PROGRAMS ■ PRACTICES ■ PEOPLE

Sexually Transmitted Diseases Affect 1 in 20 Americans

■ The Sexually Transmitted Diseases (STD) Study Group of the National Institutes of Health's National Institute of Allergy and Infectious Diseases (NIAID) recently met with international experts to review current problems and determine new research needs and directions.

Sexually transmitted diseases affect at least 1 American in 20 each year, causing problems ranging from local discomfort to chronic disabling disease, infertility, ectopic pregnancy, stillbirth, and neonatal death. Most of these conditions are easily treatable, and all but herpesvirus are curable. Gonorrhea affects an estimated 2 million Americans each year. Three million have nongonococcal urethritis or cervicitis caused by *Chlamydia trachomatis, Ureaplasma urealyticum,* or other unknown pathogens. Another 3 million get trichomoniasis, and about 65,000 get syphilis. Genital herpesvirus (HSV) infections, which already afflict more than 5 million Americans and can last for life, claim as many as 500,000 new victims each year.

Researchers are unanimous in predicting a rising annual STD toll in coming years. Two factors fuel the STD epidemic: (*a*) the rising number of sexually active young adults and adolescents who are becoming sexually active at an earlier age and often have several sexual partners and (*b*) practicing physicians who lack knowledge about the new generation of diseases and how to identify and treat the symptoms or the patients' contacts.

Dr. King K. Holmes, a professor of medicine at the University of Washington and chief of the Division of Infectious Diseases, PHS Hospital, Seattle, who chaired the meeting, reported that the *Chlamydia* diseases are rapidly overtaking gonorrhea as the nation's No. 1 sexually transmitted disease. He stated that both rational guidelines for the diagnosis and management of STDs and rapid, accurate, and inexpensive diagnostic tests are needed, since there is no standard practice or recommendation for the use of diagnostic tests for detection of most of these new sexually transmitted diseases.

The STD group concluded that additional basic research is urgently needed on all sexually transmitted diseases. The study group recommended that an accelerated training program be established to increase the staffing of STD experts in public health and VD clinics, as well as in medical schools and schools of public health. Dr. Richard Krause, director of NIAID, hopes to persuade medical school deans to launch training programs in the new venereology to meet the Institute's projected need for 200 new clinicians each year for the next 10 years.

Development of a vaccine for the treatment of gonorrhea is a major need, as well as additional research on genital herpes, for which there is no satisfactory treatment at this time. The study group also recommended (*a*) additional funding for syphilis research, with continued emphasis on culturing the causative organism; (*b*) the inclusion of group B streptococci in all general studies of STD because of its emergence as a major pathogen among newborns; (*c*) more studies on the basic biology and immunology of *Chlamydia* and the development of improved diagnostic methods to control *Chlamydia* infections, which affect more than 3 million Americans each year; and (*d*) increased research on vaginitis, a disorder that general practitioners rank among the 10 that they most frequently encounter.

Scientists have determined that certain patterns of sexual behavior may help spread hepatitis B and be implicated in hepatitis A as well as in non-A, non-B hepatitis. The group recommended that more detailed epidemiologic and experimental studies be undertaken to determine the exact role of sexual transmission in viral hepatitis. It also recommended that better forms of treatment be developed for special STD problems, such as enteric infections, chancroid, ectoparasites, and genital warts.

Sexual Function Loss Tied to Alcohol Abuse

■ Many men may be making themselves impotent, sterile, and more feminized by chronic alcohol abuse, according to a recent report by the Division of Research Resources (DRR), National Institutes of Health.

To identify the amount of alcohol consumed that will cause sexual function loss is difficult, but Dr. David Van Thiel, associate professor of medicine at the School of Medicine, University of Pittsburgh, is certain that these problems are not restricted to skid row or end-stage alcoholics. The early signs of alcoholic damage to the reproductive system can appear after a single binge.

Studies conducted at DRR's General Clinical Research Center of the Presbyterian-University Hospital in Pittsburgh show that drinking enough alcohol to cause a hangover can decrease testosterone levels in normal, healthy men who may be occasional drinkers. Van Thiel finds symptoms of alcohol abuse in many young men complaining of infertility.

About 9 million adult Americans are alcoholics, and most appear to function normally. However, sexual dysfunction is a major problem and can occur at a comparatively young age. Drinking an average of a pint or more of hard liquor per day for 5 to 8 years may cause loss of sexual function entirely, suggests Van Thiel. Seventy to 80 percent of male alcoholics suffer decreased libido, impotence, and sterility. These effects of chronic drinking may persist between intervals of drinking and possibly after the alcoholic completely dries out.

Although many men may regain some sexual function if they stop consuming liquor, for others the damage may be irreversible. The clinical researchers in Pittsburgh believe they have determined, in part, the process by which alcohol upsets normal function. Previously, scientists thought that sexual dysfunction resulted indirectly from alcohol-induced liver damage, but according to Van Thiel's 6-year study, alcohol directly damages the gonads and parts of the brain. Specifically, it seems to damage areas of the hypothalamus and pituitary that control the function of the testes. The hypothalamus produces a series of hormones, or peptides, that stimulate the pituitary which, in turn, releases two hormones (LH—luteinizing hormone—and FSH—follicle-stimulating hormone).

In males, these two hormones stimulate the testes to produce testosterone and sperm. Any disruption results in varying degrees of sexual or reproductive function loss. A low sperm count makes men sterile, and low testosterone levels may make them impotent and decrease their sex drive. Chronic alcohol abuse also makes men appear more feminine. Alcoholic men may exhibit changes in secondary sex characteristics, such as redistribution of hair and fat to patterns more like those of females.

The Pittsburgh investigators have

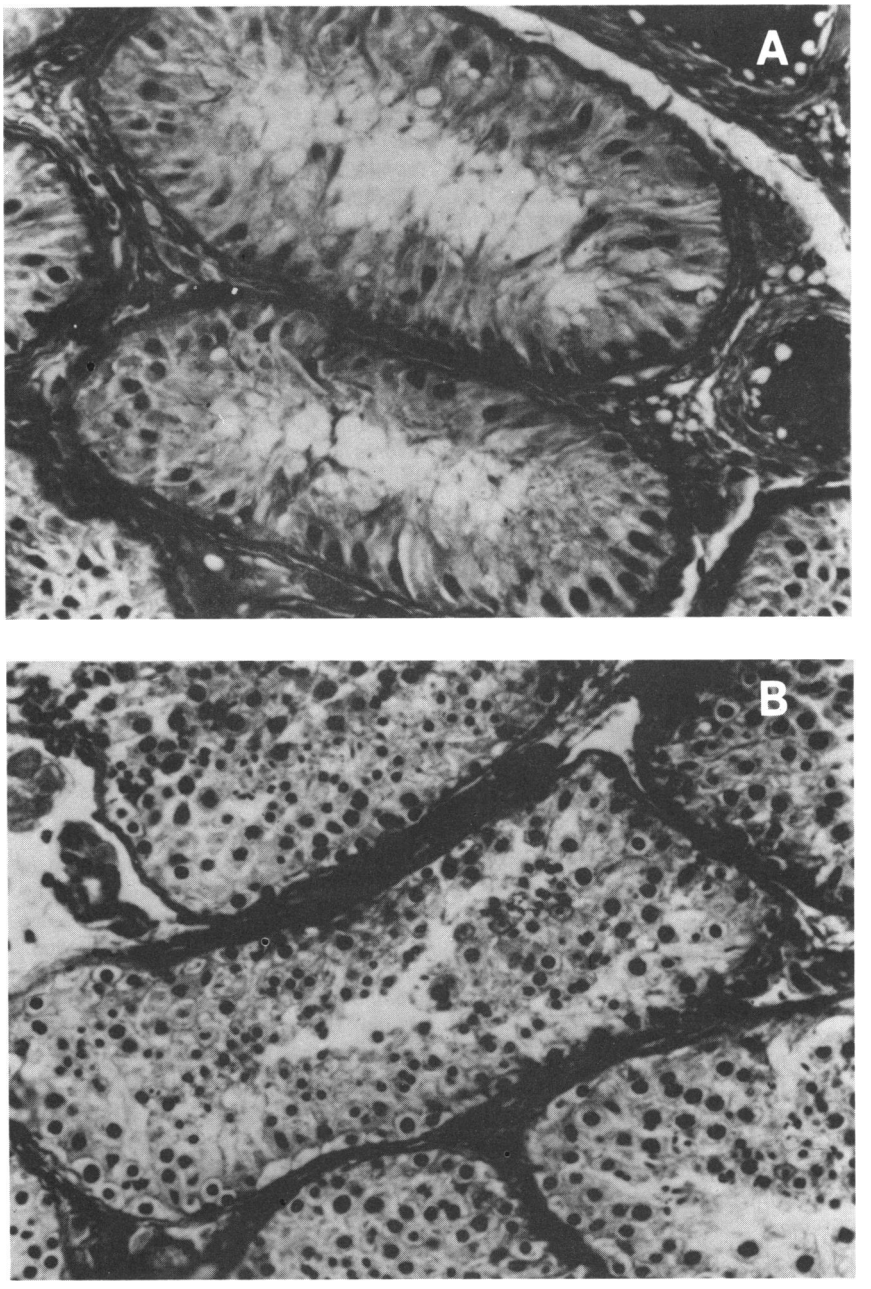


Figure A shows severe germ cell damage in testes affected by chronic alcohol abuse. The affected cells can be easily distinguished from the normal testes cells shown in figure B

researched the biochemical mechanism by which this occurs: a combination of reduced testosterone levels and increased estrogen levels. Van Thiel says that alcoholic men have increased estrogen levels in peripheral cells—for instance, in their breasts. One of the most significant aspects of the study, he believes, is that infertility caused by alcohol abuse can now be diagnosed early. No elaborate tests are necessary.

If infertility due to alcohol can be diagnosed early and the man stops drinking, sexual functions may improve. Regardless of the extent of the damage, the best treatment for the infertility, according to Van Thiel, is to stop drinking. There is no other current treatment of proved value. He believes that the effects of alcohol on sexuality may be additional persuasive evidence for patient education to prevent alcohol abuse.

The studies in Pittsburgh were supported by the National Institute on Alcohol Abuse and Alcoholism, the Distilled Spirits Council of the United States, Inc., and the General Clinical Research Centers Program of DRR.

Nigeria and NIH Join in Neurological Study

■ Do West Africans have as many strokes as American blacks? Is hypertension as great a risk factor for stroke in West Africa as it is in the United States? Is Parkinson's disease, relatively uncommon among American blacks, a significant health problem in West Africa?

To help answer these and similar questions, scientists from the National Institutes of Health, National Institute of Neurological and Communicative Disorders and Stroke (NINCDS), are collaborating with West African colleagues to establish protocols for the first epidemiologic studies of neurological disorders in Nigeria. The data will help the Nigerian government set priorities for prevention and treatment programs.

Cerebrovascular disorders, such as stroke, will be studied as well as extrapyramidal disorders, such as Parkinson's disease. Data also will be collected and analyzed on peripheral neuropathies and convulsive disorders. This pilot prcject, whose progress is being followed closely by many developing countries and the World Health Organization, is intended to serve as a model for epidemiologic studies elsewhere.

Benjamin Osuntokun, MD, professor of neurology at the University of Ibaden, Nigeria, is working on the pilot project with Bruce Schoenberg, MD, chief of the Neuroepidemiology Section, NINCDS. Within the next year, representatives from other countries interested in using the protocols will participate in a special 2-week course on neuroepidemiology and will also observe actual survey procedures in Nigeria.

In Nigeria, about 60 percent of the people who need care see native herb doctors first; only when they realize they are not improving, do they go to modern medical practitioners. Thus, by the time the Nigerian professor and his colleagues see patients, it is often too late to learn much about prior events in an illness. In addition, since the cause of death for many Nigerians is not recorded, the process of compiling accurate data is further complicated.

Lay health workers will have key roles in gathering data for this new study. They will interview people, collect answers on a questionnaire, and conduct a simple examination of patients. Persons suspected of having neurological problems will be referred to a neurologist for diagnosis and treatment.

The Nigerian-NINCDS study will also help to determine the frequency of death and debility due to cassava poisoning in the Nigerian population. Any of several plants of the genus *manihot,* cassava is eaten as tapioca in the United States. It is a major source of carbohydrate for Nigerians as well as nearly 300 million people around the world. If improperly prepared, however, the plant has a high cyanide content, and whole families have died from a single meal of improperly prepared cassava. Chronic degenerative neuropathies leading to blindness, deafness, and crippling are also common among those whose diets are high in cassava and low in protein.

International Year for Disabled Persons—1981

■ Increasing the participation in the life of our society of the 35 million Americans with physical and mental disabilities is a Public Health Service goal. Also, the Public Health Service is committed to raising the level of participation in society of the disabled throughout the world by sharing with other countries informational and research programs relating to the disabled.

In line with its active support of international efforts to meet the needs of hundreds of millions of disabled persons, the United States co-sponsored a United Nations resolution proclaiming 1981 as the International Year for Disabled Persons (IYDP), an action that President Carter has enthusiastically endorsed.

The International Year for Disabled Persons—1981 was conceived in 1976 when a delegation from Libya introduced a resolution in the United Nations General Assembly proclaiming the year and establishing as its theme the slogan "Full Participation." The following year the General Assembly approved a draft plan and established the United Nations Advisory Committee for IYDP to consult with member States and specialized agencies of the United Nations about the draft. Dr. Frank Bowe, executive director of the American Coalition of Citizens with Disabilities, was appointed in 1979 as U.S. representative to this UN advisory committee. This committee submitted a report to the Secretary General challenging all member States to establish goals and programs aimed at improving the lives of its citizens with disabilities.

U.S. PLAN FOR IYDP

A Federal Interagency Committee, chaired by Secretary of Health and Human Services Patricia Roberts Harris, Secretary of Education Shirley M. Hufstedler, and Secretary of State Edmund S. Muskie, is responsible for formulating the U.S. plan for IYDP. The specific objectives adopted by the Federal Interagency Committee for the U.S. plan are:

• To further the formulation of comprehensive Federal national policy related to the mentally and physically disabled

• To promote Federal research, demonstrations, policies, and planning related to the disabled
• To create an awareness throughout the Federal Government of the needs of people with disabilities and seek to maintain such awareness in all activities
• To further programs designed to educate and inform the public and private sectors about disabled people's rights
• To foster the implementation of human rights

The Public Health Service is strongly committed to the entire initiative for IYDP. Representing the Service on the Federal Interagency Committee are Dr. Faye G. Abdellah, Assistant Surgeon General and Chief Nurse Officer of the Public Health Service, and Harold O'Flaherty, Chief, Special Studies and Evaluation, Bureau of Community Health Services, Health Services Administration.

PHS PLAN FOR IYDP

The Public Health Service plan will be part of the overall national IYDP effort. The Public Health Service Intra-Agency Committee, co-chaired by Abdellah and O'Flaherty, has established the following objectives for the plan:

• To establish or expand primary and secondary prevention programs in order to minimize disability to the maximum extent possible
• To inform and sensitize health departments, planning bodies, and profit and nonprofit community-based corporations regarding the health needs of the handicapped generally and the goals of the IYDP specifically
• To design new, or modify existing, health service delivery programs in such a way that they meet the health needs of the disabled
• To design new, or modify existing, rehabilitative programs sponsored by the Public Health Service in such a way that they meet the specific health needs of the disabled
• To document or stimulate, or both, basic and clinical research programs that deal with handicapping conditions or with health services for the handicapped.

Members of the Public Health Service Intra-Agency Committee include (besides Abdellah and O'Flaherty) Dr. Clay E. Simpson, Jr., Director, Office of Health Resources Opportunities, Health Resources Administration; Dr. Victor Heyman, Director, Office of Policy Analysis, Health Services Administration; Larry Sparks, Acting Associate Director for Washington Affairs, Center for Disease Control; Dr. Murray Goldstein, Deputy Director, National Institute of Neurological and Communicative Disorders and Stroke; Dr. Stuart Nightingale, Deputy Associate Commissioner for Health Affairs (Medicine), Food and Drug Administration; Dr. Marta Sotomayor, Acting Director, Office of Public Liaison, Alcohol, Drug Abuse, and Mental Health Administration; Richard Cummings, Director, Civil Rights Staff, Office of Management, Office of Assistant Secretary for Health; Joseph Faha, Office of Equal Employment Opportunity, Office of Assistant Secretary for Health; and Rose Belmont, Director, Division of Multilateral Programs, Office of International Health, Office of Assistant Secretary for Health.

Accident Prevention and Injury Control Projects Directed at Children

■ Preventing children's accidents and injuries is the aim of 3-year demonstration projects funded in 1979 with Title V Maternal and Child Health funds by the Bureau of Community Services, Health Services Administration, Public Health Service. Preventive and emergency child health care systems to decrease preventable morbidity and mortality resulting from such accidents and injuries will be developed in these projects. The projects are expected to provide information that can be used as a basis for initiating injury control activities in other States besides those selected for the demonstration projects.

The projects require a coordinated effort by Title V Maternal and Child Health and Crippled Children's Services programs, Emergency Medical Services, and Poison Information Control Centers at Federal, regional, and State levels. Besides the State Title V agencies, a broad spectrum of State and local public agencies, neighborhood and voluntary organizations, and professional organizations such as pediatric and medical societies, as well as the private sector, are contributing to this child health effort.

The three projects, being carried out under the auspices of the State health departments in California, Massachusetts, and Virginia, will improve the collection and analysis of data on the demographic, epidemiologic, and operational data on accidents involving children. These data will be used to identify the children at risk and to devise approaches to accident prevention targeted at specific age groups. Each project is funded in an amount not to exceed $225,000 per year.

Following are the aims of each project and its accomplishments to date.

CALIFORNIA

California State Health Department. In the California project, which represents a joint effort of the State's Crippled Children's Services and the San Diego Regional Poison Center at the University of California-San Diego Medical Center, the data and operational structure of established Emergency Medical Services and poison control systems are used.

Significant information has already been obtained from the San Diego-Imperial region's burn injury and head injury studies. Also, a system for collecting data on all poisonings of children in the region's emergency departments and facilities for 1 year has been developed, tested, and revised. Pertinent information from approximately 1,700 patients' charts has been abstracted. A household survey of 1,200 families in the region with children 0–14 years will provide additional data on the demography and the socioeconomic and psychosocial aspects of accidents and on the health care, knowledge, attitudes, and beliefs of families with children age 14 or under.

On the basis of the data collected, a preliminary program of intervention directed at poisonings, scald burns, and central nervous system injuries is being set up. Two matching communities (including Hispanic and rural populations) are to serve as test and control sites. A wide range of medical, public health, educational, social, and other resources for use in the prevention program have been identified, such as park and recreation personnel,

preschool and school teachers, and voluntary health organizations, as well as vendors of hazardous substances. Since California has no statewide system of regional poison centers, a plan for such a system is being formulated. This system, which is to be in place by the third year of the project, will serve as a mechanism for the integration of model programs throughout the State.

MASSACHUSETTS

Massachusetts State Department of Public Health. In the Massachusetts project, the intervention strategies being tested relate to poisonings, burns, falls, and motor vehicle accidents involving children from birth to 19 years of age. Three intervention sites—an urban area, a new suburban area, and a rural area—and three matched control sites have been selected. At each, the local board of health will lead in coordinating the work with that of the school and medical community (both hospitals and practicing physicians). Other agencies and groups such as fire departments, libraries, news agencies, and the Massachusetts Hospital Association will also be involved.

A statewide surveillance system will provide a data base for understanding the epidemiology of childhood injuries. This system will require the collection and analysis of data on mortality, inpatient hospital morbidity, ambulatory patients (to be collected from emergency wards and local physicians), households (to be collected by telephone surveys), and similar data from other sources.

Agencies within and outside the State government that serve as a policy group and as a working group for the project include the New England Regional Burn Program, the Framingham Union Pediatric Accident Prevention Project, and the Massachusetts Commission on Children and Youth.

Five intervention prototypes are being developed: the Massachusetts Poison Control System, Project Burn Prevention, Pediatric Accident Prevention Project, Housing Code Enforcement Project, and Child Auto Passenger Safety Projects (an ongoing program funded by the Department of Transportation). These prototypes will seek to accomplish the following:

- Expand public and professional knowledge of poisonings
- Work with school systems and provide community outreach to parents and caretakers of young children about burn prevention.
- Increase pediatric counseling related to accident prevention
- See that housing regulations and inspections are targeted on the major concerns in childhood injuries, for example, hot-water temperatures and stairs.

Massachusetts statutes and regulations with a potential impact on child safety will also be reexamined, and an attempt will be made to revise legislation as necessary. Efforts will be made to integrate prevention strategies into ongoing service programs.

VIRGINIA

Virginia State Department of Health. Under the project in Virginia, three regional childhood emergency control centers will be set up in Charlottesville, Fredericksburg, and Richmond. The existing statewide network of poison centers will be linked by telecopier with participating hospitals to provide ready access to accident treatment information and to permit direct linkage among professionals. Both the University of Virginia and the Medical College of Virginia are participating in the project.

A form for collecting data on the contacts patients have with emergency departments and inpatient hospitals as a result of the targeted injuries (poisonings, burns, head trauma from falls, submersions, bicycle accidents) has been prepared, tested, and used to analyze 1,600 patient records from 6 hospitals. Also reviewed were data from police department reports, the Virginia Burn Care Demonstration Project, indepth interviews with the families of burn victims, and the Poison Center's registration system, as well as vital statistics data. Based on these analyses, the subpopulations at whom selected interventions will be targeted were chosen.

Following are some of the strategies selected for testing at three study sites and three control sites representing various sized communities and various population groups in the State:

- Targeted education on scald contact and flame burns, poisonings, and so forth, which is to be carried out through the media, the school, the community, and industry
- Environmental controls such as child-resistant packaging of prescription drugs
- Parental education in respect to children's susceptibility to accidents and injury
- Early and appropriate treatment of injuries, including telephone triage and home treatment
- Improvement of swimming pool management
- Establishment of a peer court system for young bicycle riders who violate traffic laws
- Proficiency course for bicycle riders.

New Vaccine Against Rabies Safer and More Effective

■ The Food and Drug Administration has announced its approval of a safer and more effective vaccine against human rabies. Thousands of people receive rabies vaccine each year after being bitten by a dog or other animal.

The newly licensed vaccine, produced from viruses grown in cultures of human cells, provides immunity after just five injections in nearly all people bitten by a rabid animal. The presently available duck egg vaccine is less efficient in producing immunity and requires 23 injections. In addition, adverse reactions associated with the new vaccine are less frequent than with the duck egg vaccine and other older types of vaccine still used in some countries.

The new vaccine is administered in the arm and, like existing vaccines, is given along with rabies-immune globulin, a blood plasma that provides temporary protection for people bitten by a rabid animal. Studies conducted in the late 1970s in Germany and Iran confirmed the safety and effectiveness of the vaccine. Of 76 people bitten by rabid animals who were given the vaccine, none developed rabies.

The new vaccine also can be given to people who are at high risk of being bitten by rabid animals or of being exposed to rabies virus, for example, veterinarians, animal handlers, laboratory workers, and people visiting certain foreign countries. For this type of pre-exposure immunization, only three inoculations are needed. If the person is exposed later, two more innoculations would be needed.

The vaccine is made by the Institut Merieux in Lyon, France, by a process

developed by scientists at the Wistar Institute in Philadelphia and is being distributed in the United States by the Merieux Institute, Miami, Fla. The vaccine is being delivered initially to government facilities under a distribution system set up by the Merieux Institute in cooperation with State health departments. These departments will be able to provide information about the vaccine's distribution.

Detailed recommendations of the Public Health Service on the use of rabies vaccines and rabies prevention were published in the Center for Disease Control's Morbidity and Mortality Weekly Report, vol. 20, June 13, 1980.

Public Warned About Operation to Correct Myopia

■ The safety and effectiveness of radial keratotomy, a surgical procedure that has received nationwide publicity as a cure for nearsightedness have been questioned by the Federal Government's top vision research advisory group, the National Advisory Eye Council. The council is the principal advisory body to the Department of Health and Human Services' National Eye Institute.

In a resolution adopted May 28, 1980, the council expressed grave concern that the procedure is being adopted even though recent reports from foreign countries and the United States do not provide an adequate basis on which to assure the general public of its safety and efficacy. For this reason, the council called for research on radial keratotomy and urged restraint on the part of patients and eye surgeons until the results of such research can be reviewed and evaluated by the ophthalmological community.

Myopia affects about one-third of the U.S. adult population. In most cases, it can be corrected easily, safely, and effectively by the use of eyeglasses or contact lenses. Surgical correction of myopia by radial keratotomy involves cutting into the cornea. The series of incisions extend from the outer edge of the cornea toward, but not into, the central portion. The incisions, which look like spokes of a wheel, are intended to be deep enough to weaken the tissue so that internal eye pressure causes the edge of the cornea to bulge slightly. This causes flattening of the central portion of the cornea, thereby improving focusing ability in the nearsighted. The incisions result in permanent corneal scars.

A variety of surgical techniques to correct nearsightedness and other refractive errors such as farsightedness and astigmatism have been developed over the past 20 years. Radial keratotomy, in particular, received widespread publicity in 1979 because of reports to the American press by a Soviet ophthalmologist and release of information from American surgeons who had learned the procedure.

The National Advisory Eye Council members consider radial keratotomy experimental because they know of no studies in which the procedure has been subjected to adequate scientific evaluation in animals and humans. Research is needed, they said, to determine how effectively radial keratotomy corrects myopia and to evaluate the safety of the procedure and both its short-term and long-term effects. The council therefore urged the National Eye Institute to support research on radial keratotomy in animals, and also in human beings, but only if patients are enrolled in scientifically designed clinical trials conducted by qualified investigators.

Symposium in New York City on Adolescent Nutrition

■ Researchers will meet in New York City for a 2-day Symposium on Adolescent Nutrition, sponsored by the Institute of Human Nutrition of Columbia University, College of Physicians & Surgeons, November 20–21, 1980. Dr. Myron Winick, director of the Institute of Human Nutrition, will serve as chairman of the meeting.

The purpose of the symposium is to bring together experts in adolescence from a variety of disciplines and to provide the latest information that is available about nutrition during this complex period of life.

For further information, write Director, Institute of Human Nutrition, Columbia University, 701 West 168th St., New York, N.Y. 10032.

More Americans are Aware of Blood Pressure Danger

■ More and more Americans are aware of the deadly complications of high blood pressure, understand that high blood pressure may lead to strokes and heart attacks, and know that it can be controlled but not cured. Those are the principal conclusions of a national survey conducted in 1979 for the National Heart, Lung, and Blood Institute of the National Institutes of Health by Urban Behavioral Research Associates in conjunction with Louis Harris and Associates.

The 1979 survey was conducted among 5,043 persons throughout the country to determine Americans' knowledge and attitudes about high blood pressure. A similar survey sponsored by the Institute had been initiated in 1973 shortly after the National High Blood Pressure Education Program began. A comparison of the two surveys shows that during the 6-year span Americans gained understanding and knowledge in every major category related to high blood pressure. Some of the greatest advances in understanding occurred among blacks.

High blood pressure is a major cause of the 650,000 heart attack deaths and the 175,000 stroke deaths that occur each year in the United States, commented Institute Director Dr. Robert I. Levy. Since 1972, he noted, the stroke death rate has decreased by 37 percent. "The efforts of many people in both the public and private sector who make up the National High Blood Pressure Education Program are largely responsible for these dramatic gains," he said. "At the same time, the national survey underscores our principal challenge at this time to get people to stay on treatment."

Almost three-quarters of the total population surveyed in 1979 expressed the belief that high blood pressure is a "very serious disease"—a 16 percent increase over the 1973 figure. Thus, in the public's perception of the most serious diseases, high blood pressure moved up to rank fourth after cancer, stroke, and heart conditions. Among blacks, 82 percent understood its seriousness, as compared with the national average of 73 percent.

Of those questioned in 1979, 83 percent reported having had their

blood pressure checked within the past 12 months, up from 77 percent in 1973. In the black population, the proportion was 86 percent, up from 83 percent.

In 1979, almost all persons (93 percent) recognized that there was effective treatment for high blood pressure, and almost as many (84 percent) knew that medication effectively lowers blood pressure.

However, although it is generally understood that hypertensives must stay on medication throughout their lives, the number of hypertensives who stopped taking medication decreased only slightly in the 6 years between the surveys, from 23 percent to 20 percent. In 1973, 61 percent of those who stopped medication attributed their actions to a doctor's instruction; by 1979, this percentage had dropped to 41 percent. Both in 1973 and 1979, less than 10 percent of the dropouts questioned blamed side effects for their action.

A high percentage of hypertensives continue to believe they can detect their own symptoms. Of those who stopped medication in 1979, 69 percent indicated that they knew their blood pressure was high. It was encouraging, however, that in 1979, 84 percent of the total population surveyed said it was likely that a person could have high blood pressure without obvious symptoms.

Physicians continued in 1979 to be the leading source of health information for the public (83 percent), followed by radio and television public service messages (63 percent), magazine articles (58 percent), television news (57 percent), and newspaper columns (53 percent). Communication between professionals and patients about the meaning of blood pressure measurements improved. In 1979, three-quarters of those questioned said that the physician or assistant took time to explain the significance of blood pressure measurements, a 23 percent gain since 1973.

In 1979, physicians performed 57 percent of the blood pressure checks —a decrease of 22 percent—and nurses performed 38 percent—an increase of 46 percent. The small number of remaining checks in 1979 (5 percent) were done by pharmacists, family members, coin-operated machines, the people themselves, and others.

High blood pressure was not considered a significant reason for lost hours from work in 1979. During the 6 years between the studies, the percentage of people with high blood pressure who said they had never lost time because of high blood pressure increased from 77 to 83 percent. A much higher percentage of blacks compared with the general population reported missing work because of high blood pressure, but this proportion decreased significantly over the 6-year period, from 45 percent in 1973 to 21 percent in 1979.

Manual on Patient Selection for X-Ray Examinations

■ The Bureau of Radiological Health has published a manual that presents information needed by physicians to make informed decisions in selecting patients for diagnostic X-ray procedures.

The 53-page document is the first part of an educational system called the Radiological Learning Laboratory that was developed by the University of California at San Francisco under a Bureau contract. The three parts of the system correspond to the three distinct parts of a radiological examination: selection of the patient, conduct of the examination, and interpretation of results. The second part of the system, called the Correlated Lecture-Laboratory Series in Diagnostic Radiological Physics, is intended for equipment operators and supervisors. The third part, the Learning File, forms the interpretation component of the system. It consists of some 5,000 full-size radiographic films assembled with over 1,400 case histories and diagnoses in six diagnostic categories.

The manual provides an overview of all aspects of radiological diagnosis and teaches the basic skills required for each of the components of a radiographic examination. It is divided into the following sections:

• *X-Ray Utilization.* Describes the patterns and trends of radiological practices in the United States. The data presented place the individual physicians' use of X radiation into a national context and provide a framework for a better appreciation of the biological implications of radiation exposure to the population as a whole.

• *Selection Criteria for Diagnostic X-Ray Examinations.* Discusses difficulties of assessing efficacy of diagnostic procedures. Examples are presented to heighten the physician's awareness of the importance of considering the expected yield of an examination relative to the patient's symptoms when making a selection decision.

• *Fundamental Radiological Concepts.* Explains the minimum radiological physics concepts necessary for the physician's basic understanding and use of diagnostic X rays.

• *Dose Levels in Diagnostic X-Ray Examinations.* Presents data on the doses patients are receiving today and what the doses would be if certain state-of-the-art techniques were used.

• *Biological Effects and Significance of X-Ray Exposure.* Reviews basic radiation biology and its significance for the use of X radiation in medical diagnosis.

• *Radiation Protection in Diagnostic X-Ray Examinations.* Explains the various dose reduction methods available to physicians.

• *Relationship Between Attending Physicians and Radiologist.* Discusses the interrelationship between these two participants in the radiological sequence and the importance of their rapport for patient welfare and dose reduction.

The materials presented in the manual are intended for the specific educational needs of medical students and physicians, but they can be modified to suit the particular requirements of any group involved with medical radiation exposure. It is recommended that a course presenting this type of information be included in the core curriculum of medical students. Such a course also would be a valuable adjunct to postgraduate-physician refresher training programs.

The Selection of Patients for X-Ray Examinations. HHS Publication No. (FDA) 80–8104, January 1980. Single free copies (limited supply) available upon request from the Bureau of Radiological Health, (HFX–28), 5600 Fishers Lane, Rockville, Md. 20857; include mailing label to help expedite the response. Copies also available from U.S. Government Printing Office, Washington, D.C. (stock No. 017–012–00285–4, $3.50 per copy).

Interagency Team at NIMH and NIDA Studies How Acupuncture Works

■ The first direct evidence that acupuncture triggers the release of endorphins in the brain has been produced by an interagency scientific team working at the National Institute of Mental Health's (NIMH) intramural research laboratories in Bethesda, Md.

Following acupuncture, rats showed significant depletions of the endogenous opiates in three key brain areas and a concommitant increase of endorphin-like substances in cerebrospinal fluid, reported Dr. Agu Pert, NIMH, and Dr. Lorenz Ng, National Institute on Drug Abuse (NIDA), two of the six scientists conducting the project.

Other members of the research team were Dr. Raymond Dionne of the National Institute of Dental Research, Dr. Evgeni Bragin, a visiting scientist from the Central Research Institute of Reflexotherapeutics, Moscow, USSR, and Dr. Terry Moody and Dr. Candace Pert of the NIMH Intramural Research Program.

Brain Opiates Activated

The study supports earlier suggestive evidence that activation of the brain's own opiates largely accounts for acupuncture's pain-relieving effects; also, for the first time, according to researchers, it pinpoints specific brain sites and compounds. Moreover, the new findings apparently confirm that acupuncture acts directly on the brain endorphins rather than through the pituitary endorphins and blood, as some had hypothesized; no increase of endorphins was detected in plasma.

Pert and Ng further reported that other nondrug, noninvasive techniques similarly tap into the brain's powerful pain-suppression mechanism. Rats subjected to sustained painful electric shock showed exactly the same chemical changes in the three brain regions as were produced by acupuncture. Also, cervical stimulation of female rats produced profound analgesia by, among other things, activating endorphins in one of the key brain centers. The study suggests that this center—the periaqueductal gray matter—plays a central role in the pain-suppression system, Pert and Ng pointed out.

The team used an experimental model of acupuncture devised by Ng — auricular electro-acupuncture — to produce analgesia in the animals used in the research. The researchers passed a mild electrical current through the experimental animals for 20 minutes via needles clipped to their ears. After analgesia was produced in the rats under study, they were sacrificed, and the three brain areas known to be associated with endorphin activity or opiate analgesia were assayed by radioreceptor and radioimmunological techniques devised by Pert. The scientists found significant depletion of endorphins in the basomedial hypothalamus and the medial thalamus (as compared with the controls). These substances were apparently released into the cerebrospinal fluid, where higher than normal levels of an enkephalin-like compound were detected by the assays.

Earlier studies by other investigators had shown that the opiate-antagonist drug naloxone blocks acupuncture's pain-relieving effects, a result suggesting that endogenous opiates and opiate receptors mediate the process. Also in an earlier study, Swedish investigators had found evidence for an increase in an opiate-like substance in the cerebrospinal fluid of patients after acupuncture treatment. Other indirect evidence came from studies by Chinese investigators in Hong Kong, which showed that acupuncture is capable of blocking opiate withdrawal symptoms in man.

Despite the dramatic new findings, "endorphin activity alone may not be sufficient to account for all acupuncture analgesia," Pert remarked. "Even though the analgesia has been shown to be reversed by naloxone, it's not totally reversed; only partially. This suggests that other neurohumors are probably also involved in the acupuncture effects.

"We've been able to demonstrate the analgesic properties of a number of different peptides," Pert reported. "For instance, bombesin has been found to be a very potent analgesic substance when injected directly into brain sites that modulate pain transmission," he said in reference to collaborative NIMH-NIDA research by Moody.

Pain Control Minus Drugs

"This is a start to examining alternate ways to control pain, other than drugs," Pert said. "It's possible that by looking at the underlying mechanisms behind acupuncture and stress analgesia—especially when we begin to examine the other systems—we may be able to come up with compounds that have analgesic properties which may not be addictive," speculated the NIMH psychologist. He noted that bombesin does not work through opiate receptors.

Pert hinted that the recent findings on cervical stimulation in female rats may further illuminate the role of the periaqueductal gray matter, which had previously been implicated in pain modulation and the analgesic actions of opiates. He characterized the analgesic effects of such manipulation as "tremendously potent," rendering rats "almost completely unresponsive to pain." "This has been shown behaviorally and electrophysiologically," he said. "We're not exactly sure what this means, but the common area that seems to be affected by all three manipulations (acupuncture, stress, and cervical stimulation) is the periaqueductal gray matter," he explained. "The endorphin content goes down in all three manipulations."

Stimulation, Not Needle

Ng is a neurologist and neuropsychopharmacologist who specializes in the treatment of pain. He uses acupuncture clinically. He said that an important implication of the new findings from a clinical standpoint is that "noninvasive, peripheral techniques can tap into very powerful mechanisms within the central nervous system." He suggested that acupuncture, a form of "percutaneous" nerve stimulation, may not differ in its mechanisms of action from transcutaneous nerve stimulation, a technique of treating pain by applying a current across the skin, which is now gaining wide acceptance in Western medicine.

"I feel it is not the needle, but the stimulation that is critical," Ng said. "By piercing the skin, acupuncture has two advantages," continued Ng. "One, it reduces the amount of current necessary to stimulate the nerve fibers,

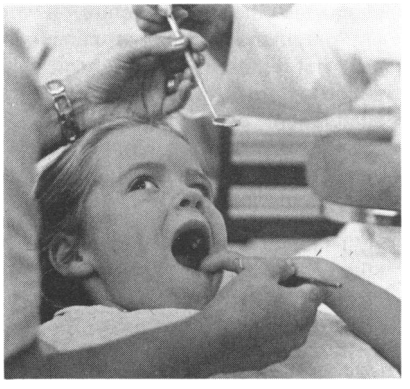
since the skin has high electrical resistance. Secondly, you can deliver the current with more depth and precision. You may in fact be stimulating other nerves besides those in the skin, like muscle or tendon nerves, which may be important." The NIDA physician-scientist speculated that analgesia produced by hypnosis might also trigger similar pain-suppression mechanisms within the brain.

Ng further commented: "When I got involved in this, I was rather skeptical about acupuncture and these other manipulations. But the fact is that clinically they are effective, and therefore they have to have a physiological basis. You can say it's just a placebo effect. But even a placebo has to have an underlying physiological mechanism. Further research in these areas can help us understand better the underlying restorative power of the human body and how we as physicians can help facilitate the body's own healing powers."

"Healthy Children" Offers Guidelines for Oral Health

■ The Public Health Service's guidelines on the most acceptable dental public health practices for improving children's oral health are presented in a recent publication of the Department of Health and Human Services (DHHS). The publication is expected to be useful to persons engaged in the planning, establishment, or operation of public programs designed to meet the oral health needs of children.

Prepared under the direction of Dr. John C. Greene, Deputy Surgeon General and Chief Dental Officer of the Public Health Service, the 28-page booklet is based on the report of a Special Public Health Service Committee appointed by Greene, which was



comprised of representatives of DHHS agencies with responsibilities for children's oral health. A special ad hoc committee representing broad areas of the dental community reviewed and commented on a late draft of the report.

The committee's principal recommendations relate to (*a*) adjustment of the fluoride content of water supplies, (*b*) the uses of supervised self-applied fluorides, (*c*) limiting the availability of highly cariogenic foods and snacks, (*d*) professional dental treatment services, and (*e*) oral health education.

Healthy Children—Children's Oral Health. DHHS Publication No. (PHS) 80–50136, May 1980. Copies available free from Office of the Chief Dental Officer, PHS, Rm. 17–19, 5600 Fishers Lane, Rockville, Md. 20857.

VA Seeks Private Psychiatrists, Psychologists, Social Workers for Part-Time Volunteer Work

■ The Veterans Administration is setting up a roster of private psychiatrists, psychologists, and social workers interested in part-time, volunteer work in the nationwide network of Vietnam era readjustment counseling centers recently established in population centers across the country.

The professionals on the register would be called to assist the staffs of the small "vet centers" already set up in nearly 100 localities to aid veterans who have experienced readjustment problems. Donald Crawford, PhD, director of the unique VA outreach program, said the volunteers are needed to augment personnel of these centers who, in some instances, have been swamped with veterans' requests for assistance. He emphasized that private psychologists, psychiatrists, and social workers interested in participating in the program should be veterans of the Vietnam era, or they should have demonstrated empathy toward this veteran group and the long-term adjustment problems of a number of its members.

Persons wishing additional information on the vet center volunteer consultant program should contact Arthur Blank, Jr., MD, Operation Outreach, Psychiatry Service (116A), VA Medical Center, West Haven, Conn. 06516 or call (203) 865-3688.

Focus of New Quarterly MÖBIUS is Continuing Education in the Health Sciences

■ A new quarterly journal, MÖBIUS, is designed to meet the needs of continuing education professionals in the health sciences. MÖBIUS takes its name from the Mobius strip, a curious topological phenomenon characterized by a continuous surface that resembles an infinity sign (∞). The name symbolizes the journal's efforts to promote lifelong, continuous education for members of the health science professions.

The primary purpose of MÖBIUS is to be of immediate practical use in the development, conduct, and evaluation of continuing education programs for physicians, nurses, dentists, and pharmacists. The editors hope to elicit thoughtful essays on a wide range of subjects that affect the lifelong commitment, competency, and performance of the health sciences practitioner. Potential contributions will be reviewed by at least two experts in the field; their comments will be excerpted and forwarded to authors (without reviewer's name). This procedure will ensure high standards for the journal and fair treatment for contributors.

The editors are interested in original manuscripts on such topics as new concepts in the evaluation of continuing education (CE) programs, assessments of CE needs, innovative CE teaching methods, relicensure and competency, objectives of CE, the impact of national health trends on CE programing, effective use of the media for continuous learning, useful marketing and promotion techniques in CE, the relationship of CE to quality health care, and so forth.

MÖBIUS will be published by the University of California Press under the sponsorship of Continuing Education in Health Sciences, University of California, San Francisco. The first issue is scheduled for January 1981.

Information for authors and subscription rates may be obtained from Lucy Ann Geiselman, Editor, MÖBIUS, 24 Kirkham St., San Francisco, Calif. 94143.

Data Coverage and Inventory of Data Sources on the Functionally Limited Elderly

■ The Office of Management and Budget (OMB) has released the report of the Interagency Statistical Committee on Long-Term Care for the Elderly. This committee, which included officials from major statistical and research components of eight agencies, was convened at the request of OMB to (*a*) establish an inventory of existing and planned data sources on long-term care for the elderly, (*b*) assess the adequacy of their coverage in relation to major long-term care policy issues, and (*c*) make recommendations for obtaining needed data. The committee defined long-term care (LTC) not only as care in institutions such as nursing homes, but as a whole spectrum of support for the elderly who, because of functional limitations, need continuing assistance in their daily lives. The results of the committee's efforts are published in two volumes.

Volume 1, entitled "Data Coverage of the Functionally Limited Elderly" (52 pages), is the committee's report and contains its findings and recommendations. The report includes five major recommendations:

- Improve access to existing data (data were often found to be difficult to obtain).
- Carry out an extensive analysis of available data. (An unanticipated rich body of data was found, and specific suggestions for analysis are offered.)
- Eliminate major gaps in population and content coverage common to national surveys. (Include the usually missed rooming and boarding home populations, and the residents of all the types of LTC institutions—some groups have been omitted from all national surveys—and collect information on informal LTC assistance, defined as all types of help, paid or unpaid, provided by family, friends, and neighbors who are not part of a group or program formally organized to provide that help.)
- Collect a standard set of data items as appropriate to the focus of the data effort. (Use items on economic resources, availability of family, a standard list of functional limitation items, and the long-term health care minimum data set.)
- Use "piggybacking"—adding a supplement to existing or planned surveys —in gathering further data.

Volume 2, entitled "Inventory of Data Sources on the Functionally Limited Elderly: A Compendium of the Content and Coverage of Data Sources on Long-Term Care for the Elderly" (285 pages), includes detailed information on 103 surveys and studies. This inventory includes:

- An introduction describing the background of the project, criteria for inclusion of data sources, and a guide to use.
- Twenty-four indexes to the data sources, listing all 103 sources by data collection frequency, geographic area covered, project chief, various policy areas covered, and so forth.
- Two pages of detailed information on each of the 103 data sources. (Included are a description of the data source and its sampling frame, policy areas addressed, functional limitations covered, types of LTC assistance covered, outcomes covered, other general data areas covered, and persons to contact for further information.)

Copies of the volumes are available from the Human Resources, Veterans, and Labor Special Studies Division, Rm. 7236, New Executive Office Bldg., Washington, D.C. 20503. For further information, contact Barbara Selfridge, OMB, 301: 395-6150.

education notes

Managing small institutions.—The Harvard School of Public Health is offering a new program designed to assist managers of small institutions to maximize their resources by refining their analytical, managerial, and decision-making skills. This intensive new executive development program is intended for the senior managers of hospitals and long-term care facilities with less than 250 beds, health maintenance organizations and group practices, community and mental health centers, home health agenices, hospices, and other health care delivery programs.

The program will be presented at the Harvard School of Public Health in two 6-day segments—December 7–13, 1980, and April 5–11, 1981. Attendance at both segments is required for all participants; a certificate will be awarded upon completion of both.

The program will be conducted by an experienced multidisciplinary faculty assembled from several professional schools at Harvard. A variety of interactive teaching techniques will be used in the course, including the case method, the lecture-discussion format, and small action-planning groups in which participants from similar institutions and faculty will work together to solve problems facing the participants' own organizations.

The total program fee is $2,000 for both segments—$1,400 covers tuition, and $600 covers materials, room and board, and transportation to and from classes. A limited number of fellowships are available.

Further information may be obtained from the Assistant Director for Administration, Executive Programs in Health Policy and Management, Harvard School of Public Health, 677 Huntington Ave., Boston, Mass. 02115; (617) 732-1142. Applications should be submitted by October 6, 1980.

Infectious Diseases in Clinical Practice. The Division of Infectious Diseases, Department of Medicine and Extended Programs in Medical Education, University of California School of Medicine, San Francisco, is sponsoring its fourth annual postgraduate course on infectious diseases in clinical practice, January 31–February 7, 1981, at Park City, Utah.

Those infectious disease topics that will keep the practicing clinicians abreast of recent advances in the field were selected for the course. The course is designed for primary care physicians, including family and general practitioners, internists, and pediatricians. Most