UNIVERSITY OF Minnesota

OFFICE OF THE VICE PRESIDENT FOR HEALTH SCIENCES AFFAIRS
MAYO MEMORIAL BUILDING • MINNEAPOLIS, MINNESOTA 55455

March 8, 1972

Dr. James H. Werntz
Director, Educational Development Center
University of Minnesota
105 Walter Library
Minneapolis, Minnesota 55455

Dear Dr. Werntz:

This letter is a revised proposal for use of combined collegiate level 1972-73 educational development funds for the Health Sciences. As indicated in Dr. Shepherd's letter of February 28, the original targeted allocation for the Health Sciences under this program is $28,650 but now has been reduced to $20,055.

In my letter of December 28, 1971, to Dr. Zimmerman, I requested that the $28,650 be allotted to the health sciences learning resources development. This amount coupled with the $21,750 allocated from the 1971-72 E.D.P. would permit funding of the project for approximately 15 months. In view of the 30 percent reduction of our tentative 1972-73 allocation, I am recommending that the project period be cut back to 12 months. The budget proposal for the project now is as follows:

Coordinator of Health Sciences Learning Resources Development	$22,287
Part-time help for collecting and cataloging data	3,500
Senior clerk typist ($5304 plus fringe)	5,951
Office supplies, used office furniture and typewriter, and some educational resources materials	1,928
Educational resources development and demonstration workshops	2,200

Educational and technical consultants	5,000
Travel for coordinator and faculty representative (if appropriate) to visit top level educational resources centers and developers	1,500
Total:	$41,805

1971-72 Allocation	$21,750
1972-73 Request	20,055
Total:	$41,805

As with the previous proposals, the deans of all the Health Sciences and I consider this project the top health sciences priority for the allocation of collegiate level E.D.P. funds within the Health Sciences.

It is my understanding that Dr. Peter Roll has requested clarification of the respective roles of the Health Sciences Learning Resources Committee and a health sciences ad hoc committee investigating certain aspects of student personnel and educational services. The Learning Resources Committee is a permanent committee of the Health Sciences, with the responsibility for programmatic and physical development of a Health Sciences Learning Resources Center, including the formation and utilization of appropriate concepts and software. The ad hoc committee has not made yet proposals to the Health Sciences deans and directors. In a preliminary report, the committee suggested the need for the development of student personnel services such as career guidance and personal problem counseling and conducting educational research on such topics as student profiles, interdisciplinary relationships, student attitudes and expectations, and student evaluation. The committee also indicated its interest in research on curriculum development. Major curricular matters of interdisciplinary import will be under the purview of our newly formed Health Sciences Educational Policy Committee.

Specific proposals from the committee will be considered by the Council of Health Sciences Deans and Directors. While some crossover of interests and functions will occur in the work of all three committees, the council will provide sufficient guidance to avoid duplication of effort.

The council has assigned a top priority to the creation of a Health Sciences Learning Resources Center. While this development will have guidance from the Learning Resources Committee, it is clear that we need to have a person who, with some support personnel, will coordinate and give impetus to further development and use of audio-visual learning resources for the Health Sciences. This activity will no doubt have

a relationship to the work of all three health sciences committees referred to previously. More importantly, however, the learning resources development will assist the health sciences faculty in providing better educational programs for the students.

Attached to this letter is a report of educational developments and special learning resources in the Health Sciences. This information, collected by the Learning Resources Committee, consists of an introductory summary and a series of reports from individual colleges and departments. It is not intended as a refined report but should give the Educational Development Committee some impression of the extent and variety of educational developments and resources in the Health Sciences.

Sincerely,

Lyle French, M.D.
Vice President

LF/km

enclosures

EDUCATIONAL DEVELOPMENTS AND LEARNING RESOURCES

UNIVERSITY OF MINNESOTA HEALTH SCIENCES

From

Health Sciences Learning Resources Committee

March 8, 1972

LISTING OF REPORTS

HEALTH SCIENCES EDUCATIONAL DEVELOPMENTS AND LEARNING RESOURCES

INTRODUCTION

In October, 1964 the Health Science units at the University of Minnesota began a comprehensive study of long-range development of programs and facilities. Part of this study has been devoted to the planning and development of special learning resources including the design of a Learning Resources Center for Diehl Hall. For some time, individual Health Science units have been increasing their use of television, special audiovisual techniques, autotutorial systems, and other innovative educational methods in their teaching programs. The Health Sciences have come to the realization, however, that we must coordinate, consolidate, expand, and improve the utilization of these teaching modalities.

Information which follows this introduction consists of reports on educational developments and learning resources from University Hospitals and all the colleges in the Health Sciences. While the reports vary in extent and approach, the information should give the Educational Development Committee a good impression of the educational developments and learning resources in the Health Sciences. It is not intended as a finished report; the materials are submitted as prepared by the colleges and departments.

The reports on educational developments provide evidence of major curricular revisions and innovative instructional projects being carried out in the Health Sciences. Some examples are as follows: (1) The new curriculum in the Medical School offers the medical students more selectivity in their studies and the option for completing Medical School in three years. (2) A revised undergraduate curriculum has been developed in the School of Nursing which utilizes an innovative conceptual framework by which to teach and practice nursing, focused around man's adaptation to health and illness. (3) A new curriculum evolving in the School of Dentistry provides more individualized programs for the students and permits them to complete their studies in less than the traditional four years. (4) The Department of Psychiatry has developed a "Systems Analysis Index for Diagnosis", originally designed to introduce clinical psychopathology to preclinical medical students. The program combines videotaped interviews with patients, the "Systems Analysis Index for Diagnosis" (SAID) Handbook, and subsequent computer analysis of the results. The multimedia presentation creates a different atmosphere of learning. The Department of Psychiatry has reported that with this teaching approach the students "are highly motivated to learn by participation, response, rapid feedback, and discussion."

Throughout the reports are descriptions of teaching programs utilizing special audiovisual aids and autotutorial techniques. These teaching adjuncts can be applied effectively to both the fundamental and clinical studies in the Health Sciences. Videotapes are used to monitor student performance for instant playback and self-learning. Through a variety of instructional approaches, videotapes are used for autotutorial benefit and group teaching in a host of departments and schools: nursing, pharmacy, public health, family practice, dentistry, anatomy, pathology, physiology, occupational therapy, physical therapy, psychiatry, and medicine.

Study carrels with self-contained audiovisual equipment for information retrieval are being used to some extent in pharmacy, obstetrics and gynecology, dentistry, nursing, medical technology, and the Biomedical Library. The most extensive development is in the Biomedical Library where twelve carrels are equipped for self-learning with such items as projectors, recorders, playback units, x-ray view boxes, a teaching microscope, models, and a transparency maker. Of the patrons using the carrels, it is estimated that eighty percent are medical students, fifteen percent nursing students, two percent medical technology students, two percent dentistry students, and one percent graduate students. While this autotutorial development is primarily a project of the Medical School and the Biomedical Library, it is serving as a pilot program for creation of the Health Sciences Learning Resources Center.

Computer assisted instruction is only in its early stage of development in the Health Sciences. Most experience with this teaching technique has been in hematology, psychiatry, and opthalmology. In the computer based course in clinical hematology, a simulated clinical setting is provided by a computer so that medical students, house officers, and family physicians can learn about quantitative and qualitative abnormalities of hematopoiesis. This is accomplished by working through a series of thirteen case development problems which illustrate basic illnesses and defects in production and/or destruction of elements in the blood. The steps in the learning process are 1) a computer pre-test; and 2) a highly systematized case development problem where the student is given basic elements of medical history, physical examination, and then the blood smear. He then proceeds to evaluate the patient's problem in a non-cued manner and receives immediate feedback on his diagnostic approach. After working through thirteen such case developments, he is evaluated by 3) a computerized post-test.

Currently, there are specialized Health Sciences television operations in areas such as anatomy, dentistry, eye-otolaryngology, medicine, pharmacology-physiology, physical medicine, and psychiatry. Nursing has purchased some television equipment and a television studio is now being planned and has been funded. Some of the above television developments are limited, for example, to operations with portable equipment for monitoring and taping patient management and student performance. Others permit greater production and distribution of laboratory and clinical demonstrations as in anatomy, physiology, and dentistry.

Production and general availability of audiovisual instructional materials pose special problems for most of the Health Sciences faculty. Some departments have very limited funds to purchase audiovisual materials and no facilities to produce these teaching aids. Such deficiencies need to be corrected so all Health Science units have an opportunity to incorporate innovative audiovisual techniques in their teaching programs.

For some sixty years, there has been a Medical Art and Photography operation housed in University Hospitals. It is a self-sustaining unit providing audiovisual materials and services for various Health Sciences units but primarily for the

Medical School and University Hospitals. Services include artwork, production of slides, photography, and preparation of exhibits and displays. A recent development in the Department of Medical Art and Photography is the establishment of an academic program in biocommunications.

In the middle 1940's, the School of Dentistry established the Dental Illustration Laboratory to assist the faculty in the preparation and selection of audiovisual aids for dental education. Services performed by this laboratory include artwork, photography, closed circuit television production, and videotaping. The audiovisual resources provided to the teaching staff include some 65,000 slides and eighty 16 mm. teaching films. The Dental Illustration Laboratory has also been active in the development of a pilot instructional media resource center for the School of Dentistry.

The above summary statement and the more complete reports that follow provide some evidence of the extent and variety of learning resources and educational developments in the Health Sciences teaching programs. Over-all, these developments show creditable accomplishments by the faculty and staff. But analyzed critically, the activities are often embryonic, independent, incomplete, and underfunded. Clearly, the Health Sciences need to coordinate and improve their utilization of special learning resources to enhance their teaching programs and to economize time, personnel, money, and equipment.

February 15, 1972

Bio-Medical Library
Learning Resources Center
475 Diehl Hall

Carrels and Equipment

12 carrels

9 equipped with Kodak Carousel slide projectors and Norelco Synchroplayer cassette playback units

3 equipped with Graflex filmstrip projectors and Norelco Synchroplayer cassette playback units

Other equipment

tape recorders (cassette and reel-to-reel)

8mm and 16mm projectors

transparency maker

teaching microscope

xray view box

Autotutor teaching machine

computer terminals (not yet operational)

Print collection

Core collection of medical textbooks and reference works

#titles- 270

#volumes- 460

Reprints (xeroxed journal articles)

titles- 410

Non-print collection

197 instructional programs, mostly slide-tape format (also some filmstrips, 8mm film loops, records, and Autotutor programs)

Models

heart

brain

skull

Mannequins

ophthalmoscopy mannequin

laryngoscopic mannequin (on loan)

Phonocardiosimulator (on loan)

Learning Center Use

Patrons

School	Estimated % of Total # of Patrons
Medical	80
Nursing	15
Med Tech	2
Dental	2
Graduate	1

Average # of students on weekdays- 130

Materials

# Programs	Intended Users
177	Medical students
8 (plus occasional loans)	Nursing students
12	Med Tech students

Average # of audiovisual materials used daily- varies from 15-96, depending upon materials available for various courses

Staff

1 library assistant	40 hours per week
1 senior clerk	20
1 clerk typist	20
2 clerks	21 10

Learning Center Hours

Monday-Friday	8am -11pm
Saturday	8am-5pm
Sunday	2pm-10pm

Space

Approximately 2300 sq. ft. divided into

Reading area

13 tables- reading space for 52 students

Carrel area

12 carrels- capacity use, 24 students

3 tables- reading space for 6 students or area for use of microscope and models

Service area

Service desk

Storage for audiovisual materials and extra equipment

Petitioned areas for use of special equipment

February 8, 1972

To: Dr. Frank E. Di Gangi

From: Wallace F. White, Professor

Subject: Survey of Educational Resources efforts and future plans

For about 10 years I have been preparing programmed learning units and using them in my teaching. For several years the material was used in elementary pharmacology courses for nursing students (General Hospital) and junior pharmacy students. The nursing school at General Hospital has been discontinued and the course for pharmacy students has been dropped from the curriculum. Part of the material used for the courses, however, has been used in other parts of the country for continuing pharmacy education and the material on vitamins has been used in teaching pharmacognosy here. Dr. Yusuf Abel-Hajj and myself are in the process of revising the vitamin material for use during spring quarter 1972 in pharmacognosy.

I have just completed writing a programmed workbook on Advanced First Aid with financial support from the Council on Liberal Education, Small Grants Program, which will be used in the multimedia Red Cross First Aid course offered each spring quarter in pharmacy. Use is also made of 4 reels of 16 mm. color sound film and the "Standard First Aid Course Multimedia System" consisting of 4 workbooks prepared for the American National Red Cross. In addition, I have prepared a slide-tape 45 minute program on the "Prevention of Poisoning" for use in this course.

Since 1969 I have taught a self-study course in medical terminology, Phar. 5-210 entitled Terminology of the Health Sciences. The text used has been Smith and Davis, Medical Terminology, a programmed text. I have written a supplent titled, "Language of the Health Sciences" which was published in 1971. There has been a demand for this course each quarter since its inception. At present 110 students are enrolled, 16 of whom are pharmacy students. The remainder are pre-medical, pre-dental, pre-pharmacy, pre-occupational therapy, and a variety of other students enrolled in CLA, IT, and education.

Last year Dr. Kenneth Nelson prepared a programmed unit on thermodynamics for a course in pharmaceutics. He has recently prepared an additional unit to extend the programmed learning part of his course.

Mr. William Hodapp provided his drug education course with taped lectures for those who were unable to attend the regular class periods due to conflicts or illnesses.

Dr. Abdel-Monem during the present year has reorganized the course in quantitative analysis making use of two series of 35 mm. slide and casette tape programs for use in the laboratory and in the Educational Resources Center of the College. In addition he has been preparing a series of slides with the technical assistance of one of his students to add new material to the programs where were developed elsewhere.

Dr. John Mc Rae has been supplementing his lectures in Veterinary Pharmaceutical Products with 35 mm. slide presentations.

Dr. E. John Staba has been using slides in his pharmacognosy course. He and others in pharmacognosy have done their own photographic work in preparation for research reports. Other members of the faculty have also prepared their own slides to present their research data.

Dr. Darwin Sarnoff prepared a series of slide-tape programs on the business aspects of pharmacy. One entire course was a self-study course in which students viewed slides and listened to tapes in two study carrels which were purchased primarily for that purpose.

Dr. Hugh Kabat used closed circuit T.V. in one of his courses in management of pharmaceutical services in which students would be viewed acting out various roles such as a pharmacist interviewing a physician, dentist, patient, nurse etc. and later would play back the interview to the class. Other members of clinical pharmacy have made use of slides and cassette tapes, of which we have a modest collection.

Several members of the medicinal chemistry and pharmaceutics departments have used the "Porta Scribe" overhead viewer in presenting chemical structures and prescriptions to supplement lectures.

Sixteen mm. movies have not been popular with students. When we have not had a captive audience, students have generally neglected to attend movie programs. Dr. Stabe had developed a very extensive movie program concerning his course-work in pharmacognosy during one quarter. About half way through these lunch hour programs had to be discontinued when the audience dropped to one or two besides the projection operator. I ordered a movie last year which should have had general interest in the College. At the beginning we had one graduate student, one faculty member and one office girl watching. At the end of the film I was alone.

At present, attempts have been made to organize all educational resource material in one area, Rm. 32 A.H. Six study carrels will be equipped for slide-tape presentations with the use of headphones to permit the use of two or more carrels at the same time.

One can only guess at the future uses of audio-visual hardware and software, but it would seem that the extent of use would be limited only by the imagination of the staff and the funds available.. We have T.V. closed circuit equipment which could be used in interviews within and outside of the College. Greatest interest probably will be in making and using 35 mm. slide-tape presentations by all members of the faculty. Graduate students could utilize the facilities more than they have in the past. Some of the advantages such as storage-retrieval capabilities, information for display purposes to the public, image magnification, flexibility in scheduling courses, individualizing instruction etc. will be welcomed by the faculty as equipment and technical help becomes more generally available.

Special mention should be made of the 6 series of closed circuit TV programs which have been organized by Mr. William Hodapp using the expertise of various faculty members in the University. These have been used in 6 or more separate showings about the State to pharmacists, nurses, and other interested in the topics presented and have been shown in several other states in continuing pharmacy education programs. It is expected that this area of effort will continue to grow, hopefully with more funds to meet the expenses in the future.

MEDICAL ART & PHOTOGRAPHY DEPARTMENT
AN EDUCATIONAL DEVELOPMENT RESOURCE WITHIN THE HEALTH SCIENCES

The Medical Art and Photcgraphy Department is a media resource unit for the Health Sciences. As a self sustaining unit of the University Hospitals we provide services which support undergraduate and graduate education in various Health Sciences Units - primarily the Medical School and Hospital. We also offer these services to the research community, and any private individuals requesting our assistance. In addition to our service function we are developing an academic program for training professionals in the field of Biocommunications, and have been offering summer internships in our department, and career counselling to undergraduate students at the University.

For a more in depth look at our resources, I have enclosed the following information for your review:

Page 2 and 3	-	Excerpt from U. of Minn. Manual of Business Procedures
Page 4	-	Excerpt from Univ. Hospitals Annual Report 1971
Page 5	-	List of departmental staff - blueprint of facilities
Page 6	-	Excerpt "Educational Resources (A-V) Systems and Facilities"- Report to N I H" for B-C Building Construction Grant
Enclosure	-	Undergraduate manual prepared for the Neurology Department

Respectfully submitted,

Martin E. Finch, Assistant Professor
Director, Medical Art & Photography
2/10/71

MEF:mo
enc.

UNIVERSITY OF MINNESOTA

Manual of Business Procedures

EQUIPMENT, SUPPLIES AND SERVICES SECTION

MEDICAL ART AND PHOTOGRAPHY

A. SERVICES AVAILABLE

The Medical Art and Photography Department, located at C-566 Hospital, performs services primarily for the college of Medical Sciences. However, any other university colleges or departments may use our services if they desire.

Consultation service

Call the Medical Art and Photography Department for professional advice on the graphic arts methods and techniques that will best suit your needs.

Medical and technical photography

The department offers services in the following specialized areas:

* Clinical photography of patients (both still and motion picture)
* Surgical photography in the operating rooms and experimental laboratories (both still and motion picture)
* Macro- and microphotography of specimens
* Photomicrography (4 x 5 in. B/W and 3 1/4 x 4 color)
* Infrared photography (special advance appointment needed)
* Copy photography of technical charts, graphs, illustrations, published works, and transparencies
* X-ray reductions and subtractions
* Photography of instruments and equipment
* Individual and group portraits
* Passport, application and naturalization photos
* Public relations photography
* Processing and printing of electron microscope plates
* Developing of roll, sheet or movie films
* Prints for use in publications and patient records, and the preparation of transparencies for 3 1/4 by 4 inch or 35mm lantern slides for lecture purposes
* Sale of fresh film and other photographic needs

Medical art services

Medical illustrators and artists are available who can produce art work in color, tone, or line for use in textbooks, journals, displays, and lecture slides. The department can offer these procedures:

* Diagrammatic and semidiagrammatic drawings on any subject
* Clinical illustrations directly from patient
* Surgical illustrations in the operating rooms and experimental laboratories
* Ophthalmological drawings, from patient or at surgery
* Pathologic specimen illustration
* Gross anatomic and histologic illustrations
* Technical illustrations of apparatus, equipment, procedures
* Animation drawing and cartoons
* Preparation of charts, graphs, and tables
* Biological and dental illustrations
* Mechanical and hand lettering, labeling, photo retouching, and mounting of illustrations
* Posters and cartoons

Exhibits and displays

The department has the facilities for complete design of all types of models and exhibits. Emphasis is placed on light weight, low cost exhibits, that can be carried as baggage.

B. ORDERING AND BILLING

It is best to first discuss your needs with the medical illustrator or the photographer. Since the work load varies, it is advisable to anticipate your needs as far in advance as possible in order to allow plenty of time for the completion of your job.

Departments should fill out a Type 11 Journal Voucher (B.A. form 42--exhibit I or procedure 2-A-1) with the proper account number and and authorized signature and send it along with the job order. The phrase "Not to exceed $xxx" may be written on the document to insure accurate cost control. Work on your order will not begin until this Journal Voucher is received.

Journal Vouchers will be processed through the Business Office when the work is completed.

TAKEN FROM UNIV. HOSPITALS ANNUAL REPORT 1971

MEDICAL ART & PHOTOGRAPHY

In the past year while maintaining a heavy workload, our department provided several free consultative services, and formulated plans for an academic program in "Biocommunications". A first step in this direction was offering a summer internship in Biomedical Photography to a student from the Rochester Institute of Technology, School of Biomedical Photography.

Like so many other departments of the Health Sciences, we developed plans for new facilities to be located in the Building B-C complex. Along with the expanded facilities, we have planned a large television studio and television control room. This will add another important dimension to our departments Biocommunication activities.

As has been the case since 1968, our income, expenditures, and workload have increased (see table and graph). This has been accomplished in a year when research and teaching grants have been sharply cut, and when the hospital has seen austerity. Although our artist workload dropped slightly, our photography and photofinishing contract workload increased. This was accomplished while our supply, equipment, and overtime expenditures dropped (see table).

This was also another year in which work produced by our department received national recognition. A movie on "U. of Minn. Transexual Project" received the American Urological Association's highest award, while an exhibit on "Air Cystometry" received 2nd prize at the same meeting. We were pleased to learn that John Repine (senior medical student) won first prize for his exhibit "Neutrophil Phagocytosis" in the national medical student competition.

The range of our activities over the past year was extensive. This can be seen in a listing of some of the major projects completed this year:

1. Movies
   - The Surgical Light
   - U. of Minn. Transexual Research Project
   - Gastric Cooling
   - Radical Groin Dissection
   - Numerous Clinical Studies of Various Patients
2. Exhibits
   - Health Sciences "LEB Day"
   - Health Sciences – State Medical Society
   - Family Practice
   - Obstetrical Intensive Care
   - Air Cystometry
   - Neutrophil Phagocytosis
   - Surgical Repair of Urethral Stricture
   - Deafness Research Foundation
   - Organ Preservation
3. Slide Presentations
   - Hospitals Employee Orientation Program
   - Film Strip – "Peripheral Blood Smear"
   - Film strip – "Solitary Pulmonary Nodule"
   - Retinal Surgery Techniques
4. Publications
   - Hospitals Annual Report
   - Health of the Nation Brochures
   - CSS Awareness Posters
   - Volunteer Services Brochure
   - Logotypes: Volunteers, CSS, Cancer Detection Center

— relate directly to undergraduate education development

STATISTICAL DATA

		1969-1970	1970-1971
I.	Financial Statement		
	A. Income	$170,305	$179,582
	B. Expenditures:		
	1. Supplies & Equipment	25,945	22,267
	2. Contractural Services	15,401	17,996
	3. Salaries & Fringe Benefits*	127,384	141,060*
	4. Overtime	620	337
	Total Expenditures	$172,899	$181,660
II.	Workload Data		
	A. Photography – (work units including prints,	58,089	60,370
	B. Artist services (measured in man hours)	6,137	5,910

*Based on our own records. This report was submitted prior to receipt of year end budget data.

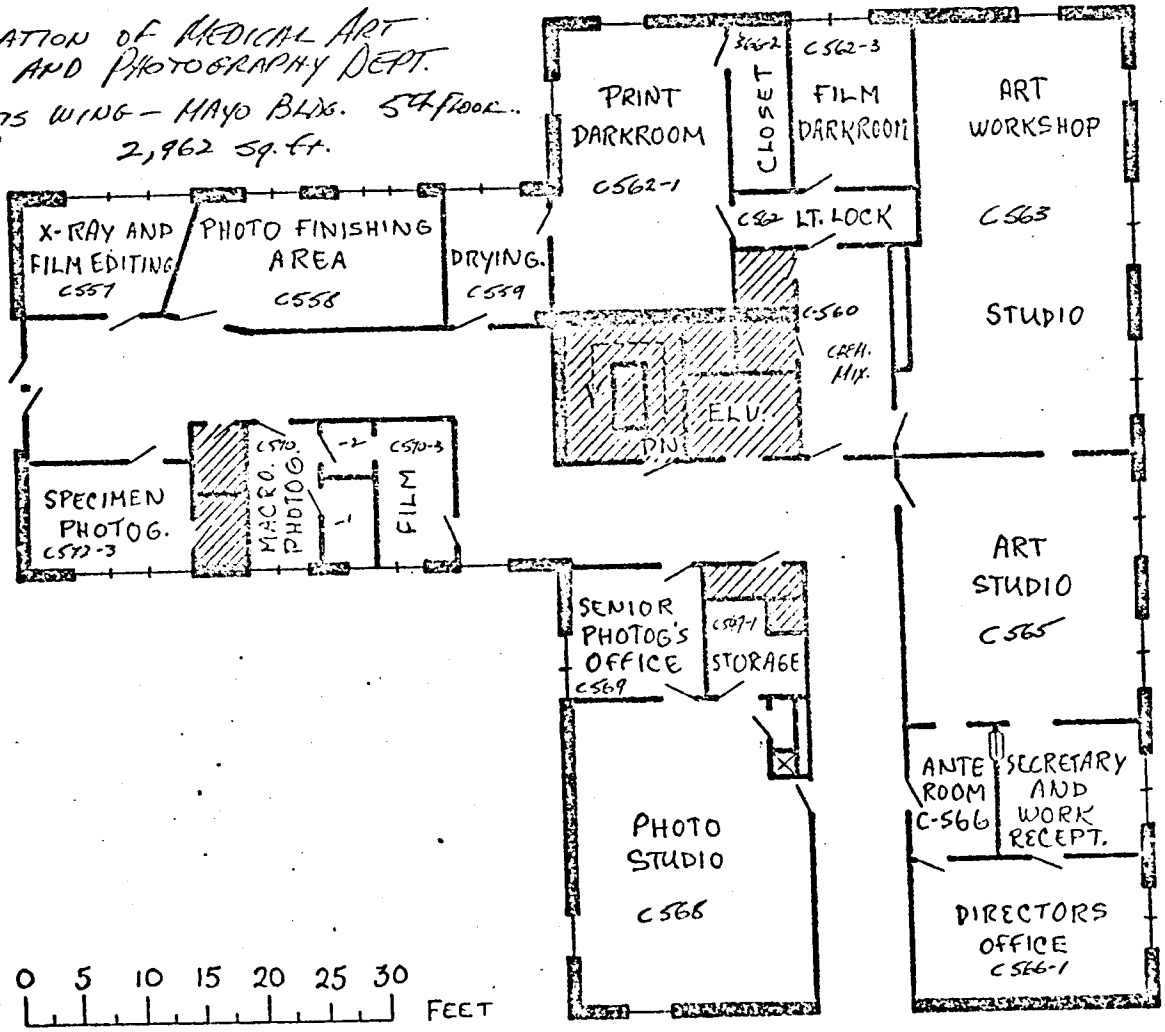
4.

STAFF POSITIONS - MEDICAL ART AND PHOTOGRAPHY 1970

1. Assistant Professor, and Director of Medical Art & Photography
2. Instructor, and Medical Illustrator
3. Senior Medical Photographer
4. Senior Photographer
5. Photographer
6. Artist
7. Artist
8. Junior Photographer
9. Junior Photographer
10. Junior Photographer
11. Senior Statistical Draftsman
12. Senior Statistical Draftsman
13. Senior Secretary
14. Clerk Typist
15. Photography Technician
16. Photography Assistant
17. Photography Assistant

* Miscellaneous Payroll
   a. Artist
   b. Photography Assistant

LOCATION OF MEDICAL ART AND PHOTOGRAPHY DEPT.
EVANS WING – MAYO BLDG. 5TH FLOOR.
2,962 SQ. FT.



PREPARED 2/22/71

As you can see from these reports, our department is currently in a fairly stable fiscal position, operating as a service unit open to all who can pay for our services. We are primarily servicing those departments of the medical school who have a strong research emphasis, as you can see by our distribution of earnings diagram. A very small percentage of our work is used specifically for undergraduate teaching, since presently funds are non existant (except supply budgets) to pay for this. The Medical School has allocated approximately $6,000 to our department for development of materials for the Phase B program and pilot learning center. Although these funds are small, they represent a beginning for us in this area.

NEW FACILITIES AND FUNCTIONAL RELATIONSHIPS

We are anticipating a move into new facilities in the basement level of Unit C. This move, in addition to providing us with a limited amount of expansion space, will place us in very close proximity to Diehl Hall and the planned Learning Resources Center. On the following page is a copy of preliminary plans for our facility. Our proposed functional relationship to the learning resources areas were outlined in Dr. Holland's report submitted to NIH entitled "Educational Resources (Audio-Visual) Systems and Facilities" written several months ago. The following is an excerpt from that report:

"Included in the Health Sciences audio-visual network and operation will be the Learning Resources Center to be built on the second floor of the Bio-Medical Library (Diehl Hall) and the seminar rooms, clinical teaching auditorium, and medical arts and photography production area to be located in Unit C. These areas will be inter connected with the television control center in Unit A. The Medical Arts and Photography operation in Unit C will have facilities for producing audio-visual software and will have a television studio interconnected with the auditoria and seminar rooms in Units A and C and the control room in Unit A. The Medical Arts and Photography production area will be able to transmit live programs to the classrooms or instructional information such as video-photomicroscopy and video-radiography. Ths Unit C auditorium is being designed primarily for lectures and demonstrations associated with clinical teaching in medicine including patient viewing directly and through video magnification."

MEDICAL SCHOOL PROGRAMS

MEDICAL SCHOOL EDUCATIONAL PROGRAMS
AND LEARNING RESOURCES PROJECTS

1. Development of audiovisual resources for Learning Center pilot project. (See Learning Center report attached)

2. Student development of audiovisuals.

   a. Student audiovisuals in neuroanatomy and diagnosis.
   b. Student generated software for computer terminals.

3. Shortened, flexible, completely revised Medical School curriculum. (See attached materials)

4. Development of support system (Medical School funds) for instruction, preparation of slides and tapes.

5. Production of patient-interview television tapes (aided by University Television, Mr. Arnold Walker).

6. Development of computer-assisted instruction programs in Ophthalmology and in Hematology, in collaboration with Dr, James Werntz.

February 15, 1972

Bio-Medical Library
Learning Resources Center
475 Diehl Hall

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12 carrels

9 equipped with Kodak Carousel slide projectors and Norelco Synchroplayer cassette playback units

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#volumes- 460

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titles- 410

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197 instructional programs, mostly slide-tape format (also some filmstrips, 8mm film loops, records, and Autotutor programs)

Models

heart

brain

skull

Mannequins

ophthalmoscopy mannequin

laryngoscopic mannequin (on loan)

Phonocardiosimulator (on loan)

Learning Center Use

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School	Estimated % of Total # of Patrons
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Med Tech	2
Dental	2
Graduate	1

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1 clerk typist	20
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Space

Aproximately 2300 sq. ft. divided into

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13 tables- reading space for 52 students

Carrel area

12 carrels- capacity use, 24 students

3 tables- reading space for 6 students or area for use of microscope and models

Service area

Service desk

Storage for audiovisual materials and extra equipment

Petitioned areas for use of special equipment

MEDICAL SCHOOL PLANS NEW CURRICULUM

Robert J. McCollister, M.D.*

MAJOR CURRICULUM changes at the University of Minnesota Medical School, in the planning stage for more than two years, were moved significantly closer to reality by recent Executive Faculty action. The Faculty voted solidly to accept the Educational Policy Committee's proposal for a new curriculum, to commence in the earliest practicable academic year, providing that adequate financing is obtained. Effectively, the new curriculum would offer all medical students more selectivity in their studies and would offer some the option of completing Medical School in three years.

The formal proposal for curriculum change was stated as follows:

> The Educational Policy Committee proposes that the curriculum for the Doctor of Medicine degree be reorganized into a core program for all students composed of a Phase A of 3 academic quarters and a Phase B of 5 academic quarters in length. On completion of this core program, the student will begin an individualized program ("pathway" or "track") which will be 3 academic quarters or 5 academic quarters in length, depending on the span of the student's entire program. The standard curriculum for the degree of Doctor of Medicine will be 13 quarters, to be completed in less than 4 calendar years. Students will be considered, at their request, for completion of work for the M.D. degree in 11 academic quarters in less than 3 calendar years, with the stipulation that the internship will be taken at a University or major affiliated teaching hospital.
>
> If funds are appropriated by the 1969 State Legislature, Phase A may begin in September, 1969, with graduation of the first class of students on the four year program in June, 1973. The first class on the three year option would graduate in June, 1972.

* Assistant Dean, Medical School

Reprinted from the University of Minnesota Medical Bulletin
Vol. 40, No. 4, December, 1968

THE CORE CURRICULUM—PHASES A AND B

In Phase A, the two principal aims of the revised Medical School program are to present the core material in five basic medical science disciplines and to introduce the student to problems related to the care of the sick, keeping the entire program relevant to what the student needs to learn and know. Opportunity will be provided for the student to learn more about behavioral science.

In Phase B, there will be an emphasis on correlated, integrated interdepartmental teaching, designed to emphasize fundamental principles and to avoid unplanned repetition. There will be more extensive faculty involvement with undergraduate teaching. Medical students will benefit from provision of large amounts of unscheduled time, through which they can order their own activities in a setting which maximizes the opportunities for independence and maturity in the learning process. By providing elective opportunities early in Phase B and in the entire Phase D segment, the student will be encouraged to become the prime mover in his own medical education. A "Phase C", composed of core clerkships, was included in the original plan. Ultimately, the clinical teaching and experience which were to be the essence of the core clerkships were woven into the *Student as Physician* portion of Phase B.

FRESHMAN YEAR BECOMES PHASE A

Phase A will be taught in three academic quarters beginning in the Fall. The major thrust of the Phase A curriculum is a presentation of a core of material in five basic medical sciences: anatomy, biochemistry, physiology, microbiology and general pathology. In addition, there is a course titled *Behavioral Science*. A major block of time, one-half day weekly, has been earmarked for presentation of a challenging new program titled *Introduction to the Patient*. This program is intended to involve the embryonic physician in his own synthesis and correlation of basic sciences with clinical applications and in direct, personal confrontation with human illness and patient care.

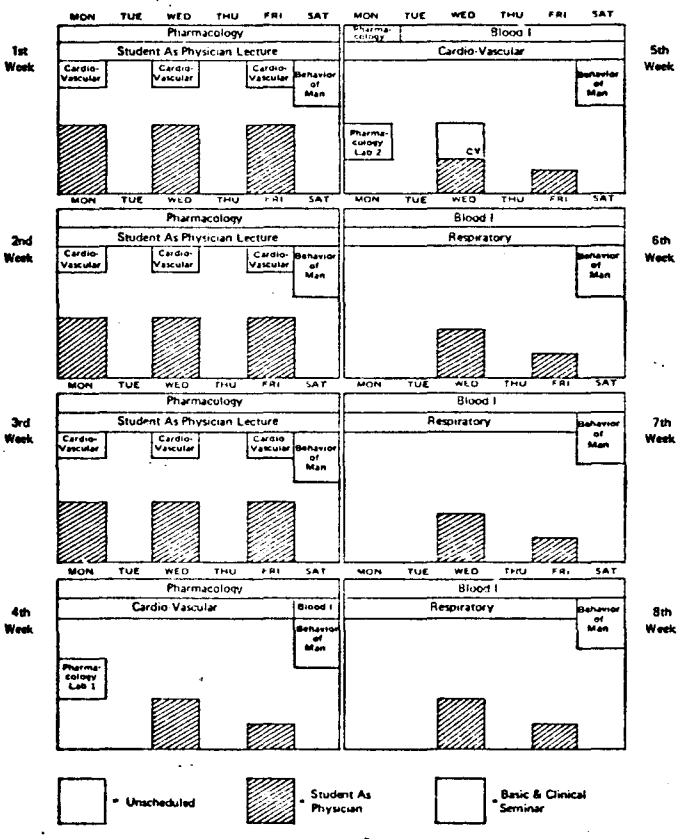
PHASE B REPLACES SOPHOMORE YEAR

Phase B is planned for five academic quarters beginning in the Summer. The Phase B curriculum will consist of a core of material related to 16 organs, systems or topics which will be presented by interdepartmental sections with emphasis on pathophysiology and general and basic concepts. The organ system topics

will be presented in the following order with overlap between many of the topics: basic pharmacology, cardiovascular, blood, respiratory, renal, man in his community, endocrine, reproduction, gut, ear-nose-throat and speech, skin, eye, neurological sciences, trauma, bone and connective tissue. The other two topics, *Student as Physician* and *Behavior of Man* are planned to extend over five and two quarters, respectively.

An example of how one week in Phase B might be organized is as follows:

PHASE B
(Sophomore Year)
TYPICAL 8-WEEK CLASS SCHEDULE
Showing Scheduled Periods and Unscheduled Periods



PHASE D TOTALLY ELECTIVE

In Phase D, the student, with the help of his advisor, will embark on an elective program of study in one general career pathway. Examples of several possible "tracks" or "pathways" are as follows:

1) Medicine, Pediatrics and Medical Specialties
2) Surgery and Surgical Specialties including Obstetrics and Gynecology
3) Psychiatry and Behavioral Sciences
4) Neurological Sciences
5) Family Medicine, Family Practice and Community Health
6) Medical Science

None of the pathways will contain mandatory requirements but each student will be urged to include at least 12 credits of basic science subjects in his program. The opportunity to return to study of one or more basic science subjects in depth after some experience in clinical medicine is one of the attractive features of Phase D. Each pathway will be under the supervision of a review committee made up of the faculty involved in the pathway, and will include at least one member of a basic science faculty in each committee. The committees, which will also have representation from the student body and from the junior faculty, will be appointed by the Educational Policy Committee and will have the responsibility of reviewing and approving each student's program. The length of Phase D will vary depending upon whether the student is on a three-year or a four-year plan. In the three-year plan, it will be three academic quarters. Five quarters of Phase D will be included in the four-year program. A thesis on a research subject or defense of some proposition in the area of specialty will be a part of the requirement for completion of Phase D for each student.

In deciding on this new plan for undergraduate medical education at Minnesota, the Executive Faculty has reaffirmed its confidence in the considerable reservoir of talent, potential and enterprise possessed by the medical student of today. There is clear recognition of the necessity for students to become involved in their own medical education as the first step in a lifetime of learning. And, of equal importance, the faculty has reaffirmed its own dedication to teaching by endorsing this plan which will surely inaugurate a new era of medical education at Minnesota.

DEPARTMENT OF ANATOMY

DEPARTMENT OF ANATOMY

EDUCATIONAL DEVELOPMENT PROGRAMS

1. This year in Histology (Anat 5-103 and 5-104) we used T.V. tapes at the beginning of each laboratory as an introduction to each slide to be studied. At the end of each laboratory there was a review session using 2 x 2 color transparencies to ensure each student's having interpreted the slides correction.

   Each third week proficiency demonstrations were provided and groups of four students signed to meet for half an hour with one of nine staff members. During this period, the students were able to ask and to answer questions in a more personal way than has been accomplished in the past.

   For each unit of lecture, core facts and diagrams were mimeographed so that note taking was unnecessary. Objectives for the learning unit were included.

2. Tutorials available for students who request it and we suggest strongly that those doing marginal or unsatisfactory work avail themselves of tutorials.

   Self-learning projects. Students can elect to write a paper or develop study aids for the purpose of learning and as a criteria for an "O" grade. TV tapes of all lectures given are available to students upon request (seldom used except by students absent for illness or other reasons).

   Lecture slide sets and a special learning room with limited lab demonstration is in the process of being provided. Presently we have only limited space in the histology laboratories.

LEARNING RESOURCES

1. All lectures emphasize a visual approach using slides, movies, and frequent handouts. We need funds to purhhase 16 mm. movies on normal and abnormal development of many of the systems which are available for purchase. We use class time to show these, but they are available on limited time rental only. Students would like to be able to view them in the learning center at any time. What funds are available? I will pruchase these films then on a priority basis.

LEARNING RESOURCES CONTINUED

2. T.V. tapes for the labortories.
   Carousels for the work of each week (2 x 2 color transparencies)
   Microscipe slides (200).
   Optional quizzes -- sets of 12 unknown slides and a key to the answers.
   Laboratory experience in vital staining, studying living cells, examination of fresh sperm and ova etc.

3. Need to develop a series of slides to program how to learn the brain stem. This could be done with a carousel-type projector and screen set-up. Another to help learn brain series coordinating slides and actual sections embedded in plastic. (Sections in plastic are already available commercially.)

DEPARTMENT OF BIOCHEMISTRY

Department of Biochemistry

Educational Development

1. Special Teaching Projects
   a. Medical students - special tutorial sessions for students needing help
   b. Graduate students - weekly tutorial sessions for first year students

2. Graduate Students
   a. Seminar program with visiting speakers - also graduate students meet with visitor for informal discussions (past 3 years)
   b. Above seminar program co-sponsored with St. Paul Biochemistry Department, monthly (started this year)

3. Health Science Students
   a. Medical students - complete re-structuring of laboratory (this year)
   b. Dental students - revision of laboratory (this year)
   c. New course for first year students - survey of biochemical techniques (past 2 years)
   d. General biochemistry for first year students - taught jointly with St. Paul Biochemistry Department, revised this year (past 7 years)
   e. Laboratory course - physico-chemical techniques, taught in co-operation with Chemistry Department (past 8 years)
   f. New advanced course - chemistry and metabolism of carbohydrates (past 2 years)

4. MdBc 5-053 Problem, directed study course with emphasis on self learning

Learning Resources

1. Audiovisual
   a. Polaroid slide making capability, graduate student seminars
   b. Overhead projector for classroom use

2. Equipment for Graduate Students
   a. High speed centrifuges, spectrophotometers, automatic recording, chromatography and electrophoresis, and desk calculator are available specifically for student use

DEPARTMENT OF MICROBIOLOGY

UNIVERSITY OF Minnesota

DEPARTMENT OF MICROBIOLOGY
1060 MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

February 18, 1972

Dr. Robert O. Mulhausen
Assistant Dean
Medical School
Box 293 Mayo

Dear Dean Mulhausen:

Per your secretary's request, I am enclosing a description of the educational development program in the Microbiology Department, namely our new M.S. degree program in medical microbiology. I hope this is the information you need.

Sincerely yours,

Pat

Patricia Graney
Administrative Officer

PAG:bk
Enc

HEALTH SCIENCES
MEDICAL SCHOOL

UNIVERSITY OF Minnesota

DEPARTMENT OF MICROBIOLOGY
1060 MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

February 17, 1972

EDUCATIONAL DEVELOPMENT PROGRAM IN THE DEPARTMENT OF MICROBIOLOGY

In the fall of 1971 the Department of Microbiology inaugurated a new program leading to the M.S. degree in Medical Microbiology.

Objectives — The primary objective is to develop a graduate training program at the master's level in the area designated Medical Microbiology. More specifically, the purpose is to train post-baccalaureate students interested in medical microbiology, in advanced concepts and methodologies in medical microbiology, virology, mycology, parasitology, and immunology. Special emphasis will be placed on laboratory methods relevant to these areas. The program will be oriented to prepare medical microbiologists for supervisory and administrative roles in diagnostic microbiology laboratories.

Need — While physicians fill a central role in the delivery of health care, a rapidly developing technology in this field has increased the demand for allied health personnel, such as medical technologists, microbiologists, and chemists. The 1967 Health Manpower Commission has reported that, although the number of allied health professionals has increased considerably in the past 25 years, the demand has outstripped the supply. Increasing population, medical specialization, and technological advances are estimated to increase requirements for additional physician-directed laboratory services by at least 50% in the interval of 1965 to 1975. The Social Security Amendment of 1965 requires the certification programs be implemented to qualify laboratory participation in Medicare. As a result, there is increasing demand for well-trained and certified or licensed personnel in clinical laboratories.

To meet this manpower crisis, not only do present undergraduate curricula in such areas as medical technology and microbiology need to be improved and expanded, but also postgraduate training programs need to be developed to enhance the skills of laboratory workers and provide them with duly recognized programs leading to certification and licensure.

The National Registry of Microbiologists is an organ of the American Academy of Microbiology and subject to the Board of Governors thereof. Prerequisites for application to the Specialists Program require that the applicant have an M.S. in microbiology. Although there are a number of universities offering M.S. degrees, most of these institutions encourage pursuit of the Ph.D., and only a few (Baylor, Columbia, Washington and Temple, as rare examples) offer any programs oriented to medical (or clinical) microbiology at all. There is no comparable program in this state or region of the country. It is our opinion that the current and anticipated manpower shortages in the area of medical microbiology provide justification for development of an M.S. program in this field. Candidates fulfilling the Registry's requirements for the Specialist category will presumably be given prime consideration for supervisory roles in medical microbiology laboratories.

Contents — The basic program will consist of course work in medical microbiology and immunology, biochemistry and biostatistics plus additional electives, an "internship" or "preceptorship", and a project dealing with some applied aspect to diagnostic problems.

Courses for a minor are already available in biostatistics, biochemistry, immunology and microbial physiology through the University of Minnesota Graduate School.

Beginning with the fall quarter of the second year and continuing into the winter quarter a preceptorship and internship in the laboratory areas will be given. Upon completioon of the first quarter of the preceptorship, the student would be eligible to carry out his or her project. (Plan B). Such a project would be planned so as to permit logical conclusion within the normal schedule for the program and so as to result in a paper for presentation at a national meeting and publication in a journal.

Application — Prerequisites include a major or minor in microbiology, biology, or medical technology with an acceptable background in biology, microbiology, chemistry and at least 30 credit hours in biological sciences.

Number and Type of Students — It is anticipated that students admitted to this program would have B.A. or B.S. degrees in microbiology, biology, or medical technology with or without actual laboratory experience in medical microbiology. Prior course work in microbiology or experience in medical microbiology may, subject to the approval of the Curriculum Committee, obviate the necessity of attendance or participation (but not examination) in certain portions of the course work or internship.

In addition to the real advantages this program offers the medical technician who wishes an advanced degree in medical microbiology and specialization in this field, it may offer similar advantages to physicians completing training in clinical pathology or laboratory medicine who can utilize it for their

specialty boards under the American Board of Pathology requirements.

There is a possibility that this program might be attractive to physicians who are not pathologists. While each situation will be judged on its merits, we would prefer to have these M.D.'s in our postdoctoral training program which would satisfy the American Society for Microbiology requirements for residency and admit them to examination by the American Board of Microbiology.

It is anticipated that initially five students could be accepted yearly in this program and that the number could be increased if and when additional laboratory space is available.

Costs — An application for support of this program was submitted to the Educational Development fund within the University of Minnesota as well as to the Bureau of Allied Health Manpower, National Institutes of Health.

DEPARTMENT OF PATHOLOGY

UNIVERSITY OF Minnesota

MEDICAL SCHOOL
DEPARTMENT OF PATHOLOGY • MINNEAPOLIS, MINNESOTA 55455

February 17, 1972

Materials Used in Teaching Pathology (Current)

Microscopic slides with protocols

Photomicrographs

Gross specimens

Need projectors in each laboratory (4)

Microprojector

Occasional Film
Projected use

Tapes
T.V.
Films
Sound-slides

Special Educational Development

Continuing Educational Program on Death and Attitudes towards Death.

Bell Museum of Pathology Medical Student Research Studies Team (Alaska 1972)

UNIVERSITY OF Minnesota

DEPARTMENT OF PHARMACOLOGY
105 MILLARD HALL · MINNEAPOLIS, MINNESOTA 55455
PHONE 373-3085 · AREA CODE 612

TO: Robert O. Mulhausen, M.D. Assistant Dean

FROM: James L. Burak

DATE: February 18, 1972

SUBJECT: Educational Development Program

Below is listed some of our involvement in the areas of Special Educational Effort and Learning Resources.

I. Special Educational Effort

Attached is a copy of implemented recommendations concerning our Student Staff Seminar Program. The objectives and proceedures are listed, and we a_e successfully accomplishing our goals.

Our department also has a student organized journal club in which students survey current literature and report their findings weekly in an informal seminar setting.

Successful development of our Clinical Pharmacology Division was also realized.

II. Learning Resources

Aside from a large number of scientific instruments, the following are available for students use: a polaroid slide camera, slide projector, a loud speaker system, and tape recorders. This allows students to prepare their own slides, practice presenting a lecture, and then play it back, and correct and improve upon it as necessary.

Also enclosed are our Pharmacology brochures mailed to interested candidates.

Sincerely,

James L. Burak
Administrative Officer

JLB:ms

HEALTH SCIENCES
MEDICAL SCHOOL

Department of Pharmacology

RECOMMENDATIONS BY COMMITTEE TO DEVELOP STUDENT-STAFF SEMINAR PROGRAM

Objectives:

a) To sustain good level of information among staff, students and postdoctorals about current research endeavors within the department.

b) To establish internal peer-review of research within the department for the sake of better exchange of research ideas and approaches and maintenance of quality work.

To accomplish the above three types of seminars are recommended.

I. Faculty and postdoctoral presentations to graduate students.

Presentations in the form of an overview of current work being conducted in the staff member's laboratory and the thesis work conducted by the postdoctoral fellow.

1. Scheduling by invitation as determined by Graduate Student Organization.

2. Complete staff coverage over a 2 year period.

3. Time, intervals and place to be decided by Student Organization.

II. Graduate Student Progress Reports

1. Report to staff and students twenty-one (21) months after starting work with selected major professor and again just before completing thesis work.

2. Evening monthly meetings to be scheduled by Director.

3. Committee recommends stronger leadership of this program and specifically recommends the appointment of Dr. Norman Sladek as the Director.

III. Faculty and postdoctoral presentations to staff

1. Advantages of smaller group dynamics.

2. In depth presentations of actual experimental data.

3. Once a month or every 6 weeks.

4. Voluntary participation.

5. Late afternoon sessions (or evening).

6. Postdoctorals to be considered as staff.

UNIVERSITY OF Minnesota

DEPARTMENT OF PHYSIOLOGY
424 MILLARD HALL · MINNEAPOLIS, MINNESOTA 55455

February 22, 1972

Dr. Robert Mulhausen
Assistant Dean
Medical Administration
1360 Mayo

Dear Dr. Mulhausen:

In response to your request for information on the development and use of learning resources in the Department of Physiology, we might list the following:

We have put considerable effort into refurbishing the departmental library. In addition to the physical renovation,we are up-dating the collection of books and current periodicals to make them more useful and relevant to both graduate and undergraduate students. All of our graduate students now have unrestricted access to this facility. As source materials for our various courses we have acquired an extensive set of human physiology text books, spanning the range from elementary through the advanced levels, to be used as reference material by the students. The new arrangement of the space also allows utilization of the room for small class teaching and discussion groups.

We have developed new courses available to graduate and Phase D students, having much greater emphasis on student participation in individual projects.

We have developed two new courses for nursing students, that have a major emphasis on clinically relevant physiology.

In the area of specialized media and visual aids, we plan to continue to expand one of the earlier closed circuit TV systems in the Medical Sciences teaching area. In conjunction with the CCTV system we have produced 4 video tapes in the Department, dealing with various areas in the teaching of physiology as well as using tapes which have been produced elsewhere. As a complement to the CCTV system, we are continuing and expanding our use of visual aids, particularly with overhead projection equipment. Using a Xerox machine to produce overhead transparencies, and a stencil making machine to produce mimeographed handouts of the same subject, the students can have their own copies of the subject material to refer to and make notes on while the instructor talks on the projected image. In this

area we are developing files of transparencies on such subjects as respiration, cardio-vascular physiology etc. We are also developing slide collections on various subjects, complete with script, which a student can sign out for his own study use.

I hope the above gives you the information you need.

Sincerely,

Wayne

Wayne L. Adams
Assistant to the Dept. Head
Department of Physiology

WLA/sma

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

February 17, 1972

Robert Mulhausen, M.D.
Assistant Dean
College of Medical Science
Box 239 Mayo

RE: Educational development, self-learning, special teaching projects, etc.

Dear Dr. Mulhausen, M.D.

The Department of Dermatology carries on an active teaching program, both at the undergraduate and the graduate level. In all of these, there is considerable use of visual aids, chiefly two by two lantern slides of patients with skin disease, together with related charts and grafts. These are available in the Department Office, and augmented constantly by photographs taken in the Clinic and at the bedside throughout the University Hospital. To some extent, slides are acquired from affiliated hospital patients as well. In addition, tape recordings of many seminars and Grand Round presentations in the Graduate Program are recorded, and are used by graduate students for continuing medical education. A moderate program is maintained in the Learning Resources Center of the Diehl Hall Library consisting of a few film strips, reprint collections, textbooks, etc. There have been no major curricular changes since institution of the full-time faculty, except that the Graduate Program is now more tightly structured with a greatly increased number of teaching sessions, seminars and Grand Rounds.

UNIVERSITY OF Minnesota

DEPARTMENT OF FAMILY PRACTICE AND COMMUNITY HEALTH
MINNEAPOLIS, MINNESOTA 55455

February 24, 1972

TO: Robert O. Mulhausen, M.D.
Assistant Dean of the Medical School

FROM: Eugene V. Lenarz, Educational Psychologist
Department of Family Practice and Community Health

First of all, major curriculum change seems to be the present life style of this Department. In order to be more specific, I shall try to identify for you some of our present involvements though, by no means, all of them.

1. Rural Physicians Associate Program — J. Verby

2. New Courses:

Practice Management	J. Lawson
Mini-Seminar: The Family (temporary)	A M Reynolds E. Nelson

3. Medical Communications:
Employing Video Tape and Audio Tape

A. Medical Communication (for medical faculty) — K. Warren

B. Undergraduate Communication

Phase A Interpersonal Communication
Communication Seminar (open)
Communication Programs for Family Practice Residents
a. Communication Seminars A and B
b. Final Evaluation of Communication abilities

C. Postgraduate Communications

Short Courses on Campus
Short Courses off Campus

D. Consultant Service

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

4. Student as Physician (Phase B)

   Audio Visual Tutorials
   Extensive Use of Family Practitioners in the Community

5. Unique Educational Involvements of Some Faculty Members

   Participation in Course on Programmed Instruction conducted by Russell Burris in the Programmed Construction Center
   Curriculum Modification Class conducted by Ruth Eckert in Educational Psychology

6. Model Family Clinics and Residency Training Program in Community Affiliated Hospitals

7. Team Teaching (presently in the Behavioral and Social Sciences but spreading to all teaching functions)

8. Conformation of Family Practice Faculty: includes Medical Personnel, Educational Psychologists, Anthropologists, Clinical Psychologists, Communication Expert, Pharmacologist, Business Management Specialist, and Chaplain.

   Each of the above is called upon for instruction, consultation, and curriculum design

9. Return to Basic Science, Phase D — J. West

   Unique multi-disciplinary involvement coordinated and integrated by Family Practitioner

10. Journal - Logs of Grand Round Involvement

    Mandatory maintenance of Grand Rounds Log Books

11. Externships (Phase D) Rural, Urban and Suburban

UNIVERSITY OF Minnesota

DEPARTMENT OF LABORATORY MEDICINE
BOX 198 MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

DEPARTMENT OF LABORATORY MEDICINE

Since its establishment in the 50"s, the department has been traditionally innovative in teaching methods and curriculum changes.

The Medical Technology Division founded the Medical Laboratory Technician course which was subsequently moved out of the University after proving successful. Currently the four-year medical technology program has more laboratory teaching in the junior year so that students enter the clinical laboratories with an in depth background. This is a national innovation and more work (space) is needed in this area. This division has faculty qualified in science education as well as medical technology and is training teaching faculty.

The Department pioneered in the medical school in the use of television teaching and continues to use this, and 8 mm movie cassettes, slide-tape and illustrated book-tape programs in its teaching. All of the material is prepared by department faculty. An open laboratory for microbiology teaching using tapes has been most successful. Dual head microscopes help individual teaching while microscope projection is used for small groups. Graduate students and residents also benefit from the accumulated teaching material.

The Department had a large role in the establishment of the learning center in the library, and medical students and medical technology students are required to use materials there.

With more teaching laboratory space, the Department will be able to experiment with more open laboratories. With funding for film, it would seem advisable to experiment with 16 mm movie film to garner better 8 mm prints for cassette use. With the burgeoning of intricate clinical laboratory tests, more sophisticated teaching equipment is needed to meet these demands.

Special Type Learning Processes in the Department of Medicine.

The Learning Center: Members of the Department of Medicine have cooperated in either providing the material or instrumental in obtaining the funds for data in hematology, gastroenterology, oncology and undergraduate teaching.

Computer Course in Clinical Medicine: Attached is the prospectus on the course in Clinical Medicine. We hope within a short time to have this available for people throughout the country.

Morphology Teaching in Hematology: The Department of Medicine has a microscopic slide file which is extensive and is available to the medical students and the house staff.

UNIVERSITY OF Minnesota

DEPARTMENT OF MEDICINE
MAYO MEMORIAL BUILDING • MINNEAPOLIS, MINNESOTA 55455

December 22, 1971

TO: Dr. Peter Roll
Dr. Frank Verbrugge
Dr. Dick Halverson
Dr. Richard Ebert
Dr. Peter Patton

FROM: Dr. James R. McArthur

The memorandum sent to you by Dr. Russell Burris on December 6th, 1971, describes the success of the demonstration of our computer-based course in clinical hematology. This demonstration was made at the American Society of Hematology meetings in San Francisco and was met with wide enthusiasm and acceptance. To me its biggest positive impact was to demonstrate a truly successful inter-disciplinary venture. The success of such a venture between two colleges of the University is graphic proof of one of the University of Minnesota's greatest strengths. It is my feeling that we have virtually completed and demonstrated the initial development and feasibility of a computer-based course in hematology. This has been designated Phase I of our project and a summary of Phase I is appended.

The second phase of our computer-based course in clinical hematology is to be a pilot project where we have as our goals the addition of at least two more case developments, the refinement of our medical author program and pre-testing with students. This pilot project is to be undertaken as a joint venture between the Center for Research in Human Learning and the Department of Internal Medicine at the University. The personal and financial support of Drs. Richard Ebert and Russell Burris is acknowledged with deepest gratitude.

JRM/slk

Computer-based Course in Hematology

James R. McArthur, M.D.
Robert Thielen, B.E.E.
Russell Burris, Ph.D.

Phase I

Introduction:

The above authors have been working for varying periods of time on a computer-based course in clinical hematology. The educational objectives of this course can be stated as follows. Using a simulated clinical setting provided by a computer, Phase B students, Phase D students, house officers and family physicians will learn about the basic quantitative and qualitative abnormalities of hematopoiesis. This will be accomplished by working through a series of thirteen case development problems which illustrate basic illnesses and defects in production and/or destruction of elements in the blood.

The steps in the learning process are 1) a computer pre-test; and 2) a highly systematized case development problem where the student is given basic elements of medical history, physical examination, and then the blood smear. He then proceeds to evaluate the patient's problem in a non-cued manner and receives immediate feedback on his diagnostic approach. After working through thirteen such case developments, he is evaluated by 3) a computerized post-test.

Evaluation is based on the results of the pre- and post-test, as well as the progress the student makes in his problem solving ability. All his responses in solving the patient's problems are recorded by the computer and will be of distinct value in evaluating the student individually and in identifying pathways of student learning. Thus the project is not only an important learning process, it is also a highly refined research technique.

The course has reached its current state of development despite three computer system changes and a definite austerity program. The course has been supported by funds taken from general grants to the Center for Research in Human Learning and for the Department of Programmed Learning. This particular project has never had its own budget.

Demonstration of Feasibility:

The course was demonstrated at the American Society of Hematology meetings in San Francisco from the 5th through the 7th of December, 1971. A formal paper was presented during the Society's education program and in addition, approximately 750 participants actually observed the course's demonstration via long distance telephone line from the CDC 6400 computer at the University of Minnesota to the remote terminal and random access carousel at the Hilton Hotel in San Francisco. A significant number of these participants actually worked through part of the course themselves. Reaction was very positive to this demonstration.

It seems that we have made a significant breakthrough in that we have found a way to permit non-cued clinical decision-making without the complexities of a natural language program. Two workers in the field who actually abandoned a similar program in hematology which was in a natural language format became very enthusiastic about our non-natural language medical authors program.

Some of the experts in hematology education who actually worked through our case development study on iron deficiency anemia are as follows:

1) Stewart Finch, M.D., Head of the Hematology Division at Yale University Medical School and a leading worker in the field of iron deficiency and iron metabolism.

2) Arthur Haut, M.D., Chairman of the Hematology Section at the University of Arkansas Medical School and member of the hematology certification subcommittee of the American Board of Internal Medicine.

3) Frazier Mustard, M.D., past president of the American Society of Hematology and currently Acting Dean of McMasters University Medical School.

4) Robert Kellermeyer, M.D., Division of Hematology, Case Western Reserve University and co-author of the text The Red Cell.

5) Robert Kyle, M.D., Division of Hematology, Mayo Clinic.

6) Donald Campbell, M.D., Division of Hematology Mayo Clinic.

7) T. Hale Ham, M.D., Professor of Medicine and Professor of Research in Medical Education and head of the division of research in medical education at Case Western Reserve University.

8) Michael Brain, M.D., Division of Hematology, McMaster University.

The educational implications of the system identified by the above participants are as follows: 1) undergraduate, graduate and continuing medical education: Drs. Finch, Haut, Mustard, Kellermeyer, Kyle, and Campbell were particularly enthusiastic about this aspect. 2) Educational Research: Drs. Kellermeyer and Ham felt that the program represented a distinctly valuable research technique for evaluating how students and physicians learn. 3) The medical authors program: Drs. Mustard and Brain felt that this had distinctly wide applicability to medical education and hospital auditing and want to become intimately involved with us in a collaborative and cooperative study. In addition, Dr. Richard Ebert, Chairman of the Department of Medicine at the University of Minnesota initially pointed out the broader applications of our program. He suggested that a series of case development problems in many fields of medicine could be programmed in the same format as our hematology program. Finally, 4) certification examination: The value of such a program for certification was identified by Dr. Arthur Haut and also by Dr. Julius Krevins, the Dean of the University of California at San Francisco School of Medicine. Thus it would seem that the educational feasibility of our program gained clear acceptance from many physicians with widely ranging experience.

In addition, the economic feasibility of the program seems clear. It is realistic to project a cost of little more than $1.00 per student hour for this program. It is also realistic to assume that approximately two hours time will be required for a student to work through the case development study. Thus, a single case development study (such as our currently programmed iron deficiency case) would take 468 student-hours for each U of M medical school class. The cost of this would be about $450. Compare this time and dollar cost to the more traditional form of student education wherein a student works up a patient with a given problem, writes it up, reads about the problem and finally presents his work to a tutor. If one assumes a total of five hours expended by the student, one hour by the tutor and three by the patient, one can see that the cost in terms of man hours for equivalent training would be 2106 for a class of 234 students.

The dollar value for this time expenditure would involve the cost of tutor time, and the cost of extra hospitalization time for patients. It certainly would run far in excess of $459! Finally, it must be stressed that even if a huge number of patients with the same problem could be found, there would be no standardization of their problem and also no standardization of the teaching or learning obtained by the student. Here the computer offers a clear advantage with its ability for standardized case simulation and drill.

In summary, we feel the computer-based course in clinical hematology has been developed to the point of demonstrating its educational and economic feasibility. It now merits expansion and pre-testing on its way to becoming an integral part of our school's approach to innovative medical education.

UNIVERSITY OF Minnesota

DEPARTMENT OF NEUROLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

1. The Neurology Department has developed 3 paper back books:

   Outline of Clinical Neurology
   Outline of Neuropathology
   Outline of Applied Neurology

2. A slide collection numbering about 2000 is maintained by the Department - in addition, new slides are being developed specifically for teaching medical students, to illustrate all didactic lecture material in Phase B.

3. Motion pictures of patients with unusual diseases who may not always be available are being collected.
   (Muscular atrophies, muscular dystrophies, dyskinesias)

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

DEPARTMENT OF NEUROSURGERY
TEACHING PROGRAMS

I. Undergraduate Teaching

A. Phase A.

1. Participating in tutorial sessions in the introduction to clinical medicine series. Emphasis on learning to relate to patients and to understand patients' problems. Course consists of bed-side demonstrations and actual student-patient contact.
2. Correlation in clinics in Embryology and Anatomy classes - demonstrating with slides on Neurosurgical problems related to the topics under study so as to foster relevances.

B. Phase B.

1. Neuromuscular system teaching - This is a multidiscipline instruction course by means of lectures, panel discussions, seminars and patient presentations with faculty participation from Departments of Neurology, Neurosurgery, Neuroanatomy, Neurophysiology, Neuropsychology, Neuropharmacology, and Neuroradiology.
2. Students-As-Physicians - Small group tutorial sessions with emphasis on Neurological examinations and evaluation of findings as well as correlation of basic science and clinical Neurosurgical problems.
3. Participation in electives - in neuro-endocrinology, cancer, neuroradiology, neurophysiology - correlation clinics (some sessions are required for all students).

C. Phase D.

Neurosurgical electives - students participate in the regularly scheduled departmental activities including outpatient and in-patient services, diagnostic workups, operative clinics and seminars. Electives available for single or multiple periods of three weeks.

II. Graduate Teaching

A five-year program with two years of general surgery training as prerequisite. Students pursuing graduate degrees of either M.S. or Ph.D. in Neurosurgery and neurological sciences. Programs designed to train clinician-teacher-investigators. Students who are interested in cerebrovascular pathological problems may conduct research in or concentrate clinically on, these areas. Micro-neurosurgical techniques may be studied.

Teaching techniques employed are for the most part tutorial and small group in nature with didactic teaching infrequently used while seminars are regularly employed.

III. Allied Health Personnel Teaching

Primarily nurses and Operating Room Technicians, consisting of an annual course of lectures emphasizing neurosurgical nursing principles and operative techniques.

IV. Learning Resources

Main source is still the library (journals and books). Slides are frequently and films occasionally used for both undergraduate and graduate teaching. Closed circuit T.V. would be helpful and will be utilized when available. Cassettes (special topics) are occasionally used mostly for graduate teaching.

TO : R. O. Mulhausen, M. D., Assistant Dean

FROM : K. W. Schlenker, Admin., Ob-Gyn Dept.

DATE : February 16, 1972

SUBJECT : RECENT INNOVATIONS TO STUDY PROGRAMS AND/OR TECHNIQUES WITHIN THE DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

1. Faculty additions of combined specialists in a.) Ob-Gyn and Pathology and b.) Ob-Gyn and Anesthesiology, both of which add new dimensions to the instructional programs.

2. In line with recommendations of ACOG, post-graduate educational divisions of Internship and Residency are being merged into one program.

3. New Outpatient Clinics have been opened by the department for specialized instruction of both residents and students. Clinics recently begun are:

   Problem or Complicated Obstetrics
   Family Planning
   Fertility (Endocrine)
   Colposcopy

4. Gynecology has been divided into three sub-sections, each with a Chief Resident, to enhance educational possibilities. The subdivisions are a.) Endocrinology, b.) Benign Tumors and c.) Malignancies.

5. An electron microscope has been installed for educational and research purposes.

6. A fetal monitoring system, capable of simultaneously monitoring three patients in labor, has been installed, which enhances patient care as well as educational and research capabilities.

7. Two study carels, each equipped with slides, projector and screen plus literature, are available for student use 24 hours a day.

8. Life-sized plastic models for Ob-Gyn instruction have been purchased.

9. Funds have been collected from former residents to furnish a new department library to be opened when available space has been remodeled.

10. Optional courses have been added which allow students to spend time working in the offices of private physicians.

UNIVERSITY OF Minnesota

DEPARTMENT OF OPHTHALMOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

February 17, 1972

TO: Robert Mulhausen, M.D.

FROM: Robert D. Letson, M.D.
Assistant Professor, Department of Ophthalmology

RE: Undergraduate Ophthalmology Education Within the Eye Department

1. Phase A medical students are given one or two eye lectures in one of the large amphitheaters yearly.

2. Phase B medical students are given an intensive course in ophthalmology lasting three to four weeks every school year. This teaching program consists of the following:

a. Students are given a two-hour demonstration and practice session in physical diagnosis of the eye in groups of 25 students at a time. Last year's program was handicapped considerably by a lack of space for this session, particularly since the students have to lie down to perform tonometry on each other. This necessitated using various and sundry and usually inadequate classrooms scattered throughout the medical sciences complex. One-half of these sessions were conducted at St. Paul-Ramsey Hospital because of lack of space at the University Hospitals.

b. They were given 15 hours of lecture in ophthalmology in one of the large amphitheaters.

c. Seminars in various areas of ophthalmology were offered for 25 students at a time. There were approximately two of these seminars given each day and each lasting two hours during the entire Phase B core presentation. Again, classroom facilities for this group suitable for projecting audio-visual materials were in most cases quite inadequate. There is no space such as this available in the present ophthalmology department.

d. Small group tutorial sessions for four or five students were offered an average of four hours per day. Again, there were space limitations in that there were no facilities to allow a student to use ophthalmological equipment to perform examinations on patients. Similar sessions were conducted at the St. Paul-Ramsey, Hennepin County General, and Veterans Administration Hospitals.

e. Learning quizzes were presented to the students for two hours in the amphitheater during that month.

f. Mannequins for teaching ophthalmoscopy were utilized when possible in either the Learning Resource Center or in the group physical diagnosis sessions. More space is needed also for students to work with these mannequins somewhere in the eye clinic.

g. About 15 audio-visual programs are available both in the eye office and in the Learning Resource Center in ophthalmology ranging from slide-tape presentations to movies. Again, because of lack of space these were available only in the Learning Resource Center which is geographically isolated from the ophthalmology department and of less value in this circumstance. Obviously there whould be facilities available for utilization of these resources within the ophthalmology department.

h. A new program utilizing a computer for tutorial learning sessions is being developed and is available in the educational psychology department on another part of the campus for use for both Phase B and Phase D medical students. At the present time, however, there is no place in the ophthalmology department for installation of a terminal to utilize this program.

i. Reference books and reading material are available to all medical students only in the Learning Resource Center and are not available to any students or staff, for that matter, within the present eye clinic.

j. Since there is only one small 10 x 12 room available for conferences for residents, nursing and clerical staffs, and Phase D and Phase B students, there are numerous conflicts all during the year and especially during the Phase B core presentation time.

3. Phase D medical students are also taught by the ophthalmology department and in the eye clinic. Two Phase D students are present throughout the school year in the eye clinic observing eye pathology, diagnosis and treatment in a clinical setting. Two-hour clinical seminars regarding various clinical ophthalmological problems are presented to these students six times a week for one week out of their three weeks rotation on the ophthalmology elective. These seminars consist of practical demonstrations, discussion, question answering and showing of slides of various ocular problems. Generally, insufficient classroom space is available for these presentations, and they have to be given helter-skelter throughout the health sciences buildings. There is a great need for more space for these students to perform examinations on patients as well as a need for a conference and library room to facilitate their learning process.

4. In addition, of course, the ophthalmology department provides training for many other health professionals, particularly fellows in ophthalmology, pediatric nursing assistants, and examiners for the pre-school survey of vision and hearing as well as post-graduate clinical conferences for ophthalmologists and general physicians.

UNIVERSITY OF Minnesota

DEPARTMENT OF ORTHOPEDIC SURGERY
C-504 MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

LEARNING RESOURCE DEVICES USED

Carousel Slide Projector

A program of pathological slides (set of 800 slides)

X-ray film library

Cassett Recorder for sound films (used occasionally)

James H. House, M.D.
Associate Professor
Department of Orthopedic Surgery

ENT Courses and Course Material

1. Phase B curriculum - The phase B curriculum is essentially the same this year as last year. Phase B makes a great deal of use of the Learning Center tapes, slides, etc. We also have a laryngoscopic maniquin which was extensively used in the Learning Center in Phase B

2. Phase D curriculum - The number of courses in the ENT Phase D curriculum has been extended from 2 courses, one 3 to six weeks in length and one 12 weeks in length to five courses of 3 to six weeks each.

   Phase D has a new Medical ENT elective in the return to basic science Medicine Track

3. Dr. Quick, in the ENT department, occasionally refers students for study abroad.

ENT audiovisual equipment

1. In the phase B ENT curriculum there was a general use of slides and films by individual instructors. Several lecturers also provided tapes for use in th. learning center.

DEPARTMENT OF PEDIATRICS

Inovative Teaching Programs and Materials

1. Post-graduating continuing education programs - Northlands Regional Medicine Program.
   Enclosure #1

2. Child Care Clinic and Neo-Infant Program

   a. The Child Care Clinic established January 1, 1971 will become an integral part of the Department of Pediatrics education program. At the present time a patient population is being developed along with protocols for recording data. It is hoped that program will fully utilize the parents in supplying medical data to physicians, and physicians assistants, in a program of preventive medicine. The Nurse Practitioner Program, in conjunction with Public Health, is already utilizing the Child Care Clinic patients for teaching sessions.

   b. The Neo-Infant Program, composed of senior medical students is explained in enclosure #2.

3. The Pediatric-Nurse Practitioner Program was established in June of 1971. This program will train baccalaureate degree nurses in assuming a primary health care role in ambulatory child health care.

4. The Pediatric Community Training Program offers post-residency training in community pediatrics and public health, hopefully leading to a Masters program in Public Health.

5. Pediatric staff continually travel to Minnesota communities in conjunction with programs in Family Practice, providing clinical sub-specialty information and research knowledge to rural physicians.

Among inovative teaching tools the Department of Pediatrics is using a close-circuit system for monitoring outpatients. This system is operational and is located in the Pediatric Outpatient clinic.

Dr. James Moller is in the process of developing a cardiology library of slides, tapes, photographs, along with reference files and material for the pediatric cardiology program.

#1

This progress report covers the period March 1, 1970 through June 30, 1970. The authorized budget was received April 26, 1970. Therefore this represents the true starting date of the 1970 year in terms of program. Progress will be related to the stated objectives in 1970.

I. Objective: To provide immediate post education in pediatric cardiology to physicians in outstate Minnesota.

Result: Five postgraduate seminars in conjunction with Crippled Childrens clinic were held. In addition, six additional programs were provided in pediatric cardiology and neonatology by the project staff. (Appendix 1).

II. Objective: To establish more effective methods of postgraduate education.

Results: The project staff has helped to create a congenital heart disease registry in Minnesota. It is reasonable to assume that this registry will identify deficiencies in patient care, define areas where additional postgraduate education is required, and register the impact of postgraduate educational training programs upon patient care. The heart disease registry is now in operation.

Most educational efforts in the past have not been evaluated in terms of effectiveness. Testing of the physician does not give any indication as to whether he has changed his method of practice. The congenital heart disease registry will provide objective evidence of change in the pattern of practice which accrues from educational efforts. Specifically, information as to timing of referral, the accuracy of diagnosis, morbidity and mortality rate for specific cardiac defects and identification of sub-optimal case finding can be used to define the impact of the total educational effort in the area.

A hospital oriented project to improve diagnosis and care of the infant with cardiopulmonary disease has not yet been offered. However, we have had the opportunity to design a curriculum based on our experience in teaching a class of eight aids the fundamentals of intensive nursing during a four week course. These young men and women have since worked most effectively in our infant intensive care unit. We currently are training a group of twelve registered nurses to work in the intensive care unit for infants. These experiences have allowed us to design methodologies of teaching for both the registered nurse and the untrained aid. Additionally, nurses and physicians have gained experience as faculty members.

III. Objective: Encourage local physicians to assume the major role in their postgraduate education.

Result: Uncertainty of funding has interferred with in service

training at the University of Minnesota in pediatric cardiology and neonatology. One physician has taken a two week refresher course in neonatology and pediatric cardiology at the University of Minnesota. This individual was able to master a new body of knowledge. More importantly he learned to apply new diagnostic and therapeutic technics in the care of infants and children. On the basis of this one experience, we are encouraged that a period as short as two weeks will enable a physician to learn new skills and technics which he can apply in his own practice.

IV. Objective: To coordinate the efforts of various groups involved in postgraduate education in pediatric cardiology and neonatology.

Result: All agencies and individuals involved in care of children with heart disease participate in the program. Also, the design of the congenital heart disease registry was approved by these same groups and its potential usefullness in the area of postgraduate education is thereby enhanced.

#2

CHILD CARE CLINIC

The Child Care Clinic was established in the early part of January, 1971, and as of June 15, 218 children have been enrolled. This program provides complete medical care for children born at the University of Minnesota Hospitals and for their siblings. Parents voluntarily choose this service, and they receive it as long as they desire. This is a paid program, and the parents are charged for each visit accordingly.

Currently, there are 4 physicians in the program, namely, Doctors Fisch, Horrobin, Satran and Virnig. The plan is to have approximately 75 ot 100 patients for each of the staff physicians. The number of staff physicians will be increased according to the need. Each physician has his own group of patients and is responsible for providing episodic care as well as regular health supervision.

The purpose of the program is: (1) to improve the relationship with the OB Department, (2) to encourage a sizeable number of patients to return to the University Hospitals for future delivery, (3) to provide more patients for the Pediatric Department, (4) to establish efficient methods of managing well children in an outpatient setting, and (5) to develop a more efficient way of managing infants by use of data collected by parents.

This program could also serve as a base for nursing education and a Physician's Assistant program. The staff members for this program are responsible for the Neo-Infant Program for senior medical students, which is similar except that parents are not charged medical fees, and the child is followed only up to one year of age. The senior medical students, who are under the supervision of the staff, provide complete care for a number of babies throughout their senior year.

This furnishes them an opportunity to learn about growth, development, everyday pediatric problems and to develop substantial relationships with some families. Patients are seen at the Pediatric Out-Patient Clinic. Discussions and seminars will be held with emphasis placed on problems dealing with growth and development, nutrition, behavior and environment.

Nurse-Practioner Program

III. SPECIFIC AIMS OF THE PROJECT

The overall goal of the project is to educate nurses who have a baccalaureate degree in nursing to assume a primary health care role in ambulatory child health care. This goal will be accomplished by providing the additional knowledge and skill in a post-baccalaureate educational program in nursing.

Three project objectives are derived from the overall project goal:

1) To prepare nurses to assume a primary role in ambulatory child health care.
2) To assess the functioning of the nurse prepared to assume a primary health care role.
3) To describe the educational structure in which the nurse is educated for a primary health care role.

IV. ACTION PLANNED TO ACHIEVE THE SPECIFIC AIMS OF THE PROJECT

The preparation of nurses to assume a primary health care role with children will be accomplished by means of a three-quarter educational program which will include one quarter of intensive academic work at the University of Minnesota followed by two quarters of continued academic study and supervised clinical practice in a University-affiliated ambulatory health care setting. (See Proposed Program Philosophy, Objectives, and Course Outlines in Appendix D.)

A major theme of the program is the application of additional knowledge and skill in child health assessment and care to the role of nursing. It is not the aim of the program to produce assistant physicians. Every effort will be made to help students incorporate their newly acquired knowledge and skills into nursing practice. The curriculum is based upon selected theories of child development inclusive of the physical, psychosocial, and cognitive aspects. The first quarter is devoted to study of the development and care of the child

from birth through the preschool years. In the second quarter, the development and care of the school-age child, the pre-adolescent, and the adolescent are given first priority. The third quarter is spent in the study of special developmental and behavioral problems common to children from birth through adolescence. Topics for discussion will be determined by the students and faculty. The nurse will have the opportunity to learn or refine the skills necessary to make a developmental assessment of a child, to rule out major or minor illness, and to prescribe comprehensive health care plans for the child within the contexts of his family and community.

Students will be evaluated on their ability to achieve course and program objectives. For example, a nurse possessing considerable knowledge of and skill in the physical assessment of newborns can concentrate on other aspects of assessment in which she does not have as much knowledge or ability. Students will be expected to be self-directed in their learning and will be encouraged to determine their learning needs with their mentors.

The courses will provide comprehensive bibliographies, demonstrations of clinical skills by expert nursing, medical, and other faculty, and closely supervised clinical practice. Lecture material will be presented concurrently with related clinical practice. Students will be given ample opportunity for discussion of their learning experiences with faculty members. For example, students are given the opportunity to discuss psychological testing with a competent clinical psychologist. In doing so, the students gain not only knowledge and skill to apply to their own practice, but they also gain an awareness of the specialist's expertise and the role he plays on the health care team. They learn how to use his talents most effectively.

A variety of health care settings affiliated with the University will be utilized for clinical practice. These centers are Pilot City Health Center,

the Pediatric Out-Patient Departments at Hennepin County General Hospital and St. Paul-Ramsey Hospital, the Minneapolis Health Department, and selected group health clinics. Students will be assigned to one practice setting for the majority of their programs. This will give them the opportunity to develop their role with a patient population as well as give them the opportunity to observe the growth and development of the same children. This method provides for continuity of patient care as well as continuity of student learning experiences.

Nurses with baccalaureate degrees in nursing from programs accredited by the National League for Nursing and who meet admission requirements for graduate work in the School of Public Health will be eligible for the program. First consideration will be given to nurses who have had clinical experience as professional nurses in ambulatory child health care or in public health nursing. Before admittance to the program the student will be screened as to her attitude toward assuming a primary health care role and her interest in working closely with children and their families. The student's knowledge and skill will be evaluated at the end of each quarter and at completion of the program. Follow-up evaluations will be made at yearly intervals during the time the project is in operation.

V. EVALUATION

The evaluation of the project is based upon the specific aim of the project which is to educate nurses with baccalaureate degrees in nursing to assume a primary health care role in ambulatory child health care. The specific tools of evaluation will be developed as part of the project. A research associate has been requested because the expertise of such a person will be needed to assist project personnel with evaluation. It is our contention that

Course in Occupational Therapy

Department of Physical Medicine and Rehabilitation

EDUCATIONAL DEVELOPMENT

Since 1967 the occupational therapy program has had an ongoing curriculum committee composed of faculty, clinical staff and students.

Many changes in the curriculum have occurred during this period of time, largely promoted by the changing role of practice our graduates face in the community. Some revisions were necessary because of changes recommended in the essentials of an accrediated curriculum recently approved by the American Medical Association Council on Medical Education and the American Occupational Therapy Association.

Major changes in the pre-occupational therapy program at the freshman-sophomore level include strengthening the students preparation in the behavioral sciences, more flexibility in the artistic expression courses and increased emphasis on orientation to the practice of occupational therapy including contact with patients and consumers of health care in the community. Greater flexibility in the pre-occupational therapy program has made it easier for students to transfer from other colleges and universities directly into the junior year.

Sweeping changes in the professional program include the development of new courses, modification of content of existing courses and revisions in the clinical practice requirement for senior students. The revised curriculum became effective Fall quarter 1971.

The expanding role of practice in the community, some of it a departure from the traditional medical setting, has resulted in greater emphasis on human development and more contact on the part of the faculty and students with community organizations.

Senior students have preliminary practice in a variety of community based programs as well as possible full-time exposure to community programs which benefit from the services of occupational therapy. These community programs include day care centers, facilities for former mental patients, nursing homes and homes for the aged, public schools, schools and centers for the mentally retarded, sheltered workshops and other community centers and agencies such as the Minneapolis Society for the Blind, Model City Teenage Medical Center, Give and Take Help Center and the Guadalupe Area Project in St. Paul.

Currently one of the greatest problems we have is providing faculty time to visit the centers to arrange for student clinical practice. It is necessary for us to communicate to the centers the value of occupational therapy services and to orient them to the program at this University. Faculty teaching, advising, counseling activities and other responsibilities limit the time needed for making these contacts. We need a full-time faculty member to take charge of the area of clinical education in our program. Funds have not been available to acquire this person.

Three years ago we organized a Disadvantaged Student Committee composed of a physician, a rehabilitation counselor, two occupational therapy faculty members and two physical therapy faculty members. We have worked with the Martin Luther King and Higher Education Program for Lower Income Persons during these years. Effort has been made to modify the professional program to meet the special needs of the minority and disadvantaged students. This includes advising and tutorial help. We presently have one senior, one junior and four sophomore students in the program.

LEARNING PROCESS

New innovations in our anatomy and kinesiology course require more extensive use of anatomical models to supplement lecture demonstrations and laboratory practice. These anatomical models are expensive and at the moment not possible to obtain due to lack of funds. The addition of new courses in evaluation techniques requires additional testing media for laboratory practice.

Extensive use of audio-visual equipment is necessary in the professional program. This includes 35 mm slides, 16 mm projectors, 3 x 4 slides, video-taping, and many demonstration models used to supplement the many laboratory courses. Over the last four years we have developed a series of video-tapes which greatly enhance teaching and learning. Many of the models used for teaching are homemade. Some of these, in particular anatomical models, are available commercially but not available due to lack of funds.

We have 1" video-taping equipment and black and white monitors. Our equipment will handle color tapes but we do not have color television monitors. We feel that the addition of the monitors to our audio-visual equipment would be a very valuable contribution. Color presentations have more depth and particularly in the anatomical tapes are considerably more effective.

Color monitors for use in lecture and laboratory would be effectively used by the occupational therapy, physical therapy staff and students as well as by the medical staff involved with the resident training program in physical medicine.

The potential for expanding enrollment in occupational therapy is excellent. We are able to accept approximately 1/3 of the students applying for admission to the professional program. When adequate funding is available we hope to expand our enrollment beyond the present limit of 48 students.

The data below illustrates the growth of the program.

	1968	1969	1970	1971	(Estimated) 1972
Freshman	26	31	36	43	55
Sophomores	64	59	80	97	120
Juniors (accepted)	25	26	32	26	26+

Expansion of the program will necessitate additional staffing, physical facilities and equipment.

UNIVERSITY OF MINNESOTA
Course in Physical Therapy

1. Educational Development

Due to outside pressures from the community and the state, as well as an increase in the number of applicants to the Course in Physical Therapy, the curriculum was revised in 1967 to allow admission of two classes of students each year. They were admitted in March and September. Essentially, two programs were structured so as to run simultaneously with certain courses shared by the two classes and other courses offered in separate sections. Enrollment was doubled in this way but,with existing faculty and classroom facilities, it was necessary to devote 100% of faculty time to undergraduate teaching. Activities such as research, faculty improvement, and graduate education was all but suspended.

Additional support, in terms of additional faculty and classrooms, was expected either from additional grant support or from the University. This has not materialized. Since its inception, the revised program has doubled the number of qualified therapists entering the field. However, the job market continues to be good and the number of applicants continues to increase. At the present time, about 1/4 of the eligible, resident applicants to the physical therapy program can be accommodated with present faculty and classroom space. One of the most urgent needs for development of the program in all areas is additional faculty and classrooms.

Improvement of curriculum in terms of new and revised courses has continued in spite of increased teaching loads. Courses in Human Growth and Development, Patient Assessment, and field experience in Public Health have been added.

With changing patterns of health care, it is apparent that the traditional, hospital-based clinical internship no longer meets the needs of physical therapy graduates who take jobs in Extended Care Facilities, Nursing Homes, and other Community Agencies. It is essential that new clinical internship programs be sought out and developed in those areas. A full-time coordinator of clinical internship programs would be needed to effect this improvement in the educational program.

2. Learning Resources

With increased enrollment and decreasing numbers of patients available from the Rehabilitation Center for class presentation, greater emphasis needs to be placed on other kinds of instructional media. Video tapes and single concept films have been produced. However, the only available monitors in the Department are black and white. To be effective, the tapes and films should be shown in color and there is need for color monitors, purchase of which has not been possible with available resources.

For greater numbers of students, more anatomical skeletons and models are needed. Most physical therapy procedures require very

detailed study of anatomical structures and the groups of students using any one model have become too large for effective learning.

Closed circuit television between hospital clinics and classrooms would permit live presentation to a large number of students. With our present enrollment, it is not possible to schedule all students for such presentations since the clinics can accommodate only a few students (sometimes only one) at a time. This, of course, could be shared by all Health Science students at the University.

Uses of SAID

Teaching. This is the purpose for which SAID has been developed. The SAID Teaching Program serves as an efficient and rapid means of introducing clinical psychopathology to persons with little or no previous experience or training. The SAID Teaching Program can be introduced in as little as six hours. At the Davis School of Medicine we use 20 hours to introduce it to our sophomore medical students, 4 hours to refresh our junior medical student clerks, and 8 hours to introduce beginning psychiatric residents to SAID. Thus the duration of the program is quite flexible, depending upon the audience and its needs. Sources of clinical material may include our videotapes, your videotapes, your audiotapes, or live interviews.

Increase Reliability. If many patients (as in a hospital or an outpatient clinic or a community mental health center) are to be compared, it is most helpful to evaluate all of them in the same fashion. SAID offers this possibility. One can conduct the usual kind of open-ended psychiatric interview and then subsequently rate the patient with the SAID INVENTORY. The diagnostician may discover that he has omitted some critical items in order to achieve a diagnosis. This also has the effect of increasing the reliability.

Record Keeping. If every patient is evaluated according to the SAID INVENTORY and DIAGNOSTIC CHART (which follows DSM-II), such records can easily be transferred to punchcards and become a part of a data bank. If a computer is not available, a card sorter can still give large quantities of information. If patients are in continuing treatment, they should probably be re-evaluated at a minimum of every six months and also at the time of their discharge or termination. Comparison of evaluations over time will provide means of establishing changes in patients.

Research. SAID has real possibilities for use in clinical research in which groups of patients need to be evaluated reliably. This has been the traditional use of rating scales in clinical research.

Use of SAID in Different Settings

Medical School. The SAID Teaching Program was originally developed to introduce clinical psychopathology to pre-clinical medical students. It is also useful as a refresher course for clinical students, and as a crash course of instant psychiatry to teach our first-year residents to recognize brain dysfunctions and psychosis (both organic and functional). Probably the majority of the time in the SAID Teaching Program is spent in discussion between students and faculty about the videotapes of various syndromes that have been seen and rated. Since the students receive instant feedback of faculty consensual ratings, they have a comparative basis for discussing their evaluation of symptoms and their diagnostic conclusions. This discussion provides the student an opportunity to raise many questions.

Hospital and Outpatient Clinic. The SAID Teaching Program can be used in both these settings to teach all levels of staff about how to evaluate and diagnose the psychiatric patient. Anyone who is involved in the care of psychiatric patients should probably have this basic information. SAID appears appropriate to teach an entire psychiatric team, ranging from psychiatric technicians and nurses and social workers through psychologists and non-psychiatric physicians and psychiatrists about clinical psychopathology. We plan to teach such a team at Davis this summer. Thus an entire team can speak the same language about patients. The second use of SAID is to increase reliability and to

standardize record keeping for all patients who enter the setting and are followed on a continuing basis. These advantages have been discussed in the previous section under Reliability and Record Keeping.

Private Practice. SAID offers the possibilities of increasing reliability and standardizing record keeping for the private practitioner. Following the initial diagnostic interviews, the practitioner who has had some experience with SAID can evaluate the patient in no more than ten minutes on the INVENTORY and DIAGNOSTIC CHART. Such evaluations can be repeated at intervals such as every six months and also at termination. The practitioner can then evaluate whether the patient has changed during the course of treatment.

Available Materials and Costs

Handbook. You received a complimentary copy of the Handbook at the SAID Exhibit or at the Special Session. Handbooks are available for one dollar.

Answer Sheets. These are availabl at five cents each.

Faculty Consensus Answer Sheets. The ratings of our own videotapes of each Item in the INVENTORY and of our diagnosis are available on our own videotapes at no charge for single copies.

Videotapes. Our television office will dub one hour of videotape for forty dollars on your videotape which you supply. Do not send videotapes for dubbing until you have confirmed that we can supply your needs. We will need a minimum lead time of 8 weeks. We are capable of dubbing for the following systems:

Ampex 1 inch

Broadcast 2 inch

Sony ½ inch

We have the following videotaped interviews available:

1. Eight brief (6-8 minutes) psychiatric diagnoses. These illustrate the decision points of brain dysfunction and psychosis.
2. Schizophrenia - 2 interviews: overt, and borderline, both with mixed symptoms.
3. A. Neurosis - mixed with anxiety, phobia, and compulsions
   B. Personality Disorder - hysterical
4. A. Personality Disorder - antisocial, schizoid, homosexual, drug abuse
   B. Personality Disorder - antisocial, alcoholic

The four videotapes present a spectrum of clinical cases that are recommended for teaching a complete program of SAID.

How to Obtain Experience in the SAID Teaching Program

Probably the most efficient way to learn how we conduct the SAID Teaching Program is to attend and participate in our teaching of SAID at the Davis School of Medicine. This will occur next during the week of September 13-17, 1971. Classes are on five consecutive days, Monday through Friday, from 1:00 to 5:00 p.m. Our own medical students will be taking the course. Any potential teacher of SAID in the mental health profession is invited to be a student in this experience.

Another possibility is to have one of our faculty come to your setting and teach the course for one or more days. Three faculty members at Davis are all equally competent to do this; they are Paul R. Miller, Joe P. Tupin, and Donald Rockwell. Our fees for doing this include transportation, per diem of $40, and a professional fee of $200 for each day of teaching.

There is some possibility that a national training workshop for the SAID Teaching Program will be held 12 and 18 months from this date. One possibility would be preceding or following the next annual American Psychiatric Association meeting in Dallas in May, 1972. Possibly some outside agency may fund a training workshop, although this does not seem to be overwhelming in light of current tight fiscal policies.

Future Developments in SAID

The SAID Teaching Program has developed very rapidly. Our current style is to develop the program in the face of great need for such procedures and then to validate it later. We are also developing other aspects.

Films. Videotapes are inherently unstable; most tapes deteriorate with use and time. Therefore, we are probably going to develop a film library for the basic syndromes. These films will then be available for purchase or rental. There is some possibility that these will be developed during 1971.

Textbook. Miller and Tupin are currently writing and editing a book to be called Clinical Psychopathology. There will be 20 contributors to the textbook, each an acknowledged expert in the syndrome on which he will be writing. This manuscript will probably be completed in the fall and submitted to a publisher at that time. Release of the book will probably be in the spring of 1972 in anticipation of the academic year 1972-73.

Computerization. We are currently attempting to write a computer program which will process individual's evaluations on the 40 INVENTORY Items and then print out the likelihood of each diagnosis. We are currently studying the feasibility of this. If we manage to develop it, we could offer two additional services: provide the computer program to those settings that have a computer available for data processing; offer a data processing service on our own campus.

In conclusion, we hope that the entire SAID Teaching Program will be of value to you. We will accept only your orders for materials and will welcome your comments about the construction and content of SAID and a feedback of your experience when you try the course. Unfortunately, we cannot go into detail about how we teach the course, since so much of this is a matter of style and must be observed in action to gain an understanding of it. Therefore, we would suggest that if you choose to undertake the SAID Teaching Program, you attend our next teaching session at the Davis School of Medicine (September 13-17) or have one of our faculty attend your first presentation of the course as a participating teacher and consultant.

An order form is enclosed for your convenience.

FILMS PERTAINING TO PSYCHIATRY

THE HIDDEN PATIENT — PFIZER

What is an "emotional biopsy?" How can you establish a link in the patient's mind between his emotional circumstance and his physical complaints? What is underlying depression and how is it manifested? These and other points are discussed in the following format: DR. JEROME RUBIN, a resident at Beth Israel Hospital, Boston, conducts a medical interview of a patient. The same patient is then given a psychiatric interview by DR. THEODORE NADELSON, Assistant Psychiatrist, Beth Israel Hospital, Boston. In interviewing another patient, DR. JOHN GRAHAM, Lecturer on Medicine at Harvard Medical School and Chief of Medicine at Faulkner Hospital, Boston, synthesizes the medical and psychiatric interview, demonstrating how the physician can use the clues that the patient gives in talking about his problem in making the diagnosis. A discussion about patient-doctor interviews and the diagnosis of anxiety and underlying depression by DR. DON LIPSITT, of harvard Medical School and Chief of Psychiatry at Mt. Auburn Hospital, Cambridge and DR. JOHN REICHARD, of Harvard Medical School and Chief of Psychiatry at Faulkner Hospital, Boston, ends the film.

DEPRESSION — LAKESIDE

A film describing the psychiatric disorder of depression. Case illustrations, differential diagnosis, pharmacological treatment and biochemical etiology is discussed by distinguished physicians.

SANDOZ MEDICAL FILM LIBRARY

THE WORLD OF THE SCHIZOPHRENIC — D.J. DUCHE, M.D. — 21 minutes

This unusual film is an attempt to present the world of the schizophrenic in both its objective and subjective manifestations by exploiting the opportunities offered by the medium of the film. By acoustic means, the opening sequences of the film portray the transformation of the environment into a fearful world. To these are added visual impressions which reinforce the sensation of disorientation. Subsequently, a confusing "reality" where nothing conforms to a logical pattern is unfolded. The film concludes with the impression of a slow dissolution of the personality. The content of the film was compiled from the records of many case histories which served as the basis for artistic interpretation of some of the essential phenomena of schizophrenia.

BALLET OF THE PARAPHRENIC — D.J. DUCHE, M.D. — 28 minutes

This film attempts to communicate the fantasy and delirium of the paraphrenic patient. Scenes are based upon the rich world of ideas and imagination described by a particularly talkative female patient. She portrays in an artistic manner her experience of groups of symptoms. Overall, the film demonstrates that, apart from nonsystematic delusions and hallucinations, the paraphrenic patient is quite lucid and able to adapt fairly well to the real world.

THE POET AND THE UNICORN — 17 minutes

Professor Muller, Director, Psychiatric Clinic of the University of Lausanne, was probably the first psychiatrist to have used filmmaking as a form of occupational therapy. This film, made by his patients in 345 hours of group work, tells the story of a poet who seeks help at a psychiatric hospital and the subjective experience of the treatment he undergoes. It is intriguing both as a film and as an occupational therapy technique.

THE MECHANICAL CONCERTO OF MADNESS — GRANGE/IGELIN
21 minutes

This moving and dramatic film expresses the tragic irony of man's dehumanization in a mechanical world. By means of a symbolic ballet narrative, the film follows a newborn man and woman through several episodes in which they confront a world where humanity is threatened on all sides by technology. Children are born to the couple but not as symbols of man's renewal and freedom. The children, too, become enmeshed in the mechanical world about them, dramatizing the continuous cycle of man's preoccupation with his own dehumanization. Each individual will see in the film certain aspects of his own personality.

CHILDHOOD SCHIZOPHRENIA — S.M. FINCH, M.D.
44 minutes

The only syndrome in psychiatry more confusing than adult schizophrenia is childhood schizophrenia, according to Dr. Finch. This film begins by discussing some of the problems associated with childhood schizophrenia: undetermined etiology and the need for more effective therapeutic techniques. The film goes on to describe three subtypes of this disorder, as observed by Dr. Finch and his colleagues: early infantile autism, symbiotic psychosis, and borderline psychosis. Three phases of therapy for children with these disorders are also described: 1) breaking through the autistic barrier, 2) developing new ego skills, and 3) working through intra- and inter-psychic conflicts. To illustrate both the clinical picture of these three subtypes of childhood schizophrenia and the techniques employed in their treatment, the film shows several children in various therapeutic situations, e.g. recreational therapy, psychotherapy.

INTERVIEWING A CHILD — S.I. HARRISON, M.D.
25 minutes

This film discusses the problems involved in "interviewing" a child for the purpose of learning the possible causes of medical or psychosocial difficulties he is experiencing. By way of two videotaped interviews with 9-year old children encountering difficulties in school, the film demonstrates both effective and ineffective techniques by which to communicate with a child. The point is made that unless the interviewer can develop rapport with the

child and gain his confidence and trust, the interview will provide little or not meaningful information.

THE SCREAM INSIDE

M.M. BERGER, M.D.
47 minutes

The Scream Inside is an educational film which presents a wide range of group processes and dynamics on many levels through actual filmed and videotaped therapy sessions. The purpose of this film is to communicate concepts basic to an understanding of therapeutic group functions and objectives. Patients shown were free to discuss any subject regardless of social convention as well as to use profanity or discuss sexual matters without fear of rejection by other members of the group.

THE HORLA

38 minutes

This film is an interpretation of a short story, "Le Horla," written by Guy de Maupassant in 1886. When de Maupassant died in 1893, he had lost his reason. "Le Horla" can in some ways be regarded as an autobiography in which de Maupassant gives us some insight into the delusional processes which were invading his mind. Aside from its literary merits, the story of The Horla can be viewed as a rare self-documentation or autoanalysis of incipient psychosis. In preparing this film for teaching purposes, the authors maintained the fundamental concept of de Maupassant's story. However, the chronology of events was rearranged in order to illustrate the progression of important phases of the illness. Symbolic content ranges from the apparent to the very sophisticated. Special attention was given to the illustration of the psychodynamics underlying the symptomatology. This film was conceived as an audiovisual presentation in the area of mental health and illness for psychiatric residents, allied mental health professionals and physicians.

OPERANT CONDITIONING

MONTGOMERY/McBURNEY
40 minutes

This film was conceived and produced at Camarillo State Hospital (Camarillo, California) to describe the successful therapeutic application of operant conditioning techniques in a population of mental retardates. Through these techniques the patient's environment is manipulated so that 1) he is made aware that his behavior has an effect on his environment, and 2) the patient can subsequently develop (through implementation of specific behavior-reinforcement techniques) new and improved patterns of behavior. The token economy is such a reinforcement program. As shown in this film, this program enables the patient to earn a specific reward for appropriate behaviors which, in turn, may be exchanged by him for what he considers the necessities and luxuries of life.

MIGRAINE - ITS DIAGNOSIS AND TREATMENT — A.P. FRIEDMAN, M.D.
26 minutes

Through a typical case history, this film presents a clinical description of migraine, possible etiologic factors, and effective symptomatic and prophylactic measures for treating the migraine patient. Methods by which the general physician can recognize, properly diagnose, and treat patients with migraine are also presented. In addition, the film illustrates the probably physiologic process by which the migraine attack develops.

TREATMENT OF ACUTE SCHIZOPHRENIA — PFIZER
30 minutes

Film demonstration of classic schizophrenic disorders (catatonic, paranoid, hebephrenic, and agitated) and their treatments. The film shows patients before and after treatment. See acompanying brochure at Learning Center. Film available until March 15.

SCHIZOPHRENIA — PFIZER

Expert psychiatrist and other physicians discuss the disorder of schizophrenia: etiology, symptomotology and treatment.

LEARNING CENTER

DIAL ACCESS LIBRARY

The Dial Access Medical Library contains audio tape abstracts on medical subjects of interest to Minnesota physicians. Call 1-800-356-8103 TOLL FREE 24 HOURS DAILY to request any one of the tapes listed below:

HOW TO USE IT:
1) Select tape title and number.
2) Dial 1-800-356-8103.
3) Provide librarian information requested.
4) If asked, identify yourself as a medical student at the University of Minnesota and that permission for using the library has been granted by LeRoy G. Bergland, Northlands Regional Medical Program.
5) Listen to the tape.
6) Copies of the script for a particular tape that has been prepared by a Minnesota physician may be obtained by writing: Northlands Regional Medical Program, 375 Jackson Street, St. Paul, Minnesota 55101.

CODE:
4:45 Time of Tape (four minutes and forty-five seconds)
1971 Year when tape produced or last reviewed

ALCOHOLISM AND DRUG ABUSE:

255. Acute Alcohol, Withdrawal, Treatment of (7:00) 1970R
S.C. Kaim, M.D., Washington, D.C.

49. Delirium Tremens, Management of (5:40) 1971R
S.C. Kaim, M.D., Washington, D.C.

292. Amphetamine Abuse (5:10) 1971R
The Medical Letter

404/405 Special Tapes on Drug Problems
Tapes 404 and 405 have been prepared by Doctor Alan Reed, Milwaukee, who has been closely associated with the "Underground Switchboard," and is in touch with those who know the dangerous combinations of drugs commonly used. Also he has some important advice on effective ways of meeting these problems on the local level.

406. Drug Abuse and the Role of the Professional Medical Person (9:23) 1970
Robert Samp, M.D. Madison

441. Drug Abuse: General Principles and Terminology (5:20) 1970
Joseph M. Benforado, M.D., Madison

442. Drug Abuse: Narcotic Abuse (5:00) 1970
Joseph M. Benforado, M.D., Madison

443. Drug Abuse: Amphetamine Abuse (5:00) 1970
Joseph M. Benforado, M.D., Madison

444. Drug Abuse: Hallucinogens (5:40) 1970
Joseph M. Benforado, M.D., Madison

445. Drug Abuse: How to Treat a Bad Trip (5:30) 1970
Joseph M. Benforado, M.D., Madison

446. Drug Abuse: Drug Abuse and Society (4:50) 1970
Joseph M. Benforado, M.D., Madison

ALCOHOLISM AND DRUG ABUSE cont.

211. Drug Abuse by Teenagers (5:50) 1971
J.C. Westman, M.D., Madison
274. Suicidal Attempts with Sedative Drugs, Medical Management of (7:00) 1970R
Avery Harrington, M.D., Madison

PSYCHIATRIC:

Psychiatric Emergencies: James M.A. Weiss, M.D., Columbia, Missouri
307. Introduction (7:55) 1971R
308. Principles of Interviewing (7:20) 1971R
309. A Simple Classification System (5:04) 1971R
310. Chemotherapy (7:45) 1971R

581. Stress on Today's Children (5:30) 1971
Julie Murphy, R.N., Menasha
50. Psychiatric Emergencies in Children, Management of (5:51) 1969R
William Bolman, M.D., San Francisco, California
7. Delinquent Child, Recognition and Management (4:50) 1971R
J.C. Westman, M.D., Madison
174. Delinquent and His Family, The (5:40) 1970R
Carl Whitaker, M.D., Madison
121. Psychotic and His Family, The (5:30) 1970R
Carl Whitaker, M.D., Madison
8. Schizophrenia, Childhood Psychosis (5:32) 1971R
J.C. Westman, M.D., Madison
138. School Phobia (or School Refusal) (5:32) 1969R
William Bolman, M.D., San Francisco, California
159. Tranquilizers: Side Effects and Contraindications (5:45) 1970R
Leigh Roberts, M.D., Madison
312. The Suicidal Patient (7:55) 1971R
James M.A. Weiss, M.D., Columbia, Missouri
33. Suicidal Threat, Recognition and Treatment of (4:58) 1971
Milton Miller, M.D., Madison
32. Psychiatrist, Choosing Your, Do's and Don'ts in (5:25) 1970R
Leigh Roberts, M.D., Madison
47. Psychiatric Patient, What to Tell the Patient When Referring as a (3:05) 1969
Seymour Halleck, M.D., Madison
253. Sex Deviate Law in Wisconsin (5:05) 1970R
Asher Pacht, PhD, Madison
351. Frigidity in the Female, Treatment of (6:15) 1970
Carl A. Whitaker, M.D., Madison
352. Impotence in the Male, Treatment of (5:56) 1970
Carl A. Whitaker, M.D., Madison
470. Infertile Couple, Evaluation of the (7:10) 1971
George E. Tagatz, M.D., Minneapolis, Minnesota
13. Marriage on the Rocks (4:45) 1970R
Carl A. Whitaker, M.D., Madison

PATIENTS WITH SPECIFIC PROBLEMS:
169. Dying Patient, The (6:08) 1971R
S.E. Sivertson, M.D., Madison

TAPE LIBRARY CATALOG

(Learning Center)

The following is a list of audio tapes which demonstrate particular psycho-therapeutic techniques. The content and length of the tapes are listed below.

No. 14 JIM 35 minutes
An example of direct analysis by Dr. John Rosen with a suicidal male in a treatment center. A brief introduction is followed by the complete interview. Good audio. Script.

No. 17 MISS E. S. T. 40 minutes
Dr. Richard Felder discusses with a young woman her reaction to a course of shock therapy seven years before, when she was 14, prescribed because of a severe obsessive-compulsive neurosis involving school phobia and a later diagnosis of schizophrenia. Fair audio. Script.

No. 21 MULTIPLE THERAPY WITH A COUPLE 1 hour, 20 min.
Drs. Carl Whitaker and Richard Felder in a demonstration of multiple therapy with a former hospital inmate and his wife at therapy workshop. The interview is followed by a discussion of the material and processes involved. Fair to good audio. Script.

No. 26 BEHAVIOR THERAPY 1 hour
Dr. Joseph Wolpe demonstrates behavior therapy including the use of relaxation and reciprocal inhibition with a phobic girl during a university psychiatry colloquium. The demonstration is followed by a question-and-answer session between the audience and the girl. Fair audio. Script.

No. 35 THE ART OF CONSULTATION
Dr. Martin Grotjahn discusses the technique, methods, and aims of psychiatric consultation. Emphasis is given to consultation between professionals on puzzling cases, with special reference to Freud as a consultant. Finally Dr. Grotjahn describes techniques for consultation with oneself for insight into difficult problems. Excellent audio. Script.

No. 36 ROBERT 1 hour, 12 min.
This initial interview by Dr. Benjamin Balser with a 15-year old male under-achiever is followed by a complete history from the psychiatric caseworker; case discussion, diagnosis, and recommendation for short-term psychotherapy by Dr. Balser; and further discussion by Drs. Selma Kramer and Robert Gaukler. Good audio. Script.

No. 41 IMPLOSIVE THERAPY 1 hour, 40 min.
Dr. Robert Hogan dramatically demonstrates implosive deconditioning by extinction using as examples snake and rat phobias. The snake tape has been used experimentally in the treatment of frigidity. Excellent audio. Script.

No. 48 FOUR PSYCHOTHERAPIES 1 hour, 25 min.
After an intake interview by Dr. John Henderson, the same anxious male is seen in consultation by Dr. David Murray (client-centered therapy), Dr. Albert Ellis (rational emotive therapy), Dr. Joseph Cautela (behavior therapy), and Dr. Robert Seidenberg (psychoanalytic therapy). Excellent audio. Script.

THE LEARNING CENTER

The Learning Center, located on the second floor of Diehl Hall Bio-Medical Library across from the University Hospitals, brings a new concept to medical education. The Center provides audio-visual and other reference material pertinent to certain topics in medical practice. It is used extensively in the new curriculum for the medical students at the University of Minnesota. One can hear various experts report on certain ropics associated with visual demonstration on cassette tapes.

Subjects and speakers available are as follows:

1. Glover, Ben
   "How Much Psychotherapy Should The Family Physician Do?"
   January 28, 1969
   13 slides, 1 cassette, time 27:21

2. Matkom, Anthony
   "Alcoholism Treatment in a General Hospital"
   February 4, 1969
   6 slides, 1 cassette, time 27:21

3. Miller, Milton
   "Depression, Suicide and Suicidal in Medical Practice"
   February 6, 1968
   5 slides, 1 cassette, time 29:00

4. Roberts, Leigh
   "Current Status of Tranquilizers"
   November 30, 1967
   13 slides, 1 cassette, time 32:00

5. Westman, Jack
   "Disturbed Adolescent"
   November 28, 1967
   9 slides, 1 cassette, 2 sets, time 35:40

Medical students are encouraged to visit the Learning Center before or after the course material is presented at the Nolte Center.

LEARNING CENTER HOURS

Weekdays	8:00 am - 11:00 pm
Saturday	8:00 am - 10:00 pm
Sunday	2:00 pm - 10:00 pm

LEARNING CENTER MATERIAL

BOOKS - RECOMMENDED

Noyes Modern Clinical Psychiatry - Kalb

Comprehensive Textbook of Psychiatry - Kaplan and Freedman

Clinical Psychiatry - W. Mayer-Gross

Handbook of Psychiatry - Solomon and Patch

Foundations of Psychopathology - J.C. Nemiah

Elementary Textbook of Psychoanalysis - C. Brenner

Mask of Sanity - Cleckley

Biological Treatment of Mental Illness - M. Rinkel

I'm O.K., You're O.K. - Harris

Fifty Minute Hour - R. Lindner

I Never Promised You a Rose Garden - H. Green

Politics of Experiences - R. Laing

Love and Will - R. May

Love is Not Enough - Bruno Bettleheim

Empty Fortress - Bruno Bettleheim

Limbic System Anatomy and Physiology, The - K. Akert and P. Hemmel

Pharmacology of Psychotherapeutic Drugs, The - Brucke, Hornykiewica and Sigg

Treatment of Schizophrenia - A Comparative Study of Five Treatment Methods - R. May

Drug Treatment in Psychiatry - Veteran's Administration, Washington, D.C.

Career Directions in Psychiatry - Volume I, #1 through Volume II, #3

Medical Management of Depression and Self Evaluation Section - Lakeside Laboratories

Psychopathological Disorders in Childhood: Theoretical Considerations and a Proposed Classification - Volume VI - Committee on Child Psychiatry (GAP)

Diagnostic and Statistical Manual II (DSM-II) A Brief Description of Psychopathological entities - American Psychiatric Association

RECOMMENDED BOOKS - CONTINUED

Mental Retardation: Appraisal, Education and Rehabilitation - A. Baumeister, ed.

Mental Retardation, Pediatric Clinics of North America - H.J. Grossman, ed.

Mental Retardation, A Handbook for the Primary Physician - American Medical Assoc.

Medical & Social Management of the Mentally Retarded - P. Pearson and A. Menefee

Resources for the Mentally Retarded in Minnesota - Mn. Department of Public Welfare

A MEDICAL INTERVIEWING COURSE: OBJECTIVES, TECHNIQUES AND ASSESSMENT

David W. Cline, M.D. and Judith Garrard, Ph.D.

Dr. Cline is Assistant Professor, Department of Psychiatry, University of Minnesota Medical School.

Dr. Garrard is Medical School Curriculum Evaluator and Assistant Professor, Department of Physical Medicine and Rehabilitation, University of Minnesota Medical School.

Over the past several years, medical interviewing skills have received increased emphasis. The focus on family practice, comprehensive medicine and the demands of the consumer that he be interviewed with skill and be made to feel that the physician is interested in him are forces within our society which require that more training focus upon the skill of interviewing. Teaching of interviewing skills has been initiated in graduate training programs of psychiatry, clinical psychology, social work, and, more recently, in the undergraduate medical school curriculum itself. Although several formats for teaching interviewing skills have been described (1 - 6), course objectives, teaching techniques, and assessment of outcome, (especially student-teacher satisfaction and student learning gain) need further researched clarification.

The Department of Psychiatry at the University of Minnesota Medical School is responsible for teaching techniques of medical interviewing to the Phase B (second-year) medical students in the recently revised Medical School curriculum. The purpose of this report is to describe this course, outlining course goals, course components, teaching techniques, and assessment of what the students learned and how satisfied they were with the course (the latter aspect has become an important one in the new student activism movement).

COURSE DESCRIPTION:

An inter-departmental committee consisting of several faculty members and two first-year medical students planned the course. The first step in course development was specification of the body of information to be

presented. The optimal interview was defined as one in which the greatest amount of accurate information relevant to diagnosis and management is obtained in realistic time limits (2). The course goals were: 1) to increase the student's attention to process information; 2) to encourage techniques that maximize opportunity for observing the patient's characteristic behavior; 3) to encourage the interviewer to limit his own activity and encourage the patient's activity; 4) to encourage the interviewer to exercise the least possible control over the patient; 5) to encourage the interviewer to allow the patient to tell his own story with minimal intervention; and 6) to encourage the interviewer to create and maintain a supportive emotional atmosphere. The course was given during a one-week period at the beginning of the second year prior to the students performing medical workups. During this week, there were 12 hours of required attendance and 6 hours of optional attendance.

During the first hour (required) of the course, a pre-test was administered to the class (N = 233) in a large group setting. The quiz, in the form of two films, depicted interviews with white, middle-class male patients in whom carcinoma was suspected. The test had 18 nodal points, with three alternatives at each point from which the student chose one response. These test films are part of the series, "Programmed Instruction in Medical Interviewing," by Enelow, et al (7) and their purpose is to test cognitive learning (8). Also included during the first hour were a general introduction to interviewing techniques, the reading assignment, course goals and course format.

Medical Interviewing: A Programmed Text (6) was the required text which students were to read at the beginning of the course. This manual focuses on the format, style and phrasing of questions and responses to fit the many types of situations that occur in the interview. Approximately 20 types of responses are defined, illustrated and programmed e.g., facilitation, confrontation, silence, open-ended questioning, support, reassurance, emphathy and reflection, from which the student can learn to construct his own responses of each type.

The major portion of the course was taught in a small group setting (8 to 14 students), led by an instructor from Psychiatry, Psychology, or Social Work. During the first of five required two-hour blocks, the small group instructor demonstrated interviewing techniques by interviewing a hospitalized patient. The interview, which was audio-taped, lasted about 25 minutes and was followed by the students asking open-ended and direct questions of the patient. The interview was then discussed by the group, and the patient participated by reporting his reactions to the experience. In this setting the students observed a skilled interviewer; the patient's presence served to decathect the anxiety surrounding the interviewing experience. The following two small group sessions were devoted to role playing. Each student was given a patient's history to learn, and he was then interviewed by a fellow student. Subsequent reversal of roles allowed the student to experience the interviewing process as a "patient," gaining greater appreciation of the importance of the interview. The instructor could also interview a programmed student, further demonstrating effective techniques and dispelling the notion that role playing is

ineffectual as a learning tool. Audio-tape recordings were used as a teaching aid to point out student errors. The final two small group sessions were devoted to students interviewing hospitalized patients. Two students, one an interviewer, the other an observer-recorder, went to a hospital station and interviewed a patient for approximately 20 to 30 minutes; the interview was audio-taped. Following the interview, students returned to their small groups where the student observer-recorder critiqued the interview. The instructor used the audio-tape recording to provide critical feedback to the student-interviewer. Interviewer-observer roles were subsequently reversed. This presented a unique opportunity for the student to be an observer-teacher, thereby enhancing his own learning.

Following each of the required small group sessions throughout the week, interviewing movies (7) were presented in a large group setting to further the learning of both verbal and non-verbal aspects of patients' responses (attendance optional). Ten programmed interviews, available on video-tape and 16 mm. film[1] were written to illustrate specific interviewing problems and techniques (8). Professional actors played the role of patient and physician. At certain nodal points, the student chose between three alternate physician responses rather than constructing his own response. This format allowed the student to become actively involved with the more complete

[1]The 10 interviewing films and 2 test films are available from National Medical Audio-Visual Center (Annex), Station K, NIH, Atlanta, Georgia 30324.

verbal and non-verbal responses of the physician and the replies of the patient. Commentary by the film's narrator concerning each type of response added to the student's understanding of the process. The films were supplemented by class discussion following the completion of each.

A post-test, consisting of the two pre-test films, was administered in the large group setting during the final required hour of the course. The student was given his pre-test and post-test scores and the class average so that he could further assess his learning gain.

COURSE ASSESSMENT

In order to asses the educational value of his course, an extensive evaluation was conducted. Students (N = 233) and instructors (N = 21) were asked to rate their own (or students') accomplishment of the course goals, effectiveness of the course components in accomplishing the course goals, instructor effectiveness (for the instructors, a self evaluation), and the overall course value. The following rating schedule was used: 1 = excellent, 2 = above average, 3 = average, 4 = below average, 5 = poor. Two hundred sixteen students (92%) and 21 course instructors (100%) responded to the questionnaire. Cognitive learning gain was evaluated by pre- and post-test comparisons.

Group leaders consisted of four staff psychiatrists, three staff psychologists, ten psychiatric residents (after their first year of training), two staff physicians from the Department of Family Practice and Community Health, and two staff social workers. Seven of the 21 group leaders instructed

in the course the previous year, the first time that it was offered. Most of the 14 remaining group leaders had had no formalized course work in interviewing techniques during their specialty training although all group leaders were given instructional kits and were invited to attend an instructional seminar before the course began.

RESULTS

Seventy-seven per cent of the students had no previous training in interviewing techniques, 14% had some training in an elective course offered the previous quarter, and 9% had previous training with other groups. None of the students had had previous experience conducting medical interviews with patients. Eight-five per cent of the class attended all required and optional sessions of the course.

Table 1 shows the distribution and average ratings for student and instructor evaluation.

(Table 1 about here)

Students rated the course between above average and excellent (mean rating = 1.63). In rating self accomplishment of each course goal, students assigned the highest mean rating (1.69) to Goal 3, "To encourage the interviewer to limit his own activity and encourage activity on the part of the patient." The course component students found most effective in learning interviewing techniques was that of interviewing a hospitalized patient (mean rating = 1.44). The instructors felt that Goal 1 was best

obtained by the students: "To increase the student's attention to process information." This goal was rated third by the students. The course component ranked highest by both students and instructors was that of "Student interviewing a patient"; this, and the subsequent small group discussion were apparently the most important elements in teaching and learning interviewing techniques.

Comments by the students included: "Excellent course"..."need to interview more real patients." "Course should be longer with periodic follow-up." "Our small group experience was excellent." "More case history role playing." "Most valuable part of my experience was self evaluation tempered by fellow students' empathy and critiques." "Feel that a video-tape interview and playback should be required for all students." (Regarding the social work instructors) "Destroyed my own distrust of social workers." "She suffered typical medical student wrath for a non-M.D.--handled it very well." (About the text) "Not worth buying, especially for $5, not worth it." "Good." "No good." "Bad book." (About the films) "Somewhat of a comedy," "One or two films sufficient," "Went to sleep; yes, I went to bed the night before." (The course in general) "A very excellent experience."

Comments by the instructors included: "Good to let students interview their fellow students, role playing a patient first, which helps them to get the feel of interviewing while under minimal stress." "It was a rewarding experience to teach the course."

LEARNING GAIN

Cognitive learning of interviewing skills was assessed by two test films designed by Adler, et al (8); both films were administered pre- and post-course. Each film contined 9 nodal or decision points. At each nodal point, an interview situation was portrayed, followed by 3 alternative physician responses; the student had to decide which alternative was appropriate and record this on his answer sheet. The nodal points within and between films were designed to be independent of one another; therefore, a student's answer at one point should not influence his subsequent responses.

In order to control for possible sequence effect, the order of the films was alternated on pre- and post-administration. That is, for the pre-test, Film 11 (Mr. King) was shown first, followed immediately by Film 12 (Mr. Lloyd); the order was reversed for the post-test.

Complete pre-post data was obtained for 207 students (85%) and results are shown in Table 2. Mean number correct and mean weighted score are given for each film. In previous research, Adler, et al (8) derived weights

(Table 2 about here)

for nodal points in order to make the two films parallel. These weights, reproduced in Table 3, were used to compute weighted scores for each student.

(Table 3 about here)

On the basis of a matched pairs t test, significant pre-post differences ($p < .001$) were found with each film; the differences were

evident whether Number Correct or Weighted Score was the dependent variable.

In order to examine the extent to which the two films were parallel, a Pearson correlation coefficient was run with the pre-test scores. The correlation (r_{xy} = .34) was the same for Number Correct and Weighted Score.

DISCUSSION

The significant differences between pre- and post-test scores were interpreted as indicative of significant learning gain attributable to the one week course.

Weighted scores were derived originally(8) in order to make the 2 test films parallel. In previous research, Adler, et al (8), reported correlations for weighted scores ranging from .49 to .69 for various groups of academic or practicing physicians. Although second year students at 2 medical schools (N = 61, N = 75) were assessed by Adler, et al (8), the test administration did not include both films; therefore, correlations between the films were not available. The results of the present study do not offer strong support for the assumption of parallel forms for sophomore medical students; therefore, use of one film as a pre-test and the other as a post-test cannot be strongly justified for second year students.

A major consideration in presenting this course was faculty time in teaching interviewing skills. Excluding preparation, the 21 instructors spent 10 hours each during one week, for a total of 210 teaching hours for the class of 233 students. The course director spent 6 hours presenting

the films, discussing them and administering the pre- and post-tests. For the director there was an additional time requirement for organizing the course, scheduling, recruiting group leaders and patients, and obtaining tape recorders, as well as supervising the course presentation.

Presenting the course in a one-week time block facilitated maximum group leader participation. Interest, morale, and enthusiasm were maintained more easily than if the course had been spread over several weeks. It is important, however, to reinforce the concepts presented in the course at periodic intervals throughout the medical students' training. However, Ware, et al (9) have shown that learning gain persists 6 weeks after the Enelow (7) programmed instruction films have been presented over a previous 10-week period.

Video-taping student interviews with playback appears to be a valuable teaching adjunct (1), although Adler, et al, (4) report that "Programmed Instruction in Medical Interviewing" films (7) were superior to video-taped interviews and discussion in producing certain measured behavioral change measured by the Psychotherapy Interactional (PIA) Scale (10). We are presently studying the value of including the video tape learning experience. Initial problems for large medical school classes are availability of equipment, technicians to operate the equipment, scheduling of instructors, students, patients and/or a programmed patient. Logistical problems are pronounced.

Using a professionally trained programmed patient has value in that

the "patient" is available for comments during the review session, clarifying interpretations of the student's response or clarifying why he replied as he did to a specific inquiry. However, this is somewhat a duplication of a fellow student's role playing the patient. Since the student patients can quickly be taught to give feedback to their colleagues and since using student patients greatly reduced logistical problems, this approach seems to be the most expedient.

SUMMARY

This article describes a course for teaching the skills of medical interviewing, a student-instructor evaluation of the course, and the cognitive learning gain achieved by second-year medical students. Components of the course include a programmed manual, observing a skilled interviewer, role playing exercises, programmed medical interviewing films, and interviewing patients. The major part of the course was conducted in a small group setting 16 hours during a one-week period. Student participation in course planning, discussion group, and as learner and teacher is emphasized. The course was rated as above average to excellent by students and instructors. The students showed significant learning gain in medical interviewing techniques.

REFERENCES

1. FROELICH, R. E. A Course in Medical Interviewing. J. Med. Educ., 44:1165-1169, 1969.

2. ENELOW, A. J., ADLER, L. M., and WEXLER, M. Programmed Instruction in Interviewing: An Experiment in Medical Education. J.A.M.A., 212:1843-1846, 1970.

3. KIMBALL, C. P. Techniques in Interviewing, 1. Interviewing and the Meaning of the Symptom. Ann. Int. Med. 71:147-153, 1969.

4. ADLER, L. M., WARE, J. E., and ENELOW, A. J. Changes in Medical Interviewing Style after Instruction with Two Closed-Circuit Television Techniques. J. Med. Educ., 45:21-28, 1970.

5. ENELOW, A. J. and WEXLER, M. The Medical Interview. In Psychiatry in the Practice of Medicine. New York, Oxford University Press, 1966.

6. FROELICH, R. E. and BISHOP, F. M. Medical Interviewing: A Programmed Test. St. Louis: C. V. Mosby, 1969.

7. ENELOW, A. J., WEXLER, M., ADLER, L., FROELICH, R. E., and SCOTT, R. Programmed Medical Interviewing, Hollywood, California, Acme Film Laboratories, 1967.

8. ADLER, L., WARE, J. E., and ENELOW, A. J. Evaluation of Programmed Instruction in Medical Interviewing. Los Angeles, California: University of Southern California Postgraduate Division, pp. 83-89, 1968.

REFERENCES

9. WARE, J. E., STRASSMAN, H. D., and NAFTULIN, D. H. A Negative Relationship Between Understanding Interviewing Principles and Interview Performance. J. Med. Educ., 46:621, 1971.

10. ADLER, L. M. and ENELOW, A. J. An Instrument to Measure Skill in Diagnostic Interviewing: A Teaching and Evaluation Tool. J. Med. Educ. 41:281-284, 1966.

TABLE 1

STUDENT - INSTRUCTOR EVALUATION

Area	Student Rating							Instructor Rating	
I. Course Goals. Rate (1-5) how well you feel you (your students) accomplished each goal in this course:	Excellent (1)	Above Average (2)	Average (3)	Below Average (4)	Poor (5)	Mean Rating	No Answ.	Mean Rating	No Answ.
1. To increase the student's attention to process information.	40%	43%	14%	3%	0%	1.80	1%	1.57	0%
2. To encourage observation of the patient's characteristic behavior.	36%	45%	17%	2%	1%	1.85	0%	2.12	0%
3. To encourage the interviewer to limit his own activity, and encourage activity on the part of the patient.	45%	43%	11%	1%	1%	1.69	0%	2.05	0%
4. To encourage the interviewer to exercise the least possible control over the patient during the interview.	30%	46%	19%	4%	1%	2.00	1%	2.24	0%

TABLE 1 (continued, p. 2)

STUDENT - INSTRUCTOR EVALUATION

Area	Student Rating							Instructor Rating	
I. Course Goals. Rate (1-5) how well you feel you (your students) accomplished each goal in this course:	Excellent (1)	Above Average (2)	Average (3)	Below Average (4)	Poor (5)	Mean Rating	No Answ.	Mean Rating	No Answ.
5. To encourage the interviewer to allow the patient to tell his own story with minimal intervention.	46%	39%	12%	1%	1%	1.71	0%	1.81	0%
6. To encourage the interviewer to to create and maintain a supportive emotional atmosphere during the diagnostic interview.	37%	43%	21%	0%	0%	1.84	0%	1.81	0%
II. Instructor or Self Evaluation. Rate (1-5) how effective your instructor was in helping you accomplish the goals of this course (your effectiveness as an instructor).	58%	33%	6%	2%	1%	1.54	0%	1.98	4.7%

TABLE 1 (continued, p. 3)

STUDENT - INSTRUCTOR EVALUATION

Area	Student Rating							Instructor Rating	
III. Course Components. Rate (1-5) the effectiveness of each of the following course components in helping you (your students) accomplish the goals of this course:	Excellent (1)	Above Average (2)	Average (3)	Below Average (4)	Poor (5)	Mean Rating	No Answ.	Mean Rating	No Answ.
1. "Programmed Instruction in Medical Interviewing" films.	12%	46%	30%	8%	3%	2.44	1%	3.08	38%
2. Demonstration interview of a patient by group leader.	31%	46%	17%	6%	0%	1.97	11%	2.45	4.7%
3. Student interview of a student role playing a patient.	29%	39%	23%	8%	1%	2.13	6%	2.24	0%
4. Student role playing a patient being interviewed.	21%	34%	30%	13%	1%	2.41	6%	2.20	4.7%
5. Student interviewing a patient.	69%	21%	8%	1%	1%	1.44	0%	1.83	0%

TABLE 1 (continued, p. 4)

STUDENT - INSTRUCTOR EVALUATION

Area	Student Rating							Instructor Rating	
III. Course Components. Rate (1-5) the effectiveness of each of the following course components in helping you (your students) accomplish the goals of this course:	Excellent (1)	Above Average (2)	Average (3)	Below Average (4)	Poor (5)	Mean Rating	No Answ.	Mean Rating	No Answ.
6. Student observing a fellow student interview a patient.	44%	37%	19%	1%	0%	1.76	1%	2.33	0%
7. Pre-post exams.	5%	25%	41%	17%	13%	3.08	9%	3.00	48%
8. Required text "Medical Interviewing: A Programmed Manual."	12%	34%	31%	14%	10%	2.75	4%		
IV. General.									
Rate (1-5) the interviewing course in general.	50%	40%	7%	3%	0%	1.63	4%		

TABLE 2

MEAN NUMBER CORRECT AND MEAN WEIGHTED SCORE

FOR SECOND YEAR MEDICAL STUDENTS

(N = 207)

	Pre-test	Post-test	Differences
Film #11 (Mr. King)			
Number correct	6.04	7.97	1.93**
Weighted score	13.09	16.29	3.20**
Film #12 (Mr. Lloyd)			
Number correct	4.86	7.09	2.23**
Weighted score	12.61	15.66	3.05**

Maximum number correct = 9.00

Maximum weighted score = 18.00

**$p < .001$ level of significance

TABLE 3*

DERIVED WEIGHTS FOR NODAL POINTS FOR TEST FILMS

		Answer Alternative		
	Nodal Point	1	2	3
Film 11 (Mr. King)	1	.5	2	.5
	2	2	0	0
	3	0	0	2
	4	.5	2	.5
	5	0	2	1
	6	.5	.5	2
	7	0	2	0
	8	2	0	0
	9	0	0	2
Film 12 (Mr. Lloyd)	1	0	2	1
	2	1	0	2
	3	2	0	1
	4	.5	2	.5
	5	0	2	0
	6	2	0	0
	7	2	0	1
	8	1	2	0
	9	0	2	1

*Adopted from Adler, et al (8), page 16.

RESIDENT TRAINING PROGRAM

Department of Radiology
University of Minnesota

The Department of Radiology of the University of Minnesota employs many methods of instruction in the resident training program.

There are group teaching sessions in conferences. There is one-to-one teaching in the reading areas as the residents rotate from one area to another within the Department. There is individual study made possible by established x-ray film libraries containing problem films and diagnoses which accompany the films. Slide libraries are available for individual and group study efforts. Tape-cassette systems provide self-teaching opportunities.

The Department has two new Gordon full-size x-ray projectors and is ordering a third projector. A 35 mm cine projector which has outstanding capability to project from still frame to standard speed with infinite variations between is being purchased. A 35 mm automatic slide producing 3M machine is here on a trial basis. This machine produces a 35 mm film chip in an IBM facsimile card which can be punched for computer storing, etc.

Dear Colleagues:

We wish to thank you for inquiring about SAID. In this letter we will describe briefly what SAID is and how it might be used in various clinical settings.

Description

SAID stands for Systems Analysis Index for Diagnosis. In its current form as represented in the SAID Handbook, it consists of an INVENTORY of 40 Items and a DIAGNOSTIC CHART with 5 major categories.

Content. SAID was originally developed to teach clinical psychopathology to medical students who were naive about psychology and psychiatry. Thus the content of SAID has the same relation to clinical psychiatry as histopathology has to clinical medicine. It portrays a cross-section representing one point in time of a disease process. Therefore, the content of SAID represents only one part of the basic knowledge essential to psychiatry. SAID emphasizes symptom recognition; subsequently the student learns to diagnose the basic psychiatric syndromes from symptom clusters he has identified. SAID has a goal of achieving a reliable diagnosis from interviewing a patient for a short period of time. By itself it gives little or no information about etiology or development of mental disorder, nor does it suggest treatment or prognosis.

Multimedia Technique for Presenting SAID. We have developed a complete SAID Teaching Program which combines videotaped interviews with patients, the SAID Handbook, and subsequent computer analysis of the results. The videotaped interviews have been previously evaluated by experienced clinicians who arrive at consensual ratings of the INVENTORY and the DIAGNOSTIC CHART; these ratings are then printed on Faculty Consensus Answer Sheets which can be distributed to students following their rating. Students then can compare their evaluations with those of the faculty. During the SAID Teaching program, the computer is available to collate student responses.

Creation of a Learning Environment. The multimedia presentation creates a different atmosphere of learning. Our experience indicates that students are highly motivated to learn by participation, response, rapid feedback, and discussion. We have obtained objective measurements of students' abilities to rate patients, by 1) comparison of pre-test and post-test results of rating the same interview, and by 2) comparison of serial ratings of patients over the sequence of the course. The results show that students improve their consensus with the faculty and their consensus with one another to a statistically significant degree. We are now seeing students in their clinical clerkships as juniors and seniors who have taken the SAID Teaching Program as sophomores, and they appear to enter this new level with a retention of their knowledge of how to evaluate and diagnose psychiatric patients. We present the SAID Teaching Program to our medical students as sophomores; we also give them a refresher course in their junior year. Beginning in July, 1971, we will present the SAID Teaching Program to our first-year residents during their first days as a part of our crash course in instant psychiatry. Whatever level at which SAID is presented, at least half the time during the SAID Teaching Program is reserved for discussion between students and faculty of the patient whom they have seen and rated on the videotape.

THE SCHOOL OF RADIOLOGIC TECHNOLOGY IN THE

UNIVERSITY OF MINNESOTA HOSPITALS

The students in this program attend didactic as well as on-the-job-training sessions. All the usual audio visual equipment is available to them. A projector and a library of 35 mm slides are available for them to use on an individual basis.

The students perform examinations which they present to the rest of the class and to the instructor on an individual basis.

The students are taught during on-the-job-training by the technologist in the examination room. Progress tests are given to insure student achievement.

DEPARTMENT OF THERAPEUTIC RADIOLOGY

They use the following:

1. TV monitors
2. Computers
3. Slides, projection equipment

They also have clinical demonstrations.

DEPARTMENTS OF SURGERY AND ANESTHESIOLOGY

DEPARTMENT OF SURGERY

According to Jim Coogins, they use slides extensively as a learning resource.

DEPARTMENT OF ANESTHESIOLOGY

According to Judy Cramer, per Dr. Van Bergen, their program only consists of a 3 to 6 week program. Most of their program is during surgery. They have no special teaching projects.

1. A two day session presented to 70-90 participants, including the participants' spouses or fiances.

2. Numerous varieties of sexual behavior were explicitly portrayed through the use of multiple movie projection, slides, light, and sound, in a comfortable, quiet and relaxed atmosphere. Most of the visual materials, demonstrating both the emotional and genital aspects of sexuality were used singly to allow the participant to focus his or her attention. During part of the program, explicit materials were used via multiple projection upon three or more screens to achieve saturation exposure.

3. Large group discussions, including all participants, were led by the course director and concentrated mostly on the epidemiological aspects of sexual behavior in the U.S.

4. Small group discussions, 12-14 persons per group, constituted a most important part of the process. While the explicit materials and large group discussion was very effective at bringing out in each person his "gut reactions" and anxieties, it was the purpose of the small group to foster an interchange that put these feelings into perspective, permit development of a tolerant attitude toward the sexual awareness of others in the group and allow integration of the material felt and learned into the total personality. Groups were led by qualified leaders, usually in pairs (a male and female) and did not assume a "sensitivity group" atmosphere. Emphasis was on sharing one's cognitive awareness of emotional reactions.

An initial "trial balloon" or pre-pilot program, financially supported by Medi-Clinics, Inc., of Minneapolis, was held in August, 1970 for a select group of 60 top-ranking Medical School faculty and administrators, medical students, clergy, some community leaders, spouses and fiances. Response was enthusiastic. All participants recommended that the program become an integral part of the Medical School curriculum, and all reported personal and/or professional benefits from the session.

The second pilot program, facilitated by a grant from the Commonwealth Fund, was conducted in April, 1971. Three two-day sessions were held for a combined total of 219 persons. Participant distribution was a follows: Medical Students 33%; Spouse or Fiance of Medical Students 21%; Medical School Faculty and Staff 16%; University Faculty and Staff 7%; Community Representatives 23%. Sixty-three percent of the participants were male; 37% female. Age ranged from 19 to 65 years. Previous sexual experience and exposure to sexual materials was similar to that reported by the President's Commission on Obsenity and Pornography.

The program was evaluated by means of the Sex Knowledge and Attitude Test (SKAT) prepared by the Center for the Study of Sex Education in Medicine, University of Pennsylvania. In addition, a modified form of an attitude and personal experience questionnaire developed by the National Sex and Drug Forum, and a professional behavior form, developed by our group, were completed immediately pre-course and post-course, and will be followed up at six months, and one year. All results discussed here are based upon comparisons of pre and post-course evaluations only.

RESULTS

1. The attitude section of the Sex Knowledge and Attitude Test (SKAT) showed a striking four point rise from pre to post testing. (Table I) This is significant at the 0.001 level by a matched pairs t test. The change is in the direction of tolerance and acceptance of others' sexual attitudes and patterns.

2. The Knowledge section of the SKAI showed a two point rise, also significant at the 0.001 level (Table II).

3. All thirteen attitude items of the modified National Sex and Drug Forum questionnaire showed a shift toward tolerance and acceptance. The changes in eleven of these items were statistically significant.

4. Marked attitude change only implies behavioral change. Pre-course professional and personal behavior questionnaires will be followed up at six months and one year.

Written comments from a number of persons in attendance already indicate behavioral change, all in the direction of professional acceptance and increased personal sexual enjoyment. For example, a veteran department chairman stated that he now prescribes masturbation to patients where indicated; and the wife of a professor states "my husband and I have gone back to multiple orgasms."

5. The complete process was found essential to success. Particularly important were the small group discussions. While the groups varied widely, in general the first one hour session was devoted to seeking a comfort level within the group, whereby true feelings could be expressed. The second session centered mostly upon self-revelation and sharing, while the third concentrated on self-acceptance and group relationship. Generally, the fourth group was spent in evaluation and closure.

6. 99.6% of all persons in attendance recommended that this program be included in the Medical School curriculum. 75% recommended this "strongly". 24.6% recommended it with some changes, mostly improved materials. 0.4% (one person) did not recommend the program.

7. 96% of all participants found the program personally beneficial.

8. Many medical students reported the unexpected side benefit that communication with all patients was improved when the student doctor understood himself sexually.

9. As a result of this program, the Medical School Educational Policy Committee voted to create a new core (required) course in human sexuality that will include this process.

CONCLUSIONS

Explicit sexual materials have been successfully employed in medical education at a number of institutions (Tyler, University of Indiana; Money, Johns Hopkins; Defeo, University of Hawaii). The process described here also deals directly with the feelings elicited by these materials and appears to have considerable promise as a mechanism to encourage understanding of the sexuality of self and others. The implications are broad. The numerous requests for this program received from other professional schools and national organizations suggests a growing awareness of the need for education of this nature.

REFERENCES

1. Prange, A.J.; etal N. Carolina Med. Journal, 20: 222-225, 1959.

2. Herndon,C.N., and Nash, E.M.: JAMA, 143: 395-401, 1962.

3. Kroger, W. S., and Freed, S.C.: JAMA, 143: 526-532, 1950.

4. Masters, W. H., and Johnson, V.E.: In Klemer, R.H. (Ed.): Counseling in Marital and Sex Problems. Williams and Wilkins, 1965, pp. 126-137.

5. Burnap, D.W., and Golden, M.S.: Sexual Problems in Medical Practice, J. Med. Educ., 42, July, 1967.

6. Lief, H.: In Nash, E.M.: Jessner, L., and Abse, D.W. (Eds.): Marriage Counselling in Medical Practice. Chapel Hill, U. of N.C., pp 301-318.

7. Lief, H.: in Human Sexuality in Medical Education and Practice, Clark E. Vincent, Thomas & Co., Illinois.

8. Vincent, C.E.: ibid.

9. Sheppe, W.M., Hain, J.D.: ibid.

10. Riffenburgh, R.S., and Strassman, H.D.: Journal of Medical Education, Vol. 42, No. 11, November 1967.

TABLE I

	Pre-test Mean	Post-test Mean	Number	Significance Level
Medical Students	50.98	55.73	56	.001
Spouse, Fiance, Etc. of Medical Student	50.26	54.67	42	.001
Medical School Faculty or staff	54.59	57.25	21	.01
University Faculty or staff	59.30	62.40	15	.05
Community Representatives	51.09	54.93	38	.001
All Participants	52.0	56.06	172*	.001

Above are results of Pre and Post-testings on the SKAT attitude section.

TABLE II

	Pre-test Mean	Post-test Mean	Number	Significance Level
Medical Students	71.54	73.53	55	.001
Spouse, Fiance, Etc. of Medical Student	67.62	71.03	37	.001
Medical School Faculty or staff	73.25	74.00	16	Not Significant
University Faculty or staff	76.25	77.00	12	Not Significant
Community Representatives	70.76	72.82	33	.001
All Participants	70.97	73.09	153*	.001

Above are results of Pre and Post-testings in the SKAT knowledge section.

*Total number of participants vary because some failed to complete all portions of all forms.

UNIVERSITY OF Minnesota

SCHOOL OF DENTISTRY · 136 OWRE HALL · MINNEAPOLIS, MINNESOTA 55455

February 16, 1972

EDUCATIONAL DEVELOPMENT

School of Dentistry

The School of Dentistry has been traditionally tied to the university calendar offering academic instruction for the fall, winter and spring quarters, and permitting students on a voluntary basis to attend the summer sessions for clinical activity only.

In an effort to establish a 12-month clinical service for our patients, the curriculum committee has been encouraging developmental programs within the dental disciplines as well as restructuring schedules to provide a more individualized curriculum for the students. Flexibility is incorporated that will permit them to move more freely as their own abilities and desires dictate. These revisions also will permit a student to complete his undergraduate requirements in less than the current 4-year curriculum, enabling him either to go into practice or to enter another facet of his professional development at an earlier stage.

The following are representative of these developmental changes:

1. The philosophy of teaching at this School of Dentistry is toward small group teaching in a seminar environment, as opposed to the large group lecture series.

2. In the area of Health Ecology especially, elective and selective programs have been developed to permit the student more latitude in structuring his program along his main lines of interest. This division has also developed the Learning Resources Center, utilized by many of the dental disciplines to expand programmed learning and other autotutorial phases of their course offerings.

3. The Division of Operative Dentistry has moved clinical demonstrations and clinical experience for the students into the sophomore year, while at the same time restructured their preclinical course for a group of selected students on a trial basis in order to study variations

in methods of presentation of their material. They have also been working diligently at proficiency evaluation for the clinical years in an effort to eliminate a numbers requirement for clinical exercises.

4. The Division of Crown & Bridge has been running a parallel course to Operative Dentistry in their preclinical offerings. One third of their class this past year has received the subject material under an entirely different format, again in an effort to explore more efficient means of presenting the material and, hopefully, that will offer more motivation to the student.

5. The Division of Prosthetics has instituted many dramatic changes in their preclinical offerings as well as initiating their clinical program with a case completed entirely under the direction of a single instructor on a formal assigned basis. This is done much to crystalize their prosthetics training to that point on their first clinical case and facilitates the handling of their remaining clinical responsibilities in that division.

6. The Division of Periodontics has restructured their entire course offerings to dovetail with the other areas, such as occlusion, and have brought the students into patient contact in the freshman year.

7. The curriculum in Pediatric Dentistry has undergone a complete revision during the past 2 years. Formerly the formal offerings of the division included: (a) a technique course during the sophomore year; (b) a lecture program during parts of the junior and senior years; (c) clinical experience during the senior year. Under the present curriculum the technique course has been eliminated in favor of clinical experience through a program of assisting and observation in the dental clinic. This is a formal program for sophomore students, although it is also available to freshmen on an elective basis. The junior program consists of seminar-clinical experience in which one faculty member and four students meet weekly. Formal instruction emphasizes discovery learning of important concepts on a small group or individualized basis. The emphasis of the senior program has changed from one of correction to prevention. Most didactic instruction is provided through small group seminars.

8. The course Oral Pathology 5-251/5-252, is one of three offered to undergraduate dental students by that division, and covers all aspects of oral diseases; hereditary, inflammatory, neoplastic and those related to systemic illness are included. It comprises a total of approximately 100 hours during two quarters, half of which are lecture time. 20 hours are given to small group seminar sessions in which students take part in discussions on diagnosis and treatment of various oral lesions. Suitable patients are presented at these sessions. The remaining 20 hours are elective in nature; histopathologic laboratory sessions, additional "clinical" oral pathologic groups or elective study may be chosen. Students omitting the laboratory are, however, required to appreciate the cellular basis of head and neck diseases.

   A methodic approach to oral diagnosis is taught and emphasis is laid on the clinical and radiographic features which aid in distinguishing neoplastic from other lesions. All diagnostic aids are considered utilizable in diagnosis.

   Management of patients with disease, especially oral, is presented in the context of the health team approach. Tumor biology, chemotherapy, radiation therapy, surgery, and the dentist's role, etc., are discussed by qualified dental and medical specialists from the university staff.

   Laboratory and seminar sessions are supported by a collection of photographs and microscopic teaching material complete with case histories. A realistic and a variety of instructional methods have just now (in 1972) been realized in Oral Pathology.

9. A general concept in our overall clinical program is the total patient care concept that is begun in the area of screening and oral diagnosis. This, of course, is aimed at improving the student's ability in diagnosis and treatment planning, but at the same time improves the service we offer our patients. The student is also becoming more proficient in practice management.

10. All other clinical areas, such as Endodontics, Orthodontics, are active along similar lines. The area of Endodontics, for instance, is offering a seminar course this spring quarter to students who have had difficulty in this discipline in an effort to offer them a small group seminar environment, and through such tutoring, bring them up to the level where they may progress along with their classmates.

11. Perhaps the greatest current thrust in the ever-changing concept of oral health care delivery is the greater utilization of auxiliaries on the dental team. Not only have we introduced more formal structuring of the curricula of Dental Hygiene, Dental Assisting and the School of Dentistry in an effort to gain the maximum team education for the students within our institution environment, we have expanded the duties of the auxiliaries and have incorporated courses creating the dental therapist, the advanced restorative assistant.

    The Dental Auxiliary Utilization Clinic is constantly being remodeled as new equipment or equipment systems become available and its operation as it relates to student experiences with various auxiliary groupings on the team is, likewise, in a constant state of reorganization.

12. The Division of Radiology has recently undergone a complete reorganization of its course offerings, giving them a more logical sequence and relevance to the parallel offerings of other divisions. They have also introduced autotutorial materials permitting students to fulfill their responsibilities to this area on a voluntary basis and progress as their demonstrated proficiency permits.

13. The Division of Oral Surgery has developed a program for its undergraduate students using small group teaching extensively and different educational experiences for the students in several hospitals and by participating directly in graduate seminars and clinical programs.

Dental Assisting

1. Teacher training program at the B.S. degree level. Developed to provide dental assisting educators -- one of the first such training programs in the country.

2. Special program to train minority students in dental assisting using tutorial techniques and special teaching methods. This particular program enrolls American Indian students who have not received a high School diploma. They are studying to earn the high school diploma and the certificate in dental assisting.

3. Having dental assisting students gain experience in dental health education in public schools.

Dental Hygiene

1. Preparation of self-learning programs in special topics using slides and accompanying audio explanations. Topics developed and being developed cover cytological diagnosis, placement of periodontal packs, and performing dental prophylaxis.

2. Producing video tapes on special dental hygiene procedures to be used for autotutorial learning.

3. Working with handicapped children to learn behavioral modification skills.

4. Developing programmed learning in human relations.

5. Teacher training program to produce much needed educators for dental hygiene schools.

6. New program in four-handed dental hygiene training -- dental assistants helping the dental hygienists.

Oral Biology

New approach to intergrating fundamental biological knowledge with clinical dentistry. This new science of oral tissues takes on interdisciplinary approach and now offers M.S. and Ph.D. degrees.

INSTRUCTIONAL MEDIA RESOURCES
School of Dentistry
University of Minnesota

In the middle 1940's, the Dean of the School of Dentistry and an Executive Faculty Committee established the Dental Illustration Laboratory to function as a media center to assist the faculty in the preparation and selection of audio-visual aids for education in Dentistry.

Services performed by the Dental Illustration Laboratory are as follows:

-- Artwork prepared by artists include charts and graphs, pen and ink drawings, pen and ink or pencil halftone drawings, color drawings and charts, originals for overhead transparency, and preparation of laboratory teaching manuals.

-- Photographic services include full range of black and white and color photography in studio, clinic, hospital operating rooms, motion picture production in 16 mm and Super 8 mm, photomicrography, general patient records, small and gross specimens; preparation of slides for teaching, and publication.

-- Closed Circuit Television production includes operation of CCTV studios in Owre Hall for presentation of:

  -- live telecasting to viewing classrooms in Owre 111 and 113 or Sophomore Laboratory (Room 54 Owre-Jackson);

  -- video-taping and editing for later presentation;

  -- portable video-taping in classrooms, clinics and in the Community as field trip experiences to be brought into the classroom;

  -- operation of video-taping and editing studio in the Instructional Media Resource Center.

-- Audio-visual resources are provided to the teaching staff by:

  -- maintenance of a permanent, card-indexed 2 X 2 and 3 X 4 slide collection of approximately 65,000 original entries and in most instances a reserve duplicate color slide;

  -- modest equipment pool of 2 X 2 and 3 X 4 slide projectors, overhead projectors, and 16 mm motion picture projectors, also providing projectionist service for motion pictures and audio taping services and equipment.

  -- motion picture library of approximately 80 - 16 mm teaching films and obtain films required from other lending libraries.

-- Consultation services for preparation of motion picture, T.V., and slide-tape scripts:

-- prepare to completion slide-tape instructional units;

-- prepare professional exhibits;

-- evaluate and advise on visual materials programs, self-instructional hardware.

The Instructional Media Resource Center was opened in the summer of 1970 to provide video-taping studios, video editing and self-instructional equipment for use in the development of new ideas for presentation of teaching materials via video-tape playback for students, slide-tape instructional units, and single concept Super 8 mm films. The area is used by the teaching staff for consultation and work-up of visual teaching aids, small group participation in video recording of Dental Health problem reports and group awareness -- interaction problems.

Media production programs are in progress in the Division of Dental Hygiene; and Division of Periodontology

-- to train the dental hygienists in the preparation and use of visuals for teaching dental health in the public schools;

-- self-instructional slide-tape series and video-tape for undergraduate teaching in the Division of Periodontology;

-- self-instructional oral lectures, slide-tape units, and single concept films for instruction of proper toothbrushing techniques, occlusion adjustments, and etiology and corrective procedures of periodontal problems.

The Instructional Media Resource Center of the Division of Health Ecology is housed in approximately 1200 square feet of office and studio space two blocks from the School of Dentistry. The facility is completely modernized and provides the latest of instructional equipment and media devices. Some of the major equipment items are six study carrels, each with closed circuit T.V. to a central control room, portable video-tape operated at the carrel, audio-controlled 35 mm. carousels and Fairchild super 8 carrel projection units. The Center itself includes a seminar-room, a carrel study room, a fully equipped television studio with broadcast quality 1" and high quality ½" as well as one fully portable ½" camera and recorder. All facilities at the Center are available for student use with technical assistance provided when necessary. The Center serves as a laboratory for faculty and graduate students working on instructional development problems and has a full-time staff which serves faculty and students as consultants. Staffing includes three full-time faculty, an educational psychologist specializing in learning and curriculum development, an educational psychologist specializing measurement and evaluation and a communications psychologist.

A series of seminars are offered to graduate students for preparation as dental faculty, administrators and educators:

8-126 Teaching and Evaluation in Dentistry I (3 cr.)

A systems approach to instructional planning is presented where curricula are related to long-term professional goals of dentistry by means of task analytic techniques. Instructional objectives are then developed from the analysis emphasizing the importance of accounting for the student's individual knowledge and abilities. Basic principles of cognitive and behavioral psychology are applied to curricular problems. Students learn to use these techniques and develop understanding of their implications in applied dental school settings.

8-127 Teaching and Evaluation in Dentistry II (3 cr.)

A continuation of above emphasizing the role of quality evaluation in the instructional process. Both classroom and standardized tests are considered as tools for instructional and curricular decision-making. Sophistication is developed in test construction and analysis. Concepts studied include reliability, validity, variability, measurement error, feedback, and grading practices.

8-128 Educational Administration (3 cr.)

An in-depth study of administrative and management concepts and techniques necessary for academic administrators to implement curricular planning; identify, hire and allocate faculty, support personnel and money; and to facilitate long-range planning consistent with broad institutional goals. Topics include organizational principles, critical path management, personnel management, budgetary considerations.

8-129 Special Projects (credit arranged)

The purpose of this is to allow advanced students an opportunity to become deeply involved in curricular and administrative decision-making by working with selected faculty to develop course offerings, develop and test experimental instructional or evaluation devices at the Instructional Media Resource Center or participate in school administration by intern associations with school administrators.

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INSTRUCTIONAL MEDIA RESOURCE CENTER
Annual Report
July 1, 1970 - May 14, 1971

The Instructional Media Resource Center was established and equipped for the Division of Health Ecology for the specific purpose of increasing the breadth and scope of behavioral science in the dental school curriculum. Since the facility and equipment grants actually preceded systematic plans for implementation, the staff has found itself in the unusual position of having an unusually powerful and flexible plant with which to plan a program for utilization. As such, this has been a year of familiarization, tryout and plan generation based upon experience in the facility rather than the more usual course of implementation of a pre-existing plan. Therefore, this report will include projected plans for utilization next year as well as a summary of accomplishments in 1970-71. Although the primary purpose of the funding grant addressed the Division of Health Ecology, the Center has developed a clear service function within the School of Dentistry and, therefore, has coordinated equipment and many efforts with the Dental Illustration division. To facilitate this function and aid in its own curriculum development efforts, the Center has established a formal division for Educational Research and Development directed by Dr. Michael Loupe. The primary purpose of that division will be to stimulate faculty interest in curriculum development, work closely with faculty in accomplishing this development and carry on its own ongoing research program regarding curricula in professional dental education in accord with the position that instruction is most effective when it is individualized and personalized.

The Center has been used for many purposes: for classes and seminars within Health Ecology and when needed by other Divisions if the specific capabilities of the Center were needed; for conferences regarding professional dentistry beyond the limits of the Dental School, such as the Conference on Oral Health Care Delivery for the State of Minnesota, and the Conference of the Regional Advisory Committee for Continuing Dental Education; for production of instructional audio-visual materials for use in class at professional meetings or in continuing education by Health Ecology, Dental Hygiene, Dental Assisting, Prosthodontics, Oral Anatomy, Oral Surgery, Operative Dentistry, Pedodontics, Periodontology, and Crown and Bridge; for direct instructional device used by students when groups tape their own sessions and then review the characteristics of their interactions (small group interaction) or actually take our newly acquired portable video equipment into the field and document situations first hand pertinent to health care delivery. In addition to its production and direct instructional roles, the Center is collecting a library of instructional tapes, films, slides and tape programs and paper instructional programs produced in the dental school and will periodically update and circulate a catalog of available instructional programs which faculty might wish to use as is or as a basis for a new, revised program to meet their specific needs. Attached is a list of video-tapes presently included in our library which would probably be of general interest to the Dental School faculty.

A total of 53 video-tapes have been produced this year, of these 31 were produced for other departments utilizing either the Center facility itself or the video facilities in Owre Hall. The remaining tapes were produced by Health Ecology to present to student groups or were produced

by students in Health Ecology classes. A total of 94 video-tapes are presently catalogued in the library with 37 being of general dental interest and produced so as to be appropriate for general use. Our secretary, Mrs. Rose Sherwood, was hired specifically because of her skills in library organization. Time involved in production of each video-tape by the Center staff varied from 2-3 hours for simple set-up and recording time to several days to a week of planning, set-up, rehearsal, recording, reviewing, editing and again reviewing with the faculty member involved. In addition, when used for class showing, set-up, showing and takedown time was also included.

The video facilities at the Center have been used heavily by Health Ecology faculty and students. Some faculty have recorded their own class sessions to review and evaluate their own instructional methods and effectiveness. Others have used the facility to record student rehearsals for public dental health presentations, for recording and reviewing student discussions about problems of concern to them and for use by students in community situations to produce and record documentary material about community health care problems.

The Center has served a number of purposes other than video-tape production. One such major function has been as an additional class facility for the division and on occasions other divisions. A primary assumption held in Health Ecology which directly effects the curriculum is that instruction is most effective when it is personal and classes are small, thus we attempt to split courses, sections and offer selectives whenever possible in order to reduce class size. The Center has become a resource for seminar rooms without which the selective system could not operate. By the end of spring quarter almost 100 class sessions will have met here, many of which

have utilized the media equipment housed here. Average size for classes held in the Center has been 14 students. In addition, a number of students have expressed interest in applying media techniques demonstrated in the Center in their own office practice settings and have inquired about producing dental education programs for office use as independent study projects, etc.

The Center is also furnished with 6 learning center carrels equipped for audio-visual presentation and instructional programming in the form of slides and audio-tape, super 8 film cartridges or video-tape. The carrels at the Center are primarily for demonstration, program development, and small class use. Thus far, one slide-tape program has been produced for Dental Hygiene with Miss Barbara Bartholdi and a second is under development for Dr. Witkop on genetics and oral disease. It is anticipated that the Center's Division of Educational Research and Development will become quite active in the development of instructional programming for faculty and also in consultation with faculty regarding instructional problems. We will attempt to increase the amount of individualized instruction and diagnostic evaluation available to students during their professional training by increasing the utilization of self-instructional techniques and objective instructional planning. In addition, two educational development projects are planned to get underway by summer which will develop simulated experiences and test their effectiveness as supplements to the existing curriculum in the areas of diganosis and treatment planning and community dentistry. If effective, simulation may prove an effective remedy for many of the current problems confronting instruction in practical applied dentistry.

Attached is a list of all activities occurring at the Instructional Media Resource Center until May 18, 1971. As can be seen from the dates,

utilization of the Center has increased steadily, partly as a function of increased familiarity with the equipment by the staff and with the Center by other faculty and partly as a function of equipment delivery.

The basic video equipment was delivered in September, the learning carrels in October, the protable vido camera and records in March and some media equipment is still on order.

EQUIPMENT LIST

1 Fisher stereo receiver

1 Sony stereo tapedeck

4 Kodal Ektagraphic carousel slide projectors

2 Programs and 2 Wollensak audio cassette - projector control units

2 Fairchild super 8 cartridge projectors

6 Learning center carrels
T.V. Master Control and distribution consoles

4 Concord 1 inch T.V. cameras

2 Concord VTR custom cameras with controls
Intercom system

4 13 inch Concord VTR monitors

2 19 inch Concord VTR monitors

3 Tripods

2 Concord 1" VTR (one master and one slave)

3 Concord 1/2" VTR
Cabinets, shelves, tables and chairs

UNIVERSITY OF Minnesota

SCHOOL OF DENTISTRY • 136 OWRE HALL • MINNEAPOLIS, MINNESOTA 55455

November 23, 1971

TO: Division Heads, School of Dentistry

FROM: Dr. John G. Geier

RE: Learning Resource Center

Please share the enclosed information with your staff. Perhaps this could be discussed at one of your staff meetings.

Most importantly is the service provided in the "Center". We are now equipped with a wide variety of audio-visual aids including television which can be of great value in planning instruction, revising methods, providing supplementary tutorial material, etc. These kinds of facilities can be used for large or small group instruction as well as for preparation and presentation of individualized instructional experience.

Recently a Creative Planning Committee has been developed to brain storm ideas and implementation for the "Center". It's my hope that you contact any one of these members to help assist you in planning. The committee members are: Dr. John Geier, Chairman; Dr. M. Loupe, Dr. Les Martens, Dr. Lawrence Meskin, Dr. James Wade, LeRoy Christenson and Rose Sherwood.

JGG:rms

USING THE CENTER

To make use of the INSTRUCTIONAL MEDIA RESOURCE CENTER for development of video-tapes and other instructional materials simply contact a member of the planning committee to relate the nature and purpose of your project. When your project is for instructional purposes important information to have in your plan would be (1) the instructional purpose (primary instruction, review material, supplement to lecture, required or optional information), (2) the number and level of students to be effected, (3) the objectives of the program in terms of what it is you wish the student to learn from it and (4) the general content of the program you wish to develop. Your should meet with Dr. Michael Loupe and review your plans from a pedagogical standpoint to assure maximum educational effectiveness. LeRoy Christenson will assist you in making and implementing all arrangements for production of your particular program.

If you wish to avail yourself of the center facilities and services, please assist us in record keeping, scheduling, and establishing production priorities by filling out the upper half of the form through "Project Dates Requested" and returning it to the Instructional Media Resource Center. Two dates are listed, to eliminate disappointment should a prior commitment have been made. You will be scheduled and confirmation of date and time will be given in writing and by phone.

Creative Planning Resource Committee

LeRoy Christenson 3-3258
Dr. John G. Geier (Chairman)
Dr. Michael Loupe 3-0015
Dr. Les Martens 3-4540
Dr. Lawrence Meskin
Rose Sherwood 3-0041
Dr. James Wade 3-0015

INSTRUCTIONAL MEDIA RESOURCE CENTER

COURSE:_____

INSTRUCTOR:_____

Description of Project:_____

_____

_____

_____

_____

Purpose for tape.

( ) Classroom use

( ) Tape library

( ) Student use

( ) Individual faculty use

Project dates requested 1.---------- 2.----------

(Fill in only up to this point.)

Projection Requirements:

Approximate number of hours for taping_____

Approximate number of hours for editing, if any_____

Scheduled date_____

Scheduled Project Site_____

Please return this form to: (via Campus Mail)
INSTRUCTIONAL MEDIA RESOURCE CENTER
School of Dentistry, Division of Health Ecology
Room 205
720 Washington Avenue Southeast
Minneapolis, Minnesota 55414

UNIVERSITY OF MINNESOTA
School of Nursing
February 16, 1972 RECEIVED FEB 17 1972

EDUCATIONAL DEVELOPMENT

A PROCESS OF ATTITUDE CHANGE IN HUMAN SEXUALITY

Richard A. Chilgren, M.D., Pearl Rosenberg, Ph.D., Judith Garrard, Ph.D.
University of Minnesota Medical School, Minneapolis, Minnesota

INTRODUCTION

"Sexual problems, while often disguised, are among the most common causes for consulting a physician" (1). This has been confirmed by numerous authors (2-4), including a study by Burnap and Golden (5) indicating that of 92 doctors of various backgrounds, patients with sexual problems comprised 15% of General Practice, 6% of Internal Medicine, 14% of Obstetrics and Gynecology and 77% of Psychiatry.

Unfortunately, while the physician is the most frequently consulted person in sexual problems, he is ill-prepared to handle them (8). While the recent graduate from medical school is often in the difficult position of an "expert" who knows less about this subject than his patient (9), most studies would attribute this inadequacy to the physician's own anxieties and attitudes (6, 8, 9, 10). Even the physician who is factually knowledgeable about human sexuality is often unable to use the information he possesses, due to his own emotional response to the subject.

PROCESS

As part of our overall curriculum revision at the University of Minnesota Medical School, we have attempted to deal with sexual attitude through the demythologizing of sexual behavior, desensitization to hasty or emotional overreaction to sexual stimuli, and resensitization toward gentle, humanistic, and professional understanding of the sexuality of both self and others.

The National Sex and Drug Forum, a division of the (Methodist) Glide Foundation, San Francisco, has developed a sound and sight program for sex education which formed the basis of our process. To this was added academic review, research material, and highly trained professional group discussion leaders for small group sessions. The final program consisted of the following:

Dr. Chilgren is Curriculum Coordinator, Phase B, The Medical School, and Assistant Professor, Department of Pediatrics. Dr. Rosenberg is Clinical Professor of Physical Medicine and Rehabilitation. Dr. Garrard is the Medical School Curriculum Evaluator.

This program was planned and implemented by an interdepartmental committee consisting of Dr. Chilgren, (Chairman); Dr. Rosenberg; Dr. Theodore Cole, Associate Professor, Department of Physical Medicine and Rehabilitation; Dr. Titus Bellville, Associate Professor; Dr. William Hausman, Professor and Head; and Dr. Donald Hastings, Professor, Department of Psychiatry; Dr. John Sciarra, Professor and Head, Department of Obstetrics and Gynecology; and medical students, Mrs. Jan Kassulke, Mr. Henry Doerr, and Mr. Peter Russell.

UNIVERSITY OF MINNESOTA
School of Nursing
February 16, 1972

EDUCATIONAL DEVELOPMENT

Title of Project	Date	Funded by	Brief Description
Entering Behaviors for Graduate Students in Nursing	1971-72	Graduate School	Development of tools of assessment of knowledge and skills in nursing, especially for disadvantaged students or those with unusual or irregular educational backgrounds, to assess their need for remedial work or for advanced placement.
Curriculum Development for Expanded Nurse Role with Communities	1971	Center for Curriculum Studies	To define and incorporate into the undergraduate curriculum content and learning experiences to provide nursing care to communities as units.
Development of Strategies for Measurement of Interpersonal Skills in Nursing, for Challenge Exams	1971	EPD	To develop an interaction analysis tool to measure interpersonal skills in nursing. This is used in teaching and as a descriptive tool of interaction, for evaluation of student learning.
School of Nursing Program for Disadvantaged Students	1971-72	Health Sciences Committee for Disadvantaged Students	Provides consultation to faculty on how to work with disadvantaged students and limited funds for purchase of special learning tools for these students.
Development and Evaluation of A Baccalaureate Nursing Curriculum Utilizing Man's Adaptation as a Conceptual Framework for Nursing Practice	1971-76	USPHS Division of Nursing	This provides multiple resources for further development and evaluation of the undergraduate curriculum. The School has developed an innovative conceptual framework by which to practice and teach nursing, focused around man's adaptation to health and illness.

Cont'd

Title of Project	Date	Funded by	Brief Description
Use of Intercultural Specialist	1972	Living-Learning Center	The Specialist is here helping us to understand how to interview and work with patients and students of other cultural backgrounds.
		LEARNING RESOURCES	
Nursing Skills Instruction through A-V and Improved Practice Strategies	1971	EPD	To improve the instruction in procedural nursing skills through independent audio-visual materials and practice on a realistic manikins.
Video-tape equipment	1971	Ed. Equipment Allotment	To purchase ½" VTR, cameras and related equipment to teach interpersonal skills and procedural nursing skills to students, through model video tapes and taping and analysis of student performance. A television studio is now being planned and has been funded.
Misc. Instructional Equip. Grant	1971	Ed. Equipment Allotment	Allowed purchase of independent learning programs-equipment, to support audio-visual teaching in the School.

UNIVERSITY OF MINNESOTA
SCHOOL OF PUBLIC HEALTH

Educational Development

Title of Project	Date	Funded By	Description
Prep PHN Faculty For Nursing Educa	1972	NIH	A graduate program to prepare teachers of Public Health Nursing for baccalaureate nursing programs.
Pediatric Nurse Practitioner Program	1971-76	NIH	A post-baccalaureate program to prepare primary health care givers. In the fall of 1972 this program will also be available for students in PHN master's program.
Grad Training In Air Pollution Control	1971-72	CPEHS	A graduate program to train Environmental Health students in Air Pollution Control.
Grad Program In Inst Environmental Health Safety	1972	NIH	A program to prepare graduate students in Environmental Health and Safety.
Short Course Epidem. Teacher Med School	1971-72	NIH	A short course in epidemiology for teachers in medical school.
Public Health Service Short Course In Epid.	1971	NIH	A short course for Public Health Service personnel.
Systems Development Project	1971-72	HSMHA	A project to evaluate health care programs using systems development.
Independent Study Program For Hospital and Health Care Faculty Administrators	1971-72	Kellogg Foundation	A program for currently employed hospital and health care administrators to improve their administrative ability.

Title of Project	Date	Funded By	Description
Educational Development Grant for Undergraduate Teaching Program	1971-72	U of MN Educ. Dev. Grant	A program to prepare education major students to teach health in primary and secondary schools.
Fundamentals of Alcohol and Drug Abuse	1971-72	U of MN Educ. Dev. Grant	A program for teachers and counselors of students and drop-outs.

Learning Resources

For all of the above programs an assortment of A-V equipment is used to teach the programs. There is a need for videotaping for television series for the drug course.

Audiotapes have been made and are available in the library for student self-study.

The School of Public Health has a portable camera and monitor for videotaping as well as miscellaneous instructional equipment such as overhead projector, slide projector, 16mm movie projector.

There are two employees in the School of Public Health for A-V. One is a graduate student in education who works 20 hours per week as an A-V teaching assistant. The other employee works full-time in Environmental Health in A-V.

UNIVERSITY OF *Minnesota*

UNIVERSITY HOSPITALS · MINNEAPOLIS, MINNESOTA 55455

February 15, 1972

TO: Dr. Mel Holland, Chairman
Health Sciences Learning Resources Committee

FROM: Gary R. Peterson, Hospital Representative

SUBJECT: Hospital Educational Development Programs

The following educational programs are offered by University Hospitals. These programs are primarily directed toward employees of University Hospitals to increase effectiveness and organizational harmony. These programs may not adhere specifically to the criteria established, however, I believe they should be taken into consideration by our committee.

I. SUPERVISORY TRAINING

This is a course in Supervisory skills for first-line supervisors or those who you wish to develop into first-line supervisors. This course covers the Supervisory process, the supervisor's role, organization, authority, responsibility, communication, job analysis, setting and achieving objectives, scheduling, employee relations, employee induction and training, problem solving, counseling, disciplinary action, greivance management, interviewing, operational efficiency and cost reduction and self organization.

(12, 1 1/2 hour sessions)

II. EMPLOYEE TRAINING

The purpose of this course is to develop training skills in departmental personnel and to further skills in people who are already operating in a training function.

The course will cover the purpose of training, setting objectives, developing a learning attitude, the training cycle, the various instructional styles, development and use of audio-visuals, program evaluation and practical experience.

(12, 1 hour sessions)

III. LEADERSHIP FOR MANAGERS

The purpose of this course is to develop insights into the subject of leadership. Definitions, theories, roles, applications, dynamics and techniques of leadership will be discussed.

The course is designed for assistant manager, manager, and administrative classifications, though others may apply and will be considered for admission at the request of their department head.

A review of empirical research into leadership will be included. The "Styles of Leadership Survey" which will give valuable personal insights will also be offered as a part of the course.

(6, 1 hour sessions)

IV. MOTIVATION FOR MANAGERS

The purpose of this program is to develop further insight in the question of employee motivation and to the application of motivational skills within the hospitals. It is meant for personnel in the assistant manager, manager, administrative classifications though others will be considered at the request of the department head.

The presentation will include reviews of the McGregor, Herzberg, and Maslow theories, and some instances of practical applications. It will be presented in a discussion style.

(6, 1 hour sessions)

V. PROBLEM SOLVING AND CREATIVE PROBLEM SOLVING

This is a course on the use of groups in the solution of problems. Included in this course are: the rationale, techniques, regression techniques, and demonstrations of their use. This course is designed for Supervisory personnel.

(5, 1 hour sessions)

VI. SECOND LINE SUPERVISION

The purpose of this course is to develop or improve Second Line Supervision skills, in either second line supervisors or first line supervisors who you wish to develop into a second line supervisor. In definition, the second line supervisor is the person who gets departmental work done through controlling other supervisors.

The presentation methods will be case study/discussion. It will cover the general areas of Personnel Administration, Financial Management, Planning and Goal Setting, and Group Dynamics.

(8, 1 1/2 hour sessions)

VII. SUPERVISORS' DISCUSSION SERIES

This is a program for first line supervisors to discuss personnel-centered problems through the use of problems and case studies. This is an opportunity to develop an understanding of problems of other departments as well as an information exchange based in current supervisory practices.

(6, 1 1/2 hour sessions)

VIII. OTHER EDUCATIONAL PROGRAMS

a. Administrative Trainee Program

University Hospitals provides an educational training experience for men and women interested in the field of Hospital and Health Care Administration. This program acquaints students with the overall activities related to managing and organizing a modern hospital. The purpose of the program is to provide student exposure to the various activities of administrative detail and to acquaint them with the many facets of a complex health care delivery system. The program is intended to provide background experience for students applying to graduate programs in Hospital and Health Care Administration. The duration of the course is normally one calendar year.

b. University Hospitals Administrative Residency Program

University Hospitals participates in the graduate training of students in programs of Hospital and Health Care Administration. This particular course is designed to acquaint a graduate student with at least one year of academic preparation to the realities of hospital management and organization. The program is an intense training period where the student becomes involved in many aspects of hospital operation. Numerous responsibilities are assigned and performance is carefully monitored. This particular phase of training is required by many graduate training programs in order to fulfill the requirements of a Master's Degree in Hospital and Health Care Administration.

IX. EDUCATIONAL RESOURCES

a. Hospital Library

University Hospitals maintains a library of minimal size for the benefit of employees. A variety of references are included from technical journals for departmental assistance to contemporary works dealing with modern day society.

b. In-Service Training Center

The hospital maintains an in-service training center in Powell Hall which is used by the various hospital departments for numerous educational activities and programs. The center is equipped with

audio-visual equipment as well as adequate resources to function as a complete classroom.

c. Departmental In-Service Programs

Each department of University Hospitals also conducts in-service training programs for their employees. These programs deal primarily with orienting the employee to the activities of the department and the maintenance of necessary skills. These programs can be coordinated through the hospitals Manpower Development Department or conducted individually.

I hope these listings can be of value to you. As you know, University Hospitals serves as a training laboratory for practically all of the students in the Health Sciences. This involves many educational programs on both an in-patient and out-patient basis. These programs, however, are primarily organized by the respective schools or units and the hospitals participates only as a provider of required resources or personnel.

If you would like to discuss any of these programs in more detail, I will be happy to do so and if you have any questions, please do not hesitate to contact me.

GRP:11c

Health Sciences Learning Resources Committee
February 4, 1972

1. Call from Mr. David Preston 2-3-72 advising that $21,750 had been released from 1971-72 Educational Development Funds to provide initial support of our learning resources project.

2. Health Sciences Learning Resources Committee given go ahead to prepare job description for coordinator of Health Sciences Learning Resources to be sent on to Vice-President French's office. Appropriate information would then be sent out indicating our desire to interview interested persons.

3. David Preston sent a Dr. Gordon Kingston to visit with me regarding the coordinator's position. I talked to him briefly last week. Dr. Kingston has a Ph.D. in education and was formerly with the University in University Services including some time with Audiovisual Services. We just talked in general about the goals of the Health Sciences for development of learning resources. Dr. Kingston seemed interested in learning resources from the academic, learning standpoint.

4. Need to determine a plan for interviewing potential candidates. Would seem interview by the H.S.L.R. Committee would possibly be the best plan.

5. David Preston advised me that the Educational Development Office (believe it was Peter Roll) asked that our committee provide within <u>one week</u> the following information:
    a. List of all educational development projects in the Health Sciences. It wasn't clear what this should encompass but apparently would include curriculum changes, major course changes, innovations in educational methods.
    b. Description of all special learning resources now available in the Health Sciences.

M. Holland