
PUBLIC HEALTH PROGRAMS AND PRACTICES

NICHD Establishes Network to Test Children's Drugs

Most of the drugs on the U.S. market have not been tested specifically for their effectiveness and safety in infants, children, or fetuses. These include many drugs that are used routinely to treat children and pregnant women.

To help remedy this situation, the National Institute of Child Health and Human Development (NICHD) has established a Network of Pediatric Pharmacology Research Units (PPRU). The five centers comprising this new network will conduct studies to provide the clinical data on drugs necessary for Food and Drug Administration (FDA) approval for use in children.

"Pediatricians and other physicians are now in a bind," says NICHD Director Dr. Duane Alexander. "Physicians can face legal problems if a child has an adverse reaction to a drug, but they can also risk suit for failure to use an effective drug for a child's illness, even if that drug does not have specific FDA approval for use in children."

The goal of this new program is to increase the number and variety of medications that are FDA-approved for use in children. The ultimate objective is to ensure that all drugs prescribed for children have been evaluated and approved specifically for such usage.

Federal law and FDA regulations require that drugs be tested for safety and efficacy before they are approved for clinical use. This testing must be done in all populations in which the drug will be used.

Since many aspects of the dosage and biological activity of drugs are different for infants and children than for adults, separate testing must be conducted with infants and children before a drug can be approved for use by them. A number of issues make such testing difficult in pediatric populations; thus, for most drugs, it is not done.

Nevertheless, many drugs for children currently are used "off label," that is, without specific FDA approval. Such usage is permitted under the Food, Drug & Cosmetic Act. Once a product has been approved for market-

ing, the FDA permits its use "in treatment regimens or patient populations that are not included in approved labeling." The new network is expected to encourage the pharmaceutical industry to support investigation of the appropriate manner in which to use such products.

The five units that will initially comprise the network are University of Tennessee, Memphis, Dr. Russell W. Chesney; Children's Hospital Research Foundation, Columbus, OH, Dr. Philip D. Walson; Children's Hospital of Michigan, Detroit, Dr. Ralph E. Kauffman; Louisiana State University, Shreveport, Dr. John T. Wilson; and University of California, San Diego, Dr. James D. Connor.

Studies at these units will be conducted by pediatric clinical pharmacologists, either with other investigators in the network, in collaboration with pharmaceutical companies, or independently with other support.

Data will be gathered on the safety and effectiveness of drugs taken by pregnant women and their effects on the fetus, and on drugs specifically prescribed for newborns, infants, and children through adolescence. New drugs not yet on the market will be tested as well as drugs that are currently available.

Homicide Leading Cause of Worker Deaths in Five States, DC

In the District of Columbia and the States of Alabama, Connecticut, Maryland, Michigan, and South Carolina, homicide was the leading cause of workplace death for the decade 1980-89, according to a report by the National Institute for Occupational Safety and Health (NIOSH), an arm of the Centers for Disease Control and Prevention within the Public Health Service.

Although data for New York are incomplete, NIOSH estimates that homicide may be the leading cause of work-related death in that State.

The 27-page report, "Fatal Injuries to Workers in the United States, 1980-1989: A Decade of Surveillance," con-

tains the most comprehensive statistics to date on workplace fatalities in each State and across the nation.

The study reveals that work-related injuries claimed the lives of 63,589 workers during the 10-year period, with homicide claiming 7,603 of these lives. While the leading cause of death varies by State, job-related motor vehicle crashes, machine-related incidents, and homicides emerged as the leading killers overall.

The States whose workers were at highest risk of dying on the job were Alaska (34.8 deaths per 100,000 workers), Wyoming (29.0), Montana (20.9), Idaho (16.7), and West Virginia (15.7). The States with the lowest rates of fatal workplace injuries are Connecticut (1.8 deaths per 100,000 workers), Massachusetts (2.3) and New York (2.6).

The mining industry had the highest average annual fatality rate per 100,000 workers (31.9), followed by construction (25.6), transportation-communication-public utilities (23.3) and agriculture-forestry-fishing (18.3).

Black workers had the highest fatality rate (6.5 deaths per 100,000 workers), but the largest number of deaths was among white workers. Of workplace death victims, 80 percent were white, 11 percent were black, 6 percent were Hispanic, 2 percent were Asian and Pacific Islanders, less than 1 percent were American Indians-Alaska Natives, and 1 percent of the victims were of other or unknown race-ethnicity.

Copies of "Fatal Injuries to Workers in the United States, 1980-1989: A Decade of Surveillance" can be obtained by telephoning 1-800-35NIOH.

NICHD Funds Studies of Contraceptive Vaccines

Researchers funded by the National Institute of Child Health and Human Development (NICHD) recently reported progress in the development of contraceptive vaccines for men and women. Other NICHD researchers described attempts to develop a contraceptive vaginal ring and vaginal compounds that protect against the AIDS virus.

The researchers are from NICHD's three contraceptive development centers—the University of Virginia, the University of Connecticut, and the Population Council of New York.

"Since the advent of oral contraceptives, few new contraceptives have been introduced to the U.S. market," said Nancy J. Alexander, PhD, Chief of the Contraceptive Development Branch of NICHD's Center for Population Research. "Because most women have diverse requirements during their reproductive lives, the availability of a variety of methods is important."

Much of the research involves antigens of sperm and eggs. Specifically, the researchers hope that, once injected into the body, these antigens will spur the development of antibodies, immune system molecules that bind to antigens, targeting them for eventual destruction by the cells of the immune system. Theoretically, antibodies that recognize antigens on sperm and eggs have the potential to prevent fertilization from taking place.

Key proteins for vaccine research have been those involved directly with the sperm's binding to the egg or with fertilization. Once isolated and produced in large enough quantities, these proteins can be injected into animals, and their effectiveness at preventing fertilization can be assessed.

Dr. Alexander noted that it is important to test possible contraceptive antigens thoroughly, to make sure that they do not provoke an immune response to other organs in the body. This can happen if the antigen bears a chemical resemblance to molecules on other tissues.

Scientists from the Contraceptive Development Centers are studying ovarian antigens to make sure that immunizing animals with them would not result in an immune response against the animals' own tissues, Dr. Alexander said. In one attempt, she added, a vaccine containing an ovarian protein has been designed that is contraceptive but does not cause an immune response against other tissues.

Dr. Alexander noted that another problem contraceptive researchers face is that many contraceptive vaccines provoke an immune response for only short periods of time. NICHD-funded researchers have genetically spliced sperm and egg antigens onto the surface of nondisease-causing strains of *Salmonella* bacteria. Cur-

rently, the researchers have produced high levels of antibodies in animals for long periods of time and have completed human safety testing of the nondisease-causing *Salmonella* strains.

Other researchers have developed a contraceptive vaccine for men against the key reproductive hormone, luteinizing hormone releasing hormone (LHRH). The researchers have completed animal studies on the vaccine's safety and effectiveness and are now ready to test the vaccine in healthy human male volunteers. So far, the researchers have found the vaccine to be effective at lowering LHRH in four men castrated as a treatment for prostate cancer.

In addition to studies of contraceptive vaccines, NICHD investigators are also developing a contraceptive ring that can be inserted in the vagina, Dr. Alexander said. Preliminary clinical trials indicate that, although the device delivers one-third less hormone than conventional oral contraceptives, it is every bit as effective and is nearly free of side effects. Additional trials are planned to confirm the device's safety, effectiveness, and acceptability.

Another centers project involves the development of a spermicide that will protect men and women from the human immunodeficiency virus (HIV). Several compounds have been identified that may slow the spread of sexually transmitted diseases, including HIV, but do not irritate the reproductive tract.

Dramatic Increase in Thyroid Cancer Among Chernobyl Children

The rise in the incidence of thyroid cancer among children in some regions affected by the Chernobyl fallout is continuing to grow dramatically, according to experts organized by the World Health Organization (WHO).

Since 1989, 225 new cases have been identified among children and adolescents in Belarus and 158 in Ukraine. Under normal circumstances, the incidence of thyroid cancer among children is extremely low—approximately one to two cases per million.

"There are about 3 million children in Belarus, and one might therefore have expected to encounter two or

three cases at most," explains Dr. Yuri Riaboukhine, Scientific Secretary of WHO's International Program on the Health Effects of the Chernobyl Accident (IPHEGA).

The number of thyroid cancer cases among adults in Belarus and Ukraine is also abnormally high, with 2,039 currently registered in Belarus (out of a total population estimated at 10.5 million) and more than 3,000 in Ukraine (population 53 million).

There are still some baffling questions for which scientists are trying to find answers. Among them is the enigma of why the epidemiology of thyroid cancer varies so widely from one affected country to another. In Belarus, more than half of all cases are concentrated in the Gomel region, while very few cases have been reported in the neighboring Bryansk region of the Russian Federation. In Ukraine, the rise in the incidence of the diseases is less pronounced and delayed, compared with Belarus.

Having examined the current public health situation in the affected countries, the experts stressed the necessity of setting up long-term epidemiologic studies to monitor the health status of children exposed to radiiodine. The studies should also help to determine the frequency of occurrence of thyroid tumors among the population of territories affected by the fallout. The scientists working on the project are trying to establish the association between the exposure of the thyroid to radiiodine and tumor development.

By mid-1994, the pilot project should be replaced by a regular project on thyroid disorders. Although the current activities should be maintained, the eventual scope of the project will depend on the availability of resources.

So far, as part of the thyroid project, WHO has provided international expertise, helped to develop standardized epidemiologic procedures for all three affected states, and furnished technical and financial support for the training of specialists in a variety of disciplines, both domestically and abroad. WHO also has supplied to Belarus, Russia, and Ukraine a wide range of diagnostic equipment, including ultrasonic scanners, diagnostic kits, and automatic gamma-counters.

Further information may be obtained from Dr. Yuri Riaboukhine, tel. 41-22-791-3763.

HRSA Awards Cities \$160 Million in Ryan White AIDS Grants

The Health Resources and Services Administration (HRSA) of the Public Health Service has awarded \$159.9 million in 1994 formula grants for HIV-AIDS care under Title 1 of the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act, which is administered by HRSA's Bureau of Health Resources Development.

In this fourth year of CARE Act awards, grants went to 34 cities and metropolitan areas in 17 States, the District of Columbia, and Puerto Rico, with nine cities receiving CARE grants for the first time. The 34 cities reported 71 percent of the cumulative total of AIDS cases in the United States, and had 81 percent of cases reported during the year April 1, 1992, to March 31, 1993.

The nine new grantees were Bergen-Passaic, NJ; Denver, CO; Kansas City and St. Louis, MO; New Haven, CT; Orlando and West Palm Beach, FL; Phoenix, AZ; and Riverside-San Bernadino, CA.

With the 1994 grants, more than \$547 million in Title 1 funds has been awarded since 1991 to assist in the treatment of AIDS. The grants are called formula awards because all cities are automatically eligible for grants if they reported more than 2,000 AIDS cases, or a per capita incidence higher than .0025, to the Centers for Disease Control and Prevention by March 31, 1993.

In determining grant amounts, both the number of reported cases and the city's population are taken into account. The fiscal year 1994 grants ranged from \$45.8 million for New York City, with 48,259 reported AIDS cases, to \$976,793 for Ponce, Puerto Rico, which reported 892 cases.

Grants are used for community-based outpatient health and support services for people with HIV and AIDS. Services may include home-delivered meals, prescription drugs, transportation of patients to care sites, counseling, home health care, and comprehensive medical care.

Title I grants are made to cities with an HIV services planning council whose members identify local service needs, prioritize those needs, award grants to subcontractors who provide the care, and monitor how efficiently

Ryan White CARE Act Title I emergency relief grants, fiscal year 1994

Area	Grant amount	Number of cases	Percent of cases
Atlanta, GA	\$ 4,066,062	6,174	1.96
Baltimore, MD	2,232,355	3,603	1.14
Bergen-Passaic, NJ	1,277,031	2,032	0.64
Boston, MA	3,091,876	5,349	1.70
Chicago, IL	4,706,676	8,023	2.54
Dallas, TX	3,445,177	5,282	1.67
Denver, CO	1,626,755	2,609	0.83
Detroit, MI	1,623,489	2,917	0.92
Fort Lauderdale, FL	3,555,421	4,572	1.45
Houston, TX	5,676,753	8,261	2.62
Jersey City, NJ	2,306,302	2,625	0.83
Kansas City, MO	1,251,712	2,072	0.66
Los Angeles, CA	12,617,337	18,900	5.99
Miami, FL	6,875,102	8,295	2.63
Massau-Suffolk, NY	1,403,882	2,436	0.77
New Haven, CT	1,235,428	2,051	0.65
New Orleans, LA	1,691,877	2,568	0.81
New York, NY	45,835,380	48,259	15.30
Newark, NJ	5,166,261	6,608	2.10
Oakland, CA	2,379,546	3,716	1.18
Orange County, CA	1,426,850	2,454	0.78
Orlando, FL	1,319,944	2,097	0.66
Philadelphia, Pa.	3,479,453	5,837	1.85
Phoenix, AZ	1,175,959	2,054	0.65
Ponce, PR	976,793	892	0.28
Riverside-San Bernadino CA	1,299,021	2,293	0.73
Saint Louis, MO	1,178,039	2,074	0.66
San Diego, CA	2,696,880	4,262	1.35
San Francisco, CA	19,056,960	15,329	4.86
San Juan, PR	4,561,223	6,023	1.91
Seattle, WA	1,617,949	2,683	0.85
Tampa-St. Petersburg, FL	1,955,256	3,154	1.00
Washington, DC	5,225,866	8,051	2.55
West Palm Beach, FL	1,959,886	2,666	0.85
Total	\$159,994,501	206,221	

funds are being used. Planning councils, which must by law include both those who provide and receive services, range in size from 20 to 67.

Since 1991, the number of cities eligible for Title I formula grants has more than doubled, with 16 cities receiving grants that first year, 18 in 1992, and 24 in fiscal 1993. An additional \$159.9 million will be awarded later in 1994 for supplemental grants.

WHO Issues Drinking Water Guidelines for the 1990s

The World Health Organization (WHO) has issued the most comprehensive set ever of drinking water guidelines, designed to ensure a greater degree of public health protection.

The first volume of WHO's once-a-decade publication, "Guidelines for Drinking-Water Quality," serves as a

benchmark for setting national standards. Volume 2, "Health Criteria and Other Supporting Information," and Volume 3, "Surveillance and Control of Community Supplies," will be published in 1994.

In the preparation of the current edition, assessments of the health risks of 128 chemical contaminants were carried out by more than 200 experts from some 40 developed and developing countries. The previous edition of the guidelines, published in 1984, examined only 38 chemicals.

Diseases resulting from the ingestion of pathogens in contaminated water have the greatest public health impact worldwide. The current global cholera pandemic can only be resolved through the introduction of safe drinking water supplies and appropriate levels of hygiene. Diarrheal diseases are among the leading causes of morbidity and mortality among children younger than age 5—1.6 billion cases with 3.2 million deaths per year.

The diseases are usually caused by water-borne pathogens such as *Salmonella*, *Escherichia coli*, *Shigella*, and enteroviruses.

Dracunculiasis (Guinea-worm disease) is the only water-borne disease that can be eradicated solely by the provision of safe drinking-water. Other diseases need a combination of measures. According to WHO estimates, there are about 2 million cases of dracunculiasis worldwide.

The health risks due to toxic chemicals in drinking water differ from those caused by microbiological contaminants. There are very rarely any acute effects. For the most part, adverse effects surface after a prolonged period of exposure: lead is known to cause mental retardation and disorders of the nervous system; increased exposure to arsenic creates an increased risk of skin cancer; crippling fluorosis occurs in areas where drinking water contains excessive concentrations of fluoride.

Among suspect chemicals evaluated in the guidelines are chlorinated alkanes, ethylenes and benzenes, aromatic hydrocarbons, pesticides, inorganic chemicals, disinfectants, and disinfectant byproducts.

Among other important issues, the guidelines address the hazards of lead in water. Lead is a general toxicant that accumulates in the skeleton. It is toxic both to the central and peripheral nervous systems. Infants, children up to age 6, and pregnant women are most susceptible to the chemical.

Lead is present in tap water primarily from household plumbing systems containing lead in pipes, solder, fittings, or the service connections to homes. Over a period of time, depending on the extent of corrosion of the pipes, lead in water may contribute to serious health problems.

Having examined the latest information available, WHO scientists concluded that the guideline value for lead should be tightened. Thus, the guidelines give the benchmark of 0.01 milligram per liter, compared with 0.05 in the 1984 edition.

The new guidelines stress protection of water supplies from microbial contamination and call for vigorous disinfection of drinking water. The destruction of microbial pathogens is essential and almost universally involves the use of chlorine. Although it does its job perfectly, chlorine stands accused of reacting with water constituents and creating new compounds

with potentially harmful long-term health effects. In 1991, the WHO International Agency for Research on Cancer (IARC) published an evaluation of the carcinogenic risks to humans of chlorinated drinking water. Its main conclusion was that there was inadequate evidence for the carcinogenic properties of chlorinated drinking water.

Guidelines for Drinking-Water Quality, Volume I, Recommendations, is available in English for 46 Swiss francs from WHO, Distribution and Sales, tel. 41-22-791-2476, Fax 41-22-788-0401.

President's Committee Publishes Information on Disabilities Act

"ADA and the Health Professional," an introduction to what health professionals need to know about the Americans with Disabilities Act, has been published by the President's Committee on Employment of People with Disabilities.

This brochure includes basic technical information about the ADA, and a question and answer section covering the information most frequently sought by health professionals, such as "essential functions," "reasonable accommodation," and examinations.

A free copy can be obtained by mail or FAX from Ruth E. Ross, President's Committee on Employment of People with Disabilities, 1331 F St., NW, Third Floor, Washington, DC, 2000-1107; tel.: 202-376-6200; 202-376-6205 (tdd); FAX: 202-376-6868. Available in alternative formats.

Rural Health Projects Get \$24.6 Million

The Health Resources and Services Administration (HRSA) of the Public Health Service approved demonstration grants totaling \$24.6 million to assist 146 rural U.S. communities in improving health care in 1993.

The grants, normally awarded for 3 years, help rural communities implement innovative projects to correct severe shortages of health professionals and services.

A total of \$4.5 million was approved for 26 new outreach projects, while the

remainder of the awards went to second and third-year grantees. Grants averaged \$180,000.

The program challenges rural clinics, hospitals, private practitioners, universities, public health departments, and others first to pool their resources by forming consortia and then to demonstrate innovative strategies for overcoming the traditional rural problems of distance and scarcity.

Past grants have been used by communities to provide health care in schools, develop referral and networking services for the isolated elderly, and support prenatal-well child care for high-risk mothers.

This year, two of the newly funded outreach projects will focus on the health care needs of migrant workers, while four others will bolster emergency medical services in rural counties.

NLM Offers Free Access to Electronic AIDS Data

The National Library of Medicine (NLM) has eliminated all online charges for searching three AIDS-related databases and an online directory of sources of information. The action, effective immediately, was announced on January 25, 1994, at a meeting of the NLM Board of Regents.

The 75,000 members of the NLM international online database network may now search AIDSLINE, AIDS-DRUGS, AIDSTRIALS, and DIRLINE without charge. In the past, fees had averaged \$1.25 per search, or \$18 per hour connected to the NLM computer in Bethesda, MD.

The change to free access is the result of recommendations made at the National Institutes of Health (NIH) HIV-AIDS Information Services Conference in June 1993 when members of community organizations made it clear that even the existing modest fees were a financial burden that was inhibiting their access.

Recent increases in NLM's AIDS funding enables the Library to offer this service.

The AIDS conference report, "Information Services for HIV—AIDS: Recommendations to the NIH," is available from the Library's Office of Public Information, tel. 301-496-6308.