League of Women Voters
of
Manitowoc County

Poverty and Addiction in Manitowoc County Study Report

Part One

May, 2018

LEAGUE OF WOMEN VOTERS

The League of Women Voters is a nonpartisan political organization that encourages informed and active citizen participation in government. Its membership is open to men and women, eighteen years and older. The League works to increase understanding of major public policy issues at local, state, and national levels of government. It influences public policy through education and advocacy.

The League was established in 1920 after passage of the 19th Amendment to the United States Constitution, allowing women the right to vote. It is one of the oldest grassroots organizations in the country, working to protect the right of all eligible citizens to vote. The LWV was founded in Manitowoc County in 1939. League members explore issues from all points of view before arriving at a consensus and developing a position from which to act on legislation.

NOTE:

The following report constitutes the introductory first half of the League of Women Voters study entitled "***Poverty and Addiction in Manitowoc County*.**" Information is provided in four sections: what addiction is, how poverty is measured, how poverty and addiction affect children and youth, and how adults are impacted. The forthcoming final part of the study will report on strengths and gaps in services provided in the county to support children, individuals, and families as they struggle with both addiction and poverty.

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LEAGUE OF WOMEN VOTERS OF MANITOWOC COUNTY
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POVERTY AND ADDICTION IN MANITOWOC COUNTY
PART ONE

I. Introduction

When a member of a local Narcotics Anonymous (NA) group was asked for a general estimate of how many people who attended meetings regularly could be considered at poverty level, he replied, *"Addiction makes everybody poor."* From birth to old age across the life span, addiction and substance abuse are rising in Manitowoc County and making more and more people poor.

Recent local data highlight some of the effects of addiction on the lives of our citizens, from the youngest to the oldest:

- Our county had the fifth highest rate of Neonatal Abstinence Syndrome (NAS) babies born addicted to narcotics during 2012-2014. In 2014, 21 births were recorded, up from 11 in 2012 and 13 in 2013. In 2006, 2 births were registered ("Select Opioid-Related Morbidity and Mortality Data for Wisconsin," 2016, pp. 40, 43).

- 28 percent of high school students in 2017 reported drinking alcohol in the prior month, and 14 percent had engaged in binge-drinking. 23 percent said they had ridden in a vehicle driven by someone who had been drinking (Youth Risk Behavior Survey, 2017).

- Adult binge drinking increased in 2016 to 40 percent, up from 23 percent in 2010 (Manitowoc County Health Department, 2016*)*.

- Overdose deaths totaled 5 or less each year between 2000 and 2004; in 2015 there were 15 deaths in the county (Manitowoc County Health Dept., 2016*)*.

- For 2016, we were in the top 15 counties for controlled substance prescriptions filled, according to the Prescription Drug Monitoring Program (Manitowoc County Health Dept*.,* 2016*)*.

- Workplace drug use in zip codes 54200-54299 in 2016 was higher than the state and national averages. These zip codes include Manitowoc, Kewaunee, and Door Counties. Urine drug test positivity was at 5.5+ percent in these areas vs. 5.0 percent for the state and 4.2 percent for the country ("Mapping Drug Use in the U.S Workforce," 2017).

- Deaths from falls related to alcohol for those 65 and older continue to go up in the state as our population ages and the consequences of binge-drinking become riskier due to changes in metabolism, medication reactions, and more medical problems in this age group ("Wisconsin Epidemiological Profile on Alcohol and Other Drugs," 2016, p. 15).

From babies to seniors, addiction and substance abuse are affecting more and more of our residents. When they live in low-income households, their social and health problems can be

severe and extend from generation to generation. At local public events on the addiction epidemic, family members will express their anguish and anger over attempts to find treatment for their loved ones. They share their frustration about the shortage of resources, especially for those with Medical Assistance or no health insurance.

The League of Women Voters in 2015 undertook the study project *Poverty in Our Midst: How It Affects Families in Manitowoc County and Our Community.* The goal of the study has been to research the extent and effect of poverty in our area and to educate members of the community and elected officials about the need for services to mitigate its effects. Information has been gathered from data available from local organizations, from interviews with agency leaders, and from online sources. Sub-committees were formed to study poverty as it impacts families and individuals in four basic life areas: General Economic Factors, Basic Shelter Needs, Food Security Issues, and Impact on Health.

The Impact on Health sub-committee adopted the lifespan framework to examine how poverty affects the health status of all age groups. The report on poverty and addiction is part of the comprehensive health needs study. The scope of the drug crisis in Manitowoc County necessitated a separate report on how substance abuse affects low income households.

Information in this first portion of the poverty and addiction report is provided in four sections. First, an explanation is given on what addiction is, how abuse of addictive substances changes the brain, and what treatments have been successful. Many people, including those addicted, are not aware of the physiological basis of the disease and incorrectly consider it a moral failing, an individual weakness. They do not know why it is so difficult to quit and maintain sobriety, why relapse occurs repeatedly for many. With knowledge, the stigma that surrounds addiction may decrease. Second, the report explains how poverty is measured. The third part reports on the effects of poverty and addiction on infants and preschoolers, school children and teens. The fourth area provides information on effects on the adult population, including seniors.

The forthcoming final portion of the study will report on some of the many strengths in our county's public and private support programs. Gaps in services for the different generations will be identified, as well. Finally, the study will conclude with consensus-determined policies and recommendations for meeting the identified critical needs of the community as we face poverty and addiction in our midst.

II. Addiction is a Disease

> *"Addiction is a disease and needs to be treated compassionately."*
> *—Wisconsin Attorney General Brad Schimel*

Attorney General Brad Schimel on September 26, 2015, at a "Recovery Rocks" event in Sheboygan stated *"Addiction is a disease and needs to be treated compassionately."* When he was District Attorney of Waukesha County 20 years ago, he recognized the need for drug treatment courts and for the elimination of the stigma of substance abuse. He finds today that the stigma of addiction is still a problem and that only about 50 percent of Wisconsin's 72 counties, thus far, have created drug courts. The event hostess, in introducing Mr. Schimel to the

audience, began by announcing that four over-dose deaths had occurred within the past two weeks in Sheboygan County, but she quickly was corrected that as of 7:00 A.M. that day, the total had risen to five.

What is the nature of this disease of addiction that causes the same self-destructive patterns of behavior that is seen in laboratory rats, chronic gamblers, cocaine and heroin addicts, chain smokers, and alcoholics? *What unnatural changes occur in their brains when individuals abuse addictive substances***?**

Changes to the Brain

Psychiatrists diagnose addictions to psychoactive drugs based on the presence of a subset of 11 characteristics. When six or more features are present, the individual has a severe addiction. The substance can be *alcohol*, *cannabinoids* (marijuana, THC), *stimulants* (cocaine, amphetamine, methamphetamine), *opiates* (heroin and morphine), *opioids* (prescription painkillers Vicodin, Percocet, Fentanyl, Methadone, OxyContin), or *nicotine* (cigarettes and other tobacco products). *Gambling disorder* is classified as a behavioral addiction, as well, with similar behavioral symptoms, brain patterns, and even similar genetic profiles. [Information in these following sections on the neuroscience of addiction and treatment are from Polk, 2015.]

For behavior to be considered an addiction, it has to lead to significant negative consequences for the addict. These can include health problems, family and relationship difficulties, job and financial loss, school disruption and failure, and possible involvement with the criminal justice system.

A hallmark feature of addiction is *tolerance* to the effects of the drug. The addicted individual needs more and more of the substance to get the desired effect, and this leads to *dependence*. Another symptom of physical dependence is *withdrawal.* If the addict abruptly quits taking the drug, very unpleasant physical and psychological symptoms occur. Detoxification can be life-threatening for alcoholics who are recommended to have medical care during withdrawal because of risks of stroke and delirium tremens. Another significant feature is *craving* the drug so strongly that the person becomes obsessed with getting more and more. *Environmental cues* become associated with the drug's use—this means certain locations or people or objects will trigger the craving response.

Neuroscientific research explains how repeated abuse changes the brain and results in tolerance, dependence, craving, and aversion to withdrawal. There are *three major changes in the brain* that underlie these behavioral patterns of addiction:

1. First, repeated overstimulation of the brain's reward circuit results in *numbing of the brain's pleasure center, the nucleus accumbens*. Over time, the addict feels less pleasure from the drug and requires more and more to stimulate this area of the brain to get the same level of reward, and, after time, to feel normal.

2. Second, *repeated overstimulation of the pleasure center releases large amounts of the neuro-transmitter dopamine*, which plays a central role in addiction. Studies have found that all psychoactive drugs lead to a significant increase in dopamine when

taken. Dopamine release is associated with wanting or craving impulsively. With repeated use of addictive substances, the dopamine system becomes sensitized, so the cravings become stronger and stronger until the urges are irresistible**.** This release of larger-than-normal levels of dopamine produces particularly strong learning so that the addict associates environmental cues with the drug. Those particular environmental cues strongly associated with using the substance then become triggers that *by themselves cause dopamine release* and reinforce craving and continued use. For example, a certain tavern or street or group of friends can stimulate cravings.

3. The third type of brain change is *reduced self-control as a result of weaker inhibitory control from the prefrontal cortex*. The prefrontal cortex plays an important role in inhibiting undesirable behavior and in exerting self-control. It is the thinking part of the brain that can consider future consequences and make rational decisions. Chronic use of addictive drugs can lead to abnormalities in the prefrontal cortex, and this undermines the ability to exhibit self-control over the more primitive reward circuit. The volume of the prefrontal cortex is reduced in chronic drug users. They show many of the same cognitive impairments seen in patients with damage to the prefrontal cortex. These include poor performance on tasks of working memory, decision-making, and sustained attention. As a result, the drug addict's ability to exhibit self-control and override drug craving becomes weaker and weaker.

Furthermore, studies have shown that *genetic makeup can influence how susceptible an individual is to addiction*. A genetic susceptibility can indicate a person being at-risk for chemical dependency. Genetic studies explain why many addicts have multiple addictions, e.g., to both alcohol and nicotine. There is no single addiction gene, but the same genes contribute in many different addictions. Over 50 percent of cases of substance use disorder are genetic-based. Early diagnosis and treatment, therefore, are critical.

> *Rather than a choice, a moral failing or a character defect, addiction has been found through scientific research to be a diagnosable physiological condition.*
> *— Thad A. Polk, Ph.D., THE ADDICTIVE BRAIN*

Treatment

Current medical and therapeutic treatment and recovery methods vary for each substance. They include *replacement therapy* (e.g. nicotine patches), *detoxification*, and *cognitive behavior therapies (CBT)* that help addicts understand and change the way they think in order to feel and act better. *Psychosocial rehabilitation programs* include individual and group therapy and peer support self-help groups. Twelve-Step organizations like Alcoholics Anonymous, Narcotics Anonymous, Gamblers Anonymous and commercial programs such as Rational Recovery and Community Reinforcement Approach help the individual learn coping skills to deal with cravings. The recovery groups also provide important social support and accountability.

Medical Assisted Therapy (MAT) is the term for pharmacological interventions, like methadone. They are used by medical and certified AODA (Alcohol and Other Drug Addictions) specialists. These prescribed medications reduce the harmful effects of addictive substances and support

withdrawal efforts. Examples of MAT medications that are used for opioid overdoses and treatment are *naltrexone*, *non-addictive naltrexone (Vivitrol)*, *naloxone (Narcan)*, *methadone*, and *suboxone*. Narcan is used widely by Emergency Medical Technicians (EMTs) and law enforcement officers to prevent overdose deaths. Individuals can purchase Narcan at local pharmacies without a prescription. *Benzodiazepines* (e.g. Valium) are used for detoxing from alcohol. *Acamprosate (Camprol)* is used for alcohol cravings, and *disulfiram (Antabuse)* inhibits drinking.

Research scientists continue to develop new medications to treat addictions. An example of an MAT being worked on is a long-lasting immunization that will prevent relapse from methamphetamine and cocaine addiction (Polk, 2015*).*

These research-based treatments have been successful in other counties and states when used as part of comprehensive anti-substance abuse programs. The foundation of effective programs includes the four pillars of Prevention, Treatment, Harm Reduction and Law Enforcement. Some counties include more pillars to address the full scale of their addiction problems. For example, the Healthy Sheboygan County 2020 Substance Abuse-Mental Health Coalition added Work Place and Recovery pillars to their mission. Providing treatment, harm reduction, and recovery programs for addicted individuals is vital to the health of every impacted community. Because the disease of addiction affects all levels of income and social class, it is critical that effective services should be made available to everyone regardless of income.

III. Measures of Poverty

Measuring poverty in our country is important because we need to know whether progress is being made to improve life for families and individuals struggling to pay for their basic needs. When new data is released, the opportunity for discussion can begin again about the pressing social needs in our state and local areas. The numbers are needed for determining eligibility for benefits and assessing how effective safety net programs are. There are several measures used to determine state and county need. They vary based on what benefits are included in income. Also, they vary in their definitions of basic living needs, on what people and families really need to get by day to day.

Federal Poverty Level (FPL) and the Supplemental Poverty Measure (SPM) Based on U.S. Census Data

40.6 million Americans are living in poverty below the FPL, according to the current Census Bureau data for 2016, released in September 2017. These individuals and families make up 12.7 percent of the total population. This is a drop from the 2015 rate of 13.5 percent, and a further drop from 14.8 percent in 2014. The current rate reflects the nation's gradual economic recovery from the Great Recession of 2008. However, the national level of poverty in 2016 still was higher than what it had been a decade before in 2007. The official poverty measure is based on income and government cash benefits. These include Social Security and Unemployment Insurance benefits, Supplemental Security Income [SSI], and public assistance benefits, such as Temporary Assistance for Needy Families (TANF) and Workers' Compensation.

The *Supplemental Poverty Measure* (SPM) was started by the Census Bureau in 2011 to assess the effectiveness of government programs that were created to help families during the recession. The American Recovery and Reinvestment Act of 2009 (ARRA), a temporary stimulus program, provided tax and noncash benefits aimed at improving the economic situation of the poor. These included housing assistance, the Supplemental Nutrition Assistance Program (SNAP—called Food Share in Wisconsin), and the Earned-Income Tax Credit (EITC). According to the 2016 SPM report, U.S. poverty was down to 14 percent from the 2015 rate of 14.5 percent. The SPM shows how effectively these programs have worked to lift many out of poverty (Supplemental Poverty Measure, 2016).

The Federal Poverty Level (FPL) for a family of four including two young children was $24,563 in 2016. However, many do not earn that much: 18.5 million Americans (5.8 percent) live in *deep poverty at income levels below half the FPL*. This number of people in abject poverty is higher than the 2007 level before the Great Recession in spite of benefit programs and an increasing job market. More people are in abject poverty now in many areas of the country. In this group of deeply poor are more than 6 million children (Coalition on Human Needs, 2017).

Wisconsin Poverty Measure

The *Wisconsin Poverty Project* was started in 2008 by researchers at the UW-Madison Institute for Research on Poverty to measure poverty in the state at the beginning of the Great Recession. Their purpose was to provide policy makers with current data specific to Wisconsin that would go beyond the official federal census statistics. A main goal of the project was to develop the *Wisconsin Poverty Measure* (WPM) that would assess the effects of federal as well as state benefit programs. It would take into account the needs and resources of Wisconsin residents.

The WPM thus aligns with the purpose of the Census Bureau's Supplemental Poverty Measure. It is significant that it is the only poverty study that is federally-funded. The *2016 Wisconsin Poverty Report* is the ninth annual study by the Institute. Critics of the federal poverty measure point out that the FPL is based on a threshold amount that is three times the cost of a minimally adequate diet in the l960s adjusted for inflation. They conclude it is an outdated measure that gives an unrealistically low threshold for eligibility for benefits.

A poverty threshold is the least amount of income needed to pay for basic expenses. The WPM poverty thresholds are based on food, clothing, shelter, and other vital needs. They take into account housing costs across areas of the state and essential work-related expenses such as child care, transportation, and health care costs. The WPM includes as income the value of benefits gained from participating in federal and state programs that reduce out-of-pocket expenses. Important examples are subsidized child care, BadgerCare, Food Share (SNAP), Wisconsin EITC, the Additional Child Tax Credit (ACTC), and the Wisconsin Homestead Tax Credit. These benefits have allowed many Wisconsinites to climb out of poverty.

The WPM found a significant reduction in poverty in the state from 11.2 percent in 2008 to the most recent measure of 9.7 percent for 2015—the lowest rate recorded since the research program began. Manitowoc and Kewaunee Counties combined were shown to have 8.1 percent of residents living in poverty, down from 12.5 percent in 2014 (when the state rate was 10.8 percent). The WPM threshold for a two-child, two-adult family was $25,543 in 2015. The U.S.

poverty threshold for the same family that year was $24,036. The WPM threshold was higher because the cost of living in Wisconsin is lower than the average for the rest of the country.

Among the benefit programs examined in the report, SNAP had the greatest impact on reducing overall poverty in 2015, reducing the rate by 1.9 percent. The Earned Income Tax Credit had the second largest effect on helping eligible families who actually applied. However, rising child care costs plus work and medical expenses had the opposite effect. Together, the two programs decreased the number of children in poverty even more than the overall rate for all ages.

Looking toward the future, the researchers predict that because the growth in jobs in 2016 slowed significantly, the 2017 report can be expected to show little change. They emphasize the importance of looking at solutions that will alleviate poverty over the longer term to continue and sustain the reduction in poverty rates for all age groups coming out of the recession:

- Better employment opportunities and higher-quality jobs with benefits
- Continuation of work supports such as BadgerCare (Medicaid) and food support (SNAP)
- Child care and other policies to reduce work-related expenses for families with children
- Expansion of housing subsidies
- Continuing to pay attention to medical costs and adequacy of Social Security benefits for low-income seniors

Taking away any of these and other economic supports that lifted people of all ages out of poverty during the recession would wipe away the good progress gained *(Wisconsin Poverty Report: The Recovery from the Great Recession Lowers Poverty Rates in 2015*, 2017).

United Way ALICE Report – The Working Poor in Wisconsin

In 2016, *United Way of Wisconsin* released their comprehensive research report on the working poor to understand why they are struggling to make ends meet. These are individuals and families who earn above the federal poverty level but still not enough to afford basic household needs. Being above the cutoff, they often are ineligible for benefit programs, as well. According to the report, 42 percent of Wisconsin households cannot afford housing, food, health care, child care, and transportation despite working, often at two or three jobs. The report calls these struggling families the *ALICE households—Asset-Limited, Income-Constrained, Employed*. It is forecast that low-paying jobs will continue to dominate the economy in the future. Currently 65 percent of all jobs in Wisconsin pay less than $20 an hour, and most pay less than $15. While the cost of necessities keeps going up, the number of good-paying jobs is not keeping pace. *In Manitowoc County, 41 percent of families earn less than the basic amount needed to survive*, based on the ALICE Household Survival Budget. The budget was calculated based on data taken from the IRS, Bureau of Labor Statistics, and Department of Housing and Urban Development (HUD). A family of four comprised of two adults, an infant and a preschooler

needs an annual income of $52,152 to afford their minimum basic needs. This requires both adults to earn a combined fulltime salary of $26.08 per hour. For a single adult in Manitowoc County, the Household Survival Budget is $22,104 ($11.05 per hour). *48 percent of families and individuals in Two Rivers and 47 percent in the city of Manitowoc do not earn that much*.

> *13,642 of our 33,272 households do not have enough to cover their housing, childcare, food, transportation, taxes, health care, and miscellaneous needs.*

They do not earn enough to go on vacations or save for emergencies or future goals. This means that almost half of the households in Manitowoc County face financial insecurity. Nine percent of these households are at the Federal Poverty Level (FPL) which for 2016 was $11,880 for a single adult and $24,300 for a family of four.

All these families below the ALICE Survival Budget threshold are not making enough to get by. They are one medical emergency or major car problem away from crisis. The goal of the United Way ALICE Report is to raise awareness and create change by addressing the underlying causes of problems in communities. Poverty is widespread here, and when substance abuse is part of the home situation, stress levels increase for every family member, especially children and teens (*United Way ALICE Report Wisconsin*, 2016*).*

Rep. Jim Sensenbrenner of the Milwaukee area cited the cost of child care as a major stressor for low income families. He stated in his opinion piece published on his website February 6, 2017, that only nine states have higher child care costs than Wisconsin. Child care here totals more than $9,000 a year. A single mother earning $23,000 would have to pay almost 40 percent of her salary. He said, *"These statistics present a troubling reality for families throughout the state, one in which they must choose between quality child care and daily essentials such as food, housing and transportation* (Sensenbrenner, 2017).

In line with the United Way ALICE Study that found 41 percent of households in our county struggle economically, school superintendents reported that 41 percent of students in the Two Rivers Schools qualified for the free and reduced lunch program in 2015, as did 42 percent in the Manitowoc Public School District (Superintendents panel, League of Women Voters Public Forum, January 28, 2016).

Likewise, The Department of Human Services reported that 29 percent of youth under Juvenile Court supervision (fall, 2016) were exempt from paying court fees based on limited family income. However, it was explained that the truer figure would be near 40 percent because many parents do not complete the application form for exemption from court costs (W. Jaspers, personal interview, October 24, 2016).

The Census Bureau's Federal Poverty Level and Supplemental Poverty Measure, the Wisconsin Poverty Measure, and the United Way ALICE Report all reinforce the need to continue programs that lift people out of poverty. From the deeply poor to the working poor, families continue to struggle just to afford the basic necessities. The vulnerable populations of children and seniors especially need continued support. Furthermore, when the impact of local poverty intersects with the addiction crisis, the need for effective intervention programs *and access to them*

regardless of income level becomes even more apparent and urgent. Linda Rosenberg, President of the National Council for Behavioral Health, stated that "*those in the throes of addiction are often young and uninsured"* in response to the 2016 report of the former U.S. Surgeon General Vivek Murthy. The report "*Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health"* was the first federal report dedicated to substance addiction. Murthy called for removing the stigma from addiction, creating more patients and fewer prisoners (Surgeon General, 2016).

Goals of the League of Women Voters Study on Poverty and Addiction

This report shows some of the combined and related effects of poverty and addiction experienced across all age groups in our county. Our goal is to provide increased awareness and expanded support of the many good programs we do have: *our strengths*. In addition, because the substance abuse crisis and its related social problems continue to strain the capacity of all our service agencies, the need for new evidence-based policies and initiatives is evident—*to fill our gaps*. Our public support organizations face increasing needs each year— for more foster homes, addiction specialists, food pantry donations, Salvation Army winter coats, mental health counselors, and detox and recovery support centers— to identify just a few of the urgent challenges.

IV. Effects of Poverty and Addiction on Children and Teens

Infants and Preschoolers

> *Manitowoc County has more than double the rate of infant deaths than the rest of Wisconsin, according to Coroner Curtis Green.*

Two dozen pregnancies end as stillborn a year, including some late-term, due to fetal drug death (C. Green, personal communication, May 3, 2016). Nancy Randolph, Deputy Director of Human Services, reported that babies provided services through the *Birth to 3 Program* often are premature. They have low birth-weight and are considered at risk, often with Neonatal Abstinence Syndrome (NAS) and Hepatitis C. Many of these parents have had or still have alcohol and drug issues. Many have never had a life without poverty, and the cycle is passed on to the next generation. Their struggles are compounded by learning disabilities, no high school diploma, physical disabilities, and/or mental illness. In 2015, 54 percent (146) of *Birth to 3* parents had no medical insurance, and 64 percent (173) received Medicaid. She said there is an increased need for stay-at-home foster parents for NAS babies who must be removed from their birth homes (N. Randolph and Birth to 3 Staff, personal communication, February 2, 2016).

Poverty and Children's Brain Development

Brain imaging research has shown that as early as age four, children from households at the Federal Poverty Level (FPL) have smaller amounts of gray matter in areas of the brain responsible for functions needed for learning. The anatomical difference could explain as much

as 20 percent of the gap in test scores between children growing up in poverty and their more affluent peers, according to the study *Association of Child Poverty, Brain Development and Academic Achievement*, published in 2015 by *JAMA Pediatrics*. Small gaps were evident for households considered *near poor* at 150 percent of the FPL. (The 2016 FPL is $24,300 for a family of four, and the 150 percent amount is $36,450 for a family of four).

> *"It was really when we started getting down into real poverty, real abject poverty, that we started seeing a difference,"*
> *says Seth Pollak, Psychology professor UW-Madison and co-author.*

The differences were evident in children as young as four, meaning that they occurred before kindergarten (Hair, Hanson, Wolfe, & Pollak, 2015).

Households in Poverty

The above study summarized that children living in poverty experience less parental nurturance, elevated levels of life stress, increased family instability, and great exposure to violence. Their homes are more crowded and often provide less cognitive stimulation. The research suggests that

> *"Specific brain structures tied to processes critical for learning and educational functions (e.g. sustained attention, planning, and cognitive flexibility) are vulnerable to the environmental circumstances of poverty, such as stress, limited stimulation, and nutrition."*

The authors recommend that *"such understanding should lead to public policy initiatives aimed at improving and decreasing disparities in human capital. Development in these brain regions appears sensitive to the children's environment and nurturance"* (Hair et al, 2015.

The Stressors of Poverty, Child Abuse, and Neglect

Researchers at UW-Madison reported on new insights into the influence of poverty on child maltreatment in a set of studies collectively presented in *Children and Youth Services Review* (2017). The connection between poverty and childhood trauma has been established by decades of research, but the UW studies uncovered the root causes of low income and maltreatment as the lack of economic support systems. *Social safety net programs were shown to be significant reducers of neglect and abuse in economically-stressed families.* Editor Kristen Stack, Professor in the UW School of Social Work, summarized

> *When people think about child abuse and neglect, they tend to focus only on deficiencies in parenting behaviors, and not a broader set of stressors that can create or exacerbate risk for children. Poverty and economic hardship need to be systematically considered in our efforts to prevent maltreatment or lessen its consequences. For some*

families, economic support can make a meaningful difference in whether children experience harm.

("Important New Insights into the Influence of Poverty on Child Maltreatment," 2017)

When children are born into financially-strapped homes where substance abuse is part of daily life—and perhaps in their genetic codes, as well—they may be at risk for early failure as soon as they start school. Lack of learning readiness skills and a history of living in stress can set them apart early, mark them for marginalization in their classrooms and ostracism on the playground. They can be left behind and left out as early as kindergarten. Programs that support their healthy physical, cognitive, and social development are crucial to the health of our whole community. Our youngest children are our future, and boosting the potential of these soon-to-be high-school students and working adults will insure a stronger, more economically sustainable county in the next decades.

> *"It is very disturbing that 40 percent of the youth in our public schools need a reduced or free lunch, and that lunch doesn't stand up to the health and wellness we owe our kids."*
> *–Mayor Justin Nickels*

Mayor Justin Nickels in 2017 in his third inauguration address said,

> *We all know the kinds of difficulties that exist around us; the drug crisis and people losing their jobs are just two. In seeking a representative image for the challenges of our community, I've been ruminating on the idea that we can be proud of a school system that ensures every child gets a lunch whether they can afford one or not, but it is very disturbing that 40 percent of the youth in our public schools need a reduced or free lunch, and that lunch doesn't stand up to the health and wellness we owe our kids. I define 'community' as a very large and colorful family. Every person, whether a CEO or homeless, is part of this family. Some family members teach us how to make an organization prosper; some remind us of our humanity and obligation.* ("Nickels: Manitowoc's Waterfront Must Be Focus," April 20, 2017)

Adverse Childhood Experiences (ACEs)

> *"For many adults, ACEs in their young lives follow them into adulthood in the form of physical, mental, and behavioral health struggles that often include a variety of substance use-related behaviors."*

Many parents have experienced trauma during their childhoods. The Center for Disease Control (CDC) measures the effects of childhood trauma on adult health. The *Adverse Childhood Experiences (ACEs) Questionnaire* is administered as part of their *Behavioral Risk Factor Survey (BRFS)*. The ACEs test consists of 10 questions about traumatic experiences prior to the age of 18, which include abuse, neglect, and household dysfunction. It is based on research that

shows that the more negative experiences a person had as a child, the more health and behavior problems one will have throughout adulthood—regardless of the adult's income. An ACEs score of four or higher indicates high risk for negative adult health outcomes. Chronic childhood trauma leads to risky health behaviors, chronic health conditions, low life potential, and early death. *"The Adverse Childhood Experiences Study in a Video Nutshell"* produced by Substance Abuse Mental Health Services Association (SAMHSA) is a three-minute video about ACEs. Dr. Robert Anda, co-founder of the CDC ACEs Study, explains the direct relationship between negative experiences in childhood and especially adult mental health problems and substance abuse (*Aces Too High News*, November 19, 2012).

The 2011-2013 report on Adverse Childhood Experiences in Wisconsin found that people with low incomes had higher ACE scores. 14 percent of all the respondents had ACE scores of 4 or more—indicating high risk. When those with 4+ were grouped by income, 21 percent earned less than $25,000 vs. 14 percent who earned more. 23 percent were uninsured compared with 13 percent who had private insurance. 16 percent had a high school education or less while 12 percent had some type of post-secondary education. *24 percent had experienced parental or other adult substance abuse in their childhood homes, and 26 percent reported emotional abuse*. Significant chronic childhood trauma made it hard for most of these 4+ adults to get ahead, and the presence of alcohol and other drug use in their families had a lasting impact on their economic and health outcomes (*Wisconsin Adults with 4+ ACEs and Socioeconomic Factors,* 2011-2013*)*.

> *When poverty, substance abuse, and trauma are part of a child's daily life, the risk for lifelong problems increases.*

Many youth are unable to overcome the compounded effect of their childhood traumas and be successful in adulthood. They start kindergarten with high ACEs and arrive at age 18 perhaps with even more ACEs. Furthermore, involvement with the criminal justice system for drug use at 18 can be the beginning of their adult marginalization and their own personal poverty. Overcoming young adult poverty can be an overwhelming struggle when the effects of chronic childhood trauma can hang on into mid-life and beyond.

High ACEs, Substance Abuse, and Poverty: Multiple studies have shown a strong relationship between ACEs and a variety of substance-abuse problems. Some of the problems found among high ACEs respondents were

- early initiation of alcohol use
- problem drinking behavior into adulthood
- increased likelihood of early smoking initiation
- continued heavy smoking during adulthood
- legal prescription drug use
- life-time illegal drug use

A male child with 6+ ACEs has a 46 times greater chance of becoming an injection drug user. Adults with 6+ ACEs are 5 times more at risk of alcoholism and are 2.5 times more likely to be addicted to nicotine.

Vincent J. Felitti, M.D., founder of the Dept. of Preventive Medicine for Kaiser Permanente in San Diego, was the Co-Principal Investigator of the original ACE Study. He reported in his 2004 research "*The Origins of Addiction: Evidence from the Adverse Childhood Experiences Study"* that a male child with a score of 6+ ACEs had a 4600 percent risk (46 times greater chance) of becoming an injection drug user sometime later in life. Those adults in the study who had a 6+ score were 250 percent (or 2.5 times) more likely to be addicted to nicotine. Likewise, there was a 500 percent (5 times) greater risk of alcoholism in the high ACE adults vs. those with 0 points.

Linda Tirado, author of *Hand to Mouth: Living in Bootstrap America* (2014) describes her personal experience of the unrelenting daily stress of supporting a family while working in low-wage jobs. She explains that financially struggling people spend money on cigarettes for relief from stress and physical exhaustion. Dr. Felitti asks in his study, *"Do current smokers now represent a core of individuals who have a more profound need for the psychoactive benefits of nicotine than those who have given up smoking? Our clinical experiences and data from the ACE Study suggest this as a likely possibility."* He cited the psychoactive benefits of nicotine for controlling anger, anxiety, and hunger, though the emotional benefits are short-term and carry immediate and long-term health risks. The unrecognized childhood traumas of his financially-comfortable *yet high ACE* subjects still left them dependent on addictive substances to cope with their unresolved emotional stress. In comparison, the higher stress levels and ACE scores of low income parents struggling to climb out of poverty increase their need for relief and their risk for addiction (Felliti, 2004).

High ACEs and Behavior Problems: Serious behavior problems also were present in people with high ACE scores. They showed more suicide attempts during adolescence and adulthood, lifetime depressive episodes, risky sexual behaviors, and teen pregnancies. Chronic stress in childhood led to chronic substance abuse and emotional problems for people even after they grew up and aged. Fortunately, communities are using the CDC ACEs data to develop and implement programs, policies, and strategies to reduce intergenerational trauma (*The Role of Adverse Childhood Experiences in Substance Abuse and Related Behavioral Health Problems*, 2015).

Adverse childhood experiences can be prevented, and ACEs prevention has become the primary focus of many agencies and the public school districts in Manitowoc County that serve children and teens. ACEs research is guiding their efforts to reduce trauma in young lives and build resilience in their parents. In 2017, after a review of the data that showed our county to have a significantly high number of residents who are dying young or prematurely before age 75, the stakeholders who make up Healthiest Manitowoc County developed the mission *Achieve Healthy 25*. The long-range overarching goals and strategies are to *"implement local policies to build capacity to reduce adverse childhood experiences, increase resilience and promote healthy child development"* (*Healthiest Manitowoc County: Achieve Healthy*, 2017).

The Adverse Childhood Experience (ACE) of Racism: At the international level, the World Health Organization recognizes that ACEs are different in low- and middle-income countries where most of the world's children live (in contrast to high-income nations with lower birth rates). The *"Adverse Childhood Experiences International Questionnaire" (ACE-IQ)* includes questions on bullying, physical fights, witnessing community violence, being beat up by soldiers, police, militia, or gangs, and having a family member or friend killed or beaten up by them.

Racism and racial discrimination in our country have left many large urban communities suffering from generations of trauma similar to that measured by the international ACEs test. The Kids in Crisis article *"For Young People of Color, Racism's Toll on Mental Health"* highlighted the effects of ongoing racism that constantly barrage students. It points out that *"racism is often left out of the discussion as a source of this stress. It doesn't make the state health department's official list of adverse experiences."* A black Lawrence University student quoted in the article said, *"You really can't talk about mental health of students of color without talking about racism and the real effect it has on a daily basis…That's something counselors in general really need to educate themselves about and do the work to get there"* (For Young People of Color, Racism's Toll on Mental Health," 2017).

Research continues to show the health consequences of centuries of oppression, trauma, and inequities that get passed through generations. Chronic stress from racism can have far-reaching health effects, too, showing up in anxiety and depression, heart problems and diabetes ("A Time to Heal: From Generation to Generation an Epidemic of Childhood Trauma in Milwaukee," March, 2017*).*

The Healthiest Wisconsin 2020 report also cites social exclusion as a risk to health. *"Social exclusion—often manifested through stigma, discrimination, gay oppression, racism, social class—is a highly relevant public health issue seen in rates of incarceration, immigration policies, language and culture*) ("Healthiest Wisconsin 2020 Focus Area Profile, 2014).

When the stressors of poverty and substance abuse are present along with racism, black youth are at high risk for health problems in childhood and as adults. Manitowoc County's youth population ages 10-17, in 2015, was 91.5 percent white and 2.5 percent black. However, of the 82 bookings sent to juvenile detention that year, 70 percent were white and 24 percent black youth. In 2016, there were 54 bookings—63 percent white and 35 percent black. All youth referred to Juvenile Court are high in ACE scores, according to Stacy Ledvina, Social Work Supervisor, Youth and Family Services Unit. The factors underlying the racial disparity among youth sent to detention are important to examine, she indicated at the March 29, 2017, meeting of the Manitowoc Youth Intervention Network. Those who go to detention are high-needs youth who have violated probation, e.g., gone overnight for three days from home. She said there is no data on recidivism, on what has happened to them a year after their cases are closed, or how they do as adults. The emotional stress of growing up in families who have experienced generations of racial discrimination may put black youth, especially boys, at greater risk for failure in their teen and young adult years.

Black boys as early as preschool may be subjected to implicit bias, even by teachers who reject prejudicial ideas. A 2016 research project at Yale University Child Study Center asked white and black teachers to view videos of four well-behaved preschool-aged children. Two boys, one

black and one white, and two girls, one black and one white, were shown working and playing together in a classroom. Though the children were behaving calmly, the teachers were asked to look for signs of behavior that might become problematic. Tracking the eyes of the teachers showed that they watched the black children, especially the boys, longer when looking for signs of trouble.

The researchers concluded that implicit bias in preschool disproportionately suspends and expels black boys and denies them access to early education. However, they also reported that *"fortunately, recent research suggests that implicit biases may be reduced through interventions designed to either address biases directly or increase teachers' empathy for children."* ("Racial Profiling in Preschool," 2016)

Fortunately, Manitowoc County teachers are involved in district-wide training programs to enhance the emotional climate of their schools. These programs increase empathy for all children, especially those with high ACEs who come from low-income households where the stressors and stigmas of poverty and racism may be present.

Prof. Patricia Devine thirty years ago was a graduate student who conducted the experiments that built the case for *implicit racial bias* and coined that term. This is the idea that it is possible to act in prejudicial ways while sincerely rejecting prejudiced ideas. Now director of the Prejudice Lab at UW Madison, she has developed a workshop to break the habit of bias. She states affirmatively, *"I submit to you that prejudice is a habit that can be broken."* (Devine, 2017).

Adding questions on experiences of racial bullying and discrimination to the ten items on the ACEs questionnaire given in the United States would be helpful to researchers. Even in small communities, individuals of color regularly may experience the chronic stress of potential bias, living where they make up a small percent of the population. The significantly disproportionate number of African American males in the Wisconsin criminal justice system for marijuana arrests is evidence of the effects of generations of ACEs, with racial bias and systemic discrimination being main contributing factors to chronic, traumatizing stress. *"Wisconsin demonstrates the fifth highest racial disparity in marijuana arrests in the country, and this disparity has increased 153 percent during the years 2001-2010,"* stated the report of the American Civil Liberties Union in 2013 to the State Council on Alcohol and Other Drug Abuse (SCAODA) (State Council on Alcohol and Other Drug Abuse, June, 2016).

SCAODA'S Strategic Plan July 2014 – June 2018 includes among its five goals *"Remedy historical, racial/ethnic, gender, and other bias in substance use disorder systems, policies, and practices"* (SCAODA, March, 2016).

Researchers have found that *"Black and Hispanic youth are less likely to receive mental health services, even among youth with high needs,"* according to the *Wisconsin's Office of Children's Mental Health 2017 Report to the Legislature (pp. 35-36).* Though the prevalence of psychiatric conditions is considered similar across racial and ethnic groups, children of color receive significantly less behavioral health care. Furthermore, those with mental health issues are misdirected into the juvenile justice system in some cases. (Wisconsin's Office of Children's Mental Health, 2017)

Historical prejudice against blacks as well as other minorities has limited many from economic security, adequate housing choices, educational advancement, and mental health care.

Risk Outcomes for Children

The comprehensive report *Poverty and Child Health in the United States* by the American Academy of Pediatrics Council on Community Pediatrics (2016) states that

> *Children living in poverty are at increased risk of difficulties with self-regulation and executive function, such as inattention, impulsivity, defiance, and poor peer relationships….Poor developmental and psychosocial outcomes are accompanied by a significant financial burden, not just for the children and families who experience them but also for the rest of society. Children who do not complete high school, for example, are more likely to become teenage parents, to be unemployed, and to be incarcerated, all of which exact heavy social and economic costs* (American Academy of Pediatrics Council on Community Pediatrics, 2016).

The Lakeshore Community Action Program's (Lakeshore CAP) Needs Assessment 2017-2020 (p. 17) bears out the findings of the report cited above. Manitowoc County is experiencing rising rates of youth drug use and drug-related crimes. Truancy and teen pregnancy rates are rising as well as record numbers of foster placements due to the prevalence of drugs in the home. The lack of mental health services for children from low-income families is also a great problem. These issues were assessed by community leaders as the most pressing issues facing our youth and the entire county. "*Families are required to have two wage earners to reach economic stability, and this exacerbates problems with child care and family scheduling. The generally high stress level in families contributes to poor parenting, drug use, and other high risk behaviors."*

Kids in Crisis *USA TODAY Series:* 2015-2018

The *USA TODAY NETWORK-WISCONSIN* in 2015 launched a year-long state-wide series of town hall meetings to investigate the growing mental health crisis among children. Data such as the high suicide rate among Wisconsin teens led to the development of the investigative project which Bellin Health helped sponsor. The goals were to identify crisis-level problems and find solutions and partners to help heal communities. A main purpose, too, was to hold officials accountable for implementing legislation and policies to overcome the alarming increase in children's mental health problems.

Manitowoc County's first Kids in Crisis town hall meeting was held February 22, 2016. A panel of local and regional experts reported poverty and addiction to be significant causal factors of children's mental health problems. Panelist Sharla Baenen, President of Bellin Psychiatric Center Green Bay, said the five drivers of poverty are *addiction, lack of education, mental health issues, lack of financial resources,* and *a medical emergency.* Any of these crises reduces the ability of families to thrive and be healthy. Panel member Linda Luedtke, counselor at Two Rivers High School, reported seeing in her work significantly more critical issues in the last five years, especially chronic anxiety. She said what was needed were tools to identify student

mental health issues and teacher training to recognize and respond to problems. Commenting again as a panel speaker a year later at the League of Women Voters Children's Mental Health Forum (February 23, 2017), Luedtke added, *"What I do see is a significant rise in the number of kids whose issues are related to their parents' dependence on alcohol and other drugs—no boundaries, providing substances to the kids, lack of supervision, homelessness, lack of support, allowing kids to miss school, etc."* State Representative Paul Tittl shared his push for school-based mental health services. Nancy Randolph, Deputy Director of the Human Services Department, reported that low-income parents lack an understanding of how to advocate for their families. She said that many parents of children in the child welfare and juvenile justice system were unemployed or underemployed and using alcohol and/or drugs ("Community Talks 'Kids in Crisis'," 2016).

The Manitowoc County town hall meeting was one of ten held across the state. At the culminating Kids in Crisis Day of Action event held in Madison, May 5, 2016, solutions for the big common problems facing communities were presented. They focused on the need for early screening for mental health issues and on collaboration among mental health providers and primary care doctors to help bridge the income barrier to getting mental health care. Wisconsin has an estimated shortage of 200 psychiatrists.

Other recommendations from the state-wide meetings included:

- Hold counties accountable for providing public mental health care;
- Raise Medicaid payment for children's mental health care;
- Support training for law enforcement to better understand mental health challenges;
- Require schools to track and respond to bullying;
- Standardize and expand mental health screening in schools;
- Expand programs for primary care doctors to get advice from psychiatrists

("Day of Action: 'Let's Start Saving Our Children'," 2016).

In May of 2017, a year after the first Day of Action and after a second year of state-wide town hall meetings, the Kids in Crisis reporting team reviewed the current status of the 2016 recommendations. They reported that legislative and funding action had not been taken during that time for several of the critical issues listed above:

- Holding counties accountable for providing public mental health care remained an issue because of problems in measuring the cost of services provided and patient outcomes. Elizabeth Hudson, Director of Gov. Walker's Office of Children's Mental Health, emphasized the need to avoid creating more work for the counties in documenting all services.

- No budget action was taken to expand Medicaid rates for children's mental health care because of competing budget priorities. The state's current reimbursement rates for mental health providers are among the lowest in the nation.

- No budget action was taken to increase funding for mental health crisis intervention training (CIT) for police officers beyond the $125,000 budgeted annually since 2013. Demand from police agencies has continued to increase since 2016 for officers to be trained to recognize signs of mental illness and learn how to de-escalate situations to safer conditions.

- No state action was taken on requiring public schools to document bullying in any way. Instead, school boards must adopt local policies. The state budget proposed $300,000 in grants over two years for training and online bullying prevention curricula for elementary students.

- *Expanding and standardizing mental health screening in schools was approved and funded.* $1 million was budgeted over the next two years to boost training and screening practices. Also, $3 million was allocated to hire more social workers who would perform screenings.

- The 2017-18 budget doubled the annual funding of $500,000 for pediatricians to consult with psychiatrists, but that amount is significantly below the $3.l million needed to expand the program statewide, according to estimates by health officials.

The theme of the second year of town hall meetings in 2017 was suicide prevention because Wisconsin's teen suicide rate is nearly one third higher than the national average. Seven hundred fifty people across the state received Question, Persuade, Refer (QPR) training on how to recognize and help an individual at risk for suicide. The team of journalists focused on how young brains are damaged by adverse childhood experiences (ACEs) that make them vulnerable to mental health challenges. Their coverage highlighted different causes of stress, anxiety and depression while also explaining how to help youth.

> *Wisconsin's teen suicide rate is nearly 1/3 higher than the national average.*

First Lady Tonette Walker in 2011 launched Fostering Futures to raise awareness about how childhood trauma can dramatically shape a person's life. Gov. Walker declared May 4, 2017 as Youth Mental Health Day at the second Kids in Crisis Day of Action held in Madison. Her continuing work with Fostering Futures has initiated state-wide trauma-informed care programs.

Jim Fitzhenry, Vice President of news for USA TODAY NETWORK – WISCONSIN, led the 25 reporters of the Kids in Crisis project. He stated, *"Instead of pointing out problems and moving onto the next crisis, we've committed to finding solutions and partners to help heal our communities."* Bill Laakso, Director of Clinical Services at Bellin Psychiatric Center added that a main goal of the series, in addition to highlighting problems, is to keep officials accountable for the mental health needs of the children and youth in the counties they serve. He marveled that

over 750 people had come to the town hall meetings to participate in suicide prevention training ("Kids in Crisis/Kids Mental Health is Focus of Day of Action," 2017).

In 2018, the Kids in Crisis series in its third year of state-wide town hall meetings focused on hearing from the youth themselves. In the ten meetings, local teens shared their personal stories of trauma and what supports are helping them recover. A culminating Day of Action was held May 10 in Madison to call on state lawmakers to take action on youth mental health. Wisconsin state budget requests in 2016 stemmed in part from the Kids in Crisis project. Laws signed by Gov. Walker in July 2017 and more recently in 2018 are now being fleshed out within their funding limits.

Wisconsin Act 31 is an example of some of the progress being made to address the growing numbers of children in crisis. The legislation added $200,000 in 2017-18, and budgeted another $200,000 in 2018-19 to fund a state-wide mental health support program for all public and charter schools. The funding is designated to establish a mental health training support program which the Department of Education provides. School district staff and instructional staff of charter schools will be trained on the screening, brief intervention, and referral to treatment program (SBIRT), an evidence-based strategy related to addressing mental health issues in schools (*Wisconsin Act 31* 2017). How this measure and other laws signed actually will impact Manitowoc County children will be covered in the next section of this report: Strengths and Gaps in Services to Children and Youth.

Traumatized Youth, Poverty and Substance Abuse

Numerous studies have documented a strong correlation between trauma exposure and substance abuse in adolescents. The National Child Traumatic Stress Network in its 2008 report *Understanding the Links between Adolescent Trauma and Substance Abuse* summarized the cumulative data. These factors and their consequences describe the daily life experiences of many of the children and teens growing up in poverty here, especially when no safety nets are provided:

- *Teens at risk for addiction show these signs*: aggressive behavior, genetic vulnerability, low self-esteem, academic failure, risk-taking propensity, and impulsivity.

- *Factors in the home* include lack of parental supervision, family members with a history of alcohol or other drug abuse, lack of clear rules and consequences regarding alcohol and other drug use, family conflict/abuse, and loss of employment.

- *Social influences* that are factors are substance abuse in peers, ties to deviant peers/gang involvement, and inappropriate sexual activity among peers.

- *School risk factors* are drug availability, students' lack of commitment or sense of belonging at school, high number of failing students, and parents and community members not actively involved.

- *Community characteristics* which put youth at risk for substance abuse are poverty, alcohol and other drugs readily available, lack of sense of connection to community, high unemployment, youth activities not monitored, and norms that are unclear or encourage use of drugs, as well as laws and ordinances unclear or inconsistently enforced (National Children Traumatic Stress Network, 2008).

Parents in low-paying jobs struggling to make ends meet often must work multiple jobs and take late shifts. Many cannot afford adequate child care, especially single mothers, and they have to rely on their older children to take care of themselves in the early evening. This prevents many youth from participating in after-school activities that require transportation. Poverty can lead to a lack of connection to the community which puts teens at risk for school failure. With the prevalence of alcohol and other drugs readily available, as well as the stresses in the home from economic hardship, the potential for making it successfully to young adulthood plummets rapidly for many of our youth.

Youth and Alcohol, the Gateway Drug

> "The younger the respondents initiated alcohol use,
> the greater the frequency of illicit substance use across one's lifetime."
> —2016 Monitoring the Future Survey

Wisconsin's alcohol culture puts our children and youth—regardless of family income— at great risk for future substance abuse. Research over decades has shown that *alcohol is the gateway drug*, rather than tobacco or marijuana, that leads to abuse of illicit drugs. Since 1975, the University of Michigan Institute for Social Research has conducted *Monitoring the Future* (MTF), an annual survey assessing the values, attitudes, and behaviors of American youth, with particular emphasis on the use and abuse of alcohol, tobacco, and other drugs. The 2016 MTF report published in the *Journal of School Health* established alcohol as the gateway drug and linked age of first drink with future drug use:

> *Alcohol is the most commonly used substance, and the majority of polysubstance using respondents consumed alcohol prior to tobacco or marijuana initiation. Respondents initiating alcohol use in sixth grade reported significantly greater lifetime illicit substance use and more frequent illicit substance use than those initiating alcohol use in ninth grade or later.*

The researchers recommend that children as young as nine and ten be screened for substance use when they are seen in medical settings. The screening instrument CRAFFT (each letter standing for the six screening questions) *"has the most consistent data to support its use in primary care settings."* Medical staff should intervene to encourage discontinuing substance abuse, as well. Schools should begin prevention programs in third grade when students are eight and nine, and continue throughout their maturation. The data showed that *"the younger the respondents initiated alcohol use, the greater the frequency of illicit substance use across one's lifetime."*

Because alcohol is the substance which youth typically initiate first, *"emphasizing abstinence from alcohol use is appropriate and paramount….Interventions should address multiple risk factors and work to build up multiple protective factors."* The researchers found that the biggest risk factors for early-onset drinking included having a single parent, having parents who also started drinking when they were very young, and parental drinking frequency ("Prioritizing Alcohol Prevention: Establishing Alcohol as the Gateway Drug and Linking Age of First Drink with Illicit Drug Use," 2016).

> *The researchers found that the biggest risk factors for early-onset drinking included having a single parent, having parents who also started drinking when they were very young, and parental drinking frequency.*

"Adolescents who were supplied alcohol only by their parents had higher odds of subsequent binge consumption," reported the team of twelve researchers in a study published in *Lancet Public Health* (2018). They found no evidence to support the view that parents who supply their teens with alcohol protects them from adverse drinking outcomes. Wisconsin allows minors to be served in bars and restaurants if a parent or guardian is present to monitor them, at the discretion of the license holder. However, research does not support this policy in terms of health outcomes for the youth (Mattick et al, 2018).

Youth and Marijuana

> *"Marijuana is the second most commonly initiated substance by teens in Wisconsin."*
> *—State Council on Alcohol and Other Drug Abuse (SCAODA)*

"Marijuana is the second most commonly initiated substance by teens in Wisconsin," reported the Wisconsin State Council on Alcohol and Other Drug Abuse (SCAODA) Ad Hoc Committee on Marijuana report of 2016. 5.0 percent of adolescents aged 12-17 initiated use in 2009-2013. Alcohol initiation was reported by 10.7 percent of teens. The committee cited research that early onset and continued use during the teen years can significantly increase the lifetime risk for mental illness and cognitive deficits. Brain images taken from young, frequent users reveal structural and functional abnormalities critical to learning functions like memory, executive function, sustained attention, and psychomotor speed (SCAODA, 2016).

> *"Brain images taken from young, frequent users reveal structural and functional abnormalities critical to learning functions like memory, executive function, sustained attention, and psychomotor speed."*
> *–SCAODA*

The University of Michigan's *2015 Monitoring the Future Study* (cited in the SCAODA report), found no increase in use of marijuana, despite changing state laws. The survey called attention,

however, to the changing trends in teen attitudes about the substance: Perception of the harm of marijuana and disapproval of its use are decreasing. In 2015, 68.1 percent of high school seniors said it posed no risk and 71 percent disapproved of regular smoking of the substance. In 2016, 68.9 percent said it was not a risk and 68.5 percent disapproved of regular use. In 2017, 71.0 percent replied it was not harmful and 64.5 percent disapproved. *The 2017 response of 12th graders regarding perception of harm was half of what was reported 20 years ago* (National Institute on Drug Abuse, 2017).

The 2017 Manitowoc County Youth Risk Behavior Survey showed the same downward shift in perception of the risk of use. However, the collateral risks of use for teens increase greatly when they turn 18. An arrest for possession can lead to involvement with the criminal justice system. When teens without financial resources get arrested, have fines, jail and court charges to pay, along with the possibility of charges at the felony level, young lives can be impacted negatively for years. The 4+ ACEs youth who struggled in school, maybe were in special education, maybe have mental illness diagnoses, and come from dysfunctional homes—these can experience great difficulty navigating the complexity of law enforcement and court processes. Their marginalization from the community may increase if they miss court appearances, probation and AODA appointments, or fine payment due dates, and have to return to jail.

Thomas Mann, Program Director of JusticePoint Juvenile Detention Alternative Initiatives program, said that 18-23-year-olds are an especially vulnerable group in the county. There is not a comprehensive way to connect their needs to any ongoing services during those years (T. Mann, personal communication, January 9, 2018). Those 4+ ACEs youth with limited skills and financial and social resources who leave dysfunctional homes to couch-surf are especially at-risk when they become 18.

After study of the data on the effects of the drug on youth, the SCAODA Ad Hoc Committee on marijuana recommended that

> *"Cannabis and cannabis extracts(s) for use in individuals younger than age 21 should not be legalized in any form unless specifically FDA approved. A growing body of evidence links early cannabis exposure with neurobiological brain abnormalities, an increased risk of addiction, potential to be a gateway drug leading to other drug abuse, neurocognitive decline, lower school performance, and compromised life time achievement."*
> *(Marijuana In Wisconsin: Research-Based Review and Recommendations For Reducing The Public Health Impact of Marijuana,* 2016).

School Experiences of Children in Poverty

Children from low-income households who enter school at a disadvantage in learning readiness and physical and emotional wellbeing are at-risk for failure. They can become marginalized and isolated both academically in class and socially on the playground. They can be left out of supervised after-school activities and other opportunities that foster school and community connection. When alcohol and other addictive substances are used in their homes, their risk for future chemical dependence is great, as well. Their lack of academic success and social acceptance in comparison with their more affluent peers take a daily toll and can lead to long-

term behavioral and economic consequences. According to school data cited in the Healthiest Manitowoc County 2020 Community Health Improvement Plan, disadvantaged students were less likely to be advanced or proficient in both reading and math at 3rd grade, and they were less likely to graduate from high school.

Those who begin school at the margins are at great risk for staying at the margins of society throughout adulthood as they follow intergenerational patterns of financial stress, trauma, and substance abuse. Because schools are the primary social agencies that interact with these vulnerable children, it is vital that school districts receive all the support and resources necessary to help these students grow up healthy and successful. Likewise, social service agencies that provide for the realistic after-school needs of at-risk children and teens beyond childcare should be supported, as well. The future economic and cultural vitality of Manitowoc County will be the result of investments made in the success of all our children now, for soon they will be our neighbors, workers, taxpayers, heads of families, and home owners. Supporting their progress in school and through relevant, effective social programs in the community will ensure their good contributions when they are adults.

V. Effects of Poverty and Addiction in Adulthood

Veterans

> *It is significant that pain reliever prescriptions written by military physicians quadrupled between 2001 and 2009, increasing the numbers of addicted vets.*

Four homeless vets sought assistance from the *County Veterans Services Officer* in 2011 (*2013 League of Women Voters Mental Health Study*). Todd Brehmer, current VSO Officer, when interviewed in September, 2016, said that seven homeless vets had come for help just during the prior seven-week period. Of those, five admitted to alcohol and cannabis abuse, and he could tell the other two had heroin-use indicators (T. Brehmer, personal communication, September 16, 2016).

The ALICE Report found that younger vets are more likely to have less education and training and more likely to have a disability than older vets. They are most likely to be unemployed or in struggling ALICE households (pp. 30-31). Those who have had multiple deployments and combat exposure are at greater risk of developing substance use problems. They are more apt to engage in heavy weekly and binge drinking, to suffer alcohol and other drug-related problems, and to be prescribed more behavioral health medications. It is significant that pain reliever prescriptions written by military physicians quadrupled between 2001 and 2009, increasing the numbers of addicted vets *("Drug Facts: Substance Abuse in the Military,"* 2013*).*

Opioid Felonies and Death Counts Rising

Drug-related arrests have gone up every year as reported by both the County Sheriff's Department Metro Drug Unit and Manitowoc City Police. According to Curtis Green, County

Coroner, more Narcan, used to prevent overdose deaths from opioids, is being deployed than in the past. The District Attorney and police report that most arrests are related to drug-seeking (Healthiest Manitowoc County, 2015).

Lt. Dave Remiker, head of the Metro Drug Unit, spoke at a public awareness event, Drug Addiction 101, on April 20, 2017. He said the war on drugs has already been lost and we need to think of different solutions for drug addiction . His professional attitude has gone from *"It's a choice"* to *"Addiction is a disease."* He said that until policies change so that insurance covers addiction treatment and recovery, nothing will change. *"There is a stigma attached to drug addiction…We must start accepting these individuals as members of our community who can provide a service, who can provide friendship, who can provide a sense of belonging and a sense of being recognized and that sense of being cared about."* He cited the shortage of mental health counseling and funding and said that increasing the mental health network would have the greatest impact in treating Manitowoc's drug problem: *"When we start fixing that problem, the drugs are no longer going to be the problem"* ("Remiker: Manitowoc's 'War on Drugs' Already Lost," April 21, 2017).

Annie Short, Executive Director of NEWAHEC and its former Opioid Prevention Specialist, said that lack of services both in the jail and at discharge often result in individuals being worse off after having served their sentences. They have a record, may have lost their apartments and jobs, burned bridges with family and friends, and owe court fees. Individuals may continue to incur more charges and fees without having committed additional crimes whenever any parole rules are broken, and the resulting insurmountable levels of debt can prevent them from rising out of poverty. However, when evidence-based support services are provided for those arrested for AODA issues, recovery rates go up and recidivism rates of repeated offenses go down significantly. (A. Short, personal communication, July 30, 2016)

The *Lakeshore CAP Community Assessment 2017-2020* reported that the lack of mental health services is leading affected individuals to indulge in self-medicating. In turn, excessive use leads to greater involvement with drugs and eventual entry into the illegal drug culture (pp. 16-17). Former Director Mike Huck described the path from addiction to poverty: It begins with lack of knowledge, which leads to exposure to substances. Continued use then leads to surrender to substances resulting in household vulnerability. The first crisis with law enforcement or job loss can put an individual or family into poverty. (M. Huck, personal communication, March 7, 2016)

The Salvation Army in 2016 saw more poverty cases requiring AODA services than in the past, according to Lisa Antonissen, Business Administrator of the Manitowoc office. More phone requests for help had come in, too. One of the program volunteers said she was concerned about a young man she was to pick up from the Milwaukee Adult Rehabilitation Center (ARC). There was no safe place to take him in Manitowoc because he had been prescribed suboxone to prevent heroin relapse, and both the local residential recovery center and the men's shelter do not admit individuals who are taking such substances. Her only option was to return him to the trailer park where he lived with roommates who used drugs (L. Antonissen, personal communication, October 17, 2016; C. Rhodes, personal communication, October 17, 2016)

Todd Holschbach, Vice Chairman of the Manitowoc County Finance Committee and County Board Supervisor, reporting for the *USA TODAY NETWORK – WISCONSIN,* November, 2017 stated that the opioid abuse epidemic presents a major crisis and a serious fiscal challenge:

> *We are not alone among counties or states dealing with this issue, but we are responsible for addressing the impacts it is having on our community. In that regard, we need substantially increased resources for inpatient treatment and outpatient services for county residents dealing with opioid abuse/addiction and for associated mental health services. Without these resources, families continue to fall apart and the serious, adverse impacts this problem is having on our community continue to grow* ("Holschbach, T.).

The number of overdose deaths from opioids continues to rise in Wisconsin and other states despite fewer prescriptions being dispensed. Doctors now are required to check the state's prescription database in order to prevent patients from getting pain prescriptions from different doctors, in compliance with the Prescription Drug Monitoring Program (PDMP). Currently about 40 states, including Wisconsin, are in the program, and the CDC's goal is to have all states participate so prescription-filling across state lines can be tracked.

Another new procedure to reduce dependence on psychoactive painkillers is the automatic computer flagging of prescribed narcotic drugs in patients' charts. The doctor is required to look at how the patient is using the drug and to help the individual stop use. Physicians on Governor Walker's Task Force on Opioid Abuse are educating fellow doctors about alternative pain medications and proper opioid use. Doctors have been told falsely since the 1990s that long-term use of opioids was safe for patients and did not cause addiction. Dr. Timothy Westlake of the Governor's Task Force said at a meeting of the task force that "*The whole premise that chronic pain is treated well with opioids is false. That's the fallacy the medical community bought 20 years ago*." He also emphasized that patient perceptions on opioids needed to be addressed: *"If we don't change the cultural expectations of patients, (overprescribing) is not going to get fixed.* ("Opioid Doses Drop in Wisconsin, but Overdose Deaths Continue to Rise," November 3, 2017)*"*

Purdue Pharma, manufacturer of OxyContin, was instrumental in reinforcing a scientifically-invalid understanding of addiction and opioid safety among the medical community. The in-depth report *"The Family That Built an Empire of Pain"* in the October 2017 issue of *The New Yorker* by staff writer Patrick Radden Keefe, covers the history of Purdue's marketing of OxyContin. Its sole active ingredient is oxycodone, "*a chemical cousin of heroin which is up to twice as powerful as morphine*." The company, facing a shrinking market and increasing criticism, continues to seek new users, and in August 2015, "*over objections from critics, the company received F.D.A. approval to market OxyContin to children as young as eleven*." Meanwhile, many of our community residents from teens to vets to seniors who have been over-prescribed opioids struggle to overcome their chemical dependence, and they require long-term treatment solutions ("The Family That Built an Empire of Pain, 2017).

In November 2017, Manitowoc County joined 47 other Wisconsin counties in a lawsuit against pharmaceutical companies who marketed opioid painkillers fraudulently. The counties seek compensation for the millions of dollars spent annually *"to combat the public nuisance created by the drug companies' deceptive marketing campaign that misrepresents the safety and efficacy of long-term opioid use."* The lawsuit filed in federal court targets Purdue Pharma L.P., Purdue,

Pharma, Inc., The Purdue Frederick Company, Inc., other pharmaceutical manufacturers, and individual doctors. Erin Dickinson of Crueger Dickinson LLC, one of the law firms representing the counties, stated, *"Counties are bearing a large burden of the costs associated with combating this public health emergency."* The lawsuit builds on the initiatives in the state to deal with the opioid crisis ("Manitowoc County Joins Opioid Painkillers Lawsuit Against Pharmaceutical Companies," November 29, 2017).

Poverty and Substance Abuse Impact Seniors

> *Suicide and liver disease have replaced Alzheimer's and Parkinson's Disease in the list of top ten causes of death.*
> *—County Health Dept. 2015 Annual Report*

Fifty-seven percent—more than half— of Manitowoc County seniors age 65 and older struggle with annual incomes below the ALICE Household Survival Budget threshold—less than $23,196. The combination of financial stress, aging bodies and minds, multiple drug prescriptions, and excessive alcohol use puts this group at greater risk for increased health problems. Excessive drinking means more than one drink per day for women and two for men. Seniors have been conditioned to turn to drugs, including painkillers, for relief, and they fill more than twice as many prescriptions as those younger than 65. They trust their doctors and the TV commercials, and they may see several doctors and take many medications with potentially negative combined effects. Loneliness, depression, and money stress can lead to increased drinking and, for those who smoked marijuana during their youth, a return to cannabis use (H. Haroutunian, 2016).

Elderly women in poverty, especially those living alone, are especially vulnerable to addiction because they are prescribed more psychoactive drugs for depression and anxiety, like benzodiazepines (e.g. Valium). They may conceal their drinking or drug use because their stigma is greater than for men (*Substance Abuse among Older Adults: An Invisible Epidemic*, 2016).

The *AARP Bulletin* monthly newsletter regularly alerts age 50+ readers to new data on the rise in substance use disorder among seniors. The January-February, 2018 issue printed the U.S. map from *"America's Health Rankings: Senior Report 2017"* that showed Wisconsin was a close second behind Alaska with the highest rate of reported chronic drinking (more than one or two drinks daily) or binges (more than four or five drinks at a time) *(AARP Bulletin, January-February, 2018).*

Wisconsin Department of Health Services reported in April, 2017, that alcohol use is on the rise among residents age 65 and older. One of the dangers for seniors who drink is fatal falls. Vision problems and slow reaction times coupled with alcohol use have led to steady increases in the number of falls among Wisconsin seniors. Alcohol can make some health problems worse, such as hearts conditions, high blood pressure, liver problems, diabetes, and memory problems. Mixing alcohol with prescription or over-the-counter medications can be fatal (Wisconsin Epidemiological Profile on Alcohol and Other Drugs, 2016).

Suicide and liver disease have replaced Alzheimer's and Parkinson's Disease in the list of top ten causes of death, cited in the Manitowoc County Health Department 2015 Annual Report. Low-income seniors with medical conditions and underlying alcohol and drug abuse issues appear invisible because they do not commit crimes. However, their addiction and mental health needs require support programs as much as children and families whose struggles are evident.

Nicotine Addiction More Prevalent Among Low-income Groups

> *"Nicotine dependence leads to diseases which take the lives of more than 3,000 Wisconsin tobacco users a year with AODA and mental health disorders…Tobacco deaths are responsible for more deaths than from alcohol and other drugs combined."*
> *—SCAODA*

Nicotine must not be overlooked as a harmful drug, and more people in poverty are addicted than the average population. According to the State Council on Alcohol and Other Drug Abuse, "*Nicotine dependence leads to diseases which take the lives of more than 3,000 Wisconsin tobacco users a year with AODA and mental health disorders…Tobacco deaths are responsible for more deaths than from alcohol and other drugs combined*." (SCAODA, 2016).

Whereas 15 percent of the average American adult population smokes, 70-80 percent of the homeless are smokers. Other groups with high rates are: 32 percent with incomes below $25,000, 33 percent of those who did not finish high school, 36 percent of Medicaid or Badger Care recipients, 32 percent of African Americans, and 77-83 percent of people in substance abuse treatment. In Wisconsin, 21percent of pregnant women reported they smoked.

The tobacco industry targets the poor and teens, according to Cath Tease, Coordinator of Healthiest Manitowoc County Anti-Tobacco Coalition and Grant Coordinator for re-THINK—The Lakeshore Tobacco Prevention Coalition. She reported that tobacco product marketers will offer Buy One—Get One cigarette-pack deals to increase sales in low-income areas. Sellers are paid to position Other Tobacco Products (OTP) in front of store counters and by exits, and they are reimbursed by manufacturers for any theft. OTP are packaged as candies, gum, lip balm, and mints to look like products teens and children commonly buy. Representative Andre Jacque´ accompanied the Coalition's environmental scan team on one of their checks of retail mini-marts near schools and in poverty areas to compare product placement in low-income vs. higher-income area stores.

As of February, 2017, smoking is banned within 25 feet of HUD low-income housing. Tease said this may put stress on residents addicted to nicotine, especially in winter and if they have physical disabilities and/or are elderly. By July, 2018, all HUD buildings will be smoke-free—no candles, e-cigarettes, or cigars, as well as cigarettes (C. Tease, personal communication, February 17, 2016).

Forty percent of Wisconsin high school students have tried a tobacco product, and 20 percent currently use nicotine. Over half of the users have tried to quit, but they report the addiction makes it hard. The 2015 Minnesota Department of Health advisory, *Nicotine Risks for Children*

and Adolescents, warns of the effects of nicotine on brain development during ages 12-18—a critical window for cognitive growth. Extensive evidence shows that exposure during those years causes long-lasting changes in brain development, which could have negative implications for learning, memory, attention, behavior problems, and future addiction ("Nicotine Risks for Children and Adolescents," 2015).

> *Nicotine leads the list of the top five addictive substances responsible for 911 calls in Two Rivers.*
> *—David Murack, Assistant Fire Chief*

Nicotine leads the list of the top five addictive substances responsible for 911 calls in Two Rivers, according to David Murack, Assistant Fire Chief. Of all emergency cases that include calls to the ER and requests for transport from local hospitals to specialized medical centers, addictive substances make up the top five causes:

- #1 is cigarettes. These calls come from adults age 35+.
- #2 is alcohol. Young adults and adults 35+ make up this big group.
- #3 is Poly-Pharmacy. These are seniors who take several different medications that may not interact well, and when alcohol is added, 911 may need to be called.
- #4 is prescription drugs. These calls involve young adults and adults 35+ who abuse these substances and experience overdoses and life-threatening effects. They are "*chasing the dragon*"—the intensity of their first high.
- #5 is crystal meth, heroin and other illegal opioids. Young adults are the group most often affected.

The station has never received calls for ODs from marijuana or physical violence because of marijuana. Murack explained that marijuana can impair driving, but the individual is not violent like crystal meth and cocaine users.

He said that whenever they respond to an incident presenting with chronic bronchitis, enlarged heart, COPD, or shortness of breath, smoking most often is the underlying cause. Though he is seeing here in Manitowoc County the heroin problems he saw 15 years ago when he worked in Milwaukee, he said it is clear from the station's records that nicotine and alcohol abuse are the leading reasons for EMS calls. Over 50 percent of their transport services to larger hospitals are for nicotine and alcohol as prior causes of the presenting medical conditions. To him, it is almost politically incorrect to say that car-fentanyl and other new drugs are the big problem given the fire station's data on the local population. He commented, "*The culture here is a tavern environment. The alcohol tax—sin tax—keeps it going. Tobacco and alcohol companies are held harmless* (D. Murack, personal communication, May 4, 2017)."

Nicotine and alcohol abuse are the leading reasons for EMS calls.
—David Murack

The big tobacco companies have been ordered by a federal court to state to the public their intention to design cigarettes to make them more addictive. This is the statement they were ordered to make which appeared as a full page in *The New York Times,* Sunday, February 4, 2018):

- *Lorillard, Altria, Philip Morris USA, and R. J. Reynolds Tobacco intentionally designed cigarettes to make them more addictive.*
- *Cigarette companies control the impact and delivery of nicotine in many ways, including designing filters and selecting cigarette paper to maximize the ingestion of nicotine, adding ammonia to make the cigarette taste less harsh, and controlling the physical and chemical make-up of the tobacco blend.*
- *When you smoke, the nicotine actually changes the brain—that's why quitting is so hard.*

Lorillard, Altria, Philip Morris USA, and R. J. Reynolds Tobacco intentionally designed cigarettes to make them more addictive.

Alcohol's Dominance

The problem of the availability of alcohol in Wisconsin was cited by the Healthiest Wisconsin 2020 Focus Area Strategic Team on Alcohol and Other Drug Use in 2010. The focus team's year-long research and discussions provided the objectives for HW 2020. Their report stated that

> *"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 cents per gallon) and the tax has not changed since 1969."*

Wisconsin has the third-lowest beer tax in the nation (6.5 cents per gallon) and the tax has not changed since 1969.
—Wisconsin Dept. of Revenue, 2007

The focus team identified what evidence- or science-based actions would move the state forward from 2010 to the goals set for the year 2020. Regarding the problem of availability, the recommended actions included increasing the alcohol excise tax, reducing alcohol outlet density,

restricting alcohol sales at public events, and establishing limits on alcohol sales or its use on public property *(HW2020 Profile: Alcohol & Other Drug Use).*

Healthiest Manitowoc County *Achieve Healthy 75*

> *70% of the early deaths were of those who had a high school education or less—and education is considered a proxy for employment or income.*

"Too many Manitowoc residents are dying young or prematurely before age 75." When the Healthiest Manitowoc County sub-coalitions, social agency representatives, and community members first came together in 2016 to determine what health challenges most needed their collective action, the data on our high rate of premature deaths stood out. Between 2000-2002 and 2013-2015, the number of early deaths in the county rose 16 percent, when the nation, state and surrounding counties experienced declining rates. 70 percent of the premature deaths were of people who had a high school education or less, and education is considered a proxy for employment or income.

The largest increases in causes of death were cancer (trachea, bronchus and lung), chronic liver disease and cirrhosis, suicide, and accidental overdose. The causal link between alcohol and cancer has been established by the medical profession. 40 percent of adult county residents binge drink (higher than the rest of the state and nation), and 59 percent of motor vehicle accidents involve alcohol.

Achieve Healthy 75 is the Healthiest Manitowoc County long-term plan for improving adult health and wellness for target years 2022-2025. The collective impact groups continue to plan and implement action steps to lower the number of early deaths. They are focusing on specific goals and systemic changes that target socio-economic factors, health behaviors and clinical care:

- Target addiction and mental health
- Increase resilience and strengthen families
- Impact socio-economic factors
- Improve health behaviors
- Impact clinical care

(Healthiest Manitowoc County, 2017)

A recent large-scale research study published in *THE LANCET* reported that life expectancy decreases the more a person drinks. 100 grams, or about seven standard glasses of wine or beer, per week was the level associated with an increased risk of death for all causes. This contradicts the U.S. safe limit recommendation of up to two drinks per day for men and one for women who

are not pregnant. The report brought together data from 83 studies in 19 countries and involved nearly 600,000 current drinkers. People who drank between 14 and 24 drinks per week had one to two years shorter lifespan. Those who had more than 24 drinks weekly decreased their life expectancy by four to five years.

Furthermore, the authors found that liquor and beer drinkers had a higher risk of death and cardiovascular disease compared to wine drinkers: "*Beer and spirit drinkers looked pretty different from the wine drinkers: They were more likely to be lower income, male, and smokers and to have jobs that involved manual labor* ("It's Time to Rethink How Much Booze May Be Too Much.")"

An unhealthy diet, smoking, less exercise, less access to health care, and other factors combined with high alcohol consumption put the lives of low income individuals at high risk. Supporting legislation and policies to increase the beer tax and limit availability would help save lives. Implementing alcohol prevention, treatment, and recovery support programs accessible by those with limited financial resources would reduce significantly Manitowoc County's high premature death rate.

The Impact of Poverty and Addiction across the Lifespan

The above sections of this report have provided information on the neurobiology of substance use disorder to give an understanding of how addiction affects an individual's behavior and life. Explanations of federal and state measures of poverty were given to describe the challenges that low income households face daily to afford basic needs. The combined impact of addiction and poverty on children and adults across the lifespan was reported to show the vulnerability of different age groups. In the forthcoming final sections, the report will give information about important local programs and agencies that support people's needs—our strengths. Areas of continuing or new need—our gaps—will be covered, as well, with reference to how other counties and municipalities are dealing with those challenges. Policies and recommendations derived through League consensus for addressing our community's gaps will conclude the report.

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