Higher Blood Pressures in Supravalvular Aortic Stenosis Explained by Cardiologists

Cardiologists at the National Heart and Lung Institute offer an explanation why patients with supravalvular aortic stenosis frequently have higher blood pressure in the innominate artery than in the aorta upstream or downstream from the innominate origin.

An arterial model confirms their hypothesis for the previously unexplained paradox—that the vessels closer to the blockage have a lower pressure than the vessels further downstream from the occlusion.

The NHLI scientists suggest that this inordinately high pressure in the innominate artery—the largest branch of the aorta—could be caused by the impact of the jet of blood originating at the stenosis and being directed upon the blood in the innominate artery.

Hypothesis Tested

Slowing of this rapidly moving stream of blood would convert kinetic energy to potential energy and thus increase innominate pressures to exceed pressures in the aorta.

To test this hypothesis, the investigators constructed a model of the ascending aorta, innominate artery origin, and the aortic arch which simulated the angliogram of a patient with supravalvular stenosis and increased innominate pressures.

High speed motion pictures of the model showed results consistent with the hypothesis. The fluid of the rapidly moving jet was found to course directly into the innominate artery close to its origin.

Pressure measurements confirmed that no pressure differences were created within the aorta just beyond the stenosis, but that a progressive increase in pressure occurred within the first 5 centimeters of the innominate artery.

When the simulated stenotic oriﬁce was replaced by a fine mesh screen in order to maintain a pressure gradient, but eliminate the jet, innominate pressures were not found to be increased.

In addition, when the simulated stenosis was moved within the aorta to mimic valvular aortic stenosis, increases in innominate artery pressures were abolished.

A report of this work, by Drs. Robert E. Goldstein and Stephen F. Epstein, of the NHLI Cardiology Branch, appeared in a recent issue of Circulation.
Housing Registry Needs
Listings of All Available
Houses and Apartments

Do you have housing for sale or rent? Are you looking for housing?
To assist employees in locating suitable housing, the Employee Relations
and Recognition Branch of the Office of Personnel Management
maintains a housing registry.

This registry includes houses for sale as well as houses, apartments,
and rooms for rent.

To improve service, additional listings are needed—particularly
furnished rooms and apartments. Employees who have housing available
are requested to list it in the registry.

Time Off Is Authorized
When Needed to Vote

Limited time off for voting in
the general elections on Nov. 3
may be authorized under certain
conditions. This time should be
charged to administrative leave.

If the polls are not open 3 hours
before or after an employee’s work
hours, he may report for work 3
hours after the polls open or leave
work 3 hours before the polls close—whichever requires less time.

If friends or neighbors have
housing for rent or sale their ac-
commodations may also be listed.

Five 3 x 5 cards should be sent
to ERRB, Bldg. 31, Room B29-29,
stating: description of property,
whether for rent or sale, how furni-
ished, location in relation to NIH,
price, when available, telephone
number, and any other pertinent
information.

Statement Required

The following signed statement
must appear on the back of each
card: “This property is available
on an open occupancy basis without
regard to race, color, creed, or na-
tional origin.”

One of the cards will be kept on
file in ERRB. The other four will
be posted on bulletin boards at:
Bldg. 31, next to the escalator,
first floor, B wing; Bldg. 1, next
to the elevators, basement level;
Bldg. 13, near the snack bar,
ground level, and Westwood Bldg.,
ground level, outside the snack bar.

Listings may be sent in at any
time; however, all are removed at
the end of the month.

To continue listings for the next
month, a new set of cards must
be sent to ERRB.

Davis Xmas Plan Encourages Employees
To Play 'Santa Claus' for CC Patients

There are times when a fellow needs a visit from his brother. The young CC
patient has much to tell about his room, the nurses, and Christmas activities
planned. Out-of-town traveling expenses for the patient’s brother and parents
were paid through the Patient Welfare Fund.

There is one before-Christmas shopping expedition that can be cheer-
fully eliminated, thanks to James B. Davis, Director, Office of Adminis-
trative Services. That is shopping for Christmas cards for NIH colleagues.

Instead, donate that money to the Patient Welfare Fund. This is the
idea behind the “Davis Plan,” which, every Christmas for the past 10
years, has augmented the Patient Welfare Fund.

Mr. Davis used to send cards to colleagues—over 200 of them—but
thought how the money might better be spent; thus evolved the Davis
Plan.

R&W Contributes

Now all NIH employees can be a part of a Christmas program to help patients at the Clinical Center. The NIH Recreation & Welfare Association also contributes substan-
tially to the Fund.

Benefits CC patients and their families derive from the Patient Welfare Fund, with the assistance of the Davis Plan, are numerous. For instance, patients are given money for long-distance phone calls to their families and, in some cases, the Fund pays the transportation for the visit of a relative to a CC patient.

At Christmas time these morale boosters—visits and phone calls—
may very well be more important than at any other time of the year.

Donate Funds Instead

Instead of buying Christmas cards say “Merry Christmas” to your NIH colleagues and donate that sum normally spent on cards to the Patient Welfare Fund.

For further information, contact Jim Davis at Ext. 62315. Checks may be made to the NIH Patient Welfare Fund.

Subject: The Development of Early Communication

Interview takes place during in-
termission of the Library of Con-
gress concerts.
Secy. Richardson Urges Generous Drive Support

CFC Quotas Announced;

As the Combined Federal Campaign—now in its fourth week—seeks funds for 164 agencies, a quota of $218,687 for NIH has been announced.

The National Institute of Environmental Health Sciences already has gone over its quota by 128.3 percent, with contributions received thus far from only half of its staff.

In a memo to all Department employees, HEW Secretary Elliot L. Richardson noted:

"In the past, a great majority of Department employees have recognized their obligation to participate in a community effort to aid those in need of assistance. "When contacted this year, I urge each of you to generously support this non-government effort directed toward the relief of some of the ills of our society."

This year's drive is stressing the advantage of using the payroll deduction plan—the most effective and painless method of making a meaningful contribution to those in need.

Any contribution may be designated for a specific participating agency. Undesignated donations will be distributed in accordance with a predetermined percentage: National Health Agencies, 17.58 percent; United Givers Fund, 75.32 percent, and International Service Agencies, 7.1 percent.

Technical Developments Increase Deaths From Heart Disease

The greater production of electricity in a country, the more deaths there are from heart disease. The same holds true of heart disease in relation to average annual income, number of television sets and telephones, and other indices of technical development.—WHO Facts.

Former Military Corpsmen and Medics Augment CC's Cancer Nursing Service

Four former military corpsmen and medics are working as patient care technicians in the Clinical Center's Cancer Nursing Service. They are pilots in a project to help relieve the CC nursing shortage.

The men are assigned to male patients "requiring the most comprehensive nursing care," according to Louise C. Anderson, chief of the CC Nursing Department.

Mrs. Anderson, who conceived the idea, saw it through to a project that may well become "standard operating procedure" in many hospitals.

Explains Rationale

Explaining the evolution and implementation of her idea, the CC Nursing chief said, "For the past 5 years we have been consistently short of male assistants for the nursing care of men patients. "We had men with nursing experience on our staff who were obviously very competent. Four men who met the criteria established for patient care were chosen."

A close-working team headed by a group leader to direct activities and plan time was established.

Nursing personnel and the team group participated in a 6-week orientation program to establish procedures.

Evaluating the plan at the end of a 3-month period, Mrs. Anderson found it extremely workable.

"Patients and physicians have been very complimentary on how these men function," she added.

Clarence I. Haywood is leader of the patient care technician team. For 13 months he served as a field medical technician in Vietnam, where he administered first aid to combat casualties.

Mr. Haywood was trained as a medical corpsman at the Charles Naval Hospital. Later, he was assigned to Camp Lejeune as a field medical technician.

"What Mrs. Anderson is doing here is giving us responsibilities and letting us function with limited supervision," Mr. Haywood said. "In this job we work better as team members and have an opportunity to use all our skills."

The other members of the team are Kyle Smith, Melvin Taylor, and Solomon Romero. Mr. Taylor has had combat experience in Korea as a medical corpsman. Mr. Smith and Mr. Romero were army medics before coming to NIH.

As patient care technicians, their duties are diverse. They assist investigators with diagnostic procedures, change sterile dressings, irrigate wounds, and help with special procedures.

The nursing technicians utilize various types of therapy and are especially adept at aiding male patients with ambulatory problems.

This team plan has been so successful that 10 men are training to function the same way.

"Our plan," Mrs. Anderson said, "is to develop at least one team of trained technicians for each nursing service."

Unit Quotas for Annual CFC

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The Tenth Annual Jules Freund Memorial Seminar will be presented by Dr. Harry Eagle, professor of Cell Biology at Albert Einstein College of Medicine, Yeshiva University.

The seminar will be held at noon on Monday, Oct. 19, in the Jack Masur Auditorium of the Clinical Center.

Dr. Eagle's subject will be "Serum pH, and the Contact Inhibition of Normal Human Cells." The scientific community is invited to attend.

Former NIH Researcher

Dr. Eagle has been at Albert Einstein since 1961. Prior to that, he was an investigator in the Public Health Service, including NCI and NIAID. While chief of NIAID's Laboratory of Cell Biology, he was a colleague of Dr. Jules Freund.

Dr. Eagle, whose present research interest is cell and tissue culture, developed the Eagle's medium (a synthetic medium widely used for tissue cultures) and the Eagle test for syphilis.

His span of investigation has included blood coagulation, penicillin, bacterial physiology, and the detoxification of metal poisoning.

Dr. Eagle serves as a scientific advisor to the Sloan-Kettering Institute for Cancer Research and the Helen Hay Whitney Foundation. He is a trustee of the Microbiological Foundation (Wakeman) and the Hebrew University in Jerusalem.

Honors Noted

Among his honors are the Albert Einstein Commemorative Award, the N.Y. Academy of Medicine Award, and an honorary Doctor of Science degree from Wayne University.

The National Institute of Allergy and Infectious Diseases has presented the Jules Freund Memorial Seminar annually since 1961 in honor of the first chief of its Laboratory of Immunology.

Detroit Nurses Conduct Study on Child Caring

Results of a recent study suggest that infants whose families move frequently have particular need for nursing and preventive care.

The Visiting Nurse Association of Detroit, under contract with the Bureau of Health Manpower Education's Division of Nursing, conducted a research project on child caring patterns in the Detroit area.

Data show that one differentiating factor in families whose infants suffer diarrheas and poor weight gain is location instability.

A full report of the study is now being prepared by the Detroit agency.

Clarence I. Haywood, leader of the CC's patient care technician team, changes the dressing on a facsimile patient. Physicians are loud in their praise of the four-man group of former Navy corpsmen and Army medics.
Willard Vincent Named Chief of OAS Branch

The Office of Administrative Services has announced the appointment of Willard E. Vincent, assistant chief, Plant and Office Services Branch, as chief of the Protection and Safety Management Branch.

Mr. Vincent succeeds George P. Morse, who retired from Federal service.

In his new assignment, Mr. Vincent will be responsible for developing and administering programs concerned with the security and safety of NIH personnel and property.

Mr. Vincent came to NIH from the Department of Commerce in 1957 where he had served as a Security Officer. He served first as the administrative officer and later as assistant to the chief of the Plant Safety Branch.

From 1953 to 1955, he worked as a Security Evaluator in the Security Division, HEW.

For the 2 years prior to joining HEW, he held the position of Special Agent in the Security Division, Department of State.

With the exception of his tenure in the Plant and Office Services Branch, Mr. Vincent's entire career has been devoted to security, protection, and related fields. He is a U.S. Army veteran of World War II where he served in counterintelligence.

He was the recipient of a Sustained Superior Performance Award in 1959.

Two Investigators Join NINDS Collaborative and Field Research Program

Two scientists have been named to the staff of the National Institute of Neurological Diseases and Stroke Collaborative and Field Research Program.

Dr. Bernard H. Fox has been appointed assistant to Dr. Heinz W. Berendes, chief of the Perinatal Research Branch. Otis Turner has been named to the Epidemiology Branch, Office of the Associate Director for C&FR.

Both men were previously with the Neurological and Sensory Disease Control Program, Regional Medical Program Service, Health Sciences and Mental Health Administration.

Dr. Fox will coordinate the various task forces of the Branch and will serve as liaison between it and the Perinatal Research Committee.

Mr. Turner, who has co-authored 10 papers on epidemiology, will coordinate data from all of the Epidemiology Branch's programs.

4-Drug Treatment for Hodgkin's Disease May Double Survival Time of Patients

A 4-drug treatment developed in 1964 for advanced Hodgkin's disease is more than doubling the survival time of patients who respond to treatment, according to scientists of the National Cancer Institute.

Drs. Vincent T. DeVita, Arthur Serpick, and Paul Carbone of NCI reported their findings to the International Society of Hematology in Munich, Germany, last month.

Last year Dr. DeVita and his colleagues reported that 32 to 43 patients (81 percent) treated with the four drugs—vincristine, procarbazine, prednisone and an alkylating agent—responded with a complete remission or temporary disappearance of all evidence of disease.

This is 4 times the rate of complete remissions usually achieved in advanced Hodgkin's disease.

The median duration of these complete remissions is now between 29 and 42 months after the end of therapy. At present, the longest continuing complete remission is lasting 52+ months.

The researchers noted that 17 patients among the 35 complete responders (48 percent) remain free of all evidence of cancer.

65 Percent Surviving

Twenty-eight of the entire group of 43 patients (65 percent) are surviving, at the very least 52 months after the end of therapy. The median survival time of the entire group and the complete responders is not yet known, but in the latter case it will exceed 42 months.

This is more than double the duration of survival of 20 months usually reported in medical literature for patients with this advanced cancer treated with single-drug therapy.

Patients were given six 2-week cycles of drug therapy, each followed by a rest period of about 14 days.

During each cycle, procarbazine was given daily, and vincristine and an alkylating agent (either nitrogen mustard or cyclophosphamide) were given on the first and eighth day.

Most Are Outpatients

Prednisone was given daily during cycles 1 and 4 only. The average duration of therapy was 5.8 months and, although all patients had advanced disease, most were able to receive almost all of their treatment as outpatients.

Twenty-three of the patients were males; twenty were females. At the start of treatment, their mean age was 31 years. There was no difference in survival with regard to sex.

None of the patients were considered resistant to any form of therapy, although nine patients had received prior local radiotherapy and two had received a single prior exposure to one of the drugs.

Side effects reported mainly of nausea and vomiting in the first two days of each cycle.

The major limiting toxicity was damage to the bone marrow, believed to be from the drug vincristine from infection of two patients.

Older patients frequently had some loss of reflexes and constipation, but this disappeared when vincristine treatment was stopped. In most patients toxicity was well tolerated and disappeared after the cessation of treatment.

Dr. DeVita and his colleagues conclude that combinations of drugs in full doses, each with independent anticancer activities and somewhat different toxicities, produce a higher percentage of complete remissions and longer survival times for patients than any available drug used alone.

Dr. George Willis Joins Grants Asso. Program

Dr. George M. Willis, a native of Alto, Tex., has joined the Grants Associates Program for a year of training in grants administration.

Dr. Willis, a 1953 graduate of Prairie View A & M College, received his M.S. degree (1959) and his Ph.D. degree (1962) in Plant Pathology from Ohio State University.

From 1955 to 1959, he was a graduate assistant in Plant Pathology at this university.

He was with the Ohio Agricultural Development Center in Wooster, Ohio as a research assistant from 1959 to 1962.

Later Dr. Willis became a plant pathologist at the Center, devoting more time to experimental testing and scientific writing.

From 1962 to 1968, he was a research plant pathologist with the Plant Sciences Laboratory, Ft. Detrick, Md.

In 1968, he became professor of Botany and director of the Biology Audiotutorial Program at Central State University, Wilberforce, Ohio, a position he held until he accepted his present appointment.

Dr. Willis is a member of the American Association for the Advancement of Science, the Research Society of America, Sigma Xi, the Sigma Gamma Delta Society, the Society of Sigma Xi, and the Gamma Alpha Scientific Professional Fraternity.

Dr. James Whittico Is Appointed To Advisory Manpower Council

Dr. James M. Whittico, Jr., a surgeon and assistant clinical professor at the St. Louis University School of Medicine, Mo., has been named to the National Advisory Council on Education for Health Professions for a term ending February 1973.

A diplomate of the American Board of Surgery (1951) and a fellow of the American College of Surgeons (1952), Dr. Whittico is a member of the National Medical Association, in which he held various offices, and the AMA.
Deadly Shark May Hold Key to Unlocking Secret Of Blood-Brain Barrier

NINDS scientists are approaching brain research in many new ways, including a study of the blood-brain barrier (BBB) of the shark to learn the secret of its resistance to injury. The BBB regulates and limits the exchange of substances between the blood and the central nervous system of all vertebrates.

Guards Brain

As a guardian of the brain, allowing certain agents in the blood ready access and denying or restricting entry to others, the BBB is largely responsible for the health and proper functioning of the central nervous system.

According to Dr. Igor Klatzo, chief of the NINDS Laboratory of Neuropathology and Neuroanatomical Sciences, the shark is particularly significant to BBB research because of its amazing resistance to brain damage.

In experiments at the Lerner Marine Laboratory on the Bahaman island of Bimini, one of the world’s foremost marine biological research centers, sharks have been subjected to brain damage that no human or other mammal could endure.

Goals, Progress...Problems Reviewed As Institute Contemplates New Horizons

Twenty years ago, the National Institute of Neurological Diseases and Blindness was born. It was created to guide and direct the national research effort in the neurological, sensory, communicative, and neuromuscular disorders.

Ten years ago, one of its original functions—research on blindness, was largely removed by the creation of a new National Eye Institute. Shortly thereafter, the word “stroke” was incorporated in a revised title to reflect an increased Institute responsibility in this area of research.

Clearly the old, yet new, National Institute of Neurological Diseases and Stroke is undergoing change. Has organizational change been accompanied by progress in other areas?

As the NINDS celebrates its 20th anniversary, it seems a good time to look at its history, goals, progress, and problems.

The Institute’s first Director, Dr. Pearce Bailey, worked with a budget of little more than $1 million—and virtually no staff.

He soon developed a program for the support of extramural research, particularly in the universities, through research grants. Training programs were then established in neurology, ophthalmology, neurosurgery, otolaryngology, speech pathology, and in basic neurological research.

After the NINDB program was underway, it became apparent that research could be speeded through cooperative arrangements to consolidate program activities in such areas as geographic, and disciplinary levels.

The first example of a cooperative program on the institutional level was on retrolental fibroplasia (RLF) in 1952.

Eighteen hospitals participated in this project to determine the role played by the administration of oxygen to prematures in the production of RLF.

Preventive Found

The study found the disorder could be prevented by reducing the concentration of oxygen administered to prematures.

In April 1957, NINDB launched the Nation’s first cooperative research attack against cerebrovascular diseases. These diseases collectively known to the layman as “stroke” constitute the Nation’s third-ranking killer.

During late 1956 and early 1957, the Institute, working in conjunction with the University of Puerto Rico, acquired and modernized a monkey colony on an island in Puerto Rico along with various laboratory facilities.

The colony and laboratory were set up with a view to playing a key role in the broad perinatal period study.

The collaborative and field research program has been maintained and supplemented the extramural grants program and intramural research. These three research approaches make up the broad NINDS research attack on neurological problems.

Clues to Riddle of MS, Other Disorders Sought Among Known Viruses

While several scientists are looking for the answer to the MS riddle through the discovery of a “slow” virus, others hope to find clues to this disease among the known viruses.

There is a strong possibility, many researchers believe, that MS represents an atypical response to a common viral disease such as measles.

Early in 1969, NINDS and Institute-supported scientists reported the discovery that a common virus is associated with a progressive, chronic nervous system disease in humans. Their demonstration that measles virus is associated with a rare brain disorder, subacute sclerosing panencephalitis (SSPE), may help in developing the theory that viruses may cause multiple sclerosis, Parkinson’s disease, and other more common neurological diseases.
HORIZONS
(Continued from Page 5)

The joint basic research extramural program of NINDB and the NIMH was divided and organized as two separate programs in 1960. The primary objective of the new basic research program of NINDB was to understand the anatomical basis on which the varied activities of the nervous system depend, and to discover the electrical, physical, and chemical changes which accompany alterations in them. In 1961, the first program projects and clinical research centers were supported. The next year funds were appropriated for professional and technical information assistance, and neurosurgery and neuroradiology training grants were established. A program of developmental graduate training grants was started in 1963. Other programs began during this period were the Section on Head Injury in 1965, the Neurological Information Network in 1966, and the vision outpatient research centers in 1967.

In 1968, Dr. Edward F. MacNichol, Jr. became the third Director of the Neurology Institute. The same year the blindness program of the Institute became the nucleus of the new National Eye Institute. A special laboratory building shared jointly with NIMH was completed and dedicated in 1969. The new 40,000-square-foot building has allowed for considerable expansion of the intramural research program. The Institute’s intramural research program is now organized around 11 laboratories and branches—eight for basic research, and three for clinical studies.

The clinical research program is housed in the NIH Clinical Center where 52 beds are divided between surgical and medical neurology.

Relatively New Field

Today, neurology is a relatively new branch of medicine—barely a century old. Only in the 19th century did neurology start to develop as a separate field.

Advancing knowledge of anatomy and physiology provided the basis for development of scientific methods for treatment of neurological disorders. Yet neurology is still, in many ways, the stepchild of medicine. It

NINDS Support Advances L-DOPA Use, Exploits New Investigations and Therapy

Their work is an exciting development in the application of biochemistry to the treatment of a chronic neurologic condition and the most important contribution to medical therapy of a neurologic disease in the past 50 years...

Thus spoke the prestigious New England Journal of Medicine in an editorial in its issue of February 13, 1969.

The reference was to the development of L-DOPA (levodihydroxyphenylalanine) for treatment of Parkinson’s disease, an ailment estimated to affect between 500,000 and 1,000,000 Americans.

Role Cited

Although the Institute cannot claim major credit for the discovery, it has played an important role in bringing L-DOPA into widespread use, and is increasing its effort to exploit all new research opportunities the development has created.

L-DOPA therapy illustrates the important interrelation of basic research and clinical studies.

Fundamental research at NIH in the late 1950’s, performed in the main in NIH laboratories by Dr. Bernard B. Brodie and colleagues, produced a wealth of new information on neurochemical transmitter substances, known as catecholamines.

Then in 1960, scientists at the University of Vienna reported that they had found a marked depletion of the amine, dopamine, in the basal ganglia of Parkinson patients at autopsy. This clearly pointed to the possibility of replacement therapy.

Early efforts to replace dopamine directly were unsuccessful. It was found that it would not cross the blood-brain barrier.

is bristling with unsolved problems of which doctors and related scientists are too painfully aware.

In contrast, medical developments of the last 20 years, particularly antibiotics and immunological techniques, have brought an almost incredible reduction in infant mortality from acute infectious diseases. Epidemics have been controlled.

The control of chronic disease, of which diseases of the brain and nervous system are a large proportion, however, has not kept pace.

It is not at all surprising. The brain is the most complex structured organism known to man. It comprises more than 4 billion cells, each with a separate role in the processes of thinking, moving, seeing, hearing, and even digestion.

Recent advances point to a much more hopeful future. This past year, long-term research efforts undertaken and supported by NINDS, have been paying off in several important areas described in some detail elsewhere in this issue.

Then scientists in several countries suggested that dopamine’s metabolic precursors—preceding links in the chain of chemical reactions leading to its production—might cross the barrier.

The suggestions were correct but early trials with DOPA, dopamines immediate precursor, were inconclusive.

As it subsequently became clear, DOPA was not at first given in such a way that an effective concentration could be built up slowly to minimize side effects.

It remained for two PHS grantees to open up this new “biochemical engineering” approach. The first, Dr. George C. Cotzias of the AEC’s Brookhaven National Laboratory, began preliminary trials of DOPA in 1966 and settled many of the controversial interpretations of previous results by using high doses and prolonged administration.

Findings Confirmed

His work was confirmed and extended by a number of clinical groups, the largest headed by Dr. Melvin Yahr, Director of the NINDS-supported Parkinson’s Disease Research Center at Columbia University.

Trials were launched by two drug companies, Hoffman-LaRoche and Eaton Labs, and L-DOPA was licensed for general prescription use by the FDA on June 4, 1970.

In addition to funding the Columbia Center, NINDS supports a number of projects in which the mode of action of L-DOPA is being studied, and also sponsors scientific meetings aimed at stimulating research in the field.

Although L-DOPA is now in the stage of commercial production and is helping thousands of severely disabled Parkinson patients, a number of urgent questions remain.

Unclear How It Works

First, scientists are not yet completely clear on how it works, and they have yet to discover the cause of the underlying error in brain cell metabolism that seems to be the cause of parkinsonism.

Another question is whether L-DOPA therapy slows down the progress of Parkinson’s disease. Opinions among the most experienced investigators differ, and not enough time has passed to tell.

One of the problems with L-DOPA therapy is that the drug has a large number of possible side effects.

Scientists in Canada and Switzerland are combining L-DOPA with enzyme inhibitors which make possible dosage reductions and substantially reduce side effects.

However, there are many unanswered questions about the enzyme inhibitors. Metabolic disturbances in animals given inhibitors have been noted, and it has also been pointed out that the inhibitors may cause chromosome damage.

Still poorly understood are the not uncommon psychiatric aspects of L-DOPA therapy. Some patients experience impaired judgment, anxiety, depression, hallucinations, and other mental disturbances.
Rare Metabolic Defects Being Uncovered With New Diagnostic Tool

Amniocentesis—a way to diagnose disease before birth by tapping amniotic fluid and then studying the fetal cells harvested and grown from it—is still in its infancy. But the list of diseases surrendering their biochemical secrets grows, promising to mature amniocentesis into one of the most valuable diagnostic techniques available. Tapping amniotic fluid from pregnant women, usually in their 14th-18th weeks, is a relatively simple and painless procedure. The key to diagnosis, however, lies in knowing what to look for in the cells of fetal origin drawn out of the fluid surrounding the fetus. If a biochemical or structural (chromosomal) defect exists in the fetal cells, the abnormality also exists in the fetus.

The metabolic defect responsible for most genetic disorders—which cause about one in five childhood deaths—is the absence of a specific enzyme. The specific missing enzyme must be identified as the culprit in order for amniocentesis to be used to diagnose these genetic disorders.

Over the past 4 years, NINDS scientists and scientists elsewhere have forced six rare hereditary diseases to give up their biochemical secrets by discovering the exact missing enzyme in each. Taken as a group, these diseases are known as sphingolipidoses because in each, the missing enzyme allows the build-up of a fatty material called sphingolipid in tissues.

Now that the enzymes have been identified, these six may soon be added to the list of disorders discernible by amniocentesis.

Dr. Roscoe O. Brady and Dr. Edwin Kolodny, NINDS Laboratory of Neurochemistry, along with Dr. Bruno W. Volk, Issac Albert Research Institute, confirmed that the absence of hexosaminidase produces the symptoms of Tay-Sachs disease—the most prevalent of the sphingolipidoses.

Children with this presently incurable disorder suffer from mental retardation and blindness and usually die by age 3. Their finding confirmed other studies done by Drs. John S. O’Brien and Shintaro Okada, NINDS grantees at the University of California at San Diego.

Invitation to Observe Kuru in New Guinea Stimulates NINDS ‘Slow Virus’ Research

Thirteen years ago, an NINDS scientist accepted an invitation from a young Australian health officer to observe a disease among the Stone Age Fore tribe in the eastern highlands of New Guinea. The strange new disease was kuru, the first chronic, progressive, neurological disease discovered in recent years.

It was soon noted that kuru had some similarities to scrapie, a neurological, degenerative, fatal disease of sheep. Nerve-cell damage in kuru is exactly like that in scrapie, and the two diseases follow a similar course.

Scrapie is but one of several diseases, characterized by a long incubation period and a protracted clinical course, which have been described during the past 15 years. Brain tissue of affected animals contains an infectious agent that induces the illness after an incubation period of usually 2 to 4 years, and never less than 6 to 8 months.

Arouses Interest

The discovery of kuru, a human neurological disease similar to scrapie, known to be caused by a transmissible agent, aroused considerable interest. After noting their similarity, NINDS scientists decided to test the slow virus theory by putting kuru-infected tissue into as many kinds of laboratory animals as possible.

This research approach was considered so promising, the Institute established in 1962 a special slow virus laboratory. The program was planned to include the inoculation of many species of primates, including the chimpanzee, and long-term observation of these animals for at least 5 years after inoculation.

This approach led to the successful transmission of kuru to chimpanzees after long incubation periods varying from 14 to 38 months.

A second passage of brain tissue from afflicted chimpanzees to chimpanzees reduced the incubation period to about one year.

Kuru thus became the first chronic disease of human brain shown to be caused by an infectious agent.

NINDS scientists later transmitted kuru to a second, smaller primate—the spider monkey—raising hope that the agent may be made to grow in the laboratory, where it will be easier to study and isolate.

Other Studies Launched

Institute investigators then launched into studies of other chronic, central nervous system diseases. The disease bearing the closest resemblance to kuru in America and everywhere throughout the world is Jakob-Creutzfeldt.

A number of animals were inoculated with brain tissue taken from Jakob-Creutzfeldt patients. These injections induced disease in eight chimpanzees after incubation periods of only 12 to 14 months.

Since the discovery that kuru and Jakob-Creutzfeldt are caused by a transmissible agent, scientists in the slow virus program have extended their search to viruses which might be involved in the etiology of more prevalent neurological disorders such as multiple sclerosis, Parkinson’s disease and amyotrophic lateral sclerosis.
NINDS Clinicians Probe Complex Illnesses at CC

An awareness of how many “things” can go wrong with the brain and nervous system came to millions of TV viewers who weekly faced the complexities of neurosurgery with Ben Casey. The show fizzled out—the complexities have not.

They are being dealt with continuously by clinicians in the Institute’s Medical and Surgical Neurology Branches. The Surgical Neurology Branch has 22 in-patients at the Clinical Center and 12-16 outpatient a week.

The decision to admit a patient, based on the patient’s medical history and applicability to current studies, is made by Drs. John M. Van Buren and Ayub Ommaya.

Through studying these patients doctors are trying to find answers to a number of perplexing problems from pain to epilepsy.

In addition to those two, neurosurgeons are also currently studying: head injury, diseases precipitating involuntary movements such as parkinsonism and dystonia, and brain tumor.

Engel Heads Branch

The Medical Neurology Branch headed by Dr. W. King Engel, with Dr. John R. Warmolts, associate neurologist, is studying a variety of patients with neurological and muscular problems.

Eleven clinical staff doctors see patients with muscular dystrophy, myotonia, periodic paralysis, metabolic and endocrinologic muscle disease, myasthenia gravis, neurtis, and neurological disease accompanied by protein abnormalities.

Diagnostic and basic research studies are being conducted on patients with amyotrophic lateral sclerosis and ataxia.

Babies with muscular weakness as well as their parents who are “carriers” (pass on hereditary diseases without having the disease themselves) are also seen.

Diagnostic evaluations, electroencephalography, and clinical biochemistry tests are helping doctors understand the processes involved.

Long-Term Perinatal Study Yielding New Knowledge About Maternity, Infant Care

The causes of certain disorders—epilepsy, mental retardation, and for the most part unknown.

It is clear, however, that their origins lie in events that occur between conception and the early months of life.

One of the first actions of the newly organized staff of the Institute in 1952 was to plan a long-range program to study the nature of these prenatal and early neonatal causes of neurosensory defect.

Thus was conceived the project which was eventually to involve thousands of medical researchers, workers, and patients.

14 Institutions Involved

It is the Collaborative Perinatal Research Project, a national program being conducted by NINDS in collaboration with 14 medical institutions.

Experiments with guinea pigs and monkeys had demonstrated that mental retardation could result from prenatal asphyxia, but data on the perinatal injuries in children was rare.

Research generally consisted of tracing the causative factors of mental retardation or cerebral palsy, usually years after the victim.

Such retrospective research seemed painfully inadequate to the challenge of discovering the causes of these and other disorders.

By 1954, plans were underway to launch a prospective project for perinatal studies. This collaborative project was the first attempt to collect data early in pregnancy from women whose children would be closely checked until the age of seven.

Began in 1959

The project began in 1959, and since then data have been gathered on 65,800 women and their offspring. Every possible detail of the deliveries of these infants was observed and recorded. Further tests followed, and each child is regularly checked thereafter until his seventh year.

Investigators are attempting to associate the results of pregnancy with specific maternal characteristics. The mothers have been carefully checked for weight, height, weight gain during pregnancy and menstrual history, and the importance of these factors in being tested against the voluminous data from this project.

Reports are expected to focus on: 1) the identification of prenatal factors operative 1) in neurologic problems identified in one-year-old children, 2) in neurological and developmental problems that are identified in children at 4 years and at 7 years, and 3) as precursors of deficiencies in speech, language and hearing performance.

Training Programs Help Overcome Shortage of Neurological Scientists

The sharp rise in the number of neurological scientists in this country in the past 20 years has come about largely as a result of NINDS training programs.

When the Institute was founded, it was evident that medical ability to prevent, treat, or cure neurological and metabolic disorders was seriously impaired by a lack of trained manpower.

Thus, the recruitment and training of laboratory and clinical scientists for careers in research and teaching became a matter of first importance.

Adapts to Needs

Through the Training Grants and Awards Branch, Extramural Programs, the NINDS initiated programs to train these needed specialists in neurology, ophthalmology—then an institute responsibility—and otolaryngology.

Over the years Institute programs have been adapted to new training requirements as they developed and have been extended to institutions and to individual scientists throughout the Nation.

An example of the impact of the NINDS training efforts is in the field of child neurology. The first two organized child neurology training grant programs were undertaken with NINDS support in 1957.

Today, the Institute supports 12 child neurology training grant programs. In addition, more than a third of the neurology training grant programs include a child neurologist on the training staff.

Approximately 80 child neurologists have completed training within this period and are now themselves teaching investigators providing clinical care to neurologically disordered children in academic institutional settings.

219 Programs Supported

In fiscal year 1970, NINDS supported a total of 219 training programs at a cost of $11.5 million. In addition to the 12 child neurology programs, these included 62 in neurology; 46 in otolaryngology; 23 in neurosurgery; 14 in neuropathology; 13 in neurochemistry, and 10 in neuroradiology.

Also, six in the communicative disorders; five each in audiology, neuroanatomy, and neurophysiology; four each in neuropsychology and speech pathology; three in sensory physiology; two each in cerebrovascular disorders, neurobiology, and neurochemistry and one in neuroradiology.

Studies on the basic level are having direct practical implications for determining safe levels of noise in industry, transportation, and other factors in the human environment.
NHLLI Plans for Centers To Solve High Priority, Specific Area Problems

The National Heart and Lung Institute intends to establish, on a competitive basis, a limited number of specialized research centers devoted to the solution of specific problems identified by the Institute as of high priority, and in one of four disease areas.

These are: arteriosclerosis, thrombosis, pulmonary disease, and hypertension.

Program Aims Cited

The program will focus resources, facilities, and manpower on particular problems and expedite the development and application of new knowledge essential for improved diagnosis, treatment, and prevention of these diseases.

The support mechanism for the centers will be grants-in-aid but it will differ from other research grants both in its goal orientation and in the degree of NHLI participation.

In this sense, the award of a center grant will connote a special relationship between the Institute and the grantees institution.

The deadline for receipt of application is Jan. 1, 1971. Applicants may expect to be advised of action on their proposals about June 1971.

A orientation meeting concerning this Specialized Research Center Program will be held by the Institute on Oct. 15, in Washington, D.C.

Copies of a detailed program announcement, describing the Specialized Centers of Research, and information concerning the orientive Centers of Research, may be obtained by writing to:

Dr. Jerome G. Green, associate director for Extramural Research and Training, National Heart and Lung Institute, Bethesda, Md. 20014.

Science Academy Invites Russian, European Study

The National Academy of Sciences is inviting applications from scientists who wish to visit the Soviet Union or other Eastern European countries.

Researchers may study in Yugoslavia, Romania, Poland, Czechoslovakia, Bulgaria, and Russia in the academic year 1971-72 under the provisions of exchange agreements between the U.S. National Academy of Sciences and counterpart academies in these countries.

Any American scientist who possesses the doctoral degree, or its equivalent, in the natural sciences, or who is now a candidate for the doctorate and will receive it prior to the time he would like to make an exchange visit, is eligible for consideration in the program.

A knowledge of Russian language is essential for scientists wishing to visit the Soviet Union. Research visits may be made to Russia from 3 to 10 months.

For other Eastern European countries, applications will be accepted for periods ranging from one-month lecture tours to long-term research visits up to one year.

Salary Loss Provision

Provision is made to compensate for a scientist’s loss of salary up to $1500 a month during his research visit.

Researchers remaining longer than 5 months will be reimbursed for the transportation of members of their immediate family.

Applications should be received by the National Academy of Sciences before Nov. 23. Candidates will be notified of final selections in February 1971.

For further information and application forms, write to: Office of the Foreign Secretary (USSR/EE), National Academy of Sciences, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

Progress In Regulation of Reproduction Counterbalanced by Areas of Ignorance

Reproduction is an area in which "tremendous progress has been made on the one hand" with "vast areas of ignorance" still remaining on the other, said Dr. M.G. Candau, Director-General of the World Health Organization when delivering the keynote address at a 5-day conference here.

The need to intensify fundamental research is urgent since reproduction receives such a small share of total research expenditure around the world, he told participants in the conference on "The Regulation of Mammalian Reproduction," held Sept. 27-Oct. 1 at NIH.

It was sponsored by the Center for Population Research, National Institute of Child Health and Human Development, and the Fogarty International Center.

The threefold purpose of the conference was: to summarize current knowledge; clarify interrelationships of reproductive processes and their relevance to each other, and to reveal knowledge gaps that require research.

More Than 130 Attend

More than 130 scientists from 24 countries attended the first conference since 1959 to cover all of the major areas of reproductive physiology. They heard leading health officials from HEW and WHO discuss population problems.

Dr. Roger O. Egeberg, HEW Assistant Secretary for Health and Scientific Affairs, told conferees he considered population the most important problem to our country and the world. He called the conference a "landmark in progress in this field."

Deputy Assistant Secretary for Population Affairs, Dr. Louis Helli- man, told the group, "the means to control population satisfactorily are not now at hand."

He added that these means would be developed only if basic research in reproduction is successful.

Major sessions of the conference, each chaired by Dr. Candau, covered the field under discussion, covered six areas vital to regulation of mammalian reproduction.

These areas—the reproductive activities of the pituitary, sperm, ovum, oviducts, corpus luteum, and transport of gametes—are the basis of the reproductive biology program of the Center for Population Research.

MANPOWER (Continued from Page 1)

vision of Health Manpower Educational Services.

The Division of Manpower Intelligence is also new. Dr. Eugene Confrey will hold the post of Acting Director in addition to his regular duties as Associate Bureau Director for Program Planning and Evaluation.

Dr. Thomas G. Bowery remains DDR Director.

The Division of Research Resources—transferred to the health manpower bureau through a reorganization in January 1969—now returns to independent status as one of NIH’s research divisions.

The Division administers and manages grants for general research support and research resources.

Included are grant programs for general clinical research centers, primate research centers, laboratory animal resources, special research resources, and general research support.

Last year, the Division’s four branches gave awards to over 450 institutions throughout the U.S.

Awards went to health professional schools (medicine, dentistry, veterinary medicine, public health, and pharmacy), to hospitals, and to research organizations.

The NIDR Information Office, under the supervision of Tula Brocard, was recently presented a group award for superior work performance. Dr. Seymour J. Keshover, Dental Institute Director, cited the staff for their outstanding work.

L to r are: Edward Bronson, Hilah Thomas, Mrs. Brocard, Dr. Keshover, Sue Hannon, Annie Atlee, Hedy Shpritz, and Sally Wilberding. Marie Norris was not present for the picture.
Dr. Johns Heads NCI's Newly-Created Section Of Drug Metabolism

Dr. David G. Johns, associate professor of Pharmacology and Medicine at Yale University, has been named head of the National Cancer Institutes recently-established Section of Drug Metabolism.

The new section is a unit of NCI's Laboratory of Chemical Pharmacology.

Created to study the metabolic activity of anti-cancer drugs and related compounds, the section is concerned with the application and development of pharmacologic, physiologic, and biochemical techniques.

Seeks Safer Usage

Beginning with the basics of molecular biology, the investigations will evolve into the complexity of whole animal physiology.

The section's studies are part of a continuing effort to establish the safest and most effective way to use cancer chemotherapeutic drugs in man.

Dr. Johns, an experienced clinical investigator and pharmacologist, received his M.D. and Ph.D. degrees from McGill University in Montreal, Canada.

The author of over 40 publications in his field, Dr. Johns is currently the associate U.S. editor for the professional journal, Biochemical Pharmacology.

Booklet Discloses Nature Of Viruses and Effects

Viruses can attack plants, animals, and humans. Yet, in spite of their aggressive nature, they must rely on living cells for reproduction.

How they fight their way into our systems and multiply is described in a new booklet released by the National Institute of Allergy and Infectious Diseases entitled Viruses: On the Border of Life.

Single copies of the publication may be obtained by writing to the NIAID Information Office, Bethesda, Md. 20014.

Brilliant, Warm, Generous, Gentle—Colleagues Eulogize Ernest Cotlove at Memorial Service

A memorial service honoring the late Dr. Ernest Cotlove was held at the Washington Hebrew Congregation on Sept. 27.

Dr. Cotlove was acting chief of the Clinical Pathology Department, Clinical Center, at the time of his death on Sept. 13 (See NIH Record, Sept. 20).

Following are excerpts from eulogies delivered at the service as well as other tributes to Dr. Cotlove:

We who were privileged to be closely associated with Ernest Cotlove during his decade in the National Heart Institute were impressed by his absolutely first-rate mind.

His brilliance and meticulousness showed in his fundamental investigations into the distribution of electrolytes in tissues, in his studies on the heterogeneity of insulin, and in the fact that he was the first to label insulin radioactively.

These same personal qualities also reflect in the method that he co-developed for chloride determination and in his contribution to laboratory medicine. His innovative accomplishments are going to remain in use for a long time.

We are all fortunate that Ernest Cotlove was available at the time when a man of his capacities was needed.

Dr. Robert W. Berliner
Deputy Director for Science, NIH

It is given to only a few to make a lasting impact on society. Ernest Cotlove was among these. Under his expert guidance, the most advanced computer programming application to laboratory automation was developed and remains today the model for all other such systems.

But his greatest and lasting contribution was a remarkable native skill in teaching. By a career thus dedicated, Ernest Cotlove's profound impact on his associates and former residents will influence laboratory medicine long into the future.

For this and for the personal privilege and benefit of knowing and learning from Ernest Cotlove, we are all deeply grateful.

Dr. George Z. Williams, Director
Research Institute of Laboratory Medicine
Pacific Medical Center
(formerly chief, Clinical Pathology Department, CC)

To know Ernest Cotlove was to feel a deep sense of warmth. It was not his concern for patients alone; his calm, open look at the world around him; his focused sense of humor which saw a bright side to things in the midst of all their seriousness, or his concern with social issues which transcended concentration on real but smaller problems.

It was most of all his interest in people as individuals, his wonderful warmth as a human being.

Dr. Herbert L. Abrams
Professor of Radiology
Harvard Medical School

Ernest Cotlove was my ideal as a scientist. His contributions to science and medicine extend far beyond the publications that bear the signature of his authorship, and the techniques that are marked with the stamp of his inventiveness.

His contributions extend also to the influence that he had on other scientists who admire his work, his ideals, and his impeccable standards.

Few of us are capable of leading the same sort of life that he did, but by emulating his, we could significantly enhance our own.

Dr. Solomon A. Berson
Professor of Medicine
Mount Sinai School of Medicine

I speak most knowingly of Ernest Cotlove during the decade from 1950 to 1960 when we both participated in the beginning of the intramural research program of the National Heart Institute.

The qualities that he brought to his colleagues there were both intellectual and emotional—an enormous erudition, an unflagging generosity in spirit, a warm friendliness. However long he is remembered as a scientist, those of us whose lives were touched by his will, as long as we live, carry the memory of this fine and generous and gentle friend.

Dr. Thomas J. Kennedy, Jr.
Associate Director for Program Planning and Evaluation, NIH

(Continued on Page 11)
Blood Bank at CC Reports More Blood Donors Needed

The Clinical Center Blood Bank reports that seven donors have attained a special status. Judith L. Bergmann, NIMH, achieved the 2-gallon mark.

New Gallon Donor members are: Moizelle Johns and James W. Wright, ODA; Wendell E. Pugh and Lois Renfer, NIAID; Donald A. Nutt, DRS, and Lucille O. Moore, NIMH.

More blood is needed. Call the Blood Bank, Ext. 65408, to make an appointment to donate.

DN Pamphlet Designed To Help Older People And Diabetic Patients

Feet First, a colorful, illustrated question-and-answer booklet to help older people and diabetic patients of all ages avoid the consequences of foot infection has been published by the Division of Nursing, Bureau of Health Manpower Education.

This self-instructional course of basic information is presented in large, easy-to-read type.

The pamphlet also serves as a tool for teaching nursing and home health aides the rudiments of foot care for elderly and diabetic patients.

NIMH Art Therapy Unit Holds Seminar to Show Techniques With Families

The Art Therapy Unit of the Adult Psychiatry Branch, National Institute of Mental Health, recently held a seminar on “Art Techniques with Families” at the Clinical Center for 16 members of the American Art Therapy Association.

Hanna T. Kwiatkowska, who headed the seminar, demonstrated—by means of video tape—the use of art therapy with families of disturbed patients.

The technique points out some of the structures and components of the family which contribute to the patient’s mental condition. It allows the patient and members of his family to draw pictures related to their life together.

Classes to discuss the nature of problems and suggestions for their solution often develop. Sessions are held at the Clinical Center as a part of NIMH family therapy research.

Attendees Assume Roles

Those attending viewed the tapes on a special television screen and were asked to assume the role of a family member in a simulated art therapy session.

Dr. James K. Dent, a member of the Adult Psychiatry staff, and Dr. Juliana Day Franz, a former student member, also participated in the seminar.

Mrs. Kwiatkowska is receiving a growing number of requests to conduct seminars on her technique at schools and hospitals in this country and abroad.

Feet First may be purchased in quantity at 60 cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

A single copy may be obtained from the Division of Nursing, 9000 Rockville Pike, Bethesda, Md. 20014.

COLLEAGUES EULOGIZE DR. ERNEST COTLOVE

(Continued from Page 10)

Ernest Cotlove was a committed and involved member of his community. He gave a great deal of his time, energy, and talent to upgrading the quality of education in the state of Maryland.

By helping to enrich and modernize the school curriculum, he made a substantial investment in the future. Thousands of youngsters in our State will benefit because Dr. Cotlove cared and because he worked so hard to invigorate our schools.

Richard Schifter, Vice President Maryland State Board of Education

Dr. Cotlove possessed those twin qualities of the superior scientist—the abilities to ask perceptive, fruitful questions and to conceive and carry out the critical experiment. But beyond this, he had human qualities more rarely found... he had an extraordinary kindness and gentleness and an instinctive generosity of deed as well as word.

His death is tragic not only because his scientific work was still incomplete, but even more for the irreparable loss of a noble human spirit, one to which I personally am much indebted.

Dr. Eugene K. Harris, chief Laboratory of Applied Studies Division of Computer Research and Technology

Dr. Lenfant Will Direct Expanded NHLI Program For Pulmonary Research

Dr. Claude J. M. Lenfant has been appointed associate director for Lung Programs of the National Heart and Lung Institute.

Dr. Lenfant will plan and administer an expanded Institute program of research and training activities directed against emphysema and other lung diseases.

He will also coordinate NHLI efforts with those of other Institutes of NIH.

In addition, he will work with other Federal agencies.

Dr. Lenfant serves on the editorial boards of the “American Journal of Physiology” and the “Journal of Applied Physiology.”

Dr. Lenfant comes to NHLI from the University of Washington School of Medicine, Seattle, where he had served on the faculty since 1968, with the rank of associate professor of Medicine and associate professor of Physiology and Biophysics.

Dr. Lenfant, a native of Paris, completed his undergraduate training at the University of Rennes. He received his M.D. degree from the University of Paris in 1956, earning a thesis prize for his studies on extracorporeal circulation.

He subsequently served as Director of the Surgical Laboratory, Centre Marie Lannelongue, Paris, until 1957 when he came to the United States for postdoctoral studies at the University of Buffalo and Columbia.

After returning to France, he was appointed assistant professor of Physiology at the University of Lille in 1956.

In 1961, Dr. Lenfant returned to this country as staff physician and then associate director of the Institute of Respiratory Physiology, Firland Sanatorium, Seattle, and as a clinical instructor in Medicine, Physiology, and Biophysics at the University of Washington.

Dr. Lenfant is currently a member of the NIH Physiology Study Section.
Registration forms may be obtained from the Drug Research Board, by Adverse Drug Reactions Conferees to Seek Best ways in which data might be more current data on this sub-

Dr. Thomas C. Chalmers, Director of the Clinical Center, will be chairman of a Data Deficient The Drug Research Board reports that detection and scientific evaluation of adverse reactions to drugs are deficient in the United States at present.

As a result, the Board concluded that much current data on this subject are of questionable value. Also, information which might be obtained through current programs does not effectively reach concerned investigators.

The Board recommends closer cooperation of data from the various programs in order to disseminate this information more quickly.

Speakers from the United States and several countries with well-developed systems for reporting adverse drug reactions will outline ways in which data might be more closely coordinated.

Three NIH scientists will take part in the program. Dr. Thomas C. Chalmers, Director of the Clinical Center, will be chairman of a session, Friday morning, Oct. 23, on "Investigation of Specific Problems."