SECTION II

NEW DEVELOPMENTS DURING 1970
IN THE AREAS OF EDUCATION, RESEARCH, PATIENT CARE AND SERVICE

During 1970 significant progress was made in the total educational, research, patient care, and service programs in the Texas Medical Center. Some of the most significant areas of development are noted below.

The Annual Report for 1969 stated that perhaps the most significant developments in the area of patient care pertained to strengthening community health services. The following developments were emphasized: the establishment of a Department of Community Medicine by Baylor College of Medicine and the Hospital District; the addition of a satellite health center by the City of Houston Department of Public Health; and, under the Regional Medical Programs, closer working relationships were established by several institutions in the Texas Medical Center with certain community hospitals including St. Elizabeths, Riverside, St. Josephs and others.

During 1970 continued progress was made in these community health endeavors. Although not without problems and frustrations, the Department of Community Medicine made very significant progress and the following accomplishments deserve special mention: the identification of goals and the establishment of an organizational framework for the Department; organization of a Community Medicine Service for the Harris County Hospital District; establishment of a viable framework for a comprehensive care program within the Hospital District; establishment of a working relationship with professional organizations, institutions of higher learning and community agencies; and, the development of a curriculum in comprehensive health care for undergraduate medical students.
Projects supported by the Regional Medical Programs and sponsored by Baylor College of Medicine, the University of Texas and other institutions in the Texas Medical Center at certain community hospitals were continued with important professional benefits being obtained by the hospital staffs. At the close of 1970, progress was being made in the initial activation of the Medical Community Television System with a limited number of closed-circuit broadcasts from the Texas Medical Center to Riverside Hospital. As this project becomes fully operational, a new dimension in the area of "continuing and upgrading" education for professional and technical medical personnel in this community will be available. Effective utilization of this Medical Community Television System should not only be beneficial to all participants but should also be an integrating force between the Texas Medical Center and the community health institutions thereby strengthening the total health care system in Harris County and this region.

In the area of patient care another significant development during the past year was the establishment of the Houston - Galveston Regional Drug Abuse Treatment Center at the Texas Research Institute of Mental Sciences. Institute physicians, social workers, psychologists and research scientists spent a great deal of their time teaching and advising school and community representatives on how to cope with drug use and drug abuse. In 1971 the program will be expanded to neighborhood clinics and an in-patient and methadone maintenance unit will serve patients in an eight-county area.

In education and training there were four highly important developments that should be noted here: first, the organization and establishment of the University of Texas Medical School at Houston with Dean Cheves McC. Smythe assuming his responsibilities April 1, 1970; second, the initiation
by Baylor College of Medicine of a new curriculum operating on the quarter system year around and the beginning in September, 1970, of a plan to double the undergraduate student body progressively over a three year period; third, adoption of a plan by Texas Woman's University to double the undergraduate student body at the Houston Center; and, fourth, graduation of the first class and a major expansion in the faculty and student body of the University of Texas School of Public Health.

In the area of research perhaps the most important accomplishment during the year was the highly successful Tenth International Cancer Congress of the International Union against Cancer which was held in Houston in May, 1970. Approximately 6,000 scientists and physicians representing seventy-two nations were present for the meeting which was hosted by The University of Texas M. D. Anderson Hospital and Tumor Institute and the National Academy of Science. During the week 1,801 papers were presented at the Albert Thomas Convention Center, Jones Hall, Music Hall and surrounding buildings and five major convention hotels. Forty-five main Congress panels were conducted, as well as fourteen post-graduate courses. Live surgical procedures were transmitted from Anderson Hospital via a system that permitted exchange of questions and answers between surgeon and audience. The Houston meeting marked the first time the Congress had met in the U. S. in almost a quarter of a century.

Another very significant accomplishment in 1970 related to education and research was the successful consummation of a Library Operating Agreement which made the Houston Academy of Medicine - Texas Medical Center Library a truly joint and cooperative library for the Texas Medical Center and the Houston academic medical community.
Section I of this Report gives statistical information covering changes and developments in the areas of education, research, patient care and community service. The remainder of this section gives a rather comprehensive summary of the more significant developments in these areas of responsibility by the various institutions in the Center.

A. BAYLOR COLLEGE OF MEDICINE

With the initial step to double the number of medical students being taken in September, 1970, the student body increased from 359 in 1969 to 396 in 1970. In addition, Baylor had 99 graduate students (82 Baylor plus 17 Rice and University of Texas students who participated in the Baylor program), 53 interns, 301 residents and 112 post-doctoral fellows. The faculty was comprised of 424 full-time, 96 part-time and 950 volunteers. The total number of personnel on the staff was 1,924 of which 1,519 were full-time and 405 were part-time. There were four outstanding categories of development in educational programs at Baylor College of Medicine during 1970.

First, the selection of a number of outstanding medical scientists as department chairmen and professors. (The major appointments are listed in Section VI.)

Second, the establishment of the new Department of Community Medicine with Dr. Carlos Vallbona being appointed Chairman. (See introductory part of this Section); and, the establishment of the Institute for Health Services Research - Xerox Center, with Dr. Harry S. Lipscomb serving as Director.

Third, the development of a new curriculum operating on the quarter system on a year around basis with the Freshmen entering in July. The first four quarters, or a full calendar year, will be devoted to a revised basic science curriculum which will constitute a single sequence for all students. Thereafter, each student will arrange in appropriate sequence five quarters of clinical clerkships and three quarters of elective studies chosen from a wide variety of offerings in both the pre-clinical and clinical subjects. Students who so desire may therefore complete their
medical curriculum in three calendar years instead of the customary four years, and be prepared to begin their internship in July as usual.

Fourth, a decision to double the undergraduate student body progressively over a three year period with the Freshman class being raised to 124 in 1970, 146 in 1971 and 168 in 1972. A grant from the Physicians' Augmentation Program from the National Institutes of Health will assist in supporting the added costs of the program. Plans are being prepared for a Basic Medical Sciences Building which will provide an efficient and effective learning center for the increased student body.

In the area of research, Baylor College of Medicine had some 681 research grants, totaling $13,548,701. This combined support reflects the high quality of the biomedical effort at Baylor.

At Baylor College of Medicine, biological and medical research constitute an important part of the College's activities. To provide an optimum environment for medical and graduate students in the biological sciences, the faculty is recruited and supported with a view toward discovery of new knowledge and application of this knowledge to people with disease. The research activities vary from elemental analysis of biological compounds to development of pumps to substitute for the human heart.

It is not possible to summarize the total research endeavors at Baylor College of Medicine in this brief Report. However, it should be noted that the following research areas have received special emphasis and productivity has been very significant: the Cardiovascular field, Virology and Epidemiology, Lipid Research, Pharmacology, Rehabilitation, Microbiology and the Clinical Research Centers including three General clinical research centers carried out in hospitals affiliated with Baylor College of Medicine. These included the centers at Texas Children's Hospital, The Methodist Hospital and Ben Taub General Hospital.
Progress during the past year in certain specific research projects has been quite significant. These projects are:

Possible Viral Causation of Cancer of the Uterine Cervix

Detection of Virus in Water

Development of Vaccine Viruses that Immunize Against Tumors in Animals

Development of a new surgical procedure to bypass occluded heart arteries and to improve the blood supply to the heart in patients with advanced coronary artery disease.

Discovery of the first artificial substance which can transmit a specific form of behavior from one animal to another was isolated, identified and synthesized in its entirety.

Through a substantial NIH grant, a stroke center was established by Baylor at The Methodist Hospital to give comprehensive care to patients with strokes including the latest surgical, medical and rehabilitation services.

It was discovered that a breakdown in calcium transport within the heart muscle cell is a specific biochemical defect found in heart failure.

B. BEN TAUB GENERAL HOSPITAL

During 1970 Ben Taub continued to be one of the principal teaching hospitals for Baylor College of Medicine and also continued its intern and residency program in conjunction with the Baylor College of Medicine Affiliated Hospitals Residency Program. In addition, students in the following categories received clinical experience and training at Ben Taub: Degree Program in Nursing (Texas Woman's University College of Nursing and Prairie View A & M College of Nursing); Vocational Program in Nursing (Houston Independent School District); and, Associate Degree Program in Nursing (San Jacinto Junior College of Nursing).

The Harris County Hospital District supports schools of Medical Technology (12 students), X-ray Technology (19 students), Nurse Anesthesia
(8 students), Surgical Technicians (19 students), and Cyto-Technology (2 students).

The Hospital District also participated in the Neighborhood Youth Corp Program in which youth from poverty areas are given an opportunity to become acquainted with hospital jobs. The District also had one Hospital Administration Resident in training during the year.

The special eight-bed Clinical Research Center and Metabolic Laboratory established by Baylor College of Medicine in 1968 continued in operation and became an important research arm of not only Baylor College of Medicine but also of Ben Taub General Hospital. As noted above, a Department of Community Medicine was established in cooperation with Baylor College of Medicine.

The most significant developments in the area of patient care include the expansion of a surgical intensive care unit (ICU) from four beds to ten beds and improvement of laboratory services with the addition of a 660 autoanalyzer and a Mark 10 Discretionary Analyzer for the Biochemistry Laboratory and an auto Technicon Tissue Processor for the Histology Laboratory. The Ben Taub Hospital had its first kidney transplant patient in 1970.

C. CITY OF HOUSTON DEPARTMENT OF PUBLIC HEALTH

The Houston Health Department continues to present a course in Public Health to the Sophomore Class of Baylor College of Medicine each Spring under the auspices of the Baylor Department of Epidemiology and Virology. The Health Department staff also participate as sponsors of
elective projects in epidemiology and community health pursued by students at Baylor.

A short course in Community Health is provided to Senior Physical Therapy students of Texas Woman's University; and baccalaureate nursing students from Texas Woman's, Prairie View and Baptist College receive orientation and observation in Public Health Nursing. Special Community Health Workshops for student nurses were held twice in 1970. Vocational Nursing students from Houston Independent School District and Hermann Hospital attended one-half day workshops in Community Health in 1970.

The Department was able to provide temporary limited classroom space for the University of Texas School of Public Health.

The following research projects were being carried out under the auspices of the City of Houston, Department of Public Health in 1970:

1. A project for the purpose of evaluating a multiple vaccine used at an early date in the life of a child is supported by the National Center for Disease Control. This project evaluates serum antibody to combine mumps, rubella and rubeola vaccines when administered between the ages of 12 months and two years.

2. Approximately 50,000 asymptomatic females have been cultured for gonorrhea. Carrier rates of two to ten percent have been shown depending on the location of the clinic or private doctor's office. This preliminary data suggests that a culture for gonorrhea should be routine along with the cancer tests for all adult women. Data collected on carrier rates among asymptomatic males is currently under review.

3. The Galveston Bay Study supported by the Federal Water Pollution Control Administration is being carried out in cooperation with the Texas Water Quality Board to measure chemical and microbiological pollution on a seasonal basis.

4. A vaccine prepared from an avirulent Treponema pallidum strain is being studied in order to evaluate its potency for developing
immunity to syphilis. This study is being done in cooperation with the Department of Dermatology, Baylor College of Medicine.

5. A teaching and training grant supported by the National Institutes of Health is in effect for five years for the purpose of training post-doctoral fellows in diagnostic bacteriology, virology and serology as well as public health laboratory procedures used in examining environmental health problems. This grant is in cooperation with the Baylor College of Medicine, Department of Microbiology.

In the area of patient care, the following developments should be noted: the increased curbside unit service is now able to extend immunization and certain screening tests into more areas; the seven small units and five major health centers are now in full operation with the Family Planning Service being offered five days each week at Northside; Social Hygiene Service has been extended to Lyons Avenue Health Center with a five day week schedule; and, the Division of Nursing Assignments continues to be divided into home health services and health center clinic activities.

D. HERMANN HOSPITAL

A total of 203 individuals participated in the formal and informal educational and training programs at Hermann Hospital during the year. This number included five medical students from The University of Texas Medical Branch who participated in a rotating ten-week program. In addition, there were 13 interns, 45 residents, 34 vocational nursing students, nine medical technology students, 11 X-ray technology students, one histology technician student, 84 diploma nursing students and one post-doctoral fellow. In addition, 90 staff registered nurses completed a four-week course in cardiac nursing care taught by the Cardiology Staff.
The Hospital maintained the following approved training programs for physicians: Internships - Rotating, Straight Medicine and Straight Pathology; Residencies - General Surgery, Internal Medicine, Obstetrics/Gynecology, Orthopedics, Ophthalmology, Pathology, Anesthesiology, Urology and Colon and Rectal Surgery. The Radiology Residency was terminated on July 1, 1970. An integrated residency program in radiology under the direction of the University of Texas Medical School at Houston is in the developmental stage. A new Plastic Surgery Residency was approved. In addition, the Hospital participates in the Baylor City-Wide Pediatric Residency and has an ENT resident on rotation from Baylor. The Hospital also offers a residency in Oral Surgery under the auspices of the University of Texas Dental Branch.

There were 24,226 in-patient admissions at Hermann Hospital during the year and 82,789 out-patient visits. The Hospital had 623 beds and 55 bassinets available for occupancy during the year. The total full-time staff numbered 1,593 with an additional 123 full-time equivalent part-time personnel.

The following improvements in the area of patient care were made or are in the process of being completed: an acute hemodialysis unit was made available for patients, a new Occupational Therapy Department was added and a new Cardiac Catherization Room is being installed to improve studies of heart diseases.

The Hospital administration and staff devoted a great deal of time and effort in preparation for Hermann Hospital to become the principal teaching hospital for the new University of Texas Medical School at Houston.
E. HOUSTON ACADEMY OF MEDICINE

The Houston Academy of Medicine - Texas Medical Center Library was for many years the sole responsibility of the Houston Academy of Medicine. In recent years, this responsibility has been shared first with Baylor College of Medicine and later with other participating institutions in the Texas Medical Center. Under a recently approved Operating Agreement, which is mentioned below, the Houston Academy of Medicine remains one of the five participating institutions responsible for the support and operation of the Library.

In addition, the Houston Academy of Medicine has for the past seven years helped to defray expenses for Guest Speakers for the nine Affiliated Scientific Sections (Specialty Societies - County) and for the Harris County Medical Society.

The Houston Academy of Medicine Memorial Education and Research Foundation established late in 1969, was able during 1970 to grant one student loan in the field of nursing. The Directors of the Foundation anticipate that additional funds will be available for loans as the Foundation matures and becomes known.

F. HOUSTON ACADEMY OF MEDICINE - TEXAS MEDICAL CENTER LIBRARY

The Houston Academy of Medicine - Texas Medical Center Library made significant progress in several areas during the past year. The following items should be emphasized:

1. A new operating agreement was approved by the five participating institutions represented on the Library Board: Houston Academy of Medicine, Baylor College of Medicine, Texas Woman's University, The University of Texas Institutions at Houston and Texas Medical Center, Inc.
2. Automation of the Library through the use of the Medical Community Television System and the Common Research Computer Facility was essentially completed at the close of 1970. This online system is expected to advance the operational efficiency of the Library.

3. The Audiovisual Resource Center was established during the year and the first program transmission via the Medical Community Television System was conducted on December 8, 1970.

4. The installation of TWX service was a major step forward in fulfilling the Library's role as Resource Library of TALON Regional Medical Library Program. There has been a 90 percent increase in inter-library lending in the last five years.

5. Changing the fiscal year to coincide with the fiscal year of state institutions was an important step in terms of providing more stable funding during the entire fiscal year. Pledging the entire budget of $346,625 prior to the beginning of the fiscal year was a unique experience in terms of recent years, but hopefully will be the normal procedure in years to come.

6. Under the leadership of Mrs. Jean Collier, close cooperation was maintained with other institutional libraries in the Medical Center and the Houston academic community.

At the close of 1970 the Library reported 99,667 volumes and 1,812 periodical titles being received. The circulation was 142,656 with 7,080 subscribers being recorded during the year. Total expenditures amounted to $287,507.

The following recent developments deserve further elaboration in this year's Annual Report:

1. **THE AUDIOVISUAL RESOURCE CENTER**

   A unique audiovisual system for the medical community was planned and the initial groundwork begun in 1969 and was installed in 1970. Devised by the Division of Continuing Education of the University of Texas Graduate School of Biomedical Sciences at Houston and assisted by the Texas Medical Center, Inc., the audiovisual resources of Texas Medical Center institutions have been made available through an Audiovisual Resource Center maintained and operated by the Library. The Library staff has cataloged all the material of this type in the various institutions of the Medical Center as well as the Veterans Administration Hospital adjacent to the Medical Center. These institutions are connected by receiving and sending cables. This service has been extended by means of a
transmitting tower to other hospitals in the Houston area. Anyone owning a television receiver and a small converter can receive medical educational broadcasts at his home, thereby making it possible to broadcast directly to the homes of some 2,000 physicians of Harris and surrounding counties. Plans are being made to provide direct linkage with the Medical Library at The University of Texas Medical Branch at Galveston.

2. RESOURCE LIBRARY OF TALON

In 1969 the Library Board committed the Library as one of the resource libraries of the South Central Regional Medical Library Program (TALON). This program is a decentralized program with eleven resource libraries in Texas, Arkansas, Louisiana, Oklahoma and New Mexico, headquartered at The University of Texas Southwestern Medical School at Dallas. The program became operational in 1970. As a Resource Library of TALON, this Library is responsible for filling the medical library needs of physicians and hospital personnel in the counties adjacent to it. In order for the Library to serve successfully all segments of this large area, it is necessary to reach what has been called the medical information indigent members of our health society, i.e., the hospitals of 100 beds or fewer. This demand will increase the need for an extension librarian on the staff of the Library.

3. MEDLARS

The MEDLARS activities were increased during the year, and beginning January 1, 1970, an increasing number of search requests came from scientists outside the Texas Medical Center and also from a larger number of centers in the five state area of Region 9. The total number of searches processed during the year was 1,677. Of these, 58 percent were received from Houston, 24 percent from other locations in Texas and 18 percent from the other four States in Region 9 (New Mexico, Oklahoma, Arkansas and Louisiana).

MEDLARS is a system that uses for its data base all articles listed in Index Medicus since 1964. About 200,000 articles per year are indexed in depth using MeSH (Medical Subject Headings). Each article is assigned four to twenty index terms at the point of indexing at NLM. The bibliographic material and assigned index terms are then computer processed to build an information bank. During the period 1964 - 1969, approximately 1,000,000 medically related articles were put into the MEDLARS information bank. About 20,000 articles a month are now being added.

In connection with the operation of MEDLARS, it should be pointed out that the Common Research Computer Facility, which processes the MEDLARS searches for the MEDLARS Center, has also provided computer service for the MEDLARS Centers at the University of Alabama Medical Center since October and for the National Library of Medicine since November. An agreement was recently signed to provide similar service to the National Science Library in Ottawa, Canada.
During the year, the MEDLARS Center conducted four user orientations for librarians and users of the system.

At the close of the calendar year of 1970, important steps were being taken to develop plans for the expansion of the library building with the Library Board designating Dr. William Fields as the Coordinator to prepare a grant application for Federal matching funds. The Library Board also designated Dr. Grant Taylor, Dr. Willson Fahlberg and Mr. Don Macon to prepare grant applications for research development projects of the type now supported by the National Library of Medicine. The newly organized Search Committee, as the year closed, was actively seeking a director for the Library.

G. HOUSTON SPEECH AND HEARING CENTER

The Houston Speech and Hearing Center continued its patient care and education programs during 1970 as well as a limited research endeavor. There were a total of 1,882 diagnostic visits and 392 children and youth participated in the instructional and therapy programs. There were 28 full-time personnel on the staff.

An example of very significant work at the Speech and Hearing Center is that now being conducted by Dr. Tina Bangs. She serves as the Project Director of a grant from the Bureau of Education for the Handicapped of the Office of Education, H.E.W. This program is concerned with the development of and carrying out of a model program for the pre-school education of the very young handicapped child. The children in the program are divided into two age categories, birth to three years and first grade age. This latter group is being taught in a new non-graded educational program.
Educators from other States, Europe, Latin America, Canada and Australia have visited the classes and Dr. Bangs has conducted numerous short courses for others who wish to develop similar educational programs for handicapped pre-school children.

H. THE INSTITUTE OF RELIGION AND HUMAN DEVELOPMENT

The Institute of Religion and Human Development is a graduate center for education, service and research in religion, ministry and health. The Institute had 22 staff members composed of nine academic faculty, seven clinical associates and six physicians as adjunct faculty. There were 40 full-time students engaged in graduate clinical theological education.

The following summary statements give a brief description of the education, research and service components of the Institute's programs:

education at the Institute is available at different levels to clergymen and other related professionals. This includes an internship year in hospital ministry and, secondly, advanced clinical education in marriage and family counseling to clergymen specializing in this field, and to advanced students from other helping professions. Thirdly, a post-doctoral research year is provided for a small group of selected scholars engaged in interdisciplinary research in the area of religion and science, religion and culture and religion and health.

Research interest of the Institute focuses upon the nature of health and the processes by which individuals, families and communities become healthy and stay healthy, or by contrast fall into disease. The Institute explores processes of healing and recovery and not simply at the separate levels of physical, emotional and spiritual experience. Rather, man is explored in a holistic and organismic way, to clarify the sources of his creativity and the sources of his distress.

Service. Students in the hospital ministry program at the Institute, along with and under the supervision of the staff chaplains of each hospital, work as chaplain trainees within five hospital communities of the Texas Medical Center. In these settings, these clergymen offer pastoral care and support to patients, to the
families of patients and to members of the professional staff as they participate in the human crises and grief situations which occur.

The Marriage and Family Counseling Center, which is affiliated with the American Association of Marriage and Family Counselors, provides the metropolitan Houston area with a professional therapeutic resource specializing in marriage and family counseling. Services are available to individuals and couples anticipating marriage, caught in chronically conflicted marriages, or moving toward termination of marriage. At the same time, this is one of the few clinical resources in Houston offering therapeutic intervention with whole family groups. During 1970 more than 300 couples and family groups were involved in counseling at this Clinic.

In a different section of the city (where many university students, artists and religious communities live) the Institute provides a setting for another dimension of the study of modern man. This is the Center for Ecumenical Celebration which includes the famous Rothko Chapel. The Center for Ecumenical Celebration proclaims the profound truth that while man's deepest fears about human life and destiny may be checked by reason, they are calmed by ritual. It provides a setting for traditional liturgical worship as well as for experimental ecumenical worship.

1. THE METHODIST HOSPITAL

In addition to being one of the principal teaching hospitals for Baylor College of Medicine and Texas Woman's University, The Methodist Hospital's educational programs included a number of other students - 20
interns, 18 medical technology students, 16 X-ray technology students, four post-doctoral fellows and one hospital administration resident.

The Hospital has sponsored a series of continuing education programs in Internal Medicine for physicians. The opportunity to participate in these programs has been extended to all members of the Harris County Medical Society, as well as other physicians practicing in the southern part of Texas. During 1970 programs were presented in the following areas of interest: Valvular Heart Disease; Hematology; Pulmonary Disease; and modern concepts of Cardiology.

Major clinical research endeavors are carried on at The Methodist Hospital. Internationally recognized research projects are carried on in the Hospital's facilities in the areas of Cardiovascular Research, Myocardial Biology and Lipid Research. In addition, the following research laboratory facilities and resources were part of the research activity in progress at The Methodist Hospital during the year:

Anesthesiology; Audiology and Speech Pathology; Circulatory Cybernetics; Cardiovascular Pharmacology; Computer Monitoring; Electronic Monitoring; Experimental Pathology; Immunology, Tissue Typing and Virus; Orthopedic Prosthesis; Renal; Urology, Surgery.

During 1970 the advent of several programs resulted in significant improvements in patient care at The Methodist Hospital. The capacity for performing hemodialysis on patients suffering from renal failure was greatly expanded. A viral diagnostic lab began operation, with the distinction of being the only facility of its kind in the southern United States. This laboratory is capable of isolating and identifying viruses with a degree of sophistication previously unavailable. In the area of intensive care, two separate units have been opened: a coronary
intensive care unit and a pulmonary intensive care unit. Computer
interpretation of medical data has been further developed. The tissue
typing laboratory expanded from the research field into the area of
clinical service for a wide geographic area.

J. SHRINERS HOSPITAL FOR CRIPPLED CHILDREN, Houston Unit

The Shriners Hospital admitted 451 children during the year and recorded
11,517 out-patient visits. The Hospital has 40 beds available for
crippled children patients and last year had a staff of 66 with twelve
serving on a part-time basis.

The Shriners Hospital has continued to departmentalize the Hospital
and develop special clinics for different categories of patients.
There are now ten special clinics within the field of children's ortho-
paedic surgery. This has improved patient care, has made the program
much more attractive academically and has encouraged more clinical
investigation in various areas.

A conference on general orthopaedic problems is held once a week. This
is directed chiefly toward the residents on the program and to the
staff; however, it is open to any of the residents in the community or
to any other parties within the profession who are interested in children's work.

Special clinics meet once a month, some meet twice a month, and these
are open to medical personnel who have special interest in any of
these subjects: Clubfoot, Cerebral Palsy, Amputation, Myelodysplasia,
Scoliosis, Neuromuscular Diseases, Hand, Hip and Metabolic Diseases.
The Hospital has several research and investigative programs in progress, but none has been developed to the point where it can be evaluated as yet.

K. ST. LUKE'S EPISCOPAL HOSPITAL

St. Luke's Hospital continued to be a major teaching hospital for Baylor College of Medicine and Texas Woman's University College of Nursing. In addition, the Hospital provided an opportunity for other clinical training programs including training for 12 post-doctoral fellows, two residents, one graduate student, four medical technology students, two hospital administration students, 77 vocational nursing students and 40 students in clinical pastoral care. There were also 11 medical externs at the Hospital.

In the area of education and training, the following programs and activities deserve further elaboration:

The Vocational Nursing is a nationally accredited program and is contributing a significant number of trained personnel for the hospitals. A total of 42 vocational nurses were graduated and obtained licensure in 1970. It is anticipated that 75-100 students will graduate in 1971. The presence of these students in the nursing service units provides stimulus for the nursing staff and has tended to upgrade nursing care.

Clinical pastoral education brings ministers and theological students into supervised encounter with persons in crisis. The student studies human growth, development, change, life styles, illness and health. Out of his intense involvement with persons in need, he develops sensitivity and awareness of the meaning of relationships and social structures. From his supervised experience, he develops skill in helping persons to resolve conflict, growth in maturity and search for ultimate meaning.

Discussions are proceeding toward formal arrangement with Texas Woman's University School of Physical Therapy for field training of students in physical therapy and occupational therapy.

St. Luke's Episcopal Hospital received approval from the Council on Medical Education and Hospitals to offer a straight medicine
internship with recruitment for candidates who will begin their training in July of 1971. Six positions are available.

In addition to cooperating with Baylor College of Medicine in both educational and research undertakings, St. Luke's Hospital carried on certain research endeavors under the auspices of the hospital. The funding level for support for these research projects was $124,556.

The following areas of research deserve brief summary statements:

The Reproductive Research Laboratory, an activity of the Department of Obstetrics and Gynecology, Baylor College of Medicine, is now in full operation at St. Luke's. This facility provides sophisticated analyses necessary to diagnose and treat endocrine problems and serves also as a unique teaching opportunity in the subspecialty.

The Clayton Foundation for Research has established an Exercise Testing and Non-Invasive Measurement Laboratory at the Texas Heart Institute. Using physiologic and electro- and mechano-physiologic data, obtained from the intact human by a series of non-invasive techniques, laboratory personnel will study coronary artery and valvular disease as well as cardiac myopathies and arrhythmias.

The Spanish Government and the Texas Heart Institute have embarked upon a collaborative effort of research, clinical care and education as it relates to cardiovascular disease. Initial research emphasis is focused on improvement of available cardiac valve prostheses and development of an orthotopic cardiac prosthesis.

At the end of the year The Hospital had 444 beds and 96 bassinets.

There were 1,106 full-time and 221 part-time staff members for a total of 1,327. There were 16,699 in-patient admissions and 16,359 out-patient visits recorded during the year.

Significant new developments in the area of patient care included the following:

Introduction of a Neurology Service with allocation of 30 beds;
Introduction of Physical Medicine and Rehabilitation Service with full-time staff and accommodation in new facilities; Expansion of
Nuclear Medicine program; Relocation of Reproductive Research Laboratories (Baylor College of Medicine Department of Obstetrics and Gynecology) to St. Luke's Episcopal Hospital; Relocation to new facilities of professional staff, cardiovascular medicine and surgery (Texas Heart Institute); Relocation of service laboratories to new facilities; Relocation of X-ray to new department; Opening of Tower units through 16th level; and, Termination of free and part-pay obstetrics service.

L. TEXAS CHILDREN'S HOSPITAL

Texas Children's Hospital continued to be one of the major affiliated teaching hospitals of Baylor College of Medicine and Texas Woman's University. In addition to the Baylor College of Medicine Affiliated Intern and Residency Program, the Hospital also participates in a pediatric dentistry program in affiliation with the University of Texas Dental Branch which has been enlarged to receive three residents and two interns. In preparation for expansion to a three-chair facility, a half-time faculty director has been engaged. As pointed out above, the Vocational Nursing Program is carried on jointly with St. Luke's Hospital.

In 1970 the total number of in-patient admissions was 7,780 and the total number of out-patient clinical visits was 24,095. There were 174 pediatric beds available for occupancy. The full-time personnel numbered 554 and the part-time was 111 making a total of 665.

In the area of patient care the following represent the more significant developments at Texas Children's Hospital during the past year:

- Relocation of clinical laboratories to new facilities with increase to four full-time pathologists; Relocation to new facilities of Junior League Outpatient Department; Restructuring of medical staff into five major departments including Department of Ambulatory Services; Relocation of X-ray to a new department; and, Introduction of Neonatology Service and expansion of pediatric Nuclear
M. TEXAS INSTITUTE FOR REHABILITATION AND RESEARCH

The Texas Institute for Rehabilitation and Research continues to give major emphasis to education, training and research as well as to patient care. In a number of ways the programs of teaching, research and patient care are carefully integrated to the end that the teaching and research give emphasis to improving care not only by the student who later may be a physician or nurse, but also looking to better medical treatment for the patient now.

The administration and professional staff at Texas Institute for Rehabilitation and Research recognize the necessity for increasing the numbers of interested personnel in rehabilitation medicine and also believe that this need can best be met by affording greater opportunity for students to become more familiar with the concepts, practice and procedures which underlie its philosophy. The faculty of the Texas Institute for Rehabilitation and Research will participate in 15 electives and clerkships offered to Baylor students in the new, expanded curriculum.

The Texas Institute for Rehabilitation and Research continues a large program of formal and informal instruction in rehabilitation medicine for Allied Health Personnel from other institutions in the Medical Center and in the community and from institutions throughout the nation.

The Texas Institute for Rehabilitation and Research continued during 1970 to conduct a diversified research program committed to understanding
the etiology and pathophysiology of disability, as well as the treatment and rehabilitative management techniques yielding the most enduring degree of rehabilitation in the shortest possible time for the greatest number of disabled persons. The 45 research projects which were active during the year were supported by a research and training grant from the Social and Rehabilitation Service and by grants from federal and private agencies to individual investigators. Some highlights of the research program include the following:

1. A multidisciplinary approach was taken to refining and evaluating techniques of functional electrical stimulation for correcting gait defects exhibited by a large number of "stroke" patients. This work involves a miniaturized stimulator, worn by the patient, which stimulates the nerve leading to certain "paralyzed" muscles while the individual is walking.

2. Considerable advances were made in devising and implementing on-line computer approaches to maximizing the effectiveness of the Institute's rehabilitation program. Fully operational programs have been provided for arranging in-patients' treatment schedules, retrieving medical data on current and past patients, optimizing the scheduling of therapists' activities and facilitating hospital business office procedures.

3. A Work Tolerance Evaluation Laboratory was established in which on-line computer techniques are being developed for assessing the work capacity of cardiac patients. Availability of these techniques will make it possible to obtain this important information efficiently for a large number of patients.

4. Evaluative tests and efforts at further refinement were begun on a motorized wheelchair which is controlled by movements of the user's eyes. The chair, developed under the auspices of NASA's research program, is of considerable potential importance in providing mobility for spinal-cord injured patients with paralysis of both the upper and lower extremities. This project is but one example of the Institute's efforts to determine how NASA-developed technology can be used in the rehabilitation of the disabled.

Four special projects in the area of patient care are summarized below. Additional information regarding education and research is also included as they relate to these areas of specialization.
Spinal Cord Injury Center

Emphasis this year has been placed upon individualization of patient care and establishment of a comprehensive program of follow-up, whereby the rehabilitation concept can be successfully continued post-discharge. Methods to achieve this goal include: In-Patient Education Programs to teach and to prepare a patient for discharge, Family Education Groups for interchange of ideas, and review of home care techniques and new developments and procedures. The feasibility of a "Core Team Follow-up Crew," consisting of members of the various disciplines, to make home visits within a given geographical location is presently being investigated as is the use of closed-circuit T.V. and amateur (ham) radio contact with patients.

The Spinal Cord Center continues to utilize the Disability Profile as a means of individualizing patient care, and being computerized it is readily available to any physician on call.

This year the Spinal Cord Center Core Team instituted a self-education program wherein each member of the team presented his role in rehabilitation. It is hoped that, through this, better understanding of each discipline's role in rehabilitation will be achieved.

Comprehensive Respiratory Disease Center

The Comprehensive Respiratory Disease Center has been developed in response to the recognition of a need which has been intensifying for several years. The environmental hazards of increased urban population and concentration of people in crowded conditions has resulted in a rapidly growing number of respiratory patients needing care for acute and immediate problems and for long-term rehabilitation. Thus, the Center has been established to accommodate these patients with reasonable cost and optimum results. The respiratory team will provide comprehensive care for the pediatric patient with acute and/or chronic pulmonary disease and the use of the center concept for patient care will continue to be developed.

Cystic Fibrosis Care, Teaching and Research Center

This Center has been in operation for 11 years. Although located at the Texas Institute for Rehabilitation and Research, the Center directs satellite clinics in several other hospitals. During 1970 there were approximately 400 cystic fibrosis patients and 150 patients with other chronic respiratory disease problems registered at the Center. The Center also includes a laboratory where basic science research is carried out in many patho-physiological parameters underlying the multi-organic problems presented by this disease.
Experimental and Demonstration Respiratory Camp

The camp program, initiated in 1969, was expanded and developed further during the Summer of 1970. A total of 35 patients with respiratory problems attended the first camp session and 25 persons attended the second session.

The first year's camp established clearcut benefits to campers in terms of increased pulmonary functions and improved attitudes of independence, motivation and responsibility. Camp Fun 1970 was planned to expand both these care goals and the teaching program, with staff and assistants being selected as much as possible from medical and paramedical student groups.

N. TEXAS RESEARCH INSTITUTE OF MENTAL SCIENCES

The Texas Research Institute maintains academic affiliations with The University of Texas Graduate School of Biomedical Sciences and School of Public Health, Baylor College of Medicine and the University of Houston. During the past year 14 graduate students and seven post-doctoral fellows participated in the educational programs at the Institute. The collaborative professional educational program provides young investigators with the opportunity to complete their graduate research projects at the Institute, supervised by members of the Institute's Faculty for Advanced Studies who hold faculty appointments at these universities. Three students received master's degrees in biochemistry; one was awarded a Ph.D. in neuroanatomy. Many more from local and out-of-state universities - psychology interns, clinical psychology practicum students, psychiatry residents, pastoral trainees, nursing students, caseworkers and occupational therapists - took part in the Institute's educational programs.

The highlight of the year's training program was the fourth international symposium, Brain Chemistry and Mental Disease, which brought
together this country's and England's leading clinicians and researchers in neurochemistry and psychopharmacology to discuss their most recent work. Monographs from these yearly symposia are published in a continuing series, *Advances in Mental Science*. *Drug Dependence*, the collected papers of the Institute's second symposium in 1968, came out in July. The volume represents a cross section of current research and opinion on drug abuse, its causes, treatment and social consequences.

The Institute's behavioral pharmacology research team developed animal models of drug dependence to study the extent to which drug-controlled behavior can pervade an animal's total existence. The studies include alcohol, narcotics and marihuana. Biochemical and neuroendocrinological research concentrated on factors controlling alcohol metabolism and the effect of alcohol on fundamental metabolic processes in the brain and in other organs. The neurochemistry and neuropharmacology group developed a series of new compounds in their search for new chemotherapeutic agents to treat mentally ill patients.

After ten years of work, the psychophysiology research group developed the world's first working period-analytic system. Using an encoder, the new system records and analyzes by computer the electrical impulses of the human body - from the brain, heart, skin or respiratory system. Applied to encephalography, the encoder is presently capable of logging eight channels of brain waves at once. It is now being used to pinpoint the site and trace the action of drugs in the nervous system, and it will soon be employed in interpreting clinical EEG's with greater precision than was possible before.
In experimental therapeutics research, two hundred patients participated in ten carefully controlled studies of new, as compared to standard therapeutic drugs. This year doxepin was introduced on the market; it had been studied in clinical trials at the Institute in 1968. Doxepin turned out to be a useful medication in neurotic patients suffering from a complex of anxiety and depression.

There were 924 in-patients admitted during the year and 34,686 out-patient visits reported. The Institute maintained 85 intensive care type in-patient beds and an additional 25 general research beds. There were 389 on the total hospital staff including 26 who worked on a part-time basis.

Texas Research Institute of Mental Sciences is the largest out-patient psychiatric treatment program in Texas. During the past year the treatment clinics cared for 4,000 patients from Harris County with services combining individual, group and drug therapy. One thousand children received diagnostic services and counseling for psychiatric and learning problems.

The general psychiatric unit at Center Pavilion Hospital treated and discharged 812 patients after an average stay of only 33 days. New preventive treatment programs were designed to enable patients to remain close to their homes and families: the day hospital included 303 people, and the transitional exit unit helped 54 patients to return to independent life. Follow-up medication clinic, night group therapy for patients and families, night couples group, vocational evaluation and job exit activities expanded broadly, so that this small, community oriented hospital unit used its bed capacity more than ten-fold.
A very significant development during the Summer of 1970 was the establishment of the Houston-Galveston Regional Drug Abuse Treatment Center at the Texas Research Institute with financial backing from the State and Harris County Mental Health and Mental Retardation Boards and the Texas Criminal Justice Council. This year the program is expected to spread out into neighborhood clinics, and an in-patient and methadone maintenance unit will serve patients from an eight-county area. Group therapy was the main modality of treatment. The Texas Research Institute clinicians accepted both the casual drug experimenters who need a therapeutic peer-group milieu, and the youngsters and young adults whose self-destructive drug habit is a symptom of psychiatric illness. Institute physicians, social workers, psychologists and researchers spent a great portion of their time in teaching and advising school and community people how to cope with drug use and abuse among the young, and their efforts helped to change anti-drug efforts in Houston from hysteria to education.

0. TEXAS WOMAN'S UNIVERSITY

The educational programs conducted by Texas Woman's University at the Texas Medical Center are the following:

<table>
<thead>
<tr>
<th>Clinical Programs</th>
<th>Number of Students in 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Nursing</td>
<td>364</td>
</tr>
<tr>
<td>Graduate Nursing</td>
<td>77</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>37</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>28</td>
</tr>
<tr>
<td>Continuing Education (workshop)</td>
<td>144</td>
</tr>
</tbody>
</table>

The faculty consisted of 39 full-time members, two part-time and 47 volunteers including guest lecturers and physical and occupational
therapy clinical supervisors. Significant developments during the year include the following:

Nursing

1. Two new sequences (the Maternal Infant program and the Parent Child program) leading to the Master of Science degree in Nursing were implemented during 1970.

2. The University has added a full-time Director of Continuing Education to the College of Nursing faculty at the Houston Center to insure acceleration of pertinent offerings in this area. These offerings in Continuing Education included a conference on computer information systems and rehabilitation workshops.

3. The University obtained approval to offer a Doctor of Philosophy in Nursing.

Occupational Therapy

1. A course in pre-vocational testing was developed for the purpose of preparing occupational therapists to assist disabled patients in job and career choices.

Physical Therapy

1. The School of Physical Therapy sponsored monthly seminars for physical therapists and Allied Health personnel in the Texas Medical Center and in the Houston area.

2. A core curriculum in clinical medicine was developed for students in occupational therapy and physical therapy in cooperation with Baylor College of Medicine, Department of Physical Medicine.

Two research grant projects with a combined funding level of $125,000 were active during the year. In addition, Texas Woman's University continued to emphasize action research in the preparation and utilization of practitioners in nursing and related health sciences.

Graduate fellowships and scholarships are available to all graduate students in the Houston Center.
As pointed out in the Annual Reports in the past, the University of Texas Dental Branch has continued in the study and evaluation of the Dental School curriculum. The principal objectives of the curriculum revisions were summarized in the 1968 Annual Report and will not be repeated here. However, it should be noted that the curriculum is an integrated multidisciplinary teaching program involving students in clinical dentistry early in their careers. The first class of dental students to complete their studies under the new concept in dental education graduated in June, 1970. An attitude study comparing this class to alumni having practiced ten years projected almost the same professional attitude profile.

The annual faculty workshop continues to be basic to curriculum development and change. An electives program which permits students to mesh basic knowledge and dental skills in judgment making is an example of a successful workshop outcome. Short courses, faculty seminars and instructional development planning reflect a significant change in teaching methods and instructional technology.

The student body at The University of Texas Dental Branch consisted of 386 dental students, 52 graduate students, 16 post-graduate students and 75 dental hygiene students making a total of 529 students at the Dental Branch during the past year.

There were 115 full-time and 168 part-time and volunteer faculty members at the Dental School. As a part of the clinical instructional program, clinical patients are served at the Dental School. The total
number of clinical out-patient visits during the past fiscal year was 81,469.

In connection with clinical patient care, it should be emphasized that the Dental School has launched a broad program in teaching acceptable practices for the prevention of dental disease. The approach is along two main fronts: First, teaching dental students and auxiliaries their roles; and second, patient education - the dentist and dental auxiliaries helping patients to prevent dental disease. The students are able to relate patient dental problems to individual eating habits and oral hygiene habits by discussing them in a personalized manner. Dietary inadequacies are recognized and patients become motivated toward specific changes in habits. Through discussion, the patient is enabled to define his own dental problem and helped to discover personal solutions.

The Dental Science Institute

This Institute is the research arm of the Dental Branch which has as its primary objective the solution by group effort challenging problems in dental research. Another objective of the Institute is to recruit and train promising personnel in an environment conducive to self-growth, self-stimulation and peak performance.

During the past year it was found that some species of marmoset developed a spontaneous chronic thyroiditis of the Hashimoto's type. This is the first time that spontaneous thyroiditis was described in a primate. The demonstration that the marmoset of the genus Callithrix are highly predisposed to chronic thyroiditis provides a primate model for the
study of the natural history of this disease. It is believed by many that most chronic thyroiditis cases are autoimmunopathies. This is of particular interest to dental science because during this past year, the concept that chronic destructive periodontitis may have an autoimmune compartment has been developed. It is interesting to note that chronic destructive periodontitis is a disease which occurs primarily in the genus Callithrix, the same species of marmoset which develops chronic thyroiditis.

Q. THE UNIVERSITY OF TEXAS GRADUATE SCHOOL OF BIOMEDICAL SCIENCES

The Graduate School of Biomedical Sciences is divided into three divisions: Advanced Graduate Studies, Special Graduate Studies and Continuing Education. In the academic year beginning in September, 1970, there were 93 graduate students, six non-degree students and three University of Houston students taking special work. There were eleven full-time, eight part-time and 120 volunteer faculty members. The faculty is drawn primarily from the University of Texas Medical components including M. D. Anderson Hospital and Tumor Institute, the Dental Branch, the Dental Science Institute, the School of Public Health and the Biomedical Institute. Additional active faculty are drawn from the Texas Research Institute of Mental Sciences and Baylor College of Medicine. The Division of Graduate Studies provides a Ph.D. program which has initiated a truly interinstitutional awareness of ongoing research efforts. The Division is now the largest graduate effort within the medical components of The University of Texas System. It will provide the graduate effort which is so necessary for the developing University of Texas Medical School at Houston in its acquisition of staff and faculty.
The following areas of research should be noted:

The Department of Neural Sciences is a balanced effort concentrating on the fine structure details of visual perception. This program is thoroughly integrated with and compatible to programs at Baylor College of Medicine and the Texas Research Institute of Mental Sciences.

A Human Cytogenetics Laboratory, under the supervision of Dr. Margery Shaw, continues to study human chromosome structures through comparisons of light microscope images with those obtained with the electron microscope. This laboratory has recently entered into an extensive contract with NASA for the cytogenetic analysis of space pilots before and after flights to determine the effects of weightlessness on chromosome structure.

The Molecular Genetics Laboratory, under the supervision of Dr. Thomas S. Matney, has been established during the past year. He has obtained a contract from the Atomic Energy Commission to continue to study the relationship between the enzyme systems involved in radiation repair and those concerned with the phenomenon called gene conversion. The laboratory is also interested in studies concerning the molecular basis of speciation and microorganisms.

Since the Graduate School is not superimposed upon an undergraduate system, there are not inherent teaching assistantships available. In lieu of this, the students have approached the Dean of the School of Pharmacy at Texas Southern University and have procured four teaching assistantships from that school. They include the areas of microbiology, pharmacology, biochemistry and pathology. An additional student obtained an instructorship at Texas Southern University to offer a three hour course in microbiology, while another instructed a course in general genetics at the Dominican College. Several students have volunteered to serve as tutors in the biomedical sciences at Texas Southern University.

The graduate students of The University of Texas Graduate School of Biomedical Sciences at Houston have initiated several other activities
in which they provide services to the community outside the Texas Medical Center.

R. THE UNIVERSITY OF TEXAS GRADUATE SCHOOL OF BIOMEDICAL SCIENCES, DIVISION OF CONTINUING EDUCATION

During the past fiscal year the Division of Continuing Education provided 1,004 hours of instruction for 936 physicians, residents, fellows, interns and students. The staff consisted of nine full-time and two part-time members.

The Division of Continuing Education provides an opportunity for practicing physicians to stay abreast of the latest medical knowledge through organized courses conducted by specialists in the various fields of medicine. The Division continually seeks to enlarge its service to physicians and the community. In this connection, a Medical Community Television System was conceived and during the latter part of 1968 and in 1969, arrangements were worked out with all of the institutions in the Medical Center to participate in this project.

Financing for the project has come from state appropriations, the Texas Medical Center, Inc., the M. D. Anderson Foundation and certain available funds from divisions of The University of Texas in Houston.

The Medical Community Television System, which was installed in 1970, provides an electronic linkage among all the institutions in the Texas Medical Center. The System will provide a means of consolidating the outstanding medical education resources in the Center and sharing these resources among the institutions in the Medical Center as well as health and health related institutions in the City and County.
During 1970 twenty-two courses on a variety of subjects were planned and executed by the Division of Continuing Education. Of particular significance were the following symposia: 1) Teaching Methods, 2) Selected Topics of Cardiology, 3) 8th Annual Symposium on Biomathematics and Computer Science in the Life Sciences, and 4) Humanism in Medicine.

The Division of Continuing Education is administering an NIMH training grant which provides funds for the training of nonpsychiatrically oriented physicians. The small group method of instruction is used. Physicians in attendance present cases from their practices.

S. The University of Texas, M. D. Anderson Hospital and Tumor Institute

As in the past the M. D. Anderson Hospital and Tumor Institute, continued to provide excellent care for patients and at the same time carried on major educational, research and service programs.

In addition to working closely with the Graduate School of Biomedical Sciences, the Hospital and Tumor Institute conducted a major educational program of its own which included the following student body: 44 interns, 98 post-doctoral fellows, six medical technology students, 14 X-ray technology students, 11 Cyto-technology students, six physical therapy students, seven Histo-technology students, 12 inhalation therapy students and 50 summer student nurses.

The faculty consisted of 183 full-time, 46 part-time and 149 volunteers of which 131 served as consultants.
As pointed out in the introductory part of this section, probably the most significant research related activity during the past year was the Tenth International Cancer Congress which was held in Houston under the auspices of the M. D. Anderson Hospital and Tumor Institute (see page 9). Other highly significant educational, research and service activities carried on by or with the major support of the M. D. Anderson Hospital and Tumor Institute include the following:

The Fifteenth Annual Clinical Conference on "Progress in the Rehabilitation of the Cancer Patient" was held November 19-20, 1970. The purpose of these annual conferences is to provide learning opportunities to practicing physicians for the improvement of cancer care at the community level. This meeting was one of the first to offer an interdisciplinary approach to cancer rehabilitation. Registrants of the meeting included physicians, physical therapists, vocational counselors, psychologists, nurses, etc. Registered attendance totaled 372, including 55 from outside the state and country. Proceedings of the meeting will be published in monograph form.

Dial Access, a medical information service on cancer, was established in March, 1970, for the physicians of Texas. The program, which is funded by Texas Regional Medical Program, serves as a consultative aid and is intended to enhance the personal care of the family physician. The five to six minute pre-recorded medical lecture-consultations are transmitted via toll-free long distance telephone. The presentations were recorded by Anderson's physicians, as well as other eminent Texas scientists. More than 2,200 Dial Access calls were received in 1970 and numerous requests have been made to extend the service to other states.

An Alumni Association for Former Trainees was established during the Tenth International Cancer Congress. Later in the year the Felix Rutledge and William S. MacComb Societies were formed. All three groups aim to foster growth in professional stature and contribute to educational programs.

The National Institutes of Health has established an office from which a national program on cancer of the large intestine will be initiated at the M. D. Anderson Hospital and Tumor Institute. Dr. Walter J. Burdette, professor of surgery and associate director (research), has been appointed director, to whom responsibility for the administration of this program has been delegated by Dr. Carl Baker of the National Cancer Institute. Offices for the project have been established in the Center Pavilion Hospital. Both an external and an internal advisory committee are being appointed
and the initial stages of the program have been started. A large program of basic and clinical work is planned to exploit promising new leads to improve the diagnosis and treatment of this disease, which now takes more lives annually in the United States than any other type of cancer.

At the request of the Atomic Energy Commission, an isotope known for the first time only a few years ago, Californium 252, is being evaluated by Dr. Robert Shalek, head of the Anderson Department of Physics, and his staff for application to the treatment of cancer. This isotope emits neutrons which may possibly provide additional means for treating cancer by utilizing needles containing the material in cavities and tissues of the body. Techniques for scheduling dosage of the material and the response of tissues to this type of irradiation are included in the study. After this initial biology study, it should be possible to utilize characteristics which are especially advantageous in the program of therapy at the M.D. Anderson Hospital. This work will be done in conjunction with the work on the type of irradiation emitted from the cyclotron.

Under the direction of Dr. Gilbert Fletcher, Head of the Department of Radiotherapy, a 25 to 32 million electron volt linear accelerator has been installed in the M.D. Anderson Hospital as a result of a grant from the National Cancer Institute and a gift from Mrs. Harry C. Wiess and Mr. and Mrs. Theodore N. Law. This microwave electron accelerator for the treatment of patients is now being used for the management of patients at the Hospital. In addition to emitting X-rays, the electron beam from the machine is also utilized in treatment. A parallel research program on the response of tissues in the laboratory to this type of irradiation is in progress, and it is hoped that a new dimension of irradiation therapy will be added to the management of patients in the Texas Medical Center as the full potential of this machine is realized.

The replacement of human blood platelets and leucocytes in the treatment of neoplastic and other diseases has been made a reality by the use of a blood cell separator consisting of a continuous flow centrifuge and biomechanical components which separate these and return the remainder of the blood to the donor. Although it is considered that this type of work utilizing both lymphocytes and granulocytes in combating neoplastic and infectious diseases is in the investigative stage, it is quite clear that means are at hand for realizing the benefits that may accrue from this approach to treatment. A number of studies have been done with different patients, and the results obtained by Dr. Emil J. Freireich, chief of the Section of Hematology, and others at the M.D. Anderson Hospital are encouraging.

Dr. Darrell N. Ward, head, and colleagues in the Department of Biochemistry are in the process of elaborating the amino acid sequence of ovine and bovine luteinizing hormone, which should
provide the structural formula for this hormone. Comparison of the types of hormone in different types of animals will be useful in understanding how this female sex hormone acts normally and should provide information useful in the management of neoplastic and other diseases.

The total number of in-patient admissions was 6,629 and there were 174,864 out-patient clinical visits during the year. The number of beds maintained at the Hospital was 294. At the close of 1970 there were 2,590 full-time and 111 part-time staff members making a total of 2,701.

In the area of patient care the following represents the most significant developments:

The construction project was completed for housing a 25-MEV linear accelerator in the department of radio-therapy. This new accelerator is now installed and is being used for patient therapy. The facilities for physical therapy and occupational therapy were increased to take care of the patient care needs for these two services. An intravenous additive service of the pharmacy department was started during the past year, and an interstomal therapy service was activated to assist patients who have surgical stomas as a result of cancer treatment. A superior system for screening women for breast cancer utilizing a thermograph of new design and an infrared photography system was developed. A platelet transfusion program was developed in which 10,000 units of platelets per year are obtained by a plasmapheresis from volunteer donors.

T. THE UNIVERSITY OF TEXAS SCHOOL OF PUBLIC HEALTH

The students in the first graduating class of the School of Public Health completed their work in the Spring of 1970. With the opening of school in September, 121 graduate students were registered and in addition there was one post-doctoral fellow. The faculty numbered 29 full-time, four part-time and 21 volunteers.

The concept of the School of Public Health is different from that of many Schools of Public Health, reflecting a firm commitment to the
idea that public health is an interdisciplinary entity characterized chiefly by a series of important major problems, e.g., population growth, preservation of an environment consistent with human survival, and improved organization and delivery of personal health services to all segments of society. The concept recognizes further that an interdisciplinary, problem-centered field demands an academic structure serving that fundamental idea. For that reason, the basic organizational unit of the School is the Teaching-Research module, a group of faculty members and graduate students who, with supporting technical and clerical personnel, work together as a learning community investigating an important area of public health concern. At present, modules in health services administration-comprehensive health planning, urban health, occupational health-aerospace medicine, international health, population studies, environmental health, pathobiology and chronic disease have been organized. This modular structure serves to bring teaching and research together physically and organizationally, as well as conceptually, under a common umbrella, learning. It is believed by the administration and faculty that this tends to encourage development of student and faculty potential and initiative. Within these modules, faculty and students engage in joint and individual learning activities. The modules are the basis for faculty research, individual study and thesis projects.

In the area of research, the following projects should be noted as having particular significance at this time:

**Mosquito Killing Bacteria and Spores-Student Research**

Through research conducted jointly between the Harris County Mosquito Control District and The University of Texas School of
Public Health, a septicemia bacteria and a microsporidian which attacks and kills the encephalitis-carrying Culex quinquefasciatus mosquito has been discovered in the Houston area.

This discovery could eliminate the dangers of oil sprays and pesticides now used to combat the mosquito population. Attempts will be made to spread the bacteria and spores and infect healthy mosquito larvae. If means of reproducing and distributing them in quantities can be developed, they may become more effective than spraying.

City of Houston Contract

Violence is being viewed as a public health problem because it affects the well-being of citizens and communities. The Project for the Early Prevention of Individual Violence is designed to determine what clusters of factors contribute to assaultive behavior and to ascertain what agencies and resources can be mobilized to reduce the potential for violence by being alerted to possible early warning signs.

United States - Mexico Border Health Survey

In cooperation with the United States - Mexico Border Public Health Association, the School of Public Health is completing a survey of community health needs and current patterns of utilization of human and institutional health resources in the El Paso-Ciudad Juarez area. The field survey was conducted jointly by the School of Public Health at Houston and the School of Medicine of the Autonomous University of Chihuahua, Mexico. The study is funded by grants from the Houston Endowment Fund and the Texas Tuberculosis and Respiratory Disease Association.

Operation MEDIHC

Funds provided by The Department of Health, Education and Welfare and The Executive Department, Office of Comprehensive Health Planning of the Governor's Office are being used in support of a project entitled "Operation MEDIHC." The objective of this project is to design and activate an advanced and effective counseling service and vocational guidance support system which will help a maximum number of military health personnel to make a successful transition to civilian health careers programs, by direct placement of returning servicemen into health jobs, and placement of servicemen into educational or training experiences leading them to health jobs. This project will further analyze and study health manpower problems in Texas and will recommend specific methods to solve problems related to this manpower shortage.
U. UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON

In 1970 The University of Texas at Houston launched an accelerated program for the establishment of the school designed to accommodate an entering first year enrollment of 200 students by 1976.

During the year administrative offices were opened in the Jesse H. Jones Library Building. The architectural firm of Brooks, Barr, Braeber & White, Austin, was appointed to design the school facilities to be located in the Texas Medical Center. A planning team was organized in order to utilize the expertise of the members of the Texas Medical Center and the University of Texas System. The team consisted of the Dean and the Associate Dean for Business Affairs of The University of Texas Medical School at Houston, the Director and an Assistant Director of Hermann Hospital, the project architects, representatives of the University of Texas administration, consultants on various programs and staff members from other University of Texas medical units.

Subsequently, an educational program was developed, and organizational structure and operating approach was outlined. Designs for both initial facilities and permanent facilities were completed and submitted in June to the Health, Education and Welfare Department for assistance in federal funding. In January, 1971, HEW officials announced approval of both plans for the construction of the University of Texas Medical School facility and the joint proposal for the major expansion of Hermann Hospital, thus insuring the School's clinical teaching facility. The School's projected program of development was outlined before the Liaison Committee on Medical Education and a reasonable
assurance of accreditation was issued by that committee after a visit to the site.

Nineteen students were selected for enrollment. In September, through the close cooperation of the other University of Texas Medical Schools, they began their studies in Dallas, Galveston and San Antonio. They will be transferred to the Houston campus in the Spring of 1972.

An aggressive faculty recruitment program was initiated in 1970 and by December, the Associate Dean for Academic Affairs, Professor of Neurology and Professor of Neurobiology had been named. Affiliation agreements with organizations within the Texas Medical Center were firmly established and plans were begun to structurally and functionally integrate the new Medical School with the expanded and renovated Hermann Hospital, the School's primary teaching hospital.

Relations with the M. D. Anderson Hospital and Tumor Institute were strengthened and joint programs in both clinical and pre-clinical disciplines were planned. A plan was initiated with The University of Texas Dental Branch for a joint program in undergraduate teaching. Courses in Biomathematics and Epidemiology are being planned in conjunction with the facilities of The University of Texas School of Public Health. The Medical School will contribute to the programs of the Graduate School of Biomedical Sciences and is cooperating in the development of the expanding role in genetics planned by that school. Relations with Baylor College of Medicine and other institutions in the Texas Medical Center are being developed, the most tangible of which is a joint agreement with the Houston Academy of Medicine and
the Texas Medical Center, Inc. for the use and support of a Medical Center Library. Ancillary affiliations have been made with Memorial Baptist Hospital System, St. Joseph Hospital and St. Anthony Center to further balance the clinical experience to be offered the students.

An advisory group of prominent local businessmen and civic leaders formed the Houston Medical Foundation, Inc. to aid in the development of the School.