



# 2018

## Community Health Assessment

Whatcom County, WA

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# Introduction from Whatcom County Health Department

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## **We are pleased to present the 2018 *Community Health Assessment (CHA)* for Whatcom County.**

The 2018 CHA contains the most recent health data and information to provide an understanding of our county's health status. In this update, we have expanded the CHA to include community-specific health status information as well as countywide health information.

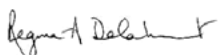
The CHA is organized using a population health framework that looks at the physical environment, social and economic factors, health behaviors, access to quality healthcare, and health outcomes. The report presents a general picture of the health of our community, in which health outcomes and disparities are the results of complex interactions between health determinants.

This assessment reflects a two-year process that included selection and analysis of over 160 health indicators, multiple community meetings, and interviews with community leaders. This provided information about strengths and challenges, identification of countywide and community-specific assets, and an assessment of the capability of the public health and health care systems to address the health challenges in our community.


Much of this report expands information on health issues identified by the dedicated group of community partners who participated in the first cycle of Community Health Improvement. Together they identified, organized, and set in motion efforts to advance equity, support young children and families, respond to the opioid epidemic, help those experiencing complex health issues, and initiate healthy planning actions. As this important work continues, the 2018 CHA offers the opportunity to take a fresh look at the health of our community, identify emerging health issues, and select community priorities.

The CHA will serve as the foundation for a process to create our next *Community Health Improvement Plan (CHIP)*. The CHIP will focus on a few selected community health priorities identified through the CHA and create a blueprint for the community to make improvements on the selected issues in a way that is collaborative and coordinated.

We would like to extend our sincere thanks to the many community members and organizations who contributed to this project. We hope the 2018 CHA becomes a resource and a point of connection for community members and agencies who are working to improve the health of all residents of Whatcom County.



**Regina Delahunt**  
Health Department Director



**Dr. Greg Stern**  
Health Officer

# Key Findings

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Whatcom County's 2018 *Community Health Assessment* contains data and information about the health and well-being of Whatcom County residents. Key findings were compiled with input from the Whatcom County Public Health Advisory Board, Healthy Whatcom team, and select staff within the Whatcom County Health Department. The findings are not priorities, but instead represent issues, themes, and concerns that stood out upon reviewing the assessment.

**While there is much to celebrate about the health of this community, there is also much room for improvement.**

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li><b>01</b> Overall, people in Whatcom County continue to be generally healthy, and the county as a whole compares favorably to Washington State on several health indicators.</li><li><b>02</b> Disparities in health by income, gender, age, or race and ethnicity are evident. Indicators of health are worse across multiple data points for youth who are English Language Learners and for youth and adults who are low-income, homeless, or people of color. Qualitative data also shows that these disparities are felt by community members.</li><li><b>03</b> Whatcom County can be a difficult place to be financially stable. Poverty, stable housing, and living wage incomes are not improving over time, and these conditions affect health and quality of life.</li><li><b>04</b> Whatcom County continues to experience an opiate crisis. Recently expanded treatment options are at capacity, and additional treatment options are needed.</li><li><b>05</b> Youth alcohol, drug, and cigarette use have significantly decreased since the last assessment.</li><li><b>06</b> Indicators of community safety and violence show that Whatcom County is experiencing higher rates of incarceration and child maltreatment than WA State.</li></ul> | <ul style="list-style-type: none"><li><b>07</b> Adult and youth mental health indicators reflect an increase in poor mental health and disparities between genders for suicide and depression. Mental health care continues to be a need.</li><li><b>08</b> The incidence of chlamydia and gonorrhea in Whatcom has increased since the last assessment but remain below WA State rates. The highest rates of these sexually-transmitted diseases are found among youth.</li><li><b>09</b> Whatcom County's older population is growing, and the number of people 65 and older who live alone has increased since the last assessment.</li><li><b>10</b> Qualitative data demonstrates that navigating the complexity of different systems is challenging, and there is a desire for creative solutions to improve coordination and integrated access to services.</li><li><b>11</b> Nutrition and physical activity indicators show a decrease in youth fruit and vegetable consumption while physical activity and obesity have remained steady since the last assessment.</li><li><b>12</b> Community members feel that access to healthy foods and safe places to walk, bike, and recreate vary based on geography, income, and race or ethnicity.</li></ul> |
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# What is Community Health Improvement?

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Across the country, community members, groups, and organizations, along with local governments, are working together to improve their community's health through focused, coordinated efforts. These efforts are meant to change the underlying factors that affect the community's health, make healthy choices easier, improve access to care, and provide everyone with an equal chance at a healthy life. It's about taking on the most significant health challenges the community is facing – together.

Through this process, a *Community Health Assessment* and *Community Health Improvement Plan* are developed.

## What is a Community Health Assessment (CHA)?

The purpose of a *Community Health Assessment* is to learn about the community: the health of the population, contributing factors to higher health risks or poorer health outcomes of identified populations, and available community resources.

The *Community Health Assessment* informs community decision-making about the prioritization of health problems and the development of a *Community Health Improvement Plan*.

## What is a Community Health Improvement Plan (CHIP)?

The *Community Health Improvement Plan* (CHIP) is an action plan to address the community health issues identified through the *Community Health Assessment*. Community members and community health partners develop the CHIP in partnership. It requires the collaboration of multiple organizations; no one agency can do it alone.

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## Phases of Community Health Improvement

Community Health Improvement is a multi-year, repeating cycle that builds upon previous efforts.



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The 2018 *Community Health Assessment* is a status update that answers the questions, "Have we made progress on our most pressing health concerns?" and "Is there any new area of need that we should be paying attention to?" Some of the priorities and projects from the 2012–2017 *Community Health Improvement Plan* are likely to continue in this cycle of CHI, and the information in the 2018 *Community Health Assessment* will determine if these are still priorities for collaborative improvement efforts.



# Developing the Community Health Assessment

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The overall goal of the *Community Health Assessment* is to use local knowledge, community stories, and multiple sources of data to assess the health of Whatcom County. The CHA is comprised of four sub-assessments, each of which provides essential information:

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01

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## Community Health Status Assessment

(Appendix A)

Includes quantitative data from over 160 indicators that measure health outcomes and determinants of health.

02

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## Community Themes and Strengths Assessment

(Appendix B)

Includes qualitative data gathered through conversations with representatives of the community.

03

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## Forces of Change Assessment

Examines the contextual factors that affect health and health interventions, this assessment summarizes trends, opportunities, and threats operating locally, statewide, and nationally.

04

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## Local Public Health System Assessment

Surveys how well essential public health services are being provided by the public health system, including the system's strengths and the opportunities to improve how public health partners provide essential services.





# Methods

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Within this report, the community health status and community themes and strengths assessments were combined in summaries that pair quantitative and qualitative data to describe how health and well-being are experienced in Whatcom County as a whole.

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## Community Health Status Assessment (Quantitative)

### Indicator Selection

The indicators in the Community Health Status Assessment (CHSA; Appendix A) were selected from 23 sources that include standard population health data systems. CHSA indicators were chosen using criteria developed by County Health Rankings<sup>1</sup>, and the selected indicators align with recommendations for regional, state, and national community health status indicators, as well as the 2012-2016 *Whatcom County Community Health Improvement Plan*.

Only a subset of the more than 160 CHSA indicators is highlighted in the following pages. Data from the CHSA have been included in the *Community Health Assessment* when:

- data for that indicator shows a trend over time;
- data for that indicator shows a significant difference in comparison to a benchmark (such as the Washington State average);
- data for that indicator shows a disparity by race, ethnicity, income, or age;
- the indicator relates to a theme from the qualitative data or to a health issue otherwise identified by the community; or
- the indicator contributes to a more in-depth, well-rounded understanding of health and well-being

### Data Analysis

Each indicator is presented with the most recent data available at the time of publication. Where available, data is also provided to show any changes since the previous CHA was completed in 2011. Data were analyzed using a comparative analysis. This analysis demonstrates when there is a difference between past and recent data within Whatcom County or when there is a difference between recent Whatcom County data and recent Washington State data. For the purpose of the analyses in this report, a statistical difference means that the 95% confidence intervals for the two data points did not overlap, and it can be said with confidence that the difference between the two values is not due to normal variability.

### **Limitations**

Limitations of Whatcom County population data include small population sizes, small and isolated population centers, and small sample sizes. Comparisons that would identify differences in the social determinants of health, health inequities, and differences in health indicators between populations are limited.

### **Thematic Analysis (Qualitative)**

Beginning in the spring of 2016, qualitative data was gathered from community members using a variety of methods (described in detail in Appendix B). These included 18 interviews with community members and organizational leaders, ten community meetings, and four focus groups. The result of this data collection represents the thoughts, opinions, and observations of the key issues shaping the health of individuals and their communities. Transcripts from the interviews and group discussions were coded and themed, and the results are presented as "Community Views" alongside quantitative data. In-depth descriptions of each of the themes are also included in Appendix B.

### **Limitations**

Qualitative data included in the CHA represents comments made at a series of community events, listening sessions, focus groups, and interviews. There are two limitations to the approach used to collect community input. First, community members were not asked questions about specific quantitative data points in the CHA because the data collection and analysis occurred after speaking with community members. This means that not all graphs and data points have Community Views to support, contradict, or clarify them. Second, data collected from community members do not represent views from all geographic, cultural, socioeconomic, or age groups in Whatcom County. Diverse and previously unrepresented residents will continue to be engaged throughout this 5-year CHI cycle.

### **Forces of Change Assessment**

The Forces of Change (FoC) Assessment examines what is occurring or might occur that affects the health of the community or the local public health system, and identifies the specific threats or opportunities generated by these occurrences. It captures current trends as well as the political and social will of a community. To assess both community-level and broader forces, the assessment was conducted in two phases. The first phase was conducted together with the qualitative data gathering (see Appendix B for a full description of those methods). Many of the forces identified in this assessment were drawn from those interviews.

Phase two occurred in March 2018, when Whatcom County Health Department (WCHD) conducted an environmental and policy scan to identify trends that are dependent on federal, state, and local conversations and policies. This process augmented the FoC Assessment with timely and relevant information not chronicled in the interviews. Environmental scanning is a process that systematically surveys and interprets relevant data to identify external opportunities and threats. The environmental scan was completed using the SWOT (strengths, weaknesses, opportunities, and threats) analysis framework, and data was added to the forces of change data set and organized into categories: Economic, Education/Technology, Environmental, Equity, Legal/Political, Medical, and Social.



## Local Public Health System Assessment

The Local Public Health System Assessment (LPHSA), answers the following questions:

- *What are the activities, competencies, and capacities of the local public health system?*
- *How are the 10 Essential Public Health Services being provided to the community?*

To complete the LPHSA, Whatcom County Health Department administered the National Public Health Performance Standards Program (NPHPSP) Local Assessment, which evaluates the delivery of the 10 Essential Public Health Services (EPHS). The NPHPSP\* assessment describes what the local public health system would look like if all the organizations, groups, and individuals in the community worked together to ensure that essential public health services were delivered optimally.

The NPHPSP assessment was conducted by identifying the divisions within the Health Department responsible for each Essential Public Health Service and developing separate surveys for each division representing their particular expertise and experience. Leadership within the Health Department completed the entire survey, along with the Public Health Advisory Board (PHAB).

To gain a broader look at non-governmental partnerships in the local public health system, groups in which WCHD staff plays a key role in collaboration with community partners are also summarized in this assessment. Lastly, WCHD gathered qualitative information during key informant interviews and six community listening sessions around Whatcom County to identify assets, challenges, and gaps within the local public health system.

*\*A copy of the complete NPHPSP Local Assessment is provided in Appendix D.*





## Health Equity in Community Health Assessment

**At its core, Community Health Improvement is about advancing equity** so that every person can have optimal physical, social, and mental well-being. Health equity means everyone has the basics to be as healthy as possible. However, “the basics” may not look the same for every person; different people will have unique needs to be met before they have a fair chance at health.<sup>2</sup>

(See illustration in Figure 1 below.)

Health equity also asks people to recognize that entire groups of people are unable to enjoy opportunities that others have come to expect because of the conditions created by current and historical decision-making. This is the lasting impact of racism, sexism, classism, ableness and other forms of exclusion and oppression.<sup>3</sup> Moving toward a society committed to health equity means working to ensure that everyone, regardless of race, neighborhood, or financial status, has fair and equal access to a healthy community of opportunity.<sup>4</sup>

*“Health equity means that everyone has a fair and just opportunity to be healthier. This requires removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care ...[H]ealth equity means reducing and ultimately eliminating disparities in health and its determinants that adversely affect excluded or marginalized groups.”*

**– Robert Wood  
Johnson Foundation**

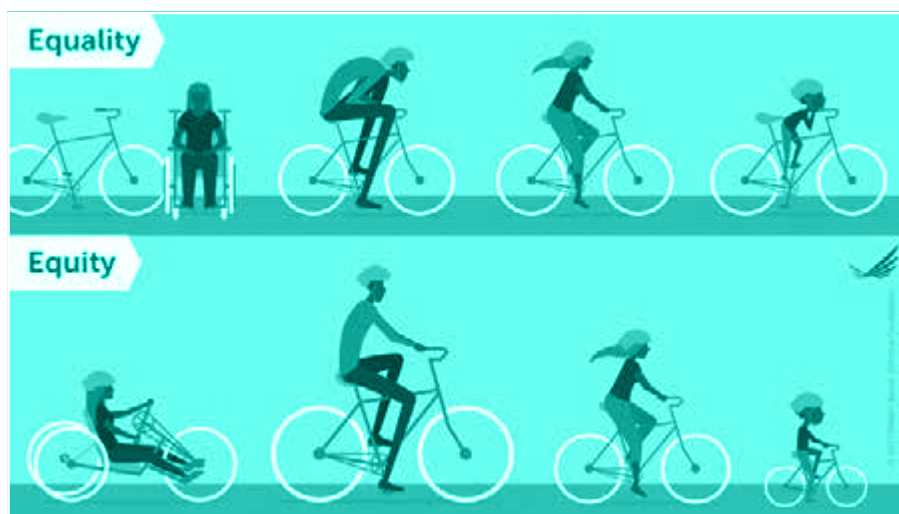


Fig 1: Equality and Equity. Credit to: Robert Wood Johnson Foundation



## Key Steps to Advance Health Equity<sup>7</sup>

### Identify important health disparities.

Many disparities in health are rooted in inequities in the opportunities and resources needed to be healthier.

### Change and implement policies, laws, systems, environments, and practices to reduce inequities in the opportunities and resources needed to be healthier.

Eliminate the unfair individual and institutional social conditions that give rise to the inequities.

### Evaluate and monitor efforts using short and long-term measures

as it may take decades or generations to reduce some health disparities.

### Reassess strategies in light of process and outcomes and plan next steps.

Actively engage those most affected by disparities in the identification, design, implementation, and evaluation of promising solutions.

(Health Equity, continued.)

The key steps to advance health equity (shown at left) are essential to equity-driven Community Health Improvement. They are integrated into each stage of the CHI process.

## Identifying Health Disparities

A community can't act on what it hasn't identified, so the *Community Health Assessment* has been designed to identify where health disparities exist. It does this in three ways.

**01** The data for many health indicators in this report has been further examined for a relationship with other factors, like race, ethnicity, income, gender, or age. Disaggregating the data like this can identify if certain segments of the population have different needs or challenges that are masked when looking at the population as a whole. For example, national data shows that people with lower incomes have higher rates of diabetes than those with higher incomes. These differences are called **health disparities**.

**02** The CHA has been divided into two parts:  
**Countywide assessment:** measures the overall health of Whatcom County's population in order to identify the county's biggest health challenges.

**Community Descriptions:** provide an in-depth look at how health is experienced uniquely in different geographic communities in Whatcom County. Since where someone lives can be a determining factor in how healthy they are, looking at health community by community allows for the investigation of health disparities by geography<sup>5</sup>. Community descriptions are a part of the second phase of the *Community Health Assessment* and will be published in late 2018.

**03** Potential health equity indicators have been identified (listed in Appendix C). Whatcom County Health Department, in partnership with community partners, will finalize a list of key health equity indicators in 2019.

## Changing and Implementing Policies, Laws, and Systems

The action phase of CHI will include strategies to change policies, systems, and environments that contribute to health inequities. It will also incorporate an approach called "targeted universalism"<sup>6</sup>, which includes both population-level interventions and efforts within communities where the need is greatest, resources are limited, and opportunities to be healthy are limited. It emphasizes that community members most affected by an issue are the best people to help others understand the issue, identify solutions, customize approaches, and drive the efforts for change.

## Evaluating and Monitoring

Key health equity indicators and additional qualitative data will be shared with the community annually to monitor and evaluate progress in reducing disparities.

## Reassess Strategies and Plan Next Steps

The CHI process will also engage community partners and members of affected communities in designing population-level interventions and monitoring efforts to achieve health equity.

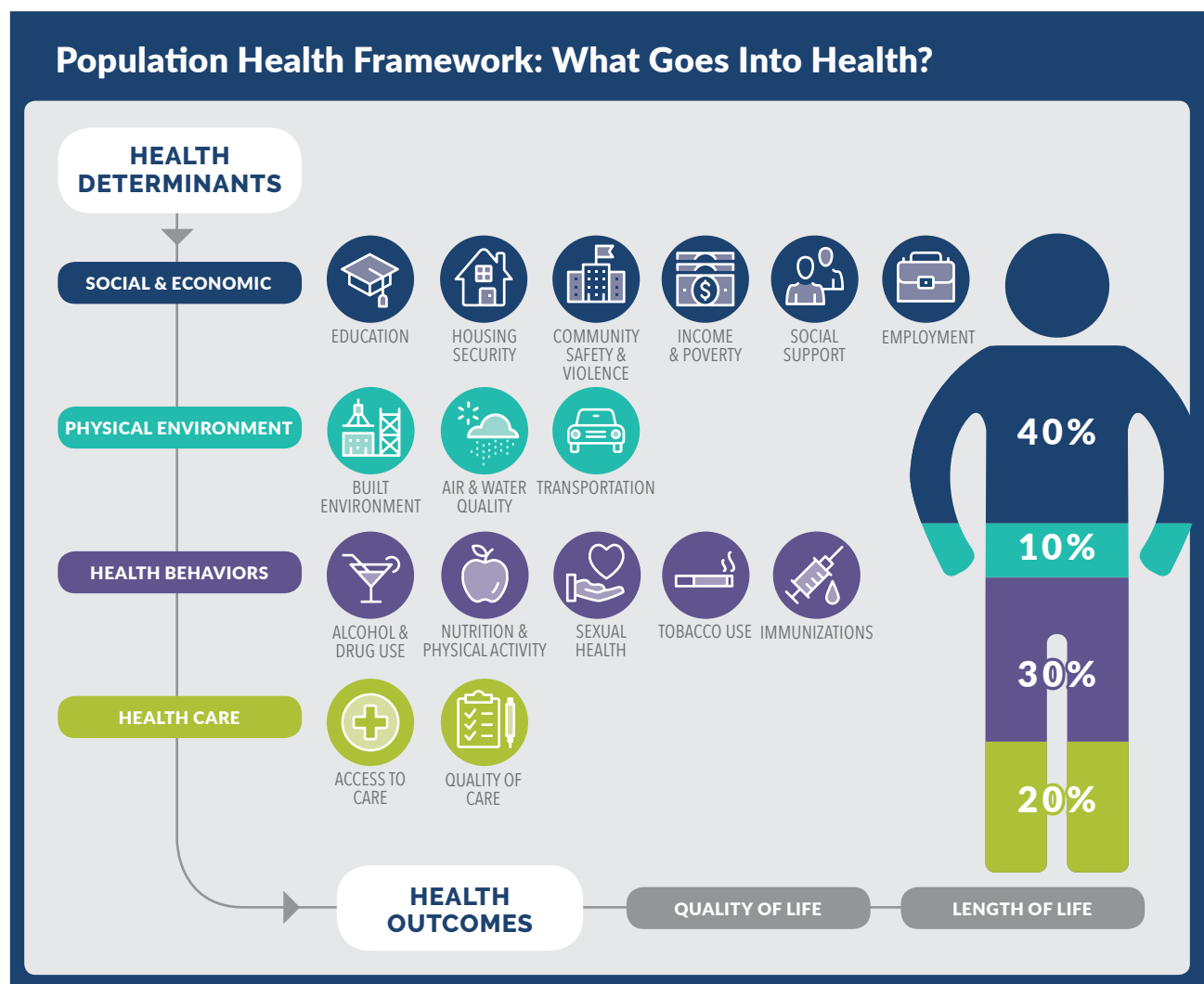




This assessment uses the population health framework shown below to demonstrate how health outcomes – the length and health-related quality of one's life – are the result of complex interactions between many factors, or *health determinants*. These influencing factors fall into one of four categories: social and economic factors, physical environment, health behaviors, and health care.<sup>8</sup>

The population health framework is important to the *Community Health Assessment* (CHA) because it explains that health is determined by more than just medical care received or the individual choices each person makes. Health is also determined by factors such as the resources that a person can access or the quality of the environment in which they live. The CHA includes measures of these health determinants as a way to assess not just how sick or well the population is, but also what underlying factors are contributing to health and disease.

This section of the CHA highlights results from the *Community Health Status Assessment* and the *Community Themes and Strengths Assessment*, with quantitative data presented together with the themes from interviews and meetings with Whatcom County community members. The data is organized into subsections that correspond with the population health framework.



The Population Health Framework is adapted from the County Health Rankings population health model. More information can be obtained at <http://www.countyhealthrankings.org/explore-health-rankings/what-and-why-we-rank>



## Whatcom County Population by City, 2017

Source: Office of Financial Management

Bellingham	86,720
Blaine	5,075
Everson	2,630
Ferndale	13,470
Lynden	13,620
Nooksack	1,490
Sumas	1,571
Unincorporated Whatcom County	91,724

## Whatcom County Population in Unincorporated Towns or Urban Growth Areas<sup>11</sup>, 2012-2016

Source: American Community Survey, U.S. Census Bureau

Acme	162
Birch Bay	8,107
Deming	246
Glacier	80
Lummi Island	951
Maple Falls	55
Peaceful Valley	3,503
Point Roberts	1,203
Sudden Valley	6,818

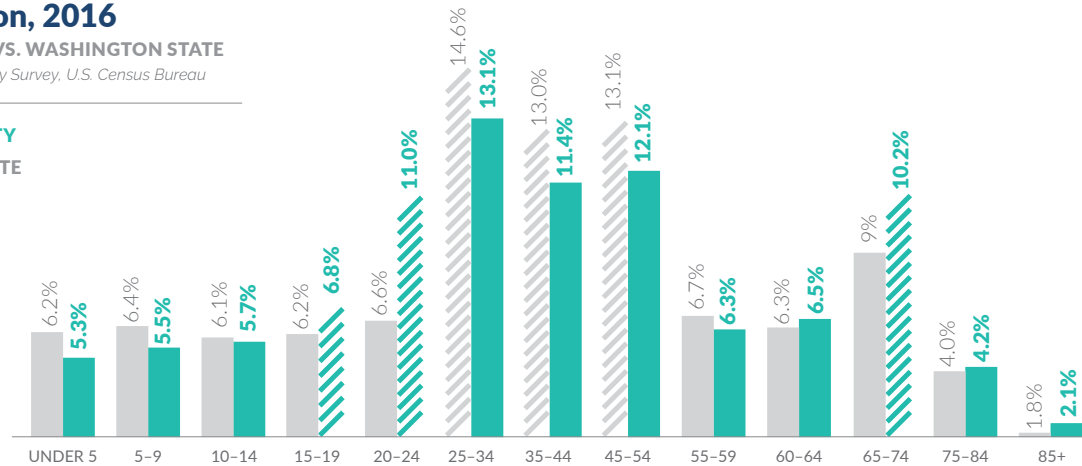
## Age distribution, 2016

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: American Community Survey, U.S. Census Bureau

● WHATCOM COUNTY  
● WASHINGTON STATE

Dashed bars represent a statistical difference between Washington State and Whatcom County.



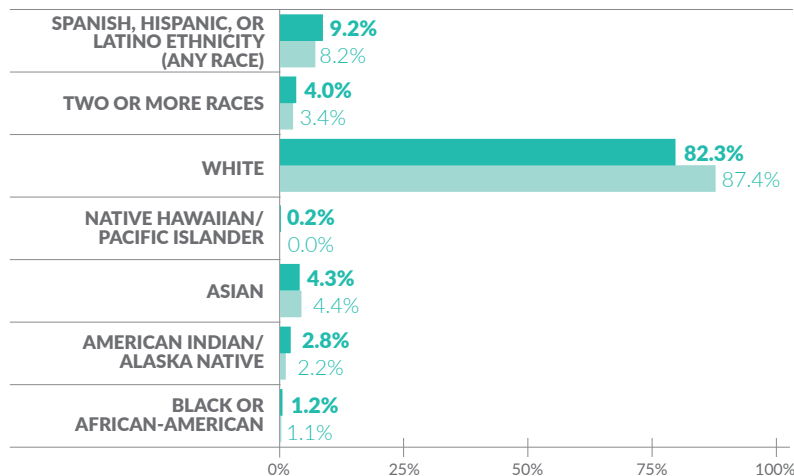
The majority (47.5%) of the Whatcom County population is between 20 and 54 years old. The median age in 2016 was 37, up from 36 in 2010. The population of adults aged 65 and older has increased 12.5%, from 25,899 in 2009 to 36,532 in 2016.

In 2016, there were a total of 84,011 households in Whatcom County, with 25.4% having one or more children under the age of 18, 12.9% with people 65 and older, and 28.4% with the householder living alone.

## Population by race and ethnicity, 2011/2016

WHATCOM COUNTY | Source: American Community Survey, U.S. Census Bureau

● 2016  
● 2011



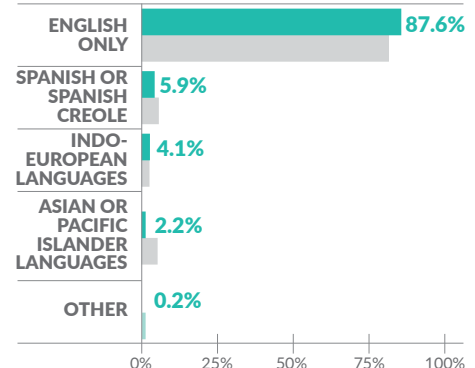
The non-white population in Whatcom County makes up 17.7% of the total population, up from 12.6% in 2011. Washington State had a similar increase in the non-white population. Persons of Spanish, Hispanic, or Latino origin are the largest non-white ethnic group, comprising 9.2% of the total population. American Indian/Alaska Native individuals comprise 2.8% of the population, including members of two indigenous tribes located within Whatcom County: the Lummi Nation and Nooksack Indian Tribe.

## Population by language, 2016

WHATCOM COUNTY VS. WASHINGTON STATE

Source: American Community Survey, U.S. Census Bureau

● WHATCOM COUNTY  
● WASHINGTON STATE



# 12.4%

of people in Whatcom County speak a primary language other than English

## Community Views: Cultural Responsiveness/Disparities



*What we heard...*

- **Health and well-being are experienced differently around Whatcom County.** Disparities exist between neighborhoods and populations based on race and ethnicity, especially relating to culturally responsive practices in planning and building the physical environment, and the level of collaboration between those who plan services and those who use services.
- **Stark differences in quality of life,** and even life expectancy, based on the demographic makeup of the county's residents need to be addressed so all residents can access high-quality services. The cultural background of those providing services in the community often does not reflect those they are serving. In some instances, language and cultural differences are creating social isolation and limiting access to social services.
- **Community members desire to** increase the level of awareness, understanding, and appreciation for the indigenous peoples and histories of the region, especially what it means for Whatcom County to reside on historically native land, and to better respect and collaborate with indigenous/native residents.
- **Community members wish to** better understand, respect, and serve immigrant populations in the region, including those who serve in roles as migrant farm workers and others who have immigrated here from outside the US borders. This is particularly acute when considering non-Native English speakers.







# Health Outcomes

**Mortality – causes of death – and morbidity – causes of illness – are both included in the category of health outcomes.** Health outcomes result from the interactions between a variety of factors that affect health. Positive health outcomes include not just the absence of disease and premature death, but also include a sense of functioning well mentally, physically, and socially.<sup>12</sup> The indicators in the following pages are those that show a significant trend (positive or negative) over time in Whatcom County, a significant difference from Washington State, or a significant difference between genders. A more comprehensive list of health outcome indicators is included in Appendix A.

## Length of Life

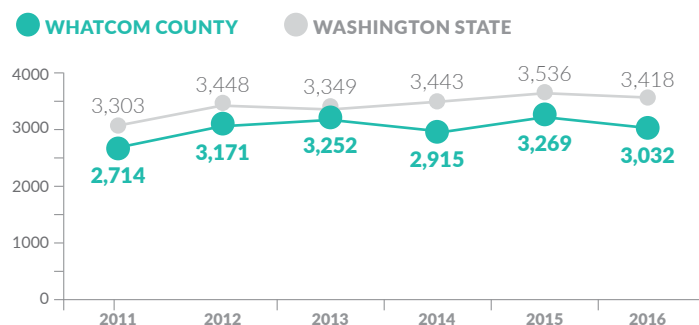
Understanding the magnitude of premature death, the leading causes of death, and the causes of preventable death is important for prioritizing interventions aimed to prevent and reduce the burden of disease.

### Premature death, 2011–2016

Total years of potential life lost (YPLL) before age 65

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Health Assessment Tool, Washington State Department of Health



Premature death is any death before age 65, which is considered to be caused by events or behaviors that could have been prevented. It is measured by the number of years of life lost before age 65\*.

Premature death in Whatcom County has remained statistically lower than Washington State since 2013.

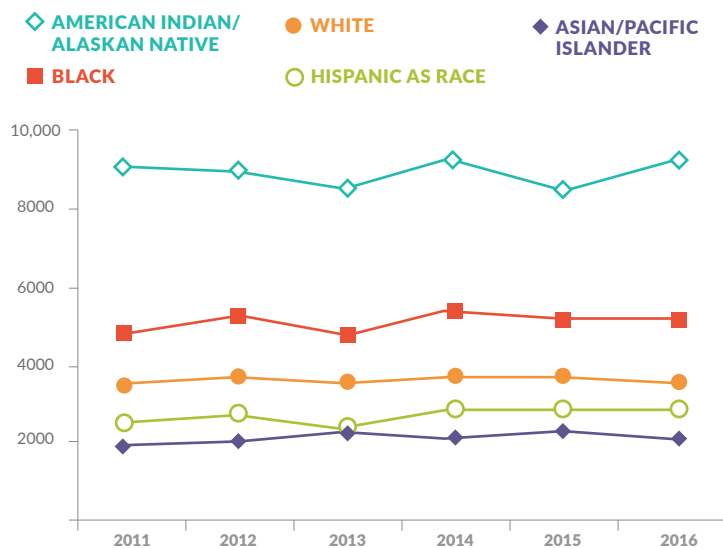
\* To calculate YPLL, the age at death for every death prior to age 65 is subtracted from 65, and the resulting numbers are summed.

## Premature death by race and ethnicity, 2011–2016

Total years of potential life lost (YPLL) before age 65 by race and ethnicity

### WHATCOM COUNTY

Source: Community Health Assessment Tool, Washington State Department of Health



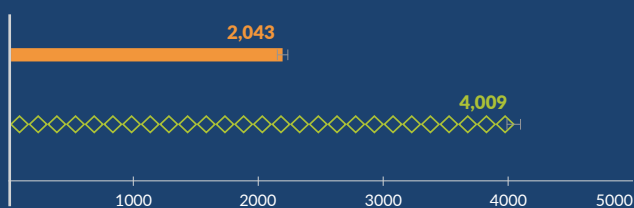
## Premature death by gender, 2016

### WHATCOM COUNTY

Total years of potential life lost (YPLL) before age 65 by gender

Source: Community Health Assessment Tool, Washington State Department of Health

● FEMALE ◆ MALE — CONFIDENCE INTERVAL



Disparities in premature death occur by gender and race and ethnicity. In comparison to other racial and ethnic groups, American Indian/Alaska Natives experience significantly higher rates of premature death. In 2016, males in Whatcom County experienced far greater premature death than females, with almost twice as many years of potential life lost.



Premature death in Whatcom County has remained below the state average since 2013.

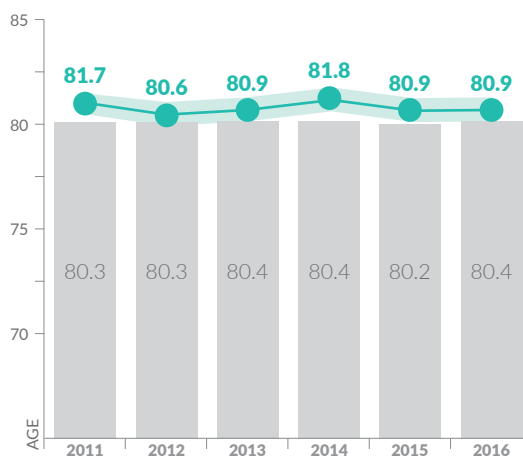
## Life expectancy at birth, 2011–2016

Total years of expected life at birth

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Health Assessment Tool, Washington State Department of Health

● WHATCOM COUNTY ● WASHINGTON STATE  
— CONFIDENCE INTERVAL



Life expectancy at birth can be associated with a number of health factors, including improved living standards and lifestyle, better education, and greater access to quality health services.

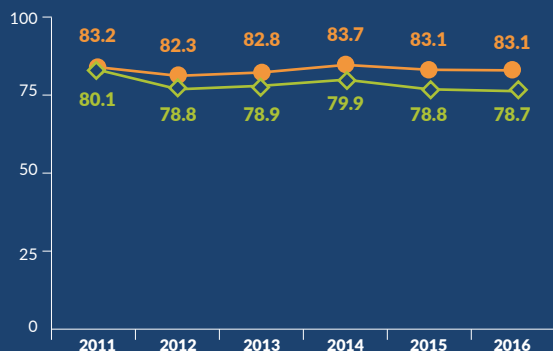
## Life expectancy at birth by gender, 2011-2016

Total years of expected life at birth

### WHATCOM COUNTY

Source: Community Health Assessment Tool, Washington State Department of Health

● FEMALE ◆ MALE



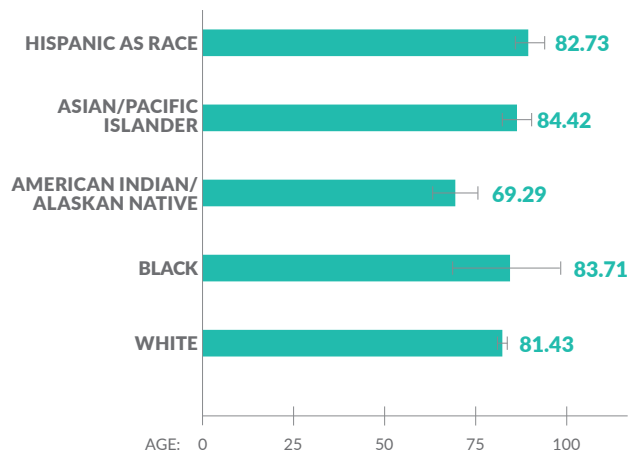
## Life expectancy at birth by race, 2011-2016

Total years of expected life at birth

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Health Assessment Tool, Washington State Department of Health

#### WHATCOM COUNTY



In Whatcom County, life expectancy at birth has remained steady since 2011. From 2011 to 2016, life expectancy at birth among Whatcom males has been statistically lower than females, with an average of four fewer years of life expectancy. American Indians/Alaska Natives experience lower life expectancy at birth in comparison to other racial and ethnic groups.

## Top 10 Leading Causes of Death, 2016

Deaths per 100,000 persons

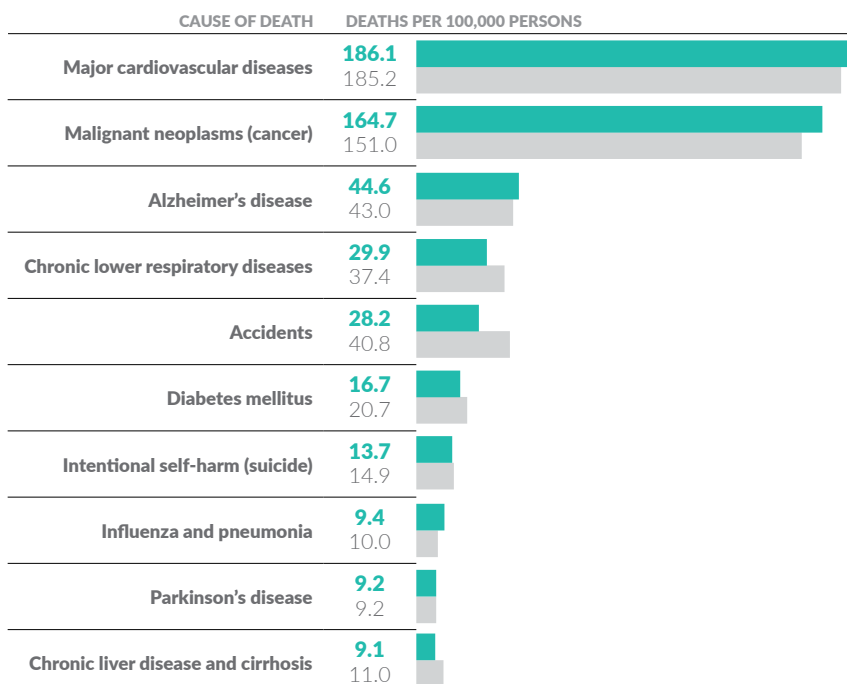
### WHATCOM COUNTY VS. WASHINGTON STATE

STATE | Source: Community Health Assessment Tool, Washington State Department of Health

Whatcom County's top 10 leading causes of death have had little variation over the last six years. The top three causes of death (cardiovascular disease, cancer, and Alzheimer's disease) have remained first, second, and third for both Whatcom County and WA State since 2011.

- Cardiovascular disease
- Cancer
- Alzheimer's disease

● WHATCOM COUNTY ● WASHINGTON STATE



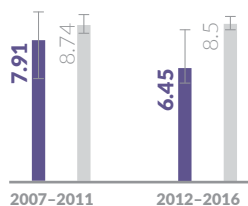
## Opioid, drug, and alcohol-related death rates, 2011 & 2016

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Health Assessment Tool, Washington State Department of Health

#### OPIOID-RELATED DEATHS

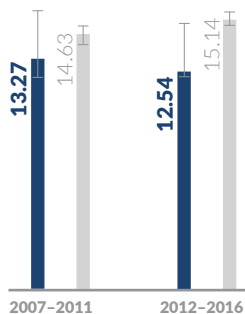
Deaths per 100,000 persons



● WHATCOM: OPIOID  
● WASHINGTON

#### DRUG-RELATED DEATHS

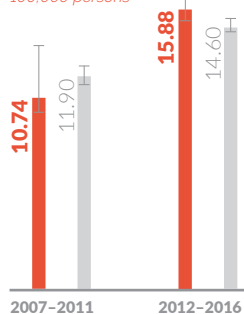
Deaths per 100,000 persons



● WHATCOM: DRUG  
● WASHINGTON

#### ALCOHOL-RELATED DEATHS

Deaths per 100,000 persons



● WHATCOM: ALCOHOL  
● WASHINGTON

Alcohol and drug-related deaths, and the associated conditions and disorders leading up to death, can have an enormous impact on families and communities and are major public health challenges.

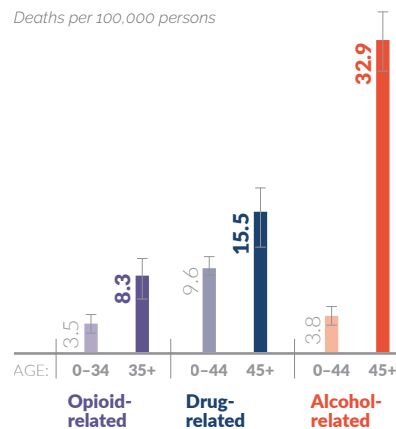
Five-year estimates for 2007-2011 to 2012-2016 show that the Whatcom County alcohol-related death rate increased significantly, by 5.14 deaths per 100,000 people.

## Opioid, drug, and alcohol-related death rates by age, 2012-2016

### WHATCOM COUNTY

Source: Community Health Assessment Tool, Washington State Department of Health

Deaths per 100,000 persons



During the period from 2012-2016, Whatcom County alcohol, drug, and opioid-related deaths rates were found to be disproportionate among different age groups.

**Opioid-related deaths were significantly higher among people ages 35+**

**Adults ages 45+ were found to have higher rates for alcohol-related deaths**



## Suicide and unintentional injury death rates, 2011 & 2016

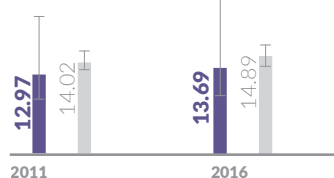
Deaths per 100,000 persons

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Health Assessment Tool, Washington State Department of Health

#### SUICIDE DEATHS

Deaths per 100,000 persons

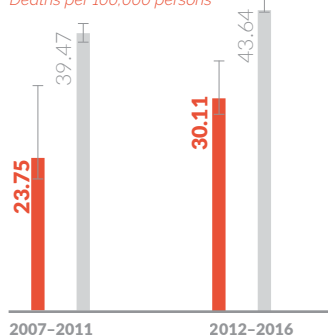


● WHATCOM: SUICIDE

● WASHINGTON

#### UNINTENTIONAL INJURY DEATHS

Deaths per 100,000 persons



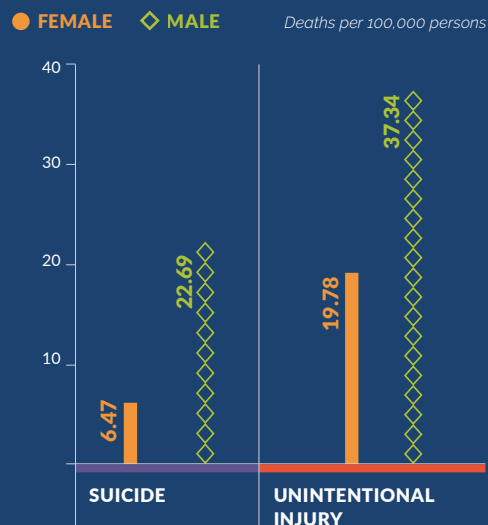
● WHATCOM: UNINTENTIONAL INJURY

● WASHINGTON

## Suicide and unintentional injury death rates by gender, 2016

### WHATCOM COUNTY

Source: Community Health Assessment Tool, Washington State Department of Health



In 2016, deaths due to unintentional injury were the fifth leading cause of death in Whatcom County. The rate of unintentional injury deaths in Whatcom County has remained significantly below the state rate. Unintentional injury deaths are highest among people ages 65 and older, with falls as the leading cause of injury. Suicide was the seventh leading cause of death in Whatcom County and the tenth leading cause in the nation. For deaths due both to unintentional injury and suicide, the rate is significantly higher for males than females.

**Suicide was the 7th leading cause of death in Whatcom County in 2016**

**Unintentional injury deaths were the 5th leading cause of death in Whatcom County in 2016**

**Deaths due to both unintentional injuries and suicide are significantly higher among Whatcom County males than females**





# Quality of Life

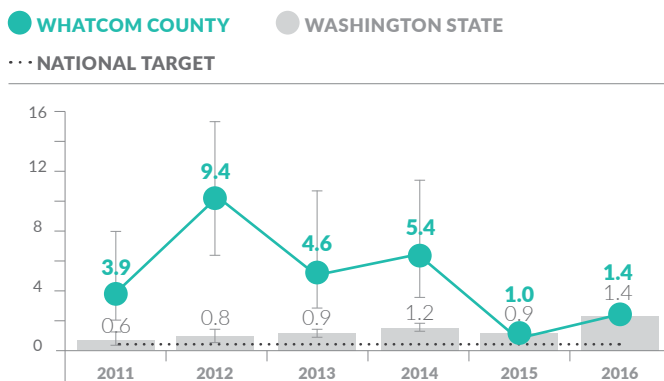
Quality of life is affected by disease or disability that prevents someone from attaining their full well-being. In this report, quality of life is measured primarily by the rate at which diseases or conditions occur in the population. This section highlights quality of life measures that show a significant trend (positive or negative) over time, a significant difference from Washington State, or a significant difference between genders. A more comprehensive list of quality of life indicators is included in Appendix A.

## Acute Hepatitis C Incidence, 2011–2016

Annual number of new cases of hepatitis C, rate per 100,000 persons

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Health Assessment Tool, Washington State Department of Health



Hepatitis C is a blood-borne virus that causes liver inflammation. The most common modes of infection are from unsafe injection practices, unsafe health care practices, and the transfusion of unscreened blood and blood products. Hepatitis C can be a short-term illness; however for 70%–85% of people who become infected, it becomes a long-term, chronic infection that can impact the quality of life.<sup>13,14</sup>

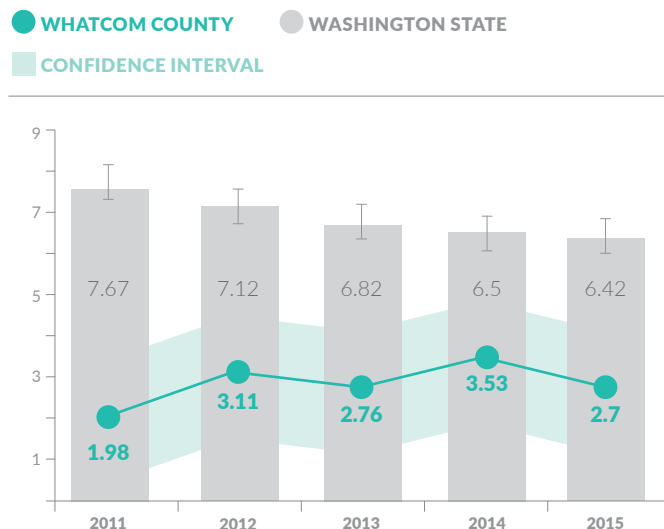
Whatcom County's acute Hepatitis C rates spiked between the years of 2011 and 2014 and were significantly higher than Washington State. In recent years, rates have decreased and are similar to the state rate.

## HIV Incidence, 2010–2015

Annual number of new cases of HIV, rate per 100,000 persons

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Health Assessment Tool, Washington State Department of Health



An estimated 1.1 million people are living with HIV in the United States. People infected with HIV are more susceptible to opportunistic infections and illness. However, improved medical treatments are helping people live longer and with a better quality of life than when it was first introduced and diagnosed.

HIV

Whatcom County HIV rates have stayed statistically lower than Washington State since 2011.

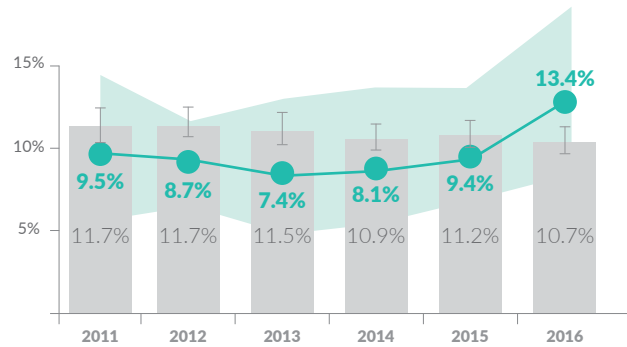
## Adults with poor mental health, 2011–2016

Percent of total population who reported 14 or more days per month of poor mental health

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Behavioral Risk Factor Surveillance System, Washington State Department of Health

● WHATCOM COUNTY ● WASHINGTON STATE  
■ CONFIDENCE INTERVAL



Mental health includes having emotional, psychological, and social well-being. Over the course of a lifetime, many factors can affect mental health, including biological factors, life experiences such as trauma or abuse, and family history. Thirteen percent of Whatcom County adults reported 14 or more days of poor mental health per month in 2016, the highest rate reported over the last six years and surpassing the Washington State rate for the first time.

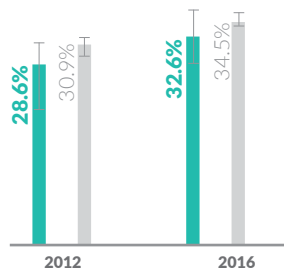
## Youth and adult depression, 2011 & 2016

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Behavioral Risk Factor Surveillance System; Healthy Youth Survey, Washington State Department of Health

#### YOUTH DEPRESSION

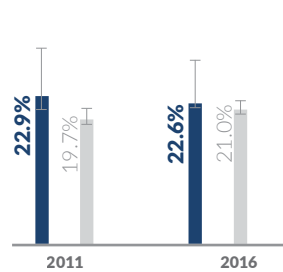
Percent of 10th graders who report depression



● WHATCOM YOUTH  
● WASHINGTON STATE

#### ADULT DEPRESSION

Percent of adult population reporting depression



● WHATCOM ADULTS  
● WASHINGTON STATE

## Youth and adult depression by gender, 2016

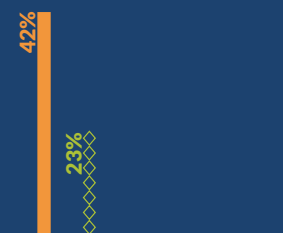
### WHATCOM COUNTY

Sources: Behavioral Risk Factor Surveillance System; Healthy Youth Survey, Washington State Department of Health

● FEMALE ◇ MALE

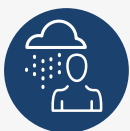
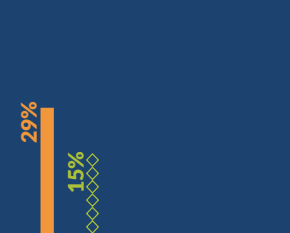
#### YOUTH DEPRESSION

Percent of 10th graders who report depression



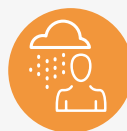
#### ADULT DEPRESSION

Percent of adult population who report depression



# 1/3

of Whatcom County 10th graders reported depression in 2016



For both youth and adults, females report higher rates of depression than males.

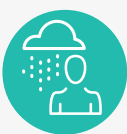
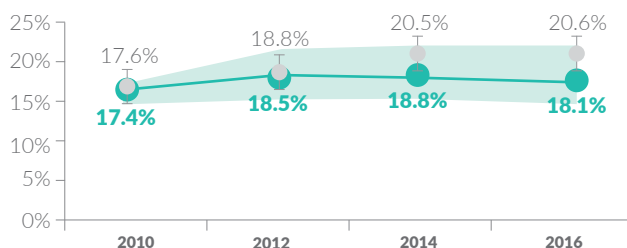
## Youth suicide contemplation, 2010–2016

Percent of 10th graders who report seriously considering suicide

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Healthy Youth Survey, Washington State Department of Health

● WHATCOM COUNTY    ● WASHINGTON STATE  
■ CONFIDENCE INTERVAL



**1/6**

of Whatcom County youth reported seriously considering suicide in 2016

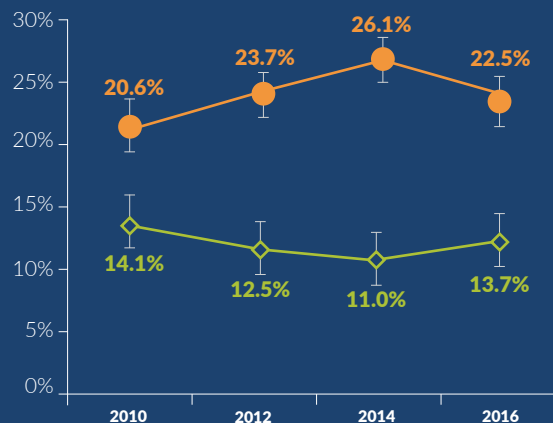
## Youth suicide contemplation by gender, 2010–2016

Percent of 10th graders who report seriously considering suicide

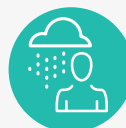
### WHATCOM COUNTY

Source: Healthy Youth Survey, Washington State Department of Health

● FEMALE    ◆ MALE



Suicide is a serious public health concern and is the third leading cause of death for young people between the ages of 10 and 24.<sup>16</sup> In 2016, 1 out of 6 Whatcom youth reported seriously considering suicide. Since 2010, female youth have had a significantly higher rate of suicide contemplation compared to male youth.



Students who identified as gay, lesbian, or bisexual had higher rates (48%) of suicide contemplation than those who identified as straight (12%) or not sure (20%).



# Social and Economic Factors

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Social and economic determinants of health include social conditions such as poverty, unemployment, and lack of educational achievement. It is widely acknowledged in public health that these factors affect long-term health. For example, without a network of support and a safe community, families and individuals cannot thrive. Ensuring access to social and economic resources provides a foundation for a healthy community.

Measures of social and economic factors that affect health include income, housing, food security, safety, and social connectedness. The health indicators presented in this section have been highlighted because they show a statistically significant positive or negative difference over time, the Whatcom County data is significantly different from Washington State averages, or because they are related to a key community-identified concern.

Data collected from community members revealed several themes relating to social and economic conditions, presented as "Community Views" alongside statistical measures below. Law enforcement and public safety; access to quality, affordable childcare; education and supports for school-aged children and their families; workforce development and living-wage jobs; housing and homelessness; and supports for parents were all identified as social and economic themes of concern.

## Community Safety and Violence

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Indicators of community safety and violence encompass public safety, incarceration, and exposure to crime or violence in the home or in community settings. Research has established a connection between incarceration and poor long-term health outcomes, such as a greater risk of experiencing substance abuse, mental health issues, violence, and infectious and chronic diseases<sup>27</sup>. Violence or unsafe conditions can lead to injury and chronic health conditions, as well as toxic stress and poor mental health.

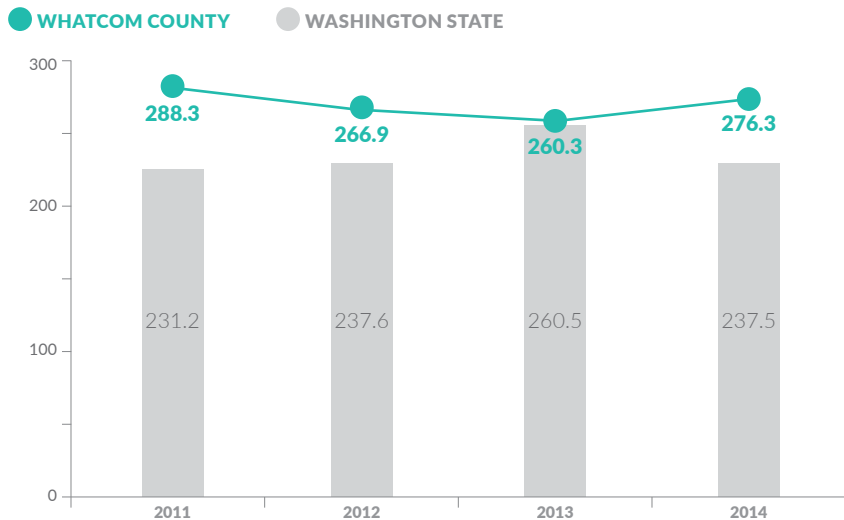


## Jail incarceration rate, 2011–2014

Rate of persons incarcerated per 100,000 population ages 15–64

WHATCOM COUNTY VS. WASHINGTON

Source: Vera, Institute of Justice



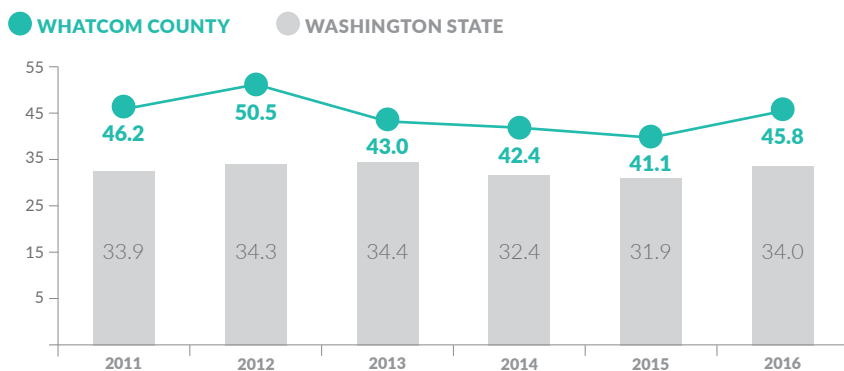
Whatcom County had a higher rate of incarceration than Washington State with a difference of 38.3 per 100,000 in 2014.

## Victims of child abuse and neglect, 2011–2016

Rate of accepted referrals per 1,000 persons aged 0–17

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Risk Profiles, Washington State Department of Social and Health Services



Consequences of child abuse and maltreatment can lead to poor mental and physical health well into adulthood. Whatcom County rates have continued to be higher than Washington State since 2010, with the highest rate (50.5 per 1,000) being reported in 2012.

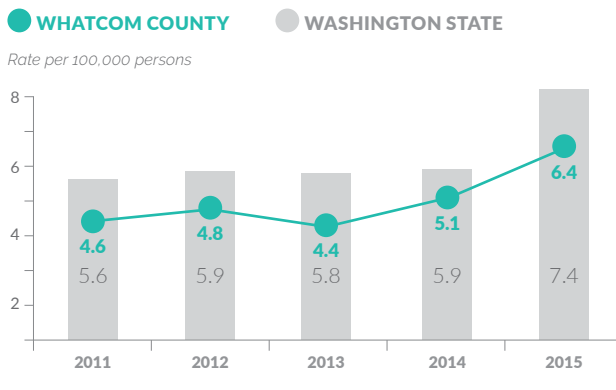


## Domestic violence offenses, 2011–2015

Rate per 1,000 persons

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Risk Profiles, Washington State Department of Social and Health Services



Domestic violence can have long-term, negative effects on families and the communities in which they live. Adult victim survivors can experience long-term health problems such as heart disease, chronic pain, stress disorders, and increasing health care costs. Witnessing violence committed against a parent can affect a child's attachment and trust of adults in the future.

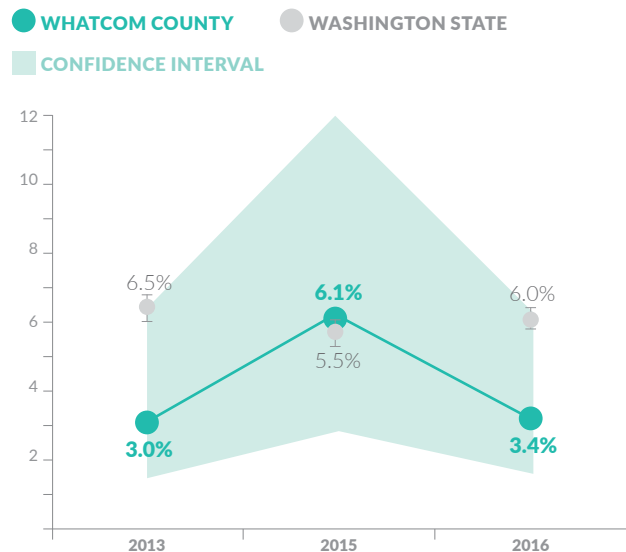
Whatcom County rates of domestic violence offenses have remained below Washington State. However, Whatcom County's rate has been steadily increasing since 2013 with the highest rate (6.4 per 100,000) reported in 2016.

## Households with loaded and unlocked firearms, 2013–2016

### Percent of population with unloaded and unlocked firearms in the home

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Behavioral Risk Factor Surveillance Survey, Washington State Department of Health Services



Loaded and unlocked firearms in the home are associated with an increased risk of fatal or nonfatal unintentional shooting, criminal assault, firearm homicide, and suicide attempt.<sup>18</sup> Fewer than 4% of Whatcom County homes report having loaded and unlocked firearms in 2016.

## Community Views: Community Safety & Violence



*What we heard...*

- **Some community members are concerned** about the potential of expanding the jail system locally, while some point to this as an asset. Irrespective of the opinion expressed, community members feel more needs to be done to deter and prevent criminal activity in the first place, including substance abuse treatment, mental health supports, increased opportunities for positive activities, employment skills, and general attention to economic opportunities for Whatcom residents. In addition, community members feel incarceration by itself does very little to support rehabilitation and preparedness for people to safely and productively re-enter the community.

# Education



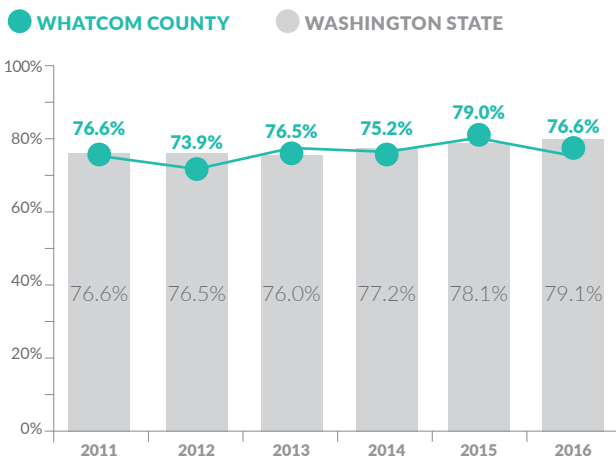
Educational success is linked to better health outcomes such as longer life expectancy and less illness. The first few years of education are crucial to establishing a solid foundation from which children can adapt to school systems and learn effectively. High school graduation is an important predictor for decreased rates of long-term morbidity and mortality, and lacking a high school diploma or higher education can limit a person's social and economic well-being and access to resources.

## On-time graduation rate, 2011–2016

Percent of high school seniors who graduate high school within four years of starting

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Office of Superintendent of Public Instruction, State of Washington



Whatcom County graduation rates have remained steady and close to the WA State rate since 2011.



A large body of evidence links educational success to better health outcomes



**28.7%**

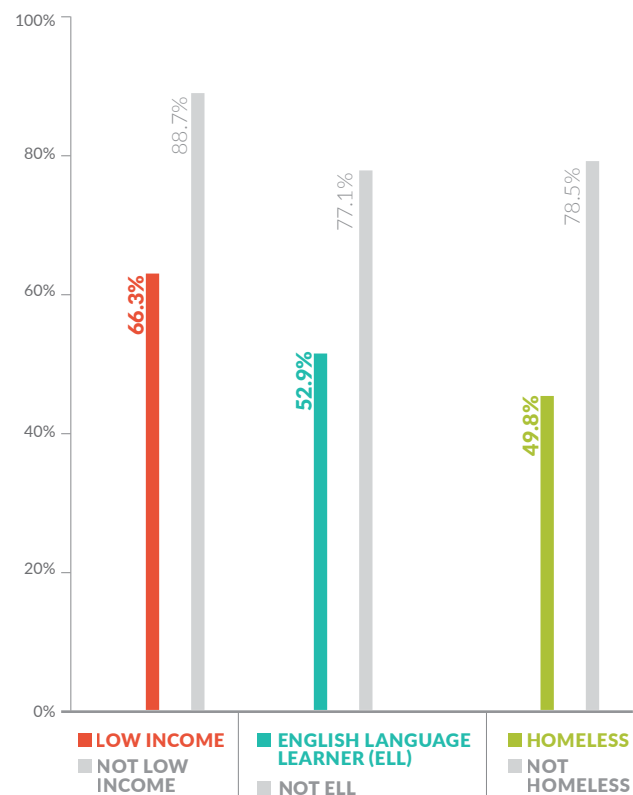
Gap in on-time graduation between Whatcom County homeless youth and non-homeless youth

## On-time graduation rates by income, English language learner and homelessness, 2016

Percent of high school seniors who graduate high school within four years of starting by income, English language learner, and homelessness

WHATCOM COUNTY

Source: Office of Superintendent of Public Instruction, State of Washington



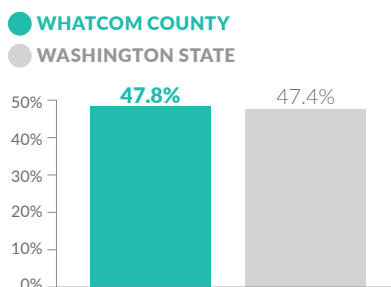
Low-income, English language learners, and homeless Whatcom students are less likely to graduate than their classmates, at 22%, 24%, and 29%, respectively.

## Children who demonstrate kindergarten readiness, 2016–2017

Percent of children who met six of six domains to demonstrate kindergarten readiness

### WHATCOM COUNTY VS. WASHINGTON

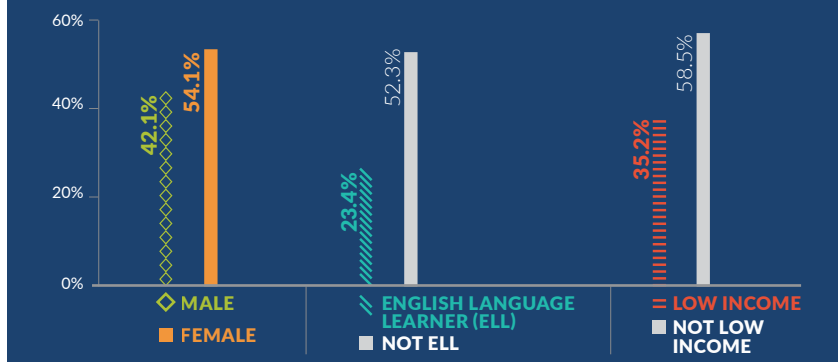
Source: Office of Superintendent of Public Instruction, State of Washington



## Children who demonstrate kindergarten readiness by gender, English language learner, and income, 2016–2017

Percent of children who met 6 of 6 domains to demonstrate kindergarten readiness by gender, income, and English language learner

Source: Office of Superintendent of Public Instruction, State of Washington



For the 2016-2017 school year, the Whatcom County average for kindergarten readiness (47.8%) was comparable to the Washington State average (47.7%). Disparities in kindergarten readiness were highest between English language learners (ELL) and non-ELL students (28.9% difference) and between low-income and higher income students (23.3% difference).

## Community Views: Education



What we heard...

- **Education is a pathway to success and opportunity, and schools provide much more than academic instruction.**
- **Some community members see the potential for schools to be the hub of the community,** where not only education is provided, but other community programs collaborate with schools to serve student, family, and community needs. One community member expressed it this way: *"I want to go back to the idea of the schools as being the hub of a community... to me, it makes such perfect sense because there are already existing buildings... They're owned by the community... and the public funds them. It would increase the perceived value to community members if they were able to use it for purposes beyond education."*
- **Working through the school system is challenging.** Teachers, administrators, and parents of schoolchildren noted that teachers and those who support them are tired and expected to serve multiple functions, not 'only' teaching.
- **Schools and school districts need to consider the ways in which they can support school staff** to better engage with the families of the school children and to better understand the 'whole child', or the child and their family in context.
- **Community members want to connect families and caregivers** to social, health, and community education services as well as peer support activities in school settings.

# Housing Security



Safe and affordable housing is an essential component of healthy communities, and housing conditions, affordability, and homelessness each have implications for well-being.

In areas where housing costs are high, low-income residents may be forced to select substandard living conditions with increased exposure to environmental hazards that impact health, such as lead or mold. Residents who lack complete kitchens are more likely to depend on unhealthy convenience foods, and a lack of plumbing facilities and overcrowding increases the risk of infectious disease.

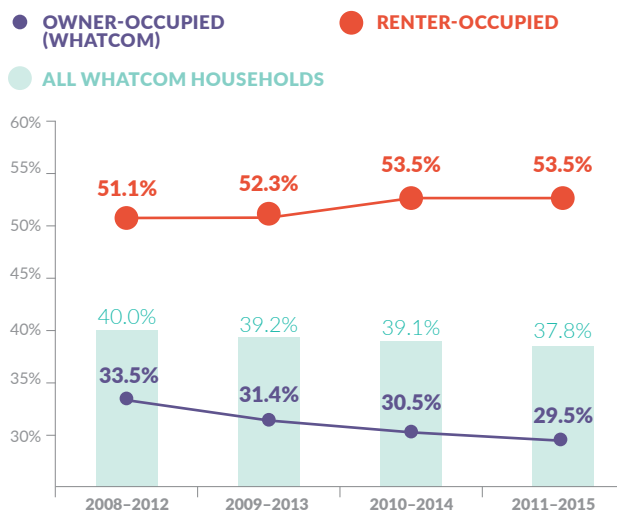
Households who put a significant portion of their budget toward housing cut costs in other areas, spending less on food, transportation, education, childcare, and health care.<sup>19</sup> This reduction in spending impacts the household's quality of life, can add to negative stress and poor mental health, and may prevent people from meeting basic health needs.

People experiencing homelessness are more vulnerable to a broad range of acute and chronic illnesses, such as hypertension and diabetes. Additionally, individuals facing homelessness are more likely to have substance use and mental health concerns, which can be difficult to address without the stability a home provides.

## Cost-burdened households, 2008–2015

Percent of households who spend more than 30% of income on housing

ALL HOUSEHOLDS, RENTER- AND OWNER-OCCUPIED HOUSEHOLDS | Source: American Community Survey, US Census Bureau



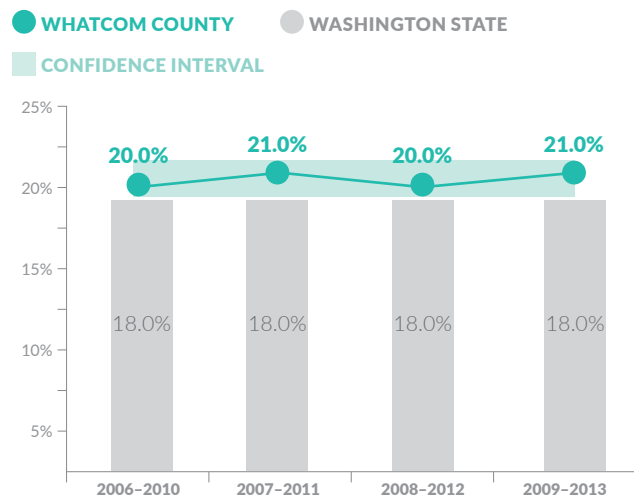
The percentage of cost-burden households in Whatcom County has decreased slightly since 2012 but remained statistically higher than Washington State in 2016 (37.8% vs. 35.1%). The percentage of renter-occupied households that are cost-burdened has increased 2.4% since 2012. This rate was also significantly above Washington State in 2016 (53.5% vs. 47.2%).

## Households with severe housing problems, 2006–2013

Percent of households with one or more of the following problems: lacks complete kitchen, lacks complete plumbing, household is severely overcrowded

WHATCOM COUNTY VS. WASHINGTON STATE

Source: American Community Survey, US Census Bureau



Five-year estimates for 2009–2013 show that 2 out of 10 Whatcom County residents are in households with severe housing problems.



**Low rental vacancy rates drive up demand for and costs of rental housing, resulting in residents spending more of their income on rent.**

When households who pay more for rent have less to spend on essential items such as food, childcare, transportation, and healthcare needs, it impacts their health.

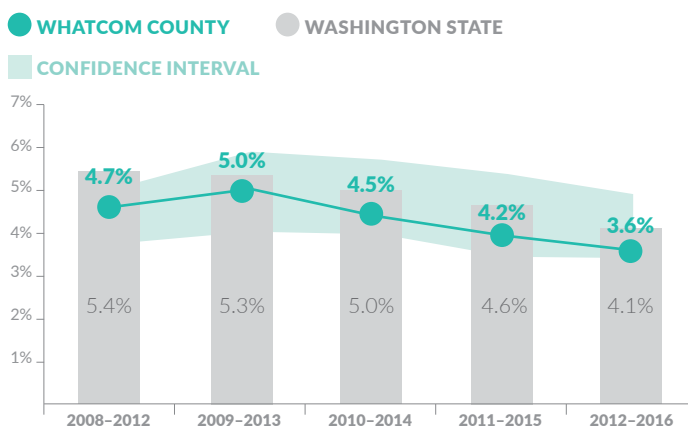
Whatcom County's rental vacancy rate was statistically lower than Washington State for the 2012–2016 five-year estimates and was the lowest rate since 2008–2012.

## Rental vacancy rate, 2008–2016

Percent of housing units that are vacant

WHATCOM COUNTY VS. WASHINGTON STATE

Source: American Community Survey, US Census Bureau



## Individuals experiencing homelessness, 2011–2017

Total number of individuals who were homeless

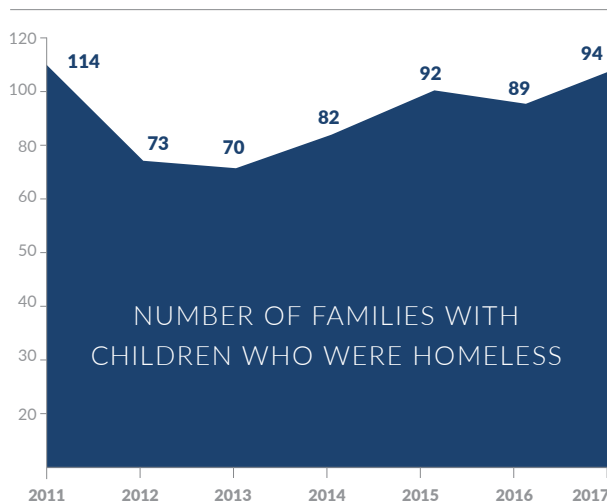
Source: Whatcom County Annual Point-in-Time Count, Opportunity Council



## Families with children experiencing homelessness, 2011–2017

Total number of families with children who were homeless

Source: Whatcom County Annual Point-in-Time Count, Opportunity Council



According to 2017 Whatcom County's Annual Homeless (Point-in-time Count) Census<sup>20</sup>:

- 78% of homeless households included only one person
- There were 94 families with children that included 287 persons
- 44% of all homeless persons identified as female
- Ages ranged from less than one year old to 78 years old
- Median age of all people experiencing homelessness was 34 years
- The most prevalent disabling conditions were mental illness (41%), permanent physical disabilities (22%), chronic illness (20%), substance use disorders (16%), and developmental disability (11%)



## Community Views: Housing



*What we heard...*

- **All residents need safe, affordable housing.**
- **Some community members are challenged by being “priced out”** of the areas where they would prefer to live, frequently closer to their places of employment such as Bellingham.
- **Policies are needed for** development, creating innovative ways to provide “affordable housing”, addressing homelessness, and working to ensure ample and comprehensive services are readily available within future housing developments. Housing is recognized as a complex subject, and yet there is a sense of urgency to act on policy solutions.
- **Community members are concerned about the lack of temporary housing or shelter beds available for various populations** — people who may struggle with addiction, mental health challenges, unstable or insufficient employment, and those with or without children, including single men and couples.
- **Community members see housing and health as intersecting** and consistently want to see a general ‘housing first’ approach that includes wraparound services. Some also desire creative housing options, such as the development of “tiny home” communities.



# Income, Poverty, and Employment



Poverty is both a cause and a consequence of poor health. Poverty status is directly linked to educational attainment, employment status, housing stability, transportation availability, food access, and access to health care — all of which contribute to health status. Individuals with lower incomes have higher rates of many chronic diseases, lower life expectancy, poorer access to health-promoting resources, and may face more barriers to adopting healthy behaviors. For example, maintaining a healthy diet is critical to achieving overall health, but for some people, barriers like affordability stand in the way of eating healthily.

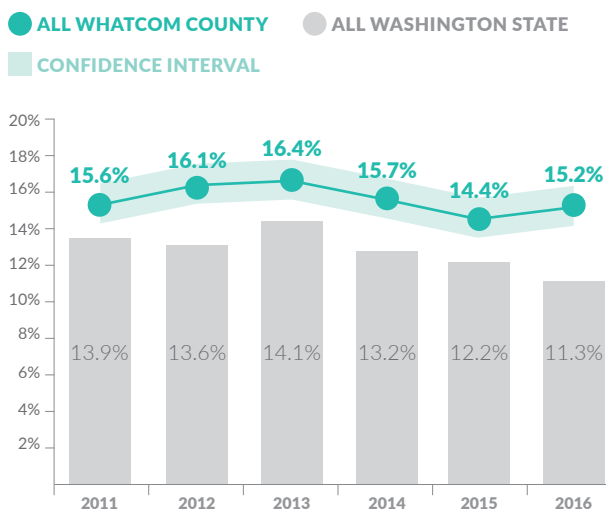
Unemployment is associated with a number of negative health effects. People lacking employment are more likely to have fair or poor health than those with steady work, are at a greater risk of developing stress-related conditions, and struggle with depression.<sup>21</sup> Additionally, an individual's poor health may limit their employment opportunities and income, and as a result, they may need added social and economic supports to meet their basic needs. Higher employment rates lead to better access to health care, increased quality of life, and better health outcomes.

## Poverty and childhood poverty, 2011–2016

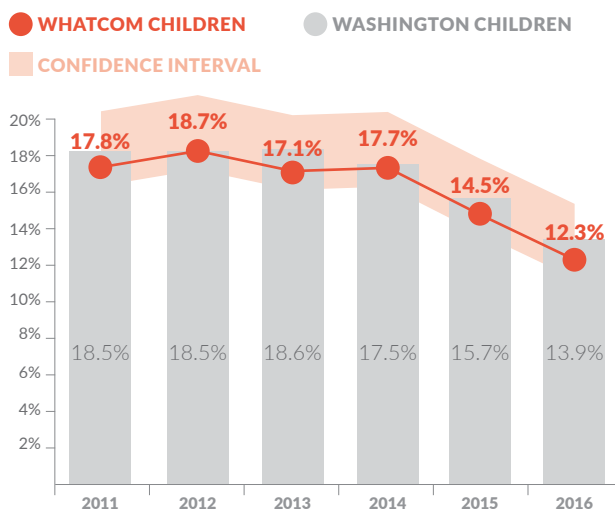
Percent total population and percent of children living below Federal Poverty Level

WHATCOM COUNTY VS. WASHINGTON STATE | Source: American Community Survey, US Census Bureau

### Total Population



### Children



The percentage of Whatcom County's total population living in poverty has remained unchanged, and statistically higher than Washington State, since 2011. However, since 2011, the percentage of Whatcom County children living in poverty has decreased and is similar to Washington State. Additionally, according to United Way's 2014 ALICE report, 22% of Whatcom County households were ALICE\* households. ALICE represents the number of individuals and families who are working but are unable to afford basic necessities of housing, food, childcare, health care, and transportation. ALICE is a gauge of financial hardship that affects 1 in 5 Whatcom County households.

\*ALICE is an acronym developed by United Way that stands for Asset Limited, Income Constrained, Employed

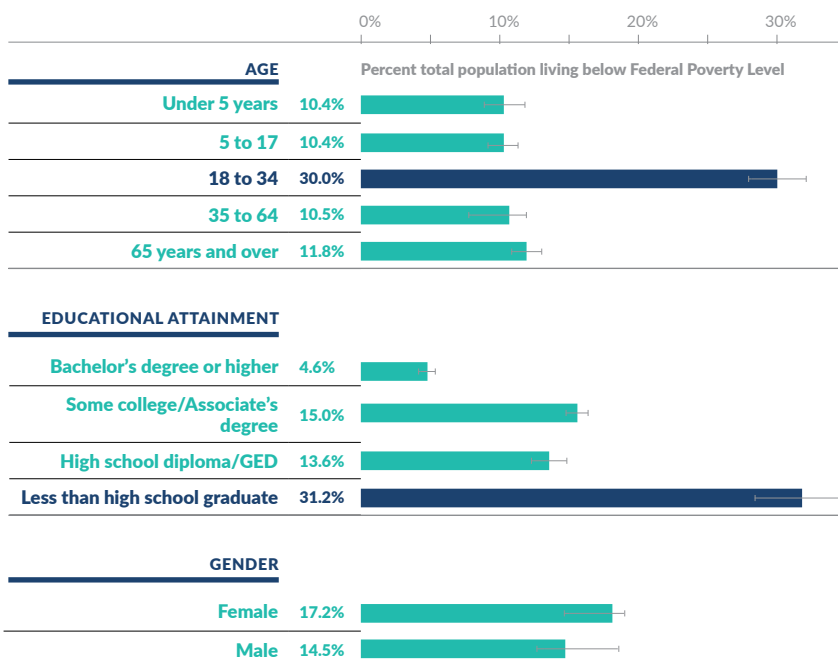
## Poverty by age, educational attainment, and gender, Whatcom County, 2016

Percent total population living below Federal Poverty Level by age, educational attainment and gender

Source: American Community Survey, US Census Bureau



In Whatcom County, poverty rates were significantly higher for people between the ages of 18 to 34 and those with less than a high school education.

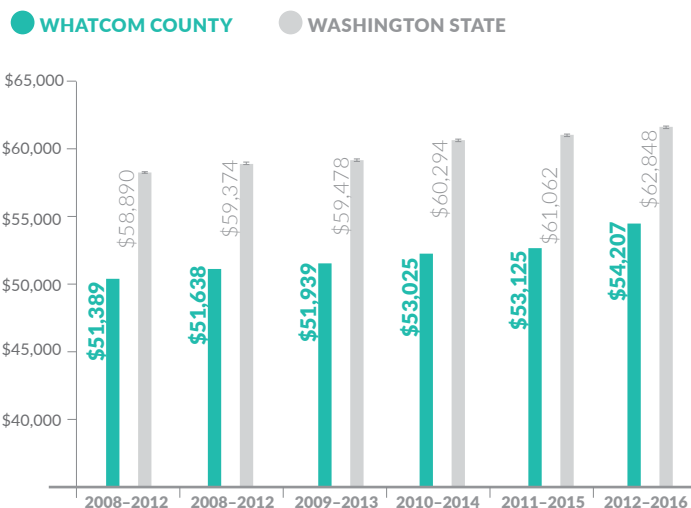


Darker bars indicate significant difference from other groups

## Median household income, 2007–2016

WHATCOM COUNTY VS. WASHINGTON STATE

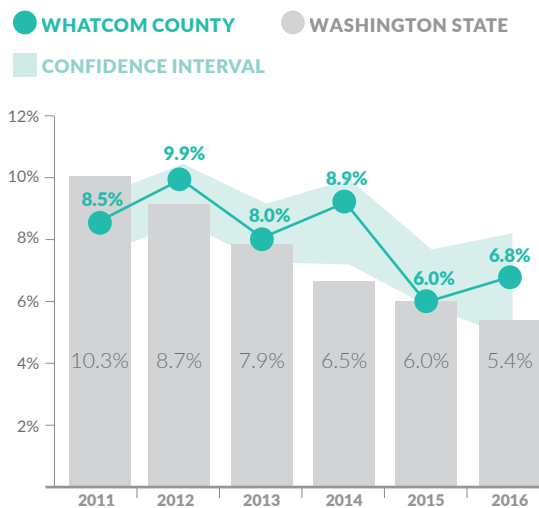
Source: American Community Survey, US Census Bureau



## Unemployment rate, 2011–2016

WHATCOM COUNTY VS. WASHINGTON STATE

Source: American Community Survey, US Census Bureau



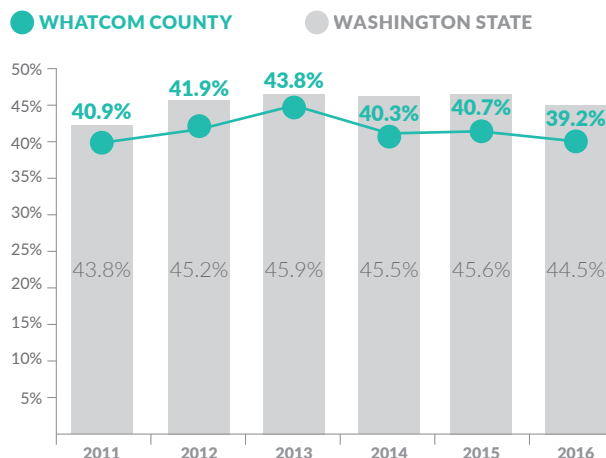
Median household income reflects the relative wealth and prosperity of an area. Communities with higher median household incomes are likely to have more educated residents and lower unemployment rates.<sup>22</sup> Based on 5-year estimates, Whatcom County's median household income continues to rise.

## Students eligible for free and reduced lunch, 2011–2016

Percent of all students eligible for Free and Reduced Lunch program

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Office of Superintendent of Public Instruction, State of Washington



Evidence shows that there is a link between nutrition and cognitive development, confirming that the brain's ability to develop and learn can be negatively impacted when adequate nutrition is not available.<sup>23</sup> Students experiencing food insecurity are at greater risk for serious health implications and can often be experiencing inadequate housing and a lack of access to health care. School lunch programs assist with removing the barrier to food access.

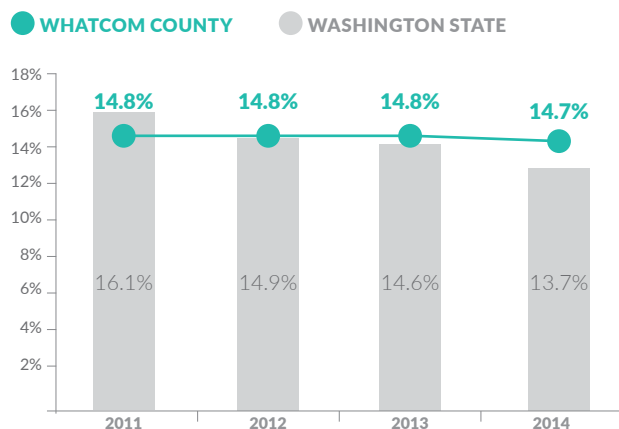


## Food insecurity, 2011–2014

Percent of population who did not have access to a reliable source of food during the past year

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: American Community Survey, US Census Bureau



Food insecurity is associated with self-reported chronic diseases, like heart disease, diabetes and hypertension, as well as poorer overall health status.<sup>24</sup>



## Community Views: Income, Poverty, and Employment



*What we heard...*

### Childcare

- **Not being able to access high-quality, affordable childcare is an issue for many families** that create barriers to employment, education, and opportunities for parents and children to connect by socializing and learning from each other.
- **Some parents face the dilemma of working a low-wage job**, where the majority of their paycheck goes to cover childcare expenses, or not working at all.
- **Families seeking more affordable housing often find themselves living farther from where they work**, complicating schedules since the hours of operation for childcare may not align with the times they need to catch a bus, or require them to make a longer driving commute.
- **Families who need subsidized childcare and those who have children with special health care needs** are particularly impacted by limited access to childcare.

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### Employment and Poverty

- **Some in Whatcom County feel there are disparities in employment opportunities based on demographics such as race and ethnicity.**
- **Community members want competitive, living-wage jobs that can sustain a family.**
- **Community members recognize the need** for job-ready employees and increased training and professional development opportunities for people at all stages of employment.

---

*"I am hiring all of these new restaurant employees all the time...We pay them \$11 an hour, and if they worked 40 hours a week, all year long, that would mean that they would make like \$23,000 for the year. Their annual salary is \$23,000...How in the world do people make this work?"*





# Isolation and Social Support



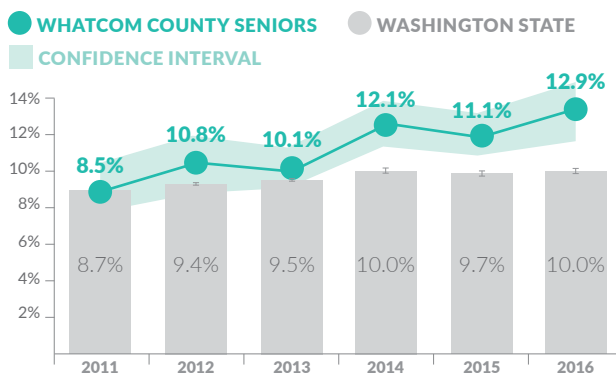
An adequate social support system is essential to coping with everyday and major life stressors. Lack of social supports can result in minor stressors contributing to the escalation of multiple major life stressors, and this can lead to negative short and long-term health outcomes. Having positive social connections and community connectedness are also important components of good mental health.

## Seniors living alone, 2011–2016

Percent of population age 65+ living alone

WHATCOM COUNTY VS. WASHINGTON STATE

Source: American Community Survey, US Census Bureau

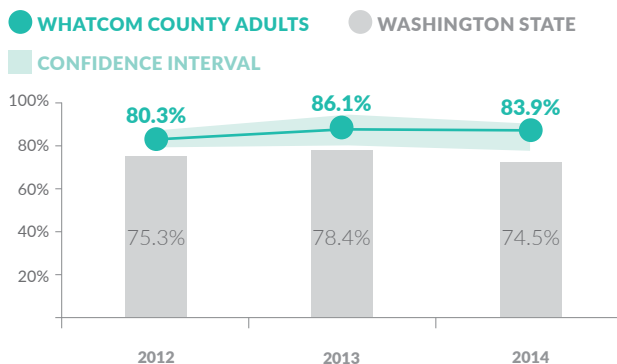


As people get older, their likelihood of living alone only increases. While living alone does not inevitably lead to social isolation, it can be a risk factor. Social contacts tend to decrease as people age for a variety of reasons, including retirement, the death of friends and family, or lack of mobility. Social isolation and loneliness in seniors have been linked with adverse health effects, including increased risk for hospital readmission, dementia, increased risk of falls, and death.<sup>25</sup> Whatcom County's aging population that is living alone has significantly increased since 2011 and was statistically higher than Washington State in 2016.

## Adults who have community support, 2012–2014

Percent of adults who can count on other adults to watch out for their children

WHATCOM COUNTY VS. WASHINGTON | Source: Behavioral Risk Factor Surveillance Survey, Washington State Department of Health

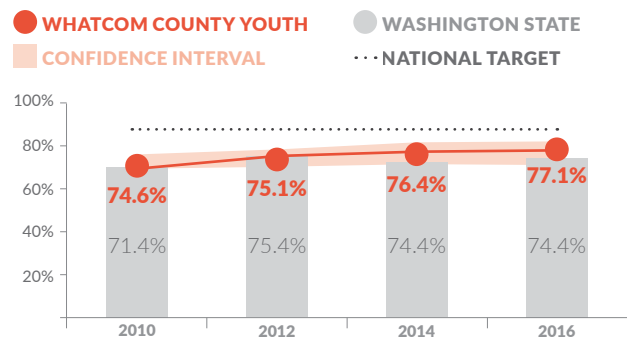


## Youth who have community support, 2010–2016

Percent of 10th graders who reported having a neighborhood adult they can talk to

WHATCOM COUNTY VS. WASHINGTON

Source: Healthy Youth Survey, Washington State Department of Health



About 3 out of 4 Whatcom youth report having an adult they can talk to, and 8 out of 10 adults say they have other adults to watch out for their children.

## Community Views: Isolation and Social Support



*What we heard...*

### Family/Parenting – From Early Childhood through Adolescence

- **Community members, both families and providers, need help navigating the systems of care, and connecting with new parents for support.**
- **Many families struggle to** access quality, affordable childcare and education about parenting and child development.
- **There are disparities in the number and quality of positive, safe activities for children and youth.** Some families appreciate a wealth of options, while others are concerned by the lack of opportunity (frequently based on a family's location).

---

### Senior/Elder Care

- **Seniors desire more options for emotional connections and relationships as they age.** According to one senior interviewee, *"I think this is a big issue for our elders. So much research shows that social support networks make such a difference. If an elder has a community that they are a part of, that they feel purpose and meaning in relationships, then their health outcomes are a lot better than if they're just sitting in loneliness."*





# Physical Environment

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The physical environment includes both the natural environment (water, air, and land) and the built environment (buildings, roads, parks, and other infrastructure). A healthy natural environment — having access to clean water, clean air, and preventing exposure to environmental toxins — is foundational to good health. The built environment influences health by providing or limiting opportunities for healthy living, including access to safe areas to be physically active, access to nutritious foods, and access to community gathering spaces for social connections.

In addition to measures of air and water quality, health indicators of the physical environment include access to parks, food, and recreation; commute modes; and the presence of disease-causing germs in the natural or built environment. The health indicators presented in this section have been highlighted because they show a statistically significant positive or negative difference over time, the Whatcom County data is significantly different from Washington State averages, or because they are related to a key community-identified concern.

Data collected from community members revealed several themes that related to social and economic conditions, which are presented as "Community Views" alongside statistical measures below.

## Air Quality

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Both indoor and outdoor air quality affect health. Exposure to secondhand smoke or other indoor air contaminants can complicate existing health conditions, like asthma or other lung diseases, and can lead to additional poor health outcomes, like cancer. Similarly, outdoor air quality, which is affected by smoke from wildfires or wood-burning stoves and motor vehicle or industrial pollution, can make current health conditions worse and is linked to long-term health outcomes.<sup>26</sup>

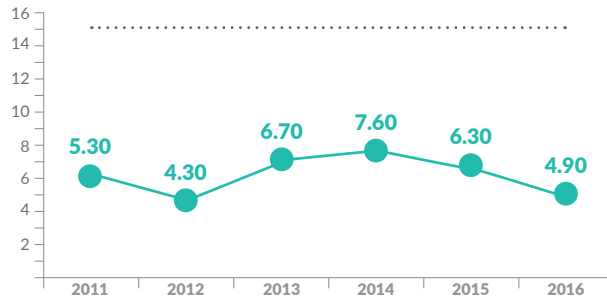
## Average Air Quality 2011–2016

Annual average of particulate matter concentration (PM<sub>2.5</sub>)

### WHATCOM COUNTY

Source: Washington Tracking Network, Washington State Department of Health

#### WHATCOM COUNTY



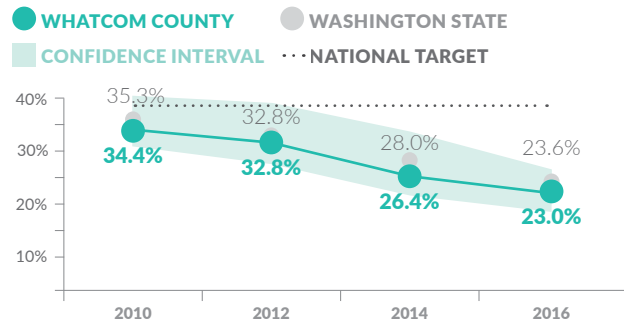
Whatcom County's average air quality has remained the same since 2011 and well below the national target of 15 µg/m<sup>3</sup> PM<sub>2.5</sub>.<sup>26</sup>

## Youth exposed to secondhand smoke, 2010–2016

Percent of 10th graders exposed to indoor secondhand smoke

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Healthy Youth Survey, Washington State Department of Health



**1 out of 4 youth report experiencing secondhand smoke exposure in the last 7 days**

# Food and Water Diseases



Contaminated food or water can lead to serious diseases caused by microorganisms such as salmonella, E. coli, campylobacter, and giardia. In addition to a variety of physical symptoms, food and water diseases also have an impact on the local economy. Outbreaks require disposal of food products, lost business and employee productivity, and other costs associated with correcting the issues.

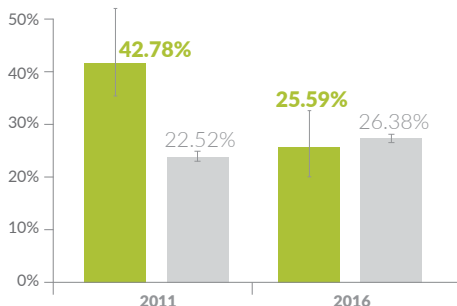
## Campylobacter and Giardiasis incidence rates, 2011 & 2016

Rate per 100,000 persons | WHATCOM VS. WASHINGTON STATE

Source: Community Health Assessment Tool, WA DOH

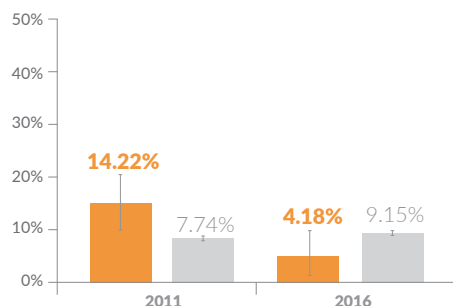
### WHATCOM: CAMPYLOBACTER

WASHINGTON STATE



### WHATCOM: GIARDIA

WASHINGTON STATE



In Whatcom County, both campylobacter and giardia cases have significantly decreased from 2011 to 2016.

# Water Quality



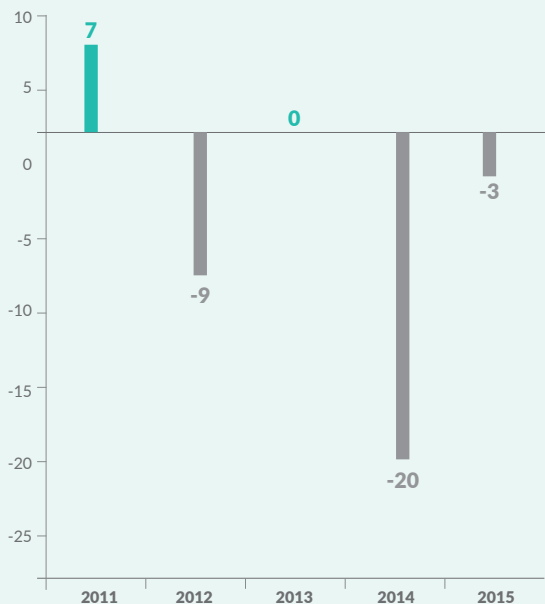
Clean water for drinking, farmland irrigation, and shellfish or other marine life are all important to community health. The presence of contaminants in drinking water can lead to adverse health effects, including gastrointestinal illness, reproductive problems, and neurological disorders. The quality of marine waters impacts the availability of shellfish and other species that are safe to eat.

## Marine Water Condition Index, 2011–2015

Index of 12 water quality variables ranging from +50 to -50 indicating a positive or negative departure from zero (unchanged baseline conditions)

WHATCOM COUNTY

Source: Puget Sound Vital Signs, Puget Sound Partnership



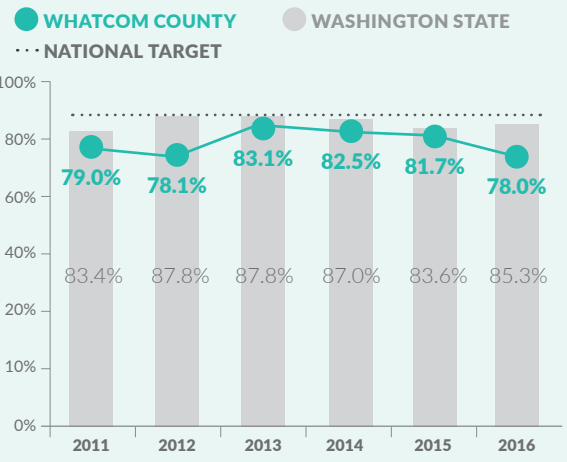
Marine water quality is affected by many different factors including weather, climate and natural circulation patterns, inflow from rivers and streams, discharges from wastewater treatment plants, erosion and storm-water runoff, groundwater, and other pollution. In the Puget Sound, Bellingham Bay had the largest significant change (22% decline in index score) over a 17 year period, from 1999 to 2015. In recent years, more unfavorable ocean conditions in the Salish Sea and off the west coast of Washington have contributed to the apparent decline across all regions.<sup>27</sup>

## Population served by Community Water Systems, 2011–2016

Percent of population using a Community Water System\* as drinking water source

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Washington Tracking Network, Washington State Department of Health



Sources of drinking water are subject to contamination and require appropriate treatment to remove disease-causing contaminants. Infants, young children, pregnant women, the elderly, and people whose immune systems may be compromised can especially be susceptible to illness from some contaminants.<sup>28</sup>

Whatcom County's population served by community water systems has remained lower than the state average and the national target since 2011. In 2016, 22% of Whatcom County's population used a water source other than a community water system. Wells are the most common source of drinking water for these residents.

\*A community water system is a public water system that supplies water to the same population year-round and is regularly tested.



# Built Environment



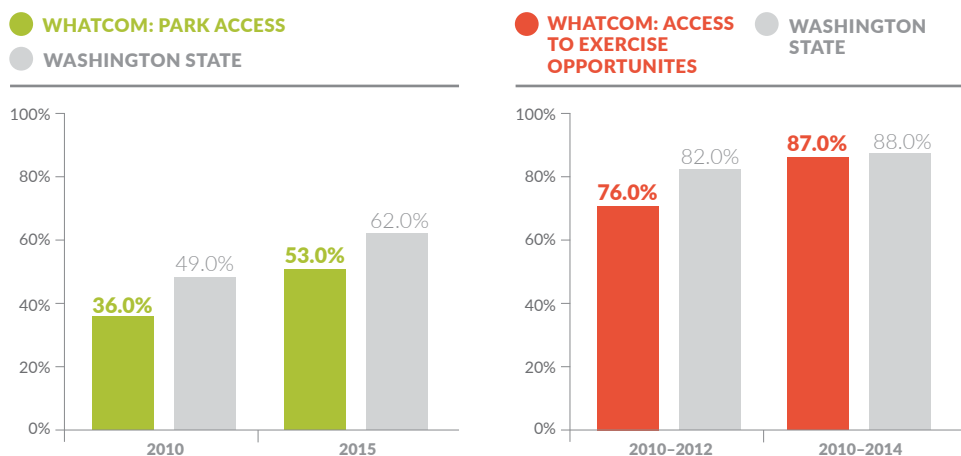
The built environment includes access to parks and open space; walkability and bike-ability of neighborhoods, including sidewalks and bike lanes, shops and basic services; access to outlets for healthy food, medical clinics, and other essential services; and how well the transportation system provides alternatives to single-person motor vehicle commutes. Poor or lacking infrastructure can lead to injuries, inaccessibility of resources and services, and less physical activity, which is an important predictor of obesity-related diseases. In addition, green spaces and public places to be active or to gather and recreate with community members are associated with lower rates of depression and stress and with better overall mental health.

From 2010 to 2015, the percentage of Whatcom County residents that live within a ½ mile of a park increased by 17%. Access to exercise opportunities (gyms, sports clubs, parks, etc.) increased 11% for Whatcom County from 2012 to 2014.

## Access to parks and exercise opportunities, 2010–2015

### WHATCOM COUNTY VS. WASHINGTON STATE

Sources: County Health Rankings, Robert Wood Johnson Foundation



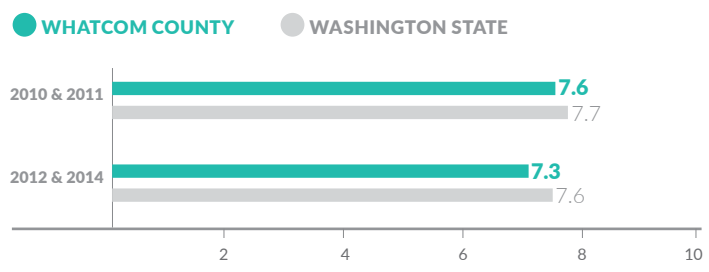
There is strong evidence that links limited access to healthy foods and food insecurity to negative health outcomes such as weight-gain and premature death.<sup>29</sup> Whatcom County's food environment index has remained steady and slightly below WA State's index since 2011.

## Food environment index, 2010–2014

An index ranging from 0 (worst) to 10 (best) that weighs both limited access to healthy foods and food insecurity

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: County Health Rankings, Robert Wood Johnson Foundation



## Community Views: Physical Environment



*What we heard...*

### Built Environment

- **The built environment is central to** discussions and decisions about housing, development of correctional facilities, transportation, and many of the other issues of tension that arise within community development and community health.
- **Community members suggest** expanding the use of existing public structures, and creating more access to safe, quality recreational spaces like playgrounds, picnic areas, trails, and community buildings.
- **Community members recognize the tensions** between designing for public safety, promoting community health, and the evolving public perceptions about the need to align safety, health, and resource considerations when creating a policy about the built environment. The tensions point — in part — to disparities in quality and quantity of effective, useful, and necessary structures and resources.
- **Some community members feel they can access a variety of safe, secure parks and recreational areas.** Far fewer opportunities are available in the northern and eastern areas of the county.

**Seniors indicated they felt a sense of fear for safety when navigating poorly maintained public spaces. They shared stories of injuries sustained from damaged or non-existent sidewalks and poorly lit walkways.**

*"I like it here very much but I only have one problem. I like to walk around here but when you go down to Sterling Drive there is no crosswalk, cars cannot see us coming and we can't see them coming. Coming back is even more dangerous because there is a big tree blocking the way and you can't see both sides. We need a crosswalk with a push button or a mirror so that we can see the cars coming."*

### Natural Environment

- **Community members generally see the unique geography, access to physical activities, and outdoor spaces as assets,** and many people appreciate the natural beauty and quality of the environment.
- **These natural assets are at risk in some areas,** and may be out of reach for residents without transportation, time, or resources needed to take advantage of them.
- **The impact of industry; potential expansion of trafficking fossil fuels; and introduction of invasive species, pesticides, and chemicals cause concern for many residents.** This includes the potential for encroaching on ways of living and commerce of indigenous populations.

*"We live in paradise in a lot of ways. It's so beautiful. I think that is such a strength."*



## Food/Nutrition

- **Low socioeconomic status and isolated geographic locations limit access to healthy food.**

For those with means, Whatcom County has wonderful options for healthy eating habits and nutritious food. However, those without means are often limited to their local convenience store. In recent years, a number of grocery stores have closed, leaving food deserts in both rural and urban areas and frustration related to disparities in food availability.

*"...it's so obvious to me that there's poor access to healthy food, I had somebody say to me that the loss of the grocery store [was a tremendous hardship on the family]...it takes two buses to get to a grocery store, and if you have kids age 7 or older, you have to pay for the kids, right? So it's a \$6 trip just to get to a grocery store and then you can only have two grocery bags on the bus, and then if you have little kids, I don't know how you would manage two kids and two bags anyway..."*

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## Emergency Preparedness & Response

- **Given Whatcom County's geographic location, there is potential risk for a variety of natural disasters.** Disaster readiness and keeping the community prepared for any such disaster is a leading concern. This concern is particularly stark for those areas of the county that by their nature are isolated, such as Lummi Island, areas of East County, Point Roberts, and a variety of single-road-way communities within the county.



# Commute

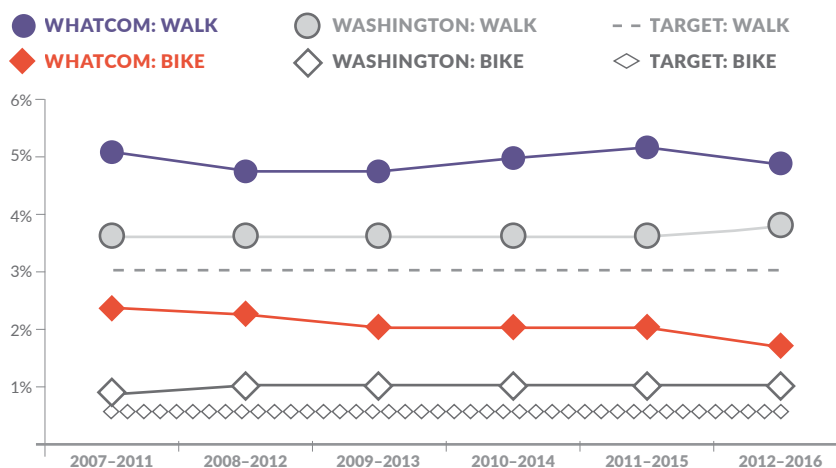


Opportunities for active forms of transportation, like walking or biking, can decrease dependence on automobiles and may result in reduced motorized traffic and overall outdoor pollutants. Walking or bicycling to work also provides an opportunity to engage in physical activity regularly, which is important to maintaining good physical and mental health.

## Commute by walk or bike, 2007–2016

Percent of population who walk or bike to work

WHATCOM COUNTY VS. WASHINGTON STATE | Source: American Community Survey, US Census Bureau



The percent of the population who either walk or bike to work continues to remain higher in Whatcom County than in WA State.

## Community Views: Transportation



What we heard...

- **Access to transportation is challenging for some residents**, especially those who live outside of Bellingham or have lower incomes. Routine transportation needs, like commuting to a job, obtaining groceries or other household goods, and attending appointments are far more difficult for those without their own vehicle. Community members shared stories of catching multiple buses and taking hours of time to attend appointments for medical or social services.
- **Community members living in both Bellingham and in more rural parts of the county suggest** increasing the number of sidewalks and lanes/trails for walking and biking and enhancing existing ones.
- **Community members worry about** transportation related to safety in the event of a crisis, especially in areas without public transportation or multiple thruways.



# Health Behaviors

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Behaviors such as exercising, eating healthy, using substances, or getting vaccines are important factors that directly relate to health outcomes. For example, a person who quits smoking almost immediately cuts his or her risk of developing heart disease. Many public health and health care interventions focus on changing individual behaviors, and data about personal health behaviors can provide cues for developing effective interventions to promote healthy behavior choices.

The measures of health behaviors included in the Community Health Status Assessment cover nutrition and physical activity; sexual health; immunizations and preventative screenings; and alcohol, drug, and tobacco use. The indicators presented below have been highlighted because they show a statistically significant positive or negative difference over time, the Whatcom County data is significantly different from Washington State averages, or because they are related to a key community-identified concern.

Community discussions yielded only one theme related to health behaviors: nutrition and healthy eating.

## Alcohol and Drug Use

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Substance use has major health implications at the individual, family, and community levels. Abuse of drugs and alcohol is associated with poor health outcomes such as violence, crime, suicide, child abuse, sexually-transmitted infections, and injuries, in addition to societal impacts like health care costs or incarceration. Substance use is especially concerning during the adolescent years because it can impact a child's development and healthy cognitive function as an adult.

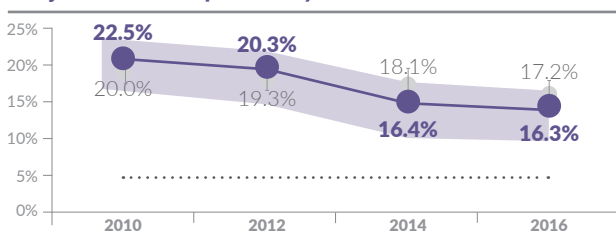


## Youth marijuana and alcohol use, 2010–2016

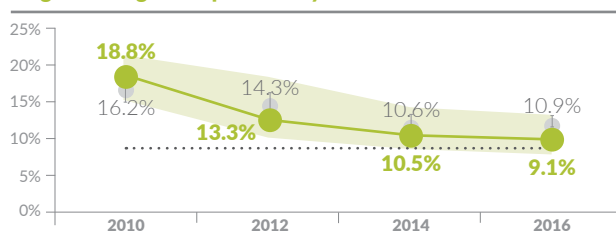
### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Healthy Youth Survey, Washington State Department of Health

#### Percent of 10th graders who report marijuana use in the past 30 days



#### Percent of 10th graders who report binge drinking in the past 30 days



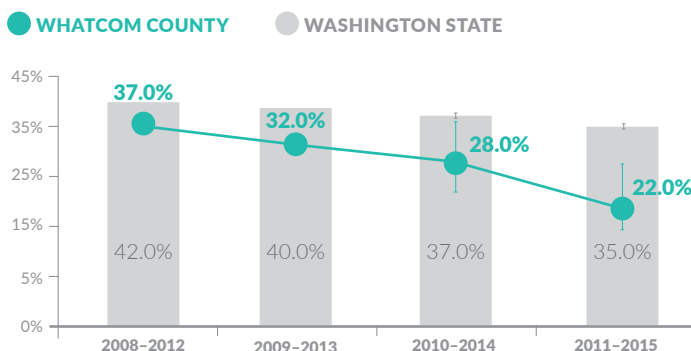
Over the last six years, Whatcom County youth binge drinking (having five or more drinks in a row) has significantly decreased (6.2%). In 2016, 5 out of 6 Whatcom youth reported not binge drinking in the last two weeks. Youth marijuana use has also significantly decreased (10.7%) over the same time period. In 2016, 9 out of 10 Whatcom youth reported that they had not used marijuana in the last 30 days.

## Alcohol-impaired driving deaths, 2008–2015

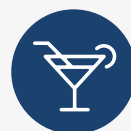
### Percent of motor vehicle crash deaths with alcohol involvement

#### WHATCOM COUNTY VS. WASHINGTON STATE

Source: County Health Rankings, Robert Wood Johnson Foundation



In 2015, nearly one-third of all traffic-related deaths in the US were due to alcohol-impaired driving crashes.<sup>30</sup> In Whatcom County, alcohol-impaired driving deaths have remained statistically lower than Washington State and decreased 15% from 2008–2012 to 2011–2015. Between the years of 2008 and 2016 there were 28 fatalities in Whatcom County that involved alcohol-impaired driving.<sup>31</sup>



# 15%

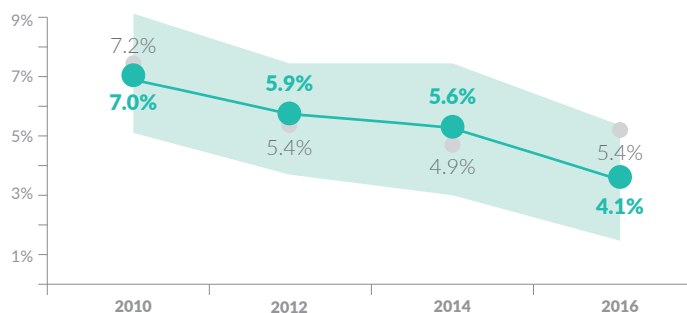
decrease in alcohol-impaired driving deaths

## Youth drinking and driving, 2010–2016

### Percent of 10th graders who reported drinking and driving in past 30 days

#### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Healthy Youth Survey, Washington State Department of Health



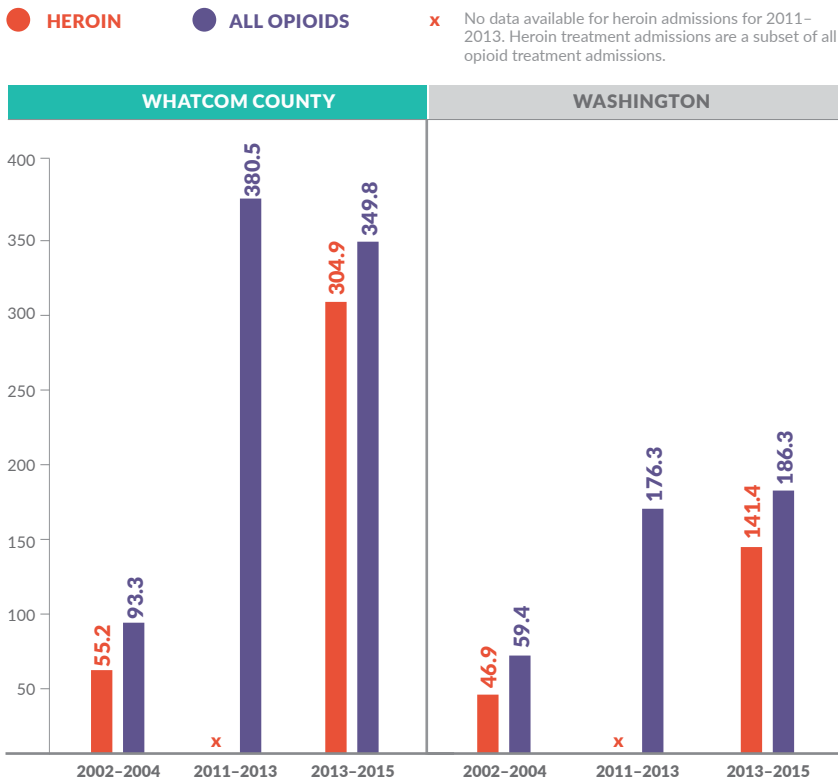
Teen drivers are three times more likely than older drivers to be in a fatal crash, this increases greatly when alcohol is involved. Nationally, youth drinking and driving has declined 54% since 1991.<sup>32</sup> Whatcom County youth drinking and driving rates have decreased 3% since 2010.

## Heroin and opiate treatment admissions, 2002–2015

Rate of per 100,000 persons

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Alcohol & Drug Abuse Institute, University of Washington

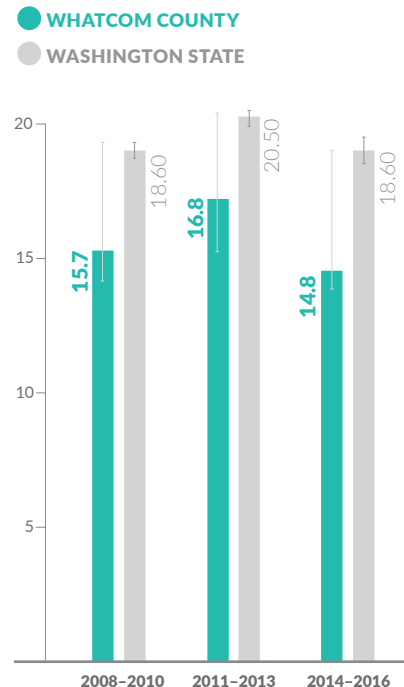


## Opioid overdose hospitalizations, 2008–2016

Rate of per 100,000 persons

### WHATCOM COUNTY VS. WASHINGTON

Source: Alcohol & Drug Abuse Institute, University of Washington



**Communities across the country have been impacted by the increase in prescription and illicit opioid abuse, addiction, and overdose. Treatment admissions and hospitalizations for heroin and other opioids are indicators of the extent of use of these substances.\***

In Whatcom County, opiate treatment admissions increased 3.7-fold, and heroin treatment admissions increased 5.5-fold from 2002–2004 to 2013–2015. Treatment admissions for both opioid and heroin were almost double the state rate in recent years. Similar increases have occurred for several Washington State counties, including peer counties in the northwest region of the state.

Though treatment admission rates have increased, opioid overdose hospitalization rates have remained steady.

*\*Many factors contribute to the rates of treatment admission, including dedicated funding, availability of providers, wait lists, and education and outreach. Whatcom County had an expansion in opioid treatment options starting in 2011; however these services are at their capacity. Additional treatment options are needed to address the ongoing opioid crisis.*

# Immunizations and Screenings



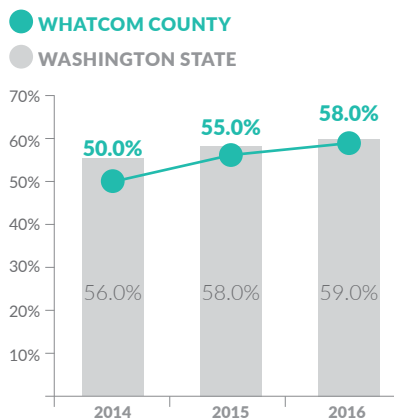
Vaccines and health screenings, are key to preventing many diseases. In fact, immunizations are among the most cost-effective and successful public health interventions due to the high levels of death and illness associated with most vaccine-preventable diseases. Regular health screenings can identify a disease in its early stages, so it can be treated and further health complications can be avoided.

## Child vaccination and personal exemption rates, 2014–2016

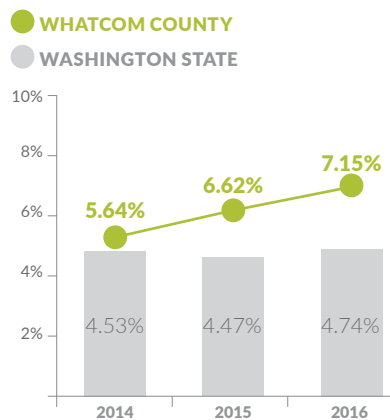
WHATCOM COUNTY VS. WASHINGTON STATE

Source: Immunization Information System, Washington State Department of Health

Percent of children ages 19–35 months who received recommended vaccines



Personal vaccination exemption rate among school age children



For Whatcom County children aged 19–35 months, vaccination rates have increased 8% since 2014

The personal vaccination exemption rate among school age children has risen by 1.51% since 2014 in Whatcom County

**58%**  
of Whatcom children received recommended vaccines in 2016

For Whatcom County children aged 19–35 months, vaccination rates have increased 8% since 2014. Recommended vaccinations include diphtheria, tetanus, pertussis, polio, measles, mumps, rubella, hepatitis B, influenza, chicken pox, and pneumococcal conjugate.

Some families choose to obtain vaccination exemptions for their children for medical, religious, and philosophical reasons. Whatcom County has remained slightly higher than Washington State in personal exemption rates for school-aged children.



# Nutrition and Physical Activity



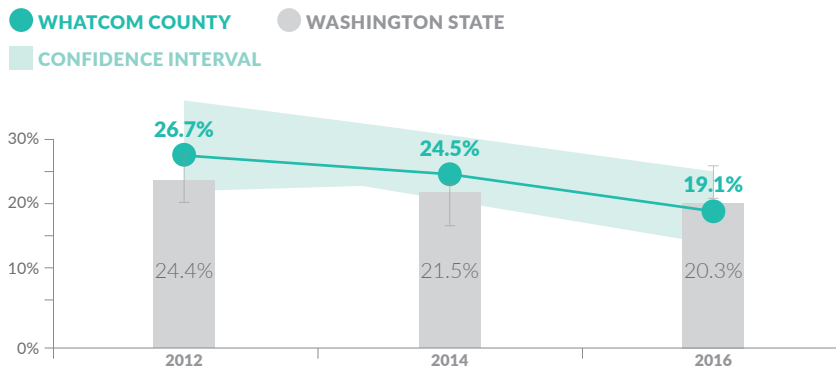
Eating fruit and vegetables every day not only provides essential nutrients, but can also reduce the risk of high blood pressure, obesity, and many chronic diseases such as heart disease and some forms of cancer. Engaging in physical activity likewise reduces the risk of heart disease, metabolic syndrome, diabetes, and some cancers, in addition to boosting mood and improving mental health. It has also been shown to be linked to longer life and improved ability to do everyday activities.

## Youth eating five or fewer fruits and vegetables per day, 2012–2016

Percent of 10th graders who report eating  $\geq 5$  fruits and vegetables per day

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Healthy Youth Survey, Washington State Department of Health



**80%**

In 2016, 80% of youth reported consuming fewer than 5 fruits and vegetables per day



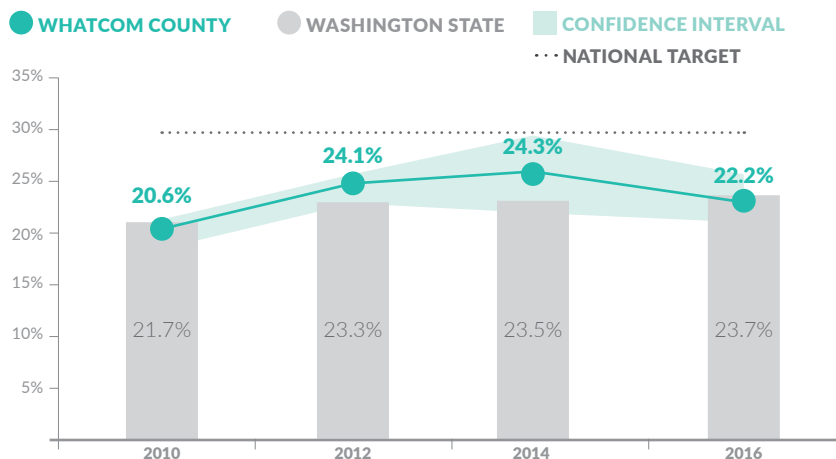
From 2012 to 2016, the percentage of Whatcom County youth consuming 5 or more fruits and vegetables has significantly decreased (7.5%)

## Youth who met aerobic physical activity guidelines in the last 7 days, 2010–2016

Percent of 10th graders who were physically active for 60 minutes per day seven of the past seven days

WHATCOM COUNTY VS. WASHINGTON STATE

Source: County Health Rankings, Robert Wood Johnson Foundation



Whatcom County and Washington State remain below the national target (32%) for youth meeting aerobic physical activity guidelines.

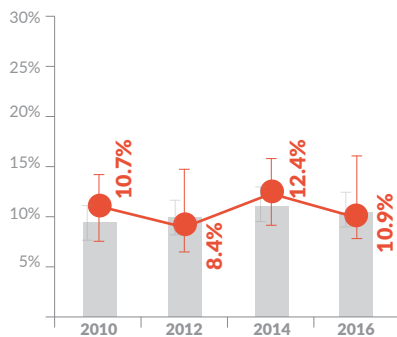
## Adult and youth obesity, 2010–2016

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: Behavioral Risk Factor Surveillance Survey, Healthy Youth Survey, Washington State Department of Health

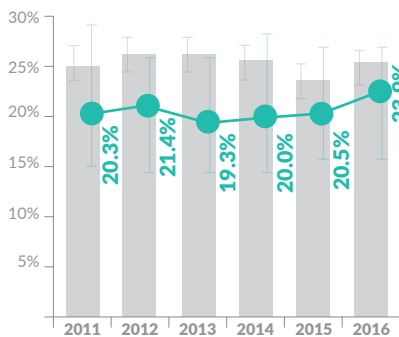
#### Percent of 10th graders who have BMI ≥ 95th percentile

● WHATCOM YOUTH  
● WASHINGTON YOUTH



#### Percent of adults who have BMI ≥ 29

● WHATCOM ADULTS  
● WASHINGTON ADULTS



Poor nutrition and lack of exercise contribute to obesity. Obesity or being overweight can put people at a heightened risk for type 2 diabetes, heart disease, dementia, some forms of cancer, and several other chronic health conditions.<sup>33</sup>

In 2016, Whatcom County obesity rates were significantly higher among males (38%) compared to females (18%).

## Community Views: Nutrition and Physical Activity



*What we heard...*

### Food and Nutrition

- **Community members connect obesity with the lack of access to healthy foods.** Suggestions to address this include enhancing collaboration across systems so that programs work more effectively to reach residents where they live. Some examples of this collaboration are schools hosting food banks and family education programs such as nutritious meal planning and budgeting.
- **Families appreciate that schools offer breakfast and even dinners, in addition to school lunches;** however, they express concern about the quality, nutrition, and cultural appropriateness of the food served.
- **Some community members see an opportunity** to build community by bringing diverse families together to share meals and create an appreciation for cultural and ethnic traditions.



# Sexual Health



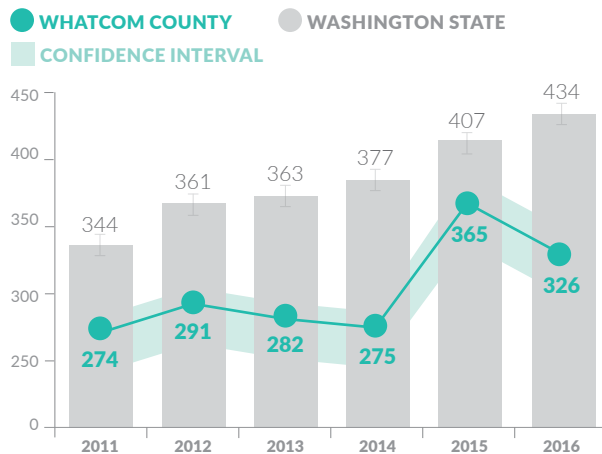
Healthy sexual practices like condom use can prevent sexually-transmitted diseases such as chlamydia, gonorrhea, syphilis, and HIV, as well as preventing unintended pregnancies. Rates of chlamydia and gonorrhea incidence are of public health significance as both are associated with high morbidity as well as social and economic consequences for individuals, families, and the health care system.

## Chlamydia incidence, 2011–2016

Rate per 100,000 persons

WHATCOM COUNTY VS. WASHINGTON STATE

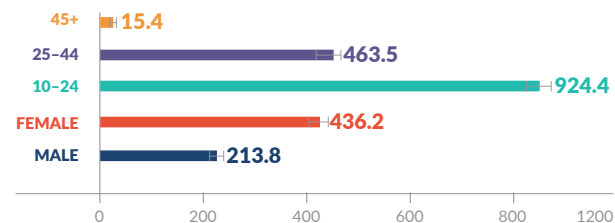
Source: Community Health Assessment Tool,  
Washington State Department of Health



## Chlamydia incidence by age and gender, 2016

Rate per 100,000 persons | WHATCOM COUNTY

Source: Community Health Assessment Tool, Washington State Department of Health

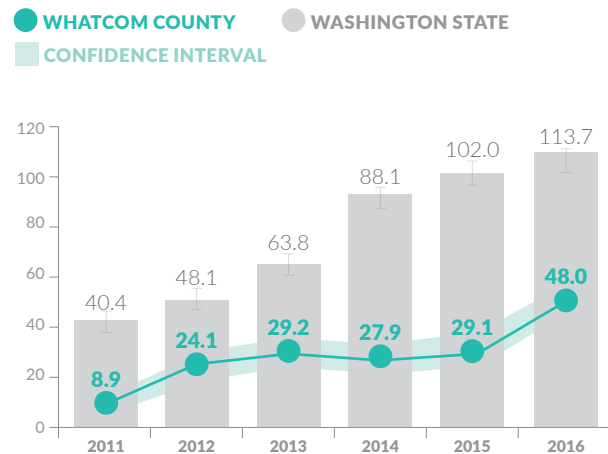


## Gonorrhea incidence, 2011–2016

Rate per 100,000 persons

WHATCOM COUNTY VS. WASHINGTON STATE

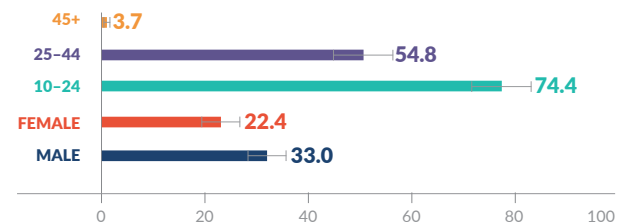
Source: Community Health Assessment Tool,  
Washington State Department of Health



## Gonorrhea incidence by age and gender, 2011–2016

Rate per 100,000 persons | WHATCOM COUNTY

Source: Community Health Assessment Tool, Washington State Department of Health



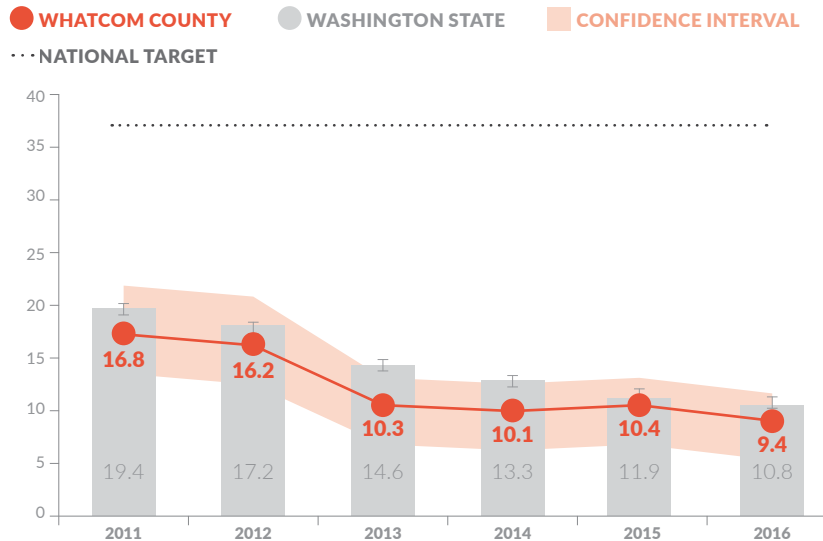
Over the past six years, Whatcom County chlamydia incidence rates remained below the Washington State rate. However, they have increased significantly since 2011. In 2016, Whatcom County chlamydia rates were found to be significantly higher among people between the ages of 10–24 and females.

Whatcom County gonorrhea incidence rates had increased 5-fold from 2011 to 2016. Rates over the same years were found to be statistically higher among males and for people between the ages of 10–24.

## Teen pregnancy, 2011–2016

Rate per 1,000 females age 15–17

Source: Community Health Assessment Tool, Washington State Department of Health



Pregnant teens are more likely than older women to receive late or no prenatal care, have low birth weight babies, preterm delivery, and potentially severe neonatal conditions. Preterm delivery and low birthweight babies have an increased risk of child developmental delay, illness, and mortality.<sup>34</sup> Whatcom County teen pregnancy has significantly decreased (7.4%) since 2011.



**Whatcom County teen pregnancy has significantly decreased (7.4%) since 2011.**



## Tobacco Use



Tobacco use remains the leading cause of death and disease in the U.S. In Whatcom County, the prevalence of tobacco use among adults (12% in 2016) has remained unchanged since 2011. Tobacco use causes cancer, heart disease, stroke, lung disease, and affects reproduction, birth outcomes, and many other health conditions.

Tobacco use during adolescence is a strong predictor of lifelong use, which makes preventing tobacco use among youth particularly important. Evidence shows that nearly 9 out of 10 cigarette smokers first tried smoking by age 18.<sup>35</sup>

In addition to cigarettes and smokeless tobacco, e-cigarettes are also considered tobacco products because most of them contain nicotine, which comes from tobacco. Besides nicotine, e-cigarettes can contain harmful ingredients, including known carcinogens.

## Youth cigarette & e-cigarette use, 2010–2016

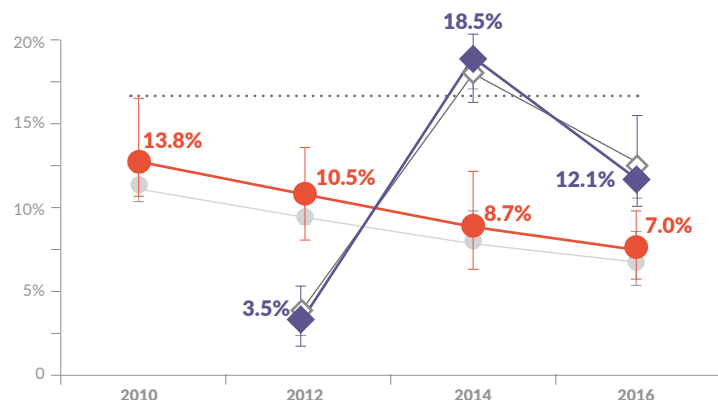
Percent of 10th graders who report smoking cigarettes and using e-cigarettes in the past 30 days

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Healthy Youth Survey, Washington State Department of Health

● WHATCOM: CIGARETTES ● WASHINGTON: CIGARETTES ◆ WHATCOM: E-CIGARETTES ◇ WASHINGTON: E-CIGARETTES

... NATIONAL TARGET



## E-CIGARETTES

Nationally youth cigarette use has declined from 2011 to 2016. In Whatcom County cigarette use has significantly decreased (almost by half) from 2010 to 2016.

E-cigarettes are now the most commonly used tobacco product among youth, having surpassed the use of conventional cigarettes in 2014.<sup>36</sup>



In 2016, almost 1 out of 8 Whatcom youth reported using e-cigarettes in the last 30-days

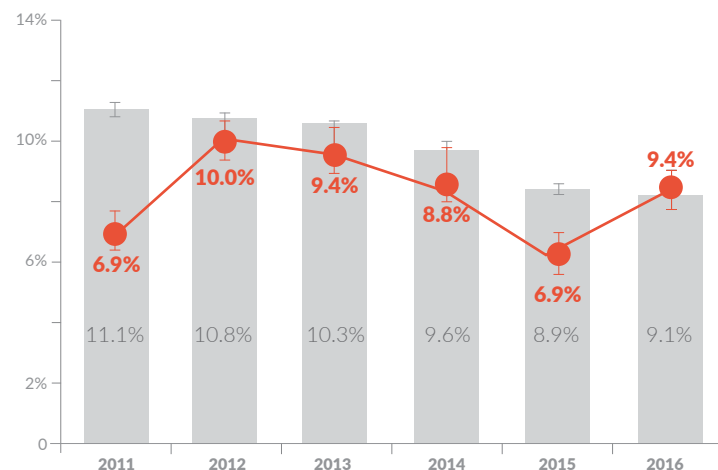
**14.3%** 10th-grade male students reported higher rates of use (14.3%) than females (11.3%)

## Smoking during pregnancy, 2011–2016

Percent of births in which the mother smoked during pregnancy

Source: Washington Tracking Network, Washington State Department of Health

● WHATCOM COUNTY ● WASHINGTON STATE



Women who smoke during pregnancy are more likely than nonsmokers to have low birth weight babies, preterm delivery, and infant death. Since 2011, there has been a significant increase in Whatcom County mothers who smoked during pregnancy, with the highest rate being reported in 2012 at 10%.



# Health Care

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## **Access to quality health care is important to maintaining good health.**

The supply and accessibility of medical facilities and providers, having health insurance, cultural sensitivity in care, and limitations in insurance coverage all affect access. When community residents access preventive services, the number of emergency hospitalizations and costly treatments for disease are often reduced. The passing of the 2010 Affordable Care Act has impacted access to care as federal, state, and local efforts have focused on expanding access to health insurance, protecting patients from indiscriminate actions by insurance companies, and reducing health care costs.

Measures in this section include both accessibility of care and quality of care. Access is measured by indicators such as having health insurance or the presence of providers. Quality is measured by indicators such as health care visits that could have been prevented by providing care in a different way. The health indicators presented in this section have been highlighted because they show a statistically significant positive or negative difference over time, the Whatcom County data is significantly different from Washington State averages, or because they are related to a key community-identified concern.

Data gathered from community members indicated that there are concerns about access and affordability of health care in Whatcom County, especially for seniors. There was also a consistent theme of concern that care should be better coordinated within the health care system and between systems. These are presented below as "Community Views."

## Access to Care

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The ability to get health care when it's needed not only affects a person's ability to recover from disease or injury, it can also help maintain healthy development throughout life and prevent disease or injury in the first place.

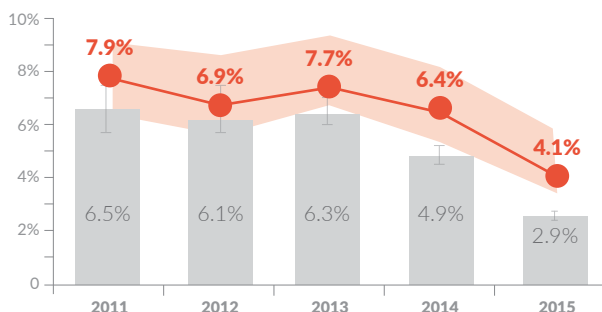
The inability to access health services, due to barriers such as not having health insurance or experiencing economic hardship, can have serious consequences for one's health.

## Children and adults without health insurance, 2011–2015

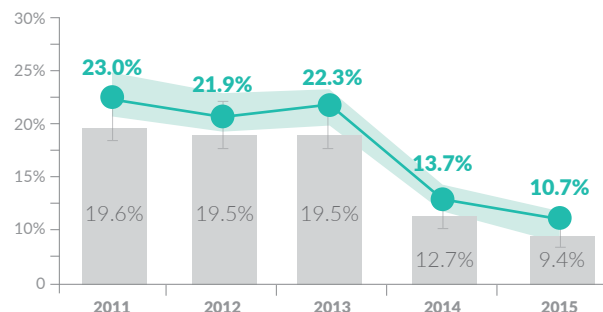
WHATCOM COUNTY VS. WASHINGTON STATE | Source: U.S. Census Bureau, Small Area Health Insurance Estimates

● WHATCOM YOUTH ● WHATCOM ADULTS ● WASHINGTON STATE ■ CONFIDENCE INTERVAL

### Children Percent of population ≤ 18 years without health insurance



### Adults Percent of population 18–64 years without health insurance



Evidence has demonstrated that people without health insurance are less likely than those with insurance to receive preventive care and services for major health conditions and chronic diseases.<sup>37</sup>

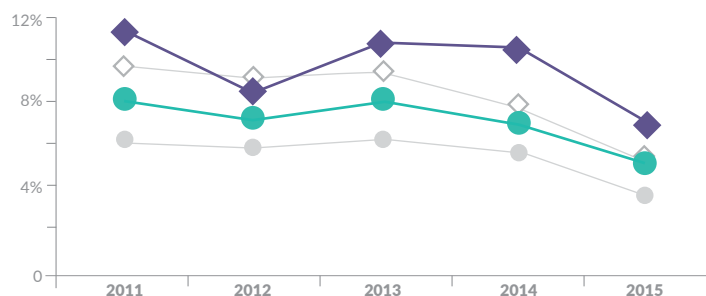
## Children and adults without health insurance by income, 2011–2015

WHATCOM COUNTY VS. WASHINGTON STATE

Source: U.S. Census Bureau, Small Area Health Insurance Estimates

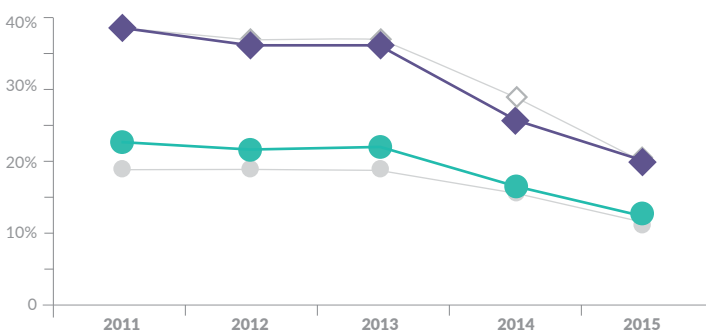
● WHATCOM: ALL INCOMES ◆ WHATCOM: ≥ 200% OF POVERTY LEVEL  
● WASHINGTON: ALL INCOMES ◇ WASHINGTON: ≥ 200% OF POVERTY LEVEL

### Children Percent of population ≤ 18 years without health insurance



Since 2011, the percent of Whatcom children and adults without health insurance decreased significantly. In 2015, adults whose incomes were below 200% of the Federal Poverty Level were less likely (17.4%) to have health insurance compared to adults of all incomes (10.7%).

### Adults Percent of population 18–64 years without health insurance

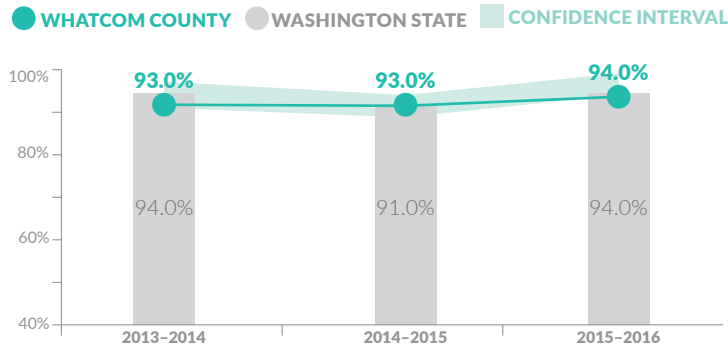


## Infants with well-care visit in past year, 2013–2016

Percent of infants 12–24 months who had a well-care visit with a primary care practitioner in the past year

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Checkup, Washington Health Alliance



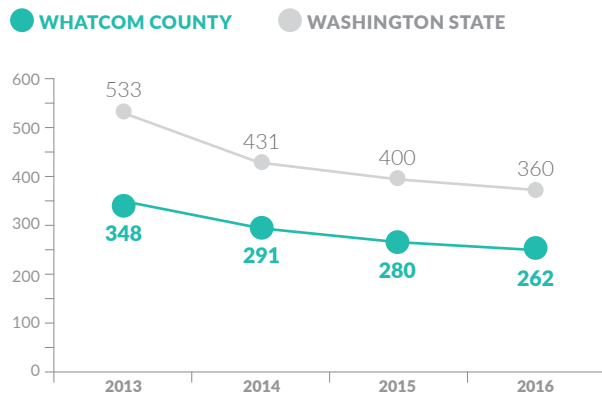
Infant well-care medical visits are important preventive care. They are an opportunity to assess a child's physical, behavioral, and developmental status, which may impact future health outcomes. Most Whatcom County infants receive well-care visits. In 2017, Medicaid insured infants were slightly less likely (93%) to have had a well-care visit in the past year than infants with commercial insurance (97%).

## Ratio of mental health care providers, 2013–2016

Number of people for every one mental health care provider in Whatcom County

WHATCOM COUNTY VS. WASHINGTON STATE

Source: County Health Rankings, Robert Wood Johnson Foundation

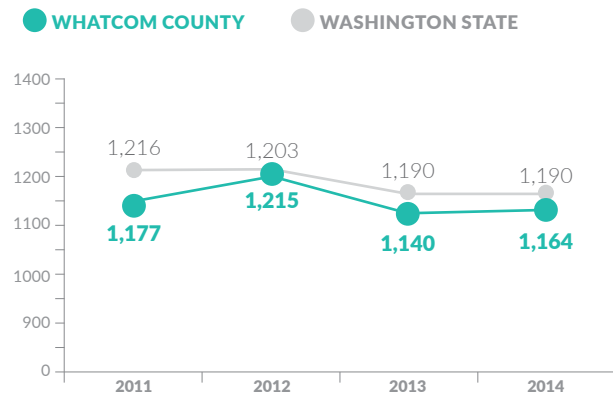


## Ratio of primary care providers, 2011–2014

Number of people for every one primary care provider in Whatcom County

WHATCOM COUNTY VS. WASHINGTON STATE

Source: County Health Rankings, Robert Wood Johnson Foundation



Access to health care requires not only insurance coverage, but also access to health care providers. Availability of mental health and primary care providers is essential for preventive and primary care and can help in decreasing unnecessary hospital utilization. Over the last several years, there has been a slight decrease in the ratio of mental health providers per population in Whatcom County, while primary care providers per population has remained constant. Qualitative data demonstrates the community's concern with the difficulty in accessing needed health care services in relation to both affordability and availability.



## Community Views: Access to Care



*What we heard...*

### Health Services

- **Perceptions of access and quality of health care vary greatly based on financial means.**
- **Community members without comprehensive medical insurance or with limited financial supports express more challenges** in accessing their needed health care and services and often have a stark choice between paying for health treatment or other necessary expenses. This was true for US citizens, non-citizens, and undocumented residents.
- **There are concerns about access to and affordability of a range of health care services:** primary care, mental and behavioral health, specialty therapies, and dental health.
- **Access to mental health services is a high concern** for service providers, teachers and school administrators, human services practitioners, and community members speaking on behalf of themselves and their own needs.
- **Community members are concerned about limited care coordination, service alignment, and information sharing about and for patients.**
- **There are perceptions of “silo-ing” of services between non-traditional and traditional medical systems and within specialty areas.** This includes everything from simple referral processes and the non-centralized location of services, to the cost of services.
- **The presence of a comprehensive regional hospital and highly-qualified medical providers was identified as a tremendous asset to the county.** As expressed by one community member, *“I do know that the way our providers cooperate with each other is amazing and to have the kind of talent we have, but...[w]e definitely don't have all the services Seattle has, but...you can pretty much get what you need up here...”*

*“...I have a 19-year-old daughter and she had Medicaid but it ended and it's been hard for me to get all of the prescriptions she needs...so I am struggling with that ...because she takes so much medicine and no longer has Medicaid I am faced with deciding what medication she's going to stop taking since I can't afford all of it...and there is trouble getting appointments... I had something scheduled for my daughter but because the insurance was no longer valid and I couldn't pay out of pocket they canceled it and said come back when you have insurance that is valid... I am also diabetic and struggle a lot to get insulin, other medications, and all the equipment necessary to monitor my numbers...”*

## Senior/Elder Care

- Community members are worried about the quality, affordability, and availability of support for the aging population.
- Community members are concerned that aging is increasingly difficult for those who cannot financially afford quality care, including assisted living.
- Services for seniors including housing, food, health care access, recreational activities, and social support are not keeping up with anticipated population growth.
- Some seniors are concerned about the ability to access and pay for needed health services, including dental care.
- There are growing needs within comprehensive palliative care, support with pain management, and quality end of life supports.

## Quality of Care



Quality of care means to deliver timely, effective, affordable, and safe medical care for the right person at the right time. Inpatient and outpatient medical facilities can help protect and improve health and reduce the likelihood of receiving unnecessary or inappropriate care.<sup>38</sup>

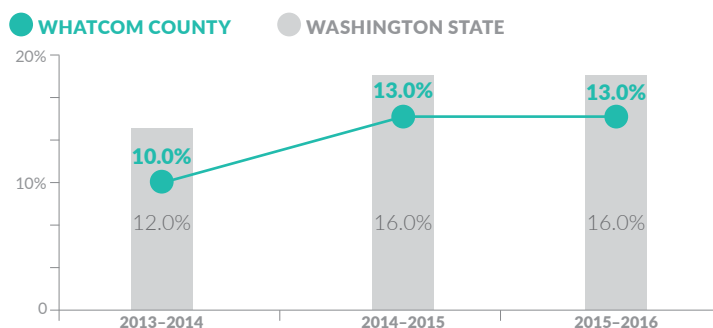
Emergency department (ED) visits and hospital stays are costly. Some visits and stays are preventable and may occur due to inadequate access to primary care. Preventable hospital stays may also indicate that outpatient care is not sufficient. The percentage of preventable ED visits and hospitalizations can help to identify potential cost savings associated with visits and stays overall and for specific populations.

### Potentially avoidable ED visits, 2013–2016

Percent of all ED visits that are potentially avoidable

WHATCOM COUNTY VS. WASHINGTON STATE

Source: Community Checkup, Washington Health Alliance



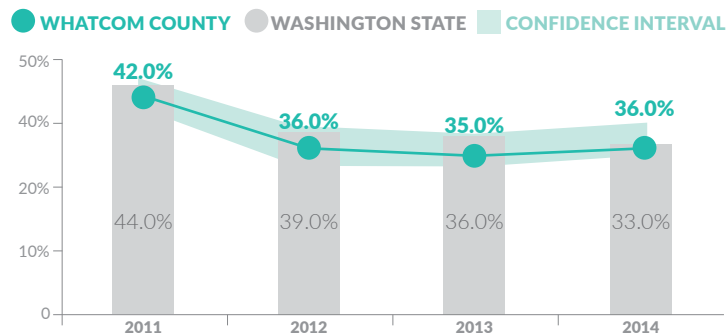
Potentially avoidable ED visits have remained steady in Whatcom County. However, for 2015–2016, Medicaid insured patients had a significantly higher percentage (14%) of potentially avoidable ED visits than commercially insured patients (10%).

## Preventable hospital stays per 1,000 Medicare enrollees, 2011–2014

Percent of all hospital stays that were preventable, per 1,000 Medicare enrollees

### WHATCOM COUNTY VS. WASHINGTON STATE

Source: County Health Rankings, Robert Wood Johnson Foundation



# 8%

Preventable hospital stays have decreased 8% between 2005 and 2014

## Community Views: Quality of Care



*What we heard...*

### Connecting Systems of Care/Working Across Boundaries and Barriers

- **Many community members feel it is important to work across organizational and personal boundaries and barriers**, particularly around coordination of services and aligning data metrics.
- **Coordination and collaboration are important in many areas:** between governmental jurisdictions, across organizations, and between individuals or groups.
- **Parents/caregivers, and those who work with them**, prioritize opportunities for person-to-person connections and person-to-community connections.
- **There is a need to create or enhance the ability** of service providers to share information about clients or patients with other providers or organizations serving the same clients. Similarly, recipients of services consider it a priority to better align services with a "wraparound" approach so clients do not have to seek support from so many different locations in the county.



A photograph of three young children standing outdoors in a park-like setting. The child on the left is a boy with short dark hair, wearing a striped t-shirt and plaid shorts, making a peace sign. The child in the middle is a boy with short dark hair, wearing a black t-shirt with a graphic and plaid shorts. The child on the right is a girl with short dark hair, wearing a light-colored t-shirt and dark shorts. They are all smiling and looking towards the camera. The background shows a paved path and some trees.

# Forces of Change Assessment

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**The Forces of Change Assessment identifies the trends, factors, and events that are likely to influence community health and quality of life or to impact the work of the local public health system in Whatcom County.**



# Forces of Change Assessment Results

Forces of change are summarized as things that are occurring or might occur, threats, and opportunities. Significant policy changes that have bearing on public health and public health interventions are also identified in the Environmental and Policy Scan.

## Force: Economic

### Occuring or Might Occur

- Correlation between income and access to stable housing, places to be active, health care services, healthy food, and educational achievement
- Lack of access to quality, affordable childcare
- Agencies (such as the Y) are providing scholarships to the ALICE population (Asset-Limited, Income Constrained, Employed), particularly for childcare
- Strong support for local businesses, goods, and services

### Threats

- Lack of affordable, quality childcare limits parents' ability to pursue educational or employment opportunities
- Duplication and inefficiencies among support agencies
- Future financial hardship for high school students who do not pursue higher education or professional training
- Less access to services increases family stress and economic instability
- The ALICE population does not meet income requirements for needed services

### Opportunities

- Providing childcare or stipends so parents can participate in community processes
- Paid, protected leave from employment to care for self or family

## ENVIRONMENTAL AND POLICY SCAN

### Local

- The City of Bellingham amends hiring practices to "Ban the Box" for job applicants (2016)
- Philanthropic organizations endorsed a plan to establish the "every child sustainable financing initiative" (2018)

### State

- Paid Family and Medical Leave Act (2017)
- Equal Pay Opportunity Act (2018)
- Fair Chance Act/Ban the Box (2018)
- HB 1783 passed prohibiting courts from imposing costs on indigent defendants (2018)

### Federal

- US Tax Reform – Tax Cuts and Jobs Act (2017)

## Force: Education and Technology

### Occurring or Might Occur

- Difficulty finding safe, nurturing childcare and early education opportunities
- Schools working to understand the impacts of adverse childhood experiences, poverty, and family mobility
- WWU's Woodring College of Education developing a Family and Community Engaged Teaching initiative to better prepare future teachers and human services practitioners
- Fewer Whatcom County high school seniors go on to post-secondary education
- Parts of Whatcom County lack cell phone and internet access

### Threats

- Families relying on unsafe or undesirable childcare options
- Children not having academic or social-emotional readiness for school
- Opportunity/achievement gaps based on social and economic status, race, and ethnicity throughout the educational system
- Less funding for supportive services
- Teacher shortages and insufficient numbers of teachers and administrators of color who reflect the demographics of the students in their classrooms

### Opportunities

- Use of publicly-funded spaces to partner with service providers to create cultural, educational, and social space
- Increasing social support, student wellness, food assistance, and nursing services within schools

## ENVIRONMENTAL AND POLICY SCAN

### Local

- Bellingham Public Schools develops the Bellingham Promise (2012)

### State

- McCleary Decision passed (2012, 2018)
- Breakfast after the Bell passed (2018)

### Federal

- Proposed federal budget cuts funding for public education (2017)





## Force: Environment

### Occurring or Might Occur

- Disparities in access to safe places to play and gather around the county
- Insufficient pedestrian and bicyclist safety precautions and amenities
- New housing developments
- Insufficient opportunities for older youth to engage in pro-social, healthy activities
- Grocery stores closing around the county
- Atlantic farmed salmon escape fish farm
- Emergency preparedness efforts across the county

### Threats

- Social isolation within neighborhoods
- Risk of pedestrian injury or physical harm
- Insufficient or poor quality housing
- Insufficient access to healthy food and basic needs
- Natural or man-made disaster

### Opportunities

- Community support for schools as locations to receive support services
- Support health in community planning
- Develop housing that includes wraparound services

## ENVIRONMENTAL AND POLICY SCAN

### Local

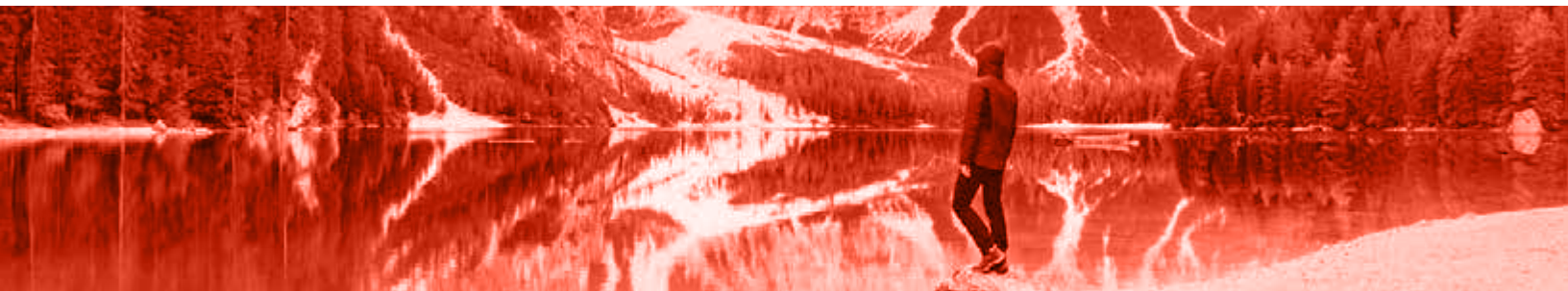
- Health Board passes Healthy Planning Resolution (2015)
- Cherry Point Shipping Terminal blocked (2016)
- Drayton Harbor fully reopens for shellfish harvesting (2017)

### State

- Hirst Decision to protect water resources (2016, 2018)
- Atlantic farmed salmon phased out by 2025 (2018)
- Housing: bill passed prohibiting discrimination of tenants based on income source (2018)

### Federal

- US decision to cease participation in Paris Agreement on climate change mitigation (2017)



## Force: Equity

### Occuring or Might Occur

- Disparities in health determinants and outcomes throughout the county
- Social and economic status, geographic location within the county, and systemic and historic racism have led to disparities in access to services and the natural environment
- Those with means often do not see how others are living, and do not feel the impacts on the community

### Threats

- Perpetuating historical harm of marginalized populations
- Segregated communities
- Families unable to meet basic needs leading to poor health outcomes
- Limited access to living wage jobs

### Opportunities

- Connecting efforts to advance equity in the community
- Convening community dialogue to share personal stories of lived experiences
- Support inclusive policies and plans that address racial inequities
- Supporting professional development to gain cultural humility

## ENVIRONMENTAL AND POLICY SCAN

### Local

- Health Board passes Compassionate Community Resolution (2013)
- Whatcom County Equity Summit delegations (2012, 2015, 2018)
- Arch of Healing and Reconciliation (2018)

### State

- Governor signs bill addressing police use of force (2018)
- Governor signs bills addressing sexual misconduct in the workplace (2018)
- Several bills passed to promote gun safety (2018)

### Federal

- Black Lives Matter Global Network established (2013)
- Increase of hate crimes since 2015 (FBI)
- Women's March (2017, 2018)
- #MeToo Movement (2017)
- March for our Lives (2018)



## Force: Legal/Political

### Occurring or Might Occur

- Bureaucratic barriers for families accessing social services (e.g., complicated phone systems, paperwork, and eligibility requirements)
- Politics and priorities of the cities and county vary greatly
- Undocumented families at risk of being separated due to increasing numbers of deportations
- Disparities in incarceration trends
- Increased collaboration between government agencies and the non-profit sector

### Threats

- Underutilization of services
- Competition for resources between cities and rural areas
- Greater political and social divide
- Poor health outcomes, increased stress, and financial cost associated with family separation

### Opportunities

- Coordinated work among agencies to better serve residents
- Greater civic engagement and more equitable representation
- Increase in restorative justice activities

## ENVIRONMENTAL AND POLICY SCAN

### Local

- Bellingham City Council votes that police won't enforce federal immigration laws and Bellingham won't be officially named a sanctuary city (2017)

### State

- Washington State (WA) becomes a sanctuary state (2017)
- WA State Voting Rights Act passed (2018)

### Federal

- Immigration policies limit entry to the US and increase deportations (2017)
- Growing partisan divide in developing and supporting legislation



## Force: Medical

### Occurring or Might Occur

- Uncertainty about the future of the Affordable Care Act
- Implementation of emerging care models
- Agencies are working to better serve vulnerable populations that utilize services in frequent, ineffective ways
- Formation of the North Sound Accountable Community of Health (NSACH) and Medicaid Transformation
- Substance use (particularly opiate use) and lack of recovery/treatment options

### Threats

- Less access to health care and services
- Rising health care costs
- Societal and economic impact of substance use

### Opportunities

- Coordinating and centralizing services
- Providers and parents aware of and able to navigate services
- Coordinating care for complex conditions
- Utilizing community health workers within diverse community settings

## ENVIRONMENTAL AND POLICY SCAN

### Local

- Health Board approves Secure Medicine Return policy (2017)

### State

- Bills pass requiring health plans to cover all preventive services with no cost sharing and ensuring reproductive parity in all WA state health plans (2018)
- Governor signs Secure Drug Take-back Act (2018)

### Federal

- March for Science (2017, 2018)
- American Health Care Act passes (2017)



## Force: Social

### Occuring or Might Occur

- Whatcom Community Foundation builds community connections through Project Neighborly grants
- Awareness of the need to address Adverse Childhood Experiences (ACES) in community interventions
- Difficulty accessing parenting supports and opportunities to build parenting skills
- Strong non-profit network with increased collaboration between agencies
- Younger mothers experience challenges connecting with other young parents
- Limited support services for fathers
- Limited opportunities for relationship building among seniors

### Threats

- Increased social isolation felt by mothers, adolescents, and elders in various areas of the county

### Opportunities

- Addressing social-emotional needs of caregivers
- Expanding parenting and child development education and support groups for a range of families
- Creating opportunities for social interaction between parents while obtaining social services

## ENVIRONMENTAL AND POLICY SCAN

### Local

- Health Board adopts a child and family focus (2017)
- Health Board advocates for VA childcare stipend for GI bill recipients (2017)

### State


- Paid Family and Medical Leave Act (2017)

### Federal

- US military institutes 12-weeks of paid maternity leave and increases childcare access (2018)







# Local Public Health System Assessment

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**The Local Public Health System Assessment (LPHSA), describes how the 10 Essential Public Health Services are being provided to the community and the activities, competencies, and capacities of the local public health system.**



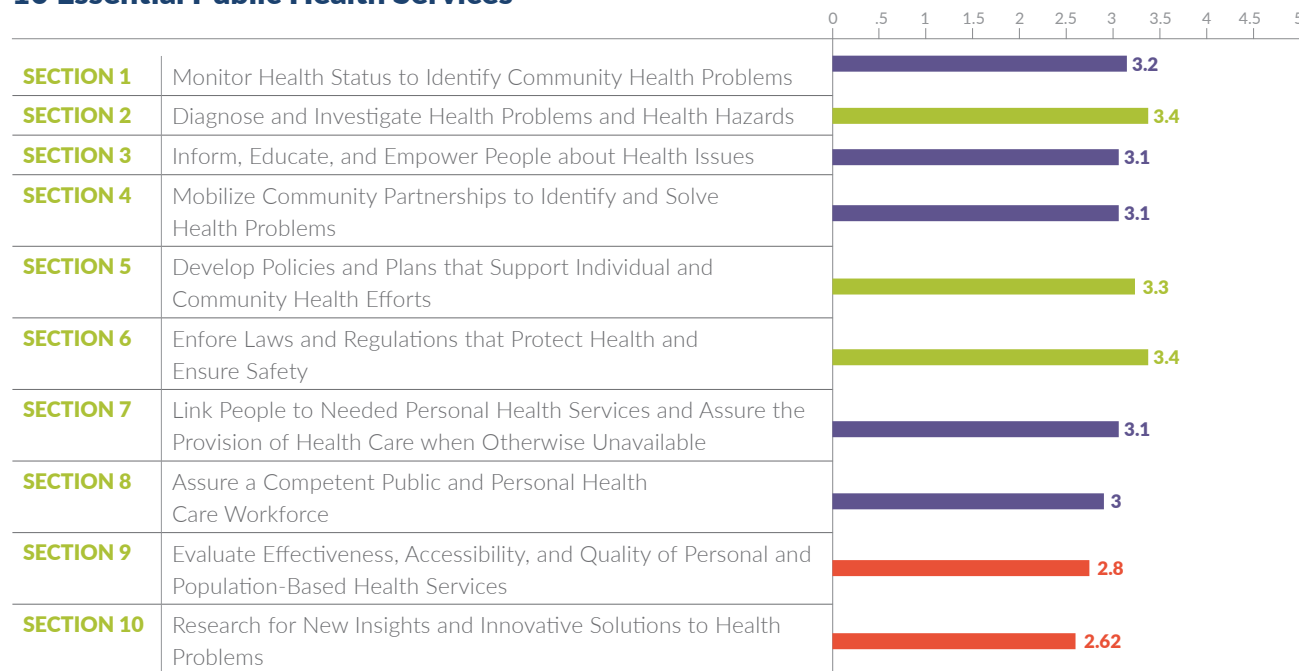


# Summary of Local Public Health System Assessment Results

The essential services are those that should be provided by the local public health system, which is comprised of governmental public health as well as a host of other community agencies and organizations.

The Local Public Health System Assessment (LPHSA) results identify areas of strength and areas in which to grow the system's ability and resources to provide essential services. The results also include a summary of public health coalitions, partnerships, and initiatives currently underway in Whatcom County and what essential services those groups engage in.

## 10 Essential Public Health Services



Scale: 1: No Activity, 2: Minimal Level, 3: Moderate Level, 4: Significant Level, 5: Optimal Level  
Green bars indicate higher scores; Purple bars indicate middle scores; Orange bars indicate lower scores



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**Whatcom County Health Department (WCHD) staff and leadership and Public Health Advisory Board members all rated the public health system, and the health department's role in it, as moderate in most areas.**

**Scores were highest in traditional public health areas:**

- Diagnose and investigate health problems and health hazards (section 2)
- Develop policies and plans that support individual and community health efforts (section 5)
- Enforce laws and regulations that protect health and ensure safety (section 6)

These are all areas the health department has dedicated staff and resources to accomplish. They are also areas widely accepted as the responsibility of the local public health department, so staff surveyed are more familiar with their role in providing these services.

- Scores were lowest in work related to the health care system and research, namely: Evaluate effectiveness, accessibility, and quality of personal and population-based health services (section 9); and Research for new insights and innovative solutions to health problems (section 10). These are areas, in contrast to the highest scores, for which there is no coordinated or dedicated staffing. Without additional resources and a more concerted effort to connect with health providers, a smaller health department like Whatcom County's is unable to build capacity and priority in these areas
- Regardless of the section in which they were contained, questions regarding social determinants of health and health equity, technology and data, and assessment scored lower than other competencies or services. While the department recognizes these gaps, the LPHSA survey indicated the degree to which these impact core services and the continued need to improve confidence and competence among staff.

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**The Whatcom County Health Department is in the fourth year of a five year strategic plan.**

The department recognizes that foundational public health capabilities, which are addressed in the strategic plan, still have room for improvement. More specifically, the LPHSA identified the following areas of the department's strategic objectives that require additional focus:

- **OBJECTIVE A3**  
Data and compassion drive our decisions.
- **OBJECTIVE B2**  
Health information is dynamically communicated.
- **OBJECTIVE C2**  
Health equity is advanced in our community.

These objectives relate to the lowest scores in the LPHSA and to assessment, technology, and equity, respectively. Leadership in the department will continue to address these gaps for the remainder of this strategic plan term and in the development and execution of the next strategic plan.



# Local Public Health Partnerships and Advisory Committees

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These groups represent the breadth of activity, resources, and partnerships in the local public health system in Whatcom County. For each committee or board, the Essential Public Health Services (EPHS) it provides are indicated.

*\* Indicates an official county board whose members are appointed by the Whatcom County Executive.*

**BEHAVIORAL HEALTH ADVISORY COMMITTEE\***: provides oversight on funding a countywide infrastructure for behavioral health programs and services for residents impacted by mental illness and/or substance use disorder. EPHS: 2,4,5,7,9

**COALITION TO END HOMELESSNESS**: collaborate to create a system of housing and services to move homeless families and individuals to permanent housing and self-sufficiency. EPHS: 4,5,7

**CRISIS OVERSIGHT COMMITTEE**: coordinates responses to emerging crises among behavioral health, housing, health care, and emergency response agencies. EPHS: 2,3,4,5,9,10

**DEVELOPMENTAL DISABILITIES ADVISORY BOARD\***: advises on policy, budget priorities, and procurement of services for community resources and programs for persons with developmental disabilities. EPHS: 1,4,5,7,9

**FIRST STEPS COALITION**: a network of health and social service providers that provide support services to low-income families during pregnancy and the post-partum period, and perinatal mental health. EPHS: 1,3,4,5,9,10

**GENERATIONS FORWARD INITIATIVE**: a cross-sector group working towards a future where all Whatcom County children and families thrive. EPHS: 4,5,9,10

**GRACE PROJECT**: a cross-system effort to intervene in the lives of people who have frequent contact with two or more service systems in Whatcom County. EPHS: 2,4,5,7,9,10

**HEALTHY WHATCOM**: collaborative work group supporting the Community Health Improvement process. EPHS: 1,3,4,5,10

**INFECTION CONTROL TASKFORCE**: a cross-agency forum to address topics that impact infectious disease transmission in the community. EPHS: 1,2,3,4,6

**OPIATE ABUSE PREVENTION:** coordinates efforts around responding to the opioid crisis. EPHS: 1,2,3,4,5,10

**PUBLIC HEALTH ADVISORY BOARD\*:** advises on policy, budget priorities, and procurement of services for community resources and programs for persons with developmental disabilities. EPHS: 1,4,5,7,9

**SCHOOL NURSE GROUP:** school nurses from all school districts discuss current trends and issues facing school nurses and the children and families they support. EPHS: 1,2,4,10

**SOLID WASTE ADVISORY COMMITTEE\*:** advises on solid waste management issues to prevent pollution and conserve resources. EPHS: 2,4,5,6,9

**SOLIDWASTEEXECUTIVECOMMITTEE:** provides oversight of the implementation of the Comprehensive Solid and Hazardous Waste Management Plan and local waste management. EPHS: 5,6

**VETERANS ADVISORY BOARD\*:** advises on the implementation of Veterans' programs and services funded by the dedicated Veteran's Assistance Fund programs and services. EPHS: 4,5,7,9, 10

**WHATCOM COUNTY HOUSING ADVISORY COMMITTEE\*:** advises on issues related to the use of housing funds and the development and preservation of affordable, low-income housing. EPHS: 4,5,10

**WHATCOM EARLY LEARNING ALLIANCE STEERING COMMITTEE:** supports access to high-quality early learning opportunities for children and their families. EPHS: 4,5,9

**WHATCOM TAKING ACTION LEADERSHIP TEAM:** working to create a cohesive, family-centered system of services and supports for children, youth, and families that are impacted by developmental, behavioral, and other special health care needs. EPHS: 2,3,4,5,10

**YOUTH-FOCUSED PREVENTION COALITIONS:** cross-sector effort to coordinate and implement services aimed to reduce youth substance abuse and promote mental health. EPHS: 1,3,4,5

## Summary of WCHD Partnerships and Relationship to 10 EPHS

	ESSENTIAL PUBLIC HEALTH SERVICE									
	1	2	3	4	5	6	7	8	9	10
Behavioral Health Advisory Committee*				x	x		x		x	
Coalition to End Homelessness				x	x		x			
Crisis Oversight Committee		x	x	x	x				x	x
Developmental Disabilities Advisory Board*										
First Steps Coalition	x			x	x		x		x	
Generations Forward Initiative				x	x				x	x
GRACE Project		x		x	x		x		x	x
Healthy Whatcom	x		x	x	x					x
Infection Control Taskforce	x	x	x	x		x				
Opiate Abuse Prevention	x	x	x	x	x					x
Public Health Advisory Board*				x	x			x		
School Nurse Group	x	x		x						x
Solid Waste Advisory Committee*		x		x	x	x			x	
Solid Waste Executive Committee					x	x				
Veteran's Advisory Board*				x	x		x		x	x
Whatcom County Housing Advisory Committee*				x	x					x
Whatcom Early Learning Alliance Steering Committee				x	x				x	
Whatcom Taking Action Leadership Team		x	x	x	x					x
Youth-focused Prevention Coalitions	x		x	x	x					



# Recommendations and Next Steps

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**Community engagement efforts in this Community Health Assessment brought in perspectives from young mothers, seniors, members of immigrant communities, and people experiencing homelessness. As with any assessment, gaps in data were identified during this assessment process that will be addressed in subsequent years.**





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In subsequent years, Whatcom County Health Department will continue to expand efforts to engage marginalized groups in order to gather a sample of qualitative data that represents the breadth and diversity of Whatcom County. Additionally, the Health Department will build on existing partnerships to better provide more timely and relevant quantitative data.

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**SPECIFIC NEXT STEPS IN  
THIS CYCLE OF COMMUNITY  
HEALTH IMPROVEMENT  
INCLUDE:**

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In the fall of 2018, the Whatcom County Health Department, in partnership with data and assessment staff from local agencies, will be developing Community Descriptions. See the Health Equity section of this report for details about Community Descriptions.

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WCHD will work with community partners to select key indicators for Whatcom County from the set of health equity indicators identified within the Community Health Status Assessment. These indicators will be monitored annually.

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The countywide *Community Health Assessment* and *Community Descriptions* will be used in the next phase of Community Health Improvement: a prioritization process that will lead to the development of Whatcom County's *Community Health Improvement Plan*. The prioritization process will involve a large group of stakeholders from a variety of sectors and agencies.





## ENDNOTES

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- 1 County Health Rankings. Criteria for Selecting or Revising Measures. <http://www.countyhealthrankings.org/criteria-selecting-or-revising-measures> Accessed April 3, 2018.
- 2 Voices for Healthy Kids. Health Equity Messaging Guide. Fall 2017. <https://voicesforhealthykids.org/healthequity/>
- 3 Ibid.
- 4 PolicyLink. Building a Movement. Transforming Institutions: A Guide for Public Health Professionals. <http://www.policylink.org/our-work/community/health-equity/institutionalizing-health-equity>. Accessed 5/21/18.
- 5 The interventions to address those needs might also vary for each community, and organizing this way allows people to mobilize for improvement through community networks that they already identify with. Community Descriptions will be completed in 2018 and will be compiled in a separate report.
- 6 John A. Powell, Stephen Menendian and Jason Reece, "The Importance of Targeted Universalism," *Poverty & Race* (March/April 2009). [http://www.prrac.org/full\\_text.php?text\\_id=1223&item\\_id=11577&newsletter\\_id=104&header=Miscellaneous&kc=1](http://www.prrac.org/full_text.php?text_id=1223&item_id=11577&newsletter_id=104&header=Miscellaneous&kc=1)
- 7 A fifth category of health determinants, genetics, has been excluded from the population health framework used here. While an individual's genetic makeup is also an important determinant of health, our model focuses only on modifiable determinants of health: those that can be changed through population health interventions.
- 8 Washington State Data Book: Whatcom County Profile. Office of Financial Management 2017
- 9 American Community Survey. U.S. Census Bureau. 2012-2016 5-year estimates
- 10 Urban growth area (UGA): An area designated, within which urban growth will be encouraged and outside of which growth can only occur if it is not urban in nature. Urban growth areas around cities are designated by the county in consultation with the cities; urban growth areas not associated with cities are designated by the county.
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- 15 Suicide Among Youth. Center for Disease Control and Prevention. <https://www.cdc.gov/healthcommunication/toolstemplates/entertainment/tips/SuicideYouth.html>
- 16 Brinkley-Rubinstein, L. (2013). Incarceration as a catalyst for worsening health. *Health & Justice* 1:3 <https://doi.org/10.1186/2194-7899-1-3>
- 17 Dahlberg, L.L., Ikeda, R.M., Kresnow, M. (2004) Guns in the Home and Risk of Violent Death in the Home: Findings from a National Study. *American Journal of Epidemiology*. Bloomberg School of Public Health. Vol. 160, Number 10 <https://pdfs.semanticscholar.org/8944/970417605b7f098742b97e4e1c74c1dfcb0d.pdf>
- 18 Housing Challenges (2015) the State of the Nations Housing 2015 <http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/jchs-sonhr-2015-ch6.pdf>
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- 20 How does Employment – or Unemployment Affect Health (2013). Health Policy Snapshot. Rober Wood Johnson Foundation. <https://www.rwjf.org/content/dam/farm/reports/issue-briefs/2013/rwjf403360>
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- 24 Seegert, L. (2017). Social isolation, loneliness negatively affect health for seniors. Association of Health Care Journalists. Center for Excellence in Health Care Journalism. <https://healthjournalism.org/blog/2017/03/social-isolation-loneliness-negatively-affect-health-for-seniors/>
- 25 Outdoor air quality is highly dependent on geography, varies seasonally, and is measured in very few locations across the county. It is measured by the amount of particle pollution, also called particulate matter (PM<sub>2.5</sub>), in the air. Particulate matter in some parts of the county is higher than others, and the community level data and descriptions will provide more information about disparities in outdoor air quality.
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