

# **Alcohol and Other Substance Use and Addiction: An Overview**

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## **Introduction**

*Healthiest Wisconsin 2010* focuses on 11 health priorities. By targeting these specific priorities, Wisconsin's public health partners intend to leverage improvement in a wide range of health conditions and diseases affecting Wisconsin residents. Among these 11 statewide health priorities, *Alcohol and Other Substance Use and Addiction* has a major influence on many of the other 10 priorities. Its connections and influences are especially strong with the priorities of *Mental Health and Mental Disorders*, *Intentional and Unintentional Injuries and Violence*, and *High-Risk Sexual Behavior*.

*Healthiest Wisconsin 2010* has taken the groundbreaking step of considering the health needs of family members of individuals with substance use disorders. It has considered children and adults affected by another's addiction as deserving of a public health response to the functional impairments they may manifest within the family, in school, or in the workplace.

The term "substance use" is synonymous with "alcohol and other drug use." "Addiction" is synonymous with the substance use disorder termed "substance dependence" in the American Psychiatric Association's Diagnostic and Statistical Manual, the standard nomenclature reference in the field. Among substance use disorders, "addiction" to alcohol and other drugs is a chronic disease. By contrast, the substance use disorder "alcohol and other drug abuse" is a risky and harmful health condition. Both substance use disorders – substance dependence (or "addiction"), and substance abuse (or "repeated problem use") -- can cause terrible, costly, and lasting damage to the individual and can cause great harm to the health, productivity, and quality of life of others, including the family, employer, and the community. Beyond this immediate circle, many other people are affected by vehicular collisions, crime, and other tragic occurrences that result from substance misuse, abuse, and addiction.

Current treatments for addiction are as effective as treatments for other chronic conditions such as hypertension, diabetes, and asthma. Research has shown that early treatment for substance use disorders is a good investment of public and private funds resulting in savings in other public and private costs, decreases in threats to public safety, and increases in productivity. On the average each \$1 invested in treatment yields a \$3 to \$7 return. Current Wisconsin statistics show that 65 percent of persons entering treatment complete it; 90 percent are satisfied with the services; 55 percent maintain abstinence; 62 percent are employed; 82 percent have no further contact with the criminal justice system; and just 10 percent have a return to treatment in a two-year time period.

Furthermore, evidence-based prevention approaches have endured the rigor of multiple studies with different populations, and the positive results are now well documented.

Use of alcohol and other intoxicating substances can be benign or pathological. Use, in and of itself, is not necessarily a health condition, though it can be a risk factor for the development of health conditions, including permanent cognitive and developmental injury to the fetus if use occurs during pregnancy; diminishing or negating the effect of prescription medication used in treating most other health conditions; and, of course, use of alcohol or other intoxicating substances can progress to addiction. Certain routes of drug self-administration constitute significant risks to individual and public health. And use of alcohol and other substances that is repetitive and results in a pattern of biomedical, psychological, social, family, legal, academic, occupational, or other problems does constitute an individual and public health problem.

The continuum of substance use can extend to the primary health condition of addiction, though usually it does not progress to that extent (Institute of Medicine, 1990). When addiction develops, it can lead to disability or, in some cases, even to death.

A well-planned and executed public health strategy which follows the lead of the 1990 Institute of Medicine report to “Broaden the Base of Treatment” for alcohol and other drug problems can be effective against alcohol and other substance misuse and addiction in Wisconsin. The five implementation plans for this statewide health priority outline its major 10-year, long-term objectives that focus on:

- Reducing stigma through education of the general public and health care professionals.
- Improving the implementation of evidence-based prevention practices.
- Improving screening.
- Closing the treatment gap.
- Meeting the needs of other family members when an individual has a substance use disorder.

The sheer scale of alcohol and other drug use and addiction, which affects more than one in five Wisconsin residents, positions alcohol and other substance use disorders as one of Wisconsin’s critical public health issues and statewide priorities.

### **Scope of the Problem**

There can be no debate that the magnitude of the burden that alcohol and other substance use and addiction have on society--in the form of early death, traffic crashes, child abuse, and arrests, for instance--is enormous. The detailed implementation plan documents prepared for *Healthiest Wisconsin 2010* provide many examples of these statistics.

**Reduce stigma through education of the general public and health care professionals.** This objective is focused on reducing stigma in the general population. Stigma leaves its victims struggling to retain their dignity and self-respect and leads to a sense of invalidation. In the end, stigma devalues individuals who are marked by it and substantially limits opportunities by reducing the humanizing benefits of free and unfettered social interaction. Frequently stigma is expansive, pervading all corners of one's life space and identity. At other times stigma is limited and controllable in terms of consequences and, more importantly, personal and social identity.

The stigma attached to substance use and addiction compounds the impact of this major health problem. The hiding of a substance use disorder, for example, can prevent an individual from initially seeking and continuing in treatment, as well as from having a constructive attitude about treatment. Compounding the problem further, as discussed previously, is the gap between the number of available treatment slots and the number of persons seeking treatment for an alcohol, prescription drug, or illicit drug use disorder.

Within the general public, there is limited understanding of the scientific knowledge about alcohol and other drug use, addiction, and recovery, as well as about substance use during pregnancy. For example, the placental/fetal effects of alcohol and tobacco use during pregnancy still are not fully comprehended by most women of childbearing age. Many potential patients do not seek treatment for substance use problems and addiction. Further, many health care professionals do not refer patients to treatment, and many employers and public policymakers do not provide funding for treatment. *Healthiest Wisconsin 2010* focuses on knowledge and attitude change as a means to improve the public's understanding of the scientific knowledge of alcohol and other drug use, addiction, or recovery, including substance use during pregnancy. The intent is to reduce stigma and broaden public understanding in order to encourage individuals to seek the help they need.

***Improving the implementation of evidence-based prevention practices.*** Prevention programs today must produce tangible results. To achieve this, programs must be developed using substantiated knowledge about what works and what doesn't work. State and federal agencies, local governments, and private foundations are interested in funding programs with the best chance of realizing measurable outcomes. This emphasis on performance means that prevention practitioners must show that the programs they propose will achieve the results predicted. The prevention field now has an empirical knowledge base to assist practitioners in selecting proven approaches for their programs. Using scientifically defensible principles will help practitioners respond to demands for accountability and will simultaneously ensure that program participants receive the most effective services available.

Prevention programs need to focus on risk and protective factors that are both identifiable and modifiable, recognize schools as central loci for intervention, and provide long-term support. Children and adolescents at risk for co-occurring substance abuse disorders and mental disorders have multiple and complex needs, and they interact with a variety of school, community, and social services agencies. Effective prevention programs must address the multiple domains in the life of a child and the family and promote a consistent message among key agents (e.g., parents, peers, teachers). Ideally, prevention programs should be coordinated with systems of treatment to facilitate the best possible outcomes for children and adolescents, and their families. Individuals selected to deliver evidence-based prevention programs must be trained in the specific approach used.

***Improving screening.*** The annual prevalence of substance abuse in Wisconsin is estimated at 450,030 adults and adolescents. The estimated number of persons receiving treatment for substance use disorders each year is 58,320. A treatment gap of some 391,710 persons exists. Two of the principal reasons for this gap is that persons do not perceive the severity of their problem, and stigma keeps them from seeking help. One avenue to address this problem is through the medical care system. Surveys of physicians show that most (76 percent) ask new

patients about their alcohol/drug use, but only 27 percent routinely ask about it on an annual basis. An even smaller number use a formal screening process or instrument.

The benefits for physicians and insurance carriers of early detection for problem use and addiction include: (1) reduced risks of injuries and early deaths (e.g., falls, domestic violence, motor vehicle accidents, homicide, suicide); (2) reduced related medical problems (e.g., cirrhosis, pancreatitis, pneumonia, oral cancers, hepatitis, HIV); (3) reduced related medication reactions; and (4) prevention of fetal alcohol syndrome and fetal alcohol effects, as well as mental health disorders in families caused by abuse, neglect, and trauma related to alcohol, other drug use, and addiction.

Research has shown that screening, brief interventions, and treatment are effective and a good investment of public funds, resulting in crime reduction, savings in other public and private expenditures/costs, decreases in threats to public safety, and increases in productivity. There is a significant need for training and education, including evidence-based practices, to assist health and human services providers to recognize potential abusive and dependent use of alcohol, other drugs, and prescription medications and apply evidence-based practice.

***Closing the treatment gap.*** There is significant evidence of a gap between the amount of treatment services provided and the amount of treatment services needed in order to maximize the public health benefits for addiction treatment. Many individuals who are affected by addiction problems do not seek treatment due to various barriers, such as fear, poverty, stigmatization, and general lack of accessibility. Undertreatment is due to less than optimal levels of treatment engagement and treatment retention on the part of potential patients. It is also due to inadequate delivery system capacity and inadequate funding for treatment. Gaps in accessibility are a disservice to those who are affected directly or indirectly by addictions.

Effective and timely treatment interventions stop active cases of disease and put them into remission. This reduces the duration and prevalence rates of illness. Treatment interventions also prevent disability that results from active disease. Addiction treatment provides rehabilitation to restore functioning to individuals who have experienced disability due to chronic disease. It also has the goal of moving cases of addiction from an active phase into a remission phase. Because of the significant psychosocial harm related to problematic use and/or addiction to alcohol and other drugs, and because of the significant general medical problems whose incidence is directly affected by substance use, reducing the treatment gap is an important public health strategy to improve the health status of the people of Wisconsin.

***Meeting the needs of other family members when an individual has a substance use disorder.***

Living with a person addicted to alcohol or other drugs has a serious adverse impact on family members. It exposes partners and children to a variety of direct and indirect consequences that range from emotional disturbances to an increased potential for physical harm and an increased potential for the development of both personal addiction and psycho-physiological illnesses for the family members. Health conditions that may require health care services include psychiatric disorders, general medical conditions; substance use disorders; psycho-physiological disorders; physical trauma due to accidents, injury, or violence; and psychological trauma. As such, interventions targeting the entire family are more effective in preventing a wide array of problems than interventions involving just the substance user. There is a need for more than just

family education or family counseling when substance misuse or addiction affects a family, but rather a host of other prevention, treatment, and support services are needed.

The vast majority of private insurance companies, Wisconsin BadgerCare, and Medicaid will not reimburse for family treatment without an independent mental health diagnosis for the affected family member. This results in many people being identified as suffering from depressive disorder, post-traumatic stress disorder, or general anxiety disorder when they do not really have these psychiatric conditions. This has also led to confusion regarding who should be appropriately treating the affected family member. While therapists licensed in Wisconsin as psychotherapists should see those family members who actually have a diagnosable mental health condition, a Wisconsin certified alcoholism counselor or case manager not licensed as a psychotherapist should be able to see those family members who do not require psychotherapy for the purpose of improving family functioning.

### **Federal Alcohol-Associated Risk Indicators**

Trend data on substance related disorders and health risks can be approximated using indicators available from state and national surveys. For example, the federal Center for Disease Control and Prevention (CDC) publishes the Behavioral Risk Factor Surveillance Survey and the Youth Risk Behavior Survey, both of which contain useful indicators. In adults, as described briefly above, the CDC has identified three substance use-associated leading health indicators:

- Percentage of adolescents not using alcohol or illicit drugs during the past 30 days.
- Percentage of adults using any illicit drug in the past 30 days.
- Percentage of adults consuming five or more drinks per occasion, which is considered binge or episodic drinking. For a typical male, this would result in a blood alcohol concentration (BAC) of 0.04 to 0.10 g/dl (0.04-0.10 percent), and, for a typical female, this would result in a blood alcohol concentration (BAC) of 0.10 g/dl (0.10 percent) or higher.

While the *Healthiest Wisconsin 2010* plan has not chosen to directly impact these national indicators due to the cost of local community measurement, each of Wisconsin's five "Alcohol and other Substance Use and Addiction" objectives has initiatives that affect these national indicators.

### **Minorities: Extra Effort Required**

While addiction to and inappropriate use of alcohol and other drugs are generally a problem of those 21-49 years of age, all age groups are affected. Likewise, while substance use and addiction affect all segments of the population, there are significant racial and cultural differences. American Indians and Hispanics or Latinos tend to have higher rates of alcoholism than other groups. Similarly, American Indians and African Americans have higher rates of drug addiction than other population groups. However, African Americans have lower rates of alcohol addiction than do Wisconsin's majority population - Caucasians.

In any case, the human and economic costs of substance use and addiction have fallen disproportionately on minorities in Wisconsin. Because of their generally lower economic resources, minorities—especially people of color—tend to have less access to specialized, professional treatment, and tend to face greater challenges as they attempt to maintain a regimen

of treatment and recovery. Therefore, any public health initiatives in this area must be culturally relevant.

### **Useful Definitions and Distinctions**

The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition (DSM-IV) includes conditions it defines as Substance Related Disorders. Included are Substance Intoxication, Substance Withdrawal, and two categories of Substance Use Disorders, in which the pattern of use is associated with distinct clinical features. Substance Use Disorders include a major syndrome (“substance dependence,” which is synonymous with “addiction”) and a minor syndrome (“substance abuse,” a recurring manifestation of inappropriate substance use, problem use, or misuse). In these syndromes, the pattern of use, combined with the consequences of use, constitute the primary health problem. Other health problems, both bio-medical and emotional-behavioral, can develop as secondary consequences of the substance use disorder.

Often “substance abuse” is used as an overarching term to cover the DSM-IV substance use disorders. However, because of the variable meaning of “abuse” and the connotations of “substance abuse” and “substance abuser,” it is preferable to use the terms substance use, misuse or problem use, and addiction. The American Society of Addiction Medicine suggests that the term “dependence” can refer to physiological dependence only, without the other manifestations of addiction. Thus, the term addiction is preferable to the term substance dependence because it also encompasses the social effects of substance use.

It is important to note that low levels of alcohol and other drug use can have significant adverse health consequences even for individuals not diagnosed with a substance use disorder. For example, there is mounting evidence that there is no safe lower limit of alcohol use. Alcohol-related and even prescription drug-related vehicular crashes and episodes of falling occur in non-addicted users. Youthful users of inhalants or cough suppressants can experience sudden cardiovascular death from their first or second episode of use if toxic enough. And, while most injection drug users are diagnosable with addiction, potentially fatal infectious diseases can be contracted from a person’s first use of unclean needles or other injection equipment.

Use of alcohol and other intoxicating substances can be relatively benign or pathological. Use alone is not a health condition, although it can be a risk factor for the development of health conditions, including problem use and addiction. Use of alcohol and other drugs that is repetitive and results in a pattern of biomedical, psychological, social, family, legal, academic, occupational, or other problems does constitute an individual and public health problem. Also, certain methods or routes of drug self-administration constitute significant risks to individual and public health. Chronic, heavy use of some substances can result in dementia.

### **Substances and Addiction**

Challenging environments and stressful experiences—such as endemic drug use in a neighborhood, marital/parental discord, poverty, violence, and physical, emotional, or sexual abuse, or workplace stress—do not cause addiction, despite many commonly held conceptions. Rather, such stressors affect an individual's vulnerability to developing addiction. Genetics is not a determinant: many individuals have strong “genetic loading” yet do not develop the disease of addiction, even if they sample substances regularly.

Only a relatively small number of substances function as psychoactive agents and are considered to be habit-forming, self-reinforcing, or addictive. These include:

- Alcohol—beverages including beer, wine, wine coolers, hard ciders, and distilled spirits, or even non-beverage sources of ethanol, such as mouthwash or cold remedies.
- Sedatives or hypnotics—benzodiazepines (such as diazepam, alprazolam, oxazepam or rohypnol), barbiturates (such as phenobarbital, secobarbital, or butalbitol, even in combination products such as Fioricet), methaqualone, chloral hydrate, GHB (gamma hydroxybutyrate), meprobamate (even in combination products such as Equagesic), and other pharmaceuticals.
- Cannabinoids—marijuana and hashish.
- Cocaine—either as the sodium salt or in the cocaine base form (known as “crack”).
- Stimulants—methamphetamine, benzedrine, methylphenidate (Ritalin), pemoline (Cylert), and methylated amphetamines such as MDMA (commonly called “Ecstasy” or “X”).
- Opioid analgesics—opium, codeine, morphine, meperidine, heroin, oxycodone (including OxyContin), hydrocodone (Vicodin), methadone, tramadol.
- Hallucinogens—LSD (“acid”) and some naturally occurring compounds (mescaline, psilocybin, and others), methylated amphetamines, and supratherapeutic doses of dextromethorphan (“DXM” or simply “DM”).
- Certain anesthetics—such as ketamine (“Special K”), or its analog, phencyclidine, commonly called “PCP”.
- Inhalants—hydrocarbon solvents, volatile adhesives, aerosols, nitrous oxide, amyl nitrate, and others.

### **Modes of Substance Use**

Specific routes of drug self-administration can be associated with health conditions. Smoking of drugs damages lung parenchyma and combustion products generally include carbon monoxide and other toxins. Nasal insufflation (“snorting”) of drugs can damage the nasal septum; interruption of the nasal mucosa can provide a point of entry for viruses including the Hepatitis C Virus when “straws” are shared. Self-injection of drugs can cause local skin infections and is a factor in transmission of blood-borne infectious diseases such as HIV, HBV, and HCV. Prevention interventions related to addiction and non-addictive use of (generally illicit) drugs can address reduction of harm due to methods/modes of drug self-administration as well as harm due to the pharmacologic, pathophysiologic, and anatomic ill-effects of the alcohol or other intoxicating substance itself.

### **What We Must Aim for in Wisconsin**

For substance use prevention, intervention, and treatment strategies to succeed, we must encourage public health system partners throughout Wisconsin to employ the use of preventive interventions, screening for problem use or addiction, support screening with brief interventions, and make referrals to specialized treatment when it is warranted. All of these efforts must be aimed at helping each person acquire the awareness and skills that help them eliminate and prevent problem use or achieve recovery from a diagnosed and treated substance use disorder.

Screening for alcohol and drug use and addiction must be viewed as a “vital sign” that is routinely performed in all primary health care settings by primary health care and emergency medical providers. Thus, we must not only screen for cases of alcohol and other drug addiction, but also screen for cases of problem use or at-risk use to intervene early and prevent the development of cases of addiction.

We must also expand opportunities to screen in settings where the public health system partners encounter community residents: schools, social services offices, community corrections offices, and in the workplace.

We must identify those in need of treatment, and motivate persons to enter treatment when they are not yet ready to enter treatment despite it being indicated. We must close the treatment gap for individuals with substance use disorders: youth, the elderly, pregnant women, incarcerated individuals, those with co-morbid mental illnesses, and common citizens in workplaces all over Wisconsin.

We must use evidence-based principles for prevention of addiction, including doing all we can to delay the age of onset of first use of tobacco and alcohol which are clearly the gateway to other substance use and addiction. We must pay special attention to the demographics of substance use, particularly the disproportionate effects of problem use and addiction on minority populations, which are compounded by differences in access to treatment and outcomes in the criminal justice system of Wisconsin.

Finally, we must do basic work to correct false beliefs about substance use, addiction and recovery. We must address stigma as the primary barrier to more appropriate health care services for individuals with addiction. Discrimination against persons with substance use disorders must end in order for afflicted individuals and affected family members to enjoy the benefits of health and recovery. A public health approach to alcohol and other drug abuse is critical for Wisconsin to attain its goal of healthy people in healthy Wisconsin communities—our shared vision for the future.