Women and Substance Abuse: A New National Focus

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INTRODUCTION

Although addictive disorders have been the subject of widespread concern in the United States, relatively little is known about the causes, treatment, and prevention of these disorders in women. An estimated 200,000 American women will die of substance abuse-related illnesses this year—more than four times the number who will die of breast cancer (extrapolated from National Center for Health Statistics [1993, p. 46]). The use of tobacco, alcohol, and other drugs and the improper use of prescription medications are taking a serious toll on the health and well-being of women and their families. The growing morbidity and mortality rates from the addictive disorders in women are preventable tragedies demanding greater attention in research, service delivery, public policy, and education.

Despite historical evidence to the contrary, U.S. society has generally thought of alcohol and other drug abuse as a problem of men. Yet, American women have suffered with substance abuse problems for centuries. Before the Civil War, the number of female drug addicts outnumbered male substance abusers; in the mid-1800s, 60 to 75 percent of opium-morphine addicts were women (Cartwright 1982, p. 280). Although the rate of substance abuse among women today is lower than that among men, the estimated number of women who use or abuse licit or illicit substances is of considerable concern, given the prevalence of this problem and the rising levels of morbidity and mortality associated with substance abuse (Center for Substance Abuse Treatment 1994).

Former Secretary of Health, Education, and Welfare Joseph Califano has rightly observed that the magnitude of substance abuse among women and the full scope of its repercussions have been "masked by national denial." If an informed public policy is to be developed to better understand and combat addictive disorders in women, it is critical to tear away that mask of denial by evaluating the current status of addiction research involving women, ranging from etiology to diagnosis

and from treatment to prevention, throughout the life cycle and across the diverse racial, ethnic, and socioeconomic characteristics of American women. Gender differences in approaches to diagnosis, intervention, and prevention must be examined, and sex-based differences in the etiology and treatment of addictive disorders must be addressed. Most important, prevention and treatment strategies targeted to the unique needs of women must be developed with cognizance of the unique biological, psychological, and social factors affecting women's health.

The urgency of the need to better understand, treat, and prevent substance abuse was brought into sharper focus at the National Institutes of Health (NIH) by the reunification of the research components of the Institutes formerly under the Alcohol, Drug Abuse, and Mental Health Administration—the National Institute on Alcohol Abuse and Alcoholism (NIAAA), NIDA, and the National Institute of Mental Health—into NIH in 1992. This reintegration gave greater prominence to national research and health care initiatives on substance abuse and women by more fully integrating the behavioral sciences and the neurosciences into contemporary biomedical research and clinical practice. Through broadened scientific collaboration and enhanced interdisciplinary program coordination, the behavioral sciences and neurosciences have increased their prominence and scientific focus within NIH, and as a result, the study of mental and addictive disorders has found a place within the nucleus of NIH's research agenda. After about 25 years, NIH has finally been reunited with its "head," rectifying the dichotomy established long ago by the Greek rational philosophers who split mind from body. This merger of the Institutes has been a significant step forward in enhancing the national capacity to understand the causes and improve the treatment and prevention of *all* diseases, including the addictive disorders.

Two other significant developments—health care service delivery and the education of public and health care professionals—have played a crucial role in the growing focus on both women's health and mental and addictive disorders in the Nation's research agenda. Over the past 7 years, the Nation has experienced the greatest focus on women's health in its history. The year 1990 marked the beginning of a decade in which women's health concerns—including mental and addictive disorders—have received unprecedented attention within the academic and health care communities and in the media. That attention

continues to grow as science advances, as more women enter the health professions and attain leadership positions, and as women become increasingly empowered to take control of their own medical destinies. During this watershed period, alarming inequities in women's health research have come to light, including the failure to include women in clinical trials; inadequate attention to sex differences in biomedical, behavioral, and health services research; insufficient funding for research on women's health concerns (U.S. General Accounting Office 1990); and the dearth of women in senior health care professional and scientific positions in the country's Federal and academic research institutions (Blumenthal 1994; Blumenthal 1995, pp. 181-204).

This decade also has been hailed as the "Decade of the Brain"—a period of unprecedented explosion of research advances in the behavioral sciences and neurosciences resulting in the identification of brain receptors specific for various neurotransmitters and psychotropic agents; the localization of genes linked to disease; the mapping of the brain in both functional and chemical terms; the identification of basic processes of learning, memory, perception, and sensation; and the elucidation of mechanisms of behavior change. This tremendous leap forward in the understanding of the causes of mental and addictive disorders has resulted in the development of new and effective treatments, helping to shatter the myths surrounding these illnesses and to soften the stigma that has been associated with them in the past.

How fitting, then, is the convergence of these two crucial yet understudied areas that have emerged in this last decade of the 20th century—women's health and mental and addictive disorders. As a new national focus on women's mental health is developed, it is crucial that it be broad based, spanning the ages of a woman, from birth to old age; spanning the range of mental and addictive disorders affecting women; and spanning the spectrum of knowledge gained by working at the research bench and at the clinical bedside. The challenge to the mental and addictive disorders research, treatment, and prevention communities is to better understand and respond to the panoply of biological and psychosocial factors that contribute to the etiology of women's mental and addictive disorders, given the long history of inequity in how, until recently, medicine and science have approached women's health.

SUBSTANCES OF ABUSE

Whether use of tobacco, caffeine, or alcohol or the illegal use of licit or illicit drugs—substance abuse is a behavior pattern that has tremendous effects on the Nation, and it is among the most prominent contributors to morbidity and premature mortality in the United States (National Center for Health Statistics 1994). Although the lifetime rates of illicit drug use, drug abuse, drug dependence, and alcohol abuse and dependence are lower for women than for men, nonetheless, the statistics for women remain sobering. In 1995—

- Nearly one in three women in the United States had used an illicit drug at least once in her life—33 million out of 110 million women (Substance Abuse and Mental Health Services Administration 1996). Among women of childbearing age (15 to 44 years), the rate is approximately 45 percent.
- An estimated 15 percent of all American women ages 15 to 44 are currently abusing alcohol or illicit drugs (Substance Abuse and Mental Health Services Administration 1996).
- Nearly 5 million women have used an illicit drug at least once in the past month: 3.6 million had used marijuana; 440,000 had used cocaine—one-fourth of them in the form of crack; and nearly 2 million had used an inhalant (Substance Abuse and Mental Health Services Administration 1996).
- As many as 2.7 million American females older than 12 abuse alcohol (Substance Abuse and Mental Health Services Administration 1996). Half of all women of childbearing age reported some alcohol consumption during the previous month (Centers for Disease Control and Prevention 1997*a*). In spite of the increased risk of severe adverse effects in their children from moderate-to-severe alcohol use during pregnancy, 16 to 21 percent of pregnant women report drinking alcohol during pregnancy (Substance Abuse and Mental Health Services Administration 1996; Centers for Disease Control and Prevention 1997*a*). Because women are more susceptible than men to the effects of alcohol, moderate drinking for a woman is considered to be less than one drink a day (1.5 ounces of liquor, 5 ounces of wine, or 12 ounces of beer, according to Government guidelines) compared with no more than two drinks a day for men (National Heart, Lung, and Blood Institute 1996).

- In 1994, 1.2 million women had taken prescription drugs for a nonmedical purpose (National Institute on Drug Abuse 1994). Three out of five persons admitted to publicly funded treatment facilities for addiction to tranquilizers and sedatives were women (National Center for Health Statistics 1996, figure 39).
- Research indicates that more than 4 million women need treatment for drug abuse (National Institute on Drug Abuse 1994). The National Pregnancy and Health Survey was conducted by NIDA to provide a national estimate of the number of women who use licit and illicit drugs during pregnancy. Based on a sample of women who delivered from October 1992 through August 1993, it was estimated that of the approximately 4 million women who deliver live-born children annually in the United States, 5.5 percent or 221,000 women are projected to have used some illicit drug during pregnancy (National Institute on Drug Abuse 1996).
- Women represent about 25 percent of alcoholism clients in traditional treatment centers in the United States—a rate slightly lower than the estimated 30 percent of all alcoholics in the country who are women (National Institute on Drug Abuse 1990).
- Tobacco use accounts for more than 400,000 premature deaths in the United States—contributing substantially to deaths from cancer, cardiovascular disease, chronic lung disease, low birth weight, mental retardation, and other health problems in infants born to women who smoked during pregnancy (Centers for Disease Control and Prevention 1993*a*, 1993*b*). More than 80 percent of adult smokers start as teenagers. More than one in four women smoke cigarettes, and increasing numbers are dying of smoking-related illnesses (National Center for Health Statistics 1996, figures 4 and 21). Every day in the United States, 3,000 children begin smoking—many of them girls—and one-third will die of their addiction (Institute of Medicine 1994). Last year 1,700,000 teenage girls reported that they had smoked at least one cigar (Centers for Disease Control and Prevention 1997*b*). Lung cancer has become the leading cancer killer of American women—surpassing breast cancer in 1987 (Centers for Disease Control and Prevention 1993*a*, 1993*b*). Recent studies

have shown that women are more susceptible than men to the harmful and addictive properties of cigarettes (Zang and Wynder 1996; Gold et al. 1996; National Cancer Institute 1996; Perkins 1996).

- Approximately 120,000 deaths annually are attributed to the use of alcohol and illicit drugs (McGinnis and Foege 1993). Female alcoholics have death rates that are 50 to 100 percent higher than those of male alcoholics, and more female than male alcoholics die from suicides, alcohol-related accidents, circulatory disorders, and cirrhosis of the liver (Hill 1982, cited in National Institute on Alcohol Abuse and Alcoholism 1990).

The costs of addictive disorders are staggering. The annual direct and indirect costs of drug abuse have been estimated at $66.9 billion; alcohol abuse raises the total at least another $98.6 billion, and tobacco adds an additional $72 billion (Center for Substance Abuse Prevention 1993; U.S. Department of Commerce 1992). The Center on Addiction and Substance Abuse at Columbia University found that substance abuse and addiction are responsible for a minimum of 20 percent of the $40 billion medicaid inpatient hospital costs (Health Care Financing Administration 1997). Moreover, nearly 25 percent of medicare inpatient hospital costs (upward of $20 billion of the $87 billion expended for this purpose) will cover treatment related to substance abuse and addictions (Joseph Califano, personal communication, 1994). Other drug and alcohol use has also been implicated in numerous studies of other public health problems such as violence against women, motor vehicle crashes, the transmission of acquired immunodeficiency syndrome (AIDS) and other sexually transmitted diseases, school failure, unintended pregnancy, low work productivity, homelessness, and suicide (Center for Substance Abuse Prevention 1994).

WOMEN AND ADDICTION

In this century society has witnessed tremendous changes in women's lives and expectations. Women today enjoy educational and professional opportunities never imagined a generation ago. For the first time in the Nation's history, there are more women than men enrolled in colleges and universities, and more women than men now pursue graduate study. Women older than age 18 constitute 38 percent of the total population and 45 percent of the Nation's work force.

Women's average life expectancy has increased by almost 30 years since the beginning of the century; today, women live, on average, 7 years longer than men (National Center for Health Statistics 1996, table 29). Although women live longer, they are not necessarily living better. Women suffer from more chronic illness and greater disability than men (Office of Research on Women's Health 1992). They now face the health problems that accompany long life—osteoporosis, depression, and Alzheimer's disease—in greater numbers than men (Office of Research on Women's Health 1992).

Insofar as addictions are concerned, the status of research, prevention, and treatment programs for women is limited at best, in part because this constellation of disorders has long been viewed as the province of men. Although differences in the bodies and experiences of men and women are well documented, attention to women's health has been neglected in many spheres, particularly in biomedical and behavioral research and in the delivery of treatment services. In addiction research, as in many other areas of scientific inquiry, many studies simply were not conducted on female subjects. The majority of studies of substance abuse among women in the past have centered on the impact of women's addiction on children and family life, particularly the effect on the fetus. These concerns have reflected the traditional view of women in terms of their reproductive capacity.

Research has neglected examining sex differences in the etiology, course, treatment, and prevention of these diseases, and this neglect has led to some alarming statistics and health problems for women:

- Although heart disease is still widely viewed as a "man's disease," it is the number one killer of American women (National Center for Health Statistics 1996, p. 1, figure 4). Proportionately, more women than men die of heart disease each year (National Center for Health Statistics 1996, figure 5). Women are, on average, 10 years older and sicker at diagnosis than men and are more likely to present with coexisting, chronic conditions. Women are also more likely than men to die from a heart attack: One year following a heart attack, three-fourths of men are still alive compared with just two-thirds of women. In spite of the critical importance of heart disease for women, much of the research on preventing heart disease—including smoking prevention—has been conducted solely on men.

- When smoking was identified as a major risk factor for illnesses in men, men alone were targeted in prevention studies to stop smoking. Today, the rates of lung cancer and other chronic pulmonary diseases continue to climb among women, whereas they have begun to decline for men (National Cancer Institute 1996). An estimated 66,000 women will die of lung cancer in 1997—1.5 times the number who will succumb to breast cancer (American Cancer Society 1997). Smoking-related cardiovascular disease also is on the rise among women, as are the other health consequences of smoking for women, including increases in other types of cancer (larynx, esophagus, cervix, and breast), pulmonary problems, complications of pregnancy and infant health, osteoporosis, impaired fertility, and earlier onset of menopause (Burns et al. 1997; Office of Research on Women's Health 1992). A number of studies have suggested that women have less success with smoking cessation efforts than men, possibly because of fear of weight gain associated with smoking cessation, reduced social support for smoking cessation, greater impact of advertising on women, and the increased addictive properties of nicotine in women (Perkins 1996; Kandel et al. 1994; Centers for Disease Control and Prevention 1995). The complex psychosocial and biological reasons behind smoking behavior and smoking cessation in women have not been evaluated adequately and may complicate efforts to reduce these alarming statistics.
- As a result of the historical lack of attention to the ways that diseases manifest in women or can be prevented in women, women today are the fastest growing group infected with the human immunodeficiency virus (HIV, the AIDS virus) (Centers for Disease Control and Prevention 1993*c*; Karon et al. 1996). AIDS is now the number one cause of death for women of reproductive age in several major U.S. cities, and in 1994 it became the third leading cause of death for American women between the ages of 25 and 44 (Centers for Disease Control and Prevention 1996*a*, 1996*b*). Teenage girls are closing the HIV infection gender gap with teenage males at an alarming rate (Maternal and Child Health Bureau 1996). Again, because AIDS was thought to be a man's disease, most prevention,

detection, and treatment studies targeted men in the past. The use of illicit substances has played a large role in the transmission of the AIDS virus to women. Nearly two-thirds of all female AIDS cases have occurred in women who were either injecting drug users or were exposed to the AIDS virus through sexual contact with an injecting drug user (Centers for Disease Control and Prevention 1997*c*).

- Young women are not showing the same rate of decrease in substance abuse as other segments of the population. In fact, in recent years the use of alcohol and other drugs has been increasing slightly (Johnston et al. 1994; Substance Abuse and Mental Health Services Administration 1992, pp. 19, 55; National Center for Health Statistics 1996, table 65). Women who use drugs often suffer from other serious health problems such as depression or sexually transmitted diseases. Studies have shown that an overwhelming majority of female substance users (as much as 70 percent) have been physically or sexually abused as children, and many are victims of violence as adults (National Institute on Drug Abuse 1994).
- At the other end of the age spectrum, older women present special concerns with respect to substance abuse. Although alcoholism is lower in this population, the incidence of using licit medications for other than the intended purpose or ingesting more than the recommended dosages remains high. Elderly women represent 11 percent of the population, but they are prescribed more than 25 percent of all written prescriptions—2.5 times the number prescribed for elderly men (Abrams and Alexopoulus 1987). Little if any research has been conducted on this population at risk.
- In part, the greater social sanctions and stigma that drug-using women face compared with men, including concerns regarding the loss of custody of their children, have made women less willing to seek help and treatment for addictive disorders. As a result, data on the incidence and prevalence of addictive disorders among women—generally on the basis of contacts with treatment facilities or hotlines—are thought by treatment experts to severely underrepresent the true magnitude of the problem (Center for Substance Abuse Treatment 1994).

- Little awareness exists among health care professionals regarding the sex-based differences in physiology and cultural environment that may place women at risk of substance abuse: physical and sexual abuse, poverty, anxiety and depression resulting from multiple roles as caregivers and wage earners, issues of poor self-esteem and dead-end employment (or no employment at all), low educational attainment, and specific life stresses such as single parenthood, divorce, and loneliness. How these factors may predispose individuals to substance abuse and what protective factors may exist on the other side of the equation remain open questions in the research literature.

BUILDING BRIDGES TO RESEARCH ON ADDICTIONS IN WOMEN: THE NEW NATIONAL FOCUS ON WOMEN'S HEALTH

Today, a new national focus on women's health is leading to efforts to redress past inequities in research, service delivery, and public and health care professional education that have plagued the fields of women's health and addictive disorders. New attention is being paid to the diseases and conditions that rob women of good mental and physical health, the development of strategies to keep women healthy, and the examination of substance abuse as a serious threat to the health of American women.

U.S. Public Health Service's Office on Women's Health

The position of Deputy Assistant Secretary for Women's Health in the U.S. Department of Health and Human Services (DHHS) was established in 1994 to direct the U.S. Public Health Service's Office on Women's Health (PHS OWH), which coordinates DHHS's efforts to redress the inequities in research, service delivery, and education that had put the health of American women at risk.

To that end, PHS OWH stimulates, coordinates, and oversees research, service delivery programs, and public and health care professional education and training on women's health care issues across the agencies of DHHS, including the Agency for Health Care Policy and Research, Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), Health Resources and Services

Administration (HRSA), Indian Health Service (IHS), NIH, and Substance Abuse and Mental Health Services Administration (SAMHSA). PHS OWH is undertaking a range of activities in collaboration with these agencies to promote the health of women across their lifespans, empower women to make informed choices about their health, and translate research and policy decisions into effective women's health programs. PHS OWH also fosters collaborations with other departments of Government and consumer, scientific, and women's organizations to advance women's health both within the United States and throughout the world.

PHS OWH works to (1) stimulate the development and implementation of effective women's health policies and programs at the national, State, and local levels; (2) strengthen and sustain a broad range of research on the diseases and conditions that affect women; (3) promote comprehensive and culturally appropriate prevention, diagnostic, and treatment services for women across the lifespan; (4) stimulate public and health care professional education, training, and information dissemination on women's health issues; and (5) foster the recruitment, retention, and promotion of women in scientific careers and in the health professions. All these efforts are guided by a Public Health Service Action Plan that has adopted a lifespan approach to issues of research, health care service delivery, education and training, and career development in women's health.

PHS OWH also coordinates the activities of the revitalized PHS Coordinating Committee on Women's Health. The committee has representatives from all DHHS agencies and provides a forum to share information about women's health programs across agencies of DHHS. In addition, regional women's health coordinators have been designated in all 10 regions of DHHS. PHS OWH supports a broad range of women's health programs and activities to improve the health of women at the State and local levels.

PHS OWH has also established and supports six National Centers of Excellence in Women's Health across the country that provide state-of-the-art comprehensive and integrated health care services, multidisciplinary research, and public and health care professional education targeted toward the special needs of women. The centers are serving as national models that can be evaluated and duplicated across the country.

To ensure that future physicians are trained in women's health, PHS OWH has worked in collaboration with NIH, HRSA, the American Medical Women's Association, and the American Association of Medical Colleges to expand medical training in women's health issues, designing a model curriculum to help medical schools incorporate a new approach to women's health into the training of future physicians and other health care professionals.

One critical issue of focus for PHS OWH is the fight against breast cancer. PHS OWH coordinates and implements the National Action Plan on Breast Cancer (NAPBC), a major public/private partnership dedicated to making significant progress in the battle against this disease, which will affect one in eight women during her lifetime. The NAPBC is the product of a national effort, involving citizens, health care professionals, government representatives, Congress, the media, and private sector organizations. The Plan serves as a catalyst for building new knowledge, resources, and commitment to the prevention, diagnosis, treatment, care, and ultimate elimination of breast cancer as a threat to American women. The NAPBC has also developed a World Wide Web site (www.napbc.org) that serves as a gateway to Federal and private sector information and resources on breast cancer.

Furthermore, to enhance the early detection of breast cancer, PHS OWH has collaborated with the National Aeronautics and Space Administration, U.S. Department of Defense (DOD), and Central Intelligence Agency to adapt imaging technologies used in the defense, space, and intelligence communities to improve the early detection of diseases in women. The application of several of these new imaging technologies to breast cancer detection is now being tested in a multisite clinical trial supported by PHS OWH at major medical centers across the country.

Another important focus of PHS OWH is the promotion of healthy behaviors in women across the lifespan. In the year 1900 women died primarily of infectious diseases and complications of childbirth, on average, at age 48 (Blumenthal 1995, pp. 181-204). With public health interventions, such as better sanitation practices and the development of vaccines and antibiotics, these illnesses have become less of a threat. Instead, chronic illnesses—heart disease, cancer, lung disease, stroke, and diabetes, among others—have become the source of the major health care burden in this country. Behavioral and lifestyle factors—

smoking, poor diet, lack of exercise, substance abuse, and unsafe sexual practices—now contribute to more than 50 percent of the causation of all 10 of the leading causes of death in the United States (McGinnis and Foege 1993). Research has shown that positive behavior changes related to the risk factors for these illnesses can prevent seven-tenths of all premature deaths, two-thirds of all chronic disability, and one-third of acute illnesses. In addition, changing these health-damaging behaviors can reduce health care costs and enhance the quality of life. The issues of health and behavior, critical in combating substance abuse, are central to PHS OWH's Healthy Women 2000 initiative. This initiative includes a series of health education conferences and a nationally syndicated television series that focus on health promotion and disease prevention strategies for women of all ages; the initiative also has focused on women and substance abuse.

In addition, PHS OWH has sponsored national leadership conferences on physical activity and women's health and a college roundtable series addressing the health concerns of young women. To reflect the changing demographics of the Nation, PHS OWH has sponsored conferences on the health concerns of women of color and cosponsored a post-White House Conference on Aging and Women's Health to help increase public awareness about the issues and needs of older women. PHS OWH is also working to develop the first nationwide osteoporosis education campaign directed at women across the lifespan. As a response to the need for clear, reliable information on women's health, PHS OWH is establishing, in collaboration with DOD, a new National Women's Health Information Center. The center will provide consumers, clinicians, and researchers with a user-friendly, single point of access to thousands of Federal and private sector resources on women's health through a toll-free telephone line and the Internet.

Several PHS OWH activities specifically target the problems of tobacco and illicit drug use by women—starting at a young age, when most of the risky behaviors begin. In addition to public health initiatives that are designed to make cigarette advertising less appealing and cigarettes less readily available to children, PHS OWH has targeted girls and adolescent women, one of the fastest growing segments of the smoking population. PHS OWH collaborated with the Girl Scouts on a smoking prevention program—developing an education campaign that promotes awareness of the dangers of smoking and a new badge that is a

testament to a no-smoking pledge by Scouts of all ages who wear it. DHHS's Smoke-Free Kids and Soccer campaign, in partnership with the Olympic champions of the U.S. Women's Soccer Team, also aims antismoking, educational messages at girls. The DHHS Girl Power! campaign, launched through SAMHSA, is a major public information campaign to encourage positive health behaviors (e.g., regular physical activity, participation in sports) to help delay the onset and reduce the use of tobacco and illicit drugs and to promote self-esteem in girls between the ages of 9 and 14.

Additional DHHS Initiatives To Advance Women's Health

A number of other Federal initiatives have been implemented that will contribute to the advancement of women's health in this decade and into the 21st century. Several DHHS agencies have set in place special Offices on Women's Health as internal advocates to advance the women's health agenda within the agency's mandate, and in addition, each of the DHHS agencies has identified an individual to coordinate women's health issues.

Furthermore, the revision of NIH policy requirements to include women and minorities as research subjects will ensure that these populations are no longer excluded from the conduct of scientific investigation. Applicants for NIH grants must include women and minorities in clinical research, unless scientifically unjustified. Applicants who fail to address this policy may not be funded.

A wide range of institutes and agencies with a stake in the prevention and treatment of substance abuse—NIDA, NIAAA, the National Cancer Institute (NCI), the National Institute of Neurological Disorders and Stroke, SAMHSA, FDA, CDC, and IHS, among others—are undertaking significant initiatives to stimulate research, service delivery, and prevention programs on women and substance abuse. For example:

- Both NIDA and NIAAA support women's health-related research. NIDA is supporting targeted research initiatives on the use of substance abuse treatment services, consequences of maternal drug use, and the mechanisms of action of drugs. NIDA-supported researchers are investigating sex differences in the etiology, consequences, and behaviors associated with drug abuse; the prevalence, consequences, and prevention of drug use

during pregnancy; and treatment and prevention interventions related to substance use and AIDS in women. Similarly, NIAAA is evaluating the effects of alcohol use and abuse among women and addressing neurobiologic indicators of risk, maternal and fetal effects of alcohol, treatment protocols, and reproductive health issues. Research findings posit that a complex interaction of environmental, psychosocial, and biological factors contribute to the incidence of substance abuse among women, suggesting that a special emphasis should be placed on developing treatment and prevention strategies that target women's unique needs.

- FDA's new regulations regarding tobacco sales and advertising require a photo ID check for anyone younger than 27 who buys cigarettes or smokeless tobacco. The regulations prohibit the display of self-service or vending machines for cigarettes in places accessible to minors. The new regulations also prohibit tobacco advertising near schools and playgrounds; restrict advertisements in publications with youth readership to black-and-white text only; and prohibit the sale or giveaway of hats, t-shirts, or other items identified with a tobacco brand. Furthermore, FDA regulations no longer permit the sponsorship of any sporting or other event, team, or entry identified with a tobacco brand.
- CDC has promoted efforts to reduce tobacco use among women as a component of its overall tobacco control initiative. In addition to expanding scientific knowledge of the prevalence and the health effects of tobacco use, implementing national educational campaigns, and distributing information to the public on smoking rates, effects, and cessation, CDC also provides funds to the States and the District of Columbia to conduct tobacco prevention and control programs, including prenatal smoking cessation programs.
- NCI's ASSIST Program, one of many NCI programs supporting sex-specific smoking-related research, funds smoking cessation programs across the country. The National Institute of Child Health and Human Development, also at NIH, supports research on the potential effects of alcohol, tobacco, and other drugs on fertility, endometriosis, and other reproductive health problems.

- SAMHSA is the primary Federal agency with responsibility for the provision of substance abuse and mental health services, from prevention and early intervention to treatment for those identified as substance abusers or as suffering from a mental disorder. SAMHSA's three centers support a variety of programs that either target women directly or include women as a priority population. In collaboration with the Maternal and Child Health Bureau at HRSA, SAMHSA supports specific community-based demonstration programs to prevent and treat substance use among pregnant and postpartum women. The High-Risk Youth Program, which identifies and reduces factors that place school-age children at risk for substance use and related social and psychological difficulties, has placed increasing emphasis on young women, who previously had been the primary focus of few programs. Similarly, juvenile and female offenders now receive priority attention in substance abuse treatment programs for persons in prison, jail, or community correctional facilities. SAMHSA has also developed prevention guidelines for community-based approaches to the reduction of tobacco use by youth and supports a National Women's Health Resource Center that provides information services and community training on the prevention and treatment of alcohol, tobacco, and other drug use in women.

HEALTH CARE REFORM

The new national focus on women's health is beginning to yield dividends, leading to research advances, new diagnostic techniques, new treatments, and new ways in which women are being integrated into the conduct of research and in clinical practice. However, to truly safeguard women's health, all American women must have access to comprehensive health care services that include coverage for mental and addictive disorders—ending discriminatory insurance practices that have denied or limited coverage for these illnesses in the past.

To this end, new legislation was passed in 1996. President Clinton signed into law the Kassebaum-Kennedy bill that now protects individuals from losing their health care coverage when they lose or change jobs and prohibits insurance companies from denying insurance to individuals with preexisting conditions. The bill also contains provisions to

prohibit discrimination by health insurers against women who have been victims of domestic violence or who may have a genetic predisposition to various diseases or disabilities. An additional provision of the law requires that health insurance companies provide the same coverage for mental illness as for physical disorders, including similar copayments, deductibles, and annual and lifetime coverage limits.

CONCLUSION

The recent explosion in research advances that has occurred during this Decade of the Brain has already resulted in new findings that are increasing the understanding of addiction in women and elucidating sex differences in the etiology, treatment, and prevention of these disorders. New research is beginning to shed light on the neuropharmacology of craving and addictions and on sex differences in drug metabolism and side effects. At the same time, health services research is beginning to identify those programs of risk reduction, prevention, treatment, and rehabilitation that work best for women.

Ezra Pound observed that "hope is a measure of civilization." Hope is an important word in addiction medicine. The new national focus on women's health and the increased investment in research are bringing hope for improved detection, treatment, and prevention of addictive disorders in women.

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