

# 2019

## Community Health Needs Assessment



Virginia Mason Memorial



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# INTRODUCTION

Virginia Mason Memorial, part of the Virginia Mason Health System, is a 226-bed acute-care, nonprofit community hospital that has served Central Washington's Yakima valley for more than 60 years. Memorial Family of Services includes primary care practices and specialty care services including high-quality cardiac care; cancer care through North Star Lodge; breast health at `Ohana Mammography Center; acute hospice and respite care at Cottage in the Meadow, winner of the Circle of Life Award from the American Hospital Association for innovative palliative and end-of-life care; pain management at Water's Edge; an advanced NICU unit, the only place in Central Washington that offers specialty care for at-risk infants; advanced services for children with special health care needs at Children's Village; and The Memorial Foundation, a separate 501c(3) organization that raises funds for innovative health care programs in the Yakima Valley.

This assessment document is a map and through the following four-stage approach

we will make progress toward improved health and TRANSFORMING Yakima:

- **Plan:** Identify priorities for services and community health improvement processes
- **Partner:** Identify those who can work together to best meet community needs
- **Do:** Design programs and approaches to improve access to high quality health care services
- **Improve:** Improve the health outcomes of Yakima County

As a result of the CHNA, health priorities were selected, and using our four-stage approach we will develop an action plan to address these priorities and positively influence the health and well-being of the community.

This 2019 Community Health Needs Assessment was approved at the October 15, 2019 meeting of the Virginia Mason Memorial Board of Trustees.'

# YAKIMA COUNTY

Yakima County is composed of primarily rural communities (14 cities and towns) in Central Washington, spanning 4,296 square miles. Total current population for Yakima County as of July 1, 2017 is 251,193.<sup>1</sup> The population density for this area, estimated at 58.2 persons per square mile, is less than the national average population density of 92.2 persons per square mile. The Primary Service Area (PSA) of Yakima Valley Memorial Hospital is comprised of Yakima County. Secondary Service Areas (SSA) for highly specialized programs and services (e.g. Children's Village) stretches into neighboring counties including Kittitas and Klickitat. Located within Yakima County is the Yakama Nation Reservation which is over 1.3 million acres and reaches across the cascades. Yakima County consists of 50.1% male and 49.9% female population. Nearly half (47%) of the population is married, while 33.3% report never being married, and the remaining 19.7% consists of residents who are married but separated (3.0%), divorced (11.0%) or widowed (5.7%). Yakima County is home to approximately 10,000 migrant and seasonal farmworkers and their dependents.<sup>2</sup> The percentage of the population living in urban areas is 76.5% compared with 24% living in rural areas, which is a higher proportion of rural population than both the National and Washington State averages—81% vs. 19% and 84% vs. 16%,



respectively.<sup>3</sup> Yakima County consists of 66.6% Medicare/Medicaid payer mix (16.7% Medicare and 49.9% Medicaid).<sup>4,5</sup> According to Washington State Department of Social and Health Services, 42.4% of the population is receiving economical services assistance, primarily for: child support services; childcare; and basic food programs.<sup>5</sup>

## Demographics

### Race/Ethnicity

The majority of the population in Yakima County is Hispanic/Latino and Caucasian. The American Indian/Alaska Native population is more than three times the state average and the Yakama Nation Reservation is located within Yakima County.

### Age

The demographics of Yakima County related to age and ethnicity are changing as the county experiences a large growth in younger Hispanics. This is reflected in the population pyramid for Yakima County which shows a large Hispanic population under forty years of age.

Percentage of population by Race/Ethnicity<sup>1</sup>

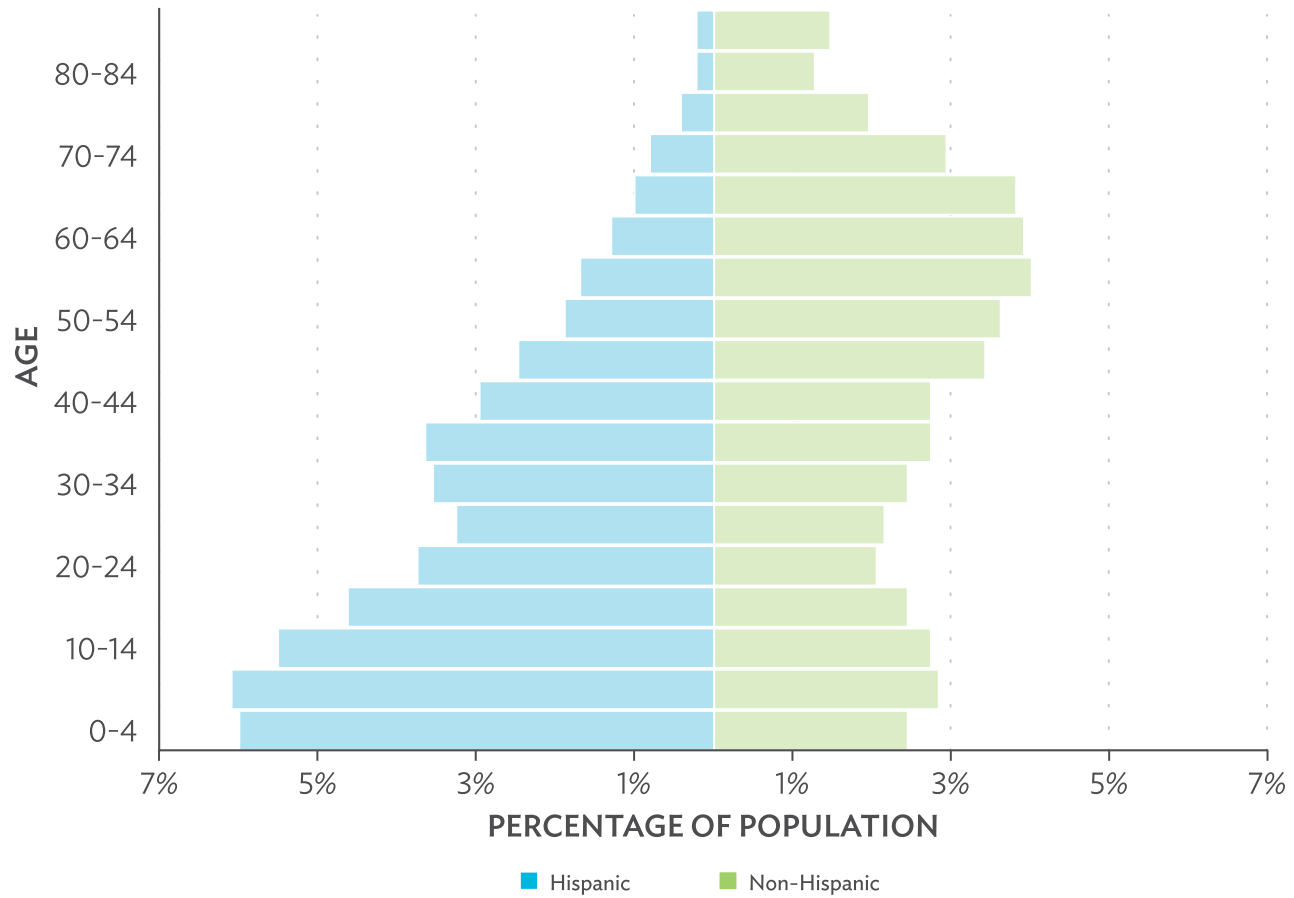
	Yakima County	Washington State	United States
Hispanic or Latino	48.4%	12.3%	17.6%
White	44.3%	69.8%	61.5%
American Indian & Alaskan Native	3.6%	1.1%	0.7%
Asian	0.9%	8.0%	5.3%
Black or African American	0.7%	3.5%	12.3%
Native Hawaiian and Other Pacific Islander	0.1%	0.6%	0.2%
Some Other Race	0%	0.1%	0.2%
2 or More Races	1.9%	4.6%	2.3%

Race and Ethnicity are combined, therefore all Race groups are Non-Hispanic/Latino.

Percentage of Population by Age Group<sup>1</sup>

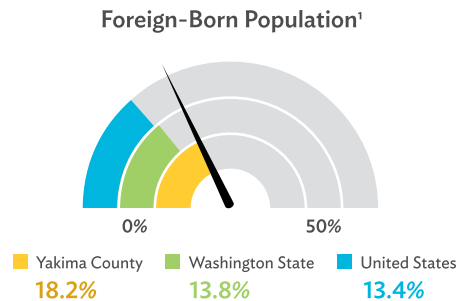
	Age 0-4	Age 5-17	Age 18-24	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+
Yakima County	8.3%	21.6%	9.9%	13.0%	11.9%	11.5%	10.8%	12.9%
Washington	6.3%	16.2%	9.2%	14.7%	13.1%	13.3%	13.0%	14.4%
United States	6.2%	16.7%	9.7%	13.7%	12.7%	13.4%	12.7%	14.9%

### YAKIMA COUNTY 2017 POPULATION PYRAMID



### Foreign Born Population

This indicator reports the percentage of the population that is foreign-born. The foreign-born population includes anyone who was not a U.S. citizen or a U.S. national at birth. This includes any non-citizens, as well as persons born outside of the U.S. who have become naturalized citizens. The native U.S. population includes any person born in the United States, Puerto Rico, a U.S. Island Area (such as Guam), or abroad of American (U.S. citizen) parent or parents.



### Primary Language/Linguistic Isolation

This indicator is significant as it identifies households and populations that may need English-language assistance; furthermore, the inability to speak English well creates barriers to healthcare access, provider communications, and health literacy/education.

#### Primary Language Spoken at Home<sup>1</sup>

	Yakima County	Washington State	United States
English	59.9%	80.9%	78.7%
Spanish	38.6%	8.4%	13.2%
Asian & Pacific Islander Languages	0.7%	5.7%	3.5%
Other Indo-European Languages	0.5%	3.9%	3.6%
Other Languages	0.3%	1.1%	1.0%

#### Linguistic Isolation<sup>1</sup>

	Yakima County	Washington State	United States
Percentage of Population who Speak English Less than 'Very Well'	16.0%	7.6%	8.5%
Spanish	15.5%	3.5%	5.4%
Asian & Pacific Islander Languages	0.1%	1.1%	1.1%
Other Indo-European Languages	0.3%	2.6%	1.6%
Other Languages	0.0%	0.4%	0.3%



# SOCIAL & ECONOMIC DETERMINANTS OF HEALTH

## Healthy People 2020<sup>6</sup>

Health starts in our homes, schools, workplaces, neighborhoods, and communities. We know that taking care of ourselves by eating well and staying active, not smoking, getting the recommended immunizations and screening tests, and seeing a doctor when we are sick all influence our health. Our health is also determined in part by access to social and economic opportunities; the resources and supports available in our homes, neighborhoods, and communities; the quality of our schooling; the safety of our workplaces; the cleanliness of our water, food, and air; and the nature of our social interactions and relationships. The conditions in which we live explain in part why some Americans are healthier than others and why Americans more generally are not as healthy as they could be.

Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Conditions (e.g., social, economic, and physical) in these various environments and settings (e.g., school, church, workplace, and neighborhood) have been referred to as “place.” In addition to the more material attributes of “place,” the patterns of social engagement and sense of security and well-being are also affected by where people live. Resources that enhance quality of life can have



A “place-based” organizing framework, reflecting five key areas of social determinants of health (SDOH), developed by Healthy People 2020.<sup>6</sup>

a significant influence on population health outcomes. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins.

Understanding the relationship between how population groups experience “place” and the impact of “place” on health is fundamental to the social determinants of health—including both social and physical determinants.

## Education

Education is a key societal factor in supporting child and youth development, skill-building for future jobs and/or secondary education, and for supporting adults in job training or career development. Poverty in early life can negatively impact educational outcomes. Higher educational attainment is linked to higher future income, furthermore research suggests education is one the strongest predictors of health.<sup>7</sup>

Not only does one’s education level affect his or her health, but education can have multigenerational implications that also make it an important measure for the health of future generations.<sup>8-9</sup> Parents’ level of education affects their children’s health directly through their ability to access resources available to the children, and also indirectly through the quality of schools that the children attend.<sup>10</sup>

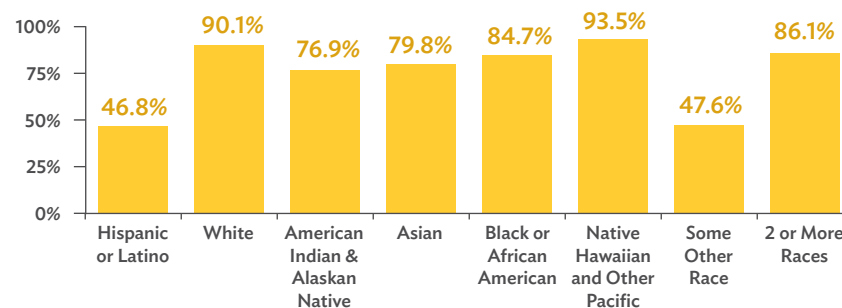
### Educational Attainment: Population age 18 to 24<sup>1</sup>

	Yakima County	Washington State	United States
Less than high school graduate	27.8%	14.6%	13.4%
High School Graduate	37.0%	31.0%	30.5%
Some College or Associates Degree	31.3%	43.5%	45.7%
Bachelor’s Degree or higher	3.9%	10.9%	10.5%

### Educational Attainment: Population age 25+<sup>1</sup>

	Yakima County	Washington State	United States
Less than 9th Grade, No High School Diploma	16.0%	3.8%	5.4%
9th to 12th Grade, No High School Diploma	10.8%	5.3%	7.2%
High School Diploma	28.3%	22.5%	27.3%
Some College, No Degree	20.8%	24.0%	20.8%
Associate’s Degree	8.1%	9.9%	8.3%
Bachelor’s Degree	9.8%	21.7%	19.1%
Graduate or Professional Degree	6.1%	12.7%	11.8%

### Yakima County High School Graduation Rates by Race/Ethnicity (age 18+)<sup>1</sup>



## Health Literacy

### U.S. Department of Health and Human Services<sup>11</sup>

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.<sup>12</sup>

Health literacy is dependent on individual and systemic factors:

- Communication skills of lay persons and professionals
- Lay and professional knowledge of health topics
- Culture
- Demands of the healthcare and public health systems
- Demands of the situation/context

Health literacy affects a person's ability to:

- Navigate the healthcare system, including filling out complex forms and locating providers and services
- Share personal information, such as health history, with providers
- Engage in self-care and chronic-disease management
- Understand mathematical concepts such as probability and risk

### Health Literacy (age 18+) <sup>11,13</sup>

	Yakima County	Washington State	United States
Population who did not graduate from high school	28.7%	9.8%	12.8%
Population with basic to below basic understanding of health literacy	23.0%	7.8%	10.2%

The primary responsibility for improving health literacy lies with public health professionals and the healthcare and public health systems. We must work together to ensure that health information and services can be understood and used by all Americans.

Currently there exists no state or county level data for health literacy. However, data shows that of individuals who have not graduated from high school 49% have a below basic understanding of health literacy, 27% have a basic understanding; 23% have an intermediate understanding; 1% have a proficient understanding.<sup>13</sup> Therefore, if 75% of the population that did not graduate from high

school have a basic to below basic understanding of health literacy we can extrapolate an estimate of the county, state and national population with health literacy challenges using graduation rates. Differences in language spoken may also have an effect on health literacy, especially if materials are only available in English or not translated appropriately.

## Unemployment

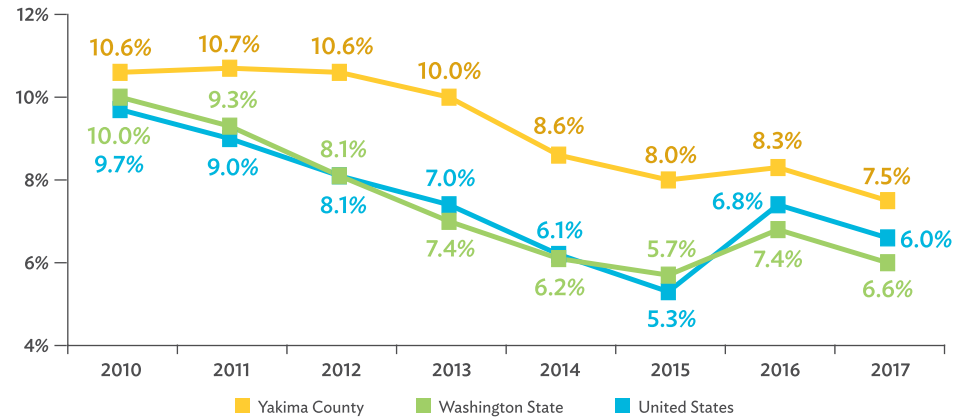
A steady job in safe working conditions means more than simply a paycheck—employment can also provide numerous benefits critical to maintaining proper health. On the flip side, job loss and unemployment are associated with a variety of negative health effects. Unemployment has been linked to poor health and stress related conditions such as stroke, heart attack, heart disease or arthritis.<sup>14</sup> Unemployed individuals are more likely than employed to be diagnosed with depression and report feelings of sadness and worry; as well as unhealthy coping behaviors such as smoking, alcohol and drugs.<sup>15</sup>

This indicator is relevant because unemployment creates financial instability and barriers to access including insurance coverage, health services, healthy food, and other necessities that contribute to poor health status.

### Unemployment Rates by Poverty Status (age 16+), 2017

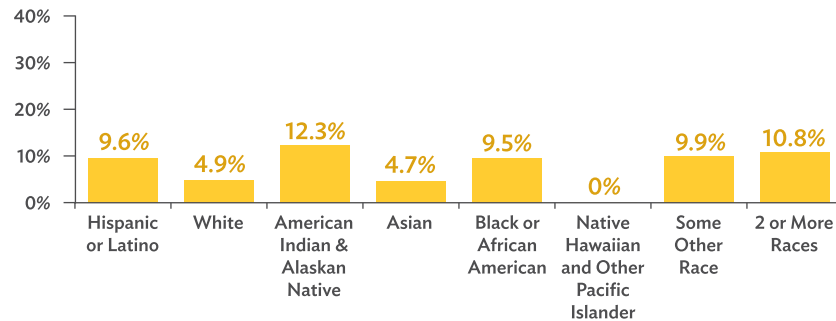
Below poverty level	19.8%
At or above the poverty level	5.3%

Average Annual Unemployment, 2010-2017<sup>1</sup>



Percentage of population ages 16 and older unemployed but seeking work.

Unemployment Rates by Race/Ethnicity (age 16+), 2017<sup>1</sup>



## Income

Economic insecurity is often associated with poor health. Higher income and social status are linked to better health, the greater the gap between the richest and poorest people, the greater the differences in health. Income inequality within U.S. communities can have broad health impacts, including increased risk of mortality, poor health<sup>16</sup>, and increased cardiovascular disease risks. Communities with greater income inequality can experience loss of social connections and decreases in trust or social support and sense of community for all residents.<sup>11</sup>

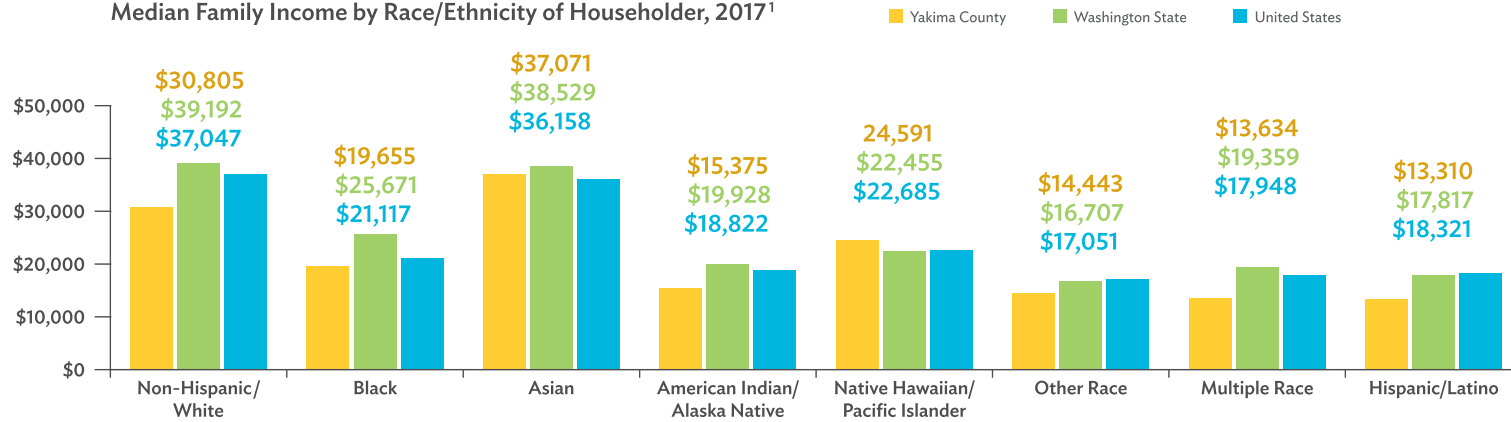
Median Income, 2010-2017<sup>1</sup>

	2010	2011	2012	2013	2014	2015	2016	2017
Yakima County	\$21,684	\$22,622	\$22,432	\$22,256	\$22,428	\$23,064	\$23,819	\$25,381
Washington State	\$31,880	\$32,521	\$32,583	\$32,900	\$33,492	\$33,661	\$34,886	\$36,286
United States	\$29,701	\$30,259	\$30,376	\$30,538	\$30,815	\$30,926	\$31,334	\$32,141

Median Family Income by Educational Attainment, 2017<sup>1</sup>

	Less than high school graduate	High school graduate (includes equivalency)	Some college or associate's degree	Bachelor's degree	Graduate or professional degree
Yakima County	\$21,627	\$28,282	\$32,313	\$44,994	\$62,348
Washington State	\$24,579	\$32,246	\$37,871	\$57,143	\$73,579
United States	\$21,738	\$29,815	\$35,394	\$52,019	\$69,903

Median Family Income by Race/Ethnicity of Householder, 2017<sup>1</sup>



**Public Assistance<sup>1</sup>**

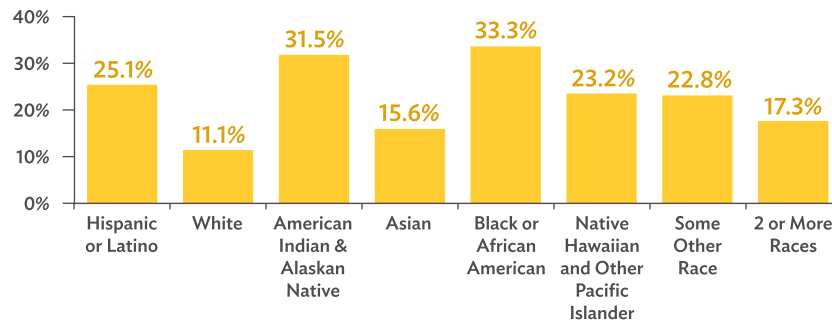
This indicator reports the percentage of children under the age of 18 living in households receiving public assistance income. Public assistance income includes Supplemental Security Income (SSI), cash public assistance income, or Food Stamp/SNAP benefits.

	Total	In married-couple family household	In male householder, no wife present, family household	In female householder, no husband present, family household
Yakima County	44.6%	32.2%	52.8%	68.7%
Washington State	25.4%	16.9%	34.9%	51.8%
United States	27.2%	16.3%	33.5%	53.4%

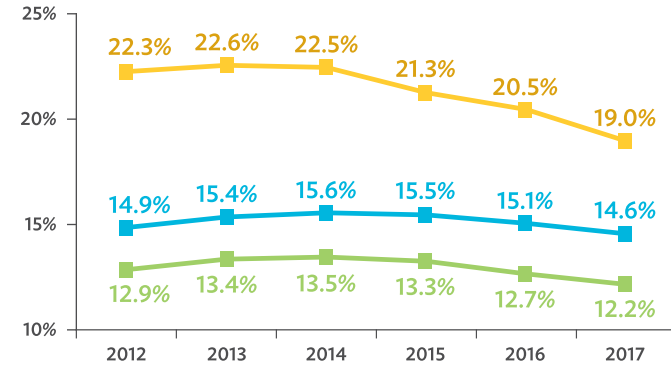
## Poverty

Poverty can result in an increased risk of mortality, prevalence of medical conditions and disease incidence, depression, intimate partner violence, and poor health behaviors. A 1990 study found that if poverty were considered a cause of death in the U.S., it would rank among the top 10 causes.<sup>17</sup> While negative health effects resulting from poverty are present at all ages, children in poverty experience greater morbidity and mortality than adults due to increased risk of accidental injury and lack of health care access.<sup>18</sup> <sup>19</sup> Children’s risk of poor health and premature mortality may also be increased due to the poor educational achievement associated with poverty. The children in poverty measure is highly correlated with overall poverty rates.

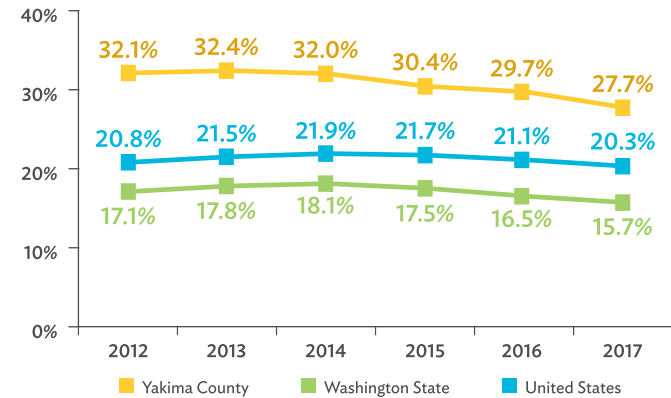
Poverty Rates by Race/Ethnicity (age 16+), 2017<sup>1</sup>



Percentage of Persons Living Below the Federal Poverty Line<sup>1</sup>



Children Under the Age of 18 Living in Poverty<sup>1</sup>



## Children Eligible for Free Lunch

Children Eligible for Free Lunch is the percentage of children enrolled in public schools eligible for free lunch. Eligibility for free lunch is a way of measuring the effect of poverty on children and it also helps to identify vulnerable populations which are more likely to have multiple health access, health status, and social support needs.

Data collected in 2018 shows that in Yakima County the percentage of children eligible for free school lunch was 77.5% compared with only 36.5% for all of Washington State.<sup>20</sup>

## Food Insecurity

Food insecure households are not necessarily food insecure all the time. Food insecurity may reflect a household’s need to make trade-offs between important basic needs, such as housing or medical bills, and purchasing nutritionally adequate foods.

Studies have shown that childhood hunger leads to poor academic performance in school and more recently a study has shown a correlation to low self-control, and interpersonal violence later in life.

Percent of the population experiencing food insecurity, 2012-2017<sup>22</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	14.7%	12.0%	11.5%	9.1%	9.5%	9.4%
Washington	15.0%	14.6%	13.7%	12.8%	12.0%	11.5%
United States	15.9%	15.8%	15.4%	13.4%	12.9%	12.5%

Food insecurity refers to United States Department of Agriculture’s measure of lack of access, at times, to enough food for an active, healthy life for all household members and limited or uncertain availability of nutritionally adequate foods.

The findings show that 37% of the participants who had experienced frequent hunger during childhood reported that they had been involved in interpersonal violence. Of those who experienced little to no childhood hunger, 15% said they were involved in interpersonal violence. The findings were strongest among whites, Hispanics, and males.

The findings highlight the need to find solutions for people living in “food deserts”—neighborhoods that have little access to grocery stores with healthy food choices, as opposed to convenient stores which have mostly processed, prepackaged food.<sup>21</sup>



## Housing Affordability

Affordable housing is critically important to the well-being and health of children and families. Without decent and affordable housing, families have trouble managing their daily lives and their children’s safety; health and development suffer. Families who pay more than they can afford for housing have too little left over for other necessities such as food, clothing and healthcare. They may not be able to pay for transportation and childcare, making it harder to go to work and school each day.<sup>23</sup>

## Households without a car

Transportation barriers are often cited as barriers to healthcare access. A number of studies have found that lack or inaccessibility of transportation may be associated with less health care utilization, lack of regular medical care, and missed medical appointments, particularly for those from lower economic backgrounds. These consequences may lead to poorer management of chronic illness and thus poorer health outcomes.<sup>24</sup>

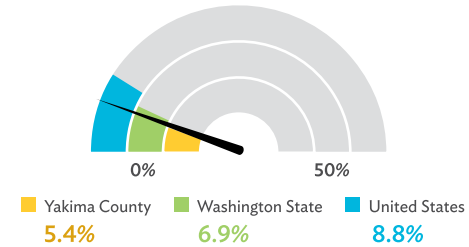
## Disability Status

Disability is defined as a long-lasting physical, mental, or emotional condition. This condition can make it difficult for a person to perform basic activities such as walking, climbing stairs, self-care, learning or remembering. Individuals with disabilities may be less visible, under-counted, or underserved and therefore experience disadvantages in health and well-being compared with the general population. The potential for a lack of access to healthcare services and medical care may increase a person’s risk for various health and mental health conditions.<sup>23</sup> This is relevant because disabled individuals comprise a vulnerable population that requires targeted services and outreach by providers.

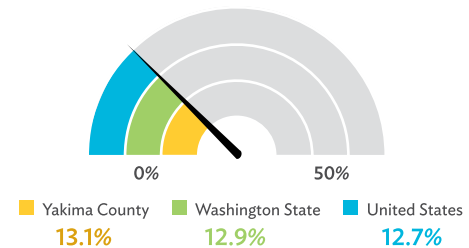
Paying More Than 30% of Income Towards Housing, 2017<sup>1</sup>

	Yakima County	Washington State	United States
Home Owners	32.7%	30.6%	29.5%
Renters	46.9%	48.9%	50.6%

Household with No Vehicle Available, 2017<sup>1</sup>



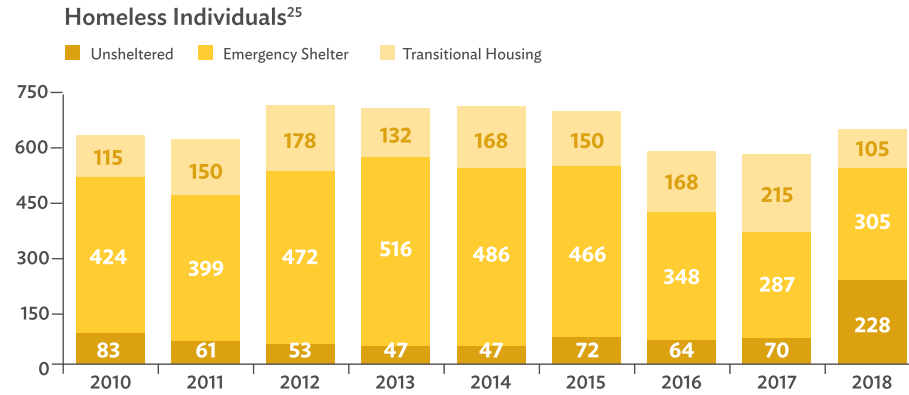
Population with a Disability, 2017<sup>1</sup>



## Homelessness

The health of a community can be measured simply by the well-being of the least stable. Long-term homelessness cuts an average of 20 years off the lifespan of a person. It also reduces their productivity and increases the burden their presence places on the community. In short, homelessness exacts cost on everyone—those with shelter and those without.<sup>25</sup>

Additional information on the state of homelessness in Yakima County can be found in the Yakima Valley Conference of Governments Homeless Program’s yearly *Point in Time Stakeholder Report*.<sup>25</sup>



Ethnicity of Sheltered Count Individuals<sup>25</sup>

	2018
Hispanic	33%
Not Hispanic	67%

Race of Sheltered Count Individuals<sup>25</sup>

	2018
White	67%
American Indian	20%
Black/African American	3%
Native Hawaiian	1%
Asian	1%
Other	8%

## Safety, Crime and Violence

Violence impacts both individuals and communities. Violent crime is linked to disability, mental health issues and increased medical costs, and may result in premature death or injury.

Domestic or family violence includes parent/guardian abuse of children and intimate partner violence (IPV). Intimate partner violence includes acts of physical or sexual violence or abuse that occur between partners or spouses and can affect any age and any gender. Children exposed to violence are more likely to act out in school and have a greater potential for perpetrating violence in the future. While gang and gun-related violence remain a key area of concern in the U.S., other forms of violence, especially bullying and cyber-bullying, have been the focus of increasing research and public attention.<sup>23</sup>

### Crime Map

Yakima County now utilizes the CrimeReports Crime Map which helps law enforcement agencies promote two-way dialogue with their community, and improve public and media perception by proactively sharing local crime information and visibility to agency operations. Citizens can sign up to receive alerts from local agencies, as well as customized daily, weekly, or monthly updates on any number of crime types.

The map can be accessed through the Yakima County website:  
<http://www.yakimacounty.us/428/crime-map>

## Homicide Deaths

### Homicide Mortality Rate, 2017<sup>26</sup>

Yakima County	Washington State	United States
11.6	3.6	6.0

Rate per 100,000 population

### Homicide Mortality Rate by Gender, 2017<sup>26</sup>

	Yakima County	Washington State	United States
Female	N.A.	5.4	2.4
Male	20.0	1.8	9.7

Rate per 100,000 population

### Rate of Homicide by Assault by Race/Ethnicity<sup>26</sup>

	Yakima County	Washington State	United States
White	5.5	2.3	3.5
Black/African American	0	15.3	22.0
American Indian or Alaskan Native	56.1	15.2	6.5
Asian or Pacific Islander	0	2.6	1.7
Hispanic or Latino	16.3	6.0	5.4

Rate per 100,000 population

**Violent Crime**

Violent crime includes homicide, rape, robbery, and aggravated assault. This indicator is relevant because it assesses community safety.

Rate of Reported Violent Crime Offenses<sup>27</sup>

	2010	2011	2012	2013	2014	2015	2016
Yakima County	340	327	356	293	244	N.A.	302
Washington	314	295	298	286	283	N.A.	302
United States	408	390	390	377	373	N.A.	399

Rate per 100,000 population; 2015 data unavailable

**Domestic Violence**

Domestic violence is defined as a pattern of abusive behavior in any relationship that is used by one partner to gain or maintain power and control over another intimate partner. Domestic violence can be physical, sexual, emotional, economic, or psychological actions or threats of actions that influence another person. This includes any behaviors that intimidate, manipulate, humiliate, isolate, frighten, terrorize, coerce, threaten, blame, hurt, injure, or wound someone. Domestic violence can happen to anyone regardless of race, age, sexual orientation, religion, gender, socioeconomic status or education level. Domestic violence not only affects those who are abused, but also has a substantial effect on family members, friends, co-workers, other witnesses, and the community at large.<sup>28</sup>

Reported Domestic Violence Offenses by Jurisdiction, 2016<sup>29</sup>

	Total Domestic Violence Offenses
Yakima Sherriff's Office	342
Yakima Police Department	1,230
Grandview	44
Granger	22
Mabton	14
Moxee	25
Selah	14
Sunnyside	141
Tieton	5
Toppenish	65
Union Gap	61
Wapato	28
Zillah	0

Reported Domestic Violence Offenses, 2016<sup>29</sup>

	Domestic Violence Offenses	% of All Reported Offenses
Yakima County	1,991	10.1%
Washington	52,159	14.3%

### Adolescents Safety and Violent Behavior

#### National Institute of Child Health and Human Development (NICHD)<sup>30</sup>

Bullying can lead to physical injury, social problems, emotional problems, and even death.<sup>31</sup> Children and adolescents who are bullied are at increased risk for mental health problems, including depression, anxiety, headaches, and problems adjusting to school.<sup>32</sup> Bullying also can cause long-term damage to self-esteem.<sup>33</sup> Children and adolescents who are bullies are at increased risk for substance use, academic problems, and violence to others later in life. Children or adolescents who are both bullies and victims suffer the most serious effects of bullying and are at greater risk for mental and behavioral problems than those who are only bullied or who are only bullies.<sup>32</sup> NICHD research studies show that anyone involved with bullying—those who bully others, those who are bullied, and those who bully and are bullied—are at increased risk for depression.<sup>34</sup> NICHD-funded research studies also found that unlike traditional forms of bullying, youth who are bullied electronically—such as by computer or cell phone—are at higher risk for depression than the youth who bully them.<sup>35</sup> Even more surprising, the same studies found that cyber victims were at higher risk for depression than were cyberbullies or bully-victims (i.e., those who both bully others and are bullied themselves), which was not found in any other form of bullying.

Feeling safe is a basic and fundamentally important need. It is well known that when students—or adults—do not feel safe, it undermines learning, teaching and healthy development. Historically, schools have paid attention to physical safety and less attention to social and emotional safety.<sup>37</sup>

#### Students report being bullied at school<sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	27%	33%	31%	29%	30%
	Washington	30%	30%	31%	27%	31%
8th Grade	Yakima County	30%	29%	30%	28%	26%
	Washington	30%	31%	28%	27%	27%
10th Grade	Yakima County	22%	23%	23%	23%	18%
	Washington	24%	25%	23%	21%	19%
12th Grade	Yakima County	17%	19%	18%	17%	16%
	Washington	17%	18%	16%	17%	17%

#### Students report not feeling safe at school<sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	14%	14%	13%	12%	20%
	Washington	13%	12%	11%	10%	15%
8th Grade	Yakima County	22%	21%	22%	23%	25%
	Washington	17%	16%	14%	16%	20%
10th Grade	Yakima County	21%	21%	21%	23%	24%
	Washington	15%	15%	15%	17%	21%
12th Grade	Yakima County	19%	18%	18%	18%	21%
	Washington	12%	13%	13%	15%	20%

*Weapon-carrying among adolescents is associated with an increased risk, within a 12-month period, of injuries requiring medical treatment, repeat/multiple injuries, and injuries requiring hospitalization.*<sup>38 39</sup>

Students report carrying a weapon at school <sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	4%	4%	4%	4%	2%
	Washington	3%	3%	3%	3%	2%
8th Grade	Yakima County	7%	5%	5%	5%	4%
	Washington	5%	4%	4%	4%	3%
10th Grade	Yakima County	8%	7%	7%	7%	6%
	Washington	7%	6%	6%	6%	5%
12th Grade	Yakima County	9%	7%	9%	7%	6%
	Washington	7%	7%	6%	8%	6%

# CLINICAL CARE

## Access to Health Services

### Healthy People 2020<sup>6</sup>

Access to comprehensive, quality health care services is important for the achievement of health equity and for increasing the quality of a healthy life for everyone. This topic area focuses on four components of access to care: coverage, services, timeliness, and workforce.

Access to health care impacts:

- Overall physical, social, and mental health status
- Prevention of disease and disability
- Detection and treatment of health conditions
- Quality of life
- Preventable death
- Life expectancy

Disparities in access to health services affect individuals and society. Limited access to health care impacts people's ability to reach their full potential, negatively affecting their quality of life. Barriers to services include:

- Lack of availability
- High cost
- Lack of insurance coverage

These barriers to accessing health services lead to:

- Unmet health needs
- Delays in receiving appropriate care
- Inability to get preventive services
- Hospitalizations that could have been prevented<sup>40</sup>

### Coverage

Health insurance coverage helps patients get into the health care system. Uninsured people are:

- Less likely to receive medical care
- More likely to die early
- More likely to have poor health status<sup>41 42 43</sup>

Lack of adequate coverage makes it difficult for people to get the health care they need and, when they do get care, burdens them with large medical bills. Current policy efforts focus on the provision of insurance coverage as the principal means of ensuring access to health care among the general population. Other factors, described below, may be equally important to removing barriers to access and utilization of services.

### Services

Improving health care services depends in part on ensuring that people have a usual and ongoing source of care. People with a usual source of care have better health outcomes and fewer disparities and costs.<sup>44 45 46</sup> Having a primary care provider (PCP) as the usual source of care is especially important. PCPs can develop meaningful and sustained relationships with patients and provide integrated services while practicing in the context of family and community.<sup>47</sup> Having a usual PCP is associated with:

- Greater patient trust in the provider
- Good patient-provider communication
- Increased likelihood that patients will receive appropriate care<sup>48 49</sup>

### Timeliness

Timeliness is the health care system's ability to provide health care quickly after a need is recognized. Measures of timeliness include:

- Time spent waiting in doctors' offices and emergency departments (EDs)
- Time between identifying a need for specific tests and treatments and actually receiving those services

Actual and perceived difficulties or delays in getting care when patients are ill or injured likely reflect significant barriers to care.<sup>50</sup> Prolonged ED wait time:

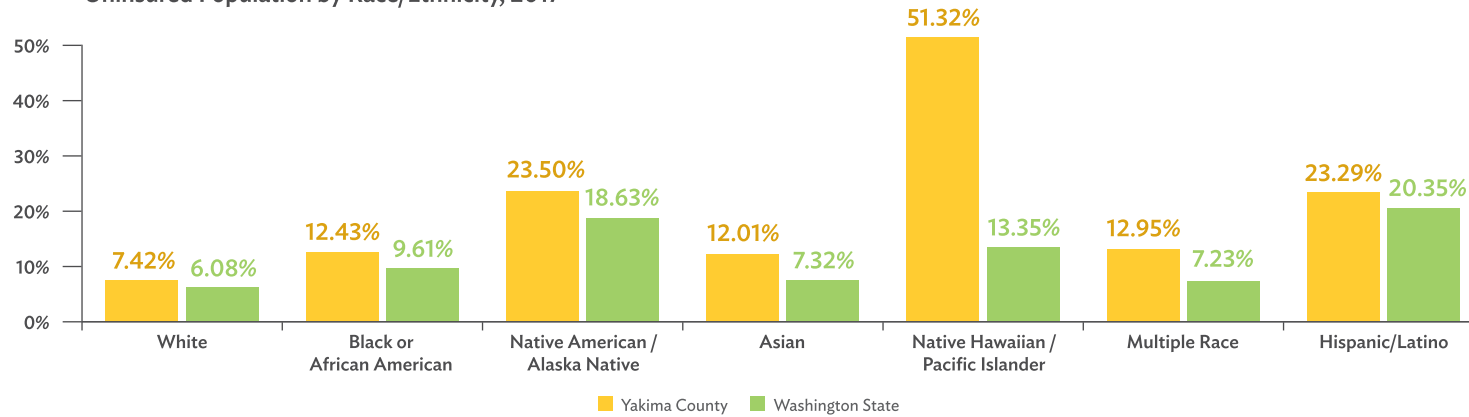
- Decreases patient satisfaction
- Increases the number of patients who leave before being seen
- Is associated with clinically significant delays in care
- Causes for increased ED wait times include an increase in the number of patients going to EDs, with much of the increase due to visits by less acutely ill patients. At the same time, there is a decrease in the total number of EDs in the United States<sup>51</sup>

**Total Uninsured Population**

The lack of health insurance is considered a key driver of health status. This indicator reports the percentage of the total civilian non-institutionalized population without health insurance coverage. This indicator is relevant because lack of insurance is a primary barrier to healthcare access including regular primary care, specialty care, and other health services that contributes to poor health status.<sup>1</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	25.0%	25.4%	23.3%	20.5%	18.3%	15.9%
Washington	13.5%	13.8%	12.9%	11.4%	9.8%	8.3%
United States	14.9%	14.9%	14.2%	13.0%	11.7%	10.5%

Uninsured Population by Race/Ethnicity, 2017<sup>52</sup>





### Uninsured Population by Year

Uninsured Population Age 18-64, Percent by Year<sup>1</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	35.2%	37.0%	34.9%	31.5%	28.7%	25.2%
Washington State	18.6%	19.2%	18.1%	16.1%	13.9%	11.8%
United States	20.4%	20.6%	19.8%	18.1%	16.4%	14.8%

Uninsured Population Under Age 18, Percent by Year<sup>1</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	14.5%	12.5%	10.0%	7.3%	6.1%	5.6%
Washington State	6.5%	6.1%	5.6%	4.9%	4.3%	3.8%
United States	8.1%	7.6%	7.1%	6.5%	5.9%	5.7%

## Health Workforce

### Clinicians

Doctor of Medicine and Doctor of Osteopathic Medicine physicians and residents who are providing patient care in the fields of Family Medicine, Internal Medicine, General Practice, Surgery, Ob-Gyn, Pediatrics.<sup>53</sup>

	2014	2015	2016
Yakima County	170.8	169.9	162.4
Washington State	254.9	256.1	255.1
United States	267.4	268.0	270.4

### Nurse Practitioners

A registered nurse provider with a graduate degree in nursing prepared for advanced practice involving independent and interdependent decision making and direct accountability for clinical judgment across the health care continuum or in a certified specialty. A nurse practitioner has completed additional training beyond basic nursing education and provides primary health care services in accordance with state nurse practice laws or statutes. Tasks performed by nurse practitioners vary with practice requirements mandated by geographic, political, economic, and social factors.

Nurse practitioner specialists include, but are not limited to, family nurse practitioners, gerontological nurse practitioners, pediatric nurse practitioners, obstetric-gynecologic nurse practitioners, and school nurse practitioners who are providing patient care.<sup>53</sup>

	2014	2015	2016
Yakima County	40.4	46.6	50.1
Washington State	49.1	52.9	57.2
United States	51.5	57.1	63.3

Rate per 100,000 resident population

**Primary Care Physicians**

Primary care physicians include non-federal, practicing physicians (M.D.'s and D.O.'s) who are providing hospital patient care.<sup>53</sup>

	2014	2015	2016
Yakima County	69.9	66.7	63.3
Washington State	83.8	83.2	82.1
United States	75.8	75.7	75.6

Rate per 100,000 resident population

**Lack of Consistent Source of Primary Care**

This indicator reports the percentage of adults aged 18 and older who self-report that they do not have at least one person who they think of as their personal doctor or health care provider. This indicator is relevant because access to regular primary care is important to preventing major health issues and emergency department visits.<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	26.9%	36.6%	27.3%	30.8%	28.8%	28.9%
Washington State	24.5%	28.5%	26.5%	24.0%	25.6%	25.5%

**Percentage of Adults Who Report Having A Check-Up in The Past Year<sup>52</sup>**

	2012	2013	2014	2015	2016	2017
Yakima County	55.5%	63.76%	63.57%	64.08%	58.24%	62.77%
Washington State	58.33%	61.08%	63.28%	62.79%	63.09%	64.43%

### Dentists

This indicator reports the number of dentists per 100,000 population. This indicator includes all dentists—qualified as having a doctorate in dental surgery (D.D.S.) or dental medicine (D.M.D.), who are licensed by the state to practice dentistry and who are practicing within the scope of that license.<sup>53</sup>

	2014	2015	2016
Yakima County	50.9	52.7	49.7
Washington State	71.2	72.9	71.1
United States	60.1	60.7	60.6

Rate per 100,000 resident population

### Mental Health Provider

Mental Health Providers is the rate of mental health providers including psychiatrists, psychologists, licensed clinical social workers, counselors, marriage and family therapists and advanced practice nurses specializing in mental health care.<sup>54</sup>

	2015	2016	2017	2018
Yakima County	222.2	232.6	249.7	262.9
Washington State	250.0	277.8	303.0	322.6

Rate per 100,000 resident population

### Cost Barrier to Care

Percent of Adults 18+ Who Needed to See a Doctor But Could Not Because of Cost<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	23.1%	23.3%	18.4%	17.8%	18.5%	17.6%
Washington State	16.1%	15.7%	12.6%	12.4%	11.4%	12.5%

## Lack of Prenatal Care

The Kotelchuck Index, also called the Adequacy of Prenatal Care Utilization (APNCU) Index, uses two crucial elements obtained from birth certificate data—when prenatal care began (initiation) and the number of prenatal visits from when prenatal care began until delivery (received services). To classify the adequacy of received services, the number of prenatal visits is compared to the expected number of visits for the period between when care began and the delivery date. The expected number of visits is based on the American College of Obstetricians and Gynecologists prenatal care standards for uncomplicated pregnancies and is adjusted for the gestational age when care began and for the gestational age at delivery. This indicator is relevant because engaging in prenatal care decreases the likelihood of maternal and infant health risks. This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.<sup>55</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	28.03%	26.17%	24.28%	29.16%	22.35%	23.93%
Washington State	30.82%	29.5%	28.81%	29.18%	27.66%	27.18%

Yakima County Less than Adequate Prenatal Care Utilization by Race/Ethnicity<sup>55</sup>

		2012	2013	2014	2015	2016	2017
White	Yakima County	25.70%	22.44%	18.46%	22.42%	19.23%	23.71%
	Washington State	28.57%	27.33%	26.40%	26.66%	25.25%	24.84%
Hispanic or Latina	Yakima County	27.61%	26.60%	26.16%	32.27%	23.08%	22.04%
	Washington State	34.03%	32.77%	32.55%	33.29%	30.72%	30.40%
American Indian/Alaskan Native	Yakima County	43.97%	38.3%	36.23%	38.61%	35.96%	46.47%
	Washington State	42.39%	40.72%	38.90%	40.51%	38.61%	39.21%
Asian/Pacific Islander	Yakima County	26.09%	30.3%	35.29%	22.5%	28.57%	26.67%
	Washington State	33.35%	30.79%	30.89%	31.13%	29.64%	28.90%
Black/African American	Yakima County	38.10%	40.0%	22.73%	26.92%	16.67%	25.93%
	Washington State	37.91%	38.22%	37.17%	37.20%	35.62%	33.79%

## Chronic Disease Screenings

### Diabetic Monitoring

#### Healthy People 2020<sup>6</sup>

More than 29 million people in the United States have diabetes, up from the previous estimate of 26 million in 2010, according to a report released recently by the Centers for Disease Control and Prevention (CDC). One in four people with diabetes doesn't know he or she has it. Another 86 million adults – more than one in three U.S. adults – have prediabetes, where their blood sugar levels are higher than normal but not high enough to be classified as type 2 diabetes. Without weight loss and moderate physical activity, 15-30% of people with prediabetes will develop type 2 diabetes within five years. Diabetes is a serious disease that can be managed through physical activity, diet, and appropriate use of insulin and oral medications to lower blood sugar levels. Another important part of diabetes management is reducing other cardiovascular disease risk factors, such as high blood pressure, high cholesterol and tobacco use. People with diabetes are at increased risk of serious health complications including vision loss, heart disease, stroke, kidney failure, amputation of toes, feet or legs, and premature death.<sup>56</sup>

#### Disparities in diabetes risk:<sup>6</sup>

- People from minority populations are more frequently affected by type 2 diabetes. Minority groups constitute 25% of all adult patients with diabetes in the United States and represent the majority of children and adolescents with type 2 diabetes.
- African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Native Hawaiians and other Pacific Islanders are at particularly high risk for the development of type 2 diabetes.
- Diabetes prevalence rates among American Indians are 2 to 5 times those of whites. On average, African American adults are 1.7 times as likely and Mexican Americans and Puerto Ricans are twice as likely to have the disease as non-Hispanic whites of similar age.

Regular HbA<sub>1c</sub> monitoring among diabetic patients is considered the standard of care. It helps assess the management of diabetes over the long term by providing an estimate of how well a patient has managed his or her diabetes over the past two to three months. When hyperglycemia is addressed and controlled, complications from diabetes can be delayed or prevented.

Diabetic Screening by Race/Ethnicity and Payer Type, 2016<sup>57</sup>

	Blood sugar (HBA1c) test		Eye exam		Kidney disease screening	
	Medicaid	Medicare	Medicaid	Medicare	Medicaid	Medicare
Statewide Commercial (All Races)	88%		89%		87%	
Statewide (All Races)	63%	91%	63%	56%	71%	73%
American Indian and Alaska Native	80%	85%	79%	50%	78%	76%
Asian	N/A	93%	N/A	57%	N/A	75%
Black or African American	84%	87%	52%	52%	77%	77%
Hispanic or Latino	84%	92%	48%	52%	74%	77%
Native Hawaiian and other Pacific Islander	84%	N/A	50%	N/A	83%	N/A
White	82%	91%	50%	57%	72%	73%

Yakima County Diabetic Screening by Ethnicity (Medicaid Only), 2014<sup>57</sup>

	Hispanic/Latino	Not Hispanic/Latino
Blood sugar (HBA1c) test	78%	74%
Cholesterol test (LDL-c or bad cholesterol)	64%	63%
Eye exam	48%	46%
Kidney disease screening	71%	71%

### Mammogram

Annual mammograms can detect cancer early—when it is most treatable. In fact, mammograms show changes in the breast up to two years before a patient or physician can feel them. Mammograms can also prevent the need for extensive treatment for advanced cancers and improve chances of breast conservation. Current guidelines from the American College of Radiology, the American Cancer Society, and the Society for Breast Imaging recommend that women receive annual mammograms starting at age 40—even if they have no symptoms or family history of breast cancer.

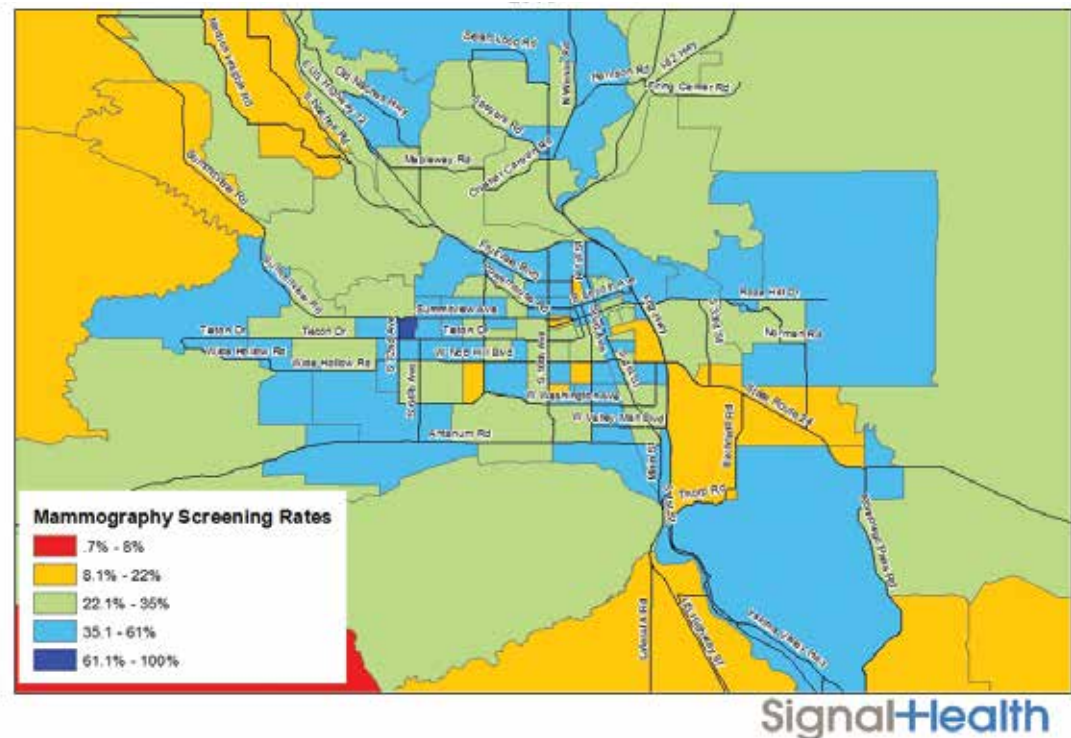
For every 1,000 women who have a screening mammogram:

- 100 are recalled to get more mammography or ultrasound images
- 20 are recommended for a needle biopsy
- 5 are diagnosed with breast cancer<sup>58</sup>

This indicator can also highlight a lack of access to preventive care, a lack of health knowledge, insufficient provider outreach, and/or social barriers preventing utilization of services.

Examining the extent of services provided by `Ohana by neighborhood shows differences in screening rates in their Yakima metropolitan service area. Some of this may be explained by the market area traditionally served by `Ohana, although some may be in neighborhoods with low utilization of preventive services. The areas with low screening rates should be examined in further detail to understand why the screening rates are relatively low.

Virginia Mason Memorial `Ohana Mammography Screening Rates, Females Age 50–74, 2018



# HEALTH OUTCOMES

## Mortality

Mortality Rate by Gender/Ethnicity<sup>59</sup>

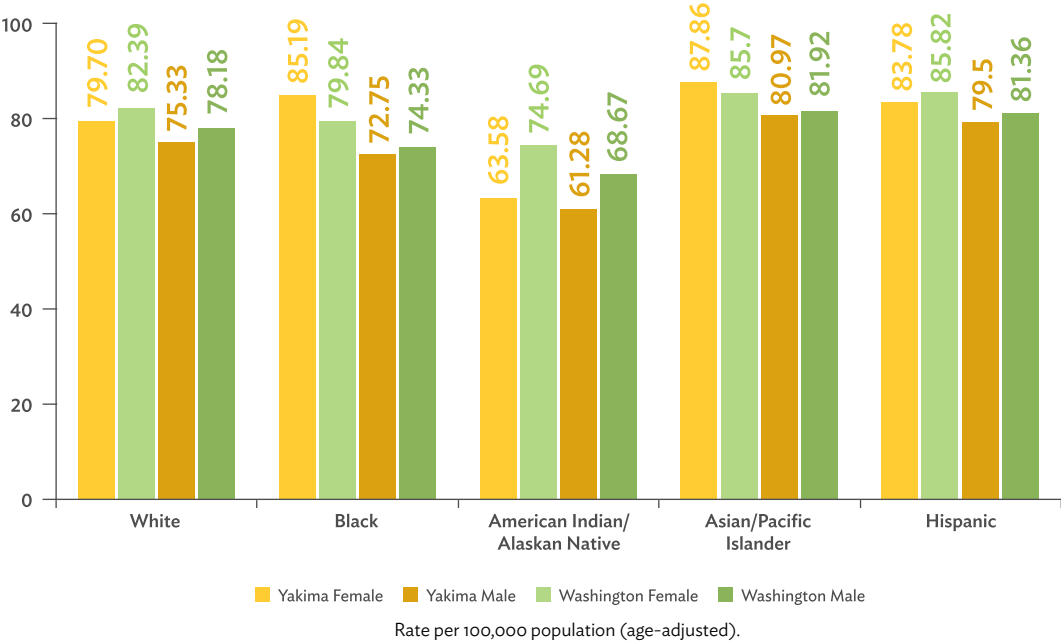
	Gender	Ethnicity	Mortality Rate
Yakima	Male	Hispanic	683.98
WA State	Male	Hispanic	607.73
Yakima	Male	Not Hispanic	967.7
WA State	Male	Not Hispanic	804.76
Yakima	Female	Hispanic	512.57
WA State	Female	Hispanic	445.24
Yakima	Female	Not Hispanic	761.1
WA State	Female	Not Hispanic	594.66

Rate per 100,000 population (age-adjusted).



Life Expectancy

Life Expectancy at Birth by Gender/Race & Ethnicity<sup>59</sup>



*Leading Causes of Death*

Top 10 Leading Causes of Death <sup>59</sup>

Cause of Death	Yakima County			Washington State		
	2010	2014	2017	2010	2014	2017
Major cardiovascular diseases	256.33	233.68	240.92	202.42	144.52	188.24
Malignant neoplasms (Cancer)	168.79	163.38	155.66	169.98	103.76	147.34
Accidents	48.82	46.23	56.18	37.30	33.34	44.07
Chronic lower respiratory diseases	42.72	35.73	37.58	40.29	27.91	37.58
Alzheimer's disease	31.18	42.69	41.31	43.57	31.33	45.41
Diabetes mellitus	25.24	19.86	24.26	21.55	27.75	21.44
Chronic liver disease and cirrhosis	12.83	16.36	14.89	10.44	15.07	11.38
Influenza and pneumonia	10.33	10.48	13.33	8.31	11.82	12.46
Assault (Homicide)	10.16	6.14	12.69	2.65	5.69	3.68
Intentional self-harm (Suicide)	14.18	15.96	11.21	13.78	12.26	17.1

Rate per 100,000 resident population. Ranking ordered by highest leading cause of death in Yakima County in 2017.

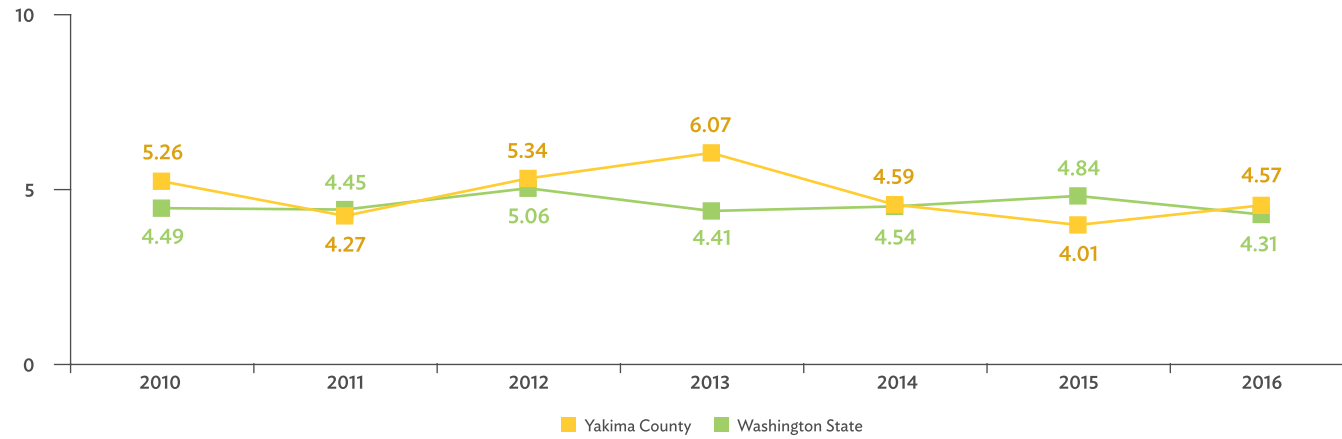
Top 10 Leading Causes of Death by Race/Ethnicity<sup>59</sup>

Cause of Death	White	Black	American Indian/ Alaskan Native	Asian/ Pacific Islander	Hispanic/ Latino
Major cardiovascular diseases	242.2	216.18	578.49	89.41	216.21
Malignant neoplasms (Cancer)	169.26	148.17	203.01	177.71	94.31
Accidents	63.2	40.4	288.81	0	40.61
Chronic lower respiratory diseases	55.24	43.25	21	0	14.3
Alzheimer's disease	42.27	0	0	59.28	45.57
Diabetes mellitus	21.88	0	60.27	20.77	32.96
Chronic liver disease and cirrhosis	10.84	0	69.21	0	19.07
Influenza and pneumonia	15.18	0	0	59.28	6.54
Assault (Homicide)	4.92	74.2	89.8	0	11.34
Intentional self-harm (Suicide)	15.32	0	0	0	6.67

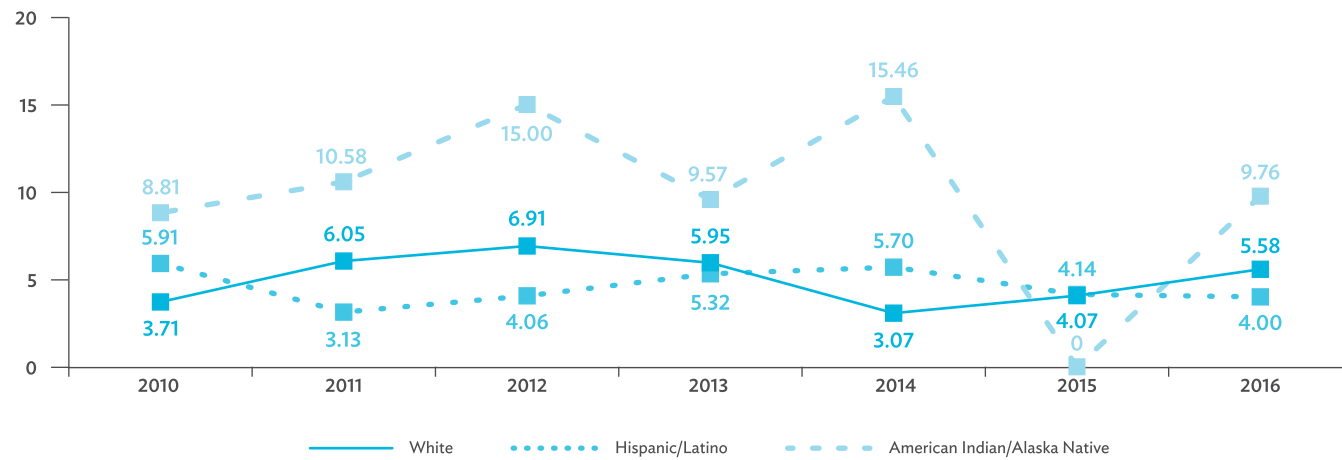
\*Rate per 100,000 resident population. 2017 Yakima County data.

Infant Mortality Rate

Infant Mortality Rates (per 1,000 live births), by Year<sup>59</sup>



Yakima County Infant Mortality Rate (per 1,000 live births), by Race/Ethnicity and Year<sup>59</sup>



## Quality of Life

### Healthy People 2020<sup>6</sup>

*The significance of quality of life and well-being as a public health concern is not new. Since 1949, the World Health Organization (WHO) has noted that health is “a state of complete physical, mental, and social well-being and not merely an absence of disease and infirmity.”<sup>60</sup> Because people are living longer than ever before, researchers have changed the way they examine health, looking beyond causes of death and morbidity to examine the relationship of health to the quality of an individual life.<sup>61</sup>*

*Promoting well-being emphasizes a person’s physical, mental, and social resources and enhances protective factors and conditions that foster health.<sup>62</sup> Instead of the traditional view of prevention as only avoiding or minimizing illness and risk factors, well-being also focuses on disease resistance, resilience, and self-management.*

## Physical Health

### Percentage of Adults That Report Poor Physical Health<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	12.28%	14.41%	12.95%	13.92%	11.00%	14.33%
Washington State	11.52%	11.43%	11.66%	10.84%	11.00%	11.76%

### Yakima County Percentage of Adults That Report Poor Physical Health by Gender, 2017<sup>52</sup>

	2017
Male	13.85%
Female	14.06%

### Yakima County Percentage of Adults That Report Poor Physical Health by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	15.86 %
American Indian/Alaskan Native Only	4.52 %
Hispanic As Race	15.99%

Poor General Health

Percentage of Adults That Report Poor General Health<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	26.8%	28.79%	24.7%	32.24%	24.11%	21.34%
Washington State	15.79%	15.43%	15.85%	14.34%	14.04%	15.73%

Yakima County Percentage of Adults That Report Poor General Health by Gender, 2017<sup>52</sup>

	2017
Male	21.14%
Female	21.95%

Yakima County Percentage of Adults That Report Poor General Health by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	22.12%
American Indian/Alaskan Native Only	9.57%
Hispanic As Race	27.74%

## Diabetes

### Healthy People 2020<sup>6</sup>

Diabetes Mellitus (DM) occurs when the body cannot produce or respond appropriately to insulin. Insulin is a hormone that the body needs to absorb and use glucose (sugar) as fuel for the body's cells. Without a properly functioning insulin signaling system, blood glucose levels become elevated and other metabolic abnormalities occur, leading to the development of serious, disabling complications.

Many forms of diabetes exist. The 3 common types of DM are:

- Type 2 diabetes, which results from a combination of resistance to the action of insulin and insufficient insulin production
- Type 1 diabetes, which results when the body loses its ability to produce insulin
- Gestational diabetes, a common complication of pregnancy. Gestational diabetes can lead to perinatal complications in mother and child and substantially increases the likelihood of cesarean section. Gestational diabetes is also a risk factor for subsequent development of type 2 diabetes after pregnancy.

Effective therapy can prevent or delay diabetic complications.<sup>63 64</sup> However, almost 25% of Americans with DM are undiagnosed, and another 57 million Americans have blood glucose levels that greatly increase their risk of developing DM in the next several years.<sup>64</sup> Few people receive effective preventive care, which makes DM an immense and complex public health challenge.

### Why Is Diabetes Important?

DM affects an estimated 23.6 million people in the United States and is the 7th leading cause of death.<sup>65</sup>

- Lowers life expectancy by up to 15 years.
- Increases the risk of heart disease by 2 to 4 times.
- Is the leading cause of kidney failure, lower limb amputations, and adult-onset blindness.<sup>65 66</sup>
- In addition to these human costs, the estimated total financial cost of DM in the United States in 2007 was \$174 billion, which includes the costs of medical care, disability, and premature death.<sup>65</sup>

The rate of DM continues to increase both in the United States<sup>67 68</sup> and throughout the world.<sup>69</sup>

Lifestyle change has been proven effective in preventing or delaying the onset of type 2 diabetes in high-risk individuals. Based on this, new public health approaches are emerging that may deserve monitoring at the national level. For example, the Diabetes Prevention Program demonstrated that lifestyle intervention had its greatest impact in older adults and was effective in all racial and ethnic groups.

Another emerging issue is the effect on public health of new diagnostic criteria, such as introducing the use of HbA<sub>1c</sub> for diagnosis of diabetes and high risk for diabetes, and lower thresholds for gestational diabetes. These changes may impact the number of individuals with undiagnosed diabetes and facilitate the introduction of diabetes prevention at a public health level.

Percentage of Adults with Diabetes<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	10.14%	9.95%	12.53%	11.12%	10.22%	13.03%
Washington State	8.35%	8.02%	8.34%	7.81%	8.7%	8.51%

Yakima County Percentage of Adults with Diabetes by Gender, 2017<sup>52</sup>

	2017
Male	15.19%
Female	11.45%

Yakima County Percentage of Adults with Diabetes by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	11.57%
American Indian/Alaskan Native Only	11.12%
Asian/Pacific Islander	N.A.
Black	N.A.
Hispanic As Race	19.26%



## Heart Disease

### Centers for Disease Control and Prevention (CDC)<sup>70</sup>

- About 610,000 people die of heart disease in the United States every year—that's 1 in every 4 deaths.<sup>71</sup>
- Heart disease is the leading cause of death for both men and women. More than half of the deaths due to heart disease in 2009 were in men.<sup>71</sup>
- Coronary heart disease (CHD) is the most common type of heart disease, killing over 370,000 people annually.<sup>71</sup>
- Every year about 735,000 Americans have a heart attack. Of these, 525,000 are a first heart attack and 210,000 happen in people who have already had a heart attack.<sup>72</sup>

Heart disease is the leading cause of death for people of most ethnicities in the United States, including African Americans, Hispanics, and whites. For American Indians or Alaska Natives and Asians or Pacific Islanders, heart disease is second only to cancer. Below are the percentages

of all deaths caused by heart disease in 2008, listed by race.<sup>73</sup>

- American Indians or Alaska Natives: 18.4%
- Asians or Pacific Islanders: 22.2%
- Non-Hispanic Blacks: 23.8%
- Non-Hispanic Whites: 23.8%
- All: 23.5%

Know the warning signs and symptoms of a heart attack so that you can act fast if you or someone you know might be having a heart attack. The chances of survival are greater when emergency treatment begins quickly.

- In a 2005 survey, most respondents—92%—recognized chest pain as a symptom of a heart attack. Only 27% were aware of all major symptoms and knew to call 9-1-1 when someone was having a heart attack.<sup>74</sup>
- About 47% of sudden cardiac deaths occur outside a hospital. This suggests that many people with heart disease don't act on early warning signs.<sup>75</sup>

Heart attacks have several major warning signs and symptoms:

- Chest pain or discomfort.
- Upper body pain or discomfort in the arms, back, neck, jaw, or upper stomach.
- Shortness of breath.
- Nausea, lightheadedness, or cold sweats.

High blood pressure, high cholesterol, and smoking are key risk factors for heart disease. About half of Americans (47%) have at least one of these three risk factors.<sup>76</sup>

Several other medical conditions and lifestyle choices can also put people at a higher risk for heart disease, including:

- Diabetes
- Overweight and obesity
- Poor diet
- Physical inactivity
- Excessive alcohol use

Percentage of Adults with Cardiovascular Disease<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	5.18%	6.64%	7.57%	5.17%	4.29%	6.91%
Washington State	5.22%	5.42%	5.09%	5.15%	5.08%	4.98%

Yakima County Percentage of Adults with Cardiovascular Disease by Gender, 2017<sup>52</sup>

	2017
Male	6.61%
Female	7.48%

Yakima County Percentage of Adults with Cardiovascular Disease by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	6.36%
American Indian/Alaskan Native Only	3.59%
Asian/Pacific Islander	N.A.
Black	N.A.
Hispanic As Race	9.92%

## Obesity

### Centers for Disease Control and Prevention (CDC)<sup>77</sup>

Obesity is common, serious and costly

- More than one-third (34.9% or 78.6 million) of U.S. adults are obese.
- Obesity-related conditions include heart disease, stroke, type 2 diabetes and certain types of cancer, some of the leading causes of preventable death.

Obesity affects some groups more than others

- Non-Hispanic blacks have the highest age-adjusted rates of obesity (47.8%) followed by Hispanics (42.5%), non-Hispanic whites (32.6%), and non-Hispanic Asians (10.8%)
- Obesity is higher among middle age adults, 40-59 years old (39.5%) than among younger adults, age 20-39 (30.3%) or adults over 60 or above (35.4%) adults.

Obesity and socioeconomic status

- Among non-Hispanic black and Mexican-American men, those with higher incomes are more likely to have obesity than those with low income.
- Higher income women are less likely to have obesity than low-income women.

- There is no significant relationship between obesity and education among men. Among women, however, there is a trend—those with college degrees are less likely to have obesity compared with less educated women.

People who are obese, compared to those with a normal or healthy weight, are at increased risk for many serious diseases and health conditions, including the following:<sup>78 79 80</sup>

- All-causes of death (mortality)
- High blood pressure (Hypertension)
- High LDL cholesterol, low HDL cholesterol, or high levels of triglycerides (Dyslipidemia)
- Type 2 diabetes
- Coronary heart disease
- Stroke
- Gallbladder disease
- Osteoarthritis (a breakdown of cartilage and bone within a joint)
- Sleep apnea and breathing problems
- Some cancers (endometrial, breast, colon, kidney, gallbladder, and liver)
- Low quality of life
- Mental illness such as clinical depression, anxiety, and other mental disorders
- Body pain and difficulty with physical functioning

### Economic and Societal Consequences

Obesity and its associated health problems have a significant economic impact on the U.S. health care system.<sup>81</sup> Medical costs associated with overweight and obesity may involve direct and indirect costs.<sup>82 83</sup> Direct medical costs may include preventive, diagnostic, and treatment services related to obesity. Indirect costs relate to morbidity and mortality costs including productivity. Productivity measures include 'absenteeism' (costs due to employees being absent from work for obesity-related health reasons) and 'presenteeism' (decreased productivity of employees while at work) as well as premature mortality and disability.<sup>84</sup>

The annual nationwide productive costs of obesity-related absenteeism range between \$3.38 billion (\$79 per obese individual) and \$6.38 billion (\$132 per obese individual).<sup>85</sup>

Percentage of Obese Adults by Year<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	31.62%	30.28%	32.96%	33.84%	36.87%	38.74%
Washington State	26.89%	26.99%	27.11%	26.33%	28.64%	27.75%

Yakima County Percentage of Adults with Obesity by Gender, 2014-2016<sup>52</sup>

	2014-2016
Male	38%
Female	32%

Yakima County Percentage of Adults with Obesity by Race/Ethnicity, 2014-2016<sup>52</sup>

	2014-2016
White	30%
American Indian/Alaskan Native Only	60%
Asian/Pacific Islander	38%
Black	78%
Hispanic As Race	37%

## Adolescents

### Centers for Disease Control and Prevention (CDC)<sup>86</sup>

Childhood obesity is a serious problem in the United States. Despite recent declines in the prevalence among preschool-aged children, obesity among children is still too high. For children and adolescents aged 2-19 years, the prevalence of obesity has remained fairly stable at about 17% and affects about 12.7 million children and adolescents for the past decade.

- In 2011-2012, the prevalence among children and adolescents was higher among Hispanics (22.4%) and non-Hispanic blacks (20.2%) than among non-Hispanic whites (14.1%).
- The prevalence of obesity was lower in non-Hispanic Asian youth (8.6%) than in youth who were non-Hispanic white, non-Hispanic black or Hispanic.

### Health Risks Now

Obesity during childhood can have a harmful effect on the body in a variety of ways. Children who are obese have a greater risk of:

- High blood pressure and high cholesterol, which are risk factors for cardiovascular disease (CVD). In one study, 70% of obese children had at least one CVD risk factor, and 39% had two or more.<sup>87</sup>
- Increased risk of impaired glucose tolerance, insulin resistance and type 2 diabetes<sup>88</sup>
- Breathing problems, such as sleep apnea, and asthma<sup>89 90</sup>
- Joint problems and musculoskeletal discomfort<sup>89 91</sup>
- Fatty liver disease, gallstones, and gastro-esophageal reflux (i.e., heartburn)<sup>88 89</sup>

- Psychological stress such as depression, behavioral problems, and issues in school<sup>92 93 94</sup>
- Low self-esteem and low self-reported quality of life<sup>92 94</sup>
- Impaired social, physical, and emotional functioning<sup>92</sup>

### Health risks later

- Children who are obese are more likely to become obese adults.<sup>95 96</sup> Adult obesity is associated with a number of serious health conditions including heart disease, diabetes, metabolic syndrome, and cancer.<sup>96 97</sup>
- If children are obese, obesity and disease risk factors in adulthood are likely to be more severe.<sup>95 96 97</sup>

Percentage of Overweight Adolescents by Grade<sup>36</sup>

		2010	2012	2014	2016	2018
8th Grade	Yakima County	14%	14%	15%	19%	20%
	Washington State	16%	14%	14%	16%	14%
10th Grade	Yakima County	18%	19%	18%	17%	17%
	Washington State	15%	13%	14%	15%	15%
12th Grade	Yakima County	16%	14%	18%	16%	17%
	Washington State	14%	13%	13%	16%	15%

Percentage of Obese Adolescents by Grade<sup>36</sup>

		2010	2012	2014	2016	2018
8th Grade	Yakima County	14%	14%	15%	14%	16%
	Washington State	11%	10%	9%	11%	12%
10th Grade	Yakima County	14%	15%	15%	17%	20%
	Washington State	10%	10%	11%	12%	14%
12th Grade	Yakima County	15%	15%	16%	18%	18%
	Washington State	11%	10%	11%	14%	17%

## Cancer

### Healthy People 2020<sup>6</sup>

Continued advances in cancer research, detection, and treatment have resulted in a decline in both incidence and death rates for all cancers.<sup>98</sup> Among people who develop cancer, more than half will be alive in 5 years, yet cancer remains a leading cause of death in the United States, second only to heart disease.<sup>99 100</sup>

In this era of patient-centered care, effective communication between clinicians and their patients and family members fosters shared knowledge and understanding and leads to medical decisions that align with patient values.<sup>101</sup> Research shows patients cite a recommendation from a health care provider as the most important reason for having cancer screening tests.<sup>102</sup>

### Why Is Cancer Important?

Many cancers are preventable by reducing risk factors such as:

- Use of tobacco products
- Physical inactivity and poor nutrition
- Obesity
- Ultraviolet light exposure
- Other cancers can be prevented by getting vaccinated against human papillomavirus (HPV) and hepatitis B virus

Screening is effective in identifying some types of cancers in early, often highly treatable stages, including:

- Breast cancer (using mammography)
- Cervical cancer (using Pap test alone or

combined Pap test and HPV test)

- Colorectal cancer (using stool-based testing, sigmoidoscopy, or colonoscopy)
- For cancers with evidence-based screening tools, early detection must address the continuum of care from screening to appropriate follow-up of abnormal test results and referral to cancer treatment.<sup>103</sup>

### Understanding Cancer

Complex and interrelated factors contribute to the risk of developing cancer and to the observed disparities in cancer incidence and death among racial, ethnic, and underserved groups. The most obvious factors are a lack of health care coverage and low socioeconomic status (SES). SES is most often based on a person's:

- Income
- Education level
- Occupation
- Social status in the community
- Geographic location (where the person lives)

Studies have found that SES, more than race or ethnicity, predicts the likelihood of an individual's or group's access to:

- Education
- Health insurance and health care services
- Safe and healthy living and working conditions, including places free from exposure to environmental toxins
- All of these factors are associated with the risk of developing and surviving cancer.

SES also appears to play a major role in:

- Prevalence of behavioral risk factors for

cancer (like tobacco smoking, physical inactivity, obesity, and excessive alcohol use)

- Rates of cancer screenings, with those with lower SES having fewer cancer screenings

### Emerging Issues in Cancer

In the past decade, overweight and obesity have emerged as new risk factors for developing certain cancers, including but not limited to colorectal, breast, uterine corpus (endometrial), pancreas, and kidney cancers.<sup>104</sup> The impact of the current weight trends on cancer incidence will not be fully known for several decades. Continued focus on preventing weight gain will lead to lower rates of cancer and many chronic diseases.

Cancer survivors often face physical, emotional, social, and financial challenges as a result of their cancer diagnosis and treatment. Survivors are at risk of recurrence of their first cancer and are at greater risk of developing other cancers and other health conditions. Factors that increase these risks for survivors include:

- The immediate and long-term effects of cancer and its treatment
- Obesity and unhealthy behaviors, such as smoking and lack of physical activity
- Genetic changes

In the coming decade, as the number of cancer survivors is expected to increase by more than 30% to 18 million,<sup>105 106 107</sup> understanding survivors' health status and behaviors will become increasingly important.

Top 10 Cancer Diagnosis (ranked by Yakima County and 2016) <sup>108</sup>

Type of Cancer	Yakima County			Washington State		
	2010	2013	2016	2010	2013	2016
Digestive System	72.36	67.06	68.52	81.71	79.52	80.05
Breast	63.00	60.64	67.16	87.88	89.94	85.99
Respiratory System	71.53	53.27	55.44	68.13	60.43	57.02
Male Genital System	53.66	40.33	42.08	70.96	55.33	50.01
Skin	29.31	33.9	39.18	50.73	56.25	55.97
Urinary System	35.33	26.97	34.13	40.43	39.14	40.22
Female Genital System	20.84	24.11	21.32	31.07	28.31	28.87
Lymphomas	21.85	17.21	18.23	24.28	23.25	21.57
Leukemia	14.23	13.42	15.42	14.98	15.35	14.4
Miscellaneous	16.84	11.71	13.98	17.1	16.6	15.39

Rate per 100,000 resident population.

Top 10 Cancer Diagnosis by Stage, 2016 <sup>108</sup>

Type of Cancer	Yakima County		Washington State	
	Early	Late	Early	Late
Digestive System	21.51	39.71	25.9	47.2
Breast	42.3	24.86	62.7	21.9
Respiratory System	13.53	34.73	15.6	37.7
Male Genital System	31.91	10.18	35.8	12.8
Skin	32.34	4.03	51.1	3.59
Urinary System	23.54	9.65	30.8	7.93
Female Genital System	13.49	6.63	17.1	10.3
Lymphomas	3.64	12.16	4.67	14.4
Leukemia	0	14.95	0.02	14.1
Miscellaneous	0.6	6.25	0.19	9.55

Rate per 100,000 resident population.

Yakima County Top 10 Cancer Diagnoses by Race/Ethnicity, 2016<sup>108</sup>

Type of Cancer	White	Black	American Indian/ Alaskan Native	Asian/ Pacific Islander	Hispanic/ Latino
Digestive System	67.21	88.13	188.55	25.04	65.11
Breast	72.0	38.41	82.18	80.05	59.22
Respiratory System	66.28	38.41	29.93	0	20.96
Male Genital System	42.63	105.73	0	0	40.96
Skin	29.75	0	8.83	0	2.44
Urinary System	39.07	0	23.59	0	27.05
Female Genital System	21.36	47.35	19.75	0	14.54
Lymphomas	21.26	0	38.93	51.25	7.48
Leukemia	13.2	0	9.32	0	20.33
Miscellaneous	15.06	0	8.83	0	7.27

Rate per 100,000 resident population.



# LEADING HEALTH INDICATORS

## Health Behaviors

### Physical Activity & Nutrition

#### Physical Activity Healthy People 2020<sup>6</sup>

Regular physical activity can improve the health and quality of life of Americans of all ages, regardless of the presence of a chronic disease or disability.<sup>109 110</sup>

Current physical activity guidelines recommend children and adolescents should do 60 minutes or more of physical activity per day and adults should do at least 150 minutes of moderate physical activity per week. The guidelines suggest a mix of aerobic, muscle and bone strengthening activities throughout the week for optimum health.<sup>111</sup> However, National data indicates that more than 80% of adults and adolescents do not do enough physical activity to meet the guidelines for aerobic activities.

Among adults and older adults, physical activity can lower the risk of:

- Early death
- Coronary heart disease
- Stroke
- High blood pressure
- Type 2 diabetes
- Breast and colon cancer
- Falls
- Depression

Among children and adolescents, physical activity can:

- Improve bone health.
- Improve cardiorespiratory and muscular fitness.
- Decrease levels of body fat.
- Reduce symptoms of depression.
- For people who are inactive, even small increases in physical activity are associated with health benefits.

#### Understanding Physical Activity

Personal, social, economic, and environmental factors all play a role in physical activity levels among youth, adults, and older adults.

Understanding the barriers to and facilitators of physical activity is important to ensure the effectiveness of interventions and other actions to improve levels of physical activity.

Factors positively associated with adult physical activity include:

- Postsecondary education
- Higher income
- Enjoyment of exercise
- Expectation of benefits
- Belief in ability to exercise (self-efficacy)
- History of activity in adulthood
- Social support from peers, family, or spouse
- Access to and satisfaction with facilities
- Enjoyable scenery
- Safe neighborhoods<sup>112</sup>

Among children and adolescents ages 4 to 18, the following factors have a positive association with physical activity:

- Belief in ability to be active (self-efficacy)
- Parental support<sup>113</sup>
- Parental education
- Personal goals
- Physical education/school sports
- Belief in ability to be active (self-efficacy)
- Support of friends and family<sup>113</sup>

Environmental influences positively associated with physical activity among children and adolescents include:

- Presence of sidewalks
- Having a destination/walking to a particular place
- Access to public transportation
- Low traffic density
- Access to neighborhood or school play area and/or recreational equipment
- People with disabilities may be less likely to participate in physical activity due to physical, emotional, and psychological barriers. Barriers may include the inaccessibility of facilities and the lack of staff trained in working with people with disabilities.<sup>114</sup>

Percent of Adults Reporting No Leisure Time Physical Activity by Year<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	31.9%	36.32%	31.36%	29.48%	26.27%	31.49%
Washington State	18.74%	19.74%	17.94%	18.79%	17.32%	18.91%

Yakima County Percentage of Adults Reporting No Leisure Time Physical Activity by Gender, 2017<sup>52</sup>

	2017
Male	26.81%
Female	36.34%

Yakima County Percentage of Adults Reporting No Leisure Time Physical Activity by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	28.3%
American Indian/Alaskan Native Only	47.62%
Asian/Pacific Islander	42.27%
Black	63.73%
Hispanic As Race	36.06%

Percentage of Adolescents That Do Not Meet the Recommended Daily Physical Activity Guidelines by Grade<sup>36</sup>

		2014	2016	2018
6th Grade	Yakima County	73%	75%	78%
	Washington State	71%	72%	73%
8th Grade	Yakima County	71%	69%	73%
	Washington State	69%	70%	72%
10th Grade	Yakima County	72%	74%	74%
	Washington State	76%	76%	78%
12th Grade	Yakima County	76%	79%	81%
	Washington State	79%	79%	79%

## Nutrition

### Healthy People 2020<sup>6</sup>

Good nutrition is important to the growth and development of children. A healthful diet also helps Americans reduce their risks for many health conditions,<sup>115</sup> including:

- Overweight and obesity
- Malnutrition
- Iron-deficiency anemia
- Heart disease
- High blood pressure
- Dyslipidemia (poor lipid profiles)
- Type 2 diabetes
- Osteoporosis
- Oral disease
- Constipation
- Diverticular disease
- Some cancers

Social factors thought to influence diet include:

- Knowledge and attitudes
- Skills
- Social support

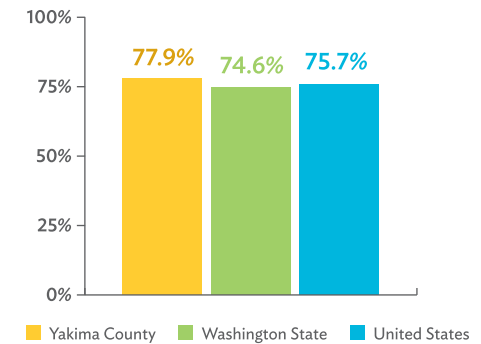
- Societal and cultural norms
- Food and agricultural policies
- Food assistance programs
- Economic price systems<sup>116</sup>

### Physical Determinants of Diet

Access to and availability of healthier foods can help people follow healthful diets. For example, better access to retail venues that sell healthier options may have a positive impact on a person's diet; these venues may be less available in low-income or rural neighborhoods.<sup>117</sup>

The places where people eat appear to influence their diet. For example, foods eaten away from home often have more calories and are of lower nutritional quality than foods prepared at home.<sup>118</sup> Marketing also influences people's—particularly children's—food choices.<sup>119</sup>

Percent Adults with Inadequate Fruit /Vegetable Consumption<sup>120</sup>



Percentage of Adolescents Who Eat <5 Fruits/Vegetables Daily by Grade<sup>36</sup>

		2010	2012	2014	2016	2018
8th Grade	Yakima County	NA	75%	74%	78%	80%
	Washington State	NA	74%	76%	77%	81%
10th Grade	Yakima County	NA	77%	77%	79%	82%
	Washington State	NA	76%	78%	80%	83%
12th Grade	Yakima County	NA	77%	78%	82%	81%
	Washington State	NA	76%	78%	81%	83%

NA—Data Not Available.

Percentage of Adolescents Who Drink Sweetened Beverages Daily at School by Grade<sup>36</sup>

		2010	2012	2014	2016	2018
8th Grade	Yakima County	21%	17%	6%	4%	4%
	Washington State	15%	12%	5%	3%	3%
10th Grade	Yakima County	21%	18%	5%	4%	4%
	Washington State	15%	13%	4%	4%	3%
12th Grade	Yakima County	21%	18%	6%	5%	5%
	Washington State	16%	12%	4%	4%	5%

Percentage of Adolescents Who Did Not Eat Breakfast Yesterday by Grade<sup>36</sup>

		2014	2016	2018
6th Grade	Yakima County	30%	30%	35%
	Washington State	20%	19%	24%
8th Grade	Yakima County	44%	44%	46%
	Washington State	31%	34%	35%
10th Grade	Yakima County	43%	46%	46%
	Washington State	35%	40%	41%
12th Grade	Yakima County	48%	50%	55%
	Washington State	41%	45%	46%

**Tobacco Use**

**Healthy People 2020<sup>6</sup>**

Scientific knowledge about the health effects of tobacco use has increased greatly since the first Surgeon General’s report on tobacco was released in 1964.<sup>121 122 123 124</sup> Since the publication of that report, more than 20 million Americans have died because of smoking.<sup>124</sup>

Tobacco use causes:<sup>124</sup>

- Cancer (oropharynx, larynx, esophagus, trachea, bronchus, lung, acute myeloid leukemia, stomach, liver, pancreas, kidney and ureter, cervix, bladder, and colorectal)
- Heart disease and stroke
- Lung diseases (emphysema, bronchitis, chronic airway obstruction, chronic obstructive pulmonary disease, and pneumonia)
- Reproductive effects (ectopic pregnancy, premature birth, low birth weight, stillbirth, reduced fertility in women, and erectile dysfunction; and birth defects, including cleft-lip and/or cleft palate)
- Other effects (Type 2 diabetes, age-related macular degeneration, rheumatoid arthritis, blindness, cataracts, hip fractures, impaired immune function, periodontitis, and overall diminished health)

The harmful effects of tobacco do not end with the user. There is no risk-free level of exposure to secondhand smoke. Since 1964, 2.5 million

deaths have occurred among nonsmokers who died from diseases caused by secondhand smoke exposure.<sup>124</sup> Secondhand smoke causes heart disease, lung cancer, and stroke in adults,<sup>124</sup> and can cause a number of health problems in infants and children, including:<sup>125</sup>

- More severe asthma attacks
- Respiratory infections
- Ear infections
- Sudden infant death syndrome (SIDS)

In addition, smokeless tobacco causes a number of serious oral health problems, including cancer of the mouth and gums, periodontitis, and tooth loss.<sup>121 123</sup>

Smoking-related illness in the United States costs more than \$300 billion each year, including nearly \$170 billion for direct medical care for adults and more than \$156 billion in lost productivity.<sup>124</sup>

Percent of Adults Who Currently Smoke Tobacco Products by Year<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	18.4%	19.12%	14.03%	16.85%	15.38%	12.98%
Washington State	17.17%	16.22%	15.54%	15.22%	14.29%	13.9%

Yakima County Percentage of Adults Who Currently Smoke Tobacco Products by Gender, 2017<sup>52</sup>

	2017
Male	13.04%
Female	12.19%

Yakima County Percentage of Adults Who Currently Smoke Tobacco Products by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	18.11%
American Indian/Alaskan Native Only	28.43%
Asian/Pacific Islander	N.A.
Black	N.A.
Hispanic As Race	7.05%

Percent of Adults Who Currently Use Smokeless Tobacco Products by Year<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	5.29%	4.41%	3.17%	3.49%	1.93%	5.24%
Washington State	3.82%	3.72%	3.53%	3.58%	3.65%	3.51%

Yakima County Percentage of Adults Who Currently Use Smokeless Tobacco Products by Gender, 2014-2016<sup>52</sup>

	2014-2016
Male	5.3%
Female	0.7%

Yakima County Percentage of Adults Who Currently Use Smokeless Tobacco Products by Race/Ethnicity, 2014-2016<sup>52</sup>

	2014-2016
White	5.6%
American Indian/Alaskan Native Only	2.2%
Asian/Pacific Islander	1.4%
Black	0%
Hispanic As Race	1.0%

### Adolescent Tobacco Use

Tobacco contains nicotine, a highly addictive drug, causing many young people to progress from smoking occasionally to smoking every day. Nearly all tobacco use begins prior to age 18. Each day in the United States, over 3,800 young people under 18 years of age smoke their first cigarette, and over 1,000 youth under age 18 become daily cigarette smokers. The vast majority of Americans who begin daily smoking during adolescence are addicted to nicotine by young adulthood.<sup>126</sup> Young people start smoking for many reasons—social, physical and environmental influences. In 2011, cigarette companies spent \$8.37 billion on advertising and promotional expenses in the United States alone; up from \$8.05 billion in 2010.<sup>127</sup> The five major U.S. smokeless tobacco manufacturers spent \$451.7 million on smokeless tobacco advertising and promotion in 2011 and increase from \$442.2 million spent in 2010.<sup>128</sup>

The emergence of electronic cigarettes, more commonly referred to as e-cigarettes, has gained national and local attention as a method of tobacco cessation to help people quit smoking. Additionally, it has garnered attention as a means to recruit new users to nicotine products, with a particular attention on young people, through the marketing of candy-flavored devices. The debate on the effectiveness and regulation of this product is currently ongoing with the Federal Drug Administration.

E-cigarettes are devices that heat a liquid into an aerosol that the user inhales. The liquid usually has nicotine and flavoring in it, and other additives. The nicotine in e-cigarettes and regular cigarettes is addictive. E-cigarettes are considered tobacco products because most of them contain nicotine, which comes from tobacco.<sup>129</sup>

Besides nicotine, e-cigarettes can contain harmful and potentially harmful ingredients, including:

- ultrafine particles that can be inhaled deep into the lungs
- flavorants such as diacetyl, a chemical linked to serious lung disease
- volatile organic compounds
- heavy metals, such as nickel, tin, and lead

Adolescent years are times of important brain development. Brain development begins during the growth of the fetus in the womb and continues through childhood and to about age 25. Nicotine exposure during adolescence and young adulthood can cause addiction and harm the developing brain. No matter how it's delivered, nicotine is harmful for youth and young adults. E-cigarettes typically contain nicotine as well as other chemicals that are known to damage health. For example, users risk exposing their respiratory systems to potentially harmful chemicals in e-cigarettes.<sup>129</sup>

Percentage of Students Who Report Using Tobacco Products (cigarettes and smokeless) in the Past 30 Days by Grade<sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	4%	4%	4%	2%	3%
	Washington State	3%	2%	2%	2%	2%
8th Grade	Yakima County	10%	8%	7%	6%	6%
	Washington State	10%	8%	5%	5%	4%
10th Grade	Yakima County	16%	14%	13%	10%	7%
	Washington State	19%	15%	12%	9%	7%
12th Grade	Yakima County	21%	21%	16%	14%	11%
	Washington State	29%	24%	18%	17%	12%

Percentage of Students Who Report Using an e-Cigarette or Vape Pens in the Last 30 Days by Grade<sup>36</sup>

		2014	2016	2018
6th Grade	Yakima County	N.A.	3%	5%
	Washington State	N.A.	1%	3%
8th Grade	Yakima County	11%	8%	12%
	Washington State	8%	6%	10%
10th Grade	Yakima County	16%	11%	17%
	Washington State	18%	13%	21%
12th Grade	Yakima County	19%	15%	22%
	Washington State	23%	20%	30%

**Substance Use**

**Healthy People 2020<sup>6</sup>**

Substance abuse has a major impact on individuals, families, and communities. The effects of substance abuse are cumulative, significantly contributing to costly social, physical, mental, and public health problems. These problems include:

- Teenage pregnancy
- Human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS)
- Other sexually transmitted infections (STIs)
- Domestic violence
- Child abuse
- Motor vehicle crashes
- Physical fights
- Crime
- Homicide
- Suicide<sup>130</sup>

Substance abuse refers to a set of related conditions associated with the consumption of mind- and behavior-altering substances that have negative behavioral and health outcomes. Social attitudes and political and legal responses to the consumption of alcohol and illicit drugs make substance abuse one of the most complex public health issues. In addition to the considerable health implications, substance abuse has been a flash-point in the criminal justice system and a major focal point in discussions about social values.

Advances in research have led to the development of evidence-based strategies to effectively address substance abuse.

Improvements in brain-imaging technologies and the development of medications that assist in treatment have gradually shifted the research community's perspective on substance abuse. There is now a deeper understanding of substance abuse as a disorder that develops in adolescence and, for some individuals, will develop

into a chronic illness that will require lifelong monitoring and care.

Improved evaluation of community-level prevention has enhanced researchers' understanding of environmental and social factors that contribute to the initiation and abuse of alcohol and illicit drugs, leading to a more sophisticated understanding of how to implement evidence-based strategies in specific social and cultural settings.

Percent of Adults Who Report Heavy Alcohol Consumption by Year<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	3.0%	3.25%	6.86%	4.04%	6.24%	5.16%
Washington State	6.33%	6.52%	6.81%	6.33%	7.17%	6.57%

Yakima County Percentage of Adults Who Report Heavy Alcohol Consumption by Gender, 2017<sup>52</sup>

	2017
Male	3.39%
Female	7.03%

Yakima County Percentage of Adults Who Report Heavy Alcohol Consumption by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	7.05%
American Indian/Alaskan Native Only	21.71%
Asian/Pacific Islander	N.A.
Black	N.A.
Hispanic As Race	2.25%



Percent of Adults Who Report Using Marijuana in the Past 30 Days by Year<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	4.61%	3.4%	6.34%	5.55%	11.42%	9.57%
Washington State	8.03%	9.6%	10.7%	12.79%	14.57%	16.6%

Yakima County Percentage of Adults Who Report Using Marijuana in the Past 30 Days by Gender, 2014-2016<sup>52</sup>

	2014-2016
Male	6.6%
Female	9.3%

Yakima County Percentage of Adults Who Report Using Marijuana in the Past 30 Days by Race/Ethnicity, 2014-2016<sup>52</sup>

	2014-2016
White	11.7%
American Indian/Alaskan Native Only	3.2%
Asian/Pacific Islander	0.8%
Black	0%
Hispanic As Race	2.3%

Yakima County Drug Overdose Deaths<sup>58</sup>

Drug Type	2010	2011	2012	2013	2014	2015	2016	2017
Any Drug	11.2	6.5	12.4	6.7	9.9	12.5	11.5	17.1
Any Opioid	8.4	5.1	8.0	2.6	5.8	5.6	6.4	10.1
Prescription Opioid	7.4	3.2	7.7	2.6	3.1	3.1	4.6	9.7
Heroin	0.9	2.2	0.9	0.7	4.4	3.1	2.8	1.6
Prescription Opioid (non-fentanyl)	7.0	3.2	7.2	2.0	3.1	2.6	3.2	6.0
Natural and semi-synthetic Opioids	4.8	2.0	6.1	2.0	2.7	2.6	2.8	6.0
Methadone	3.0	2.1	1.6	0.5	0.3	0.0	1.2	0.0
Synthetic Opioids, other than Methadone	0.9	0.0	0.8	0.5	0.0	0.4	1.4	4.6
Cocaine	0.0	0.4	0.0	0.5	0.0	0.9	2.8	0.4
Psycho Stimulant	2.6	1.4	2.6	3.1	2.5	6.8	4.9	9.1

Rate per 100,000 population (age-adjusted).

Yakima County Drug Related Hospitalizations<sup>31</sup>

Drug Type	2010	2011	2012	2013	2014	2015	2016	2017
Any Drug	130.6	121.1	116.0	96.4	79.5	81.9	83.0	84.1
Any Opioid	23.7	30.7	20.4	20.5	14.8	16.8	25.9	26.7
Heroin	NA	5.7	NA	NA	NA	NA	5.3	NA
Non-Heroin Opioid	20.3	25.1	17.2	17.0	12.9	14.5	20.6	24.9

Rate per 100,000 population (age-adjusted). NA—Data Not Available due to small numbers.

### Adolescent

Alcohol use by persons under age 21 years is a major public health problem. Alcohol is the most commonly used and abused drug among youth in the United States, more than tobacco and illicit drugs. Research indicates youth who start drinking before age 15 years are five times more likely to develop alcohol dependence or abuse later in life than those who begin drinking at or after age 21 years. Adolescent substance use and addiction is a national public health problem impacting communities across the nation. Exposure to alcohol, marijuana and other substances may interfere with adolescent brain development leading to adverse lifetime consequences. Drug and alcohol use can increase other risk behaviors, leading to injury, violence, victimization, sexually transmitted diseases, teen pregnancy, suicide and poor educational performance and completion. Youth are bombarded with mixed messages from the media, peers, family dynamics, and other places. Prevention efforts targeting the environment as well as individuals are effective in changing behaviors and health outcomes. Addressing social norms and perceived harm of substance use are critical in the implementation of prevention programs. Research shows prevention efforts improve school attendance, graduation rates, and reduce violence and mental health disorders, among other positive outcomes. Prevention programs that use a skills-based approach have demonstrated improving youth and community health outcomes.<sup>23</sup>

### Current Drinking—Students Who Report Drinking at Least Once in the Past Month<sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	5%	4%	3%	3%	4%
	Washington State	4%	3%	2%	2%	2%
8th Grade	Yakima County	20%	15%	12%	11%	13%
	Washington State	14%	12%	8%	8%	8%
10th Grade	Yakima County	31%	29%	24%	21%	20%
	Washington State	28%	23%	21%	20%	18%
12th Grade	Yakima County	38%	36%	30%	31%	26%
	Washington State	40%	36%	33%	32%	28%

### Binge Drinking—Students Who Report Drinking 3 or More Days in the Past Month and/or One or More Binge Drinking Episodes<sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	6%	5%	4%	3%	4%
	Washington State	4%	2%	2%	1%	2%
8th Grade	Yakima County	13%	11%	9%	7%	9%
	Washington State	8%	7%	5%	4%	5%
10th Grade	Yakima County	18%	19%	16%	12%	13%
	Washington State	16%	14%	11%	11%	10%
12th Grade	Yakima County	26%	23%	20%	18%	16%
	Washington State	25%	22%	19%	18%	15%

Marijuana\*—Students Report Using Marijuana at Least Once in Past Month<sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	3%	3%	3%	2%	3%
	Washington State	2%	1%	1%	1%	1%
8th Grade	Yakima County	13%	14%	13%	10%	13%
	Washington State	9%	9%	7%	6%	7%
10th Grade	Yakima County	21%	22%	21%	18%	19%
	Washington State	20%	19%	18%	17%	18%
12th Grade	Yakima County	23%	24%	26%	25%	25%
	Washington State	26%	27%	27%	26%	26%

\*While Marijuana is legal in Yakima County, the legal use age is 21 and over.

Illegal Drug Use\*—Students Report Using Illegal Drugs to Get High at Least Once in Past Month<sup>36</sup>

		2010	2012	2014	2016	2018
6th Grade	Yakima County	1%	1%	1%	1%	2%
	Washington State	1%	1%	1%	1%	1%
8th Grade	Yakima County	4%	4%	3%	5%	5%
	Washington State	3%	3%	2%	3%	3%
10th Grade	Yakima County	7%	7%	6%	7%	7%
	Washington State	7%	5%	4%	6%	6%
12th Grade	Yakima County	7%	7%	7%	8%	8%
	Washington State	8%	7%	7%	8%	7%

\*Illegal drug use includes prescription drugs not prescribed, Rx pain killers to get high, and all other illegal drugs; but does not include alcohol, tobacco or marijuana.

## Maternal, Infant And Child Health

### Healthy People 2020<sup>6</sup>

*Improving the well-being of mothers, infants, and children is an important public health goal for the United States. Their well-being determines the health of the next generation and can help predict future public health challenges for families, communities, and the health care system.*

*Pregnancy can provide an opportunity to identify existing health risks in women and to prevent future health problems for women and their children. These health risks may include:*

- Hypertension and heart disease
- Diabetes
- Depression
- Genetic conditions
- Sexually transmitted diseases (STDs)
- Tobacco use and alcohol abuse
- Inadequate nutrition
- Unhealthy weight

*The risk of maternal and infant mortality and pregnancy-related complications can be reduced by increasing access to quality preconception (before pregnancy) and interconception*

*(between pregnancies) care. Moreover, healthy birth outcomes and early identification and treatment of health conditions among infants can prevent death or disability and enable children to reach their full potential.<sup>132 133 134</sup>*

### Social Determinants of Maternal Health

*These include prepregnancy health behaviors and health status,<sup>135</sup> which are influenced by a variety of environmental and social factors such as access to health care and chronic stress.<sup>136</sup>*

### Physical Determinants of Maternal Health

*Common barriers to a healthy pregnancy and birth include lack of access to appropriate health care before and during pregnancy. In addition, environmental factors can shape a woman's overall health status before, during, and after pregnancy by:*

- Affecting her health directly.
- Affecting her ability to engage in healthy behaviors.

### Social Determinants of Infant and Child Health

*The social determinants that influence maternal health also affect pregnancy outcomes and infant health. Racial and ethnic disparities in infant mortality exist, particularly*

*for African American infants. Child health status varies by both race and ethnicity, as well as by family income and related factors, including educational attainment among household members and health insurance coverage.<sup>137</sup>*

### Physical Determinants of Infant and Child Health

*The cognitive and physical development of infants and children is influenced by the health, nutrition, and behaviors of their mothers during pregnancy and early childhood. Breast milk is widely acknowledged to be the most complete form of nutrition for most infants, with a range of benefits for their health, growth, immunity, and development.<sup>138 139</sup> Furthermore, children reared in safe and nurturing families and neighborhoods, free from maltreatment and other social adversities, are more likely to have better outcomes as adults.<sup>140 141</sup>*

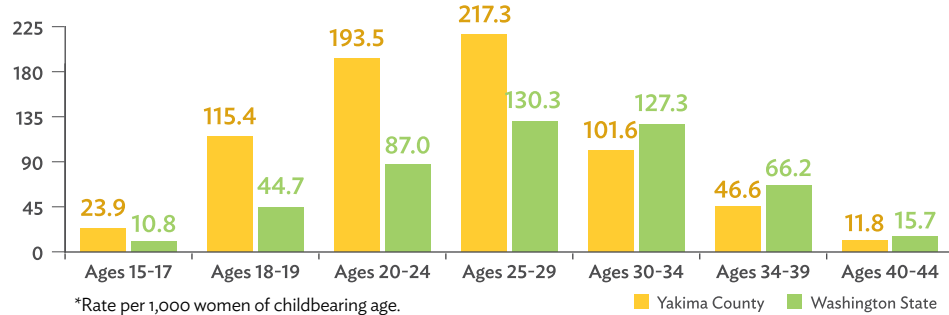
Fertility

Fertility Rate<sup>142</sup>

	2010	2011	2012	2013	2014	2015	2016
Yakima County	91.2	87.9	85.9	82.5	86.5	84.5	84.6
Washington State	63.8	64.2	64.4	63.6	64.5	64.4	64.6

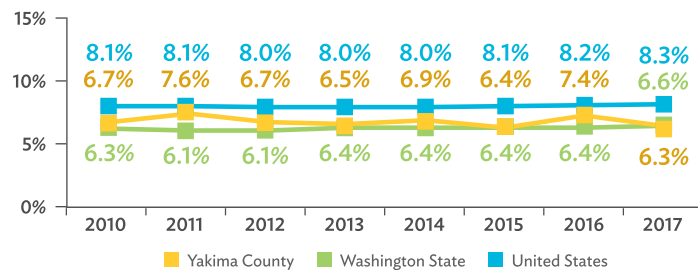
\*Rate per 1,000 women of childbearing age 15-44 years old.

Age Specific Fertility Rates, 2016<sup>142</sup>



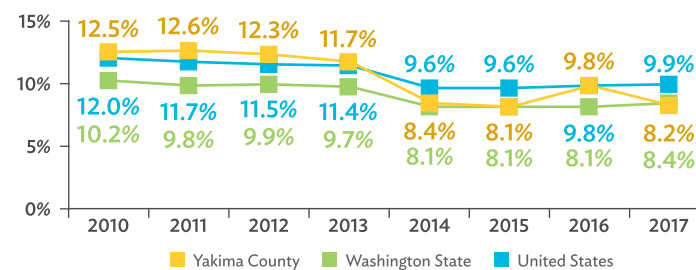
Low Birth Weight

Percent of Live Births with Birth Weight of Less Than 2,500 Grams (5 lbs., 8oz)<sup>143</sup>



Pre-term Births

Percent Infants Born Before 37 Completed Weeks of Gestation<sup>143</sup>



### Teen Births

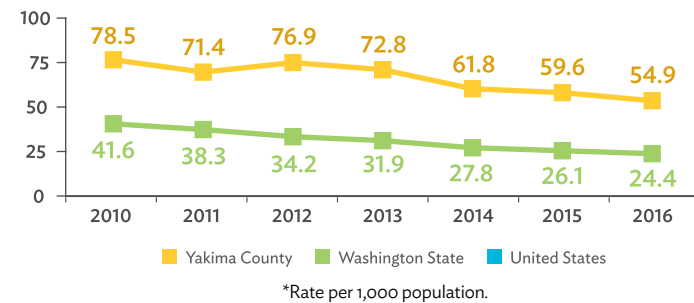
In the United States, half of all pregnancies are unplanned. Of those 3.4 million unplanned pregnancies, approximately 305,000<sup>144</sup> are to girls' ages 15–19 years old. U.S. teen pregnancy and birth rates have declined dramatically over the past twenty years and are now at historic lows; however the U.S. teen birth rates remain far higher than in other comparable countries and continue to cost the U.S. \$12.5 billion dollars a year.<sup>145</sup>

Public funding for family planning services helps to prevent unintended pregnancies; for every \$1 spent on family planning services, \$5.68 in pregnancy-related Medicaid expenditures is saved.<sup>146</sup> Furthermore, family planning funding supports access to contraception, cancer screening and prevention, HIV and STI testing and treatment, pregnancy planning, screening for intimate partner violence, and referrals for prenatal care, substance abuse treatment, and primary care.<sup>147</sup>

Sexual and reproductive health education is an important part of overall health education of teenagers. Sexual and reproductive health education includes knowledge of emotional and physiological body changes during

puberty. This knowledge is becoming increasingly important as youth today are entering puberty earlier in life and are often unaware of the changes happening to their bodies. Sexual and reproductive health education provides a framework for youth to learn about healthy vs. unhealthy relationships and community resources on this topic.

Birth Rate to Women Age 15-19<sup>26</sup>



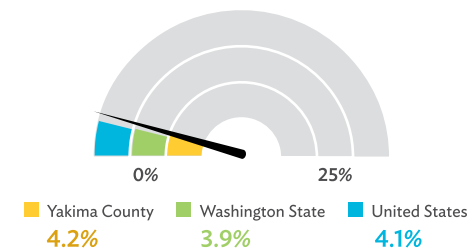
### Children with Special Health Needs

As defined by the Maternal and Child Health Bureau and accepted by the American Academy of Pediatrics (AAP), “children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally.”<sup>148</sup> It has become apparent that these more extensive health and related services require forethought in the development of their structure and coordination. Healthy People 2020 calls for all children with special health care needs to receive

coordinated, ongoing, comprehensive care within a medical home.<sup>149</sup> Care coordination plays an essential role in ongoing efforts to integrate health and related systems of care for children and youth with special health care needs.<sup>150</sup> Although efforts to better define the population continue,<sup>151</sup> data support the fact that children with special health care needs account for a substantial amount of health services utilization. Children with special health care needs are estimated to account for 13% of all children, yet they represent 70% of health care expenditures.<sup>152 153 154</sup> Individuals with chronic illness need coordinated services to provide chronic care management. Recent research

supports the benefits of professional care coordination in clinical and process improvements and in reducing health care costs and improving family satisfaction.<sup>155 156 157 158 159</sup>

Children under the Age of 18 with a Disability<sup>1</sup>



**Adverse Childhood Experiences (ACEs)**

**Centers for Disease Control and Prevention (CDC)<sup>160</sup>**

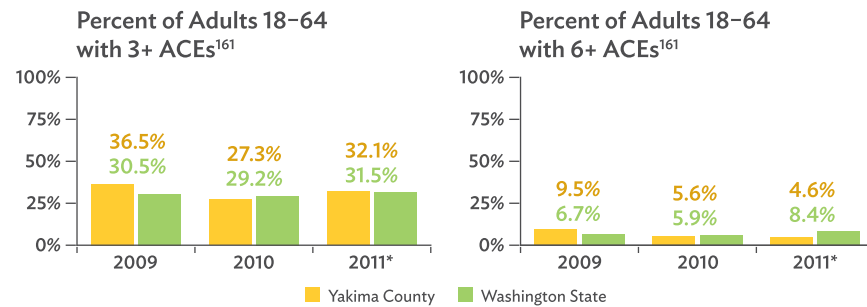
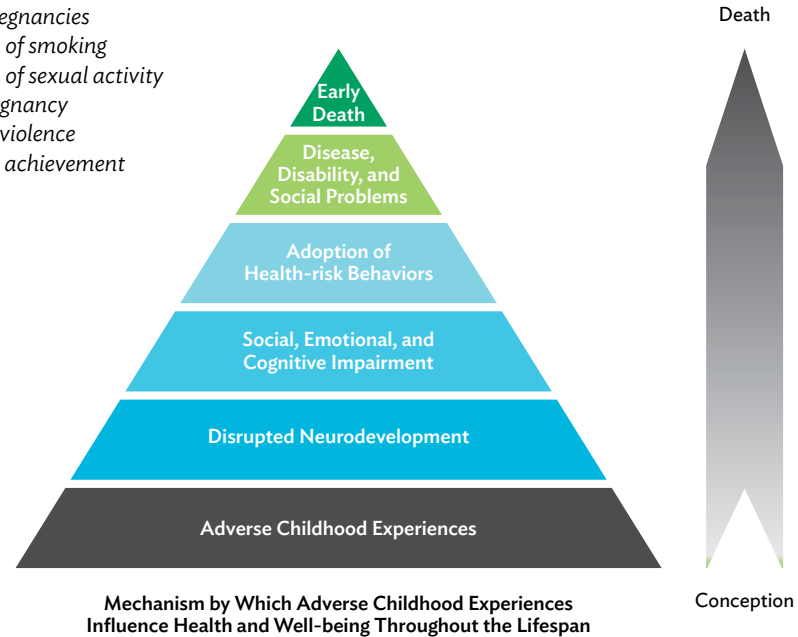
Adverse Childhood Experiences (ACEs) are common. Almost two-thirds of study participants reported at least one ACE, and more than one in five reported three or more ACEs.

The ACE score, a total sum of the different categories of ACEs reported by participants, is used to assess cumulative childhood stress. Study findings repeatedly reveal a graded dose-response relationship between ACEs and negative health and well-being outcomes across the life course.

As the number of ACEs increases so does the risk for the following:

- Alcoholism and alcohol abuse
- Chronic obstructive pulmonary disease
- Depression
- Fetal death
- Health-related quality of life
- Illicit drug use
- Ischemic heart disease
- Liver disease
- Poor work performance
- Financial stress
- Risk for intimate partner violence
- Multiple sexual partners
- Sexually transmitted diseases
- Smoking
- Suicide attempts

- Unintended pregnancies
- Early initiation of smoking
- Early initiation of sexual activity
- Adolescent pregnancy
- Risk for sexual violence
- Poor academic achievement



\* In 2011, the CDC changed the methodology to include cell phones and weighting the data differently; results from 2011 and later are not directly comparable to those from earlier years.



## Reproductive/Sexual Health

### Sexually Transmitted Infections (STIs)

#### Healthy People 2020<sup>6</sup>

Sexually Transmitted Infections (STIs) refer to more than 25 infectious organisms that are transmitted primarily through sexual activity. STI prevention is an essential primary care strategy for improving reproductive health.<sup>162</sup>

The CDC estimates that there are approximately 20 million new STI infections each year—almost half of them among young people ages 15 to 24.3 The cost of STIs to the U.S. health care system is estimated to be as much as \$16 billion annually.<sup>163</sup> Because many cases of STIs go undiagnosed—and some common viral infections, such as human papillomavirus (HPV) and genital herpes, are not reported to CDC at all—the reported cases of chlamydia, gonorrhea, and syphilis represent only a fraction of the true burden of STIs in the United States.

Untreated STIs can lead to serious long-term health consequences, especially for adolescent girls and young women. CDC estimates that undiagnosed and untreated STIs cause at least 24,000 women in the United States each year to become infertile.<sup>164</sup>

Despite their burdens, costs, and complications, and the fact that they are largely preventable, STIs remain a significant public health problem in the United States. This problem is largely unrecognized by the public, policymakers, and health care professionals.

Biological factors that affect the spread and complications of STIs include:

- **Asymptomatic nature of STIs.** The majority of STIs either do not produce any symptoms or signs, or they produce symptoms so mild that they are unnoticed; consequently, many infected persons do not know that they need medical care.
- **Gender disparities.** Women suffer more frequent and more serious STI complications than men do. Among the most serious STI complications are pelvic inflammatory disease, ectopic pregnancy (pregnancy outside of the uterus), infertility, and chronic pelvic pain.<sup>165</sup>
- **Age disparities.** Young people ages 15 to 24 account for half of all new STIs, although they represent just 25% of the sexually experienced population. Adolescent females may have increased susceptibility to infection because of increased cervical ectopy.<sup>166</sup>

Social, economic, and behavioral factors that affect the spread of STIs include:

- **Racial and ethnic disparities.** Certain racial and ethnic groups (mainly African American, Hispanic, and American Indian/Alaska Native populations) have high rates of STIs, compared with rates for whites. Race and ethnicity in the United States are correlated with other determinants of health status, such as poverty, limited access to health care, fewer attempts to get medical treatment, and living in communities with higher rates of STIs.<sup>167</sup>

- **Poverty and marginalization.** STIs disproportionately affect disadvantaged people and people in social networks where high-risk sexual behavior is common, and either access to care or health-seeking behavior is compromised.
- **Access to health care.** Access to high-quality health care is essential for early detection, treatment, and behavior-change counseling for STIs. Groups with the highest rates of STIs are often the same groups for whom access to or use of health services is most limited.<sup>168 169</sup>
- **Substance abuse.** Many studies document the association of substance abuse with STIs. The introduction of new illicit substances into communities often can alter sexual behavior drastically in high-risk sexual networks, leading to the epidemic spread of STIs.<sup>170</sup>
- **Sexuality and secrecy.** Perhaps the most important social factors contributing to the spread of STIs in the United States are the stigma associated with STIs and the general discomfort of discussing intimate aspects of life, especially those related to sex.<sup>171</sup> These social factors separate the United States from industrialized countries with low rates of STIs.
- **Sexual networks.** Sexual networks refer to groups of people who can be considered “linked” by sequential or concurrent sexual partners. A person may have only one sex partner, but if that partner is a member of a risky sexual network, then the person is at higher risk for STIs than a similar individual from a lower-risk network.

Incidence Rates of Sexually Transmitted Infections, 2017<sup>172</sup>

Disease	Yakima County	Washington State
Chlamydia	649.41	433.95
Gonorrhea	171.15	137.09
Syphilis	14.62	24.08
Herpes	30.04	28.15

Rate per 100,000 population

Yakima County Sexually Transmitted Infection Incidence Rates by Year<sup>172</sup>

Drug Type	2010	2011	2012	2013	2014	2015	2016	2017
Chlamydia	456.77	500.61	529.27	557.74	604.5	638.88	633.32	649.41
Gonorrhea	13.98	40.46	33.33	72.8	163.18	150.42	176.56	171.15
Syphilis	5.76	6.95	5.69	15.77	16.88	9.2	15.94	14.62
Herpes	20.56	30.24	24.39	22.65	24.12	44.01	25.11	30.04

Rate per 100,000 population

**HIV Prevalence**

HIV stands for human immunodeficiency virus. If left untreated, HIV can lead to the disease AIDS (acquired immunodeficiency syndrome). Unlike some other viruses, the human body can't get rid of HIV completely. So once you have HIV, you have it for life. HIV attacks the body's immune system, specifically the CD4 cells (T cells), which help the immune system fight off infections. If left untreated, HIV reduces the number of CD4 cells (T cells) in the body, making the person more likely to get infections or infection-related cancers. Over time, HIV can destroy so many of these cells that the body can't fight off infections and disease. These opportunistic infections or cancers take advantage of a very weak immune system and signal that the person has AIDS, the last state of HIV infection. No effective cure for HIV currently exists, but with proper treatment and medical care, HIV can be controlled.<sup>173</sup>

This indicator is relevant because HIV is a life-threatening communicable disease that disproportionately affects minority populations and may also indicate the prevalence of unsafe sex practices. Although, Yakima County has a significantly lower rate of population with HIV/AIDS than both state and national rates, there are significant Race/Ethnicity disparities, with Hispanic/Latino and especially Non-Hispanic Black populations having higher rates of HIV than the Non-Hispanic White population.

**Rate of Population with Living Cases of HIV Infection<sup>174</sup>**

	2017
Yakima County	97.2
Washington State	179.9

\*Rate per 100,000 population

**Percent of Adults Who Have Been Screened for HIV by Year<sup>52</sup>**

	2012	2013	2014	2015	2016	2017
Yakima County	31.74%	31.5%	32.25%	32.33%	36.08%	37.68%
Washington State	36.27%	38.89%	37.01%	38.53%	37.76%	41.03%

**Yakima County Percentage of Adults Who Have Been Screened for HIV by Gender, 2017<sup>52</sup>**

	2017
Male	35.16%
Female	40.25%

**Yakima County Percentage of Adults Who Have Been Screened for HIV by Race/Ethnicity by Race/Ethnicity, 2017<sup>52</sup>**

	2017
White	44.01%
American Indian/Alaskan Native Only	16.6%
Asian/Pacific Islander	57.73%
Black	N.A.
Hispanic As Race	29.3%

**Adolescent Sexual Behavior**

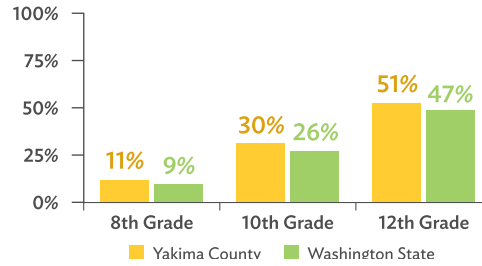
Centers for Disease Control and Prevention (CDC)<sup>175</sup>

Many young people engage in sexual risk behaviors that can result in unintended health outcomes. For example, among U.S. high school students surveyed in 2013:<sup>176</sup>

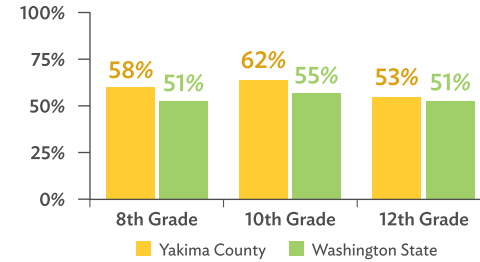
- 47% ever had sexual intercourse.
- 34% had had sexual intercourse during the previous 3 months, and, of these
- 41% did not use a condom the last time they had sex.
- 15% had had sex with four or more people
- Only 22% of sexually experienced students have ever been tested for HIV

Sexual risk behaviors place adolescents at risk for HIV infection, other sexually transmitted diseases (STDs), and unintended pregnancy. To reduce sexual risk behaviors and related health problems among youth, schools and other youth-serving organizations can help young people adopt lifelong attitudes and behaviors that support their health and well-being—including behaviors that reduce their risk for HIV, other STDs, and unintended pregnancy. HIV awareness and education should be universally integrated into all educational environments. CDC recommends all adolescents and adults 13-64 get tested for HIV at least once as part of routine medical care.

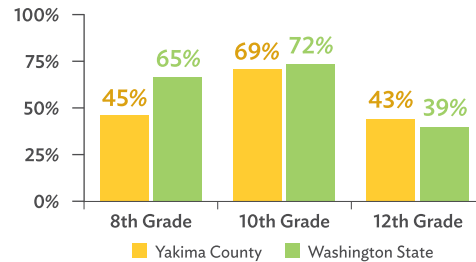
Percentage of Adolescents Who Report Ever Having Sexual Intercourse, 2018<sup>36</sup>



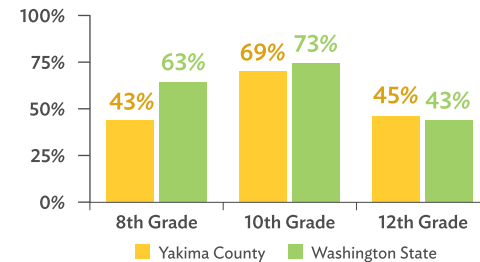
Used a condom to prevent STDs, 2018<sup>36</sup>



Taught Abstinence to Prevent STDs and Pregnancy, 2018<sup>36</sup>



Taught Other Ways to Prevent STDs and Pregnancy, 2018<sup>36</sup>



## Mental Health

### Adults

#### Healthy People 2020<sup>6</sup>

*Mental health is a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with challenges. Mental health is essential to personal well-being, family and interpersonal relationships, and the ability to contribute to community or society.*

*Mental disorders are health conditions that are characterized by alterations in thinking, mood, and/or behavior that are associated with distress and/or impaired functioning. Mental disorders contribute to a host of problems that may include disability, pain, or death. Mental illness is the term that refers collectively to all diagnosable mental disorders.*

*Mental disorders are among the most common causes of disability. The resulting disease burden of mental illness is among the highest of all diseases. According to the National Institute of Mental Health (NIMH), in any given year, an estimated 13 million American adults (approximately 1 in 17) have a seriously debilitating mental illness.<sup>177 178</sup> Mental health disorders are the leading cause of disability in the United States and Canada, accounting for 25% of all years of life lost to disability and premature mortality.<sup>179</sup> Moreover, suicide is the 11th leading cause of death in the United States, accounting for the deaths of approximately 30,000 Americans each year.<sup>180 181</sup>*

*Mental health and physical health are closely connected. Mental health plays a major role*

*in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, affect people's ability to participate in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.<sup>182</sup>*

#### Understanding Mental Health and Mental Disorders

*The existing model for understanding mental health and mental disorders emphasizes the interaction of social, environmental, and genetic factors throughout the lifespan. In behavioral health, researchers identify:*

- Risk factors, which predispose individuals to mental illness
- Protective factors, which protect them from developing mental disorders

*Over the past 20 years, research on the prevention of mental disorders has progressed. The understanding of how the brain functions under normal conditions and in response to stressors, combined with knowledge of how the brain develops over time, has been essential to that progress. The major areas of progress include evidence that:*

- Mental, emotional and behavioral disorders are common and begin early in life.
- The greatest opportunity for prevention is among young people.
- There are multiyear effects of multiple preventive interventions on reducing substance abuse, conduct disorder, antisocial behavior, aggression, and child maltreatment.

- The incidence of depression among pregnant women and adolescents can be reduced.
- School-based violence prevention can reduce the base rate of aggressive problems in an average school by 25 to 33%.
- There are potential indicated preventive interventions for schizophrenia.
- Improving family functioning and positive parenting can have positive outcomes on mental health and can reduce poverty-related risk.
- School-based preventive interventions aimed at improving social and emotional outcomes can also improve academic outcomes.
- Interventions targeting families dealing with adversities, such as parental depression or divorce, can be effective in reducing risk for depression among children and increasing effective parenting.
- Some preventive interventions have benefits that exceed costs, with the available evidence strongest for early childhood interventions.
- Implementation is complex, and it is important that interventions be relevant to the target audiences.

*The progress identified above has led to a stronger understanding of the importance of protective factors. Multidisciplinary prevention strategies at the community level that support the development of children in healthy social environments have been the most successful. In addition to advancements in the prevention of mental disorders, there continues to be steady progress in treating mental disorders as new drugs and stronger evidence-based outcomes become available.*

### Poor Mental Health

Percentage of Adults Age 18 and Older That Report Poor Mental Health<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	8.96%	12.76%	12.12%	14.14%	14.33%	13.91%
Washington State	11.67%	11.6%	11.05%	11.17%	11.66%	12.73%

Yakima County Percentage of Adults That Report Poor Mental Health by Gender, 2017<sup>52</sup>

	2017
Male	6.03%
Female	20.67%

Yakima County Percentage of Adults That Report Poor Mental Health by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	18.48%
American Indian/Alaskan Native Only	16.17%
Asian/Pacific Islander	8.92%
Black	N.A.
Hispanic As Race	N.A.

### Depression

Percentage of Adults That Have Been Told They Have a Depressive Disorder<sup>52</sup>

	2012	2013	2014	2015	2016	2017
Yakima County	26.01%	21.09%	22.54%	20.77%	19.39%	18.8%
Washington State	22.27%	23.47%	21.62%	21.76%	21.14%	23.62%

Yakima County Percentage of Adults That Have Been Told They Have a Depressive Disorder by Gender, 2017<sup>52</sup>

	2017
Male	9.52%
Female	26.72%

Yakima County Percentage of Adults That Have Been Told They Have a Depressive Disorder by Race/Ethnicity, 2017<sup>52</sup>

	2017
White	27.28%
American Indian/Alaskan Native Only	46.08%
Asian/Pacific Islander	11.8%
Black	N.A.
Hispanic As Race	N.A.

### Adolescents

Emotional health is a vital part of overall health and well-being. A person's emotional health, including thoughts and feelings, influence his or her ability to lead a satisfying and productive life. The mental health of a community depends on the opportunities its members have to experience safe, caring and secure environments in families, schools, work settings and community life.

For adolescents, this period of time can be a challenging developmental stage with episodes of confusion, wonder and discovery. Self-esteem and peer relations are critical aspects for youth development. Understanding and supporting the needs of all youth are critical to launching self-assured and positive members of society who are healthy in mind, spirit and body.<sup>23</sup>

### Depression

Students Who Report Feeling Sad or Hopeless for at Least Two Weeks in the Past Year<sup>36</sup>

		2010	2012	2014	2016	2018
8th Grade	Yakima County	29%	32%	34%	31%	35%
	Washington State	25%	26%	27%	28%	32%
10th Grade	Yakima County	34%	36%	38%	37%	41%
	Washington State	30%	31%	35%	34%	40%
12th Grade	Yakima County	35%	34%	38%	37%	43%
	Washington State	28%	30%	34%	37%	41%

### Suicide

Students Who Report Reported Considering Suicide in the Past Year<sup>36</sup>

		2010	2012	2014	2016	2018
8th Grade	Yakima County	18%	17%	19%	17%	19%
	Washington State	15%	17%	16%	17%	20%
10th Grade	Yakima County	19%	19%	21%	20%	21%
	Washington State	18%	19%	20%	21%	23%
12th Grade	Yakima County	17%	17%	19%	18%	20%
	Washington State	14%	17%	18%	20%	22%

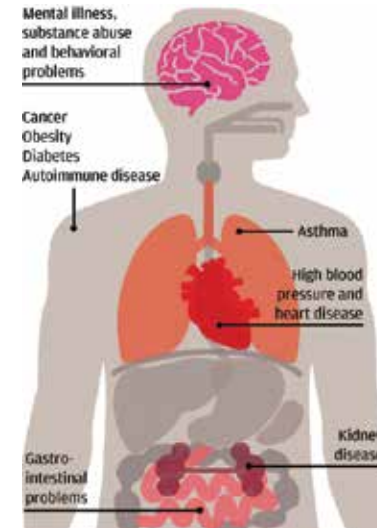
Students Who Report Attempting Suicide in the Past Year<sup>36</sup>

	8th Grade	10th Grade	12th Grade
Yakima County	11%	11%	9%
Washington State	10%	10%	9%

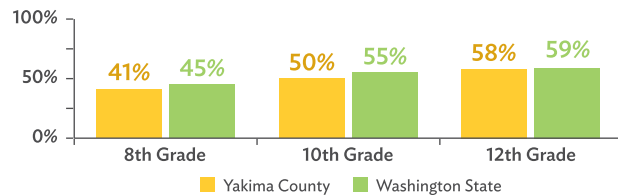
### Anxiety

Stress is the physiological demand placed on the body when one must adapt, cope or adjust.<sup>183</sup> It can be healthful and essential in keeping an individual alert; however, intense or prolonged stress can be overwhelming on the body. Long-term activation of the stress-response system can disrupt almost all of the body's processes and increase the risk for numerous health problems.<sup>184,185</sup> Allostatic load is the cumulative biological burden exacted on the body through daily adaptation to physical and emotional stress. It is considered to be a risk factor for several diseases—coronary vascular disease, obesity, diabetes, depression, cognitive impairment and both inflammatory and autoimmune disorders.<sup>186</sup> Stress may prematurely age the immune system and could enhance the risk of illness as well as age-related diseases.<sup>187,188</sup>

Adolescence is time of dramatic changes in Hypothalamic-Pituitary-Adrenal (HPA) function and stress responsiveness. Adolescence is also a significant period of continued neural maturation, specifically within stress-sensitive limbic and cortical regions. Thus it is possible that prolonged or repeated exposure to stress may result in a heightened sensitivity to these stressors, ultimately leading to maladaptive neurobehavioral development. Though the physiological and psychological implications of stress on the adolescent brain are far from clear, the increases in stress-related dysfunctions during adolescence, such as anxiety, depression, schizophrenia, and drug abuse highlight the importance of a better understanding of the interaction between changes in stress reactivity and adolescent brain development.<sup>189,190</sup>

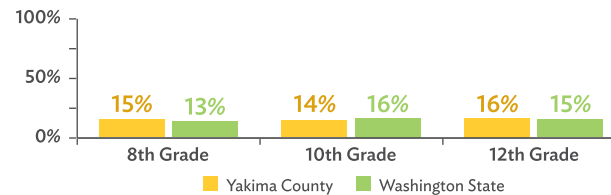


Students Who Report Feeling Anxious and Are Not Able to Stop or Control Worrying in the Past Two Weeks<sup>36</sup>



### Support

Students Who Report They Have **NO** Adult to Turn to When They Feel Sad or Hopeless<sup>36</sup>





## Fatality and Injury

### Healthy People 2020<sup>6</sup>

Injuries are the leading cause of death for Americans ages 1 to 44, and a leading cause of disability for all ages, regardless of sex, race/ethnicity, or socioeconomic status. More than 180,000 people die from injuries each year, and approximately 1 in 10 sustains a nonfatal injury serious enough to be treated in a hospital emergency department.<sup>191</sup> Beyond their immediate health consequences, injuries and violence have a significant impact on the well-being of Americans by contributing to:

- Premature death
- Years of potential life lost
- Disability and disability-adjusted-life-years lost
- Poor mental health
- High medical costs
- Lost productivity<sup>192 193</sup>

The effects of injuries extend beyond the injured person to family members, friends, coworkers, employers, and communities.

#### Understanding Injury and Violence Prevention

Numerous determinants (factors) can affect the risk of unintentional injury and violence.

#### Individual Behaviors

The choices people make about individual behaviors, such as alcohol and drug use, or risk-taking, are often connected with factors in the social and physical environment and can increase injuries.<sup>194 195</sup>

#### Physical Environment

The physical environment, both in the home and community, can affect the rate of injuries related to falls, fires and burns, road traffic injuries, drowning, and violence.<sup>196 197 198</sup>

#### Access to Services

Access to health services, such as systems created for injury-related care, ranging from prehospital and acute care to rehabilitation, can reduce the consequences of injuries, including death and long-term disability.

#### Social Environment

The social environment has a notable influence on the risk for injury and violence through:

- Individual social experiences (for example, social norms, education, victimization history)
- Social relationships (for example, parental monitoring and supervision of youth, peer group associations, family interactions)

- Community environment (for example, cohesion in schools, neighborhoods, and communities)
- Societal-level factors (for example, cultural beliefs, attitudes, incentives and disincentives, laws and regulations)<sup>199</sup>

Interventions that address these social and physical factors have the potential to prevent unintentional injuries and violence. Efforts to prevent unintentional injury may focus on:

- Modifications of the environment
- Improvements in product safety
- Legislation and enforcement
- Education and behavior change
- Technology and engineering<sup>200</sup>

*Fatalities*

Top 9 Leading Causes of Fatality<sup>59</sup>

	Yakima County			Washington State		
	2010	2014	2017	2010	2014	2017
Motor Vehicle—Traffic	14.80	16.08	19.77	7.58	7.82	8.22
Poisoning	13.16	10.85	19.29	15.20	15.73	17.33
Firearm	15.21	12.46	18.99	9.03	9.97	11.23
Falls	9.46	10.85	8.61	12.24	14.41	14.02
Suffocation	5.76	6.43	4.32	4.58	5.91	7.00
Not Specified	1.23	2.41	3.46	0.92	1.88	1.58
Drowning	3.70	0.80	2.28	1.98	1.82	1.67
Other Pedestrian	0.41	0.00	1.09	0.34	0.29	0.59
Cut/Pierce	1.64	0.80	1.06	0.71	0.77	0.76

Rate per 100,000 resident population. Ranked by 2017 Yakima County rates.

*Non-Fatal Injuries*

Top 7 Leading Causes of Injury<sup>201</sup>

	Yakima County		Washington State	
	2016	2017	2016	2017
Fall	289.64	328.56	327.4	342.74
Motor Vehicle Traffic	48.05	73.17	50.32	50.81
Firearm	15.62	27.27	7.61	7.7
Struck	21.21	15.63	21.24	20.55
Cut	14.88	9.62	14.71	15.09
Machinery	5.16	6.75	2.5	2.13
Drowning	0.74	0.32	0.54	0.42

Rate per 100,000 resident population. Ranked by 2017 Yakima County rates.

# PHYSICAL ENVIRONMENT

## Healthy People 2020<sup>6</sup>

Humans interact with the environment constantly. These interactions affect quality of life, years of healthy life lived, and health disparities. The World Health Organization (WHO) defines environment, as it relates to health, as “all the physical, chemical, and biological factors external to a person, and all the related behaviors.”<sup>202</sup>

Environmental health consists of preventing or controlling disease, injury, and disability related to the interactions between people and their environment.

Maintaining a healthy environment is central to increasing quality of life and years of healthy life. Globally, nearly 25% of all deaths and the total disease burden can be attributed to environmental factors.<sup>202</sup> Environmental factors are diverse and far reaching. They include:

- Exposure to hazardous substances in the air, water, soil, and food
- Natural and technological disasters
- Physical hazards
- Nutritional deficiencies
- The built environment

Poor environmental quality has its greatest impact on people whose health status is already at risk. Therefore, environmental health must address the societal and environmental factors that increase the likelihood of exposure and disease.

## Outdoor Air Quality

Poor air quality is linked to premature death,

cancer, and long-term damage to respiratory and cardiovascular systems. Progress has been made to reduce unhealthy air emissions, but, in 2008, approximately 127 million people lived in U.S. counties that exceeded national air quality standards.<sup>203</sup> Decreasing air pollution is an important step in creating a healthy environment.

## Surface and Ground Water

Surface and ground water quality applies to both drinking water and recreational waters. Contamination by infectious agents or chemicals can cause mild to severe illness. Protecting water sources and minimizing exposure to contaminated water sources are important parts of environmental health.

## Toxic Substances and Hazardous Wastes

The health effects of toxic substances and hazardous wastes are not yet fully understood. Research to better understand how these exposures may impact health is ongoing. Meanwhile, efforts to reduce exposures continue. Reducing exposure to toxic substances and hazardous wastes is fundamental to environmental health.

## Homes and Communities

People spend most of their time at home, work, or school. Some of these environments may expose people to:

- Indoor air pollution
- Inadequate heating and sanitation

- Structural problems
- Electrical and fire hazards
- Lead-based paint hazards

These hazards can impact health and safety. Maintaining healthy homes and communities is essential to environmental health.

## Emerging Issues in Environmental Health

Environmental health is a dynamic and evolving field. While not all complex environmental issues can be predicted, some known emerging issues in the field include:

### Climate Change

Climate change is projected to impact sea level, patterns of infectious disease, air quality, and the severity of natural disasters such as floods, droughts, and storms.<sup>204 205</sup>

### Disaster Preparedness

Preparedness for the environmental impact of natural disasters as well as disasters of human origin includes planning for human health needs and the impact on public infrastructure, such as water and roadways.<sup>206</sup>

### The Built Environment

Features of the built environment appear to impact human health-influencing behaviors, physical activity patterns, social networks, and access to resources.<sup>207</sup>

## Environmental Health Disparities

### Washington Department of Health<sup>208</sup>

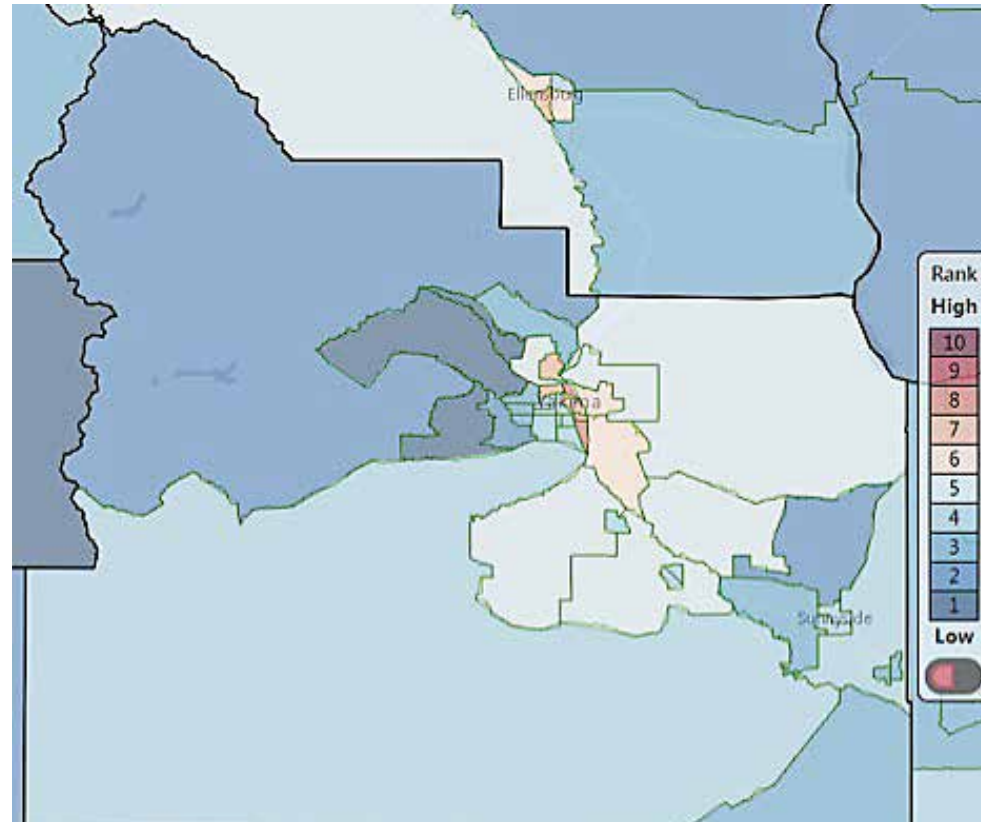
The Washington Environmental Health Disparities Map evaluates environmental health risk factors in communities. It estimates a cumulative environmental health impact score for each census tract reflecting pollutant exposures and factors that affect people's vulnerability to environmental pollution.

Threat is represented by indicators that account for pollution burden, which is a combination of environmental effects and environmental exposures in communities. Environmental effects include indicators that account for adverse environmental quality generally, even when population contact with an environmental hazard is unknown or uncertain. Environmental exposures include the levels of certain pollutants that populations come into contact with.

Vulnerability is represented by indicators of socioeconomic factors and sensitive populations for which there is clear evidence that they may affect susceptibility or vulnerability to an increased pollution burden. Indicators in socioeconomic factors measure population characteristics that modify the pollution burden itself. Sensitive populations refer to those who are at greater risk due to intrinsic biological vulnerability to environmental stressors.

In the model, threat is multiplied by vulnerability in order to reflect the scientific literature that indicates population characteristics often modify and amplify the impact of pollution exposures on certain vulnerable populations. The rankings help to compare health and social factors that may contribute to disparities in a community. You should not interpret rankings as absolute values. Do not use them to diagnose a community health issue or to label a community.

Yakima County Environmental Exposures by Census Tract, 2019<sup>208</sup>



\*This indicator includes: diesel emissions; ozone concentration; PM2.5 concentration; populations near heavy traffic roadways; and toxic releases from facilities.

### Particle Pollution<sup>208</sup>

#### American Lung Association<sup>209</sup>

Particle pollution can be very dangerous to breathe. Breathing particle pollution may trigger illness, hospitalization and premature death, risks that are showing up in new studies that validate earlier research. Thanks to steps taken to reduce particle pollution, good news is growing from researchers who study the drop in year-round levels of particle pollution. Looking at air quality in 545 counties in the U.S. between 2000 and 2007, researchers found that people had approximately four months added to their life expectancy on average due to cleaner air.<sup>210</sup> Another long-term study of six U.S. cities tracked from 1974 to 2009 added more evidence of the benefits. Their findings suggest that cleaning up particle pollution had almost immediate health benefits. They estimated that the U.S. could prevent approximately 34,000 premature deaths a year if the nation could lower annual levels of particle pollution by  $1\mu\text{g}/\text{m}^3$ .<sup>211</sup> Other researchers estimated that reductions in air pollution can be expected to produce rapid improvements in public health, with fewer deaths occurring within the first two years after reductions.<sup>212</sup> These studies add to the growing research that cleaning up air pollution improves life and health.

#### Short-Term Exposure Can Be Deadly

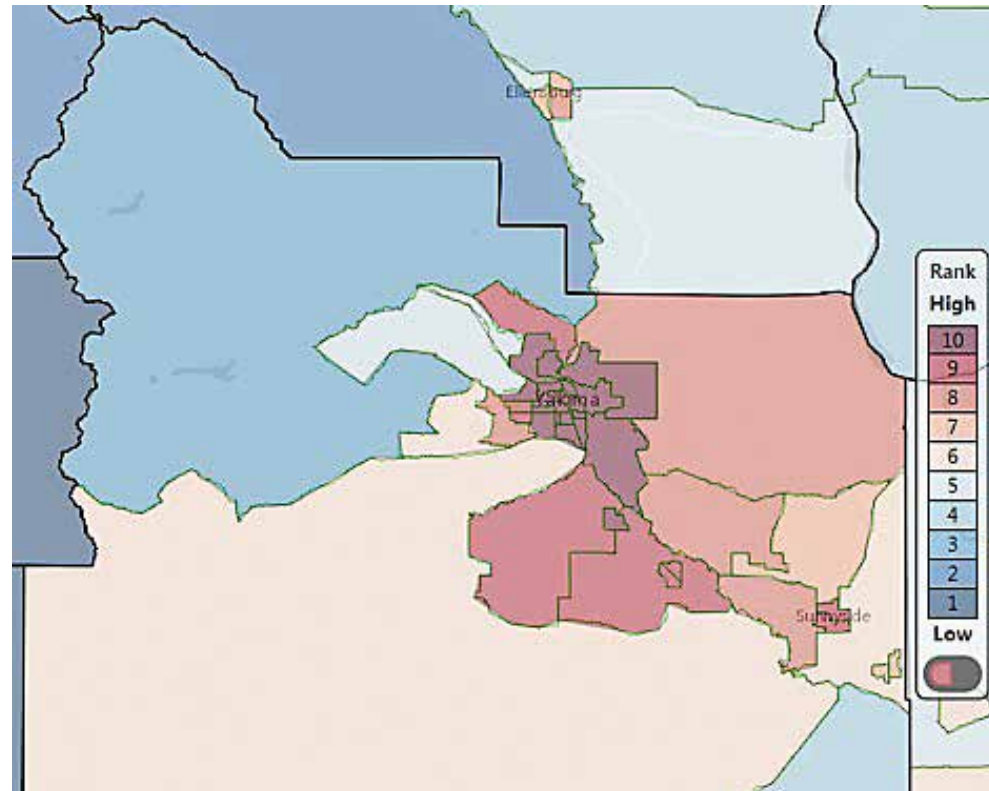
First and foremost, short-term exposure to particle pollution can kill. Peaks or spikes in particle pollution can last for hours to days. Deaths can occur on the very day that particle levels are high, or within one to two months afterward. Particle pollution does not just make people die a few days earlier than they might otherwise—

these are deaths that would not have occurred if the air were cleaner.<sup>213</sup> Particle pollution also diminishes lung function, causes greater use of asthma medications and increased rates of school absenteeism, emergency room visits and hospital admissions. Other adverse effects include coughing, wheezing, cardiac arrhythmias and heart attacks.

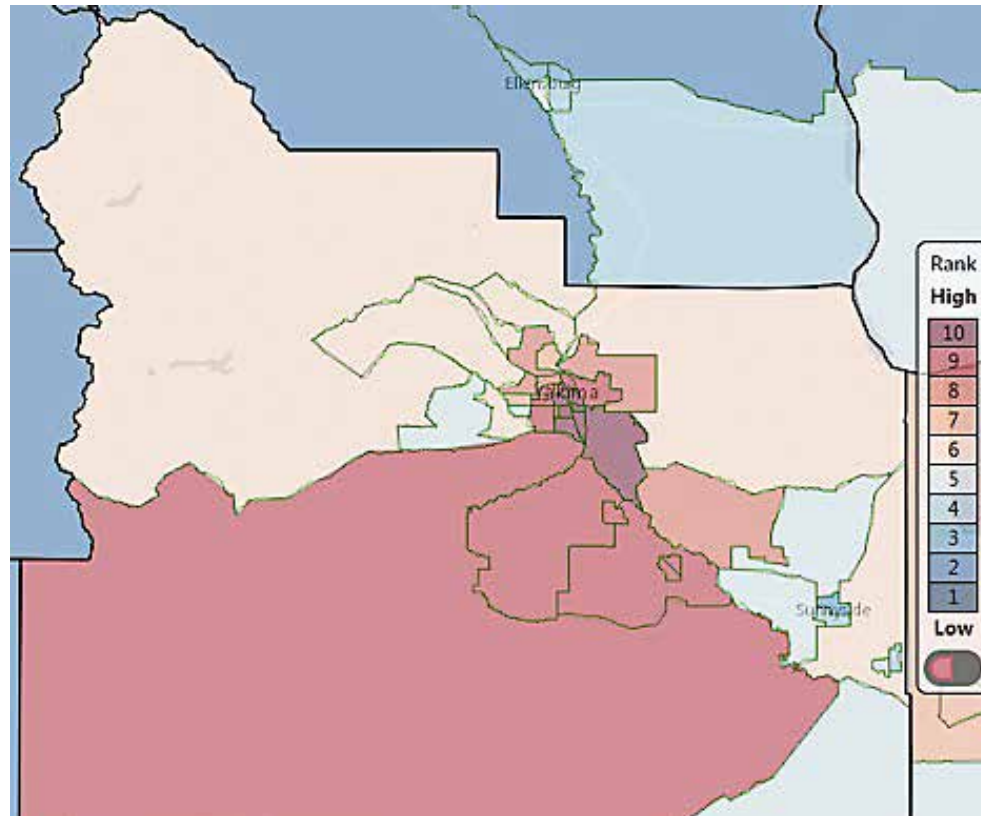
#### Year-Round Exposure

Breathing high levels of particle pollution day in and day out also can be deadly, as landmark studies in the 1990s conclusively showed<sup>214</sup> and as other studies confirmed.<sup>215</sup> Chronic exposure to particle pollution can shorten life by one to three years.<sup>216</sup>

Yakima County PM 2.5 Concentration by Census Tract, 2019<sup>208</sup>



Yakima County Environmental Effect by Census Tract, 2019 <sup>208</sup>



\* This indicator includes: lead risk from housing; proximity to hazardous waste treatment and disposal facilities; proximity to superfund sites; proximity to risk management plan facilities and wastewater discharge.



## Access to locations for Physical Activity

### National Recreation and Parks Association<sup>217</sup>

Public parks and recreation are leaders in improving the overall health and wellness of the nation. They are essential partners in combating some of the most complicated challenges our country faces—poor nutrition, hunger, obesity, and physical inactivity. Park and recreation agencies effectively improve health outcomes and thus should be supported through national and community level funding and policies that enable them to continue to expand their efforts in making a positive change in the health and wellness of our nation.

Public park and recreation agencies create healthy communities and play a fundamental role in enhancing the physical environments in which we live. Through facilities, outdoor settings, and services provided, they support good health for people of all abilities, ages, socio-economic backgrounds, and ethnicities. They foster change through collaborative programs and policies that reach a vast population to:

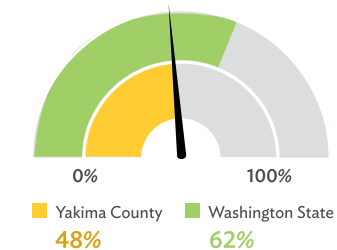
- Help reduce obesity and incidence of chronic disease by providing opportunities to increase rigorous physical activity in a variety of forms;
  - Living close to parks and other recreation facilities is consistently related to higher physical activity levels for both adults and youth.

- Increasing access to recreation facilities is an essential strategy for preventing childhood obesity.
- Adolescents with easy access to multiple recreation facilities were more physically active and less likely to be overweight or obese than adolescents without access to such facilities.
- Park renovations can increase vigorous physical activity among children and can also increase use of certain types of facilities, including playgrounds and skate parks.
- A 2011 study conducted on Seattle’s park and recreation system revealed that Seattle’s residents were able to save \$64million in medical costs as a result of getting physical activity in the parks.
- Provide a connection to nature which studies demonstrate relieves stress levels, tightens interpersonal relationships, and improves mental health;
  - In distressed neighborhoods of Philadelphia, Pennsylvania, where vacant lots were converted into small parks and community green spaces, residents in those neighborhoods reported significantly less stress and more exercise, according to a study published in the American Journal of Epidemiology.
- Foster overall wellness and healthful habits, engaging in enrichment opportunities that add balance to life.
  - Park and recreation agencies are the second largest public feeder of children, next to schools.

- Park and recreation agencies annually serve approximately 560 million meals to children through summer and after-school programs.
- Park and recreation agencies in 30 communities across the country distributed 2.5million healthy meals to children of low-income families, helping to increase their nutrition levels.

Public parks and recreation are the gateways to a healthier America, and they ensure that communities are truly livable.

Percentage of population living within half a mile of a park<sup>218</sup>



## Transportation

### US Department of Transportation<sup>219</sup>

Roadways traditionally have been designed primarily for motor vehicles. A personal vehicle-centric design approach potentially could pose barriers to use by pedestrians, bicyclists and public transportation users, thus limiting active transportation opportunities and potential resulting health benefits. Complete Streets policies can support planners and engineers in developing roadway designs that improve the safety of all users and provide additional opportunities for physical activity from transportation. The connections between physical activity and public health have been widely documented. Research suggests that physically active adults “have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon cancer, breast cancer, and depression” than their physically inactive peers.<sup>220</sup> Active transportation, or trips made by walking or bicycling, was identified by Healthy People 2020 as a target for measuring progress for healthier people.<sup>6</sup> Additionally, Healthy People 2020 listed “increased legislative policies for the built environment that enhance access to and availability of physical activity opportunities” as a specific travel and transportation policy.

Active transportation and physical activity is more likely to occur in places with a variety of land uses, a comprehensive network of pedestrian, bicycle, and public transportation facilities, inviting street design for all users, and safety measures; and Complete Streets policies address all four of those factors.<sup>221</sup> Complete Streets also promote increased roadway connectivity, which has been shown to reduce Vehicle Miles Travelled (VMT) per capita, and they have been found to improve safety and mobility for pedestrians and bicyclists.<sup>222 223</sup>

A healthy community includes reliable and safe access to all modes of transportation for everyone—pedestrians, bicyclists, motorists and transit riders of all ages and abilities—and encourages active and healthy transportation modes such as walking and bicycling.<sup>23</sup>

### Commute Mode

#### US Department of Transportation<sup>219</sup>

Commute mode share reflects how well infrastructure, policies, investments, and land-use patterns support different types of travel to work. Commute patterns are directly tied to the economy (where jobs are located within a region relative to housing). Commute mode share is linked to environmental conditions and contributing factors that affect health

outcomes, such as air pollutant emissions, which vary by transportation mode. Motor vehicle emissions contribute nearly a quarter of world energy-related greenhouse gases. Reducing motor vehicle use and increasing active transportation are ways to mitigate harmful environmental impacts caused by a large amount of vehicle use.<sup>224</sup>

Traveler safety is also an issue related to commuting, and long commutes in motor vehicles (i.e., cars and trucks) are linked to physical inactivity and associated health problems.<sup>225</sup> Conversely, active commute modes are a potential source of health-enhancing physical activity. Additionally, pedestrian and motor vehicle traffic fatalities decrease in more compact communities, suggesting that shorter commutes are safer for commuters in all modes.

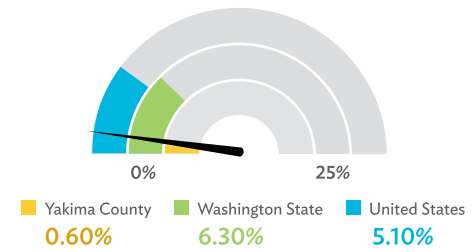
It is important to also consider other influences when connecting various health outcomes to modes of travel. These factors include food choices, sedentary hobbies, stress, unemployment rates, and regional culture, and may have impacts on obesity and diabetes.<sup>226</sup>



### Use of Public Transportation

This indicator reports the percentage of population using public transportation as their primary means of commute to work. Public transportation includes buses or trolley buses, streetcars or trolley cars, subway or elevated rails, and ferryboats.

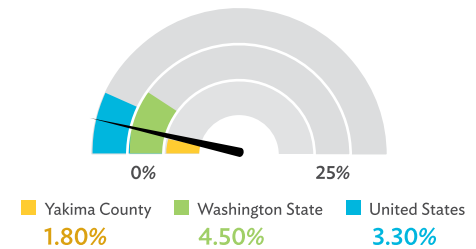
### Percent Population Using Public Transit for Commute to Work<sup>1</sup>



### Walking or Biking to Work

This indicator reports the percentage of the population that commutes to work by either walking or riding a bicycle.

### Percentage Walking or Biking to Work<sup>1</sup>



### Road Traffic Fatalities

#### US Department of Transportation<sup>27</sup>

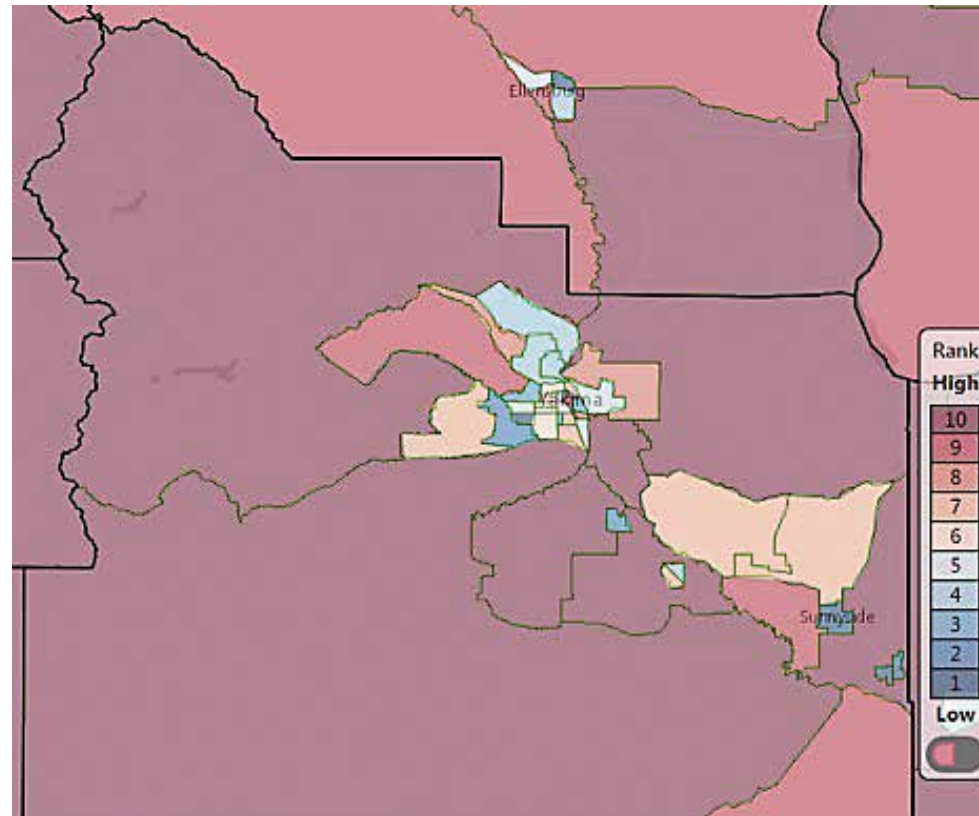
Road traffic fatalities by mode reflect a direct relationship between transportation and public health. This measure allows communities to identify mode-specific issues related to safety and transportation. That, in turn, helps them implement evidence-based interventions and implement and evaluate promising practices tailored by mode.

In the United States, 32,719 people died in motor vehicle traffic crashes in 2013.<sup>227</sup>

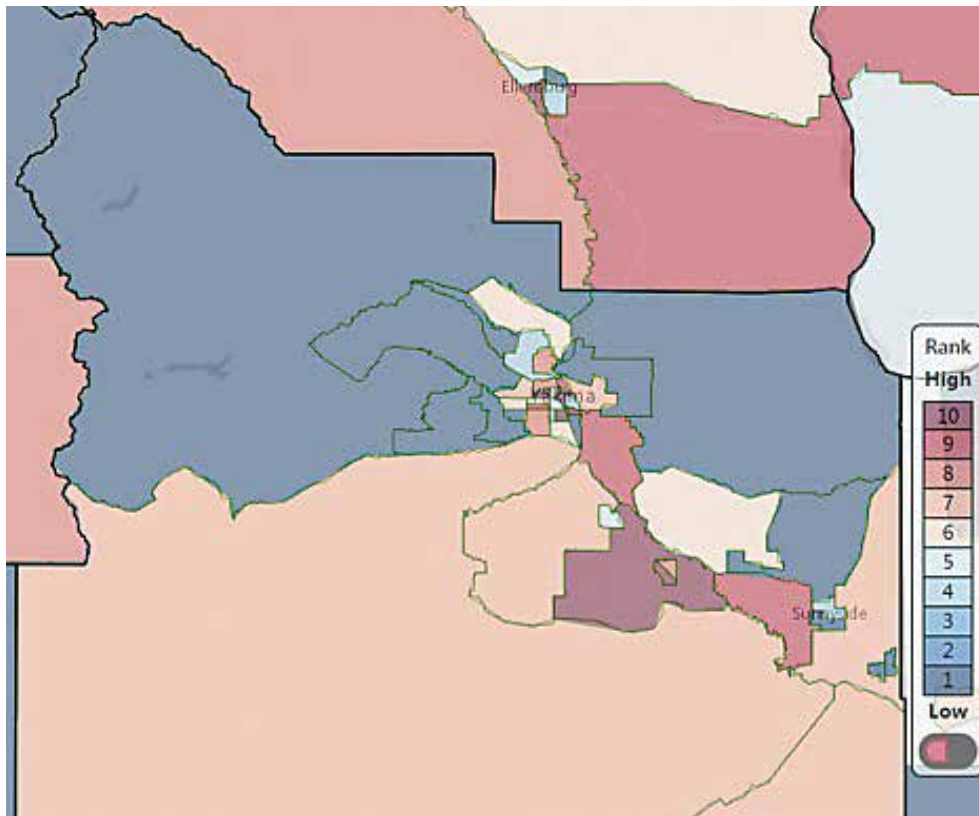
Motor vehicle crashes and traffic fatalities are public health and economic concerns. At an estimated \$871 billion in economic loss and societal harm, the price tag for crashes is a heavy burden for U.S. residents.<sup>228</sup> This includes \$277 billion in economic costs and \$594 billion in harm from the loss of life and the pain and decreased quality of life resulting from injuries.<sup>229 230</sup>

Motorcyclists and pedestrians experience a disproportionately higher risk associated with fatal injuries.<sup>231</sup> Males, adolescents, and older adults are also at increased risk for injury, even though effective interventions (e.g., marked crosswalks, seat belt use) are available.<sup>232</sup> Young people and minorities have a higher risk for pedestrian fatalities,<sup>233</sup> but older adults are at most risk of dying if they are hit.<sup>234</sup> This is mainly the result of older adults' increased susceptibility to injury and medical complications, not an increased tendency to get into roadway crashes.<sup>229</sup> In addition, the perception and reality of disproportionate risk of injury is a barrier to walking and bicycling.<sup>235</sup>

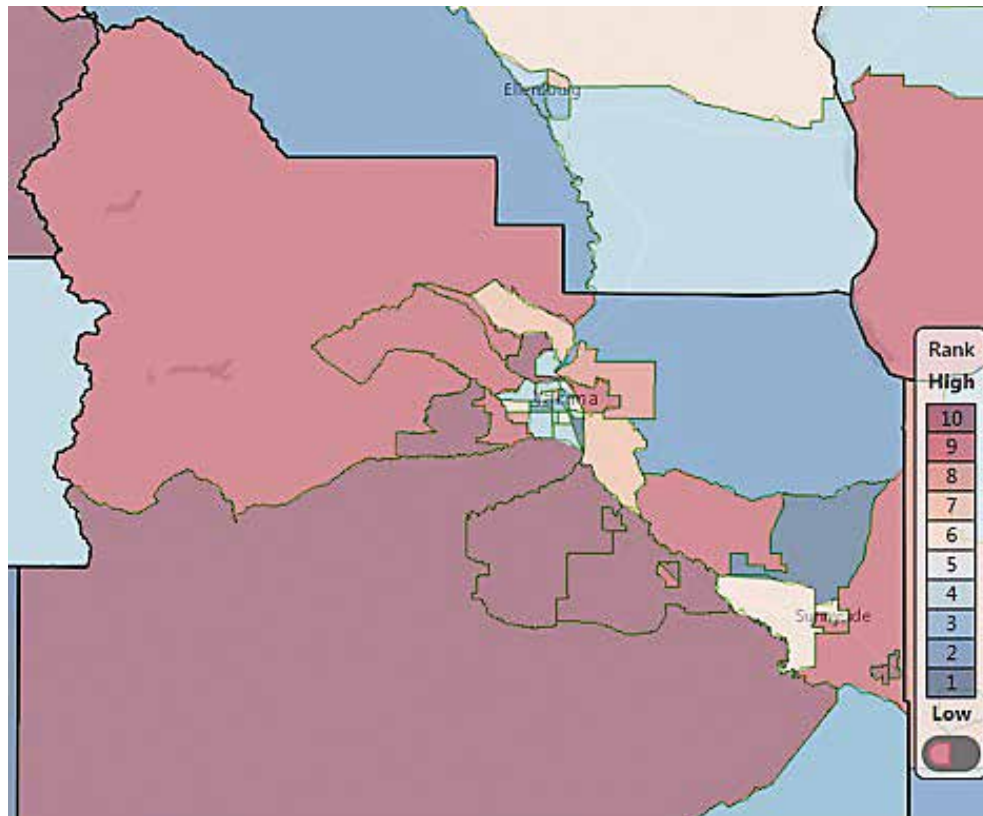
Yakima County Crashes Involving Fatalities and Serious Injury by Census Tract, 2019<sup>208</sup>



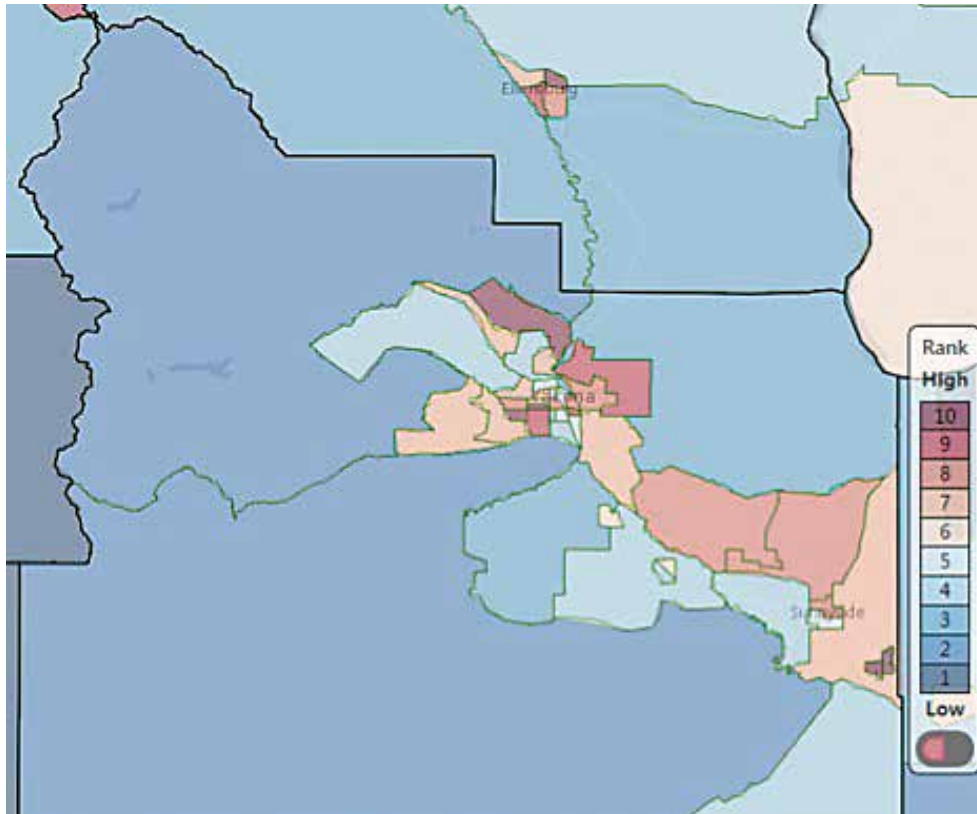
Yakima County Crashes Involving a Pedestrian or Bicyclist by Census Tract, 2019<sup>208</sup>



Yakima County Crashes Involving Alcohol by Census Tract, 2019 <sup>208</sup>



Yakima County Crashes Involving Young Drivers by Census Tract, 2019<sup>208</sup>



## Severe Housing Problems

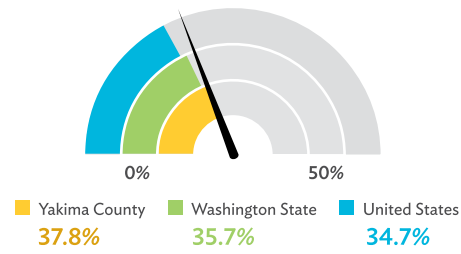
Good health depends on having homes that are safe and free from physical hazards. When adequate housing protects individuals and families from harmful exposures and provides them with a sense of privacy, security, stability and control, it can make important contributions to health. In contrast, poor quality and inadequate housing contributes to health problems such as infectious and chronic diseases, injuries and poor childhood development.

Severe Housing Problems is the percentage of households with at least one or more of the following housing problems:

1. Housing unit lacks complete kitchen facilities
2. Housing unit lacks complete plumbing facilities
3. Household is severely overcrowded
4. Household is severely cost burdened

Severe overcrowding is defined as more than 1.5 persons per room. Severe cost burden is defined as monthly housing costs (including utilities) that exceed 50% of monthly income.<sup>236</sup>

Percent Occupied Housing Units with One or More Substandard Conditions<sup>236</sup>



# 2017-2019 PRIORITY AREA UPDATE

Following the completion of the 2016 Community Health Needs Assessment, Virginia Mason Memorial used a four-stage approach to select the health priorities that would be addressed in our 2017-2019 Implementation Plan. The plan outlines both internal and community-wide objectives and strategies under each of the priority areas and the specific measurements and targets that will be used to evaluate our progress. The five priority areas we identified were:

1. Access to care
2. Health Equity
3. Chronic Disease Prevention and Screenings
4. Adverse Childhood Experiences (ACEs)
5. Infant Mortality

Virginia Mason Memorial addressed all five priority areas in our 2017-2019 Implementation Plan, which was approved at the January 31, 2017 meeting of the Virginia Mason Memorial Board of Directors. Additionally, we also outlined strategies for our EnviroMason Memorial Sustainability program, which does not fall under a priority area.

## Introduction

Over the course of the last several years, the healthcare landscape has been in a constant state of flux. Some of the factors contributing to these shifts include:

- Decreasing demand for inpatient services
- Elevated reimbursement rate pressures, particularly from Medicare and Medicaid payers
- Unpredictable changes in delivery patterns
- Increases in bad debt as health care plans place greater financial burden on patients
- Rising pharmaceutical, supply and labor expenses
- Healthcare provider shortages
- An aging demographic with high acuity and multiple chronic conditions

These industry shifts are particularly difficult to navigate in rural and suburban areas where hospitals generally have fewer commercially insured patients. This has brought a wave of hospital closures, especially among

safety-net hospitals who struggle financially.

Virginia Mason Memorial has been carefully evaluating these industry shifts and has made essential strategic and operational adjustments to address changing capacity and resource demands. We will continue to pay close attention to revenue, expenses and the many other components that make it possible to sustainably serve our community, while making progress on our CHNA priorities.

## Primary Priority Areas

Virginia Mason Memorial Hospital identified two of the five priorities as “primary” based on greatest need and our ability to have an impact with the organizational resources available. Those priorities were: Access to Care and Health Equity.

### Access to Care

#### Objective #1: Community Access

##### 1. Financial Assistance

- Virginia Mason Memorial delivers compassionate, high quality, affordable health care and advocates for members of our community who are economically disadvantaged and disenfranchised. To further this mission, the hospital provides financial assistance to eligible patients who do not have the capacity to pay for medically necessary health care services, and who otherwise may not be able to receive these services. Our Financial Assistance policy covers services provided in the hospital and at hospital-associated facilities across the organization. VMM does not deny necessary urgent care or emergent health services to any individual based upon their ability to pay for the services.
- In 2017 and 2018, VMM provided \$15,427,811 in Financial Assistance covering 24,422 patient visits.

##### 2. Uncompensated Medicaid

- Medicaid is a health care program that assists low-income families or individuals with paying for long-term medical and custodial care costs. This joint program is funded primarily by the federal government and run at the state level. Medicaid covers part of the cost of treatment and VMM covers the remainder. In 2017 and 2018,

VMM provided \$61,603,902 in Uncompensated Medicaid services.

- Virginia Mason Memorial uses Med Data to complete Medicaid patient applications. Med Data is a leading, national provider of Revenue Cycle Management Services that provides a single technology platform and patient-centered advocacy. Through this service, patients receive high quality one-on-one application assistance which improves patient's experience of, and access to, healthcare. In 2017 and 2018, Med Data managed 16,540 patient applications for VMM.

### 3. Yakima Medical Leadership Workgroup

- The purpose of this workgroup is to better understand the common challenges facing the Yakima Valley healthcare community and the impact on patients. In 2017, CEOs of the largest healthcare providers, including Russ Myers, Virginia Mason Memorial President and CEO, formed the workgroup with the following expectations: (1) begin a dialogue to explore healthcare capacity challenges and common areas of interest and concern; and (2) recognize the potential for possible coordination and/or collaboration to create positive health outcomes for patients throughout the Yakima Valley. In 2017 and 2018, the Healthcare Community Leadership Workgroup met regularly, gathered necessary data, discussed county-wide provider recruitment issues and developed a strategic work plan that included prioritized focus areas where collaboration on immediate issues could begin. The top focus area identified was to develop a plan to provide urgent healthcare access for patients who did not need Emergency Department services. By appropriately diverting patients away from the Emergency Department, the patient can receive the right care at the right place and right time, while reducing the overall cost of care. Several solutions were identified, including having a local Federally Qualified Health Center (FQHC), Yakima Valley Farmworkers Clinic, open a new clinic space where immediate access to non-emergency care could be provided. Virginia Mason Memorial hospital has partnered with Farmworkers to assist in educating and encouraging Farmworker's patients to use the clinic rather than the Emergency Department for non-emergency health care services.

### 4. Emergency Department Hot-Spotter Project

- The Emergency Department Hot spotter project is a collaborative project between Virginia Mason Memorial Hospital, The Memorial Foundation, and La Casa Hogar. The project goal was to gain a better understanding of why patients use the ED, barriers to accessing healthcare, socio-economic conditions and health seeking behaviors of households in areas with high rates of avoidable emergency department (ED) visits. This was achieved by administering a door to door survey in a neighborhood that has higher ED utilization, followed by four community focus groups. The analysis allowed the hospital to determine specific patient themes related to use of the ED and to develop community interventions to address those themes.

— The means to achieve the quantitative goal include increasing health literacy, providing alternate options to access primary and urgent care, introducing the use of care coordination teams and culturally competent Promotores (community health workers) to connect households to services, delivering cultural competency support, and building community capacity.

1. The quantitative goal was to hold VMM's Level 4 or 5 (non-emergent) ED visit rates per 1000 in the target neighborhood to a rate equal to, or less than, the prior calendar year. Level 4/5 ED visits in the target neighborhood went from a rate of 323 when the project first began in 2016, and steadily declined to 277 in 2017 and declined again to 265 in 2018.

### 5. Yakima Union Gospel Mission (YUGM) Medical Care Center

- Established in 1995, the YUGM Medical Care Center is devoted to caring for the primary medical needs of people experiencing financial restraints and homelessness. Most patients have no health insurance or ability to pay for health care services - that's why the YUGM Medical Care Center services are provided completely free of charge. The care center averages more than 14,000 patient visits each year, made possible by over 200 volunteer medical professionals. Appointments are not necessary. The care center runs on a 'first come, first served' basis.
- VMM has provided \$235,000 in direct donations over the last three years to support operations at the Yakima Union Gospel Mission



Medical Care Center. Moreover, VMM provided free lab, imaging and other medical services to YUGM patients when needed.

#### 6. Community Investment Grants

- Virginia Mason Memorial (VMM) has been serving the Yakima Valley and surrounding communities since 1950. Our wide-ranging health care services include: acute care, primary and specialty care, and health promotion and prevention services. Our vision to create healthy communities one person at a time requires investing in community programs, services, and partnerships that address the health needs of our communities, including the most vulnerable among us. VMM welcomes the opportunity to work with organizations to create healthy communities and access to services and we have set aside specific funds to help support not-for-profit organizations with community benefit programs or community-building activities.
- For 2017 and 2018, VMM invested just over \$654,332 to support community organization programs which align with our community benefit and community building priorities. Recipients include: Wellness House, Camp Prime Time, Second Harvest, Children’s Wishes and Dreams, La Casa Hogar, Rod’s House, YWCA, Sunrise Outreach and Camp Hope, Yakima Greenway Foundation, Union Gap Youth Foundation, Safe Yakima Valley, NAMI Yakima, New Vision, and Dispute Resolution Center of Yakima and Kittitas Counties.

#### Objective #2: VMM Specific Access: Primary & Specialty Care, Care Coordination

Virginia Mason Memorial Hospital and Memorial Physicians has deployed a number of strategies in 2017 and 2018 to improve patient access to healthcare services, including:

1. Recruited new providers to the community to increase the capacity at primary and specialty care clinics. Since 2017, VMM has recruited an additional 56 physicians and advance practice providers to serve Yakima County.

2. Increased the number of patient appointments, both for new patients and existing patients, by setting up a centralized call center and hiring a patient access team whose purpose is to help facilitate and schedule patient appointments with the appropriate provider.

	2016 (Baseline)	2017	2018
Total Number of Patient Visits	272,863	327,987	422,091
Total Primary Care Visits	156,997	131,416	142,135
Total New Patient Contact	8,508	7,863	6,040
Total Specialty Care Visits	115,866	196,571	267,568

3. Reduced the number of days between specialty care referral date and appointment date from 36.2 days in 2016 to 31.34 days in 2018.
4. Partnered with Federally Qualified Health Centers in the community to ensure patients are being seen in their appropriate medical homes or by their primary care provider.
  - Urgent Care Services: In 2016 and 2017, we began an internal review to determine the feasibility of opening an Urgent Care Facility. Our review included input from leaders at other community healthcare organizations. We also performed an in depth analysis of emergency room utilization which revealed that a subset of patients visiting the ED, primarily from Yakima Valley Farmworkers Clinic, could potentially receive non-emergent services in an Urgent Care Clinic setting instead. Therefore, we teamed with Farmworkers to explore opening an urgent care clinic which could create potential cost savings for patients and promote greater care continuity by keeping patients within their primary care/medical home. Details of that partnership were specified in Objective 1, Item #3.
5. Over the last three years we have been a partner in our regional Medicaid Transformation, Greater Columbia Accountable Communities of Health, which comprises a 9 county region. Project focus areas include: (1) Bi-Directional Integration of Physical and

Behavior Health; (2) Transitional Care; (3) Addressing the Opioid Crisis; (4) Chronic Disease Prevention and Control. The projects began in 2019.

6. Opened a new specialty services clinic in Sunnyside, WA in December of 2019. This clinic provides existing and new patients residing in the Lower Valley a centralized and geographically convenient location to receive over 13 different types of specialty services ranging from x-rays to urology care.
7. Increased services through our Healthy Now convenient care clinic network. We are now able to serve patients 365 days a year, with extended evening hours.
8. Improved care coordination of Medicare patients by embedding nurses and social workers within Primary Care clinics to identify and provide appropriate care coordination for high risk patients or those with chronic conditions.
9. Community-wide education about health and healthcare related resources available.
  - The Right Care Yakima website established in partnership with Community Health of Central Washington, Yakima Neighborhood Health Services and Yakima Valley Farm Workers Clinic, contains information on what to do when you are sick and where to seek care for specific types of illnesses: <https://www.rightcareyakima.com>.
  - Pamphlet campaign—‘Do you have a sick child?’ Pamphlets developed in English and Spanish and were disbursed at the Emergency Department and in Pediatric clinics. Developed due to high rates of children 0-10 being seen for non-emergent reasons in the VMM Emergency Department. Pamphlet educates parents on the appropriate steps to take when caring for a sick child, including where to seek appropriate care, and local clinic and nurse hotline contact information.
  - Cold and Flu Media Campaigns—Launched annually to encourage vaccination and educate community on ways to minimize outbreak and spread during the high risk season (December – March).
  - Radio shows to promote health education covering a wide range of health-related topics including: diabetes, cancer, healthy eating and active lifestyles, heart disease, etc.

- Bi-weekly one-hour Spanish radio show on KDNA
- Bi-weekly 10- minute English radio segment on KIT
- Health education on access and care coordination—The VMM Community Health Planning and Development and VMM Marketing and Communications departments collaborate to offer various health education promotion through public websites, print, digital, and social media channels.

### Objective #3: Health Professionals Education

1. Student education across VMM
  - In 2017 and 2018, VMM provided \$3,153,856 to help fund the Community Health of Central Washington Family Medicine Residency Program. In 2019 and in future years, this funding will increase as VMM will take over the funding for the entire program, keeping the same number of family practice residents, after the previous co-contributor pulled out of the program and filed for bankruptcy.
  - VMM provided clinical placement with training, supervision, and/or preceptors for nursing students at Washington State University, Heritage University, and Yakima Valley Community College; as well as other universities for continuation in graduate degrees. The goal of this program is to increase the number of healthcare providers in the community. In 2017 and 2018, VMM donated 58,311 hours of nursing staff time supervising 741 nursing students.
  - Collegiate programs are designed to provide well-trained health professionals and upon completion of coursework and associated exams, allows them to practice in their respective field of study. Upon completion of their program, each health professional is ready for the workforce and can quickly fill vacancies at VMM. Fewer vacancies means less waiting for patients, and results in better customer service. In 2017 and 2018, VMM donated 121,612 hours of staff time across the organization to supervise 549 allied health students.
2. Continuing Medical Education for Community Health Professionals
  - VMM is accredited to provide Category 1 AMA PRA Continuing Medical Education (CME) to our employed and community physicians. These conferences improve knowledge, performance and/or patient outcomes. CME provided credit helps physicians

meet the CME requirements for licensure renewal with the Washington State Licensing Board and MOC requirements with the American Board of Medical Specialties (ABMS). CME is an invaluable educational opportunity for physicians, and allows them to improve competence, performance-in-practice and/or patient outcomes. By providing this educational opportunity to physicians, VMM contributed to improved health and well-being for patients in the Yakima Valley.

- VMM provided Continuing Medical Education for 2,563 providers in 2017 and 2,280 providers in 2018.

## Health Equity

### *Objective #1: Improve the collection of REL data (race, ethnicity and preferred language)*

1. Improve collection of REL data to identify health disparities in our patient population and develop a plan to address those disparities. VMM's goal is a 90% collection rate for REL data for all patients.
  - Tactics Include: Ensuring that all electronic health records (EHRs) are capturing REL data categories accurately; Provide classroom training to all Patient Access team members (the focus of training will be on accurate collection of REL data, with specific intent to increase team member comfort when talking with patients about race, ethnicity and language preferences); Develop a standard process around collecting REL across VMM.
  - Currently data shows that the percentage of unknown REL data across VMM is under 7% which is the recommended best practice.
  - Within preferred language data we have identified an error rate of 27%, and are currently developing tactics and initiatives to check and improve validity of our preferred language data.

### *Objective #2: Improvement in Translation and Interpreter Services*

1. Improve translation and interpreter services to ensure all patients and family members receive care and medical instructions in their preferred language.
  - Implement appropriate language services for non-English speaking patients. Tactics Include: Interpreter Certification; Develop and deploy the Limited English Proficiency (LEP) Language Policy;

Deploy training for communicating with persons with limited English proficiency; Implement surveillance of interpreter usage and documentation of use; Enhance signage and wayfinding in the languages commonly used by the population we serve (English and Spanish).

- In 2018, VMM implemented a new language policy which stipulates that only certified staff are able to interpret. We are working on a number of tactics to help staff pass interpreter qualification tests and to ensure staff are adhering to the language policy. The language policy was implemented along with organization-wide online training, and all employees were asked to indicate they read and understood the policy. Teams that are patient-facing were provided more in-depth training on the new policy.
- In 2018, we achieved our goal to have InDemand Video Remote Interpretation available in 100% of our clinics. To ensure VMM employees are adhering to the new language policy and confirm we are meeting the interpretation needs of our community, we continue to monitor clinic and hospital use of these interpretation services.
- VMM started Bridging the Gap Interpreter training Aug. 1, 2019.
- Virginia Mason Memorial provides paper discharge instructions to all patients. In 2018, we completed a pilot study in the hospital to make sure that patients with a language need were leaving with discharge instructions in their preferred language, accessible through the electronic medical record. Our plan is to move forward with deployment of this pilot in our new electronic medical record (EMR)—Cerner, in 2019.
- In 2018, VMM developed a Code of Ethics to educate all Interpreters (both internal and external) on the role of an interpreter to ensure quality and reliability of interpretation services across the organization.

### *Objective #3: American Hospital Association's Health Equity Pledge*

Sign on to the American Hospital Association's Health Equity Pledge and commit to four strategies to achieve the pledge objectives.

1. Pledge Commitment: Stratify one quality measure by REL in first year

- This measure depends on a number of other Health Equity related tactics that have been deployed in the last three years including collection of REL data, interpretation services, and providing discharge instructions in the patient’s preferred language. Those tactics were deployed in 2018 and we will continue to monitor the impact on 30 day readmission rates.
2. Cultural Competency Training
    - Tactics Include: Utilizing effective and innovative communication tools to increase VMM team member awareness; Identify an evidence-based cultural competency curriculum that incorporates VMM values; Develop a training deployment plan; Initiate training and monitor the percentage of team member and physician completion levels.
      - Training curriculum was developed in 2018 and officially rolled out in April of 2019. To date, 98% of staff have received the training and 66% of providers.
  3. Increase diversity in VMM governance, leadership and workforce. Build governance, leadership, and a workforce that is reflective of the community we serve.
    - Tactics include: Establish baseline data for existing Leadership/ Workforce; Identify the top five positions requiring bilingual team members; Develop appropriate job descriptions (bilingual required); Increase diversity at the Board/Governance level—demonstrate a commitment to effective outreach and cultivation of board member candidates.
      - In 2018, VMM posted all nursing positions as bilingual preferred; in 2019, VMM authorized that all patient service coordinator positions will be bilingual required.
  4. Build partnerships with community, regional, state and national organizations to identify the root causes for health disparities and improve population health.
    - Tactics Include: Active participation on the WA State Health Care Authority (HCA) Communities and Equity Committee; Leverage Virginia Mason partnership to share and align health equity best practices; Foster infrastructure development and support with community coalitions focused on priority areas identified in the

Community Health Needs Assessment.

- In 2018, the WA State Health Care Authority Communities and Equity Committee modeled their strategic plan off of the Virginia Mason Memorial Health Equity Strategic Plan.
- In 2018, VMM collaborated with Virginia Mason Medical Center on a quality and efficiency event looking at system wide collection of Race, Ethnicity and Preferred Language (REL) data.

## Secondary Priority Areas

One priority area, Chronic Disease Prevention and Screenings, was selected as Memorial’s ‘secondary’ priority area.

### Chronic Disease Prevention and Screenings

#### Objective #1: Chronic Disease Prevention Community Health Programs

1. Improve overall health through the implementation of evidence-based community programming, proven to impact health and focus on prevention. All programming is offered in Spanish. Programs include: Diabetes Prevention Program, Chronic Disease Self-Management, Diabetes Wellness Initiative, ACT! Get Up, Get Moving! Childhood Obesity Program, Healthy for Life Nutrition Classes, Kohl’s Healthy for Life Physical Activity Program, and Food Insecurity Nutrition Incentive Program in partnership with the Washington Department of Health.
  - In 2017 and 2018, Memorial provided \$3,940,861 in Community Health Improvement Services and served 34,766 community members across all available programs.

#### Objective #2: Chronic Disease Risk Screenings

1. Hospital-led community outreach screenings
  - The Fiesta de Salud health fair is a free community event that brings health access and resources to the most vulnerable in our community. The fair was founded in 2008 by Virginia Mason Memorial Hospital, Yakima Valley Farm Workers Clinic, and Fiesta Foods. Those three entities help provide annual support and resources. Fiesta de Salud is a way for Yakima’s healthcare community to partner with over 45 community organizations

to help keep our community healthy. We aim to inform participants about the many resources available to them, provide them with free health screenings, and equip them with the tools they need to make the best possible health choices, including education on health, wellness, fitness and lifestyle improvements. In addition, we want to teach our community that they can still enjoy traditional meals while managing their health conditions.

- In 2017 and 2018, over 5,800 community members attended the health fair and nearly 2,000 were screened for diabetes, cholesterol, high blood pressure, and osteoporosis.

## 2. Memorial Physicians Screenings

- Mammography—Assesses women 50–74 years of age who have had at least one mammogram to screen for breast cancer in the past two years. Aside from some forms of skin cancer, breast cancer is the most common cancer among American women, regardless of race or ethnicity. Screening can improve outcomes and early detection reduces the risk of dying from breast cancer and can lead to a greater range of treatment options and lower health care costs. —In 2018, Memorial Physicians screened 69% of eligible women for breast cancer. This rate tracks with the national average across all payer types reported by the National Committee for Quality Assurance (NCQA): 69.18% (most recent data available for 2017).
- Colonoscopy and Chlamydia Screenings – Colonoscopy and chlamydia screening programs were planned to begin during the last CHNA cycle, but have been postponed while additional program implementation issues are addressed.

## 3. Comprehensive Diabetes Care—Assesses adults 18–75 years of age with diabetes (type 1 and type 2). Diabetes is a complex group of diseases marked by high blood glucose (blood sugar) due to the body’s inability to make or use insulin. Left unmanaged, diabetes can lead to serious complications, including heart disease, stroke, hypertension, blindness, kidney disease, diseases of the nervous system, amputations, and premature death. Proper diabetes management is essential to control blood glucose, reduce risks for complications, and prolong life. With support from health care providers, patients can manage their diabetes with self-care, taking medications as instructed, eating a healthy diet, being physically

active, and quitting smoking.

- Blood Pressure—In 2018, Memorial Physicians exceeded its benchmark goal of 60% patients screened and screened 72% of diabetic patients.
- LDL Screening—In 2018, Memorial Physicians screened 78% of diabetic patients, but did not meet the benchmark goal of 84%.
- HbA1c Screening—In 2018, Memorial Physicians screened 90% of diabetic patients, but did not meet the benchmark goal of 91%.
- Statin Therapy—In 2018, Memorial Physicians utilized statin therapy for 79% of diabetic patients. No benchmark was set for this measure.

## 4. Controlling High Blood Pressure—Assesses adults 18–85 years of age with a diagnosis of hypertension and whose blood pressure was adequately controlled based on the following criteria: Adults 18–59 years of age whose blood pressure was <140/90 mm Hg; Adults 60–85 years of age, with a diagnosis of diabetes, whose blood pressure was <140/90 mm Hg; Adults 60–85 years of age, without a diagnosis of diabetes, whose blood pressure was <150/90 mm Hg. Known as the “silent killer,” high blood pressure, or hypertension, increases the risk of heart disease and stroke, which are the leading causes of death in the United States. Controlling high blood pressure is an important step in preventing heart attacks, stroke, and kidney disease, and in reducing the risk of developing other serious conditions. Health care providers can help individuals manage their high blood pressure by prescribing medications and encouraging low-sodium diets, increased physical activity, and smoking cessation.

- Blood Pressure—In 2018, Memorial Physicians screened 63% of patients between the ages of 18–59 and 85% of patients between the ages of 60–85, exceeding the benchmark goal of 60% for both age categories.

## 5. Cardiovascular Disease—Cardiovascular disease is the leading cause of death in the United States. It is estimated that 92.1 million American adults have one or more types of cardiovascular disease. People with diabetes also have elevated cardiovascular risk, thought to be due in part to elevations in unhealthy cholesterol levels. Having unhealthy cholesterol levels places people at significant risk for developing ASCVD (Atherosclerotic Cardiovascular Disease). Statins are a class of drugs that lower blood cholesterol. American College of Cardiology

and American Heart Association (ACC/AHA) guidelines state that statins of moderate or high intensity are recommended for adults with established clinical ASCVD. The American Diabetes Association and ACC/AHA guidelines also recommend statins for primary prevention of cardiovascular disease in patients with diabetes, based on age and other risk factors. Guidelines also state that adherence to statins will aid in ASCVD risk reduction in both populations.

- Blood Pressure—In 2018, Memorial Physicians screened 57% of eligible patients, but did not meet the benchmark goal of 60%.
- LDL Screening—In 2018, Memorial Physicians screened 64% of eligible patients, but did not meet the benchmark goal of 84%.
- Smoking Status Assessment—In 2018, Memorial Physicians met the benchmark goal in assessing smoking status of 90% of eligible patients.
- Smoking Counseling—In 2018, Memorial Physicians counseled 63% of eligible patients, but did not meet the benchmark goal of 79%.
- Statin Users—In 2018, Memorial Physicians utilized statin therapy for 77% of eligible patients. No benchmark was set for this measure.

## Tertiary Priority Areas

Two priority areas were selected as ‘tertiary’ priority areas: Adverse Childhood Experiences (ACEs) and Infant Mortality. To address these areas, VMM partnered with, or helped provide support to other community groups and coalitions who were focusing on these issues.

### Adverse Childhood Experiences (ACEs)

#### Objective #1: Training for VMM Staff on ACEs and Trauma Informed Care

1. Train VMM staff
  - Staff trainings to increase awareness and discussion around ACEs and Trauma Informed Care
    - Specific clinicians and staff members participated in community ACEs training events to act as organizational champions for future work in this area. A formal training program is being developed.

#### Objective #2: Inpatient ACEs Programs

1. Maternal Health Services
  - The Maternal Child Health Home Visiting Program gives pregnant women and families, particularly those considered at-risk, necessary resources and skills to raise children who are physically, socially, and emotionally healthy and ready to learn. By electing to participate in local home visiting programs, families receive help from health, social service, and child development professionals. Through regular, planned home visits, parents learn how to improve their family’s health and provide better opportunities for their children. Home visits may include supporting preventive health and prenatal practices, assisting mothers on how best to breastfeed and care for their babies, helping parents understand child development milestones and behaviors, promoting parents’ use of praise and other positive parenting techniques, and working with mothers to set goals for the future, continue their education, and find employment and child care solutions.
    - In 2017 and 2018, the home visiting program served 1,294 families. Due to a number of efforts made around increasing the efficiency and capacity of this program, the number of visits provided between 2017 and 2018 increased by 9%.
  - First Steps is a program that covers a variety of services for pregnant women and their infants and helps low-income pregnant women get the health and social services they may need. First Steps is available as soon as a woman knows she is pregnant and is covered by Washington Apple Health (Medicaid). First Steps services include prenatal care, medical, vision, and dental care, delivery, post pregnancy follow-up, one year of family planning services post pregnancy, one year of full medical for newborns, and drug and alcohol services.
    - In 2017 and 2018, the First Steps program served 2,345 families. Due to a number of efforts made around increasing the efficiency and capacity of this program, the number of visits provided between 2017 and 2018 increased by 25%.
2. Nurse-Family Partnerships
  - Nurse-Family Partnership empowers first-time moms to transform their lives and create better futures for themselves and their babies.



Nurse-Family Partnership works by having specially trained nurses regularly visit young, first-time moms-to-be, starting early in the pregnancy, and continuing through the child's second birthday. The expectant moms benefit by getting the care and support they need to have a healthy pregnancy. At the same time, new mothers develop a close relationship with a nurse who becomes a trusted resource they can rely on for advice on everything from safely caring for their child to taking steps to provide a stable, secure future for both of them. Through the partnership, the nurse provides new moms with the confidence and the tools they need not only to assure a healthy start for their babies, but to envision a life of stability and opportunities for success for both mom and child.

- In 2017, the NFP program enrolled 82 new patients and served a total of 173 patients. In 2018, the NFP program enrolled 75 new patients and served a total of 176 patients. The program has exceeded its goal of serving 150 patients per year.
- In 2017, the NFP program received a grant from MAC Philanthropies to expand the NFP program to the Yakama Nation. The pilot program was launched in 2018 and with one nurse, and in less than a year, that nurse has reached a caseload goal and capacity of 16 clients. Due to the high risk of the population, we are recommending to the State that the Tribal NFP program remain at 16 maximum per nurse, rather than expanding to the expectation of 22 clients. We are currently seeking funding opportunities to expand the program and hire a second nurse to serve an additional 16 clients. Our NFP nurse works in close collaboration with the Ttawaxt Collaborative program coordinators.

### **Objective #3: Community Partnerships—Collective Impact Effort**

#### **1. Investing in Children Coalition**

- Investing in Children Coalition (ICC) is the South Central Washington regional early learning coalition, one of 10 early learning regional coalitions (ELCRs) in the state of Washington. The South Central Washington region serves Yakima and Kittitas counties. The Coalition is a strong collective body of highly committed and engaged community partners, recognized at the local and state

levels as a systems-driver. State and local funders increasingly recognize the significance of regional coalitions within the local-to-state system. ICC objectives include: (1) Having an impact on the children and families we serve; (2) Increasing understanding, and providing proof of collective impact; (3) Stabilizing and extending the reach of local and regional resources; (4) Strengthening community relationships.

- VMM participation and facilitation for the ICC subcommittee on Home Visiting; writes reports, action plan and evaluation.
  - In 2017, the members of the Investing in Children Coalition (ICC) Home Visiting subcommittee worked in collaboration with others in the community to promote a training of the Protective Factors Framework, to ensure maximum turnout by home visitors throughout the Valley. In 2018, ICC explored adoption of the ASQ-SE assessment tool to support their work around Social and Emotional Wellbeing, but the coalition decided instead to adopt a training model centered on the book *Powerful Interactions*; as the group consensus was this was a better model for the community. Utilizing this book and assessment tool, the group has selected a subgroup of 17 members to participate in monthly “train the trainer” sessions with the author throughout 2019. ICC will then decide how to deploy additional trainings later in 2019.

#### **2. Risk to Resiliency Coalition**

- The Risk to Resiliency coalition is a community initiative through the United Way of Central Washington, seeking to work with all members of the community to reduce Adverse Childhood Experiences and foster resiliency within Yakima and Kittitas Counties. The coalition seeks to inspire inter-agency collaboration in order to empower people to create a trauma-informed Yakima and Kittitas Valley where resiliency is both accessible and equitable for all. Goals include: (1) Inviting all members of the community to get involved including schools, families, law enforcement, first responders, government officials, state agencies, businesses, hospitals, physicians, and childcare agencies; (2) To have every member of the community share an understanding of brain development and the impact that Adverse Childhood Experiences can have, not only

on the individual, but also the inter-generational impact; (3) To help individuals and families develop resiliency in order to mitigate the effects of ACEs through community outreach, educational programs and educational training throughout Yakima and Kittitas counties; (4) To inspire the community to develop resilient practices that will foster growth and help the community thrive.

- VMM participation in newly formed United Way community coalition to design and implement innovative strategies to reduce ACEs and the risks associated with ACEs.
  - In 2016, the ACEs coalition consisted of 25-35 participants from 15 organizations, and at the end of 2018, the coalition had 140 people from 80 organizations across Yakima Valley participating on a regular or semi-regular basis.
  - In 2017, the coalition held monthly working meetings where they created a vision, website and content for the website <https://www.risktoresiliency.org>.
  - In 2018, the coalition monthly meetings began to focus on education and experts provided training and information on ACEs related topics. Moreover, in early 2018 the coalition hosted a NEAR science train-the-trainer program, where representatives from 20 organizations across Yakima, including three Virginia Mason Memorial staff were trained. Since that training, 20 additional half or full day trainings have been either offered through or promoted by the coalition for community members to be educated on ACEs and NEAR science. In addition, leadership of the coalition has delivered short 30-minute presentations introducing the ACEs topics to 20 different groups/clubs throughout the Yakima Valley, including Rotary, Kiwanis, church groups, etc.; attendance for those presentations ranged from 10 to 75 individuals.

## Infant Mortality

### Objective #1: Community-Led Initiatives

1. Ttáwaxt
  - Since the inception of Ttáwaxt in 2012, Virginia Mason Memorial Hospital has been a critical partner in supporting improved maternal

and child health outcomes within the Yakama Nation tribal community. Ttáwaxt originated due to the concern of disproportionately high infant mortality rates among the Native American population in Yakima County. While many factors contribute to the high infant mortality rate, ultimately, this outcome is a product of historical institutional and systematic racism.

Institutions and systems which contribute to maternal child health include those which deliver health care services. Due to a long history of healthcare access challenges and discrimination, women are not adequately receiving the care and support needed before, during, and after pregnancy. The rural nature of the Yakama Nation reservation and the existing locations of healthcare in the Valley pose specific challenges for access to critical services. The Ttáwaxt team, led by Native American women, identified the need to support and strengthen systems that are community-driven and can provide culturally responsive and respectful care.

- Ttáwaxt believes that Indigenous Birth Justice is present when Indigenous peoples honor their ancestors by making the best decisions they can during pregnancy, labor, childbirth, and after the baby arrives to ensure the next generation continues. To achieve Indigenous Birth Justice, it is critical and non-negotiable to respect cultural sovereignty. In addition, a person must have the ability to easily utilize quality and culturally responsive support systems. These systems include both indigenous and white-centric healing, medical, social, and economic services and supports.
- Successes of the program over the last three years include the following:
  - Five community members received training to provide doula, childbirth education, perinatal support, home visiting support, grief recovery, and breastfeeding support
  - 70 Families participated in Ttáwaxt services
  - Services expanded to include celebration of life, cultural teachings for families (i.e.. baby boards, moccasins), elder support, and transportation assistance to medical appointments
  - Community capacity building and mobilization
  - Family and state-level advocacy education



## Objective #2: Hospital Programs

1. Childbirth Education (CBE): Perinatal education for mothers and their support persons to decrease pre-term and low birth weight infants. CBE was developed in response to this need. Classes offered: Childbirth Education, Young and Pregnant Class (Teen Birth), Successful breastfeeding, Baby Basics, Boot camp for new Dads, Prenatal yoga, and Infant CPR.
  - In 2017 and 2018, the CBE program served 1,622 individuals.
2. Purple Cry: Purple Cry is an evidence-based 10-minute video on the normal crying patterns of a newborn. It has reduced the incident of shaken baby syndrome.
  - Goal—100% of families of newborns receive Purple Cry education and materials each year. In 2017 and 2018, the percentage of families of newborns who received the Purple Cry education and materials was 100%.
3. Obstetrics Clinical Outcomes Assessment Program (OB COAP): 39 week project – Reduction of 3,000 NICU babies statewide in last year (state DOH data/project). This project includes an intensive worksheet that is filled out for every pre-term birth, which must meet certain standards to be considered acceptable. This ensures that pre-term births are well thought out and do not happen impulsively. VMM has always had high standards around elective delivery and has very low rates of pre-term births. A 2007 survey of almost 20,000 births in HCA hospitals throughout the U.S., carried out in conjunction with the March of Dimes at the request of American Congress of Obstetricians and Gynecologists (ACOG), revealed that almost 1/3 of all babies delivered in the United States are electively delivered with 5% of all deliveries in the U.S. delivered in a manner violating ACOG/AAP guidelines. Most of these births occurred for convenience and result in significant short term neonatal morbidity (neonatal intensive care unit admission rates of 13- 21%). Repeat elective cesarean sections before 39 weeks gestation also result in higher rates of adverse respiratory outcomes, mechanical ventilation, sepsis, and hypoglycemia in newborns.
  - Goal—39 week elective delivery rate  $\leq$ 0.7% each year. In 2017 and 2018, the 39 week elective delivery rate was 0.4%.

4. Breastfeeding: Staff (nurses and physicians) educate mothers about benefits (mother and baby) of exclusively breastfeeding. Lactation experts are on hand to assist mothers with breastfeeding.
  - Goal—Mothers that discharge exclusively breastfeeding and who identified intent to exclusively breastfeed at time of admission  $\geq$ 55% each year. In 2017 and 2018, the % of discharged mothers who intend to exclusively breastfeed was 58.4%.
5. Hepatitis B Vaccines: Providing pediatric Hepatitis B vaccines to all consented newborns free of charge. The CDC reports that national averages for Hepatitis B vaccine by 3 days of age = 50.1% and the average for Washington State = 70.4%.
  - Goal—% of newborns who receive Hep B Vaccine  $\geq$  85% every year. In 2017 and 2018, 96.9% of newborns received the Hep B Vaccine.

## Sustainability

The health care sector creates an average of 29 pounds of waste per staffed bed each day. Solid waste directed to landfills generates gas that can contaminate ground water and air pollutants. Harmful chemicals used in some health care products are linked to a range of health impacts like cancer, birth defects, asthma, and other health problems. Hospitals can create a healthier environment by using safer alternatives and smarter products. A hospital is a lot like a small town—we provide food, water, shelter and care to every patient and team member around the clock. Reducing our resource use not only lowers our environmental impact, but also decreases our operating costs. Purchasing fresh food from local producers can increase environmental quality, support our local/rural economy, and increase social and economic health outcomes. Purchasing sustainably grown produce (i.e. organic methods) can help reduce farm worker and consumer exposure to harmful pesticides, as well as reduce water pollution and soil contamination. Purchasing meat and poultry raised without antibiotics can increase efficacy of antibiotics in human medicine and healthier, more sustainable meat production practices. Purchasing hormone/rBGH-free dairy can reduce udder infections and other health issues in cows and reduce antibiotic use in dairy cows, thereby combatting health problems. The Operating Room (OR) generates a substantial portion of the hospital's waste. Studies show that an estimated 20-30 percent of the total waste generated by hospitals comes from the OR and up

to 60 percent of the facility's regulated medical waste. The OR department is also responsible for 40-60 percent of the total supply costs for the organization. Key strategies include recycling, medical device reprocessing, reformulating OR kits, and the use of rigid reusable sterilization cases.

### *EnviroMason Memorial*

1. Reducing pounds of total waste per patient day.
  - Initiatives include adding recycling to more areas of the hospital, waste/recycling education through Health Stream and new hire orientations, train staff to eliminate the use of red bag waste (RMW) containers in standard patient and clinic rooms, and reduce ordering of plastic bottles and advocate tap water vs. bottled water.
  - Baseline data showed VMM created 38.55lbs of waste per staffed bed each day. Over the last two years we have reduced this to 34lbs.
2. Set policies and guidelines to eliminate harmful chemicals in the products we purchase.
  - Initiatives include exam gloves approved for removal of PVC, develop a commitment to a DEHP- Free NICU, reduction in purchased materials with chemicals of concern for Healthy Interiors, create a checklist and evaluation to eliminate the use of chemicals of concern, secure/create a hazardous waste plan including Mercury, and purchase copy paper with at least a 30% recycled content.
  - VMM was able to eliminate DEHP and PVC from exam gloves as of February 2017.
  - In 2018, VMM baseline data was established for safer chemicals which included 58% of cleaning chemical spend on green, general purpose, bath, glass, carpet and floor cleaners, which exceeded the national median of 47% reported by Practice Greenhealth.

We furthermore established a baseline of 76% for percentage of furnishings spend on items that eliminate the use of target chemicals.

3. Reducing carbon footprint through reduction of waste and conservation of water and electricity.
  - Initiatives include LED lighting project, improve Energy Star Score, reduce annual water consumption (efficient toilets, faucets and showers), and water audits.
  - VMM did not reach the goal set for reduction of energy use from 238 EUI to 230.86 EUI. This was mainly due to the new energy plant project. However, the LED lighting project was launched and we expect to see a 5% reduction in the coming year. In the past two years we did increase our Energy Star score from a baseline of 36 to 82. Furthermore, we reduced our water usage from baseline of 55.59 gals/ft<sup>2</sup> to 52 gals/ft<sup>2</sup>.
4. Increase of environmental quality, support of local/rural economy, increase social and economic health outcomes, increase efficacy of antibiotics in human medicine, and development of healthier, more sustainable meat production practices.
  - Initiatives include reduction in meat served, work with suppliers to achieve an increase in percentage of antibiotic free meats, promote the use of tap water through education and adding water bottle filling stations, buy local - explore options for ABF free local meats and healthier options, weigh food waste and find a place to donate, and educate on our definitions of sustainable foods and location of foods.
  - Baseline data showed that VMM served 8% antibiotic-free meats and purchased 38.2% local/sustainable foods. Over the last two years we increased our % of meat raised without antibiotics served to 42%, and raised our spend on local/sustainable foods to 43% (13% spend on sustainable foods and 30% spent on local food products).

In 2019, our EnviroMason Memorial sustainability practices were honored by Practice Greenhealth. Virginia Mason Memorial received the following awards:

1. Top 25 Environmental Excellence Award—Practice Greenhealth’s highest honor for hospitals. Selected from the pool of Partner for Change applicants, these hospitals are leading the industry in all-around sustainability performance, demonstrating comprehensive programs and are illustrating how sustainability is entrenched in their organizational culture. Each year, the competition for these top spots increases, as hospitals across the country continue to innovate.
2. Greening the OR Recognition Award—Greening the Operating Room Recognition honors facilities that have made substantial progress in reducing the impact of the surgical environment.
3. Circle of Excellence–Safer Chemicals—The Chemicals Circle celebrates facilities with sound chemical reduction policies and practices. Winners address toxicity through purchasing, change of products, services and equipment, and educate their staff and the community on hazardous chemicals.
4. Circle of Excellence–Healthy Food—The Food Circle highlights leaders in sustainable food services, capturing leadership in meat reduction, procurement of better meat, local and sustainable sourcing, improving access to tap water and healthy beverages, supporting healthy food access, and preventing food waste. Top contenders have demonstrated noteworthy programming in each area, and have an educational strategy that addresses the food system as a critical component in an overall sustainability plan—for human and planetary health.

# 2020-2022 PRIORITY AREAS

## Priority Areas

Virginia Mason Memorial has identified the following priorities:

1. Access to Health Care
2. Health Equity
3. Mental Health

## Methodology

Virginia Mason Memorial pulled data from a number of valid and reliable National, State and County sources (a full list can be found in the reference section at the end of this document) in order to create the best assessment possible of the state of health and wellbeing of Yakima County. Furthermore, we solicited community feedback on the 2019 Community Health Needs Assessment through an online survey tool.

VMM team members selected the top ten areas of greatest need. The ten areas of greatest need were identified as:

- Access to Health Care
- Health Equity
- Chronic Disease Prevention & Management
- Mental Health
- Health Behaviors – Physical Inactivity & Nutrition
- Adverse Childhood Experiences (ACEs)
- Social and Economic Determinants of Health
- Safety and Crime
- Homelessness
- Substance Abuse

Once the areas of greatest need were identified, a community survey was developed and deployed to capture additional feedback. Organizations from multiple sectors across Yakima County were asked to provide input on the CHNA and rank those ten areas by order of importance to both them as community member, as well as to the organization they represent.

We did not limit responses but sent out the request to take the survey to as many partners in the community as possible and also asked that they forward on to any other partners they felt should be involved. We allowed three weeks for input.

Feedback and rankings were received from over 60 organizations spanning many different sectors including:

- State, local and tribal health departments
- Health care providers, including specialty services such as mental health
- Community-based organizations, coalitions and groups representing members of the underserved, low-income, and minority populations in the community
- Churches and faith-based organizations
- Businesses
- School districts
- Community colleges and universities
- Local government
- Individual health experts within the community

The final top five areas chosen by our Community Partners were, in order: (1) Social and Economic Determinants of Health; (2) Mental Health; (3) Access to Health Care, (4) Adverse Childhood Experiences; and (5) Health Equity.

Virginia Mason Memorial Hospital Senior Leadership reviewed the final five priority areas ranked by the community and narrowed down the focus to the final three: (1) Access to Health Care, (2) Health Equity and (3) Mental Health, based on organizational resources and ability to address the area of need. These were formally adopted as the Virginia Mason Memorial Hospital 2019 priority areas on October 15, 2019. The three priority areas chosen, and the remaining two from the top five that were not chosen, will be addressed in detail in the 2020-2022 Implementation Plan.

# ACKNOWLEDGEMENTS

Virginia Mason Memorial would like to thank the following community-based organizations, groups, businesses, coalitions, universities, etc. for their valuable input on the 2019 Community Health Needs Assessment and participation in selecting the 2020-2022 priority areas:

2nd Harvest	Inspire Development Centers	Washington Association for Community Health
Astria Health	John I. Haas	Washington State University
Bob Hall Automobile Dealerships	La Casa Hogar	Wellness House
Brookside Funeral Home	Leading Force	West Valley School District
Catholic Charities Housing Services	Northwest Harvest	Whatcom Community College
Catholic Charities of Yakima	Novolex-Shields LLC	Yakima County Development Association
City of Selah	Pacific Crest Web and Data LLC	Yakima Health District
City of Union Gap	Pacific Northwest University	Yakima Neighborhood Health Services
City of Yakima	Perry Technical Institute	Yakima School District
Community Health of Central Washington	Prime Time Inc.	Yakima Schools Foundation
Consistent Care	Rod's House	Yakima Symphony Orchestra
Cowiche Canyon Conservancy	SLMartin Consulting	Yakima Union Gospel Mission
Deborah Gauck Consulting	Society of Human Resource Management, Yakima	Yakima Union Gospel Mission Medical Care Center
Dispute Resolution Center of Yakima and Kittitas Counties	South Central Workforce Council	Yakima Valley Community Foundation
Educational Service District 105	Sundown M Ranch	Yakima Valley Conference of Governments
Greater Yakima Chamber of Commerce	Sunnyside School District	Yakima Valley Farmworkers Clinic
Heritage University	Sunrise Outreach Center of Yakima	Yakima Valley Technical Skills Center
Highgate Senior Living	Tieton Arts & Humanities	Yoga Collective of Yakima
Homeless Network of Yakima County	Tree Top, Inc.	YWCA Yakima
Independence University	Ttáwaxt Collaborative	
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