

## State of the Nation's Health, 1978, Is Summarized in HEW Publication

■ The balance sheet for the Department of Health, Education, and Welfare's annual accounting to Congress on American health shows that life expectancy is higher than ever, but that problems remain in reducing the incidence of preventable disease and death. In the report, "Health, United States, 1978," the state of the nation's health is summarized and current issues are examined, including the problems of rising costs, preventable illness, and premature death.

- National health expenditures rose 12 percent in fiscal year 1977 to approximately \$165 billion and accounted for the largest share so far of the Gross National Product, 8.8 percent. Between 1950 and 1975, these expenditures rose at an average annual rate of 8.1 percent, but since 1965, the average annual increase has been 12.7 percent.

- Life expectancy at birth in 1976 was 72.8 years, a new high and a gain of almost 2 years since 1970. Death rates stood at historic lows of 8.9 deaths per 1,000 population in 1976 and an estimated 8.8 per 1,000 in 1977. The infant mortality rate for 1976 was 15.2 per 1,000 live births, compared with 16.1 for 1975.

- The age-adjusted death rate for coronary heart disease declined by nearly 28 percent between 1968 and 1976. For cancer, which stands second to heart disease in the leading causes of death, this rate has risen slightly (5.5 percent) since 1950. However, for

people under age 45, the cancer death rate has actually been decreasing since about 1950.

- The number of people employed in the health care industry grew by nearly 50 percent between 1970 and 1977, from 4.2 million to 6.3 million. The nation's total physician supply has grown faster than the population, rising from 15.4 per 10,000 population in 1970 to 17.8 per 10,000 in 1976. The physician-population ratio is projected to reach 24.2 per 10,000 persons by 1990.

- Despite the increase in the number of health workers, use of medical services has remained relatively stable in the 1970s. Americans have averaged about five physician visits per person per year. The number of days of hospital care provided annually has increased at about the same rate as the population. (These statistics suggest that the productivity of the health care system has been declining.)

- Recent growth in the supply of physicians has not materially reduced the geographic imbalance in supply. The ratio of active, non-Federal physicians per 10,000 population ranged from 20.6 in the Northeast to 13.8 in the South in 1976, a variation similar to that in 1972. Metropolitan areas still had more physicians per 10,000 population in 1976 (19.3) than nonmetropolitan areas (8.0).

- Medicare and Medicaid have helped to reduce inequities in the receipt of

health care among income groups. In the 1970s people in low income families have averaged more physician visits per person than those in high income families. (This greater use of services among the poor reflects a greater need for services.)

- Although cigarette smoking has declined, one-third of U.S. adults were cigarette smokers in 1976. Smoking has been declining faster among males than among females. In 1976, 42 percent of the males over age 20 smoked cigarettes, compared with 52 percent in 1965. Among women the decline was 2 percentage points, to 32 percent.

Assistant Secretary for Health Julius B. Richmond pointed out that "The report's analysis of personal behavior affecting health underscores the importance of health promotion programs. Cigarette smoking, overweight and poor nutrition, and failure to take advantage of protections such as vaccines make up a set of problems deserving high priority."

*Health, United States, 1978. DHEW Publication No. (PHS) 78-1232. Also, Highlights: Health, United States, 1978. DHEW Publication No. (PHS) 78-1232-1 (16-page pamphlet). Prepared by the National Center for Health Statistics and the National Center for Health Services Research, both components of the Office of the Assistant Secretary for Health. Single copies available from National Center for Health Statistics, Rm. 1-57, Center Bldg., 3700 East-West Highway, Hyattsville, Md. 20782.*

## United States and Soviet Union Cooperate in Research on Eye Diseases

■ The United States and the Union of Soviet Socialist Republics have begun formal collaboration in research on eye diseases. The two nations will engage in cooperative vision research projects and scientific exchange under provisions of the U.S.-U.S.S.R. Program for Health Cooperation. Vision research is thus afforded the same priority in this program as the other U.S.-U.S.S.R. collaborative health research efforts in cancer, cardiovascular diseases, artificial heart, environmental health, schizophrenia, arthritis, and influenza and acute respiratory diseases.

In announcing the collaboration, Secretary Joseph A. Califano, Jr., of the Department of Health, Education, and Welfare, said, "Collaborative research between nations not only provides an international forum for the exchange of ideas and scientific knowledge, but helps spread the fruits of health research to all peoples of the world. This new collaboration between the U.S. and the U.S.S.R. in vision research comes at a time when experts are estimating that the number of blind people worldwide, now estimated at 40 million, could double by the end of this century. By working with the Soviet Union to foster eye research, we hope to contribute to the prevention of such an enormous increase in global blindness and at the same time work to improve the well-being of those who already suffer from disabling eye diseases."

Coordinating the cooperative vision research program for the United States is Carl Kupfer, MD, Director of the National Eye Institute. Prof. Michail M. Krasnov, MD, Director of the All-Union Scientific Research Institute of Eye Diseases of the Soviet Ministry of Health, is coordinator for the Soviet Union.

The decision to embark on a formal collaboration for research in eye disease was reached after a successful exchange of visits and subsequent informal contacts between Kupfer and Krasnov over the past 5 years. This exchange has resulted in the identification of specific research projects and of individual scientists who would

participate initially in a vision research exchange program.

Detailed plans for implementing the new collaborative effort were developed at the seventh session of the U.S.-U.S.S.R. Joint Committee for Health Cooperation held in Moscow in October 1978. These plans call for initial projects in laser treatment of glaucoma, in research on retinal degenerations, and in studies of cataract.

## Report Discourages Development of Formal Practice Specialty in Geriatrics

■ The elderly constitute 11 percent of the American population but account for 30 percent of all personal health care expenditures. Yet a report on "Aging and Medical Education" by the Institute of Medicine of the National Academy of Sciences finds that gerontology and geriatrics are not incorporated adequately in the majority of medical schools and graduate medical education programs.

The report, commissioned by the National Institute on Aging, concludes that there is an extensive body of knowledge on aging and care of the aged relevant to medical education. It urges the systematic inclusion of this knowledge at all levels of physician training, but strongly discourages the development of a formal practice specialty in geriatrics. The report favors the recognition of gerontology and geriatrics as academic disciplines within the appropriate medical specialties.

The complete report has chapters on (a) the body of knowledge about aging that pertains to medical education, (b) research and faculty development, (c) the incorporation of knowledge about aging in medical education, and (d) a detailed discussion of recommendations for improvement of physicians training in the care of the aged. The publication also contains an appendix that outlines the possible content for both a free-standing course in geriatrics and for the inclusion of information on aging in a basic science course.

Single copies of the report are available from National Institute on Aging/Medical Education, Bldg. 31, Rm. 5C-36, 9000 Rockville Pike, Bethesda, Md. 20205.

## Asbestos: Potential to Cause Cancer, Sources of Exposure, and Protective Measures

■ Current and historical evidence of the cancer-causing potential of asbestos, possible sources of exposure, and measures that can be taken to protect workers and the public from the effects of exposure to this substance are presented in a recent publication of the National Cancer Institute. In a 192-page monograph, the production and use of asbestos fibers and products, biological effects of these fibers (including descriptions of research studies with animals and of the cancer-causing effects on human beings), and occupational and nonoccupational sources of exposure are documented.

Four serious diseases may result from exposure to airborne asbestos dust: asbestosis (a chronic lung ailment, which can produce shortness of breath and lung damage), mesothelioma (a cancer that involves the thin membrane lining the chest and abdomen), lung cancer, and certain gastrointestinal cancers.

Various aspects of controlling the asbestos hazard are described in the monograph, including physical controls in industrial settings, during transportation of the product, and in preventing emissions to the general environment. The subject of education about asbestos is approached from two points of view—(a) that of physicians, nurses, health educators, industrial hygienists, union health and safety specialists, and industrial training specialists, and (b) that of specific target groups such as managerial and supervisory personnel, workers, retirees, and former workers and their families.

Sources of additional information about asbestos, sources of educational materials, and texts of Federal regulations concerning exposure are included, as well as information about smoking cessation—one of the most pertinent recommendations for persons exposed to asbestos.

*Asbestos: An Information Resource. Prepared by Stanford Research Institute and edited by Richard J. Levine of that institute, under contract to the National Cancer Institute. Single copies without charge from National Cancer Institute, Office of Cancer Communications, NIH, Bethesda, Md. 20014.*

## Graduate Education Program in Public Health for American Indians

■ As of May 1977, 33 persons had completed a program of graduate education in public health for American Indians at the University of Oklahoma Health Sciences Center. Initiated in the fall of 1971 with a grant from the Office of Economic Opportunity, the program's purpose was to improve the capabilities of American Indians to function as planners, administrators, and staff personnel for Indian health care programs and services.

### *Need for Program*

When the program began, there was a shortage in the United States of management personnel qualified to participate in setting public policy for health care services and in implementing it through the organized efforts of government and private entities. And among Indians, the shortage of qualified managers was even more acute, because relatively few Indians were enrolled in graduate programs of public health preparing them to meet their own people's needs. This shortage remains today. Indeed the demand for Indian managers has been increased by the policies of the Indian Health Service (IHS) and recent Federal legislation that have emphasized the recruitment and use of qualified American Indians in key administrative and staff positions, in both tribal-directed health programs and IHS facilities. The Indian Self-Determination and Education Assistance Act of January 4, 1975 (Public Law 93-638) permits the Secretary of Health, Education, and Welfare to contract with tribes to manage their own health services programs. The Indian Health Care Improvement Act of September 30, 1976 (Public Law 93-437) also addresses the unmet health needs of Indians and directs planning for this need.

### *Degree Requirements*

Initially the Oklahoma master's degree program in health services administration required 30 months to complete, including a 12-month field practicum. In 1972, however, the period was shortened to 21 months so as to maintain some comparability with a similar program operated by the University of California at Berkeley. In 1974, support was offered to American Indians enrolled in other departments of the College of Health besides health services

administration, including biostatistics, epidemiology, environmental health and human ecology, and health education. Support was also extended to students working toward doctoral as well as master's degrees.

The curriculum for the master's degree was designed to meet the advance degree requirements of the University of Oklahoma and to provide skills and knowledge in health administration and other public health disciplines through a combination of classroom activities and an extended period of field practice. As revised in 1973, the program required 16 months of academic courses on the Health Sciences Center campus and 5 months of field work in individually selected health care programs and institutions across the country. A minimum of 45 semester hours was required for graduation.

The Indian students, during their first semester on campus, typically developed their own individual programs of study in consultation with their major advisor. Beyond the required courses, the students were encouraged to plan a course of study that met their individual needs and satisfied their career goals. Courses offered for graduate credit in other departments on the campus were integrated into the student's course of study.

### *Characteristics of Students*

Of the 33 American Indians who completed the graduate program, 26 were residents of Oklahoma at enrollment, 2 were residents of Arizona, and 2 of Montana; the other 3 were residents of New Mexico, North Carolina, and North Dakota.

Of the 51 students who entered the program in the fall of 1971 through the fall of 1976, 12 had a grade point average (GPA) above 3.0, while the remaining students, who were admitted in a probationary status, had an average GPA of 2.45. The mean undergraduate GPA of all students upon enrollment in the program was 2.62; female students entered with a slightly higher average GPA, 2.72. (A GPA of 4.0 is equivalent to an A at the University of Oklahoma.) The 18 students who left the program had a mean GPA for their graduate work of 2.83. The 33 graduates of the program had a mean GPA of 3.20 (men 3.16, women

3.31). The graduates improved their GPA an average of 0.54 points in the course of the graduate program. They spent an average of 21.8 months enrolled at the university (men 21.6 months, women 22.4 months).

Thirty-two graduates received master of public health degrees and one, a doctor of public health degree. At this writing, 11 Indians were still enrolled in the program. Of the 18 students who withdrew, only 3 were terminated for failure to attain the required GPA of 3.0 (equivalent to a B). Most quit for personal reasons, usually family problems or employment opportunities. At least five could still obtain their degrees by completing a major paper, one of the program's requirements.

### *On-the-Job Performance*

Twenty-eight of the 33 graduates became employed in health programs involving Indians, either in IHS or tribal health programs. A questionnaire was sent to the first 17 graduates of the program in health administration (15 respondents) and their immediate supervisors (9 respondents) after the Indians had had time to become well established in their positions (at least 1 year on the job). This survey indicated that the graduates were performing well. The supervisors appeared generally pleased with their performance. The students indicated that knowledge of budgets was the weakest area in their preparation, followed by weakness in budgeting time and resources so that all work got done and weakness in bringing about cooperative action and in linking the work of individuals or groups with that of others within and outside the organization. Most important, however, the study suggested that the program was accomplishing its goal of improving the capabilities of American Indians to function as planners, administrators, managers, and staff personnel for Indian health care programs and services.

—*Mitchell V. Owens, MPH, EdD, professor, and Harry M. Deliere, MPH, DrPH, assistant professor, Department of Health Administration, School of Public Health, College of Health, University of Oklahoma Health Sciences Center, Oklahoma City, Okla.*

## Bibliographies Available From National Library of Medicine

■ Bibliographies on specific biomedical subjects are published periodically by the National Library of Medicine, National Institutes of Health. Prepared by MEDLARS in response to requests from physicians, researchers, and educators, these bibliographies are available to interested health professionals on request. They may be obtained (request by number and title) from the Literature Search Program, MEDLARS Management Section, National Library of Medicine, 8600 Rockville Pike, Bethesda, Md. 20014. A self-addressed gummed label should accompany all requests, but no postage is necessary.

77-15. Recombinant DNA. (Updates L.S. 76-25.) May 1976 through November 1977. 162 citations.

77-16. Health maintenance organizations. (Updates L.S. 73-75). February 1973 through December 1977. 373 citations in English.

77-17. Psychological aspects of cancer. (Updates L.S. 73-13.) April 1973 through December 1977. 269 citations in English.

78-1. Patient package inserts. January 1975 through December 1977. 38 citations.

78-2. Laetrile. January 1977 through March 1978. 72 citations.

78-3. Exercise therapy and physical fitness in the rehabilitation of patients with cardiovascular disease. January 1975 through December 1977. 284 citations.

78-4. Psychological and socioeconomic aspects of kidney dialysis. January 1975 through December 1977. 230 citations.

78-5. Transcutaneous electrical nervous stimulation for control of pain. January 1972 through March 1978. 88 citations.

78-6. Recombinant DNA. (Updates L.S. 77-15.) December 1977 through June 1978. 146 citations.

78-7. Photocoagulation in diabetic retinopathy. January 1976 through April 1978. 75 citations.

78-8. Adolescent pregnancy. January 1975 through April 1978. 254 citations.

78-9. Adverse effects of oral contraceptives. (Updates L.S. 74-20.) July 1974 through December 1977. 659 citations in English.

78-10. Audiovisual aids in medical education. (Updates audiovisual por-

tion of L.S. 74-6.) May 1974 through April 1978. 253 citations in English.

78-11. Computer aided and programmed instruction in medical education. (Updates the computer assisted and programmed instruction portion of L.S. 74-6.) May 1974 through April 1978. 90 citations in English.

78-12. Estrogen replacement therapy. January 1976 through June 1978. 173 citations.

78-13. Maternal alcohol use and effects on the fetus and the neonate, including the fetal alcohol syndrome (FAS). January 1975 through April 1978. 128 citations.

78-14. Herbal medicine. (Updates L.S. 76-27). June 1976 through June 1978. 222 citations.

78-15. Audiovisual aids in nursing education. (Updates the audiovisual portion of L.S. 74-7.) May 1974 through May 1978. 98 citations.

78-16. Computer assisted and programmed instruction in nursing education. (Updates the computer assisted and programmed instruction portion of L.S. 74-7.) May 1974 through May 1978. 48 citations.

78-17. Adverse effects of diazepam on the fetus and neonate. January 1969 through June 1978. 60 citations.

78-18. Computer assisted and programmed instruction in dental education. (Updates the computer assisted and programmed instruction portion of L.S. 74-9.) May 1974 through April 1978. 25 citations.

78-19. Audiovisual aids in dental education. (Updates audiovisual portion of L.S. 74-9.) May 1974 through April 1978. 92 citations.

78-20. Chymopapain in the treatment of back pain and sciatica. January 1969 through July 1978. 80 citations.

78-21. The National Library of Medicine: selected references from the biomedical literature. (Updates L.S. 76-34.) August 1976 through July 1978. 69 citations.

78-22. Sarcoidosis. (Updates L.S. 76-31.) June 1976 through August 1978. 619 citations.

78-23. Smoking and reproduction, pregnancy, and the newborn. January 1972 through July 1978. 241 citations in English, French, Spanish, or German.

28-24. Cadmium and the environ-

ment. January 1976 through August 1978. 94 citations.

78-25. Audiovisual aids, programmed instruction, and computer assisted instruction in allied education. (Updates L.S. 74-8.) May 1974 through July 1978. 125 citations.

78-26. Sterilization reversal. January 1974 through September 1978. 125 citations.

78-27. The physician and malpractice. May 1974 through September 1978. 521 citations in English.

78-28. Malpractice in hospitals, dentistry, nursing, pharmacy, veterinary medicine and allied health professions. May 1974 through September 1978. 242 citations in English.

78-29. Adverse effects of prenatal exposure to diethylstilbestrol (DES). January 1975 through October 1978. 61 citations.

78-30. Recertification or relicensure. January 1975 through December 1978. 150 citations in English.

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### Poster Bears Caution on X-Rays in Pregnancy

■ In an effort to promote patient awareness of the need to alert the physician to a possible pregnancy when an X-ray examination is being considered, the American College of Obstetricians and Gynecologists and the Bureau of Radiological Health have prepared a poster that is designed for display in the waiting rooms of medical facilities.

In two colors and available in English and Spanish, the poster is offered in tabletop size (8 by 10½ inches) with built-in easel and in wall-display size (17½ by 22 inches). Copies may be obtained by writing the Food and Drug Administration, Bureau of Radiological Health (HFX-28), 5600 Fishers Lane, Rockville, Md. 20857, or the American College of Obstetricians and Gynecologists, Resource Center, Suite 2700, One East Wacker Dr., Chicago, Ill. 60601. Copies may also be obtained from local offices of the Food and Drug Administration.

## Landmark Study Focuses on 5,000 Black Americans

■ A comprehensive, social science survey of black Americans has been funded by the National Institute of Mental Health (NIMH) and the National Institute on Aging (NIA).

Between March and August 1979, nearly 5,000 black Americans, living in 100 communities across the nation, will be interviewed about their personal well-being, social support, and help-seeking. The survey is expected to provide social scientists, policy-makers, and the black community, for the first time, with information on

blacks in a number of important social and health-related areas.

The grantee, University of Michigan's Institute for Social Research (ISR), will examine current social and economic conditions of the black population. Interviews will include questions that deal with family relationships, community life, religion, racial identity, and political participation, as well as with education, employment, and income. This survey will be the single most extensive ex-

amination ever conducted of this minority group.

National samples of the adult and elderly black population 18 years and older are being interviewed. Respondents with at least three generations in their families will be selected to participate in an indepth family study.

An interdisciplinary advisory committee of experts on black life from all over the country has assisted in the design of the survey. Reports on the results are expected in early 1980 and will continue to be produced throughout the decade.

The principal investigator of the study is Dr. James S. Jackson, associate professor of psychology and ISR faculty associate. The project officers are Dr. Mary Harper, Center for Studies of Minority Group Mental Health for NIMH, and Shirley Bagley, Extramural and Collaborative Research Program for NIA.

Commenting on the study, Jackson said, "We want to find out how blacks cope with the rigors of day to day life. We feel being black in America puts added stress on people." "This study," he added, "will allow us to go beyond past stereotypes of blacks. Over the years blacks have developed different life styles in response to a variety of life situations. We expect differences between blacks in rural areas and those in large cities. There will also be regional differences. For example, the methods useful for dealing with both everyday problems and those associated with being black in Detroit's inner city may be different than those useful in rural Georgia."

Jackson and his staff see this study as creating a national data base that will allow comparison with both past research and future national, international, and local studies. "The importance of a study of this nature to black Americans across the country cannot be over-estimated," Jackson said. "We hope it will clear up certain misconceptions about the attitudes and behavior of blacks and provide a basis for the development of policy and programs helpful to them."

## U.S. Birth and Fertility Rates Increased in 1977

■ Previously postponed births help to account for the rise in the U.S. birth rate in 1977, according to a report of final data issued by the National Center for Health Statistics, based on information reported on birth certificates filed in the States.

Both the birth rate and the fertility rate rose in 1977 for the first time since 1970. The birth rate for 1977 was 15.4 births per 1,000 population, an increase of 4 percent over the 1976 rate. The fertility rate was 67.8 births per 1,000 women of childbearing age (15-44 years), an increase of 3 percent from 1976. Provisional data for 1978 show that these rates have slightly declined from their 1977 levels.

The increase in fertility in 1977 is reflected in higher birth rates for women in all age groups 18-39 years.

These increases were greatest for women 25-29 years (5.0 percent) and 30-34 years (5.5 percent). Rates of first births to women of these ages increased even more, 8.3 percent (25-39 years) and 11.2 percent (30-34 years), indicating that part of the increase in fertility among women of these ages reflects previously postponed births.

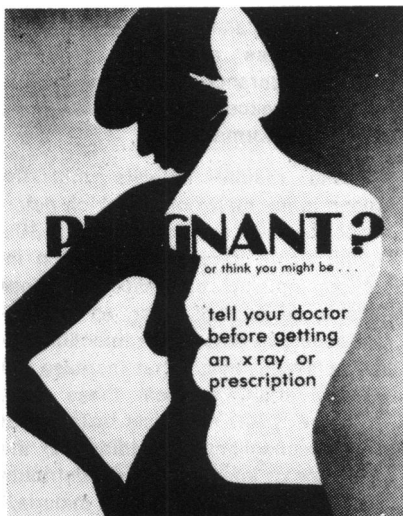
The age of new mothers has been rising. The median age of women having first births in 1977 was 22.7 years, compared with a median of 22.4 years for such women in 1975 and 22.1 years for women with first births in 1970.

The total fertility rate, which shows the implications of current levels of fertility for completed family size, was 1,826.3 per 1,000 women for 1977. The 1976 rate was 1,768.2.

Births to unmarried women accounted for 15.5 percent of births in 1977. There were 515,700 births to single mothers, 10 percent more than in 1976.

For births in 1977, the report also includes the following data:

- Births totaled 3,326,632, about 5 percent more than in 1976.
- Birth rates increased in every State except Alaska.
- The proportion of births to mothers who began prenatal care in the first 3 months of pregnancy rose from 73.5 percent in 1976 to 74.1 percent in 1977. The proportion of mothers who received no prenatal care was unchanged from 1976—1.4 percent.
- The percentage of all births reported as having been delivered by physicians in hospitals was 98.5.



## Antibiotic for Treatment of Fungus Infection of Eye Approved by FDA

■ The Food and Drug Administration (FDA) has approved the antibiotic natamycin for treatment of a fungus infection of the eye that frequently causes blindness.

In tests performed by three eye specialists, nearly 80 percent of the patients treated with natamycin eye drops retained their sight. Usually, the infection causes a perforating ulcer of the cornea and results in blindness if the lesion is untreated or the cornea cannot be surgically replaced.

Nearly 300 persons suffer from fungal keratitis each year. Most are in the hot, humid climate of the Gulf Coast States; many are citrus workers.

Natamycin is the most effective drug, thus far, to treat specific fungal infections and prevent eye damage. The approval of the drug is a direct result of an initiative by FDA's Bureau of Drugs, in cooperation with the manufacturer, Alcon Laboratories, Fort Worth, Tex., which is marketing natamycin at no profit.

Natamycin is marketed in Europe for vaginal and skin infections. When the Bureau of Drugs learned of its potential value in treating the eye infection fungal keratitis, data were compiled to demonstrate the drug's safety and effectiveness.

These data were reviewed by FDA's Ophthalmic Advisory Committee, a group of nongovernment eye specialists. Alcon Laboratories then agreed to manufacture the drug and provide it to patients suffering from the infection.

FDA Commissioner Donald Kennedy said: "This is a splendid example of cooperation among government, the medical community, and industry to bring to consumers a new weapon in fighting disease."

## Spleen Plays Major Role in Removal From Bloodstream of Malaria-Infected RBCs

■ Researchers at NIH's National Institute of Allergy and Infectious Diseases (NIAID) have shown, for the first time, that the spleen is the major organ involved in the removal of malaria-infected red blood cells (RBCs) from the bloodstream and that this removal does not appear to depend on antibodies. Furthermore, results of their animal studies indicate that during malaria, this function of the spleen is impaired.

The spleen can remove invading organisms by immunological mechanisms (involving antibodies) as well as by nonimmunological ones (nonspecific trapping of particles). However, no one has previously examined in detail the processes by which RBCs containing malaria parasites are removed from the circulation. Several findings, including one on the detrimental effect that removal of the spleen has on malaria infection, suggested a possible role for the spleen in the defense against this disease, which despite all efforts continues to claim more than a million lives annually.

To investigate whether clearance of infected RBCs by the spleen is a major defense mechanism, Dr. Thomas C. Quinn and Dr. David J. Wyler used rats infected with a nonlethal strain of *Plasmodium berghei*. The rodent host of this malaria spontaneously "cures" itself of the infection, so that within 20 days no parasites can be detected in its blood. RBCs infected with this parasite were treated with a radioactive chemical and injected into rats immune to *P. berghei* (having recovered from the disease) and into normal rats.

During the first hour, infected RBCs were removed from the circulation of the immune rats three times more rapidly than from the normal ones; thereafter, clearance rates were similar. This difference occurs because the greatly enlarged spleens of the immune rats take up the RBCs much faster. The scientists then injected radioactive noninfected RBCs coated with an antibody into immune and normal rats. Both groups of animals cleared these cells at a similar rate, suggesting that the splenic process in malaria-infected rats is not antibody dependent. In addition, hyperimmune serum taken from

*P. berghei*-immunized rats had no effect on the clearance of infected RBCs in the normal rats.

Next the researchers compared the clearance rate of the malaria-infected RBCs with RBCs containing another type of intracellular particle. These Heinz bodies, as the particles are called, are clumps of denatured hemoglobin, which because they are trapped within the RBC, decrease the cell's ability to alter its shape and to "squeeze" through narrow openings in certain areas of the spleen. Since malaria-infected RBCs also have this problem, the RBCs containing Heinz bodies simulate several nonimmunological properties of the parasitized cells.

Clearance of these Heinz body RBCs was found to be similar to that of infected RBCs: clearance was by the spleen, and the rate was directly related to that organ's size. Thus, the scientists concluded that removal of the parasitized RBCs by the spleen may be related to the cells' decreased ability to flow easily through the organ's narrower passageways rather than to an immune process.

Additional studies showed that the clearance of parasitized RBCs is slower in rats with an active malaria infection than in immune and normal rats. This slower clearance appears to result from the impaired ability of the spleens of infected rats to sequester the RBCs despite the fact that their spleens are enlarged. However, the onset of spontaneous resolution of the infection was associated with increased clearance and a splenic uptake which exceeded that found in the immune or normal rats.

These results indicate that the spleen is the major organ which determines the clearance of infected RBCs. During rising parasitemia early in infection, splenic clearance of these cells is depressed. Later, as the animal begins to resolve the infection, unknown events occur that increase the spleen's ability to clear these cells. Thus, the NIAID scientists believe that other mechanisms, in addition to the clearance of infected RBCs, contribute to the host's defense against malaria.

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## Common Agricultural Pesticide Found to Cause Liver Cancer in Male and Female Mice

■ The agricultural pesticide toxaphene causes liver cancer in male and female mice, according to a report by the National Cancer Institute.

Toxaphene, reported to be the largest selling insecticide in the world, was given in feed to rats and mice for 80 weeks. Liver cancers were found in the mice, and test results suggested that the compound caused thyroid cancers in male and female rats.

The tests are a part of a continuing National Cancer Institute (NCI) bioassay program of using animals under specific conditions to screen chemicals for carcinogenicity. Compounds found to be carcinogenic in these tests are generally considered capable of causing cancer in humans. The tests do not provide information, however, that can be used to predict how frequently cancers might be produced in human populations under actual conditions of exposure.

Toxaphene was selected for bioassay because it is widely used in agriculture and is structurally related to Strobane, a compound known to induce liver tumors in animals. Further, toxaphene's persistence in the environment may lead to long-term human

exposure through residues in food and water.

More than 100 million pounds of toxaphene were produced in 1976. About 85 percent of the production is used on cotton crops. Other major uses are for treating cattle and swine. Toxaphene also is used on soybeans, corn, wheat, peanuts, lettuce, tomatoes, and other food crops. Federal regulations allow a maximum tolerance of 7 parts per million (ppm) on or in many fruits, vegetables, nuts, and meat products, a 5 ppm ceiling on various grains, and much smaller amounts in several other food products.

In studies by the Environmental Protection Agency, changes have been found in the bones and in the growth rates of fish, birds, and mammals exposed to toxaphene at dose levels similar to present-day human exposures. That agency is reviewing the risks and benefits of the insecticide.

In the NCI bioassay, liver cancer was found in 98 percent (45 of 46) of male mice and in 69 percent (34 of 39) of female mice given high doses of toxaphene. Liver cancer also was found in 69 percent (34 of 39) of male mice and in 10 percent (5 of 49) fe-

male mice on low doses. In male control mice not given toxaphene, 8 percent (4 of 48) had liver cancer; no liver cancers appeared in the undosed female control mice.

In rats, thyroid tumors occurred in a pattern suggesting an association with toxaphene dosage. In high-dose male rats, 26 percent (9 of 35) developed follicular-cell carcinoma or adenoma of the thyroid. High-dose female rats developed thyroid tumors at a rate of 17 percent (7 of 42). The rates were not significantly different from the rates of spontaneous thyroid tumors in matched control rats, but they were higher than expected from rates in the larger group of pooled control rats of the same strain in the same laboratory.

Single copies of the report, Bioassay of Toxaphene for Possible Carcinogenicity, (T.R. 37), are available from the Office of Cancer Communications, National Cancer Institute, Bethesda, Md. 20502.

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## London Is Scene of 10th International Conference on Health Education

■ The Royal Festival Hall and other locations on both banks of the Thames will be the site for the 10th International Conference on Health Education, which will be held in London, September 2-7, 1979.

Sponsored by the International Union for Health Education, the conference will examine progress in the integration of health education in national planning; health education in youth, including preparation for parenthood; the preschool child, primary education, and the adolescent; and a range of other health education topics, including the prevention of degenerative diseases, prevention of sexually transmitted infections, family planning, nutrition, human settlement and resettlement, and problems of addiction. Simultaneous translations in English, Spanish, and French will be provided for all conference events.

Supplementing the regular conference agenda will be a program of outstanding health education films that will cover all the subthemes of the

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## Conference on Modeling Techniques and Applications in Dentistry

■ A 4-day national conference on modeling of the dental delivery system in the United States and the use of modeling as a dental manpower planning tool will be convened July 16-19, 1979, at Northwestern University, Evanston, Ill. The conference is designed to create an opportunity for developers of dental models, actual and potential users of those models, and dental planners, economists, and researchers to become familiar with current and future dental modeling activities.

The conference's objectives will be accomplished through a series of presentations and discussions by experts within the following areas: (a) single equation models of the dental sector, (b) national dental forecasting and dental policy analysis models, (c)

applications of State and regional dental models for planning, and (d) dental practice simulation models. Approximately 30 participants have been selected from experts within each of the four areas so that a variety of techniques, applications, and viewpoints can be represented.

Representatives from planning agencies, professional associations, and educational institutions, as well as researchers from various health disciplines, are invited to attend. The meeting is sponsored by the Bureau of Health Manpower, Health Resources Administration. For further information, contact Resources for Health, Education, and Communications, Inc., 962 Wayne Ave., Suite 701, Silver Spring, Md. 20910.

# education notes

conference. A series of workshops in eight areas of health education technology will be offered, including use of puppetry, visual literacy, printed material, tape-slide presentations, simulation and games in primary health care training, management of film production, school health television, and viewdata (a television-telephone information system).

For more information about registration, write to the Conference Office, 43 Charles St., London W1X 7PB England.

## WHO Fellowships Available for 1980

■ The World Health Organization will make available in 1980 a limited number of short-term fellowships for travel abroad related to the "improvement and expansion of health services" in the United States. This support is limited to U.S. citizens engaged in operational or educational aspects of public health employed by State or local agencies or employees of educational institutions. Employees of the Federal Government are not eligible to apply.

A selection committee will recommend the awarding of fellowships based on the professional background of the applicant, the field and locale of proposed study, and the use of the experience upon applicant's return. Applications will not be considered for the pursuit of pure research projects or attendance at international meetings; nor will applications from students in the midst of training at either the graduate or undergraduate level be considered. (Medical residents are considered to be in postgraduate training.)

The fellowship award covers per diem and transportation. Employers of successful applicants are expected to endorse the applications and to continue the applicant's salary during the fellowship. Except in unusual circumstances, the fellowship will be limited to short-term programs averaging about 2 months. Fellowships will be awarded up to the total amount of available funds. Deadline for receipt of applications is September 30, 1979.

Additional information may be obtained from Dr. Carl D. Olsen, Chief, International Education Section, Building 31, Room 2B55, Fogarty International Center, NIH, Bethesda, Md. 20205.

**Laboratory safety training.** Laboratory safety training short courses for 1979 will be conducted by the University of Minnesota School of Public Health under contract with the National Cancer Institute Office of Research Safety.

Two courses on Biohazard and Injury Control in the Biomedical Laboratory will be held September 11-13 at Ohio State University, Columbus, and December 11-13 at the National Institutes of Health, Bethesda, Md. Emphasis will be placed on biohazards in viral oncology research. These courses are for senior scientists and technicians working in fields related to cancer virology.

The courses, supported by the National Cancer Institute, are tuition free. Participants pay only for travel and living expenses. Enrollment is limited, and early application is recommended. Information about the courses can be obtained from Donald Vesley, PhD, Professor, School of Public Health, 1158 Mayo Memorial Bldg., 420 Delaware St., SE., University of Minnesota, Minneapolis, Minn. 55455, telephone (612) 373-5943.

**New MPH program at Yale in long-term care area.** Yale University Medical School, Department of Epidemiology and Public Health, has a new graduate master of public health degree program for training students to become planners, evaluators, and policy analysts in the area of long-term care.

The program is not focused on developing institutional managers. Graduates will seek positions in health systems and other planning agencies, professional standards review organizations, health care cost-control and certificate-of-need agencies, health care institutions, health insurance and prepayment agencies, governmental agencies (local, State, or Federal), plus voluntary and professional agencies and other agencies concerned with long-term planning, evaluation, and policy analysis.

Admission requirements include a baccalaureate degree from an accredited college or university and a minimum grade point average of 3.0 (based on a 4.0 scale). Because the program is analytically oriented, applicants should have completed undergraduate or graduate courses in at least two of the following areas: mathematics, statistics, operations research, computer science, economics, and financial management or

accounting (or both). Courses in the humanities and social sciences are desirable, as is prior experience in human services.

To apply for admission or to obtain additional information, contact David A. Pearson, PhD, Associate Professor of Public Health, Department of Epidemiology and Public Health, Yale University School of Medicine, 60 College St., New Haven, Conn. 06510.

**Development of skills to measure health needs and program outcomes.** A symposium, Educational Diagnosis and Evaluation in Public Health and Medical Care, sponsored by the Johns Hopkins Medical Institutions, is to be held at the School of Hygiene and Public Health July 23-27, 1979. Directed by Lawrence W. Green, DrPH, the institute will seek to develop skills in the measurement of health education needs and in the evaluation of program results.

The first 3 days will be devoted to the development of skills in the assessment of health education needs and in the measurement of program outcomes. The additional 2 days are designed for persons who desire further training in cost-effectiveness and cost-benefit measurement in their respective program areas. In addition, participants in the final 2-day session may bring their own planning and evaluation problems for case study and consultation. Six credit hours per day in category I toward the physician's Recognition Award of the American Medical Association have been awarded, as well as standard continuing education units. Other appropriate credit has been applied for.

The fees for the course are \$250 for 5 days, \$175 for 3 days, and \$120 for 2 days. For further information, contact the Program Coordinator, Rm. 17, Turner, Office of Continuing Education, 720 Rutland Ave., Baltimore, Md. 21205.

**Postdoctoral fellowships in psycho-social aspects of alcohol and drug use.** The Rutgers Center of Alcohol Studies has 2-year positions (with the possibility of a third year of support) available for research in the psycho-social aspects of alcohol and drug use. The support per fellow, which is funded by the National Institute on Alcohol Abuse and Alcoholism, amounts to \$10,000 to \$12,000 per year. Sociologists or psychologists are preferred, but other social scientists may apply. Fellows will work in conjunction with an ongoing longitudinal study.

Contact Dr. Mark Lender, Rutgers Center of Alcohol Studies, Busch Campus, Rutgers University, New Brunswick, N.J. 08903.



# federal register briefs

*Compiled by Charles E. Jackson, Division of Legislation, Health Resources Administration*

**January 10, 1979, Vol. 44, No. 7, pp. 2242-2348**

**Toxic substances control.** The Environmental Protection Agency (EPA) proposes rules to implement section 5 of the Toxic Substances Control Act (TSCA) concerning new chemical substances. The TSCA requires each person who intends to manufacture or import a new chemical substance for commercial purposes to submit a notice to EPA at least 90 days before manufacture or import commences. Unless EPA takes regulatory action to ban or otherwise regulate the substance, it may be manufactured or imported.

**January 12, 1979, Vol. 44, No. 9, pp. 2618-2620**

**Medicare payments to foreign hospitals.** The Health Care Financing Administration proposes a rule to provide payments of 100 percent of customary charges for covered inpatient hospital services furnished by foreign hospitals that elect to receive payments directly from the Medicare program. If the foreign hospital does not elect to receive payment directly, the Medicare beneficiary will be reimbursed based upon the hospital's reasonable charges. The purpose of the proposed rule is to encourage foreign hospitals to bill the Medicare program directly for services rendered to Medicare beneficiaries.

**January 15, 1979, Vol. 44, No. 10, pp. 3226-3228**

**Recombinant DNA research.** The National Institutes of Health (NIH) has issued a notice proposing actions to be taken under the 1978 NIH guidelines for research involving recombinant DNA molecules. These guidelines were published in the Federal Register of December 22, 1978 (43 FR 60108).

**January 15, 1979, Vol. 44, No. 10, pp. 3058-3066**

**Professional Standards Review Organizations.** The Health Care Financing Administration has proposed regulations governing the acquisition, protection, and disclosure of information obtained

or generated by Professional Standards Review Organizations (PSROs). The PSRO Statute (Title XI, Part B of the Social Security Act) authorized PSROs to acquire information necessary to fulfill their duties and functions. Section 1166 of the act places limits on the disclosure of PSRO information and establishes penalties for unauthorized disclosure. The proposed regulations are intended to assure that PSROs have access to the necessary information, that confidential information is safeguarded, and that the information will be used as effectively as possible.

**January 16, 1979, Vol. 44, No. 11, p. 3288**

**Quality control and proficiency testing required in hospital laboratories.** The Health Care Financing Administration has published a final rule revising the Medicare regulations so as to provide that the quality control and proficiency testing requirements used by the Joint Commission on the Accreditation of Hospitals (JCAH) in accrediting hospitals laboratories will now be equivalent to those established by the Department of Health, Education, and Welfare. This change reflects the results of a reevaluation made by the Department of the upgraded standards adopted by JCAH and the actions taken by JCAH to implement these standards.

The Center for Disease Control will monitor the JCAH's performance in applying the standards. The Center's findings will be used by the Health Care Financing Administration to verify the equivalence of the JCAH standards to the Federal standards.

These amended regulations will eliminate the need for State health agency inspection of JCAH-accredited hospital laboratories.

**January 22, 1979, Vol. 44, No. 15, pp. 4471-4475**

**Grants for dental team practice.** The Department of Health, Education, and Welfare has issued final regulations setting forth the requirement for the award of grants to schools of dentistry and other public or nonprofit private entities for projects to plan, develop, and operate or maintain programs in which dental students will be trained in the organization and management of a multiple-auxiliary dental team practice. The grants are designed to increase the number of dental graduates who are trained to practice with dental auxiliaries, thereby increasing the productivity of the dental care team and improving the efficiency of the dental services provided to patients.

**January 22, 1979, Vol. 44, No. 15, pp. 4475-4480**

**Expanded-function dental auxiliaries.** Final regulations have been promul-

gated by the Public Health Service setting forth the requirements for programs for expanded function dental auxiliaries under the Public Health Service Act. The programs are designed to increase the number of dental auxiliaries (dental assistants and dental hygienists) who can perform legally delegated expanded functions, thereby increasing the productivity of the dental care team so that it can provide quality service to more people.

**January 30, 1979, Vol. 44, No. 12, p. 5995**

**Project grants for home health services.** The Health Services Administration has announced that competitive applications are being accepted for home health services project grants and demonstration grants for training home health personnel. The preferred locations for these grant projects are catchment areas in which a high percentage of the population is elderly or medically indigent, or both.

**February 2, 1979, Vol. 44, No. 24, pp. 6842-6847**

**State medical facilities plan.** The Public Health Service proposes regulations governing the development and content of State medical facilities plans required by section 1603(a) of the Public Health Service Act. These plans, when approved by the Secretary, will enable the Department of Health, Education, and Welfare to approve assistance to medical facility projects under Title XVI of the Public Health Service Act.

**February 6, 1979, Vol. 44, No. 26, pp. 7143-7144**

**State public water system assistance.** The Environmental Protection Agency (EPA) has promulgated a final rule amending the State Public Water System Supervision Program's grant regulations. It changes the allocation formula for fiscal year 1980 and subsequent years to include noncommunity public water systems and provides for use in the allotment formula of the latest State population data published by the Bureau of the Census in the Statistical Abstract of the United States.

For further information, contact James F. Manwaring, Chief, Drinking Water Branch, Office of Drinking Water (WH-550), 401 M Street, S.W., Washington, D.C. 20460, Telephone: (202) 472-4150.

**February 7, 1979, Vol. 44, No. 27, p. 7817**

**International classification of diseases.** Effective January 1, 1979, classification of mortality data in the United States will be coded to the new Ninth Revision of the International Classification of Diseases (ICD-9). The Ninth Revision was adopted in 1975 by an international

conference convened by the World Health Organization. For mortality coding, the ICD-9 will be used as published by the World Health Organization without resort to an adaptation such as was used during the eighth revision (ICDA-8). A modification of the ICD-9, known as the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), will only be used in the United States for morbidity coding.

In keeping with the tradition of actively promoting the recommendations of the World Health Organization that the decennial revisions of the ICD-9 be adopted for mortality coding purposes, the National Center for Health Statistics is offering training courses in cause-of-death coding. The Center has also provided each State health department with two complimentary copies of the new ICD-9. For more information about these courses, contact Robert A. Israel, Head, WHO Center for Classification of Diseases for North America, National Center for Health Statistics, 3700 East-West Highway, Hyattsville, Md. 20782.

February 16, 1979, Vol. 44, No. 34, p. 10134

**National Professional Standards Review Council.** The Health Care Financing Administration has solicited nominations to replace five members of the National Professional Standards Review Council whose terms will expire on June 30, 1979. The Council was established in 1973 pursuant to Public Law 93-603. This law requires that the Council be composed of 11 physicians of recognized standing and distinction in the appraisal of medical practice. These physicians must not be otherwise employed by the

United States, and a majority shall have been recommended by national organizations recognized by the Secretary of Health, Education, and Welfare as representing practicing physicians (including physicians recommended by consumer groups and other health interests).

February 16, 1979, Vol. 44, No. 34, p. 10270

**Water pollution control.** The Environmental Protection Agency is considering expanding its water pollution control criteria for designating hazardous substances. Presently, the selection criteria for hazardous substances deal with acute toxicity for aquatic animals. The agency recognizes that some substances may present an imminent and substantial danger to public health for reasons other than acute aquatic toxicity. The expanded criteria for hazardous substances would include several chronic and long-term effects; these would include such factors as carcinogenicity, mutagenicity, teratogenicity, bio-accumulative effects, synergistic or antagonistic chemical effects, and radioactivity.

February 20, 1979, Vol. 44, No. 35, pp. 10358-10359

**Medical license changes for radiopharmaceuticals.** The U.S. Nuclear Regulatory Commission has promulgated a final rule amending its regulations so as to change the conditions for certain medical licenses. Physicians would be permitted greater latitude when they used certain low-level radiopharmaceuticals, since the Commission would no longer designate authorized procedures. The Commission also would delete from the lists of pharmaceuticals in Groups I, II, and III (the lists of pharmaceuticals for diagnostic proce-

dures) certain chemical forms not approved by the Food and Drug Administration.

February 22, 1979, Vol. 44, No. 37, pp. 10602-10603

**Health maintenance organizations.** The Public Health Service has issued interim regulations to implement changes in the amount of loan support that a health maintenance organization (HMO) may receive under the HMO Amendments of 1978. The new law increases the amount of loan assistance that a federally qualified HMO may receive to assist it in meeting operating costs that exceed its revenues during a certain period.

February 26, 1979, Vol. 44, No. 39, p. 11014

**Carbon disulfide research study.** The National Institute of Occupational Safety and Health has announced that it is ready to begin a research project entitled "Reproductive History Study of Workers Exposed to Carbon Disulfide." The purpose of the study is to determine what, if any, adverse pregnancy outcomes occur in the families of workers exposed to carbon disulfide.

Reports from the Soviet Union, Romania, and Italy suggest that carbon disulfide has effects on the reproductive systems of both men and women. Carbon disulfide is a colorless, volatile liquid with excellent solvent properties. It is used in the production of viscose rayon and cellophane.

For further information, contact Sherry G. Selevan, Division of Surveillance, Hazard Evaluation, and Field Studies, NIOSH, Robert A. Taft Laboratories, 4647 Columbia Parkway, Cincinnati, Ohio 45226, telephone: (513) 684-2761.

# publications

## FEDERAL

Methods for Studying Nurse Staffing in a Patient Unit. A manual to aid hospitals in making use of personnel. Health Manpower References. *DHEW Publication No. (HRA) 78-3. May 1978; 226 pages.*

Supply of Optometrists in the United States: Current and future. *DHEW Publication No. (HRA) 79-18. 1978; 23 pages.*

A Report on the National Health Service Corps Scholarship program by the Secretary of HEW to Congress. *DHEW Publication No. (HRA) 79-13. 1978; 143 pages.*

Planning for Physician Requirements: A Manual to Develop Physician Requirement Models for HSAs (Health Systems

Agencies). *DHEW Publication No. (HRA) 79-12. 1978; 245 pages.*

Survey Report on Medical, Nursing and Osteopathic School Admissions Policy Relating to Abortions/Sterilizations. *DHEW Publication No. (HRA) 79-27. 1979; 39 pages. Executive Secretariat, Bureau of Health Manpower, 3700 East-West Hwy., Hyattsville, Md. 20782.*

Health Manpower Planning: A Comparative Study in Four Countries. *DHEW Publication No. (HRA) 78-94. 1978; 167 pages.*

Fact Sheet, Health Professions Educational Assistance Act of 1976 (PL 94-484). Revised February 1, 1979. 27 pages. *Executive Secretariat, Bureau of Health Manpower, 3700 East-West Hwy., Hyattsville, Md. 20782.*

Women's Worlds. NIMH Supported Research on Women. By Anne E. Fisher. *DHEW Publication No. (ADM) 78-660. 1978; 106 pages (Stock No. 017-024-00798-6).*

Catalog of Family Planning Materials. *DHEW Publication No. (HSA) 79-5606. 1979; 144 pages.*

Health Services Research in Puerto Rico. Proceedings of the conference held March 29-April 1, 1977, at Fajardo, Puerto Rico, conducted by the Faculty of Biosocial Sciences and the Graduate School of Public Health, University of Puerto Rico. *NCHSR Research Proceedings Series. DHEW Publication No. (PHS) 78-3209. March 1978; 100 pages.*

Effects of the Payment Mechanism on