises in the Auditorium. Scholarship recipients and members of their families were guests of the Foundation at luncheon. Dr. Spink reported briefly on the Health Forums, the response to the new BULLETIN, and the Scholarship Program. DR. ROBERT B. HOWARD, *Foundation Secretary-Treasurer*, gave the financial report.

Election of members to the Board of Trustees followed. The Nominating Committee proposed the following slate: DOCTORS MOSES BARRON AND HERMAN E. DRILL, each for a second four-year term, and DR. HAROLD O. PETERSON for an initial term. The slate was adopted by a unanimous vote of the members.

MR. A. A. HECKMAN, *Executive Director*, Louis W. and Maud Hill Family Foundation, and *Member of the Board of Trustees* of the Minnesota Medical Foundation, gave an address entitled "Philanthropic Foundations and Medical Education." In his talk Mr. Heckman described the development and growth of philanthropic foundations, their relationships with other organizations, and the role they have played in stimulating research in many fields. All who heard him agreed that Mr. Heckman's address was a truly outstanding one.

Medical School Activities

Faculty Departures

As is usually the case at this time of year, we must report the departures and impending departures of a number of members of the Faculty. This is a duty which is at the same time saddening and pleasant—saddening because these friends and colleagues will no longer be with us here at Minnesota but pleasant because their moves represent advancements to positions of greater responsibility, recognizing in a very real way their demonstrated capabilities and accomplishments. Our best wishes for continued success go with each of them.

DR. WILLIAM F. MALONEY, *Assistant Dean*, has been appointed *Dean* of the Medical College of Virginia, Richmond. He will assume his new post next February. Dr. Maloney recently returned from South Korea where he spent three months as the Medical School's representative to the National University of Seoul Medical School.

DR. LEONARD F. PELTIER, who last July 1 became *Associate Professor and Acting Director*, Division of Orthopedic Surgery, will leave on January 1 to become *Professor and Head* of the Section of Orthopedic Surgery at the University of Kansas School of Medicine, Kansas City.

DR. F. JOHN LEWIS, *Associate Professor*, Department of Surgery, joined the Faculty of Northwestern University Medical School on September 1 as *Professor of Surgery*.

New Appointments and Promotions

We are pleased to welcome the following people who have joined the Faculty this year:

DR. ROBERT A. ULSTROM, *Associate Professor*, Department of Pediatrics, who rejoins the faculty after an absence of 3 years.

DR. LEROY C. MCLAREN, *Assistant Professor*, Department of Bacteriology and Immunology.

DR. ROBERT B. SCHULTZ, *Assistant Professor*, Department of Bacteriology and Immunology.

DR. G. G. NAHAS, *Assistant Professor*, Department of Physiology, who rejoins the Faculty after a year's absence.

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DR. OTTO N. RATHS, JR., *Assistant Professor*, Division of Psychiatry.

DR. WILLIAM F. SHEELY, *Clinical Assistant Professor*, Division of Psychiatry, who rejoins the Faculty after an absence of 3 years.

MISS NANCY L. COOK, *Instructor* in Pediatric Nursing, School of Nursing.

MISS MARY ANN JACKSON, *Instructor* in Introductory Nursing, School of Nursing.

MISS RUTH D. WEISE, *Instructor* in Student Teaching, School of Nursing, who returns to the Faculty after an absence of 4 years.

MISS HANNAH K. WALSETH, *Nursing Service Administration*, School of Nursing.

The following members of the Faculty were promoted to professorial ranks as of July 1:

Bacteriology and Immunology

DR. JOSEPH C. OLSON to *Professor*

DR. WILLIAM F. SCHERER to *Associate Professor*

Medicine

DR. FREDERICK H. K. SCHAAF to *Clinical Professor*

DRS. ELLIS S. BENSON, N. L. GAULT, JR., FREDERICK C. GOETZ, WILLIAM F. MAZZITELLO, and PAUL WINCHELL to *Assistant Professor*

DRS. ROLF L. ANDREASSEN, RICHARD J. FREY, MARK C. L. HANSON, WILLIAM E. PETERSEN, and FRED A. RICE to *Clinical Assistant Professor*

Dermatology

DRS. FREDERICK T. BECKER and ISADORE FISHER to *Clinical Assistant Professor*

Obstetrics and Gynecology

DR. IRWIN H. KAISER to *Associate Professor*

DR. LOUIS L. FREIDMAN to *Clinical Assistant Professor*

Otolaryngology

DR. HENRY V. HANSON to *Professor*

DRS. BENJAMIN BOFENKAMP, DOUGLAS KUSSKE, GRAHAM G. SMITH, and HAROLD S. ULVESTAD to *Clinical Assistant Professor*

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Pediatrics

DRS. MAURICIO MARTINS DA SILVA, RICHARD B. RAILE, and
RICHARD W. VON KORFF to *Assistant Professor*

Physiological Chemistry

DRS. IVAN D. FRANTZ and RALPH T. HOLMAN to *Professor*
DR. HELMUT R. GUTMANN to *Associate Professor*
DR. RICHARD W. VON KORFF to *Assistant Professor*

Psychiatry

DR. WERNER SIMON to *Professor*

Neurology

DR. MAYNARD M. COHEN to *Associate Professor*
DR. HAROLD P. COHEN to *Assistant Professor*

Clinical Psychology

GORDON HEISTAD and SHIRLEY HOLT to *Assistant Professor*

Radiology

DRS. RICHARD G. LESTER, ALEXANDER R. MARGULIS, and
CHARLES M. NICE, JR., to *Assistant Professor*

Radiation Therapy

DR. HALVOR VERMUND to *Associate Professor*

School of Public Health

THEODORE A. OLSON and JAMES STEPHAN to *Professor*
JACOB BEARMAN to *Associate Professor*
EUGENE JOHNSON to *Assistant Professor*

Laboratory of Physiological Hygiene

DRS. JOSEF BROZEK and HENRY L. TAYLOR to *Professor*

Surgery

DR. C. WALTON LILLEHEI to *Professor*
DRS. CLAUDE R. HITCHCOCK and BERNARD ZIMMERMANN to
Associate Professor
DRS. VICTOR HAUSER, EARL C. HENRICKSON, and WILLARD
D. WHITE to *Clinical Associate Professor*
DRS. STUART W. ARHELGER, ALBERT SULLIVAN, and ALAN
THAL to *Assistant Professor*
DRS. COLEMAN CONNOLLY, JOHN M. CULLIGAN, WILLIAM F.
HARTFIEL, DONALD C. MacKINNON, DANIEL J. MOOS,
NATHAN C. PLIMPTON, FRANK QUATTLEBAUM, WALTER R.
SCHMIDT, and LYLE A. TONGEN to *Clinical Assistant Professor*

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Orthopedic Surgery

DR. HARRY B. HALL to *Clinical Professor*

DRS. WALTER INDECK, D. KEITH MILLETT, E. HARVEY O'PHELAN,
and KENATH H. SPONSEL to *Clinical Assistant Professor*

Dr. Mosser Appointed

DR. DONN G. MOSSER, *Assistant Professor*, Division of Radiation Therapy, has been named Director of the Division, succeeding DR. K. W. STENSTROM who retired on June 30. We offer our congratulations and best wishes to Dr. Mosser.

Dr. Stenstrom Honored

DR. and MRS. K. W. STENSTROM were honored at a dinner in the Campus Club on June 16 where a large number of their friends gathered to pay them tribute. DR. E. T. BELL, *Emeritus Professor*, Department of Pathology was master of ceremonies, and he and DOCTORS JOHN L. MCKELVEY, *Professor and Head*, Department of Obstetrics and Gynecology, LEO G. RIGLER, *Professor and Head*, Department of Radiology, and E. DALE TROUT spoke briefly about "Stenny" and the many significant contributions he has made. Principal speaker was DR. ROBERT R. NEWELL, *Professor of Radiology*, Stanford University School of Medicine. A portion of the funds contributed by friends and colleagues of Dr. Stenstrom will be used to establish a library in the Division of Radiation Therapy.

Recognition Exercises

On the evening of June 8, the Faculty of the Medical School honored the graduating Senior Class at Recognition Exercises held in the Mayo Auditorium. After initial remarks by DEAN DIEHL, the graduates were presented. DR. RALPH SWANSON, *President of the Senior Class*, then gave a brief address on behalf of his classmates. Outstanding Achievement Awards were presented to two distinguished alumni, DR. LEONARD W. LARSON, '21, and DR. EDWIN J. SIMONS, '23. DR. FRANKLIN D. MURPHY, *Chancellor* of the University of Kansas, gave the featured address, a most stimulating talk entitled "The Meaning of University."

Postgraduate Education

Gynecology for General Physicians

The University of Minnesota announces a continuation course in Gynecology for General Physicians which will be held at the Center for Continuation Study from October 22 to 24, 1956. Management of common problems seen in daily practice will be stressed. Guest speaker will be DR. WILLIAM C. KEETTEL, *Professor* of Obstetrics and Gynecology, State University of Iowa College of Medicine, Iowa City. The course will be presented under the direction of DR. JOHN L. MCKELVEY, *Professor and Head*, Department of Obstetrics and Gynecology, and the remainder of the faculty will include members of the clinical and full-time faculties of the University of Minnesota Medical School.

Radiation Therapy for Radiologists

The University of Minnesota will present a continuation course in Radiation Therapy for Radiologists which will be held at the Center for Continuation Study and the adjacent Museum of Natural History Auditorium on the University campus from November 5 to 9, 1956. Radiation physics and biology will be considered, and two major groups of neoplastic diseases will be covered in detail, gynecological tumors and tumors of the maxillofacial area, pharynx and larynx.

Guest speakers will be DOCTORS HANS-LUDWIG KOTTMEIER, *Director*, Gynecological Department of Radiumhemmet, Stockholm, Sweden; J. A. DEL REGATO, *Director*, Penrose Cancer Hospital, Colorado Springs, Colorado; HENRY KAPLAN, *Professor* of Radiology, Stanford University School of Medicine, San Francisco, California; JOHN B. GRAHAM, *Instructor* in gynecology, Harvard Medical School, Boston; TITUS C. EVANS, Radiation Research Laboratory, State University of Iowa College of Medicine, Iowa City; and HAROLD TIVEY, Jefferson Davis Hospital, Houston, Texas. Dr. Kottmeier will also present the annual Leo G. Rigler Lecture on Wednesday evening, November 7. The course will be presented under the direction of DOCTORS LEO G. RIGLER, *Professor and Head*, Department of Radiology, and DONN G. MOSSER, *Assistant Professor and Director*, Division of Radiation Therapy.

Notice

All continuation courses presented by the University of Minnesota are approved for formal postgraduate credit by the American Academy of General Practice. Attendance certificates will be furnished on request.

Further information concerning the above programs or others to be presented may be obtained by writing to Dr. Robert B. Howard, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14.

Coming Events

- October 16 ----- Minnesota Pathological Society Meeting; THE SECOND ANNUAL E. T. BELL LECTURE; "Congenital Polycystic Kidneys"; *Dr. Edith L. Potter*, Associate Professor of Obstetrics and Gynecology, University of Chicago School of Medicine; Mayo Memorial Auditorium; 8:00 P.M.
- October 18-19 ----- Continuation Course in Techniques in General Practice
- October 22-24 ----- Continuation Course in Gynecology for General Physicians
- October 23 ----- Medical School Faculty Dinner; Main Ballroom, Coffman Memorial Union; 6:30 P.M.
- October 27 ----- Midwest Regional Meeting of the American College of Physicians held in conjunction with the fall meeting of the Minnesota Society of Internal Medicine; Mayo Memorial Auditorium.
- November 5-9 ----- Continuation Course in Radiation Therapy for Radiologists
- November 7 ----- ANNUAL LEO G. RIGLER LECTURE; "Clinical Management of Malignancies of the Ovary"; *Dr. Hans-Ludwig Kottmeier*, Director of the Gynecological Department of Radiumhemmet, Stockholm, Sweden; Mayo Memorial Auditorium; 8:15 P.M.
- November 19-21 ----- Continuation Course in Fractures for General Physicians
- November 29 ----- JACK FRIEDMAN LECTURE; "The Detection of Minimal Disease by Periodic Roentgen Examination"; *Dr. Leo G. Rigler*, Professor and Head, Department of Radiology, University of Minnesota Medical School; Mayo Memorial Auditorium; 8:15 P.M.
- December 6-8 ----- Continuation Course in Physical Medicine

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 William F. Maloney,
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 N. L. Gault, Jr.,
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Merle Loken

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Myrtle Rueger

Medical Fellow

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Henry Blackburn, Jr.
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Kyoichi Nakagawa

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 Assistant Director

Physician

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Clinical Instructor

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WEEKLY CONFERENCES OF GENERAL INTEREST

Physicians Welcome

- Monday, 9:00 to 10:50 A.M. OBSTETRICS AND GYNECOLOGY
Old Nursery, Station 57
University Hospitals
- 12:30 to 1:30 P.M. PHYSIOLOGY-
PHYSIOLOGICAL CHEMISTRY
214 Millard Hall
- 4:00 to 6:00 P.M. ANESTHESIOLOGY
Todd Amphitheater,
University Hospitals
- Tuesday, 12:30 to 1:20 P.M. PATHOLOGY
104 Jackson Hall
- Wednesday, 7:45 to 9:00 A.M. PEDIATRICS
McQuarrie Pediatric Library,
1450 Mayo Memorial
- Friday, 8:00 to 10:00 A.M. NEUROLOGY
Station 50, University Hospitals
- 9:00 to 10:00 A.M. MEDICINE
Todd Amphitheater,
University Hospitals
- 1:30 to 2:30 P.M. DERMATOLOGY
Eustis Amphitheater,
University Hospitals
- Saturday, 7:45 to 9:00 A.M. ORTHOPEDICS
Powell Hall Amphitheater
- 9:15 to 11:30 A.M. SURGERY
Todd Amphitheater,
University Hospitals

For detailed information concerning all conferences, seminars and ward rounds at University Hospitals, Ancker Hospital, Minneapolis General Hospital and the Minneapolis Veterans Administration Hospital, write to the Editor of the BULLETIN, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14.