AIDS Among Women to Double by 2000

By the end of the 1990s, the number of women infected with the human immunodeficiency virus (HIV), which causes AIDS, may well double as heterosexual transmission becomes the predominant mode of spread of the virus in most parts of the world, the World Health Organization (WHO) says.

In an analysis of the impact of AIDS and HIV infection on women, WHO estimates that worldwide, some 3 million women are already infected with HIV. Since the start of the pandemic, about one-third of the estimated total of 1.3 million cases of AIDS have been in women. Moreover, WHO says these are probably conservative estimates.

The WHO analysis indicates that, by 1992, a cumulative total of 600,000 women will probably have developed AIDS around the world. In addition, WHO estimates that AIDS will kill at least 2 million women during the 1990s, most of them in sub-Saharan Africa.

The new WHO analysis marks the culmination of a year of intensified efforts, both at WHO and around the world, to focus attention on the worsening impact of AIDS and HIV infection on women.

The new WHO analysis presents the following picture of the global epidemic of AIDS among women:

- As of 1990, 60 percent of HIV infections worldwide have resulted from heterosexual intercourse. In developing countries, heterosexual sex is the predominant means of HIV transmission. In industrialized countries, the heterosexual spread of HIV is increasing slowly but steadily, especially in groups with high rates of sexually transmitted diseases and drug injecting. By the year 2000, it is projected that 75–80 percent of all HIV infections will result from sexual intercourse between men and women, which will mean dramatic increases in HIV infection among women.
- An estimated 1 in 40 women in sub-Saharan Africa is already infected with HIV. Elsewhere, for example, 1 in 500 women in Latin America and 1 in 700 women in North America is infected. In Asia, and particularly in South and Southeast Asia, recent data indicate that within the past 3 years alone close to 200,000 women may have been infected.
- In some cities in sub-Saharan Africa, up to 40 percent of adults of both sexes may be infected with HIV. These infection levels will cause a doubling or a tripling of the total adult mortality rate during the 1990s and will also cause up to a 50-percent increase in the mortality rate of children.
- WHO estimates that approximately 30 percent of infants born to infected mothers will become infected with HIV before, during, or shortly after birth. A cumulative total of as many as 10 million infants will be born infected with HIV worldwide by the year 2000.
- Up to 70 percent of infants born to infected mothers will not be infected. They will not escape the pandemic's impact, however, as their mothers or fathers, or both, die of AIDS. At least 10 million uninfected children under the age of 10 will be orphaned in the 1990s.

"I want to stress that these estimates are projections based on what is happening now," said Dr. Michael H. Merson, Director of the WHO Global Program on AIDS. "If, for example, the virus begins to spread substantially in densely populated areas that have been relatively spared until now, such as parts of Asia, then even these high estimates will have to be revised dramatically upward."

Opportunistic Infection Drug Research Funds Approved by NIAID

The National Institute of Allergy and Infectious Diseases (NIAID) has approved $2.8 million in first-year funding for six teams of scientists to design drugs for opportunistic infections associated with AIDS.

Opportunistic infections—rare or ordinary infections that take on life-threatening proportions in people with compromised immune systems—account for up to 90 percent of AIDS-related deaths.

They are caused by bacteria, viruses, protozoa, and various other organisms. *Pneumocystis carinii* pneumonia, the most common AIDS-related opportunistic infection, occurs in about 85 percent of people with AIDS. Other opportunistic infections seen in people with AIDS include cytomegalovirus retinitis, which can lead to blindness; candidiasis, histoplasmosis, and other serious fungal infections; toxoplasmic encephalitis, the most common opportunistic infection of the brain; herpes simplex virus infections; and severe diarrhea caused by *Cryptosporidium*, the most devastating gastrointestinal infection.

Current therapies for opportunistic infections are often toxic, or must be given intravenously and thus are difficult to administer for long periods. Some infectious organisms do become resistant to standard therapies. For these reasons, new and improved drugs to treat and prevent HIV-associated opportunistic infections are urgently needed.

The new awards establish six National Cooperative Drug Discovery Groups in the area of opportunistic infections. The groups provide a formal way for basic research scientists from various fields to collaborate with those who have the knowledge and the resources to bring a drug to market.

Each group is led by a principle investigator who determines the composition and overall research objective of his or her group. Group members bring to the task complementary skills and resources that contribute to the project goal. NIAID staff members, led by H.S. Allaudeen, PhD, will facilitate each group's efforts by establishing additional collaborations, supplying critical substances for experiments, testing promising drugs, and providing a broad perspective on each group's approach and progress. NIAID staff members also work closely with the Food and Drug Administration and AIDS clinicians to accelerate the process of moving any promising new drug from the preclinical development stage into human clinical trials.

The model for the new program was set up 4 years ago to promote scientific cooperation in designing new

drugs to fight the AIDS virus, HIV. Three drugs discovered through these efforts—soluble CD4, D4T, and AZDU—are now in clinical trials; several others are in the pipeline.

The model program did not preclude research on opportunistic infections, but few applications for research in this area were received. Thus, last year the Institute issued a separate request for applications that specifically addressed opportunistic infections.

The two programs highlight a new approach to drug discovery called rational drug design. In this approach, basic researchers learn as much as possible about an infectious organism's structure and mechanism of replication. This information is used to design therapies that take advantage of its vulnerable features or to design biochemical assays to screen rapidly for inhibitors of that selected target. While random drug screening is still employed to find drugs to fight AIDS and other diseases, rational drug design has proved so successful in AIDS research that it has become increasingly popular in other fields of medicine as well.

The six awardees and the focus of their projects include

Patrick J. Brennan, PhD, Colorado State University, Ft. Collins. *Mycobacterium avium.*

Paul A. Lartey, PhD, Abbott Laboratories, North Chicago, IL. Fungi-cell wall inhibitors.

Jack S. Remington, MD, Palo Alto, CA. *Toxoplasma.*

Jeffrey I. Gordon, MD, Washington University School of Medicine, St. Louis. Fungi-enzyme inhibitors.

James R. Piper, PhD, Southern Research Institute, Birmingham, AL. *Pneumocystis, cytomegalovirus, toxoplasma.*

Charles R. Sterling, PhD, University of Arizona, Tucson. *Cryptosporidium.*

FDA Standardizes Testing of AIDS Workers' Gloves

The Food and Drug Administration (FDA) will standardize the testing and define the minimum quality levels of the billions of rubber and plastic gloves worn by health care workers for protection from AIDS and other infections.

Under current FDA requirements, manufacturers of medical gloves must have their own testing programs.

FDA will examine randomly selected samples of manufacturers' gloves for tears, holes, and any foreign matter embedded in the gloves as part of its inspection program. FDA also will subject the gloves to a water leak test in which 1,000 milliliters of water (about a quart) are poured into a glove.

Gloves will not be permitted to be sold for medical uses if leaks are found at rates greater than 25 per 1,000 for surgeons' gloves and 40 per 1,000 for patient examination gloves. The rate is lower for surgeons' gloves because they come in contact with internal areas of the body and may have longer periods of exposure to blood and other bodily fluids than do examination gloves.

Foreign glove manufacturers may be placed on an import detention list if their gloves consistently do not meet the new FDA requirements. Domestic gloves that do not meet the requirements will be seized, if necessary, to keep them off the market.

Although the use of protective gloves is widespread, the Centers for Disease Control knows of 20 cases in which health workers were infected with the AIDS virus, mostly from accidental needle sticks.

Four of them involved medical workers whose skin, thought to be chapped or scratched, was exposed to the virus.

The new FDA regulation became effective March 12, 1991.

Suppressed Anger Believed More Deadly to Women

A high level of suppressed anger is apparently more deadly to women than it is to men, according to followup on an 18-year mortality study at the University of Michigan.

Its Life Change Event Study found that women who scored high on the Harburg Suppressed Anger Scale were three times more likely to have died during the years of the study than women who had low levels of suppressed anger.

A comparison among men with high and low levels of suppressed anger found that suppressed anger had only a marginal impact on their mortality rates. Suppressed anger seemingly did have an impact, however, among men who had systolic blood pressure of 140 and above. Men with elevated blood pressure and high suppressed anger scores were almost twice as likely to die as men with high blood pressure and low suppressed-anger scores. Men with chronic bronchial conditions and high levels of suppressed anger also were at twice the risk.

Notably, the study found that men with high suppressed anger but low blood pressure were four times less likely to have died as men with high anger and high blood pressure. The high anger-low blood pressure finding suggests that suppressed anger, by itself, is not a mortality risk for men.

Mara Julius, PhD, an assistant research scientist in epidemiology at Michigan's School of Public Health, designed the Life Change Event Study and collected baseline psychosocial and health data on a representative subsample of the Tecumseh Community Health Study cohort. The subsample included 324 men and 372 women ages 30–69 years in 1971–72. She conducted 12- and 18-year mortality followup studies that controlled for age, smoking, weight, blood pressure, bronchial condition, lung capacity, and education. Between 1971 and 1989, 17.3 percent of the men and 9.4 percent of the women in the study died.

To gauge the level of suppressed anger, subjects were asked to choose one of five levels of reactions that described how angry they were likely to feel when a spouse and when a policeman yelled at them for something that was not their fault. They also were asked to choose a phrase that described how vigorously they would protest the injustice. The answers were then merged into a total suppressed-anger index for each subject.

In a report to the Gerontological Society of America, Dr. Julius described the overall style of coping with anger as similar for men and women—about 40 percent of each sex used anger suppression as a coping style. However, men were more likely to report suppressing anger in the marital confrontation while women were more likely to report suppressing anger in the policeman confrontation.

Expressed anger seems to be a more healthy style of coping, she noted. However, that does not mean one should rant and rave at the slightest provocation. She believes in the reflective method of coping with anger—counting to 10, or higher, and then dealing directly, but calmly, with the issue that provoked the anger.

Dietary Guidelines for Americans

Some changes were made to the 1985 dietary guidelines. The 1985 and 1990 guidelines and the reasons for changes are as follows:

1985	1990	Reason for change
Eat a variety of food	(same)	
Maintain desirable weight	Maintain healthy weight	New interim health-based weight criteria used
Avoid too much fat, saturated fat, and cholesterol	Choose a diet low in fat, saturated fat, and cholesterol	Focus on total in more positive way
Eat foods with adequate starch and fiber	Choose a diet with plenty of vegetables, fruits, and grain products	Focus on foods, rather than food components in total diet
Avoid too much sugar	Use sugars only in moderation	Focus on targeted food in a more positive way
Avoid too much sodium	Use salt and sodium only in moderation	Focus on both in a more positive way
If you drink alcoholic beverages, do so in moderation.	(same)	

New Dietary Guidelines Released by USDA and DHHS

The Department of Agriculture (USDA) and the Department of Health and Human Services (DHHS) have released the third edition of "Nutrition and Your Health: Dietary Guidelines for Americans," the Federal Government's principal statement of nutritional advice.

The third edition maintains the seven principal messages of earlier published guidelines (1980 and 1985). The new bulletin, however, reflects changed emphasis to take into consideration the latest scientific information.

The bulletin's presentation is clearer and more diet-oriented than previous editions, and includes a new and interim approach to judging the appropriateness of one's weight. It also, for the first time, contains suggested numerical limits for fats and saturated fat intake, and short action statements ("advice for today") along with each guideline.

Nutrition and health professionals actively promote these dietary guidelines nationwide as a means of focusing the attention of Americans on a healthful diet. The two Departments have distributed more than 5 million copies of the 1985 edition of the bulletin and millions more have been printed and distributed by others.

The third edition of the Dietary Guidelines bulletin is based on recommendations of a nine-member Dietary Guidelines Advisory Committee. The committee, appointed jointly by the two departments in early 1989, recommended changes to the 1985 edition to reflect new scientific evidence on diet and health relationships and new information on the usefulness of the earlier editions to professionals and the public. The committee also considered written comments about the guidelines from almost 100 individuals and groups outside government.

The published report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 1990, contains the committee's recommendations and the rationale for changes proposed to the 1985 revision, summarizes studies of the usefulness of earlier editions, and gives an overview of public comments to the committee.

The committee and departmental reviewers concluded that the central messages of the seven guidelines as presented in 1985 remain sound and of major importance in choosing food for a healthful diet.

The 1990 guidelines detail the following main points:

- Eat a variety of foods.
- Maintain healthy weight.
- Choose a diet low in fat, saturated fat, and cholesterol.
- Choose a diet with plenty of vegetables, fruit, and grain products.
- Use sugars only in moderation.
- Use salt and sodium only in moderation; and
- if you drink alcoholic beverages, do so in moderation.

Copies of the committee report are available from the Human Nutrition Information Service, USDA, Room 325A, Federal Building, Hyattsville, MD 20782.

The bulletin on dietary guidelines is available without charge from Consumer Information Center, Department 514–X, Pueblo, CO 81009.

Single copies are also available through DHHS, ODPHP, National Health Information Center, P.O. Box 1133, Washington, DC 20013–1133.

Food industry and other groups are encouraged to print and distribute the bulletin. Special arrangements for printing large quantities can be made with the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; tel: (202) 275–3325.

Slow-Release Iron Pill Developed to Benefit Women in Third World

Women suffering from nutritional anemia, caused mainly by a lack of iron in the diet, may now have a remedy.

A new slow-release iron pill, developed jointly by the Agency for International Development, private industry, and a major university, may alleviate iron deficiency anemia, particularly among women. Research indicates that the iron supplement formula may be three times as effective as supple-

ments now in use, and less likely to cause nausea, vomiting, or stomach distress, which are common side effects of iron supplements.

After field tests by the University of Kansas, the iron supplement is expected to be commercially available to women in developing nations, where iron deficiencies affect 50 percent of pregnant women and 35 percent of all women. Most iron supplements are in the form of capsules that release iron slowly to reduce stomach distress. However, the release generally is so slow that before the iron can be fully absorbed, the capsule passes through the stomach.

The new formula involves a vegetable substance or powder that forms a gelatin in the stomach, enabling the iron to be released at a rate to permit maximum absorption. Previous efforts to combat the problem in developing countries, by adding iron to food or distributing iron pills, have failed because it was difficult to find the right vehicle for the supplement at a low cost.

Anemia is less serious in the United States because women can eat foods rich in iron, such as meat or bread made of iron-fortified flour, and pregnant women who suffer from anemia can obtain additional iron supplements.

PHS to Share Hansen's Center with U.S. Prisoners

The Public Health Service (PHS) has signed an agreement under which its Gillis W. Long Hansen's Disease Center in Carville, LA, will provide residential and clinical services to low security Federal prisoners in need of long-term medical care.

About half of the center's physical space and service area will be used by the Bureau of Prisons of the Department of Justice to house approximately 200 prisoners. The PHS' Health Resources and Services Administration will continue to operate the center.

The center, a world leader in Hansen's disease research, will continue its activities. Most of the center's research, rehabilitation, and some clinical and training activities will be moved to a site in Baton Rouge, LA. The patients, whose numbers have declined from 300 to 180 over the past 5 years, will continue to live at the 300-acre Carville facility.

The facilities made available to the Bureau of Prisons will be used to house low security prisoners in need of chronic care. As the PHS use of the facility declines, the Bureau of Prisons use is expected to increase. The number of low security prisoners in need of chronic medical, psychiatric, and nursing home care has increased significantly in recent years and is expected to grow even faster in the next 5 years.

Institute of Medicine Panel Debunks Pessimism About Health Outlook for the Aged

A panel of medical experts convened by the National Academy of Sciences' Institute of Medicine has urged those providing health care for the aged to look beyond the concept of primary prevention and cure, and to work to retain the elderly's maximal physical and mental functions.

The panel said that misplaced pessimism about aging has led to a widespread belief that growing old means frailty, sickness, and a loss of vitality, when in fact, many old people lead satisfying lives and maintain their health well beyond society's expectations. An increasing body of evidence indicates that old people can benefit from health promotion and disease prevention efforts, the committee said, but typically such programs are targeted toward the young and middle-aged. Until recently, research in this area has focused on younger populations and there is little documented data on special risks among the 50-and-older group.

"Whatever progress is made in the prolongation of functional independence will come slowly and will depend heavily on research in the basic biology of aging and the genetic determinants of age and predisposition to disease," the panel reported. Nevertheless, there are interventions available now that can greatly reduce disability. Their report recommends new services, research on interventions to restore and maintain function, and education for professionals and the public to promote a greater awareness that disability among the aged can, to a large extent, be prevented or delayed.

Thirty percent of Medicare costs are spent for care in the last year of life. "Should we continue to devote these resources to the provision of acute care," the panel asked, "or should we allocate more of them to prolong independent functioning in a community setting?"

The study was funded by the National Institutes of Health through its National Institute on Aging and the National Institute for Dental Research, the Food and Drug Administration, Alliance on Aging, and the Charles A. Dana Foundation and Pew Charitable Trusts.

Risk Factors

People 65 years of age and older make up the fastest growing segment of the U.S. population. They numbered 30 million, or 12.4 percent of the population, in 1988 and are expected to increase to 14 percent by 2010 and 22 percent by 2030. The elderly population itself is getting older; about 10 percent of this group currently are aged 85 years and older, but by 2010 the proportion will have increased to more than 15 percent. Research data related specifically to avoiding disability among the elderly are scarce, the panel said. It selected 13 risk factors, including such health problems as high blood pressure, misuse of medications, and social isolation and falls, that can initiate a train of events leading to disability.

The panel explained that its choice was based on the fact that these conditions affect large numbers of people and remedial interventions are available. For each risk factor the committee examined its burden on people and society and recommended public and private actions to reduce disability.

High blood pressure. Everyone 50 years and older, even those with no previous symptoms or family history of high blood pressure, should have their blood pressure checked at least once every 2 years, and Medicare and private health insurance should reimburse physicians for that examination. More public education is needed to promote detection and treatment of high blood pressure, especially among black males, isolated older persons, and others unlikely to have ready access to care. The elderly should be included in research on new antihypertensive drugs; interventions such as low-salt diets, weight loss and exercise; and treatments for mild high blood pressure.

Medications. The elderly are the largest consumers of both prescription and over-the-counter drugs. "Improper medication can be disabling and deadly," the panel said. Physicians

should periodically review all drugs, prescription and nonprescription, taken by their aged patients, and should take age and body makeup into account when prescribing. Patients, in turn, should be alert to dangers of multiple medications.

Infection. All those older than 50 years routinely should be vaccinated against pneumonia and influenza. Hospitals and nursing homes need to follow good infection-control practices.

Osteoporosis. Fractured bones are responsible for a significant amount of disability among the elderly. One-half of those able to walk before suffering a hip fracture are not able to walk independently afterward. More than 1 million fractures a year in the United States are attributed to osteoporosis. Research is needed to design cost-effective screening programs; to evaluate the efficacy of estrogen replacement therapy, calcium supplements, and exercise in preventing bone loss; and to develop improved postfracture rehabilitation programs.

Sensory loss. Loss of vision or hearing isolates people from their environments. Services and devices to help overcome such losses should be readily available and covered by public and private insurance.

Oral health. Dental and oral disabilities are preventable in adults. Greater efforts should be made to extend access to care to elderly people.

Cancer screening. Age is the most consistent and strongest predictor of risk for and death from cancer, and incidence and mortality rates increase exponentially with age. However, elderly populations, particularly blacks, have received considerably less early screening for various cancers than have younger groups. Yet screening and early treatment can be as effective in the elderly as in younger people. Studies show that screening and subsequent treatment for breast cancer in women 50–70 years of age has led to as much as a threefold reduction in mortality. Screening appears to be more effective in postmenopausal women than in younger women.

Nutrition. Health care providers periodically should assess the diet and nutritional status of elderly patients. As more of the very old live alone at home, better services for delivering meals or providing meals in group settings are needed.

Cigarette smoking. Physicians should advise elderly patients to stop smoking. Policymakers should ban advertising of tobacco products and eliminate Federal subsidies to tobacco growers, according to the report.

Depression. High rates of depression have been found in certain groups of older persons, such as those in nursing homes. There is a strong link between depression and physical illness. But when illness is not a factor, older people are less likely to be depressed than younger people. Depression in the elderly, however, is seriously underdiagnosed and often misdiagnosed, and increased training for physicians in detection and treatment of mental disorders in the elderly is recommended. Inadequate reimbursement for psychiatric care by public and private insurers should be addressed.

Physical inactivity. Regular exercise among the elderly contributes to good health and the ability to function independently. Physicians should encourage older patients to engage in exercise programs, and communities should provide safe, inexpensive, and convenient places to exercise.

Social isolation. Contact with other individuals is important for continued good health, and many aged people participate in various social networks sponsored by churches, community centers and other agencies. Identifying isolated persons and increasing their contacts with others should receive greater emphasis from health care providers, families, friends and social institutions.

Falls. Although osteoporosis weakens the bones, a fall is usually the immediate cause of fractures in the aged. Many factors, from a reaction to medication to a slippery floor, can cause a fall and possible disability, but the panel report cautioned that fear of falling should not be allowed to interfere with an older person's independence or quality of life. The committee recommended education programs on reducing hazards that may lead to falls.

Chairperson was Robert Berg, Professor Emeritus, University of Rochester School of Medicine and Dentistry.

Copies of "The Second Fifty Years: Promoting Health and Preventing Disability," are available from the National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418; tel. (202) 334–3313 or 1–800–624–6242. The 332-page report is $29.95, prepaid plus shipping.

Benefits of Improved Aging Not Distributed Equally Among Rich and Poor

The goal of extending older Americans' golden years by postponing the onset of chronic illness and disability has been substantially achieved for the more educated and affluent, but not for the poor and less educated, according to a University of Michigan study.

Socioeconomic status (SES), the study found, is a critical factor determining whether illness and disability are postponed until the very end of the lifespan or begin at mid-life and increase steadily into early old age.

Using data from a survey that they conducted and from the National Health Interview Survey, sociologist James S. House, PhD, and colleagues at the university's Survey Research Center found that adults of all socioeconomic groups showed similarly low rates of chronic illness and limitations in ability to function at ages 25 to 34 years. By ages 35 to 44 years, however, the health profiles diverged significantly, with those of the lowest socioeconomic status showing a prevalence of chronic conditions, such as cancer, heart attack, stroke, and lung disease that the highest SES group did not have until after reaching 75 years of age. After age 75, they found, the health profiles of different SES groups converged, with similar rates of illness seen in each group.

The researchers found similar patterns with regard to functional limitations, such as impaired mobility and inability to perform daily tasks. Differences were virtually nonexistent at ages 25 to 34 years, increased through 55 to 64 years, and decreased after 64 years.

The divergence in health profiles between SES groups was more marked when severe illness or disability was considered. In the highest SES group,

the researchers found, reports of three or more chronic conditions did not exceed 16 percent, even at age 75 and older, whereas 12 percent of the lowest SES group reported three or more chronic conditions by age 65.

The lowest SES group was defined as having less than a high school education and an annual income less than $20,000; the highest SES group included college graduates or the equivalent, with incomes in excess of $20,000.

The researchers acknowledged that some socioeconomic differences in health may be exacerbated by unique political and economic events, such as high unemployment in the 1980s, which resulted in a significant reduction in health coverage for working-age Americans.

Other possible explanations offered for the differences in health by SES included

- Residues of early life—the effects of limited access to prenatal, neonatal, and infant care—while masked in early adulthood, may persist as risk factors in middle and old age.
- Adult lifestyles during the past 50 years have changed. Those of low SES groups increasingly have begun smoking, consuming diets higher in fats, and leading more sedentary lives, while those of high SES groups have turned from such behaviors.
- Members of low SES groups are more likely to be exposed to physical, chemical, biological, and psychological hazards and stresses in their work environments.
- Evidence suggests that, partially because of high illness and mortality rates, members of low SES groups appear to have more difficulty forming relationships associated with longevity and health, such as stable marriages.
- Members of low SES groups are likely to experience greater amounts of acute and chronic stress in most areas of life.
- Despite major efforts to equalize access to medical care, differences persist and have been exacerbated in the 1980s, with increasing numbers of people of working age lacking health insurance. After age 65, Medicare guarantees health coverage for all, perhaps partially explaining the convergence in health profiles around that age.

"Making the health characteristics of lower socioeconomic groups more similar to those in higher SES groups in a major avenue to improving health and aging in our society," Dr. House said. "This will require educating people to the inequities in occupational hazards, stress, social relationships, and medical care, and perhaps reductions of socioeconomic inequality itself."

Library of Medicine Offers Bibliographies on Ills of the Elderly, Prison Health Care

Five bibliographies on topics of interest to the elderly and those who care for them, prepared by the National Library of Medicine for its Current Bibliographies in Medicine series, are now available from the U.S. Government Printing Office.

"Prison Health Care" (GPO No. 817-006-00012-4), a 60-page bibliography of more than 1,100 citations of books, journal or magazine articles, audiovisuals, government reports, meeting abstracts, conference proceedings, and law case reports from January 1986 to September 1990 is also available from the Government Printing Office.

"Alzheimer's Disease and the Family" (GPO No.817-006-0009-4) is a 19-page bibliography of more than 340 citations of studies on family caregivers, community services, support groups, respite care, institutionalization, psychiatric factors, and legal and ethical issues.

"Exercise and the Elderly" (GPO No.817-005-00013-6) lists more than 1,000 citations on the role of exercise and other physical activity in health maintenance, disease prevention, and rehabilitation of the elderly, from age 65 to 80 and older.

"Medication and the Elderly. Part 1: Treatment Issues" (GPO No. 817-005-00019-5) and "Part 2: Specific Diseases" (GPO No. 817-005-00020—9) review aspects of prescription and nonprescription drug use as affected by advancing age. Part 1 lists more than 1,000 citations on adverse effects and drug interactions, anesthesia, patient compliance, and more. Part 2 cites more than 800 studies on medication for the elderly in Alzheimer's disease, bone and joint disease, cancer, cardiovascular diseases, endocrine disorders, hypertension, infections, pain, psychological disorders, respiratory disease, sleep disorders, and urogenital disorders.

"Sleep Disorders of Older People" (GPO No.8 17-006-00002-7) was prepared for the National Institutes of Health Consensus Development Conference, "The Treatment of Sleep Disorders of Older People" held in Bethesda, MD, in March 1990. Disorders of sleep afflict more than half of the people 65 and older who live at home and about two-thirds of those who live in long-term care facilities. There are a total of 725 studies on hypersomnia, insomnia, narcolepsy, sleep apnea, normal sleep, and animal studies in this bibliography.

Citations for the bibliographies on the elderly were selected from more than 40 electronic databases to give a comprehensive overview of current research on these topics. Included are journal articles, reports, monographs, dissertations, audiovisuals, meeting abstracts, conference proceedings, and book chapters.

"Prison Health Care" citations were selected from more than 25 electronic databases to give a comprehensive overview of the medical, legal, and ethical aspects of prison health care for the more than 1 million prisoners in the United States.

"Prison Health Care" cites studies on standards of health care, mental health, dental health, nutrition and exercise, substance abuse treatment, communicable diseases, AIDS, and health education and promotion in the prison setting, as well as the health needs of special inmate populations (pregnant women, older inmates, juveniles). An appendix lists national organizations active in prison health care issues.

The bibliographies are available for $3 each. Send the GPO order number and check or money order, payable to the Superintendent of Documents, to the U.S. Government Printing Office, Washington, DC 20402-9322. The entire 20-issue subscription series, "Current Bibliographies in Medicine," on topics of current popular interest, is available for $52. Ask for List ID CBM 90.

NIH Study Challenges Link Between Contraception and Preeclampsia

Based on a recent study showing that women with a history of barrier contraceptive use had higher rates of hypertension and renal abnormalities during

pregnancy (preeclampsia) than other women, some obstetricians have been advising women to avoid using these kinds of contraceptives.

A new study at the National Institutes of Health, however, has found no association between the incidence of preeclampsia and the use of barrier contraceptives.

"Given the large number of subjects we had and given that barrier contraceptive users, if anything, had a slightly lower risk of preeclampsia, we could virtually rule out the kinds of risks that the previous study identified," said James L. Mills, MD, MS, senior investigator in the Division of Prevention Research at the National Institute of Child Health and Human Development (NICHD) and organizer of the study.

Preeclampsia, an important cause of fetal death, usually occurs in women who are pregnant for the first time. In addition to high blood pressure, it is characterized by excessive amounts of protein in the urine and swelling of tissues and cells. If left untreated, preeclampsia can develop into full-fledged eclampsia, which can be fatal to the mother.

Barrier contraceptives are those that prevent sperm from reaching the endometrium and include spermicides, condoms, diaphragms, and sponges. Conversely, oral contraceptives, intrauterine devices, the rhythm method, and douches are considered nonbarrier contraceptives.

The etiology of preeclampsia is unknown, but it may be caused by a maternal immune response to fetal antigens. Some scientists have identified barrier contraceptives as a possible risk factor in the development of the disorder. They have suggested that a lack of prior exposure to paternal antigens via sperm may impair the process of normal desensitization of the mother's immune system to antigens produced by the fetus.

Why the results of the NICHD study dispute the findings of other studies is unclear.

"We spent a lot of time discussing potential reasons, and it's not so obvious," Dr. Mills said. "I would say that the study that found a relationship between use of barrier contraceptive methods and preeclampsia may have just found it by statistical chance."

To guard against the possibility of statistical error in the NICHD study, investigators included in their analysis large numbers of women from diverse backgrounds.

Nonetheless, additional research is warranted. Since a primary issue is whether the frequency of exposure to sperm changes the risk associated with contraceptive methods, a study that collected more information on women's sexual habits and contraceptive history would be useful, Dr. Mills said.

In the meantime, women who use barrier contraceptives may continue to do so without fear of increasing their risk for preeclampsia.

NICHD Funds Seven New Child Research Centers

The National Institute of Child Health and Human Development (NICHD) is funding seven research centers in a new program designed to apply findings from basic science more quickly to the care of sick children.

Each of seven Child Health Research Centers will select a scientific area related to pediatrics on which to concentrate. Established investigators from a variety of scientific backgrounds will work with newly trained pediatricians to establish a center of excellence in the chosen subject area.

The seven centers, the director, and the focus of each are

- Yale University, Dr. Joseph Warshaw. The program will focus on identifying and remedying the adverse genetic and environmental influences that can limit the capacity of a child to achieve his or her greatest potential. This program will use the tools of cellular and molecular biology to study normal development and the ability of the fetus and child to adapt to environmental or genetic challenges. (first year funding, $305,921)
- Rocky Mountain Center: Consortium of the Universities of Utah, Colorado, and New Mexico, Dr. Michael A. Simmons, Dr. Gerald Merenstein, and Dr. John D. Johnson. This tri-State program chose as its theme the basic biology of development and its relevance to clinical practice. Research on metabolic pathways and their regulation, genetic disease, and fetal and neonatal adaptations will be emphasized. (first year funding, $298,420)
- Boston Children's Hospital, Dr. David G. Nathan. This program will emphasize the development of a cadre of skilled pediatric scientists to work in the field of developmental biology. (first year funding, $294,797)
- Johns Hopkins University School of Medicine, Dr. Frank Oski. This center's theme is to apply new molecular biology techniques to the diagnosis, treatment, and prevention of genetic and acquired disorders in children. It will focus on developing techniques to analyze genes and gene products, especially those required for normal development. (first year funding, $236,991)
- University of Texas Medical Branch-Galveston, Dr. C. Joan Richardson. This center will focus on applying research in developmental immunology to improving health and combatting diseases of children. (first year funding, $300,926)
- University of Iowa, Dr. Frank H. Morriss, Jr. This center will concentrate on the molecular biology of development, emphasizing the identification and localization of genes on the human genome, mechanisms by which specific genes regulate the synthesis and timing of gene products and the effects of gene products or their absence on the structure and function of developing tissues. (first year funding, $329,645)
- Baylor University, Dr. Ralph D. Feigin. This center will use molecular genetics, cell biology, and developmental biology to improve the understanding and management of clinical pediatric problems. (first year funding: $333,300)

The child health research centers program is the result of a congressional initiative that urged the creation of research centers focused on the health and well-being of children.

PHS Focuses on Preventing and Treating Oral Diseases Among Adults and Children

Although great improvements have been made in oral health promotion and disease prevention in the last 50 years, and more adults are keeping their natural teeth after age 65, oral diseases remain a prevalent health problem in the United States.

In 1986, dental-related illnesses accounted for 20.9 million lost work days, 6.4 million days of bed disability, and 14.3 million days of restricted activity. The total cost of dental care for the nation in 1988 was about $27 billion. Oral cancer is a serious but preventable oral health problem, with more than 30,000 new oral or pharnygeal (throat) cases recorded annually.

Even though the incidence of tooth loss is declining, 36 percent of adults aged 65 years and older have lost all their natural teeth. This loss of teeth may affect other medical conditions by impairing adequate nutrition and contributing to isolation and other psychosocial problems. Even for those with few or no teeth, regular dental visits continue to be important as a means of decreasing the risk of developing soft tissue lesions and oral cancer.

The primary factors that improve oral health include daily brushing and flossing, regular professional dental health services, good eating habits that avoid caries-promoting foods, appropriate use of fluorides, nonuse of tobacco, and moderate use of or abstinence from alcohol use.

The 1985 National Health Interview Survey found that 83 percent of respondents thought that regular brushing and flossing was definitely important in preventing dental diseases. An additional 12 percent thought it was probably important. One important consideration in interpreting these results is that public knowledge of risk does not necessarily result in the practice of periodontal disease prevention.

In addition to daily oral hygiene, the use of regular professional services can reduce the incidence of tooth loss and the need for expensive restorative treatment. In 1986, only 57 percent of the population older than 2 years had seen a dentist in the previous year. The largest percentage of visits were made by those with higher incomes and educational levels, children aged 6 to 11 years, and people with dental insurance. The populations least likely to receive regular dental care included blacks, Hispanics, older Americans, and people who had lost their teeth. With well under half the population (about 100 million people) receiving dental health insurance benefits, the cost of regular use of services may be a primary barrier, especially for low- and fixed-income persons and families.

Many States offer only a limited number of oral health services through their Medicaid programs and only about one-third of Medicaid eligible persons receive dental services under the program. Less than one-half of dentists who practice privately report treating patients with Medicaid or other government assistance. In addition, inner city areas and isolated rural areas often do not have dental practitioners within a reasonable distance to provide preventive, diagnostic, and treatment services.

To improve oral health of adults, the Public Health Service (PHS) has established an Oral Health Coordinating Committee for a national adult oral health promotion initiative. The committee will work to coordinate the efforts or PHS and other Federal programs. The American Fund for Dental Health of the American Dental Association and the National Institute of Dental Research will lead a private sector effort to establish an effective working relationship with government and private sector agencies.

Better understanding of the process that leads to dental caries is another step in the improvement of oral health for Americans. In the past, foods with high sugar content were considered the primary cause of dental caries. Recent research indicates that the process is complex and individual susceptibility is related to a variety of factors in addition to the intake of cariogenic foods. For adults, predictors include age, number of teeth (more teeth generally indicates better overall health and less likelihood of dental disease), degree of gingival recession, number of periodontal pockets, amount of previous coronal or root decay, recent onset of illness (stress), current or former smoker, and fluoride history. Targeting oral health resources to persons or groups at high risk, such as elderly, institutionalized, or disabled adults, could produce positive results rapidly.

Fluoride has been recognized for many years as a cost-effective public health measure and the most reliable method to prevent tooth decay. However, more than 100 million people in the United States do not have fluoridated water supplies. To encourage continuation and promotion of fluoride use, PHS has included two objectives on the use of fluoride in "Healthy People 2000: National Health Promotion and Disease Prevention Objectives." These include increasing to at least 75 percent the proportion of people served by community water systems providing optimal fluoride levels and increasing the use of professionally or self-administered topical or dietary fluorides to at least 85 percent of people not receiving optimally fluoridated public water.

In addition to dental caries and periodontal disease, cancers of the oral cavity have a major impact on oral health. About 30,500 new cases of cancer of the oral cavity and pharynx will be diagnosed in 1990 and only about one-half of these victims will be alive in 5 years. Tobacco and alcohol use are responsible for about 75 percent of oral cancers. Men are twice as likely to develop oral cancers as women and the incidence in blacks is 30 percent higher than for whites.

Regular contact with dental health professionals increases the chances of identifying cancerous lesions at an early stage and improves the likelihood of effective treatment. The 5-year survival rate for people with localized disease is 75 percent compared to 18 percent for those with advanced disease at diagnosis.

Some population subgroups, such as people with low incomes, American Indians, Alaska Natives, blacks, Hispanics, those with low education levels, rural residents, and migrant workers, suffer disproportionately from dental caries, destructive periodontal diseases, and cancer of the oral cavity and pharynx. Efforts to reduce these disparities are especially important as a means of minimizing the burden of suffering from the serious social, financial, and health problems that can result from poor oral health, as well as improving quality of life for large segments of our population.

An important area of focus is educating parents to help children avoid developing early disease that will continue to affect their oral health through adulthood. Organizations that are sources for information on oral health are listed.

National Institute of Dental Research, Office of Communication, Bldg. 31/2C–35, Bethesda, MD 20892; (301) 496–4261; publishes free consumer-oriented pamphlets on a wide range of oral health topics and has professional materials on school fluoride programs

Centers for Disease Control, Center for Prevention Services, Dental Disease Prevention Activity, 1600 Clifton Rd. NE, Room 1000-E09, Atlanta, GA 30333; (404) 639–1830; provides information on fluoridation and dental disease prevention as well as technical assistance to State and local agencies on issues of oral health promotion

Indian Health Service, Communications Director, Parklawn Building, Room 6–05, 5600 Fishers Ln., Rockville, MD 20857; (301) 443–3593; provides com-

prehensive health and dental services, promotes community-based education and services, and gathers data on the health of American Indians and Alaska Natives

National Cancer Institute, Cancer Information Service, Building 31/10A-24, Bethesda, MD 20892; (800) 4-CANCER; provides information and publications on prevention, diagnosis, and treatment of cancer, including oral cancers

American Dental Association, Department of Public Information and Education, 211 East Chicago Ave., Chicago, IL 60611; (312) 440-2593; offers print and audiovisual educational materials on a wide range of dental and oral health topics, provides consultation on oral health education, and sponsors special health observances for children and seniors

American Cancer Society, 1599 Clifton Road NE, Atlanta, GA 30329; (800) ACS-2345, (404) 320-3333 in Atlanta; provides consumer information on oral cancer, the effects of tobacco use, and smoking cessation

Adapted from Prevention Report, *December 1990, Office of Disease Prevention and Health Promotion.*

NIH Funds Construction at Research Facilities

The National Institutes of Health have awarded $14.8 million for construction and remodeling at seven biomedical research institutions around the country.

The total includes $9.5 million for a facility at the Jackson Laboratory in Bar Harbor, ME, which breeds and provides special laboratory mice for many research institutions conducting studies for the improvement of health.

"Of particular concern to our department and the Congress was the desperate situation at the Jackson Laboratory," according to Louis W. Sullivan, MD, Secretary of Health and Human Services, who announced the awards. "A fire virtually destroyed the mouse breeding building on May 20, 1989, drastically reducing the nations's supply of research animals.

"That facility," Sullivan explained, "has been a unique national resource for many years. It supplies inbred mouse strains and special mutants to a broad cross-section of medical investigators throughout the world. This award is the Federal response to help restore the facility to full operation within 2 years."

Other awardees are

- Doheny Eye Institute at the University of Southern California in Los Angeles, $480,938 for converting existing space into a research laboratory and central support facility for its Center for Molecular Biology of Vision.
- University of Michigan at Ann Arbor, $1,045,000 for completing construction of a cancer genetics research facility and two core laboratories.
- Purdue University at West Lafayette, IN, $1,538,185 to consolidate most of the major programs of the Purdue Cancer Center in the Hansen Life Science Research Building.
- University of Iowa at Iowa City, $655,358 to support cerebral vascular research within the Division of Neuropathology of the Department of Pathology.
- Kenneth T. Norris Jr., Comprehensive Cancer Center at the University of Southern California, Los Angeles, $1,187,686 for the Center's Division of Cancer Cause and Prevention.
- University of Wisconsin Clinical Cancer Center, Madison, $384,833 for con struction of a new cancer biostatistics center.

The USC and Iowa awards were made earlier this year under the same program.

HHS Sets New Rules for Student Loan Defaults

The Department of Health and Human Services (HHS) has proposed rules to reduce defaults under the Health Education Assistance Loan Program (HEAL), a major financial aid program for health professions students.

The proposal would institute a performance standard against which default rates would be measured for participating schools, eligible lenders, and institutions holding student loans. Penalties for institutions that failed to meet the standard would include probation, suspension, and termination from the program.

The HEAL Program provides Federal insurance for educational loans to students of allopathic or osteopathic medicine, dentistry, veterinary medicine, podiatric medicine, optometry, public health, pharmacy, and chiropractic and graduate students in health administration, clinical psychology, and allied health.

Loans are made by banks, credit unions, savings and loan associations, pension funds, HEAL schools, State agencies, and insurance companies.

Federal payments on defaulted loans are made from the Student Loan Insurance Fund, which is supported through an 8 percent insurance premium.

Under the proposal published in the October 1, 1990 Federal Register, HHS would require schools, lenders, and loan holders to meet an annual default rate of no more than 5 percent of the dollar volume of loans entering repayment in that year. The 5-percent standard is one HHS has applied to other health professions student loans since 1983 and to nursing student loans since 1985.

Federal HEAL default payments have risen steadily in recent years, reaching $35 million in fiscal 1988. In fiscal 1989, claims payments declined to $13 million, but another $45 million in potential claims were in litigation. While the cumulative default rate has remained in a narrow range recently—7 to 9 percent—default claims and payments have increased because of large increases in the dollar volume of loans entering repayment.

The total value of outstanding principal and interest on HEAL loans today is approximately $2 billion. About 120,000 students have benefited from HEAL loans since the program began in 1979.

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