HEALTH FOCUS AREA PROFILES
INTRODUCTION and MUTUAL INFLUENCE OF THE FOCUS AREAS

Introduction

The health focus areas represent a combination of building blocks for health (nutrition, mental health, and physical activity), risk factors (tobacco, unhealthy drinking and drug use), core public health protection services (environmental health, communicable disease prevention), and basic prevention services (oral health, chronic disease). These health focus areas influence and are influenced by the overarching and infrastructure focus areas. The health focus areas were selected based on science, public health protection initiatives, preventive potential and the advice from the public health system partners. All public health partners should be able to see themselves in one or more of these focus areas.

Every focus area identified in *Healthiest Wisconsin 2020* has a Focus Area Profile. The three categories of focus areas include: Health Focus Areas, Infrastructure Focus Areas, and Overarching Focus Areas. The profiles are the products of the Focus Area Strategic Teams convened by the Wisconsin Department of Health Services from September 2009 to November 2009. These 23 Teams were composed of community and subject-matter experts. For each of the focus areas, a focus area profile was developed by the partners to provide a "jump start" for collective action. Each focus area profile contains the following elements:

- Definition (scope) of the focus area
- Why the focus area is important
- Data highlights
- Objectives for the decade including indicators and rationale for why the objectives were selected
- Potential evidence- or science-based actions to move the focus area objectives forward over the decade
- References

The profiles are designed to be acted upon by designated "champions" and used by "communities of practice" to move the objectives forward during the 2010 – 2020 decade. (Refer to Section 6 of the *Healthiest Wisconsin 2020* plan concerning the implementation of *Healthiest Wisconsin 2020*.) It is likely that a process will be established, as part of the Implementation Plan, to update and build upon the profiles over the decade and achieve the goals of (1) improving health across the life span, and (2) eliminating health disparities and achieving health equity.

Mutual Influence

A Necessity: Linking the health, infrastructure and overarching focus areas when planning, taking collective action, measuring progress, and evaluating results.

The health, infrastructure, and overarching focus areas are interdependent, synergistic and promote "whole systems thinking." The infrastructure focus areas describe the essential capacities that need to be in place to effectively act upon a health or overarching focus area and achieve results. For example, one cannot hope to improve access to high-quality health services or reduce the leading causes of injury without considering infrastructure supports for that focus area (e.g., data and information, plans, partners, a skilled and diverse workforce, or the resources to do the job). In these ways, *Healthiest Wisconsin 2020* moves us away from isolated, fragmented approaches and toward whole systems thinking.

Consider . . .

"None of us can expect to act on more than a tiny corner of the great complexity. But in our interrelated society, itself part of an uncompromising world, we have to **think** about the whole complexity in order to **act** relevantly on any part of it."

Harlan Cleveland
The Knowledge Executive
(Out of print)

Health Focus Areas

The 12 Health Focus Areas address important health outcomes for the decade. This set of focus areas will be familiar to almost everyone, since they address real health issues in a direct way. However, it is also important to realize that work on the Health Focus Areas and their corresponding objectives rely on the public health system infrastructure and pillar objectives to be effective and sustainable. Objectives were developed with proposed indicators for each of the following 12 Health Focus Areas:

- Adequate, appropriate, and safe food and nutrition
- Alcohol and other drug use
- Chronic disease prevention and management
- Communicable disease prevention and control
- Environmental and occupational health
- Healthy growth and development
- Injury and violence
- Mental health
- Oral health
- Physical activity
- Reproductive and sexual health

- Tobacco use and exposure

While some of these focus areas and their objectives will speak more specifically to one community or constituency than others, any individual, organization and community should be able to identify at least some objectives that are highly relevant to their areas of need, interest or expertise. *Healthiest Wisconsin 2020* provides opportunities for organizations, agencies, communities, and systems to integrate *Healthiest Wisconsin 2020* objectives into their plans for health improvement.

Infrastructure Focus Areas

The following set of focus areas involves the infrastructure of the state's public health system. The nine Infrastructure Focus Areas and their corresponding objectives can be viewed as the essential underpinnings of how work gets done. For more information, refer to Section 4 of Healthiest Wisconsin 2020. Objectives were developed with proposed indicators for each of the following nine Infrastructure Focus Areas:

- Access to high-quality health services
- Collaborative partnerships for community health improvement
- Diverse, sufficient and competent workforce that promotes and protects health
- Emergency preparedness, response and recovery
- Equitable, adequate, stable public health funding
- Health literacy
- Public health capacity and quality
- Public health research and evaluation
- Systems to manage and share health information and knowledge

Overarching Focus Areas

Healthiest Wisconsin 2020 has the following two Overarching Focus Areas:

- Social, economic, and educational factors that influence health
- Health disparities

These two focus areas connect the partners and the plan to the underlying forces that influence illness, injury, premature death and disability. These forces are known as the underlying determinants of health. (Refer to Figure 2 and the accompanying discussion found in Section 1 of *Healthiest Wisconsin 2020*.) As with the infrastructure profiles, partners need to consider the influence that education, income, and social connections/influence have on current and future health and health outcomes, and also the influence on health exerted by race, ethnicity, disability, gender orientation and sexual preferences.

Pillar Objectives

Ten pillar objectives have been identified in the *Healthiest Wisconsin 2020* plan. These objectives are called "pillars" because their achievement is important to sustainable support of every other objective in the plan. Some Pillar Objectives are derived from the plan's two Overarching Focus Areas (Health Disparities; and Social, Economic, and Educational Factors that Influence Health), and some represent common themes found in many of the health and infrastructure objectives. The Pillar Objectives are so crucial and, in some cases, so difficult to achieve, that all plan partners are needed to work on them.

Five of the 10 *Pillar Objectives* come from two focus areas that the Strategic Leadership Team determined were overarching to the entire plan: Health Disparities; and the Social, Economic and Educational Factors that Influence Health. These objectives are central to the plan's mission and vision, and affect every other objective in the plan. Five additional *Pillar Objectives* were derived from common themes found across many Infrastructure and Health Focus Area objectives. These identified high-impact opportunities that promise to propel the entire plan forward.

ADEQUATE, APPROPRIATE, and SAFE FOOD AND NUTRITION

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

Adequate, appropriate and safe food and nutrition means the regular and sufficient consumption of nutritious foods across the life span, including breastfeeding, to support normal growth and development of children and promote physical, emotional, and social well-being for all people. Good nutritional practices can also reduce the risk for a number of chronic diseases that are major public health problems, including chronic conditions such as obesity, type 2 diabetes, cancer, heart disease and stroke. As established in the *U.S. Dietary Guidelines* (2005), good nutrition includes meeting nutrient recommendations yet keeping calories under control. It includes safe handling, preparation, serving, and storage of foods and beverages. It also includes ready and appropriate access to nutritious foods throughout the year for all individuals and families in Wisconsin communities.

Importance of the focus area

Nutrition policy is good health policy. Healthy eating is a staple for a good life. Adequate and appropriate nutrition is a cornerstone to prevent chronic disease and promote vibrant health. Because nourishment is required for survival, eating also serves as a basic source of enjoyment. In addition, preparing and sharing meals provide a common means through which people maintain a sense of family and community. The nutritional, social, cultural, and pleasurable aspects of food contribute to quality of life for all.

Fortunately, people can incorporate all of these benefits into a healthy lifestyle. Healthy nutrition is concerned with striking a balance in the types of foods and beverages consumed that falls squarely on the side of health. A healthy diet can be constructed from foods associated with very different cultures, customs, or places of origin (United States Department of Agriculture [USDA], 2005; USDA My Pyramid Plan).

Healthy eating is central to the health and well-being of Wisconsin's people and to the vitality of their communities. It is feasible for healthy nutrition to be the norm in Wisconsin and in diverse groups within its borders. However, there is still much work ahead to ensure that Wisconsin residents have ready access to high-quality, affordable, safe, and secure sources of nutritious foods and are also likely to, on balance, make healthy choices.

One key issue for this focus area is food security, or assured access to sufficient and nutritious foods in socially acceptable ways (e.g., without stealing, using food pantries, depleting household emergency supplies) to lead active and healthy lives. A household is considered food insecure if one or more members have uncertain or limited access to food through normal means, whether or not anyone experiences hunger. People living in food-secure households have diets higher in fruits and vegetables, variety, and overall nutrient content. Adults have better health and are at lower risk for obesity, and children do better in school and have lower rates of behavioral and emotional problems. However, 10 percent of Wisconsin households are food insecure (Nord, et al., 2009).

Several other prominent nutrition issues both promote general health and play a key role in obesity prevention and control. Obesity is one of the most critical health issues of our time. Overweight and obesity describe ranges of weight for a certain height that are higher than that considered healthy (Centers for Disease Control and Prevention [CDC], *About BMI for Adults*). Obesity is caused by many interacting factors at various levels of society (Story, 2008; McLeroy, 1988). However, prevention efforts are generally targeted toward the rates of six health behaviors, identified by the CDC. Four of these targets are clearly nutrition-related: (1) following breastfeeding recommendations, (2) eating adequate levels of fruits and vegetables, (3) limiting consumption of sugar-sweetened beverages, and (4) limiting consumption of large portion sizes and energy-dense ("junk") foods (Sherry, 2005).

Obesity is a paramount health concern for Wisconsin and the nation because of its strong relationship to many negative health conditions and outcomes, such as Type 2 diabetes, cardiovascular disease, certain cancers, arthritis, asthma, depression, and negative pregnancy and birth outcomes (Bray, 2004; Li, et al., 2005; Yu, et al., 2006; National Institutes of Health, 1998). Obesity is also a driver for skyrocketing health care costs. The increase in annual health care costs alone for every obese adult exceeds $1,400 (Finkelstein, et al., 2009). For youth, obesity increases the risks for many of the same health conditions (Barlow, et al., 2007; Reilly, 2003). Obese youth are also much more likely to become obese adults, putting them at risk of having lifelong health consequences (Krebs, et al., 2007).

Over the past several decades, cultural, social and individual changes have occurred to make healthy eating more difficult and obesity more likely. Most women work outside the home, making continuing breastfeeding reliant on workplace support (CDC, *Guide to Breastfeeding*). In general, foods are more highly processed and portion sizes are larger. People also eat fewer meals at home and many schools and workplaces have inexpensive, high-fat or sugary snacks available throughout the day (Story, et al., 2008).

Evidence is mounting that healthier eating and drinking habits are linked to ready access to healthier foods and beverages and less incentive to choose unhealthy foods and beverages. Changing environments and policies to support healthful eating is likely to be critical for preventing obesity and improving overall health. Key behaviors for obesity prevention provide logical priority areas for Wisconsin's public health and health care systems.

- Breastfeeding offers many health benefits to both mother and child (Ip, et al., 2007). Bottle-fed infants also have an increased risk of childhood obesity (CDC, 2007). The American Academy of Pediatrics (2005) recommends that infants be fed only breast milk until about six months of age and then continue to be breastfed for a total of at least a year. In Wisconsin, most infants are breastfed initially, but few are breastfed according to recommendations.

- Fruits and vegetables are essential to a high quality, nutritionally complete, and balanced diet (USDA, 2005). This food group reduces hunger and is "nutrient dense" which means they are rich in nutrients and lower in overall calories per gram. (Sherry, 2005). Recommendations for intake vary with age, sex, and activity level (CDC, *Fruit and Veggies Matter*; USDA, 2005). However, in Wisconsin, intake tends to be uniformly poor.

- Sugar-sweetened beverages have little or no nutritional value but account for an estimated 8 to 9 percent of energy intake for youth and adults (Malik, et al., 2006). The *U.S. Dietary Guidelines for Americans* (2005) recommend that people avoid or limit their intake of sugar-sweetened beverages (USDA).

- Large portion sizes can promote overeating without awareness of this. Foods that are "energy dense," or high in calories per gram, frequently due to added sugar or fat, are often tasty but typically offer little nutritional value. If readily available or eaten freely, they tend to replace healthier choices and promote obesity (Ello-Martin, et al., 2005; Sherry, 2005).

Wisconsin Data Highlights

Obesity

- Twenty-six percent (26%) of Wisconsin adults are obese and 64 percent are overweight or obese (Behavioral Risk Factor Surveillance System, CDC, 2008).

- Obesity-related medical expenditures for adults (in 2003 dollars) are estimated at $1.5 billion annually (Finkelstein, et al., 2004).

- Twenty-three percent (23%) of high school students are overweight or obese (Youth Risk Behavior Survey, Wisconsin Department of Public Instruction, 2009; Youth Risk Behavior Surveillance System, 2009, CDC).

- Thirty percent (30%) of the 55,000 preschool-aged children participating in the Wisconsin Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) are overweight or obese (Pediatric Nutrition Data, Wisconsin Department of Health Services, 2008; Pediatric Nutrition Surveillance System, CDC).

Health behaviors

- Seventy-six percent (76%) of infants are breastfed initially, but only 45 percent are breastfed exclusively for at least three months. Only 26 percent are breastfed for a year (Breastfeeding Report Card for Wisconsin, 2009, CDC).

- About 14 percent of adults and 7 percent of high school students eat fruit at least twice per day and vegetables at least three times per day (State Indicator Report on Fruits and Vegetables, 2009, CDC).

Access

- Sixty percent (60%) of Wisconsin middle and high schools sell unhealthy foods, such as soda, candy, chips, or cookies in school vending machines or snack bars (School Health Profiles: School Level Impact Measures, 2008, Wisconsin Department of Public Instruction; School Health Profiles, CDC).

- Only 60 percent of census tracts have healthy food retailers within one-half mile of the tract's boundary (State Indicator Report on Fruits and Vegetables, 2009).

Food Security

- One in ten Wisconsin households has low levels of food security, and one in twenty-five has low enough levels that hunger is likely; both values have worsened over the past decade (Nord, et al., 2009).

- Between 2005 and 2007, Wisconsin FoodShare participation increased by 37 percent. High levels of increased participation were observed in central and western Wisconsin (Isaacs & Smeedling, 2009).

Health Behaviors

- Only 27 percent of infants enrolled in WIC (a relatively low-income group) are breastfed for at least six months, compared with 49 percent of all Wisconsin infants (Breastfeeding Report Card, 2009).

- For infants enrolled in the WIC, breastfeeding rates are highest for Hispanics/Latinos, lower for Whites and American Indians, and still lower for Asians and Blacks/African Americans (Pediatric Nutrition Data, Wisconsin Department of Health Services, 2008; Pediatric Nutrition Surveillance System, CDC).

- Young and middle-aged adults are less likely than elderly adults to consume fruits and vegetables five or more times per day (Behavioral Risk Factor Surveillance System, 2007, CDC). For high school students, fruit and vegetable consumption

starts low and drops with grade level (Youth Risk Behavior Survey, 2009, Wisconsin Department of Public Instruction).

Obesity

- Asian adults have lower obesity rates than adults of other racial or ethnic groups; however, Asian youth tend to have similar or higher rates of unhealthy weight status, relative to other youth.

- Among men, American Indians have a much higher obesity rate than Whites, Blacks/African-Americans, and Hispanics/Latinos.

- Among women, Whites have a much lower obesity rate than rates for Hispanics/Latinas, American Indians, and Blacks/African-Americans.

- College graduates have a lower obesity rate relative to all groups with less education.

- Milwaukee high school students are more than 1.5 times as likely as all Wisconsin high school students to be overweight or obese.

- American Indian and Hispanic/Latino high school students are more likely to be overweight or obese than are White high school students.

- For preschool-aged children participating in WIC, Blacks/African-Americans and Whites have lower obesity rates, compared with Asians, Hispanics/Latinos, and American Indians.

Objective 1

By 2020, people in Wisconsin will eat more nutritious foods and drink more nutritious beverages through increased access to fruits and vegetables, decreased access to sugar-sweetened beverages and other less nutritious foods, and supported, sustained breastfeeding.

Objective 1 Indicators

- Proportion of Wisconsin infants exclusively breastfed at three months, and breastfeeding duration of at least six months and 12 months (National Immunization Survey, CDC).
- Proportion of Wisconsin census tracts with healthy food retailers (State Indicator Report on Fruits and Vegetables, CDC).
- Number of farmers markets per 100,000 population (State Indicator Report on Fruits and Vegetables, CDC).
- Proportion of Wisconsin and Milwaukee schools that do not sell candy, high-fat snacks, or soda and juice that is not 100% juice (School Health Profiles, CDC).

Objective 1 Rationale

To prevent or control obesity, it is important that individuals have the desire, knowledge, and skills necessary to make healthy choices. However, changes that focus solely on individuals are likely to be unsuccessful or insufficient. Instead, efforts to change the environments and policies where people live, work, learn, and play in ways that make healthy choices relatively easy can complement individual efforts, reach more people, and produce more lasting changes (Swerissen & Crisp, 2004).

Objective 2

By 2020, all people in Wisconsin will have ready access to sufficient nutritious, high-quality, affordable foods and beverages.

Objective 2 Indicators

- Proportion of Wisconsin infants exclusively breastfed at three months among racial/ethnic populations, low income and low education population groups (Pregnancy Risk Assessment Monitoring System, CDC; Pediatric Nutrition Surveillance System, CDC).
- Proportion of Wisconsin farmers markets that accept payment from Electronic Benefit Transfer (EBT) and Women, Infants and Children (WIC) Farmers Market Nutrition Program Coupons (State Indicator Report on Fruits and Vegetables, CDC).
- Proportion of Wisconsin households with low and very low food security (Current Population Survey, U.S. Department of Agriculture – Economic Research Service).

Objective 2 Rationale

Food insecurity is closely linked to poverty and also tends to be higher in racial or ethnic minority households. However, other community characteristics, economic assistance policies, and the availability and use of public and private resources also play an important role (Nord, et al., 2009).

Although breastfeeding is typically a money saving strategy for a household, low-income women are also less likely to have jobs that support breastfeeding (CDC, *Guide to Breastfeeding*). Also, low-income neighborhoods and those in urban areas with high percentages of racial or ethnic minorities often lack full-service grocery stores and farmers markets where people can buy fruits, vegetables, and other healthy foods. Instead, people are limited to shopping at small neighborhood convenience stores, where fresh produce and low-fat food items are limited, if available at all. For many households the lack of money can contribute to both food insecurity and overweight or obesity. This apparent paradox is driven, in part, by the economics of buying food. Households without money to buy enough food often have to rely on cheaper, high-calorie foods to stretch their food dollar and avoid hunger (McLaren, et al., 2007; Stafford, et al., 2007; USDA, Food Environment Atlas).

Objective 3

By 2020, Wisconsin will reduce disparities in obesity rates for populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.

Objective 3 Indicators

- Proportion of adults who are obese or overweight by race and ethnicity (Survey on Health of Wisconsin). (Indicator to be developed.)
- Proportion of Wisconsin and Milwaukee high school youth who are obese or overweight by race/ethnicity (Youth Risk Behavior Survey).
- Proportion of children aged 2-4 years in the Women, Infants and Children (WIC) program who are obese or overweight by race and ethnicity (Pediatric Nutrition Surveillance System, CDC).

Objective 3 Rationale

The burden of obesity is not shared equally among Wisconsin groups or communities. Rates of overweight and obesity are often higher in socially disadvantaged groups. Strategies to help make access to healthy eating behaviors more equitable (Objective 2) are also relevant. However, showing progress toward achieving health equity requires evidence that gaps in obesity rates are also being bridged.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

Objective 1:

- Enact a statewide worksite wellness policy (for businesses with more than 25 employees) that addresses lactation support for women returning to work (Shealy, et al., 2005).
- Enact a statewide policy to establish nutritional standards for competitive foods sold outside of school meals (Booske, et al., 2009).
- Create grant programs and economic incentives to fund the establishment or renovation of farmers markets and roadside markets (Booske, et al., 2009; Robert Wood Johnson Foundation, 2009).
- Support new and existing local farms by providing incentives for production, distribution, and procurement of foods (CDC, 2009).

Objectives 2 and 3:

- Allocate funding to establish the use of electronic methods of payment at farmers markets (Booske, et al., 2009).
- Create economic stimulus programs and public-private partnerships to promote the creation of farmers markets and the expansion of retail grocery operations in low-income neighborhoods (Booske, et al., 2009; National Conference of State Legislatures, 2005).
- Provide training on maternity care practices to support breastfeeding for health care providers and organizations (Booske, et al., 2009; Shealy, et al., 2005).

- Enact zoning to limit the number/density of fast-food restaurants per square mile, particularly in lower-income neighborhoods (Institute of Medicine, 2009; Robert Wood Johnson Foundation, 2009).
- Provide support for statewide breastfeeding promotion programs; ensure culturally appropriate messages for different segments of the population (Booske, et al., 2009; Shealy, et al., 2005).
- Provide training for health care providers on body mass index screening (BMI) and effective interventions available to prevent, treat or manage overweight and obesity (Prevention Institute, 2008).

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ALCOHOL AND OTHER DRUG USE

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Definition

Alcohol and other drug use means any use of a substance, or uses of substances, that results in negative consequences. This includes a broad array of mood-altering substances that include, but are not limited to, alcohol, prescription substances, and illegal mood-altering substances. Negative consequences or unhealthy uses include, but are not limited to, operating a motor vehicle while intoxicated, drinking while pregnant, alcohol dependence, fetal alcohol spectrum disorder, alcohol-related hospitalizations, heavy drinking, alcohol-related liver cirrhosis deaths, motor vehicle injury or death, liquor law violations, other alcohol-attributable deaths, underage drinking, non-medical or illicit drug use, drug-related deaths, drug-related hospitalizations, arrests for drug law violations, and alcohol- or drug-related crimes (e.g., property crimes, violent crimes).

Importance of the Focus Area

Alcohol-related deaths are the fourth leading cause of death in Wisconsin behind heart disease, cancer, and stroke. Wisconsin tops the nation in wasted lives, harm, and death associated with its drinking culture. We find ourselves in a culture that in some ways is tolerant of excessive, dangerous, unhealthy, and illegal drinking, which results in a host of societal problems such as homelessness, child abuse, crime, unemployment, injury, health problems, hospitalization, suicide, fetal abnormalities and early death. We must achieve a culture free of harm from drinking. Wisconsin's drinking culture is not intentionally harmful, and most Wisconsin residents drink responsibly, safely and legally.

Wisconsin ranks extraordinarily high compared to other states on the nation's leading indicators of problem drinking. According to the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System data for 2008, Wisconsin ranked first in the rate of adult drinkers; second in the rate of adult heavy drinkers (60 or more drinks per month) and first in the rate of adult binge drinking (5 or more drinks on an occasion). In its 2007 Youth Risk Behavior Survey, the Centers for Disease Control

ranked Wisconsin fourth in the rate of youth who rode with a driver who had been drinking; fifth in the rate of youth who drove after drinking; first in the rate of current alcohol use among youth; and third in the rate of binge drinking among youth. Wisconsin ranks third in the nation in per-capita consumption of beer.

Wisconsin drinkers engage in risky behavior while drinking, resulting in significant negative health and social consequences. Wisconsin has the worst impaired driving rate in the country. More than a quarter (26.4 percent) of the state's adult drivers drove under the influence at least once in the past year, compared to the national average of 15 percent (Substance Abuse and Mental Health Services Administration, 2004-2006). Wisconsin's rate of disorderly conduct arrests (most due to being under the influence) is five times the national average; the arrest rate is rising in Wisconsin while falling in other states (U.S. Department of Justice, 2008). Finally, Wisconsin leads the nation in alcohol consumption among women of childbearing age. About 68 percent of women aged 18-44 consume alcohol, compared to the national average of 50 percent (Behavioral Risk Factor Surveillance Survey, 2005, Centers for Disease Control and Prevention).

Alcohol is far too accessible throughout Wisconsin in terms of availability and cost. The number of alcohol outlets per capita is double the national average. In Wisconsin there is one alcohol outlet (bar, tavern, liquor store, restaurant, grocery store or gas station) for every 187 adults age 18 years and older (Wisconsin Department of Revenue, 2007). Wisconsin has the third-lowest beer tax in the nation (6.5¢ per gallon) and the tax has not changed since 1969.

In October 2008, "Wasted in Wisconsin" was the reporting title of a front-page series of articles in the *Milwaukee Journal-Sentinel*. According to this newspaper, every year in Wisconsin there are $2.7 billion in alcohol-related costs, which include law enforcement and court costs, incarceration, crash investigation and cleanup, lost productivity and academic failures. There is the incalculable toll on families that lose loved ones. The roots of Wisconsin's unhealthy and risky drinking are sunk deep in the state's history, its ethnic heritage, and the natural inclination of its residents to want to fit in. But this culture of drinking is not inseparable from the environments that support it. Much of this support is embodied in state laws and local codes and what is left out of them. Most Wisconsin residents drink moderately and do not break the law. However, far too many who do not drink responsibly, and their actions have been the cause of disabilities, death and shattered families. When it comes to strengthening laws governing drinking and drunken driving, Wisconsin stands alone in the nation in its failure to create strong laws. Wisconsin is the only state in the nation to treat first-offense drunken driving arrests as a traffic ticket. Moreover, Wisconsin does not consider drunken driving a felony until the fifth offense.

The abuse of illicit drugs, including the non-medical use of mood-altering prescribed drugs, inflicts tremendous harm upon individuals, families, and communities. Other drug problems tend to vary by geographic area, but the abuse of powder and crack cocaine, heroin, marijuana, methamphetamine and opiate-based prescription drugs occurs across Wisconsin. According to the National Survey on Drug Use and Health, (2007), 49

percent of Wisconsin residents age 12 and over used an illicit drug in their lifetime and 14 percent did so in the past year. Deaths due to drug use, excluding alcohol, more than doubled in Wisconsin between 2000 and 2007, rising from 4 per 100,000 to 9.3 per 100,000. Drug-related hospitalizations increased 9 percent during the same period. In 2008, there were 20,668 adult and 4,646 juvenile arrests for sale or possession of illicit drugs (Office of Justice Assistance, 2008).

Wisconsin Data Highlights

- In 2008, Wisconsin ranked first in the rate of adult drinkers and first in the rate of adult binge drinking (Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System [BRFSS]).

- In 2008, Wisconsin ranked second (behind Nevada) in the rate of heavy drinkers (BRFSS, 2008).

- In 2007, Wisconsin ranked fourth in the rate of youth who rode with a driver who had been drinking; fifth in the rate of youth who drove after drinking alcohol; first in the rate of current alcohol use among youth and third in binge drinking among youth (Wisconsin Department of Public Instruction, Youth Risk Behavior Survey).

- Heroin and other opiate treatment admissions in Wisconsin rose sharply between 2000 and 2008, from 287 to 984 for heroin and from 172 to 1,283 for other opiates (Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set).

- The rate of drug-related mortality among American Indians and African Americans is consistently two to three higher than among Whites. In 2007, the rate of drug-related mortality among Whites was 8.7 per 100,000, while the rates for Blacks/African Americans and American Indians were 18.6 per 100,000 and 19.4 per 100,000, respectively (National Institute on Drug Abuse, 2003).

- Homeless people have a higher rate of alcohol and other drug abuse and limited access to services (Fischer, & Breakey, 1991; Johnson. & Cnaan, 1995).

Objective 1

By 2020, reduce unhealthy and risky alcohol and other drug use by changing attitudes, knowledge, and policies, and by supporting services for prevention, screening, intervention, treatment and recovery.

Objective 1 Indicators

State rates and rankings of selected youth and adult behaviors related to unhealthy and risky alcohol and other drug use (Wisconsin Department of Health Services, Behavioral Risk Factor Survey; Wisconsin Department of Public Instruction, Youth Risk Behavior Survey; National Survey on Drug Use and Health).

Objective 1 Rationale
Wisconsin is more tolerant than other states when it comes to excessive, dangerous, unhealthy and illegal alcohol use, which results in a host of societal problems such as homelessness, child abuse, crime, unemployment, injury, health problems, hospitalization, suicide, fetal abnormalities and early death.

Objective 2

By 2020, assure access to culturally appropriate and comprehensive prevention, intervention, treatment, recovery support and ancillary services for underserved and socially disadvantaged populations who are at higher risk for unhealthy and risky alcohol and other drug use.

Objective 2 Indicators
Periodic inventory of the proportion of counties with local capacity to provide alcohol and other drug abuse prevention, intervention (including criminal justice diversion), treatment, recovery support and ancillary services across all revenue streams for underserved and socially disadvantaged populations. (Indicator to be developed.)

Periodic inventory of the proportion of counties with services specific to racial and ethnic minorities; women; and lesbian, gay, bisexual and transgender populations (Human Services Reporting System; Medicaid Management Information System; County Agency Treatment Report; County e-survey). (Indicator to be developed.)

Objective 2 Rationale
Through access to culturally appropriate, science-based and comprehensive prevention, intervention, treatment, recovery support and ancillary services, the disparities in risk and access to services for underserved and socially disadvantaged populations will be greatly reduced.

Objective 3

By 2020, reduce the disparities in unhealthy and risky alcohol and other drug use among populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.

Objective 3 Indicators
Unhealthy and risky alcohol and other drug use by race, ethnicity, sexual identity and orientation, gender identity, and educational or economic status (Wisconsin Department of Health Services, Behavioral Risk Factor Survey; Wisconsin Department of Public Instruction, Youth Risk Behavior Survey; National Survey on Drug Use and Health).

Objective 3 Rationale
Racial and ethnic minority and lesbian, gay, bisexual, and transgender populations have higher rates of alcohol and other drug abuse and face cultural and other barriers hindering access to services.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

Effective policies and programs as documented by Booske, Kindig, Nelson, Remington, 2009:

- Change behaviors of those who might be providers of alcohol by:
  - Enacting dram shop liability laws
  - Providing Responsible Beverage Service Training, also referred to as "server training"
  - Creating policies regulating provision, possession, consumption and purchase of alcohol for and by minors
  - Vigorously enforcing existing underage drinking laws and minimum drinking age
  - Requiring keg registration
  - Establishing minimum ages for sellers and servers
- Raise the price of alcohol.
  - Increase alcohol excise tax
  - Restrict drink specials that encourage over-consumption (e.g., all-you-can-drink)
- Restrict the places and times in which alcohol can be consumed or purchased.
  - Reduce alcohol outlet density
  - Use alcohol age compliance checks
  - Establish limits on alcohol sales or use on public property
  - Restrict alcohol sales at public events
- Implement school and community-based effective prevention programs.
  - Establish broad-based community coalitions to assess specific issues and recommend alternatives
  - Create specific school–based programs (from the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-Based Programs and Policies)
- Reduce alcohol consumption in other ways.
  - Implement alcohol screening and brief intervention strategies
  - Restrict advertising placement to reduce youth exposure to alcohol advertising
  - Provide comprehensive, statewide alcohol education (California Department of Public Health, 2008)
- Reduce alcohol-impaired driving.
  - Increase penalties for drunken driving offenses (particularly first offenses)
  - Implement multi-component interventions with community mobilization to reduce alcohol-impaired driving
  - Provide school-based instructional programs to reduce alcohol-impaired driving
  - Establish sobriety checkpoints
- Increase access to culturally competent services (Cross, 1989)
  - Use people who are part of, or in tune with, the culture of the community involved in the intervention

- Use natural systems (family, community, church healers, etc.) as a primary mechanism of support for cultural populations
- Seek advice from cultural communities with respect to needs and priorities for service
- Form partnerships with organizations serving cultural populations

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CHRONIC DISEASE PREVENTION AND MANAGEMENT

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

In general terms, chronic diseases are defined as illnesses that last a long time, do not go away on their own, are rarely cured, and often result in disability later in life (adapted from McKenna and Collins, 2010).

The goals of *chronic disease prevention and management* are to prevent disease occurrence, delay the onset of disease and disability, lessen the severity of disease, and improve the health-related quality and duration of the individual's life (adapted from Doll, 1985). The line between what constitutes prevention and management is somewhat blurred. However, prevention efforts traditionally involve interventions performed before the clinical onset of disease or early in the course of disease, while management efforts may occur later in the disease course and are often focused on reducing the undesired consequences of diseases (adapted from McKenna and Collins, 2010).

Importance of the Focus Area

Chronic diseases – such as heart disease, stroke, cancer, diabetes, asthma and arthritis – are among the most common and costly of all health problems in the United States (National Center for Chronic Disease Prevention and Health Promotion, 2009b). The good news is that chronic diseases are also among the most preventable diseases.

Currently, seven of the 10 leading causes of death in Wisconsin and the United States as a whole are due to chronic diseases, accounting for approximately 2 out of every 3 deaths annually (McKenna and Collins, 2010; Wisconsin Interactive Statistics on Health, 2009). In addition, over 80 percent of the $2 trillion spent on health care in the United States each year goes toward treatment of chronic diseases (McKenna and Collins, 2010). A significant portion of this care is publicly funded. Medicaid spending has grown rapidly in recent years and is placing a significant burden on state budgets (National Center for Chronic Disease Prevention and Health Promotion, 2009a).

Four modifiable health risk behaviors— unhealthy diet, insufficient physical activity, tobacco use and secondhand smoke exposure, and excessive alcohol use — are responsible for much of the illness, suffering, and early death related to chronic diseases. There are proven, evidence-based strategies that can be used to combat chronic diseases, and when the focus turns to addressing those four modifiable risk factors, a reduction in the number of people living with and dying from chronic diseases in Wisconsin can be expected. The World Health Organization (2005) estimates that by eliminating the risk factors leading to chronic disease, at least 80 percent of all heart disease, stroke and type 2 diabetes would be prevented, as would over 40 percent of all cancers.

Moreover, as documented by the *Trust for America's Health* (2008), prevention yields a remarkable return on investment. An investment of just $10 per person per year in community-based programs that address insufficient physical inactivity, unhealthy diet, and tobacco use would yield a return of $5.60 for every dollar spent over the course of five years. Remarkably, even that substantial return can be considered an underestimate since it doesn't include gains in worker productivity, reduced absenteeism at work and school, and enhanced quality of life. Despite these convincing numbers, the vast majority of health care spending in the United States, as much as 95 percent, is directed toward medical care and biomedical research and not on prevention (Institute of Medicine, 2003).

Although chronic diseases usually become clinically apparent in adulthood, the exposures and risk factors that precede disease onset occur at every stage of life. Therefore it is important to address opportunities to prevent risky health behaviors as early as possible and throughout the life span. Childhood and adolescence are critical times to deliver and reinforce health education messages to prevent the onset of tobacco and alcohol use and to establish patterns that will result in a lifetime of healthy eating and sufficient exercise.

However, in order to be truly effective, prevention messages must be accompanied by social and environmental changes that make healthy lifestyle choices more likely. For example, imagine someone without a car and living in an environment where the nearest source of fresh fruits and vegetables is a 30-minute drive away, yet alcohol and calorie-dense foods of little nutritional value are available on every street corner. Simply delivering a message to eat healthier is likely to have little impact on that person. Similarly, if there are no open spaces for safe recreation in a given neighborhood, merely encouraging residents to increase their level of physical activity will be unlikely to produce sustained behavioral change. To truly eliminate chronic disease risk factors, the healthy choices stressed in public health campaigns must also be the easy choices for people to make. Therefore, the public health community must work closely with policy makers to help bring about structural changes to the environment.

The unfortunate reality is that chronic disease prevention is not always possible, so it is important that effective management of chronic disease is also part of the health care system. There are many definitions of chronic disease management, but one of the more comprehensive of these was developed by the Disease Management Association of America (2010). Key elements of this definition include supporting the relationship and

plan of care between the care provider and the patient, an emphasis on preventing worsening of disease using evidence-based practice guidelines and patient empowerment strategies, and ongoing evaluation of outcomes with the goal of improving overall health. The American Heart Association developed its own definition by listing eight domain areas of disease management (Krumholz, et al., 2006). The important point is that many parts must work together for a chronic disease management system to be effective, and the system has to be comprehensive and grounded on solid evidence. Following these principles of chronic disease management can greatly reduce the disease burden for the individual.

Finally, the public health system has had to evolve from primarily focusing on communicable diseases and epidemics (the major causes of death in the early 1900s) to focusing more on chronic diseases (the current leading causes of mortality). However, current primary care delivery systems that were developed around acute visits and crisis management models have not been successful in meeting chronic disease care needs. Patient-provider interactions are brief and infrequent, and therefore are not sufficient to provide the sustained support needed to maintain the healthy lifestyle changes critical to prevention and management of chronic diseases. To better meet the needs of Wisconsin residents who are living longer and living with multiple chronic conditions, these care systems must adapt by working more closely with the broader public health system.

Wisconsin Data Highlights

Cardiovascular disease, including heart disease and stroke

- Cardiovascular disease is consistently the leading cause of mortality for Wisconsin residents, accounting for more than 16,000 deaths annually, or 35 percent of all deaths (*The Burden of Cardiovascular Disease in Wisconsin, 2005*).

- In 2005, the estimated total cost of cardiovascular disease in Wisconsin was over $7 billion (*The Burden of Cardiovascular Disease in Wisconsin, 2005).*

- In 2001-2004, American Indians had the highest mortality rate for coronary (ischemic) heart disease in Wisconsin at an age-adjusted rate of 157 per 100,000 population, compared to Whites at 139; Blacks/African Americans at 133, Asians at 60, and Hispanics/Latinos at 52. The hospitalization rate in 2004 for coronary (ischemic) heart disease was highest among Whites at 6.2 per 1,000, compared to Blacks/African Americans at 4.3 per 1,000, American Indians at 3.8 per 1,000, Hispanics/Latinos at 2.0 per 1,000, and Asians at 1.4 per 1,000 (*Wisconsin Heart Disease and Stroke Surveillance Summary*, 2007).

Cancer

- Each year from 2002 through 2006, an annual average of 27,256 cancers were diagnosed among Wisconsin residents. The average age-adjusted incidence rate for all cancers was 470.3 per 100,000 Wisconsin residents (*Wisconsin Cancer Incidence and Mortality, 2002-2006*, 2009).

- For the years 2002-2006, Blacks/African Americans had the highest incidence of cancer in Wisconsin at an age-adjusted rate of 536.1 per 100,000, compared to Whites at 465.5, American Indians at 391.2, Hispanics/Latinos at 348.2, and Asians at 262.5. Blacks/African Americans also had the highest rate of age-adjusted cancer mortality at 254.2 per 100,000, compared to American Indians at 219.0, Whites at 182.1, Asians at 100.7, and Hispanics/Latinos at 87.4 (*Wisconsin Cancer Incidence and Mortality, 2002-2006*, 2009).

Diabetes

- From 2004 to 2007, diabetes-related hospitalizations increased nearly 11 percent, from 85,113 to 94,331. Diabetes prevalence among adults increased more than 27 percent, from 329,460 to 419,870 (2008 Burden of Diabetes in Wisconsin, 2008).

- In 2007, direct costs for diabetes care in Wisconsin were estimated at $3.46 billion. Indirect costs added an estimated $1.73 billion; therefore, total estimated costs were $5.19 billion (2008 Burden of Diabetes in Wisconsin).

- Among racial and ethnic groups in the state, American Indians had the highest age-adjusted rate of diabetes in 2006, at 46 percent, compared to 19.2 percent for Blacks/African Americans, 16.7 percent for Hispanics/Latinos, and 8.5 percent for Whites (2008 Burden of Diabetes in Wisconsin).

- Nearly one-quarter (23 percent) of hospitalizations among American Indians in 2006 were diabetes-related; this was a higher proportion than for hospitalizations among Blacks/African Americans (17.6 percent), Whites (14.7 percent), and Hispanics/Latinos (12.5 percent) (2008 Burden of Diabetes in Wisconsin).

- In 2008, American Indians also had the highest rate of diabetes-related mortality in the state, at 37.9 deaths per 100,000 population, compared with Whites (20.7) and Blacks/African Americans (15.6) (Wisconsin Interactive Statistics on Health, mortality module, 2010).

Asthma (Source: Drawn from *The Burden of Asthma in Wisconsin – 2007*)

- In 2005, more than 5,500 Wisconsin residents were hospitalized for asthma and more than 22,000 sought emergency room care for asthma.
- While overall differences are small (and not statistically significant), Wisconsin does appear to have a higher asthma prevalence in the most urban area of the state compared to suburban and small urban areas. Milwaukee County, the only large central metro county in Wisconsin, had the highest estimated asthma prevalence in 2002-2005, at 13.6 percent. It also had the highest asthma mortality rate for 2000-2005, at 17.3 deaths per million population.

- Among racial groups, Blacks/African Americans had the highest lifetime prevalence of asthma (19 percent in 2002-2005); were hospitalized for asthma at 5 times the rate of Whites (36.6 versus 7.1 hospitalizations per 10,000 population in 2005) and had an asthma mortality rate 3.5 times than Whites (41.2 versus 12.0 deaths per million in

2000-2005). American Indians also had higher asthma hospitalization rates than Whites (11.7 versus 7.1 hospitalizations per 10,000 population in 2005.

Arthritis (Source: Drawn from *Arthritis in Wisconsin – 2009*)

- More than 27 percent of Wisconsin adults aged 18 years and older (1.1 million) reported that they had some form of arthritis during 2003–2007.

- Costs related to arthritis and rheumatic conditions in Wisconsin total nearly $2.4 billion per year. This amount includes $1.5 billion in direct costs (medical expenditures) and $895 million in indirect costs (lost earnings).

- While the prevalence of arthritis among Blacks/African Americans is not different from prevalence among non-Hispanic Whites and Hispanics/Latinos, arthritis symptoms have a more significant effect on reported disability, activity limitation, and quality of life among Blacks/African Americans.

Objective 1

By 2020, increase sustainable funding and capacity for chronic disease prevention and management programs that reduce morbidity and mortality.

Objective 1 Indicators

- State and federal funding for chronic disease prevention and management. (Indicator to be developed.)
- Medicaid spending related to prevention of chronic disease. (Indicator to be developed.)
- Insurance coverage for chronic disease prevention and management. (Indicator to be developed.)

Objective 1 Rationale

Chronic diseases create a huge burden on Wisconsin in both human and economic costs. These diseases are largely preventable. It has been proven that investment in evidence-based interventions to target risk factors, such as unhealthy diet, insufficient physical activity, tobacco use and secondhand smoke exposure, and excessive alcohol use, can have a significant return on investment. Furthermore, by supporting the use of evidence-based chronic disease management and disease self-management programs, the impact of chronic diseases on the overall health of state residents dealing with one or more chronic diseases can be limited. This would lead to decreased disease and death and greatly decrease costs to the medical system.

Objective 2

By 2020, increase access to high-quality, culturally competent, individualized chronic disease management among disparately affected populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.

Objective 2 Indicators

- Population group-specific incidence of chronic disease (heart disease and cancer), hospitalization and emergency department utilization rates (asthma) (Behavioral Risk Factor Survey, Youth Risk Behavior Survey, Wisconsin hospital data, Wisconsin Cancer Reporting System).
- Incidence of risk factors (e.g., obesity, smoking), early detection (e.g., blood pressure, diabetes and cancer screening), and chronic disease management (e.g., proportion of diabetic patients with A1c value under 7 percent). (Behavioral Risk Factor Survey, Youth Risk Behavior Survey, Wisconsin hospital data, Wisconsin Cancer Reporting System, Medicare Healthcare Data Reports; some indicators to be developed.)
- Proportion of asthma patients receiving seasonal influenza vaccinations (Survey of the Health of Wisconsin (SHOW)). (Indicator to be developed.)

Objective 2 Rationale

To successfully address the burden of chronic disease in Wisconsin, effective interventions that reach disparate population groups will have to be employed. If interventions within these groups are to be successful, they must be developed in a culturally competent manner (Guide to Community Preventive Services, 2010). A health care setting that facilitates partnerships between individual patients and their personal physicians, and when appropriate the patient's family, is vital in developing the trust that leads to increased use of health care services (Joint Principles of the Patient-Centered Medical Home March 2007; American Academy of Family Physicians, American Academy of Pediatrics; American College of Physicians; American Osteopathic Association).

Objective 3

By 2020, reduce the disparities in chronic disease experienced among populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.

Objective 3 Indicators

Disparity ratios for populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status in the incidence or prevalence of:

- Chronic disease (heart disease and cancer) and hospitalization and emergency department utilization rates (asthma) (Wisconsin Department of Health Services, Behavioral Risk Factor Survey; Wisconsin Department of Public Instruction, Youth Risk Behavior Survey; Wisconsin hospital data; Wisconsin Cancer Reporting System).
- Risk factors (e.g., obesity, smoking), early detection (e.g., blood pressure, diabetes and cancer screening), and chronic disease management (e.g., proportion of diabetic patients with A1c value under 7 percent) (Wisconsin Department of Health Services, Behavioral Risk Factor Survey; Wisconsin Department of Public Instruction, Youth Risk Behavior Survey; Wisconsin hospital data; Wisconsin Cancer Reporting System).

- Asthma patients receiving seasonal influenza vaccinations (Survey of the Health of Wisconsin (SHOW)). (Indicator to be developed.)

Objective 3 Rationale
Often public health interventions have the unintended effect of increasing disparities, as they are targeted at those who have a high level of health literacy or who already have good access to health care. If interventions are not sensitive to addressing specific disparate populations, with specific strategies identified to reach those populations, disparities will worsen.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

- Environmental and policy approaches designed to provide opportunities, support, and cues to help people develop healthier behaviors can lessen the burden of chronic disease. These approaches are often more permanent than many programs focused on individual-level behavioral change. (Brownson, 2006).

- One individual-level intervention that has been shown to lessen the burden of chronic disease is the Chronic Disease Self-Management Program. This program has improved participants' level of exercise, cognitive symptom management, communication with physicians, self-reported general health, health distress, fatigue, disability, and social/role activities limitations (Living Well with Chronic Conditions, 2009).

- An emerging patient-centered model of the Medical Home seeks to overcome issues of uncoordinated care and barriers to access, shortage of primary care clinicians, and the increasing prevalence of chronic diseases. Changing health care delivery systems to focus more on comprehensive care coordination requires a change in care delivery methods that necessitates training of the current health care workforce and establishment of the Medical Home model of care (Patient Centered Primary Care Collaborative, 2009).

- Policy and environmental changes can affect large segments of the population simultaneously. Proven social, environmental, policy, and systems approaches support healthy living for individuals, families, and communities (The Power of Prevention, 2009).

- Policies and programs that address the multiple drivers for health improvement have been identified (Booske, 2009). A selection of the 35 strategies identified from this report are included below:
    - Allocate funding to expand WIC and Senior Farmers Market Nutrition Programs
    - Make water available; promote its consumption

- Modify vending machine options to increase healthy beverage choices
- Increase availability of fruits and vegetables, and other nutritious options
- Ensure on-site cafeterias follow healthy cooking practices
- Offer healthy foods at meetings, conferences, and catered events
- Prohibit the sale of non-nutritious food for school fund-raising activities
- Support tax credits for locating farmers markets/farm stands in lower-income neighborhoods
- Use point-of-decision prompts to highlight fruits and vegetables, and promote water consumption
- Enact snack taxes, including food and sugared soft drinks
- Label foods served in public eating outlets to show serving size and nutritional content
- Expand school-based physical education classes
- Provide nutrition information in clinic waiting rooms
- Provide patients with nutrition "prescriptions" and tools for self-assessment and recording
- Develop and support breastfeeding promotion programs
- Establish minimum school physical education requirements and standards
- Set nutritional standards for competitive foods in schools
- Establish policy regulating nutrition education standards
- Support comprehensive, center-based early childhood development programs (Head Start)
- Enact statewide ban on smoking in public places
- Support housing Rehabilitation Loan and Grant programs
- Support weatherization Assistance Programs

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COMMUNICABLE DISEASE PREVENTION AND CONTROL

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

Communicable diseases (infectious diseases) are illnesses caused by bacteria, viruses, fungi or parasites. Organisms that are communicable may be transmitted from one infected person to another or from an animal to a human, directly or by modes such as airborne, waterborne, foodborne, or vectorborne transmission, or by contact with an inanimate object, such as a contaminated doorknob.

Communicable disease prevention and control involves the surveillance for and protection from communicable diseases that may result from changes in or evolution of infectious agents (bacteria, viruses, fungi or parasites), spread of infectious agents to new geographic areas or among new populations, persistence of infectious agents in geographic areas and populations, newly emerging infectious agents, or acts of bioterrorism. Communicable disease prevention and control involves isolation and quarantine, immunization, prophylactic (preventive) measures, early interventions including antimicrobial treatment, public health education and other measures.

Importance of the Focus Area

Communicable disease prevention and control is the cornerstone of public health. Waves of severe illness and death due to communicable diseases have occurred throughout history, including smallpox prior to its eradication, the bubonic plague in 14th century Europe, the influenza pandemic of 1918 and, close to home, the massive waterborne outbreak of cryptosporidiosis in Milwaukee in 1993. Advancements in clean water and refrigeration and the development of safe, effective vaccines have greatly decreased such threats; however, common diseases still cause outbreaks and new communicable diseases emerge. The worldwide AIDS epidemic, multidrug-resistant tuberculosis, West Nile virus, severe acute respiratory syndrome (SARS), avian influenza and drug-resistant staphylococcus infections are all reminders of our continued vulnerability to communicable diseases.

Successful efforts to prevent and control communicable diseases depend on understanding the disease-causing agent in the population and its characteristics, its reservoirs, the mode of exit of the agent from these reservoirs or sources, the mode of transmission of the agent to its next host, the mode of entry of the agent into the host and the susceptibility of the host to the agent.

Wisconsin public health law requires the state health department and all local health departments to monitor and respond to 73 distinct communicable diseases and any disease outbreak. Each year approximately 35,000 cases of communicable disease are reported to public health departments in Wisconsin. Effective surveillance and early intervention are critical to prevent more people from becoming infected. Control measures include quarantine or isolation of infected people, promoting personal hygiene, administering vaccines to heighten immunity, or prophylaxis for short-term protection. Other control measures include sanitation and sanitary measures for food and waterborne infectious agents, procedures to prevent health care-associated infections, or repellants for mosquito- and tick-borne diseases.

Vaccines protect more than the individual immunized; they prevent the spread of disease within the population. This is the principle of herd immunity. The development of vaccines and their safe and effective use are considered to be among the greatest medical and public health achievements of the 20th century. Many diseases that were widely associated with severe or fatal outcomes are now rare in the U.S. because of sound policies promoting widespread use and application of vaccines, particularly routine use of vaccines to prevent serious diseases among children. The Student Immunization Law has also contributed to the reduction of diseases among children. Maintaining high immunization rates is critical to this success as only one vaccine-preventable disease, smallpox, has been globally eradicated and resurgence of these diseases can occur if immunization levels decrease. Numerous challenges remain. According to the U.S. Department of Health and Human Services, most cases of vaccine-preventable disease in the U.S. now occur among adults. With the aging population and persistently low adult immunization rates, new efforts are needed to encourage vaccination across the life span. Prioritizing best practice, evidence-based strategies to improve the effectiveness of immunization delivery systems is a critical public health priority. It must include increasing immunization access in all communities to eliminate racial, ethnic and other disparities, so all Wisconsin citizens will benefit from safe, effective vaccines.

Wisconsin is a leader in the surveillance and early detection of and response to communicable diseases. This is in part due to excellent laboratory surveillance. For example, the Wisconsin State Laboratory of Hygiene and other laboratory partners, working closely with the Wisconsin Division of Public Health and public health partners, have the highest success rate in the nation (greater than 90 percent) in identifying pathogens causing reported foodborne outbreaks.

Wisconsin Data Highlights

Influenza

- Each year 5 percent to 20 percent of the population gets sick from influenza. In Wisconsin this annually results in thousands of hospitalizations and several hundred deaths. Young children, pregnant women, people with underlying medical conditions and the elderly are at greatest risk for influenza-related complications.
- Promoting annual influenza vaccination remains the most effective means of reducing the occurrence of influenza in Wisconsin.

Foodborne diseases

- The Centers for Disease Control and Prevention estimates that 76 million cases of foodborne disease occur each year in the United States, resulting in 325,000 hospitalizations and 5,000 deaths.
- During 1998 to 2007, Wisconsin reported 260 foodborne disease outbreaks, and each year the Wisconsin Division of Public Health receives reports of thousands of individual cases of infection from reportable foodborne pathogens including *Salmonella, Campylobacter,* shigatoxin-producing *E. coli,* and *Listeria.*
- Advances in laboratory testing methods have increased capacity to detect foodborne illnesses and outbreaks.

Immunization

- Wisconsin coverage rates for completion of the recommended vaccine series among children 19 to 35 months of age increased from 67.5 percent in 2002 to 79.6 percent in 2008, based on the Centers for Disease Control and Prevention's National Immunization Survey.
- The percent of parents claiming personal conviction waivers for certain required vaccines at kindergarten entrance increased from 1.9 percent in 2000 to 2.9 percent in 2007. The most common reason for declining vaccination was concern over vaccine safety.
- In 2009, the Wisconsin Immunization Program distributed vaccines valued at $39.4 million (federally funded) to public and private health care providers enrolled in the Vaccines for Children Program.
- The consistent use of vaccines has greatly reduced vaccine-preventable disease-related morbidity. For example, the quick adoption of rotavirus vaccines among Wisconsin infants has reduced rotavirus-related hospitalizations statewide by 84 percent during the first two rotavirus seasons following the initial licensure of one of these vaccines.

Tuberculosis

- In Wisconsin the number of cases of active tuberculosis disease has declined from an average of 111 per year during the 1990s to 71 per year during the period 2000 to 2009.
- The occurrence of multidrug-resistant (MDR) tuberculosis is on the rise, from a single reported case during 2000 to 2004, to 12 cases during 2005 to 2009.

- The proportion of active disease cases occurring in people who were foreign-born has also increased in Wisconsin.
- Active tuberculosis disease, whether multidrug-resistant or not, occurs predominantly among minority populations. Of the 68 cases of tuberculosis reported in Wisconsin during 2008, the race/ethnicity among the patients was Asian, 35 percent; White non-Hispanic, 26 percent; Blacks/African American, 19 percent; Hispanics/Latinos, 19 percent; and American Indian, 1 percent.

Lyme disease/tickborne infections

- Lyme disease is the most common vectorborne disease in the United States. In Wisconsin the incidence of Lyme disease has tripled from an average of 8 cases per 100,000 during 1991 to 1995, to 27 cases per 100,000 during 2004 to 2008. This increase follows a steady expansion in the geographic range of the deer tick (*Ixodes scapularis*) which transmits *Borrelia burgdorferi*, the bacteria that cause Lyme disease.
- Deer ticks are now found in most areas of Wisconsin and, in addition to *B.burgdorferi,* can transmit bacteria that cause other serious infections including anaplasmosis, ehrlichiosis, and babesiosis.

Health care associated infections

- National estimates of annual health-care-associated infections indicate that 5 percent to 10 percent of hospital patients acquire health-care-associated infections, and such infections rank among the top 10 causes of death. Recognition of these infections as a major public health problem has resulted in federal funding for state health departments to develop health care associated infection prevention programs.
- In 2009, Wisconsin developed a statewide prevention plan that calls for improved tracking of state-specific health care associated infection incidence rates and enhanced prevention activities in Wisconsin hospitals.

Objective 1

By 2020, protect Wisconsin residents across the life span from vaccine-preventable diseases through vaccinations recommended by the U.S. Advisory Committee on Immunization Practices (ACIP).

Objective 1 Indicator

Proportion of population fully immunized according to ACIP recommendations among children aged 0-12 years, teens aged 13-17 years, and adults aged 18 years and older.

Objective 1 Rationale

Routine immunization is among the most effective interventions available to safeguard public health. Maintaining high immunization rates in every Wisconsin community is essential to preventing communicable diseases and promoting health equity. As the number of recommended vaccines increases and the immunization

schedule becomes more complex, new strategies for public education and vaccine delivery are needed.

Objective 2

By 2020, implement strategies focused to prevent and control reportable communicable diseases and reduce disparities among populations with higher rates.

Objective 2 Indicator

Population-specific incidence rates of reportable conditions by race and ethnicity, sexual identities and orientations, gender identities, educational or economic status, or other characteristic associated with health disparities.

Objective 2 Rationale

The burden of many communicable diseases is higher among the poor, and among racial and ethnic minorities, immigrants, and other socially disenfranchised populations. Identifying populations at greatest risk and focusing prevention efforts to reach these populations are necessary to reduce disparities and improve overall health.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

Vaccine Preventable Diseases

Increase vaccination rates among healthcare workers: Influenza vaccination of healthcare personnel (HCP) reduces patient mortality in long-term care facilities [Potter, 1997; Carman 2000] and reduces employee absenteeism and financial costs in hospitals [Wilde 1999; Boersma 1999]. The Wisconsin Division of Public Health will continue to lead efforts to increase hospital and nursing home employee influenza vaccination rates (EIVRs) throughout the state by monitoring rates, tracking trends, providing feedback, education, and recommendations, and recognizing facilities achieving EIVRs of at least 80 percent.

Improve monitoring of adolescent and adult vaccination rates. The adolescent immunization platform continues to expand with the development of new vaccines. The expanded recommendations are included in the Wisconsin Immunization Registry WIR along with benchmark reports that providers can use to monitor the status of their adolescent patients. The adult recommendations and benchmark reports are also included in the WIR. The benchmark reports can be done at the provider, local health department or state level. Efforts will continue to recruit health care providers that provide care to adults to participate in the WIR as well as working with health insurers and the Medicaid and Medicare Programs to get pertinent immunization related data on their beneficiaries.

Improve monitoring of adult vaccination rates. The Wisconsin Immunization Registry is experiencing significant and steady improvements in the entry of adult

vaccinations, especially in the area of seasonal influenza vaccines. While efforts are ongoing to improve this data collection, health maintenance organizations do collect this information to assess their wellness programs. Payers such as Medicare and Medicaid can provide age, sex, and zip code billing information for vaccinations. These proxy sources of data may enable the estimation of vaccination rates in adults.

Prevent and control reportable communicable diseases and reduce disparities among populations with higher rates

Improve detection of foodborne disease outbreaks: Reducing foodborne disease is a national priority. The PulseNet database has been shown to be an effective tool for the early detection of foodborne illnesses caused by genetically-related bacteria [Buxrod, 2010; CIFOR, 2010]. Epidemiological investigations prompted by PulseNet have led to the identification and control of several recent national foodborne disease outbreaks. Wisconsin will continue to play a leadership role in this area by conducting laboratory testing to determine the genetic fingerprint of major bacterial pathogens, and the necessary epidemiologic follow-up to identify potential sources of exposure.

Improve collection of race and ethnicity data: Race and ethnicity data are often omitted from reports of communicable disease. Reporters will be reminded to include this information, and assessment of compliance with this request can be made yearly.

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ENVIRONMENTAL AND OCCUPATIONAL HEALTH
June 21, 2010

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

Environmental and occupational health includes the broad and diverse suite of interrelated regulatory and educational programs and services needed in every Wisconsin community to prevent, identify, and mitigate illnesses and injuries resulting from hazards in the natural, built, and work environments. Environmental and occupational health practice requires close collaboration with environmental and public health system partners to achieve and maintain the healthy places required for healthy living. Environmental and occupational health activities include but are not limited to the following:

- Identifying, evaluating and controlling chemical, radiological, and biological hazards in the air, water, soil, food, and built environment.
- Assuring a safe and healthy food supply that considers the “farm to fork” concept.
- Assuring basic sanitation and safety in hotels, pools, campgrounds, and other public places and workplaces.
- Monitoring the safe use and handling of radioactive materials in health care and industry.
- Ensuring that Wisconsin’s workers are adequately protected from the range of physical, chemical, biological and psychosocial hazards associated with work.
- Preparing for and responding to natural and manmade disasters, including those potentially exacerbated by global climate change.

- Conducting surveillance of occupational and environmental hazards and relevant health outcomes to provide evidence needed to take action in local, regional, and statewide communities.

Importance of the Focus Area

More and more clear associations and linkages are emerging to demonstrate the ways human health is affected by the environments where people live and work. The air we breathe, water we drink, communities where we live and food we eat are increasingly recognized as underlying determinants of health. In response, the fields of environmental and occupational health have expanded into a diverse area of work with the main focus to protect people from exposures (e.g., lead, contaminated water, asthma triggers, toxic waste) that cause health problems. Additionally, there is increased recognition that the relationships between these exposures and human health are the result of a complex set of interactions between people, their behavior choices, conditions in the physical environment, and regulatory programs and policies. In the past, many of these factors were evaluated and addressed individually. It is now accepted that a systematic integration of information and data from the many interacting forces will have a greater impact on health than continuing to independently respond to individual factors.

This work is further supported by the emergence of technological advances that enhance the ability to use data in a way that helps delineate the most significant issues and prioritize efforts to resolve such problems. As this is a relatively new approach, there is a pressing need to improve the utility of existing data as well as develop new data to better understand the many interacting components of environmental and occupational health. Recent trends have shown the usefulness of combining environmental and occupational health indicators into a single score calculated from a variety of independent measures. This approach allows for the tracking of a single index over time that is sensitive to changes in the overall state of natural, built and work environments. In addition, the scores on each of the independent measures provide the basis for identifying which specific areas of environmental and occupational health should be prioritized, statewide and in local communities, to boost the overall index score. As scores increase, exposures and their negative health effects are reduced.

The underlying assumption of an indexing approach is that it will improve assessments of the individual components, such as unsafe work environments or contaminated drinking water. These more focused assessments will assist the state and communities to set environmental and occupational health priorities and promote more efficient use of resources to address threats to health and safety. To accomplish the objectives by 2020, the process to develop an environmental and occupational health index will be evaluated in three phases for each of two objectives. One index focuses on improved health across the life span and the other focuses on improved health equity and the reduction of disparities in environmental health issues related to people's homes.

Index Development - Phase 1 and Phase II

- Phase I involves the development of the composite index that can be used to assess the overall quality and safety of the food supply and natural, built and work environments in Wisconsin. Index development will be complete by the end of 2012. This index will be calculated from individual measures reflecting work in a number of different environmental and occupational health programs.

- Phase II is the implementation of the index by local health departments and tribal jurisdictions in assessments that establish a baseline and identify priority areas to be addressed. Implementation will occur as a part of localized assessments by 2015 so that steps can be taken to improve the overall index by addressing areas deemed to be the most appropriate. This will result in an overall increase in the composite score that can be tracked during Phase III (from 2015 until 2020) to demonstrate improved environmental and occupational health. Notably, different jurisdictions will be able to address different problems while still improving the overall composite score. This reflects the strength of using several individual measures, so that jurisdictions are able to identify the most significant issues in their areas and effectively address them.

- The second index focuses on improved health equity and the reduction of disparities in environmental health issues related to people's homes. While there are a number of options for activities that would address environmental and occupational health equity and disparity reduction, it was determined that a focus on healthy homes is the priority for the next decade. Place matters. Where people live and work exerts a powerful influence on the health of individuals and families. Disparities in the quality of living spaces are often related to socioeconomic, racial/ethnic and income/education level factors. These factors often affect whether or not contaminants are detected and removed. By improving the construction and maintenance of healthy homes, including the immediate environment around the home, human exposures and health problems will be reduced. It is fully recognized that exposures also occur in the workplace; however, focusing on homes over the next decade will maximize the number of people that will directly benefit from outreach, prevention, and intervention strategies.

- The steps to address this objective are similar to those described above for improving health across the life span. Specifically, Phase I will be completed by 2012; this is the development of a composite score that defines a healthy home. Phase II, completed by 2015, is the implementation of the index to assess the number of healthy homes and identify specific issues to target. In Phase III, changes in health and safety index scores will be tracked from 2015 to 2020 to assess improvements.

Wisconsin Data Highlights

The data highlights that follow are documented in the Wisconsin Division of Public Health Report entitled: *Health Indicators Report: The State of Environmental and Occupational Health in Wisconsin – 2007.*

- Asthma is one of the most common chronic diseases of childhood. In 2003-2004, the lifetime asthma prevalence among children in Wisconsin was 10.9 percent and the current asthma prevalence was 8.7 percent.

- In the human health assessments and consultations conducted by the Wisconsin Division of Public Health in a two-year period (2004-2005), 50 percent involved indoor air concerns in commercial buildings or facilities, 21 percent were related to manufactured gas plant sites, and 14 percent were related to mercury spills in schools. Additionally, a clandestine drug (methamphetamine) lab was investigated and a rock quarry was assessed.

- Many Wisconsin rivers and lakes are covered by fish consumption advisories because of mercury contamination. Given that 85 percent of Wisconsin residents include fish in their diets and nearly half enjoy eating locally caught game fish, this remains an important source of exposure to harmful chemicals.

- In Wisconsin, 253 foodborne disease outbreaks were reported between 1995 and 2004. A minimum of 6,941 illnesses, 263 hospitalizations, and three deaths were associated with these outbreaks.

- About 30 percent of all homes in Wisconsin have lead-based paint hazards; children under the age of six live in about 80,000 of these homes.

- In 2005, 3.4 percent of Wisconsin children tested for blood lead were found to have lead poisoning, which is more than twice the national average of 1.6 percent.

- In August 2007, it was estimated that there were approximately 23 state inspectors and 142 local inspectors for public pools in Wisconsin. An estimated 65 percent of inspected pools are swimming pools, 19 percent are whirlpools, 7 percent are wading pools, and the remaining 10 percent are classified as combined, water attractions, wave, activity, plunge, lazy river, zero-depth entry, or other types of

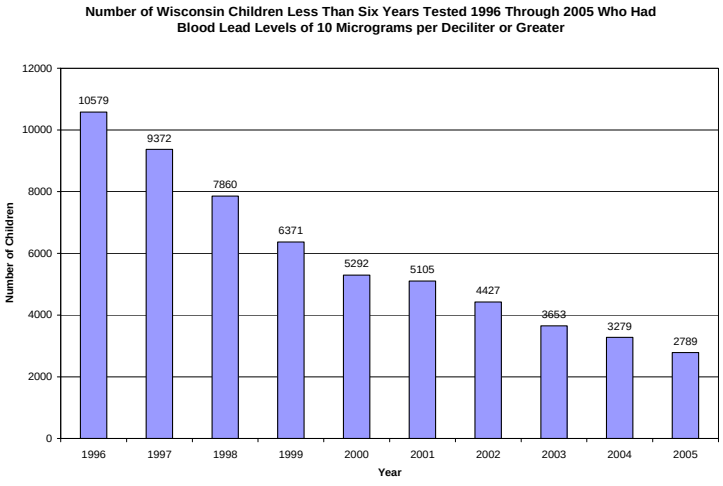

Figure 1: Number of children detected with lead poisoning 1996-2004

pools.

- Between 1993 and 2003, a total of 4,700 hazardous substance release events were identified and tracked in Wisconsin: 2,558 (54 percent) occurred in fixed facilities; 2,142 (46 percent) were in the transportation sector. Injury victims, totaling 1,281 people (including 5 deaths), were identified in 365 (8 percent) of the total events; and 41,314 evacuees were identified in 530 (11 percent) of total events.

- A primary public health concern related to indoor air quality in Wisconsin is mold. In 2003, a total of 43 mold-related hazard assessments were completed. Among these, approximately 43 percent were due to improper construction; 34 percent to heating, ventilation, and air conditioning; and 15 percent to roof leaks.

- The Radiation Protection Section registers approximately 4,800 facilities with 15,000 sources of ionizing radiation annually. The majority of registrants are medical and dental x-ray facilities.

- Radon is a gas produced by the breakdown of uranium. Bedrock in soil is one source. Approximately 10 percent of the total lung cancer deaths in Wisconsin are attributable to radon exposures. Elevated radon levels have been found in homes in every region of Wisconsin. Bedrock underlying homes is just one of a number of factors that determine the levels of radon indoors.

- In 2000, there were approximately 175,500 work-related injuries and illnesses, with nearly one-third resulting in days away from work.

Objective 1

By 2020, improve the overall quality and safety of the food supply and the natural, built and work environments.

Objective 1 Indicator

The proportion of local and tribal jurisdictions that have assessed, prioritized and improved performance on an environmental and occupational health index. (Indicator to be developed.)

Objective 1 Rationale

The breadth of the environmental and occupational health focus area can make it difficult to summarize a current state with any single indicator. The indicators for Objective 1 reflects the development of a summary statistic, the environmental and occupational health index, that will make it easier to routinely use data for prioritizing activities that promote improved quality in the food supply, and the natural, built and work environments. The use of the index will be tracked as a second indicator. Different health departments and tribal jurisdictions will focus on different components of the index as their priorities. Changes in any component will result in a change in the overall index score. The resulting changes in the index scores are evaluated as a measure of improved environmental and occupational health.

Objective 2

By 2020, increase the percentage of homes with healthy, safe environments in all communities. (Safe environments are free from lead paint hazards, mold or moisture damage, environmental tobacco smoke and safety hazards, and include carbon monoxide and smoke detectors, and radon testing and mitigation.)

Objective 2 Indicator

Proportion of local and tribal jurisdictions that have assessed, prioritized and improved performance on a home health and safety index. (Indicator to be developed.)

Objective 2 Rationale:

Currently there are a number of obstacles to the effective and efficient use of data for prioritizing environmental and occupational health activities. These indicators reflects the development of a tool, a healthy home index, that will make it easier to routinely use data for making decisions that promote the creation and maintenance of homes with healthy and safe environments. The use of the index will be tracked as a second indicator. Finally, as the index is used to prioritize activities, the resulting changes in the number of homes with healthy and safe environments are evaluated.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

- Increase enforcement of workplace health and safety laws (Booske, et al., 2009).
- Include pedestrian- and transit-friendly provisions in community and neighborhood planning efforts (Project for Public Spaces, 2008).
- Implement groundwater stewardship programs to identify and remediate potential water contamination hazards (Booske, et al., 2009).
- Expand undergraduate and graduate education programs in environmental and occupational health (Booske, et al., 2009).
- Promote rollover protection structures for tractors to prevention injury among farm workers (Booske, et al., 2009).
- Increase availability of training materials for food service workers in their language of origin to ensure food safety (Hertzman, 2007).
- Increase availability of training materials for migrant and seasonal workers to ensure worker safety (Millard, 2004).
- Implement workplace-based exercise programs to prevent workplace injury (Booske, et al., 2009).
- Promote the Energy Star Program (Booske, et al., 2009).
- Implement green pricing utility programs (Booske, et al., 2009).
- Reduce indoor allergen and/or ambient air pollution exposure through low-cost and well-studied measures (e.g., eliminate environmental tobacco smoke, use mattress and pillow covers, reduce or eliminate exposure to pet dander) (Anderson, 2010).

- Use ozone action days to help people with asthma know when to stay indoors (Anderson, 2010).
- Reduce diesel bus idling (Booske et al., 2009).
- Disseminate best practices for home construction and renovation (American Lung Association, 2009).
- Conduct studies to help link available environmental data to asthma prevalence (Environment and Human Health, Inc., 2003).
- Make available inexpensive carbon monoxide detectors designed to sound an alarm well before levels pose any risk to health (Raub, 2000).

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HEALTHY GROWTH AND DEVELOPMENT

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Definition

Healthy growth and development requires family-centered, community-based, culturally competent, coordinated care and support throughout the life course during preconception and prenatal periods, infancy, childhood, adolescence, and adulthood. Components include:

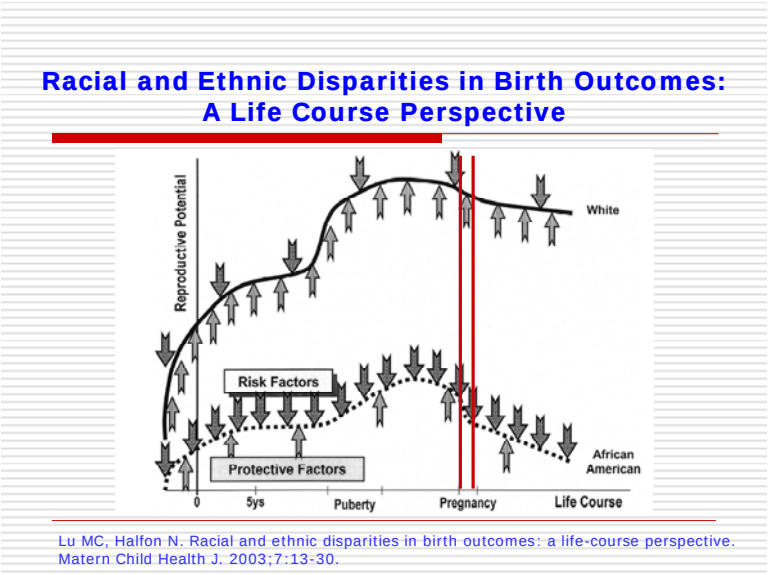
- Addressing factors that affect biologic, psychological, social and emotional growth and development.
- Conducting prevention, screening, assessment, and intervention to promote healthy growth and development across the life span.
- Promoting healthy social, emotional, behavioral, cognitive, linguistic, sensory, and motor development.

Importance of the Focus Area

Healthy growth and development in early life have a profound effect on health across the life span. Research studies over the past decade demonstrated the link between early life events and adult chronic diseases and found that babies born at lower birthweights have an increased risk of developing heart disease, diabetes, and high blood pressure in later life. Infants with poor birth outcomes begin life with multiple risk factors that may prevent them from reaching their full health and development potential.

In an average week in Wisconsin (based on data for 2008), 1,385 babies are born. Of these, 153 babies are born preterm (before 37 weeks of gestation), 97 babies are born low birthweight (less than 2,500 grams or approximately 5.5 pounds), and 10 babies will die before reaching their first birthday (Wisconsin Interactive Statistics on Health).

Significant racial and ethnic disparities in birth outcomes exist in Wisconsin. A greater proportion of infants born to Black/African American women than those born to White women are low birthweight or preterm. Health conditions related to prematurity and low birthweight are the leading cause of infant mortality for Blacks/African Americans. In 2006-2008, infants born to Black/African American women were 2.8 times more likely to die in the first year of life than infants born to White women (Wisconsin Interactive Statistics on Health).



The Life Course Health Development Model (Lu and Halfon, 2003) is useful in understanding disparities in birth outcomes and the influences on healthy growth and development across the life span. The model illustrates that birth outcomes are influenced by the health of the mother throughout her life, not just during the nine months of pregnancy. Many women enter pregnancy with risk factors for poor birth outcomes such as obesity, stress, smoking, or sexually transmitted infections. It is important to optimize women's health prior to pregnancy by providing screening, education, and interventions to reduce those risk factors. Interventions include providing preventive measures (multivitamins with folic acid, immunizations), managing health conditions (diabetes, infections), and supporting healthy behaviors (smoking cessation, physical activity). Additionally, variations in exposures to risk and protective factors across the life span contribute to racial and ethnic disparities. Chronic experiences with risk factors such as racism and poverty have a negative impact on health. Social support and access to high-quality health care are known protective factors that support health.

Early childhood is also a critical development period with lifelong impacts on health. Recent research has clearly shown that brain development of children before the age of five has a profound influence on their social, emotional, language, memory, physical, and cognitive development. Positive environments and relationships in the life of a child serve as protective factors to support development and provide a strong foundation for all future learning, behavior, and health. It is well established that adverse conditions such

as family turmoil, enduring poverty, violent neighborhoods, and substandard daycare conditions put children at higher risk for mental health and developmental problems that can persist into school-age years and adulthood.

Research has greatly expanded the understanding of the factors children need to succeed in school. "There is clear evidence that beginning intervention early makes a big difference in the cost of intervention and in its probable success" (Fox, 2006). Early, positive and nurturing conditions promote children's readiness to learn and their success in school. Effective early childhood programs offer an opportunity to promote lifelong health and prevent disease during adolescence and adulthood. A healthier population begins with reducing toxic stress such as physical and emotional abuse and neglect in childhood. The healthy development of young children provides a strong foundation for later academic achievement, economic productivity, and responsible citizenship, as well as a lifetime of good physical and mental health.

Wisconsin Data Highlights

- Infant mortality rates (the number of deaths during the first year of life per 1,000 live births in a population group) for 2006-2008 were 15.2 for Blacks/African Americans, 10.1 for American Indians, 6.5 for Hispanics/Latinos, 7.2 for Laotian and Hmong, and 5.4 for Whites (Wisconsin Interactive Statistics on Health).

- In 2006-2008, the disparity ratio of Black/African American to White infant mortality rates was 2.8, meaning an infant born to a Black/African American woman was 2.8 times more likely to die in the first year of life than an infant born to a White woman. The American Indian infant mortality rate was 1.9 times the White rate; the rate for Hispanics/Latinos was 1.2 times the White rate (Wisconsin Interactive Statistics on Health).

- Critical risk factors for an infant death include low birthweight (less than 2,500 grams or about 5.5 pounds) and preterm birth (less than 37 weeks of gestation). A higher proportion of infants born to Black/African American women than those born to White women are low birthweight or preterm (Wisconsin Interactive Statistics on Health).

- In 2007, a survey of new mothers in Wisconsin found that: (1) During the month prior to becoming pregnant, 37 percent of White women and 22 percent of Black/African American women reported taking a multivitamin; (2) 12 percent of White women and 26 percent of Black/African American women reported feeling down, depressed or hopeless after the baby was born (Wisconsin Pregnancy Risk Assessment Monitoring System).

- Based on the 2007 National Survey of Children's Health, 57.9 percent of Wisconsin parents reported that during the past 12 months, a doctor or other health professional asked if they had concerns about their child's learning, development or behavior; 34 percent of parents reported a doctor or other health professional had them fill out a

questionnaire about specific concerns or observations about their child's development, communication, or social behaviors.

Objective 1

By 2020, increase the proportion of children who receive periodic developmental screening and individualized intervention.

Objective 1 Indicators

- Proportion of parents reporting that a health provider assessed their child's learning, development, communication, or social behavior (State and Local Area Integrated Telephone Survey [SLAITS]).
- Number of children who received services from the Birth-to-Three program during the first year of life (Birth-to-Three Program).

Objective 1 Rationale:

The American Academy of Pediatrics (2001) recommends developmental surveillance at every well-child visit and developmental screening using formal, validated tools at 9, 18, and 30 months of age or whenever a parent or provider concern is expressed. Screening is a process using a standardized method or tool to identify children who may need further evaluation because they may have health or developmental concerns. Surveillance and screening activities should be performed within the medical home and coordinated with early intervention services available in the community to assure optimal child development and potential for achieving a productive and healthy life course.

Objective 2

By 2020, provide pre-conception and inter-conception care to Wisconsin women in population groups disproportionately affected by poor birth outcomes.

Objective 2 Indicators

- Rates of avoidable infant and fetal death. (Perinatal Periods of Risk methodology, Vital Records).
- Percentage of births that are to women with avoidable risks for poor birth outcomes (Pregnancy Risk Assessment Monitoring System).

Objective 2 Rationale

The health of women before pregnancy has a great impact on birth outcomes, and birth outcomes affect health in childhood and adulthood. Preconception care strives to optimize the health of women before pregnancy by identifying risk factors and providing education and appropriate interventions to modify risk factors that can lead to low birthweight and congenital malformations.

Objective 3

By 2020, reduce the racial and ethnic disparities in poor birth outcomes, including infant mortality.

Objective 3 Indicators
Disparity ratios for infant mortality, low birthweight, prematurity, and timing of entry into the Women, Infants and Children (WIC) program.

Objective 3 Rationale
"One unacceptable health disparity in Wisconsin is the persistent high death rate of infants born to Black/African American women. Infants born to Black/African American women in Wisconsin have been about three, and as high as four, times more likely to die before their first birthday than infants born to White women. Further, during the past 20 years, no sustained decline has occurred in Wisconsin's Black/African American infant mortality rate. Compared to White infant mortality, disparities also exist among American Indian, Laotian and Hmong, and Hispanic/Latino populations, although disparities are smaller than those for Blacks/African Americans" (Wisconsin Health Facts: *Racial and Ethnic Disparities in Infant Mortality*, 2010).

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

- Implement broadly focused early care and education programs (Booske, et al., 2009).
  - o High/Scope Perry Preschool approach: preschool paired with home visits
  - o Comprehensive, center-based early childhood development programs (Head Start or Child-Parent Centers, Chicago)
  - o Comprehensive, statewide system similar to Smart Start (North Carolina)
  - o Early Head Start
  - o Birth-to-Three Program
- Set up healthy child development policies (Booske, et al., 2009).
  - o Families and Schools Together (FAST)
  - o Universal Pre-Kindergarten (Oklahoma Pre-K)
  - o Increase funding for child care subsidy (Wisconsin Shares Program)
  - o Refundable state dependent care tax credit
  - o Statewide childcare quality rating system
- Develop home visiting or parent education programs (Booske, et al., 2009).
  - o Nurse home-visiting program (Nurse-Family Partnership)
  - o DARE to Be You: parent-child workshops
  - o HIPPY (Home Instruction Program for Preschool Youngsters)
  - o Developmentally Supportive Care (and Newborn Individualized Developmental Care and Assessment Program); Parents as Teachers
  - o Reach Out and Read
- Implement *Recommendations to Improve Preconception Health and Health Care – United States* (from the Centers for Disease Control and Prevention and the Select Panel on Preconception Care).
  - o Individual responsibility across the life span
  - o Consumer awareness
  - o Preventive visits
  - o Interventions for identified risks

  - Interconception care
  - Pre-pregnancy check-up
  - Health insurance coverage for women with low incomes
  - Public health programs and strategies
  - Research
  - Monitoring improvements
- Implement universal developmental screening of infants and children at 9, 18, and 30 months of age using an evidence-based standardized tool.
  - Ages and Stages Questionnaire (ASQ), Third Edition
  - Ages and Stages Questionnaire-Social Emotional (ASQ-SE)
  - Parent's Evaluations of Developmental Status (PEDS)
  - PEDS: Developmental Milestones (PEDS-DM)
  - Brigance Screens-II
  - Pediatric Symptom Checklist (PSC)
  - Developmental Indicators for Assessment of Learning, Third Edition (DIAL-3)
  - Modified Checklist for Autism in Toddlers (M-CHAT)
  - Edinburgh Postnatal Depression Scale (for post-partum mothers)

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INJURY AND VIOLENCE

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

Injury and violence encompasses a broad array of topics. Unintentional injuries are often referred to as accidents despite being highly preventable. Examples include falls, drowning, motor vehicle crashes, suffocation and poisoning. Intentional injuries include those that were purposely inflicted, with the intent to injure or kill someone (including self). Intentional injuries often involve a violent act. Examples include homicide, child maltreatment, sexual assault, bullying and suicide. While not all violence results in physical injury, the use, and threat of use, of force or power may result in injury, death, psychological harm, maldevelopment, or deprivation eroding communities by reducing productivity, decreasing property values, and disrupting social services, to name a few (Dahlberg and Krug 2002, Centers for Disease Control 2008). Common prevention strategies exist across all causes and manners of injury that include but are not limited to environmental changes, education, and enforcement of policies, laws and standards.

The burden of injury differs across the life span. The effects of unintentional and intentional injury include costs related to care and treatment of injuries, but also loss of productivity (economic loss to the individual, family and workforce), years of potential life lost due to injury mortality, and the influence of injury and violence on chronic disease, physical and mental health.

Importance of the Focus Area

Injuries are the leading cause of death among Wisconsin people age 1-44 years and are a significant cause of morbidity and mortality at all ages. Though many of these deaths due to injury are unintentional, the majority are also preventable.

Injuries and violence are not discriminatory; they occur in all ages, races, and socioeconomic classes. However, we do know that some groups are affected more severely. These disparities include:

Homicide
The homicide rate for Blacks/African Americans is 16 times higher than the homicide rate for Whites. For 15-24 year olds, the rate is 20 times higher. When considering geographic area, 69 percent of homicides in 2008 occurred in the southeast region of the state. While this is the most densely populated region of the state, it makes up only 37 percent of the population.

Suicide
The majority of suicides occur in Whites, but American Indians have the highest rate of death. Across all ages, the highest rate of suicide is in those aged 25-44 years. Men die from suicide four times more frequently than women. Regionally, rates of suicide are more evenly dispersed, with the highest rate in the northeastern region and the lowest rate in the southeastern region.

Motor vehicle crashes
The highest rate of motor vehicle crashes occurs among Wisconsin residents ages 15-24 years. American Indians have the highest rate of motor vehicle-related fatalities. The highest rate of motor vehicle fatalities occurs in the northern region, with the lowest rate in the southeastern region. Approximately 42 percent of Wisconsin motor vehicle crash fatalities are alcohol-related, one of the highest percentages in the nation. Wisconsin's estimated seatbelt use, around 75 percent, is one of the lowest in the nation.

Poisoning
Unintentional poisoning deaths have increased in Wisconsin over the past three years. The highest rate of death occurs among Wisconsin residents ages 25-44 years. Blacks/African Americans have a rate approximately twice that of Whites.

Falls
Wisconsin has one of the highest rates of fall-related fatality in the nation. Falls are the leading cause of injury-related death in the state. The bulk of deaths occur in those 65 years and older. Whites and those in the southeastern and northeastern regions of Wisconsin have the highest rates of fall-related death.

Deaths are only part of the problem. Injuries range from mild to severe, and the hospitalizations and emergency department visits required to treat these injuries cost the people of Wisconsin over $1.7 billion annually (2007 data from Wisconsin Interactive Statistics on Health). For severe injuries, such as traumatic brain injury, costs can continue over a lifetime.

Injury prevention is extremely cost-effective. According to the National Highway Traffic Safety Administration, every dollar spent on bicycle helmets saves $30 in medical and other costs. If Wisconsin's seatbelt use rate rose to 90 percent from the current rate of 75

percent, more than $220 million would be saved (National Highway Traffic Safety Administration, 2009).

As with other public health issues, injury and violence are significantly influenced by the underlying determinants of health such as poverty; drug and alcohol use and abuse; mental and physical health problems; the physical environment; lack of social cohesiveness; lack of education and awareness; and social norms.

One examination of these underlying determinants and their effects on health outcomes is the Adverse Childhood Experiences Study (Centers for Disease Control and Prevention, 2008). The findings document that acts of violence not only have an immediate effect on those directly and indirectly exposed to violence, but may have life-long health consequences that greatly increase the emotional, physical and societal costs associated with violence. Immediate effects to abused children include physical injuries such as cuts, bruises, burns and broken bones. However, long-term maltreatment causes stress that can disrupt early brain development. Extreme stress can harm the development of the nervous and immune systems. As a result, children who are abused or neglected are at higher risk for health problems as adults. These problems include alcoholism, depression, drug abuse, eating disorders, obesity, high-risk sexual behaviors, smoking, suicide and certain chronic diseases (Centers for Disease Control and Prevention, 2010).

The underlying determinants of health also influence unintentional injuries. Education levels, poverty and the physical environment all play an important role in determining an individuals risk for injury. For example, “adults with low literacy struggle to understand basic beneficial information that readers take for granted, such as prescription dosages, warning labels on poisonous products and appliance maintenance steps. Unfortunately, even manufacturers' instructions for using smoke alarms are heavily text-based. If a person cannot read or comprehend safety information or a product or appliance's fire safety warnings, he or she is not being reached effectively and may not be taking the necessary actions to reduce the risk of fire at home” (Home Safety Council).

Further, there is a lack of data for some topic areas, such as child maltreatment and violence against women, due to under-reporting or inaccurate reporting. This represents a unique challenge to injury prevention professionals in measurement of both incidence and disparity.

Wisconsin Data Highlights

- Five types of injuries cause the greatest number of deaths: falls, suicide, motor vehicle crashes, poisoning, and homicide.

- Data for 2008 show that falls have surpassed motor vehicle crashes as the leading cause of injury-related death (Wisconsin Interactive Statistics on Health).

- Veterans accounted for one out of every five suicides in Wisconsin between 2001 and 2006 (Wisconsin Interactive Statistics on Health).

- In 2006, Wisconsin had the second-highest fall-related fatality rate in the nation (Centers for Disease Control and Prevention).

- In 2008, approximately 40 percent of Wisconsin motor vehicle crash fatalities were alcohol-related. Wisconsin had the highest rate of drunken driving in the nation (Wisconsin Department of Transportation).

- In 2008, the homicide rate for Blacks/African Americans was 16 times higher than the homicide rate for Whites (Wisconsin Interactive Statistics on Health).

- Unintentional poisoning deaths have steadily increased since 1999 (Wisconsin Interactive Statistics on Health).

- In 2008, there were 56,934 allegations of child abuse reported to Wisconsin County Child Protective Services and the Bureau of Milwaukee Child Welfare; 15 percent, or 5,686 events, were substantiated as abuse (Department of Children and Families).

- It is estimated that one in six Wisconsin females has reported being sexually assaulted in her lifetime (Centers for Disease Control and Prevention).

Objective 1

By 2020, reduce the leading causes of injury (falls, motor vehicle crashes, suicide/self harm, poisoning and homicide/assault) and violence though policies and programs that create safe environments and practices.

Objective 1 Indicators

- Morbidity from falls, assaults, motor vehicle crashes, poisoning and self-harm (hospitalization and emergency department data).
- Mortality from falls, homicide, suicide, motor vehicle crashes and poisoning (Vital Records and Wisconsin Violent Death Reporting System).
- Number of crash occupants (motor vehicle, trucks, motorcycles, bicycles, pedestrians with moving vehicle) (Crash Outcome Data Evaluation System [CODES]).

Objective 1 Rationale

Failure to address these leading causes of death and disability would be a failure to address the health needs of Wisconsin people and will cause a continued burden to the state financially.

Objective 2

By 2020, increase access to primary, secondary and tertiary prevention initiatives and services that address mental and physical injury and violence.

Objective 2 Indicator
Reimbursement for preventive services related to injury and violence (Medicaid/BadgerCare, medical service billing codes). (Indicator to be developed.)

Objective 2 Rationale
Ensuring convenient and affordable preventive services will improve health equity and improve quality of life for all of Wisconsin's people but most importantly to those unequally affected by injury and violence.

Objective 3

By 2020, reduce disparities in injury and violence among populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.

Objective 3 Indicators
- Disparity ratios in hospitalizations from falls, poisoning and self-harm.
- Mortality from homicide, suicide, and motor vehicle crashes (Hospital and emergency department data, Wisconsin Vital Records data, and Crash Outcome Data Evaluation System [CODES]).

Objective 3 Rationale
To effectively address injury and violence in Wisconsin, all populations need to participate in identifying strategies that can be communicated and implemented effectively, and measured for impact within their specific communities. Failure to reduce injuries and violence in these communities will only widen the disparity gap.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

When a public health approach is applied to the problems of injury and violence, in most cases these events can be prevented. Strategies for injury and violence prevention focus primarily on environmental and product design, human behavior, education, and legislative and regulatory requirements that support environmental and behavioral change.

- Compare prevention strategies related to policies and programs (Booske, et al., 2009).
    - Policies mandating bicycle helmet use
    - School-based programs to reduce violence and bullying

- Results of research on the effectiveness of injury and violence prevention programs (Harborview Injury Prevention and Research).
    - Firearm buy-back programs and firearm safety curricula
    - Youth violence interventions such as supervised after-school recreation and home visiting programs
    - Reducing tap water temperature

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MENTAL HEALTH

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during October 2009 through February 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

"Mental health is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community" (World Health Organization, 2001). "Mental health is the foundation for well-being and effective functioning for an individual and community. It is more than the absence of mental illness; it is a resource vital to individuals, families and societies" (British Columbia, Ministry of Health, 2007).

Importance of the Focus Area

When comparing all diseases, mental illnesses rank first in terms of causing disability in the United States, Canada, and Western Europe (World Health Organization Report 2001). One out of five people, or 20 percent of the population, will experience a mental health problem of some type during a one-year period (Robins and Regler, 1991). Serious mental illness costs Americans at least $193 billion a year in lost earnings alone (Kessler et al., 2008). Lost earnings are just one aspect of the total economic burden, which also includes direct treatment costs such as medications and physicians' care (Kessler, 2008). Mental health disorders are an enormous social and economic burden to society by themselves, but are also associated with increases in the risk of physical illness (World Health Organization, 2009).

Indeed, mental and physical health are closely connected, and the statement "there is no health without mental health" accurately summarizes the relationship between the two (Prince et al., 2007). More specifically, mental health disorders are associated with increased rates of chronic health problems and risk factors such as smoking, physical inactivity, obesity, and substance abuse and dependence. In the U.S., persons with mental illnesses represent an estimated 44.3 percent of the tobacco market and are nicotine dependent at rates that are 2-3 times higher than the general population (Grant et al., 2004; Lasser, 2000). Data show that mental health clients treated in publicly funded systems of care have high rates of smoking-related medical illnesses (Grant, 2004) and

premature death, resulting in as much as 25 years of potential life lost compared to the general population (Colton and Manderscheid, 2006).

Moreover, evidence suggests that the profoundly negative effects of poor mental health on physical health are not unique to those with the fewest resources, but are also evident among adults with mental health problems in the wider population. Among Wisconsin adults, the burden of chronic physical disease falls heavily on those with mental health problems, as evidenced by comparatively higher rates of cardiovascular disease and diabetes. In addition, treatment for mental health problems is lacking for a large portion of those who need it (Wisconsin Department of Health Services, 2009).

The Behavioral Risk Factor Survey (Wisconsin Division of Public Health /U.S. Centers for Disease Control and Prevention) measures serious psychological distress using the K-6, a non-specific distress scale (Kessler, et.al.1998). The K-6 originally was developed to measure serious mental illness, but was subsequently found to better indicate serious psychological distress. Serious mental illness is defined as the presence of a DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders, Version IV)* diagnosis and serious functional impairment in one or more major life areas.

> ***Serious psychological distress defined***
> Serious psychological distress is a non-specific category of distress characterized by a DSM-IV mood or anxiety disorder and a lesser degree of functional impairment than serious mental illness. Serious psychological distress is considered to be an indicator of possible serious mental illness, with similar but less strict inclusion criteria.

Wisconsin data from the 2007 Behavioral Risk Factor Survey indicate that adults with past-month serious psychological distress have poor quality of life and poor physical health compared to other adults. The differences include significantly lower levels of social support and life satisfaction and higher rates of chronic diseases

Estimates of mental health disorders among adults ages 60 and older are of increasing importance, but require scrutiny, as they may be misleading for multiple reasons. First, many such estimates are based on survey data, which exclude adults who are cognitively impaired or are otherwise unable to live in non-institutional settings. In addition, what appear to be lower rates of mental health disorders among older adults (Kessler et al., 2005) may be, at least in part, a function of the high rate of premature death associated with such disorders. When dementia is added to the mix of psychiatric disorders, some estimates indicate that the occurrence rate of psychiatric symptoms among older adults will be approximately 20 percent by the year 2030 (Jeste, et al., 1999; Charney, et al., 2003).

Wisconsin Data Highlights

- Thirty-six percent (36 percent) of Wisconsin adults with serious psychological distress were current smokers, compared with 18 percent of adults without serious

psychological distress (Wisconsin Department of Health Services, Behavioral Risk Factor Survey [BRFS], 2007 data).

- Forty-four percent (44 percent) of adults with serious psychological distress were obese, versus 25 percent of those without sensory processing disorder (BRFS, 2007 data).

  - Among adults with serious psychological distress, less than half (49 percent) received mental health treatment or medication (BRFS, 2007 data).

    Note: This text refers to "past year" and "past month" serious psychological distress because of the different reference periods used in the National Survey on Drug Use and Health (NSDUH) and the Behavioral Risk Factor Surveillance System. Both surveys use the K-6 scale (Kessler at al., 2003), a six-item screener to measure serious psychological distress, but because of the different reference periods, the measures are not strictly equivalent. They must be identified as "past month" or "past year" for the sake of clarity.

  - Frequent mental distress was more prevalent among Wisconsin Hispanics (17 percent), American Indians (14 percent) and African Americans (15 percent) compared to Whites (8 percent) (BRFS, 2006-2008 data).

  - Suicide rates in Wisconsin were highest among American Indians compared to other race/ethnicity groups – 16.6 per 100,000 population versus 7.1, Blacks/African American, 6.1, Asian/Pacific, 5.6, Hispanics/Latinos, and 12.1, White (Wisconsin Resident Death Certificates, unpublished data for 2001-2006).

  - Women in Wisconsin were more likely to have past-month serious psychological distress than men, and adults with low educational attainment (less than high school) and low-incomes (less than $25,000 in household income) had a higher prevalence of serious psychological distress than those with more education and higher-incomes (BRFS, 2007 data).

  - Wisconsin high school girls were nearly twice as likely as boys (30 percent versus 16 percent) to have experienced symptoms of depression for two weeks or more in a row in the past 12 months (Youth Risk Behavior Survey, 2007).

  - Forty-one percent of gay, lesbian, and bisexual youth considered suicide in the past 12 months, compared with 17 percent of youth with only opposite sex contact (Youth Risk Behavior Survey, 2007).

Objective 1

By 2020, reduce smoking and obesity (which lead to chronic disease and premature death) among people with mental health disorders.

Objective 1 Indicator
Smoking and obesity rates among people with depression or serious psychological distress (Behavioral Risk Factor Survey).

Objective 1 Rationale
A direct means to improving the health of people with mental health disorders is to reduce the prevalence of risk factors such as smoking and obesity that lead to chronic disease and premature death.

Objective 2

By 2020, reduce disparities in suicide and mental health disorders for disproportionately affected populations, including those of differing races, ethnicities, sexual identities and orientations, gender identities, educational or economic status.

Objective 2 Indicators
- Prevalence of mental health disorders in these population groups (Behavioral Risk Factor Survey, Youth Risk Behavior Survey).
- Suicide rates in these populations (Wisconsin Vital Statistics).
- Mental health provider capacity indicating access to mental health services. (Indicator to be developed.)

Objective 2 Rationale
Reducing the relatively high rates of suicide and mental health disorders in population groups identified by characteristics such as race/ethnicity, sexual orientation, and age will increase health equity and quality of life.

Objective 3

By 2020, reduce the rate of depression, anxiety and emotional problems among children with special health care needs.

Objective 3 Indicators
- Percent of children who have depression, anxiety or emotional problems (State and Local Area Integrated Telephone Survey – Children with Special Health Care Needs [SLAITS-CSHCN]).
- Percent of children who needed but did not receive mental health services in the previous year (SLAITS-CSHCN).
- Percent of CSHCN/non-CSHCN who received mental health treatment / counseling in the past year (SLAITS – National Survey of Children's Health).

Objective 3 Rationale
Among youth ages 12-17, approximately 9 percent have a recent (past-year) major depressive episode in both Wisconsin and the U.S. (*National Survey on Drug Use and Health, 2005-2006*). The 2000 U.S. Surgeon General's Report on Mental Health concluded that a high proportion of young people with a diagnosable mental disorder do not receive any mental health services at all (Burns et al., 1995; Leaf et al., 1996).

Although two of five children receive some form of mental health intervention, but only one in five children with a serious emotional disturbance used some form of mental health specialty services, (Burns et al., 1995). Lack of access to mental health services is due to multiple factors including geography, costs and availability. However, lack of psychiatrists and other mental health professionals also contribute significantly to the lack of services.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

Tobacco

Mental health policies and programs will use a public health approach. Some identified strategies include:

- Require screening for tobacco use in all mental health and substance abuse treatment programs.
- Educate mental health and substance abuse professionals in evidence-based motivational interventions for smoking cessation that will be integrated into existing treatment/recovery plans. Other smoking cessation interventions may include self-help materials, and the nicotine patch.
- Incorporate smoking cessation models, which are tailored for persons with mental illnesses. Encourage mental health and substance abuse professionals to combine nicotine replacement therapy (NRT) with Cognitive Behavioral Therapy (CBT), a type of psychotherapy focusing on changing dysfunctional thoughts, emotions, and behavior.
- Fund projects such as, the Wisconsin Nicotine Treatment Integration Project: Mental Health, Alcohol and Other Drugs and Tobacco Dependence (WiNTiP) to promote the integration of evidence-based nicotine dependence treatment practices into Wisconsin's alcohol and other drug abuse, and mental health services statewide.
- Encourage mental health and substance abuse service providers to offer or refer their patients/clients/consumers for medication assisted smoking cessation as appropriate. Use of cessation interventions such as nicotine replacement therapy (NRT) or Bupropion in combination with individual or group counseling employing motivational interviewing or cognitive behavioral strategies are effective for persons with mental illnesses.

Smoking Cessation Resources

- Getting Ready, Implementing, and Sustaining the Effort: A toolkit for providers National Association of State Mental Health Program Directors, 2007.

- A Practical Guide to Working with Health-Care Systems on Tobacco-Use Treatment Centers for Disease Control and Prevention, Office on Smoking and Health, 2006.

- The U.S. Public Health Service Clinical Practice Guideline: Treating Tobacco Use and Dependence, 2007.

- Morris, C., Waxmonsky, J., Giese, A., Graves, M., Turnbull, J., *The Tobacco Cessation Toolkit for Mental Health Providers.* University of Colorado at Denver and Health Sciences Center, Department of Psychiatry.

Reducing obesity

Mental health policies and programs will use a public health approach to implement comprehensive programs. Mental health programs and policies will need to address multiple drivers for health improvement which have been identified (Booske, 2009). A selection of these strategies are identified and listed below:

- Implement comprehensive programs that promote physical activity and nutrition through multi-component interventions aimed at diet, physical activity, and cognitive change.
- Promote increased use and access to fitness or community centers or athletic facilities across all ages of the population.
- Encourage employers to offer benefit packages to their employees which add incentives to increase physical activity including reduced health insurance premiums for members of fitness clubs/YMCA.
- Make water available; promote its consumption.
- Increase availability of fruits and vegetables, and other nutritious options.
- Ensure onsite cafeterias follow healthy cooking practices.
- Use point –of –decision prompts to highlight fruits and vegetables, and promote water consumption.
- Provide nutrition information in clinic waiting room.
- Provide clients/patients/consumers with tools for self-assessment and recording.
- Support comprehensive, center-based early childhood development programs.

Delivery of care

- Implement systemic changes to all health care delivery systems to provide comprehensive care coordination that requires an integrated care delivery model to support patient/family-centered medical homes.
- Encourage health systems to co-locate mental health practitioners in or near primary care including pediatric and family practice offices or encourage systems to implement and utilize a mental health consultative model with primary care physicians.
- Promote statewide use of “tele-health” to expand mental health services, which could include use of primary care as the service delivery site and billing entity. This would provide seamless coordination to expand access to mental health services for children and families and will provide primary care physicians’ access to mental health consultation when needed.
- Provide intensive training, support, and consultation for primary care providers’ in the treatment of children’s mental health problems.
- Promote the use of screening tools for depression, anxiety, and suicide risk across all medical settings, community, and schools. Examples of tools include the Columbia TeenScreen and the Signs of Suicide (SOS).

- Implement comprehensive mental health and school-based interventions with the wraparound process to involve all partners in all communities.
- Expand use of medical homes, which may enhance the capacity of primary care providers to provide and manage care for children with special health care needs and provide case coordinators to help children and families gain access to in-home services and supports.
- Incorporate family to family involvement and peer to peer support as core principles of service delivery, as families and peer consumers are playing a larger role in the provision of children's mental health services.

Suicide prevention

A public health approach is essential to addressing suicide prevention. The following are featured prevention strategies found in the Burden of Suicide In Wisconsin Report (Kopp, et al., 2008):

- Develop statewide broad community–based coalitions.
- Develop and implement crisis intervention and "postvention" (what to do after a suicide occurs) plans or policies in all communities and regions statewide.
- Implement prevention strategies:
  - Complementary programs-Classroom curriculum that focuses on increasing youth assets has been shown to be a protective factor in suicide prevention. Specifically, problem-solving, coping skills and conflict resolution skills are important elements of resiliency that can reduce the likelihood of suicide.
  - Provide educational settings where environments are both physically and psychologically safe. Include programs that address bullying and violence prevention.
  - Promote use of screening tools for depression, suicidal ideation and suicidal acts. Examples include: Columbia TeenScreen and Signs of Suicide (SOS); Geriatric Suicide Ideation Scale (GSIS) is a validated screening tool for the elder population.
  - Educate mental health and substance abuse providers to recognize signs and symptoms of depression and to assess suicide risk.
- Implement community wide "gatekeeper trainings" to train persons (gatekeepers) who have regular contact with potentially vulnerable populations to more readily identify populations at-risk for suicide and refer them to appropriate services. An example of a gatekeeper training program is Question-Persuade-Refer (QPR).
- Utilize media guidelines to encourage members of the media to follow guidelines for reporting suicide so as not to encourage at-risk persons to attempt suicide.
- Promote and implement means restriction. Means restriction activities are designed to reduce access or availability to the means and methods of deliberate self-harm in an attempt to reduce the odds that an attempter will use a highly lethal means. Coordinate efforts with law enforcement, crisis responders, social services, mental health, and substance abuse professionals, and service organizations.
- Culturally tailor messages and implement comprehensive multi-component interventions in partnership with statewide and community-based coalitions to reduce

suicides across all ages, racial/ethnic, deaf and hard of hearing, veteran, and sexual orientation populations.
- Adopt the Wisconsin Suicide Prevention Strategy (2002).
- Encourage the development of a statewide, comprehensive, and sustainable suicide prevention system with a central coordinator to facilitate and foster suicide prevention efforts.

Suicide Prevention Resources

- American Indian Life Skills Development/Zuni Life Skills Development. Suicide Prevention Resource Center (SPRC). Substance Abuse and Mental Health Services Administration (SAMHSA), National Registry of Evidence-Based Programs and Practices (NREPP). September 2007 (http://www.sprc.org/featured_resources/ebpp/pdf/zuni_life skills.pdf)

- CAST (Coping And Support Training) Effective Youth Suicide Prevention Screening Tool and Curriculum. Suicide Prevention Resource Center (SPRC). Substance Abuse and Mental Health Services Administration (SAMHSA), National Registry of Evidence-Based Programs and Practices (NREPP). January 2008. (http://www.nrepp.samhsa.gov/programsfulldetails.asp)

- Columbia University TeenScreen Program. Effective Youth Suicide Prevention Screening Tool. Suicide Prevention Resource Center (SPRC). Substance Abuse and Mental Health Services Administration (SAMHSA), National Registry of Evidence-Based Programs and Practices (NREPP). November 2007. (http://www.sprc.org/featured_resources/ebpp/pdf/columbia-teenscreen.pdf)

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- Evidence-Based Practices for Preventing Substance Abuse and Mental Health Problems in Older Adults: Excerpt: Prevention of Mental Health Problems: Suicide Prevention. SAMHSA Older Adults Technical Assistance Center II: 2005 National Reports. (http://www.samhsa.gov/OlderAdultsTAC)

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ORAL HEALTH

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

Oral health is basic to general overall health throughout the life span. It means being free of mouth pain, tooth decay, tooth loss, oral and throat cancer, oral sores, birth defects, gum (periodontal) disease, and other diseases that affect the mouth and surrounding structures.

- Achieving good oral health requires access to a dental home, which is not a building, but rather a team approach to providing comprehensive oral health care services in a high-quality and cost-effective manner.
- Early intervention with primary preventive measures (tooth brushing, flossing, good nutritional and infant feeding practices) begins during the preconceptional and prenatal periods. It includes care provided from both primary health care providers and oral health providers and continues through the life span.
- Early intervention with preventive measures, such as fluoride varnish and dental sealants, includes children and adults with developmental disabilities who experience significant problems of access to dental services.
- Older adults with poor oral health are at risk for malnutrition.

Importance of the Focus Area

Oral health is essential to the general health and well-being of all Wisconsin people and can be achieved by everyone. Oral health means much more than having healthy teeth. It means being free of chronic oral-facial pain, oral and pharyngeal (throat) cancers, oral soft-tissue lesions, birth defects such as cleft lip and palate, and scores of other diseases and disorders. Good oral health also includes the ability to carry on the most basic human functions such as chewing, swallowing, speaking, smiling, kissing, and singing. Oral health is integral to general health, and people cannot be healthy without good oral health. Oral health and general health should not be interpreted as separate entities.

Many systemic diseases may initially start with and be identified through oral symptoms. People who have conditions that affect their immune system, including people with HIV/AIDS, are more likely to experience oral infections. Also, research suggests an association between gum and tissue disease and diabetes, heart disease, stroke and adverse pregnancy outcomes.

Modifiable risk factors such as tobacco use, heavy alcohol consumption, and poor dietary practices also affect health, not only of the mouth but also the health of the face and the head. Tobacco use is a risk factor for oral and throat cancers, gum disease, oral yeast infections, and dental decay. People who use tobacco and who also drink heavily are at a much greater risk for oral and throat cancers.

There are profound and far-reaching oral health disparities within the population. Disparities in various oral conditions may relate to age, sex, race/ethnicity, geography, income, education, or medical status. Children from low-income families suffer dental decay twice as much as children from higher-income families and are more likely to let disease go untreated because they lack resources.

Access to oral health care is a major issue in Wisconsin and throughout the United States. Lack of dental insurance (public or private) is one of the major barriers to obtaining care. In addition, the level of reimbursement for services, particularly for state-funded insurance programs, is also a barrier for providers to participate in these programs because of insufficient financial incentives and reimbursements.

Safe and effective disease prevention measures need to be readily available so that everyone can adopt prevention measures to improve oral health and prevent disease. These measures include daily oral hygiene procedures and other lifestyle behaviors; community-based programs such as community water fluoridation and tobacco cessation programs; and provider-based interventions such as the placement of dental sealants, fluoride varnish applications, and examinations for common oral and throat cancers. Wisconsin Seal-A-Smile is a statewide sealant program that offers grants to local school-based programs. Wisconsin Seal-A-Smile targets low-income, uninsured children who attend schools with high rates of free and reduced-price school meals eligibility. In addition to sealants, these children also receive oral health education and fluoride varnish applications. Community water fluoridation is a cost-effective, safe, broad-based approach that helps people of all ages and income levels and is considered one of the great public health achievements of the 20th century (U.S. Department of Health and Human Services, 2000).

Wisconsin Data Highlights

- Results from screenings of Wisconsin children conducted among a sample of Head Start children in the 2008-09 school year, and a sample of third-grade students in the 2007-08 school year, revealed that 26 percent of Head Start children had untreated decay and 20 percent of third-grade children had untreated decay (Wisconsin

Department of Health Services, Healthy Smile for a Healthy Head Start Survey, 2010; Make Your Smile Count Survey, 2009).

- Racial and ethnic disparities were found among children screened, particularly among the third-grade children. African American and Hispanic third-graders were twice as likely to have untreated decay and were less likely to have the benefit of sealants compared to White children (Wisconsin Department of Health Services, Healthy Smile for a Healthy Head Start Survey, 2009; Make Your Smile Count Survey, 2008).

- Oral health disparities in Wisconsin also exist by disability status. Wisconsin children with special health care needs were more likely to have decayed teeth or cavities in the past six months (21 percent) compared to children without special health care needs (15 percent) and were twice as likely to have had a toothache in the past six months (National Survey of Children's Health, 2007).

- According to the 2008 Wisconsin Behavioral Risk Factor Survey, African American adults were more likely to report having lost permanent teeth due to decay/gum disease (52 percent) compared to White adults (38 percent).

- Of the 955,336 Wisconsin Medicaid and BadgerCare members in 2008, 23 percent received at least one dental service (Wisconsin Department of Health Services, Medicaid Dental Utilization Data Tables, 2008). In 2006, one Wisconsin county was without a Medicaid billing dentist and six other counties did not have a dentist billing Medicaid for claims totaling at least $10,000 per year (Medicaid claims data, 2009).

- During the 2008-09 school year, the Wisconsin Seal-A-Smile program screened almost 9,800 children, placed dental sealants on more than 6,200 children, and provided fluoride varnish to almost 6,000 children (Sealant Efficiency Assessment for Locals and States, 2009).

- Approximately 90 percent of Wisconsin's population who are on a public water supply receive the benefit of fluoride. Nationally, Wisconsin ranks 16th highest among states for fluoridation of community water supplies (Wisconsin Public Water Supply Fluoridation Census, 2009).

Objective 1

By 2020, assure access to ongoing oral health education and comprehensive prevention, screening and early intervention, and treatment of dental disease in order to promote healthy behaviors and improve and maintain oral health.

Objective 1 Indicators

- Percent of third-graders with dental sealants and untreated decay (School Survey).
- Percent of Head Start children with untreated decay.
- Percent of adults with self-reported oral health problems (Behavioral Risk Factor Survey).

Objective 1 Rationale

The oral disease burden in Wisconsin can be reduced through early education and preventive services. In addition, access to preventive and treatment services would reduce morbidity and mortality and would reduce the severity of oral disease, which would lead to better overall health. Improved overall health status would result in better nutrition, improved school and work attendance and performance, and enhanced interpersonal relationships. It would also facilitate the search for, and attainment of, work.

Objective 2

By 2020, assure appropriate access to effective and adequate oral health delivery systems, utilizing a diverse and adequate workforce, for populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status and those with disabilities.

Objective 2 Indicators

- Proportion of BadgerCare enrollees with at least one dental claim in a year.
- Number of oral health related emergency room visits by population group. (Indicator to be developed.)
- Percent of schools with school-based dental screening/sealant programs.
- Number of dental providers by type of provider by demographics and location. (Indicator to be developed.)

Objective 2 Rationale

Certain populations in Wisconsin disproportionately bear the burden of oral disease. The oral disease burden can be reduced through early education and preventive services. In addition, access to preventive and treatment services would reduce morbidity and mortality and would reduce the severity of oral disease, which would lead to improved overall health. Improved overall health status would result in better nutrition, improved school and work attendance and performance and enhanced interpersonal relationships; it would also facilitate job searches and attainment of work. However, in order to address these disparities, adequate and accessible infrastructure must be maintained and services delivered by a culturally competent and diverse workforce.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

- Expand scope of practice for dental hygienists and the types of settings where dental hygienists may practice independently of a dentist (Booske, et al., 2009).
- Increase Medicaid reimbursement rates for dentists to 75 percent of regional market rates (Booske, et al., 2009).
- Allow alternative dental care providers. Expanded-function dental assistants supplement and support dentists by performing basic dental procedures, enabling dentists to see more patients (Booske, et al., 2009).

- Provide mobile dental health program for on-site dental care (Booske, et al., 2009).
- Establish a state-based oral health surveillance system (Association of State and Territorial Dental Directors, 2010).
- Develop and support state oral health coalitions and collaborative partnerships (Association of State and Territorial Dental Directors, 2010).
- Engage in state oral health plans and collaborative planning (Association of State and Territorial Dental Directors, 2010).
- Create a statutory mandate for a state oral health program (Association of State and Territorial Dental Directors, 2010).
- Support community water fluoridation (Association of State and Territorial Dental Directors, 2010; Guide to Community Preventive Services, 2010).
- Support school-based fluoride mouth rinse and fluoride supplement programs (Association of State and Territorial Dental Directors Proven and Promising Best Practices for State and Community Oral Health Programs, 2010)
- Support school-based dental sealant programs (Association of State and Territorial Dental Directors, 2010; Guide to Community Preventive Services, 2010).
- Engage in workforce development to increase access to oral health care services (Association of State and Territorial Dental Directors, 2010).
- Address the oral health of children, adolescents, and adults with special health care needs (Association of State and Territorial Dental Directors, 2010).

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PHYSICAL ACTIVITY

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Definition

Physical activity means any bodily activity that enhances or maintains physical fitness and overall health. Public health strategies focus on environmental and policy changes (e.g., active community environment initiatives, urban planning, safety enforcement, trails and sidewalks) to reach large sections of the population.

- Physical activity includes specific time set aside for exercise as well as activity that is part of a person's daily routine (lifestyle activity).
- Regular physical activity has been shown to reduce the risk of certain chronic diseases, including high blood pressure, stroke, coronary artery disease, type 2 diabetes, obesity, colon cancer, and osteoporosis.
- Physical activity recommendations include strategies to make physical activity the easy choice. This can be accomplished by creating opportunities for children, adults, and older adults to be active where they *live, play, work and learn*.
- Adults need 150 minutes of moderate aerobic activity or 75 minutes of intense aerobic activity per week, preferably spread throughout the week. Adults should also do strengthening activities two or more days per week.
- Children 6-17 years of age need 60 minutes of aerobic activity per day. This includes vigorous activity and strengthening activities three days per week each.
- Older adults need guided physical exercise to improve strength, prevent falls, improve cardiovascular performance, and restore resilience and social connection.
- The built environment and overall environment should promote and support people being active.

Importance of the Focus Area

Physical activity is important and yet most people don't get enough. Recent developments such as reliance on cars for almost all transportation, significant decrease in walking and biking to schools, existence of suburban developments where shopping

and parks are not within safe walking distances, busy lifestyles, and an increase in the time spent with computer and video gaming all have engineered activity out of the daily routine. In schools, physical education and recess are often one of the first areas to experience reductions in assigned time, specially trained instructors, and funding.

There are some encouraging signs. Physical activity has become a key component of workplace programs where employers have recognized the value of regular engagement in wellness programs in reducing workplace absences due to illness and slowing or reducing the cost of health care (Strum, 2002). Land use planners for municipalities and counties who have become aware of the connection between the built environmental and health are more often considering health consequences when they plan for development. Despite these signs, physical activity levels in the population have not increased.

The current national recommendations for physical activity as established by the U.S. Department of Health and Human Services (2008) include:

Children and Adolescents

- One hour or more of physical activity every day.
- Most of the hour should be moderate or vigorous aerobic activity.
- Vigorous activity at least three days per week.
- Muscle strengthening or bone strengthening activity (weight lifting or resistance training) at least three days per week.

Adults

- 150 minutes per week of moderate activity or 75 minutes of vigorous activity or an equivalent combination of both.
- Additional health benefits, such as improved cardiovascular endurance, muscular fitness and weight loss, achieved by doubling the minimum time of moderate physical activity to 300 minutes or doubling vigorous activity to 150 minutes or an equivalent combination of both.
- Muscle strengthening activity at least two days per week.

Older Adults or People with Disabilities

- 150 minutes per week of moderate activity or 75 minutes of vigorous activity or equivalent combination of both.
- Muscle strengthening activity at least two days per week.
- For those with physical limitation, it is recommended to be active within one's abilities.

The health benefits of physical activity have been studied extensively. Physical activity is a preventive factor for premature death; diseases such as coronary heart disease, stroke, some cancers, type 2 diabetes, osteoporosis, and depression; risk factors for disease, such as high blood pressure and high blood cholesterol; lack of functional capacity (the ability to engage in activities needed for daily living); mental illnesses, such as depression and reduced cognitive function; and injuries or sudden heart attacks.

Limited physical activity is closely linked to obesity (a major risk factor for cardiovascular disease, certain types of cancer, type 2 diabetes and other chronic diseases). Obesity is defined by the Centers for Disease Control and Prevention as "a body mass index (BMI) of 30 or greater. BMI is calculated from a person's weight and height and provides a reasonable indicator of body fatness and weight categories that may lead to health problems." U.S. and Wisconsin rates of obesity have risen steadily over the past 20 years, with a leveling off in recent years. Behavioral Risk Factor Surveillance System results for 2008 indicate that 26.7 percent of the U.S. population and 26.1 percent of the Wisconsin population were obese (Wisconsin Behavioral Risk Factor Surveillance System, [BRFSS], 2008).

For people to engage in physical activity, they need safe, accessible and affordable opportunities regardless of their location, race, ethnicity or socioeconomic status. Because of this, the following points need to be considered in decision-making:

- Safe, pleasant environments are needed to make it easy to be active in neighborhoods and the community.
- Physical activity programming needs to be culturally relevant for all races and ethnic groups in order to increase participation.
- Access to physical activity opportunities is crucial to increasing participation. Developing an infrastructure that increases opportunities for physical activity makes it easier to be active.
- Key stakeholder involvement and leadership are essential for disparate populations to increase their physical activity levels.
- Collaboration between existing agencies and key stakeholders in delivering culturally appropriate physical activity programming is also crucial.

Wisconsin Data Highlights

Table 1. Percent of people who are obese (Body Mass Index >30)

Age	2000	2007	2010 Goal
Obese Adults Ages 19 years and older	20%	25%	15%
Obese Teens Ages 15-18	10%	13%	NA

(Source: Wisconsin Behavioral Risk Factor Surveillance System [BRFSS], Wisconsin Department of Health Services; Wisconsin Youth Risk Behavior Survey [YRBS], Wisconsin Department of Public Instruction.)

- Levels of physical activity trends in Wisconsin have shown a slight increase since 2001. The proportion of residents meeting the minimum physical activity recommendations rose from 52 percent (2001) to 55 percent (2007). Nearly half the population of Wisconsin does not meet the recommendations for physical activity (BRFSS, 2008).

- In 2008, 61 percent of people with high annual incomes ($50,000 or more) were physically active, compared to 43 percent of people with low incomes (less than $15,000) (BRFSS).

- In 2008, a higher percentage of people with higher annual income ($50,000 or more) were more physically fit (61 percent) than people with income (less than $15,000) (43 percent) (BRFSS, 2008).

- In 2008, 59 percent of people with a higher level of education (college degree) were physically active compared to 50 percent of people with a lower level of education (less than a high school diploma) (BRFSS, 2008).

Objective 1

By 2020, increase physical activity for all through changes in facilities, community design, and policies.

Objective 1 Indicator

- Proportion of high school students who meet federal physical activity guidelines for aerobic physical activity and muscle-strengthening (Youth Risk Behavior Survey).
- Proportion of adults who meet federal physical activity guidelines for aerobic physical activity and muscle-strengthening (National Health Interview Survey).

Objective 1 Rationale

Physical exercise contributes positively to both physical and mental health. The 2008 *Physical Activity Guidelines for Americans* suggests that "[p]hysical activity gives people a chance to have fun, be with friends and family, enjoy the outdoors, improve their personal appearance, and improve their fitness so that they can participate in more intensive physical activity or sporting events" (U.S. Department of Health and Human Services).

Objective 2

By 2020, every Wisconsin community will provide safe, affordable and culturally appropriate environments to promote increased physical activity.

Objective 2 Indicators

- Percent of children less than 18 years old living in a neighborhood with a nearby park or recreation center and sidewalks (National Survey of Children's Health). (Indicator to be developed.)
- Percent of Wisconsin communities with satisfactory scores as measured by the Wisconsin Assessment of the Social and Built Environment. (Indicator to be developed.)

Objective 2 Rationale
The location and environment in which people live affect their level of physical activity, especially as these elements relate to a person's daily routine. Well-planned neighborhoods and workplaces can encourage people to engage in physical activities that are healthful. For example, bike paths that make it safer for children to bike to school; parks and shopping areas that do not require crossing major thoroughfares.

Objective 3

By 2020, every Wisconsin community will provide safe, affordable and culturally appropriate environments to promote increased physical activity for individuals among populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.

Objective 3 Indicator
Inventory of environments by community (including parks, facilities, workplace programs) (Survey of the Health of Wisconsin (SHOW). (Indicator to be developed.)

Objective 3 Rationale
The location and environment in which people live affect their level of physical activity, especially as these elements relate to a person's daily routine. Studies have shown that neighborhoods with lower social, economic and education status have poorer environments for physical activity. Well-planned neighborhoods and workplaces can encourage people to engage in physical activities that are healthful. For example, bike paths that make it safer for children to bike to school; parks and shopping areas that do not require crossing major thoroughfares.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

- Establish minimum physical education requirements and standards for schools.
- Provide comprehensive, center-based early childhood development programs (Head Start)
- Increase access to fitness or community centers or athletic facilities
- Offer grants/funding for mixed-use development
- Increase green space/parks, especially those accessible by foot/bike
- Provide extracurricular sports/after-school activities for schoolchildren
- Create neighborhood watch/safety walks to create safe communities
- Develop recreational sports leagues for adults
- Promote community recreational activities
- Provide workplace incentives for physical activity
- Reduce health insurance premiums for members of fitness clubs/YMCAs
- Provide subsidized public transportation

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REPRODUCTIVE AND SEXUAL HEALTH

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

Reproductive and sexual health includes the factors that affect the physical, emotional, mental, and social well-being related to reproduction and sexuality across the life span, including engaging in same-sex and/or heterosexual behaviors. Reproductive and sexual health is a core component of individual and community public health.

To maintain reproductive and sexual health, individuals must have access to reproductive and sexual health education, and medical services from a health care provider of their choice. Medical services include biomedical interventions and supplies that help prevent unwanted pregnancies and sexually transmitted diseases, including HIV; screening for and treatment of sexually transmitted diseases, testing for HIV, and linkage to care; and pregnancy-related services that include care before and during pregnancy and from the end of one pregnancy to the next. Services must be culturally competent in addressing the health needs of diverse populations, including people marginalized because of race/ethnicity or socioeconomic status; young women and men; older adults; people engaging in same-sex sexual contact and/or identifying as lesbian, gay, bisexual or transgender; people who are deaf and hard-of-hearing; and people with disabilities.

Health outcomes are not driven by individual behavior alone. Supportive community attitudes toward healthy sexuality, positive social and economic environments, and constructive public policies are as important as access to education and services in fostering reproductive and sexual health. Supportive community attitudes recognize that sexuality is normal. Constructive public policies must support individuals and communities.

Importance of Focus Area

Unintended pregnancies and sexually transmitted diseases, including HIV infections, result in tremendous health and economic consequences for individuals and society.

Unintended pregnancies
The consequences of unintended pregnancy are serious, imposing appreciable burdens on children, women, men, families, and society. A woman with an unintended pregnancy is less likely to seek early prenatal care and is more likely to expose the fetus to harmful substances, such as tobacco or alcohol. The infant born after an unintended conception is at greater risk of being born at low birthweight, of dying during its first year, of being abused, and of not receiving sufficient resources for healthy development (Institute of Medicine, 1995).

***Sexually transmitted diseases* (STD*s*)**
STDs may cause serious, life-threatening complications including cancers, infertility, ectopic pregnancy, miscarriages, stillbirth, low birthweight, neurologic damage, and death. Women and adolescents are disproportionately affected by STDs and their effects. Reducing other STDs decreases the risk of HIV transmission. Every year, approximately $10 billion is spent in the United States on major STDs other than AIDS and their preventable complications. This cost is shared by all Americans (Institute of Medicine, 1997).

Human immunodeficiency virus (HIV)
HIV incidence estimates from the Centers for Disease Control and Prevention (56,300 infections each year) suggest there is, on average, a new HIV infection every 9.5 minutes in the U.S. The racial/ethnic disparities in HIV/AIDS are staggering, with Black/African American and Latino communities bearing disproportionate burdens. Incidence is rising among gay and bisexual men. There are also important fiscal consequences of the epidemic. HIV care and treatment costs per person average approximately $22,500 per year (depending on the client's health status), and lifetime treatment costs can easily total over $275,000 (Holtgrave, 2008).

In order to change trends in unintended pregnancies and sexually transmitted diseases including HIV, an approach must be adopted that is broader than the individual. "Reproductive justice" is a term inclusive of reproductive and sexual health and defined as "the complete physical, mental, spiritual, political, social, environmental and economic well-being of all persons based on the full achievement and protection of their human rights" (SisterSong, 2005).

The conceptual model illustrated in Figure 1 below acknowledges that behaviors do not occur in isolation; they are influenced by the socioeconomic and political context. Elements of that context include cultural norms and societal values—the pervasive community beliefs and attitudes that in turn shape behavior, policies and other large-scale contextual factors.

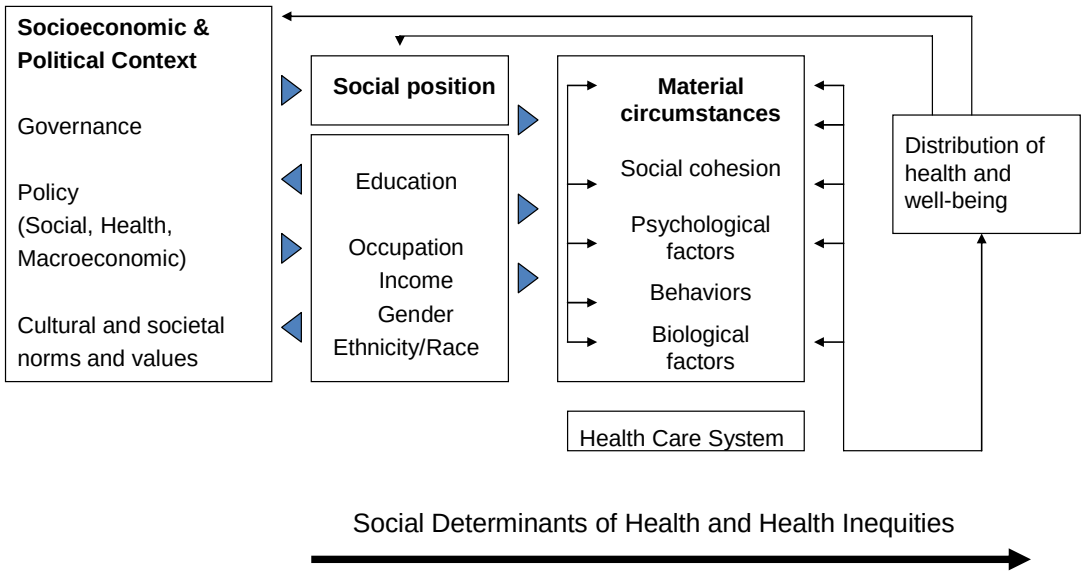
The model is relevant to transmission of HIV and STD and to unintended pregnancies. For example, transmission of HIV and STD are affected not only by behaviors, but by epidemiologic trends. Rates of HIV and sexually transmitted diseases and HIV are much higher in groups of people with higher background rates of disease, such as Blacks/African Americans, compared to whites. This is true even

when the level of risk behaviors is similar or even lower in Blacks/African Americans; research suggests that this is the case for Black/African American men who have sex with men (Millet, 2007).

Because of socioeconomic conditions, racism and other aspects of the social environment, Blacks/African Americans have sexual partners primarily within their own racial group. As a result, even when the number of partners and frequency of unprotected sex are similar or lower among Blacks/African Americans, rates of HIV and syphilis transmission are still much higher than in other racial groups.

Figure 1.

World Health Organization
Commission on Social Determinants of Health: Conceptual Model



Source: *Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health.* Geneva, World Health Organization, 2008. *http://whqlibdoc.who.int/publications/2008/9789241563703_eng.pdf*

Wisconsin Data Highlights

- A 2008 survey of middle and high school principals and health teachers indicated that 50 percent of the public schools in the state taught 11 topics related to HIV, sexually transmitted diseases, or pregnancy prevention in a required course and 23 percent of schools had a gay/straight alliance or similar club.

- Among Wisconsin high school students who reported having had sexual intercourse in the last three months, condom use increased from 58 percent (in 1993) to 65 percent (in 2003 and 2005). It declined to 61 percent in 2007 and

rose to 64 percent in 2009. (Wisconsin Youth Risk Behavior Survey, 2009, Centers for Disease Control and Prevention, and Wisconsin Department of Public Instruction).

- Among students who reported having engaged in any sexual contact, 10 percent reported having had sexual contact with a partner of the same sex. Some of these students also had opposite-sex contact. Youth who had engaged in same-sex sexual behavior had much higher risks (two-fold to six-fold increase) of depression, lack of physical and emotional safety, and alcohol, tobacco, and drug use (2009 Wisconsin Youth Risk Behavior Survey, Wisconsin Division of Public Health).

- From 1993 to 2007, the number of births to Wisconsin teens aged 15-19 declined by 12 percent, from 7,057 to 6,240 births (Wisconsin Department of Health Services, Wisconsin Youth Sexual Behavior and Outcomes, 1993-2007, 2009).

- An estimated 38 percent of Wisconsin women who gave birth in 2007 reported that their pregnancies had been unintended. By race/ethnicity, 33 percent of white births were unintended, compared to 61 percent of Black/African American births (rate ratio 1.85) and 47 percent of other births (Wisconsin Pregnancy Risk Assessment Monitoring System, Division of Public Health, Wisconsin Department of Health Services).

- Sexually transmitted disease rates among Blacks/African Americans aged 15-19 in Wisconsin increased by more than 50 percent from 1997 to 2007. During the period 2003-2007, the rate for Blacks/African Americans was 18 times the rate for whites. This disparity is twice the national average; rates for Blacks/African Americans nationally are nine-fold higher than those of whites (Wisconsin Sexually Transmitted Disease Program, 2008).

- Among the 50 largest cities in the U.S., Milwaukee had the second highest rate of Chlamydia in 2007. Milwaukee's rate was second only to Memphis, Tennessee and was 50 percent higher than the rate in Chicago, Illinois (U.S. Centers for Disease Control and Prevention, 2007).

- While rates of HIV attributable to injection drug use and heterosexual contact declined markedly from 2000 to 2008, rates among men who have sex with men increased by 36 percent during the same period. This included an increase of 143 percent among men under age 30 who have sex with men. In the Milwaukee Metropolitan Statistical Area, cases of HIV tripled among Black/African American men ages 15-29 who have sex with men. Outside the Milwaukee Metropolitan Statistical Area, the increase in cases occurred primarily among young white men, ages 15-29, who have sex with men (Wisconsin AIDS/HIV Program, 2009).

Objective 1

By 2020, establish a norm of sexual health and reproductive justice across the life span as fundamental to the health of the public.

Objective 1 Indicators

- Percentage of sexually active high school students who reported that they or their partner had used a condom during last sexual intercourse (Youth Risk Behavior Survey).
- Unintended pregnancy rates (Pregnancy Risk Assessment and Monitoring System [PRAMS]).

Objective 1 Rationale

Reproductive justice and sexual health must be viewed in the context that individual behaviors and choices are affected by societal norms and economic and political environments. To improve sexual and reproductive health outcomes, sexuality and sexual expression must be viewed as important healthy components of adult life and throughout the growth and developmental stages for youth. Condom use serves as a useful indicator because it pertains to sexually transmitted diseases, HIV and unintended pregnancy.

Objective 2

By 2020, establish social, economic and health policies that improve equity in sexual health and reproductive justice.

Objective 2 Indicator

Periodic inventory of state policies and funding targeted to achieving this objective. (Indicator to be developed.)

Objective 2 Rationale

Shifts in societal norms will be accomplished through committed resources, leadership, and public policy; comprehensive sexual health education; community consensus building; messages in the media; and access to clinical services.

Objective 3

By 2020, reduce the disparities in reproductive and sexual health experienced among populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.

Objective 3 Indicators

- Racial and ethnic disparities in teen birth rates (Wisconsin Vital Records), HIV/STD rates (HIV Surveillance System and Reportable Communicable Disease Reporting System), and unintended pregnancies (PRAMS).
- Lesbian, gay, bisexual, transgender and heterosexual population and racial and ethnic group incidence rates of HIV (HIV Surveillance System) and other sexual health indicators (Behavioral Risk Factor Survey, Youth Risk Behavior Survey).

- Education/income disparities in sexual behavior indicators (Behavioral Risk Factor Survey, Youth Risk Behavior Survey).

Objective 3 Rationale
Conditions related to reproductive and sexual health and other health issues are worse for marginalized people, including people of color; people living in poverty; lesbian, gay, bisexual, and transgender people; and people with physical, mental, and emotional disabilities.

Potential evidence- or science-based actions to move the focus area objectives forward over the decade

Government, community leadership, and structural interventions

- Increase resource and policy commitment by state and local governments and community leaders to promote policies that assure societal norms regarding healthy sexual expression.
- Secure and expend economic resources to revitalize the state's most impoverished communities.
- Address stigma and adverse health outcomes for the state's most marginalized and vulnerable residents.

Access to and provision of health services

- Expand access to reproductive and sexual health care services.
- Expand health clinics located at, and affiliated with, high schools and middle schools.
- Expand access to the Medicaid Family Planning Waiver.

Education

- Improve educational opportunities for the state's most marginalized youth.
- Provide comprehensive, medically accurate sexual health education in schools throughout the state.

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TOBACCO USE AND EXPOSURE

Note to readers and users of the *Healthiest Wisconsin 2020* Profiles: This *Healthiest Wisconsin 2020* Profile is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020* plan.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

Definition

Eliminating tobacco use and exposure means improving health by preventing tobacco abuse, promoting tobacco dependence treatment, protecting all people from exposure to secondhand smoke, and identifying and eliminating tobacco-related disparities. This is accomplished by partnering with state and local leaders to implement a research-based comprehensive tobacco prevention and control plan.

Importance of the Focus Area

Tobacco continues to be a devastating health and economic burden on Wisconsin. Each year, 8,000 people in Wisconsin die from tobacco-related illnesses. Tobacco use is the single most preventable cause of death and disease in the U.S. Every day, people across Wisconsin suffer from the effects of tobacco, and the effects of this deadly addiction are felt throughout Wisconsin communities and by Wisconsin families. Tobacco use in Wisconsin costs more than $2.2 billion annually in direct health care costs and $1.6 billion in lost productivity. Through the leadership of the Tobacco Prevention and Control Program, important strides have been made. Chief among them is the reduction in both adult and youth smoking rates among the general population; however, rates among high-risk populations remain extremely high. Smoking prevalence and exposure to secondhand smoke remain high among youth and young adults, and among people in low socioeconomic groups (defined by income, education, and type of occupation). Current state and local community funding is inadequate to address the tobacco epidemic in the state. Wisconsin cannot afford the cost in lives, health care, and lost productivity of an inadequately funded tobacco control program. Funding is much lower than recommended by the U.S. Centers for Disease Control and Prevention. Wisconsin is losing too many lives and too much money for tobacco-related illness, whose effects reach deeply into community life throughout the state.

Recent successes have been achieved, including passage of the statewide smoke-free air law that goes into effect July 5, 2010, and two significant tobacco tax increases during 2008 and 2009. Nevertheless, many populations have not benefited from prevention and

protection policies. In addition, the tobacco industry counters these successes by developing and targeting new tobacco products to the most vulnerable populations in Wisconsin.

A comprehensive approach is needed that focuses on the population as a whole. By adopting and building on policies and programs that have been proven to work, societal norms, systems, and networks can change and play a significant role in improving health across the life span.

Emerging issues

- Tobacco industry targeting and marketing of new smokeless tobacco products, such as new flavored products.
- Product sampling at community places and events such as bars, taverns, community fairs.
- Dual cigarette and smokeless tobacco use among tobacco users.
- Decrease in cigarette use as smokeless tobacco use increases.

Wisconsin's Strategic Plan, *Bringing Everyone Along: A Strategic Plan to Eliminate Tobacco-Related Health Disparities in Wisconsin,* (Department of Health Services, 2008), shows that progress has been made in tobacco control in Wisconsin; however, all people have not benefited equally. *Bringing Everyone Along* supports the goal to eliminate health disparities, which persist among low socioeconomic population groups, those defined by income, education, and type of occupation. Many population groups are at risk because of concentrated marketing efforts by the tobacco industry, which targets racial and ethnic groups, those with mental health and/or substance abuse issues, and young adults, especially18-24-year-olds.

A tobacco disparity exists when the health of one group of people is affected to a greater degree than another group, based on a specific tobacco-related dimension. A partial list of dimensions used to identify populations experiencing a tobacco health disparity includes high prevalence, high morbidity and mortality; special vulnerabilities such as tobacco industry targeting; cultures and subcultures that accept smoking; work environments that are not protected or regulated from exposure to second-hand smoke; access to treatment; access to health insurance; cultural beliefs associated with treatment; low personal resources; choice of type of tobacco; and size of the population.

The tobacco epidemic can be stopped by implementing comprehensive programs based on the U.S. Centers for Disease Control and Prevention's *Best Practices for Comprehensive Tobacco Control Programs (2007)* at fully funded and sustainable levels. According to the CDC, Wisconsin's sustainable level is $64.3 million annually.

Wisconsin Data Highlights

- Tobacco continues to be a devastating health and economic burden on Wisconsin. Every year, 8,000 Wisconsin people die from tobacco-related illnesses each year. (Burden of Tobacco in Wisconsin, 2008).

- In 2008, 15 percent of women who gave birth in Wisconsin smoked during pregnancy (Wisconsin Interactive Statistics on Health [WISH] Births Module, 2008).

- Each year, 8,200 Wisconsin youth start smoking regularly. This means 22 new youth smokers each day (Wisconsin Youth Tobacco Survey, 2008).

- Tobacco costs Wisconsin nearly $4 billion annually in health care costs and lost worker productivity (Burden of Tobacco in Wisconsin, 2006).

- Each year the tobacco industry spends $276.1 million in marketing and advertising in Wisconsin, compared to the state's investment of $6.8 million annually for tobacco prevention.

- The Centers for Disease Control and Prevention recommends a budget of $64.3 million annually for Tobacco Prevention and Control in Wisconsin (Best Practices for Comprehensive Tobacco Control Programs, 2007).

Objective 1

By 2020, reduce tobacco use and exposure among youth and young adults by 50 percent.

Objective 1 Indicators

- Proportion of youth and young adults using tobacco (Wisconsin Youth Tobacco Survey).
- Proportion of smoke-free homes (Wisconsin Youth Tobacco Survey).
- Percent of Wisconsin children in smoke-free homes (Wisconsin Youth Tobacco Survey).

Objective 1 Rationale

By reducing tobacco use and exposure among youth and young adults, an end to the epidemic can be reached in Wisconsin.

Objective 2

By 2020, reduce tobacco use and exposure among the adult population by 25 percent.

Objective 2 Indicators

- Proportion of adults using tobacco products (Wisconsin Department of Health Services, Behavioral Risk Factor Survey [BRFS]).
- Proportion of smoke-free workplaces (BRFS).
- Proportion of smoke-free homes (BRFS).

Objective 2 Rationale
Tobacco use is the single most preventable cause of death and disease in the U.S. Reducing tobacco abuse and exposure among adults can save lives, increase quality of life, and reduce the economic burden to the state.

Objective 3

By 2020, decrease the disparity ratio by 50 percent in tobacco use and exposure among populations of differing races, ethnicities, sexual identities and orientations, gender identities, educational or economic status, and high-risk populations.

Objective 3 Indicator
Proportion of adults and youth using tobacco and exposed to tobacco in disparate populations (Wisconsin Youth Tobacco Survey, Wisconsin Behavioral Risk Factor Survey, Wisconsin Youth Risk Behavior Survey).

Objective 3 Rationale
Continual development and strengthening of systems and networks to identify and address tobacco-related health disparities are needed. As data improves, a better understanding of the differences within groups can be achieved, thus refining prevention measures that are effective for at-risk population groups.

Evidence- or science-based actions to move the objectives forward over the decade

- Continue to embrace collaboration with partners and constituencies.
- Develop public and private mental health and alcohol, tobacco, and other drug abuse treatment systems to integrate dependence treatment according to Public Health Service Guidelines.
- Implement evidence-based strategies across all tobacco prevention and control programs.
- Reduce the initiation of tobacco use among children, adolescents, and young adults.
- Promote the use of the Wisconsin Tobacco Quitline through health care providers, employers, insurers, media, and community-based organizations.
- Strengthen data collection systems for tobacco use and exposure among populations of disparities.
- Continue to promote the participation of community leaders, public health agencies, and health care providers in education and advocacy about local and statewide tobacco prevention and control policies (Centers for Disease Control and Prevention, 2007).

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