2019 CENTRAL OREGON

REGIONAL HEALTH ASSESSMENT

BRANDON NIXON PHOTO:
FRONT AND BACK COVERS

CONTENTS

CENTRAL OREGON HEALTH COUNCIL BOARD APPROVAL OF THE CENTRAL OREGON REGIONAL HEALTH ASSESSMENT

Health partners in Central Oregon are making important strides to improve the overall health of all residents in our region. These strides will continue to be facilitated by partnerships among health care providers, local governments, educators, community-based and non-profit organizations, community and resident groups and other health-serving entities. To further our vision of a healthier Central Oregon, regional partners have collaborated to compile the 2019 Central Oregon Regional Health Assessment (RHA).

This assessment offers a variety of lenses through which to view the health of the region. Ultimately, the 2019 RHA will inform the Central Oregon 2020-2023 Regional Health Improvement Plan (RHIP), which serves as a roadmap for improved health outcomes.

As the Central Oregon Health Council (COHC) Board of Directors, we are committed to the following:

- Continuing to build a system of health that meets and supports the needs of our region.
- Using the data within this document to help us create the 2020-2023 RHIP and inform other strategic plans.
- Facilitating partnerships to achieve optimal health for our region's residents.

To the extent these goals are achieved, there will be a healthier Central Oregon and healthier citizens to enjoy the special place in which we live, work, and play.

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EXECUTIVE SUMMARY

Central Oregon partners in Crook, Deschutes, Jefferson, northern Klamath Counties, and the Confederated Tribes of Warm Springs collaborate to complete a Regional Health Assessment (RHA) every four years. The RHA describes health-related strengths and challenges in the region and is used to prioritize improvements. Four types of assessments are completed during this process utilizing Mobilizing for Action through Planning and Partnership (MAPP), a community-driven strategic planning process for improving community health. Each of the four assessments yields important information. These ensure varying factors are accounted for that affect the local health system and our community. Information from the 2019 RHA will be used to help prioritize strategies in the 2020-2023 Regional Health Improvement Plan (RHIP), a collaborative document that Central Oregon can use to support communities where everyone is provided the opportunities to achieve their full health potential.

Central Oregon strives to make the creation of the RHA an inclusive process that incorporates many different perspectives. Creation of the 2019 RHA included:

- Staff and community experts from over 25 local organizations with expertise in health, social determinants of health, and health equity (See the Health Equity and Social Determinants of Health section for more information).
- Over 240 people who participated in community focus groups throughout the region.
- 202 surveys at county fairs.
- 705 people who participated in a regional St. Charles phone survey.

BRANDON NIXON PHOTO

These are the key findings from each section of the 2019 RHA:

Social determinants of health (SDoH) and health inequities are ***bolded*** *in the Executive Summary*

DEMOGRAPHICS

- The population of Central Oregon continues to grow and all three Central Oregon counties are growing faster than Oregon as a whole.
- The cost of housing is highest in Deschutes County, but **housing affordability** is an issue in all three counties. Although housing cost is lower in Crook and Jefferson Counties, the median household income is also lower.
- Addressing the **high cost of living** in Central Oregon, including **housing, healthy foods, healthcare, and childcare** was consistently identified as a main community need during focus groups hosted throughout the region. All three Central Oregon counties have a higher proportion of adults and children who are food insecure, compared to Oregon as a whole.
- Central Oregon's population is aging with a larger proportion of people aged 65 years and older than Oregon overall.
- **Educational attainment** is not equal between people of different races and ethnicities. For example, in all three counties, a lower percentage of Hispanics or Latinos earned a high school degree compared to White, non-Hispanics.
- During focus groups, **promoting equity and decreasing stigmas** was frequently mentioned as a need during community focus groups. This includes decreasing barriers to care, creating culturally relevant information, educating staff, and promoting a workforce that represents the demographics of those served.

CAUSES OF DEATH AND QUALITY OF LIFE

- Mortality rates, regardless of the cause of death are not equal between sexes and among racial/ethnic populations. In Central Oregon, American Indian/Alaska Natives have a lower life expectancy and Hispanics have a higher life expectancy than the overall population. Life expectancy among women in Central Oregon is higher than men.
- The way people perceive their own health varies widely by **income and by level of education**. In Central Oregon, a lower percentage of those with only a high school education report having a good quality of life compared to those with a college education. Similarly, a lower percentage of those below the federal poverty level (FPL) report having a good quality of life compared to those living above the FPL.

CHRONIC CONDITIONS

- **Income level** is strongly linked to chronic condition prevalence and risk factors. For example, a higher proportion of those who live below the FPL have asthma and cancer compared to those living above the FPL. Similarly, a higher proportion of those who live below the FPL smoke cigarettes and are classified as obese compared to those who live above the FPL.
- All three Central Oregon counties have a higher overall cancer incidence rate than Oregon. Breast cancer has the highest incidence rate in Central Oregon, and melanoma incidence rates are higher in Central Oregon compared to the United States as a whole.

- There are **geographic differences** in prevalence and mortality from chronic conditions. For example, Jefferson County has a higher diabetes prevalence and mortality rate, and Deschutes County has a lower diabetes prevalence and mortality rate compared to Oregon overall.

COMMUNICABLE DISEASES

- Up-to-date immunization rates for two-year-olds have been increasing in Central Oregon over the past two to three years, but there are opportunities for improvement in childhood, adolescent, and adult immunization rates.
- Sexually Transmitted Infections, specifically chlamydia and syphilis, continue to increase in Central Oregon. Chlamydia incidence is highest among those in their late teens and early twenties.
- Although rare, some vector-borne diseases disproportionately affect Central Oregonians. For example, all Colorado Tick fever cases and half of all Hantavirus cases in Oregon over the past ten years occurred in Central Oregon counties.
- Diarrheal diseases affect hundreds of Central Oregonians each year and the incidence rate of several diarrheal diseases, including Campylobacteriosis, E. coli (STEC), Giardiasis, and Vibriosis, is higher in Central Oregon than Oregon statewide.
- Outbreaks of communicable diseases in Central Oregon most commonly affect those **residing, or working in, long term care facilities**. Nearly half of all Central Oregon outbreaks over the past six years have been norovirus outbreaks.

MATERNAL HEALTH AND PREGNANCY

- There are **geographic differences** in maternal health and pregnancy outcomes. The percentage of pregnant women receiving prenatal care beginning in the first trimester and adequate prenatal care throughout pregnancy, varied among Central Oregon counties. Deschutes County's rate was the highest. Jefferson County's rate was lower than Oregon statewide.
- The Central Oregon pregnancy rate was higher than Oregon statewide. Crook and Jefferson County teen pregnancy rates were significantly higher than the Oregon average, especially among 18 to 19 years olds and individuals who identified as Hispanic.
- The birth rate decreased in Deschutes and Jefferson counties and increased in Crook County.
- In Central Oregon, Jefferson County had the highest rates of **preterm birth, gestational diabetes, and pre-pregnancy obesity**, and Crook County had the highest rate of mothers who smoked during pregnancy.
- Alcohol consumption during pregnancy has increased in recent years, with pregnant women in Central Oregon drinking alcohol more frequently and in higher quantities than in Oregon overall.

INFANT, EARLY CHILDHOOD, AND ADOLESCENT HEALTH

- There are **geographic differences** for infant, early childhood, and adolescent health and risk factors. Crook and Deschutes County breastfeeding rates increased over the last three years, while the Jefferson County rate is significantly lower than Oregon statewide.
- The rate of infants born **low birth weight** was higher in Crook and Jefferson Counties than the Oregon rate.
- Both the rate of **uninsured children** and the proportion of **children living in poverty** decreased in Central Oregon.
- Child developmental screenings increased for children insured through the Oregon Health Plan (Medicaid). American Indian children were less likely to have participated in developmental screening than other ethnic groups.
- Among Central Oregon students, e-cigarette use was more common than the use of cigarettes and other tobacco products.
- Central Oregon students have more **access to take-out meals and fast food** than fresh fruits and vegetables.
- In relation to **physical activity**, Central Oregon students were most likely to use some form of motorized transportation between school and home. Notably, many Central Oregon students had no physical education class at school, however, fewer Deschutes County students reported no physical activity compared to the overall rate in Oregon.
- More than one-third of Central Oregon 8th and 11th grade students did not meet the **Positive Youth Development (PYD) Benchmark criteria** which includes questions related to well-being and social connectedness.
- Focusing on youth, including the prevention of **Adverse Childhood Experiences (ACEs), and reducing school dropout rates, alcohol, tobacco, and other drug use**, was identified as a need during community focus groups.

MENTAL HEALTH

- 2017 saw the highest number of suicides in Central Oregon over the last decade.
- The **suicide mortality** rate among individuals 15-44 years of age was higher than Oregon overall, and more than 50% of suicides were completed using firearms.
- The percent of students reporting feeling sad or hopeless every day for two weeks or more has increased steadily since 2011.
- A greater percentage of females compared to males were diagnosed with depression in Crook and Deschutes Counties. However, in Jefferson County, it was the opposite with more males than females reported being diagnosed with depression.

ALCOHOL, TOBACCO, AND DRUG USE

- The age-adjusted all-cause mortality rate from tobacco-related causes has decreased in Central Oregon in the last ten years. This is consistent with Oregon overall.
- **Overdose deaths** related to methamphetamines have increased, while overdose deaths related to opioids have decreased in Central Oregon; this follows a similar statewide trend.
- All drug overdose hospitalization rates have increased since 2005-2007 in Central Oregon.

- **Risky prescribing practices** have decreased across Central Oregon, which is similar to the trend in Oregon overall.
- In Central Oregon, a greater percentage of males reported **heavy drinking** (more than two drinks per day for men or more than one drink per day for women) among 18-34 and 35-54 year-olds, however, a greater percentage of females over 55 years of age reported heavier drinking than males.
- More than half of all 8th graders reported abstaining from alcohol use in Central Oregon.

UNINTENTIONAL INJURY

- Unintentional injury deaths have increased since 2012 in Central Oregon.
- Males in all Central Oregon counties have a higher unintentional injury mortality rate than females. These differences were statistically significant in all locations except Crook County.
- The leading causes of unintentional injury deaths are motor vehicles, falls, and poisonings.
- There were between one to three unintentional pedestrian, drowning, a nd bicycle deaths per year in Central Oregon from 2008-2017.

ORAL HEALTH

- Approximately 30-40% of adults in Central Oregon **did not visit a dentist or dental hygienist** during the previous year.
- Among adults enrolled in the Oregon Health Plan (Medicaid), roughly 70% did not receive any dental services.
- Most (70-75%) Central Oregon 8th and 11th graders report that they have had a cavity.

HEALTHY ENVIRONMENTS

- Most Central Oregonians commute to work alone in a car. A lower proportion of Central Oregonians commute to work using **active transportation (i.e., walking or biking) and/or public transportation** compared to Oregon as a whole.
- All three counties had a greater number of **unhealthy days for asthma or other lung diseases** in 2017 than in previous years.
- There were no **lead or copper alerts** in all active water systems in Central Oregon in 2018. Deschutes and Jefferson counties had approximately 20% of all active water systems experience a Coliform alert, and Crook had 5%.
- Creating better **public transportation systems, safe alternate commute options, and community spaces** were identified as community needs during focus groups hosted throughout Central Oregon. In addition, preparing for and developing community resilience around forest fires and drought was mentioned as a growing concern and a community need.

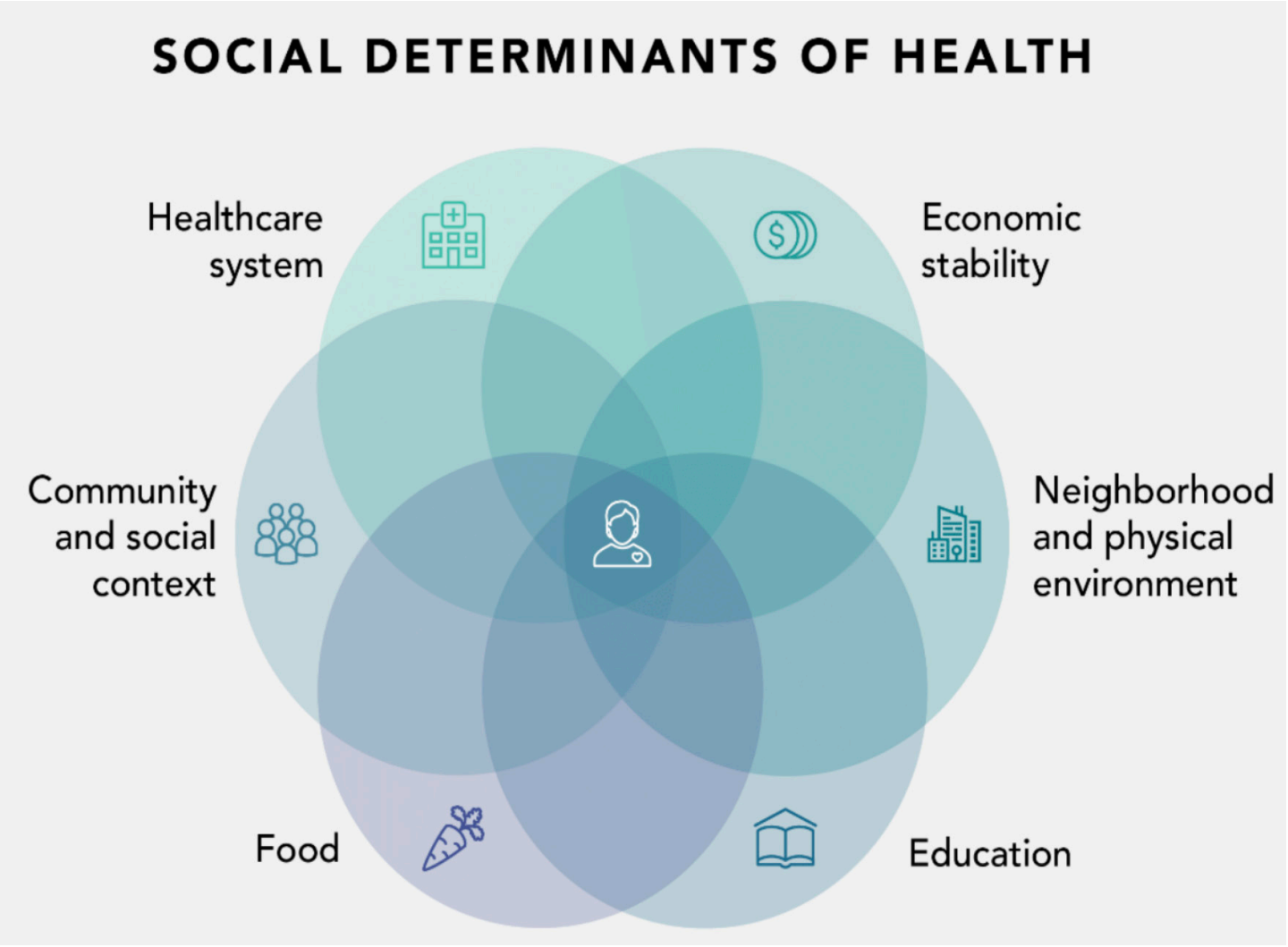
ACCESS TO CARE

- **Health insurance coverage rates** in Central Oregon lag behind the state average. All three Central Oregon counties have a higher proportion of uninsured adults and uninsured children compared to Oregon as a whole.

- Health care coverage differs based on **education level**. In all three counties, a higher proportion of those with a high school education or less were uninsured compared to those with a college education.
- There are **geographic differences** in access to care. Several areas of Central Oregon, including La Pine, Madras, Prineville, and Warm Springs, have higher levels of unmet health care needs than Oregon overall.
- Gaps exist in population-to-provider ratios, especially based on **geography**. For all categories of licensed health professionals, with the exception of Certified Registered Nurses, Crook and Jefferson Counties have a less favorable population-to-provider ratio than Deschutes County.
- There are several **geographic areas** in Central Oregon that are more than a 30-minute drive to mental health service locations.
- During focus groups, community members identified improving timely, affordable, **access to behavioral health care and support** as the top community need. Decreasing wait times and promoting specialty care was identified as the second greatest community need. These priorities were especially true in **rural communities.** Deschutes County.

HEALTH EQUITY & SOCIAL DETERMINANTS OF HEALTH

- Where we **live, go to school, and work affects** our overall health, as does the **safety and livability of our communities**, whether we are **economically stable or struggling to get by**, have strong **social connections**, and how we are **treated** in society. These are determinants of health and help explain why certain segments of the population experience better health outcomes than others.
- People may experience health differently based on where they **live**. For instance, Crook and Jefferson Counties have a less favorable population-to-provider ratio than Deschutes County, which means there may be less acess to services in those areas.
- People may also experience health differently based on their **race or ethnicity, sexual orientation**, or based on characteristics like **income and education**. In Central Oregon, a lower percentage of people who live below the FPL report having a good quality of life compared to those living above the FPL.


SOCIAL DETERMINANTS OF HEALTH
Healthcare system
Economic stability
Community and social context
Neighborhood and physical environment
Food
Education

INTRODUCTION

WHAT IS A HEALTH ASSESSMENT?

A health assessment is a snapshot of the health and wellness of a community or communities at a point in time. It describes a variety of health topics, as well as social and economic factors that influence health. These comprehensive reports are intended to guide communities and organizations to strategically address health-related issues and work together with partners to maximize the use of resources and support populations most at risk. Assessing the health of a community or region is an ongoing process that involves not only monitoring population health, but also measuring progress toward improvement. In Oregon, a health assessment is usually referred to as a Community Health Assessment (CHA) and provides information on a single community. Within Central Oregon, the health assessment is collaboratively completed as a region and includes partners from Crook, Deschutes, Jefferson, and northern Klamath counties, and is referred to as a Regional Health Assessment (RHA).

In 2015, per Senate Bill 648, the Central Oregon Health Council responsibilities were expanded to require creation and adoption of a Regional Health Assessment and Regional Health Improvement Plan (RHIP) to serve as a strategic population health and health care system service plan for the region. The development of the RHA fulfills requirements for the hospital system, public health, behavioral health, early learning, and other entities, allowing for a collaborative regional process that creates, adopts and implements the RHA and RHIP.

COMMUNITY INPUT

Central Oregon residents and health organizations care a great deal about working together to improve the health of our communities. From May 2018 to June 2019, health partners in Central Oregon worked

collaboratively to create the Central Oregon Regional Health Assessment (RHA), with leadership provided by the Central Oregon Health Council. The stages of development of the RHA were entirely transparent and public in all processes and outcomes.

The Regional Health Assessment Steering Committee used a planning process called Mobilizing for Action through Planning and Partnership (MAPP). The RHA was developed with data, input, and information from a wide variety of health and community-based organizations, stakeholders and community members. The input was solicited from the Central Oregon Health Council's Community Advisory Council, a number of health-related advisory boards and groups (all providing various layers of expertise to our region via social determinants of health and health equity lens), and via numerous community focus groups throughout the region. Individuals (such as traditional health workers/peer support specialists/ community health workers) and organizations were asked to share their expertise through a health equity and social determinants of health lens. This information not only informed the development of this document but will be used to develop priority health issues that will be addressed in the 2020-2023 Central Oregon Regional Health Improvement Plan.

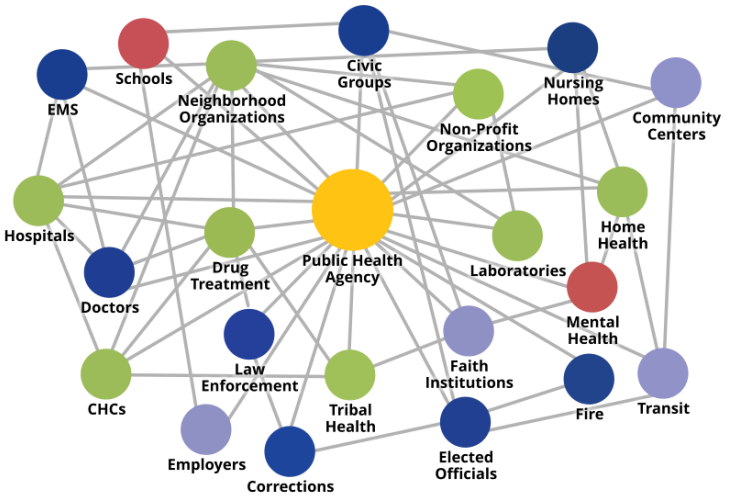
HOW TO USE THE RHA

Stakeholders regularly gather and consider how to best address issues that have been described in the RHA. The RHA is a valuable tool to ground discussions in data and information, and to focus resources on important health issues with the potential of effective services, programs, and interventions. The RHA is not an exhaustive collection of health indicators or analyses. Therefore, readers are encouraged to explore and use additional information as Central Oregon health partners continue to construct a more in-depth understanding of the health of populations in our region.

BRIEF HISTORY OF THE PUBLIC HEALTH SYSTEM IN OREGON

Public health systems are all the public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction. The public health system is not just the health department and includes:

- Health care providers
- Public safety agencies
- Human service and charity organizations
- Education and youth development organizations
- Recreation and arts-related organizations
- Economic and philanthropic organizations
- Environmental agencies and organizations (CDC, 2019)



CENTER FOR DISEASE CONTROL AND PREVENTION, 2019

Public health systems examine the multifaceted components of health that affect populations and systems. The Regional Health Assessment helps professionals within the public health system understand what is going well and what needs to be changed to assure good health. There are 10 essential health actions to assure health within communities and populations (CDC, 2018).

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships to action and identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure competent public and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

The development of public health in Oregon has evolved greatly over the years, beginning with an established bacteriology laboratory in Portland in 1898 that focused on disease control components (Oregon Health and Sciences University, 2018). Other focal points of public health include, but are not limited to: injury prevention, tracking disease outbreak, understanding how the environment impacts health and discovering why some individuals experience poorer health than others in the community (American Public Health Association, n.d.). The public health system also helps assure access to services such as physical, oral, and behavioral health. The primary goal related to oral health is to prevent and control oral as well as craniofacial conditions, injuries, diseases, and also to also improve access to preventive care as well as dental services (HealthyPeople.gov, 2019). Related to behavioral health, public health systems aim to identify risk factors and health inequities, increase awareness, lower stigma connected to accessing behavioral health services, eliminate disparities, and improve access to services (Centers for Disease Control and Prevention [CDC], 2005). Public health integrates mental health promotion into disease prevention endeavors while collaborating with community partners to enhance coordination of care related to behavioral health services (CDC, 2005).

HEALTH EQUITY AND SOCIAL DETERMINANTS OF HEALTH

According to the World Health Organization (1948), "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." A person's health is determined largely by social, economic, and environmental factors, including where we live, go to school, and work affects our overall health, as does the safety and livability of our communities, whether we are economically stable or struggling to get by, whether we have strong social connections and how we are treated in society, currently or historically. These factors are all determinants of health and help explain why certain segments of the population experience better health outcomes than others. They also explain how external factors influence our ability to live in a healthy way.

"To reduce health inequalities requires action to reduce socioeconomic and other inequalities. There are other factors that influence health, but these are outweighed by the overwhelming impact of social and economic factors—the material, social, political, and cultural conditions that shape our lives and our behaviors."

- Marmot & Allen, 2014

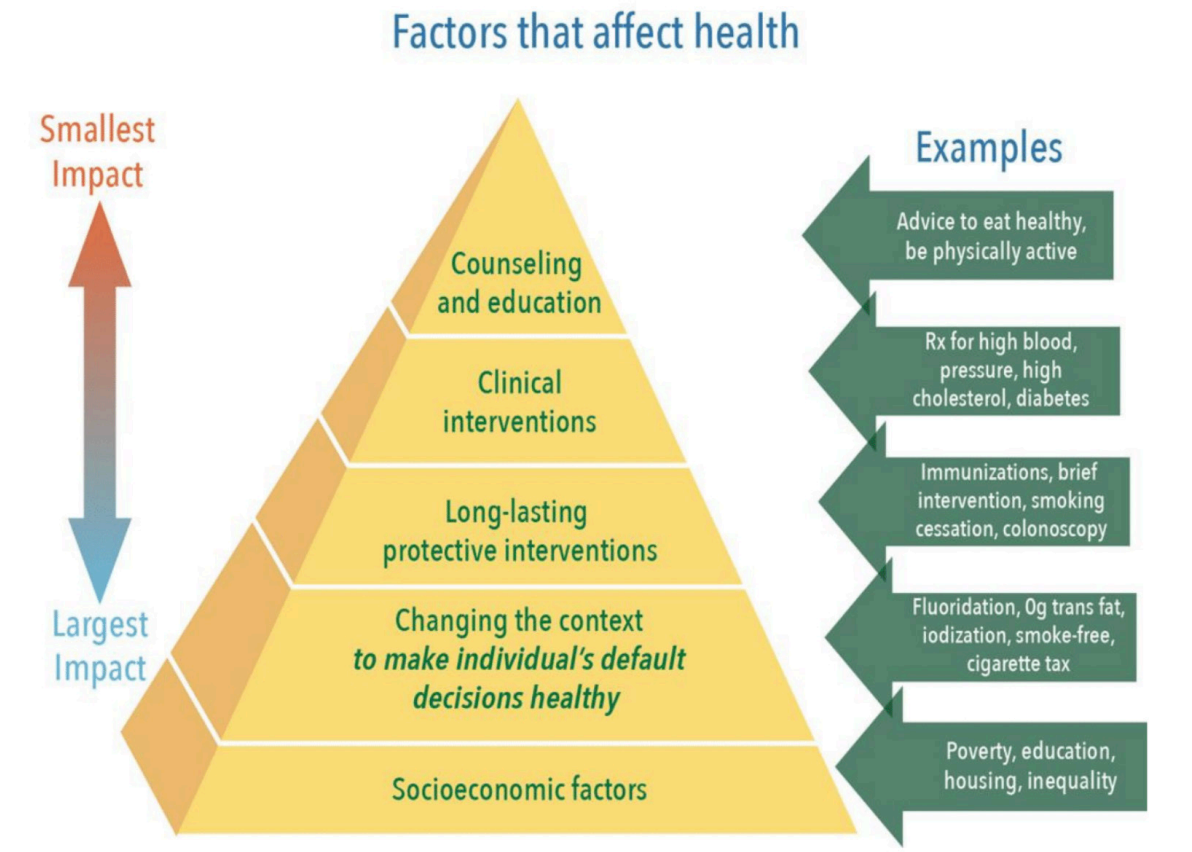


IMAGE ADAPTED FROM THE CENTER FOR DISEASE CONTROL AND PREVENTION

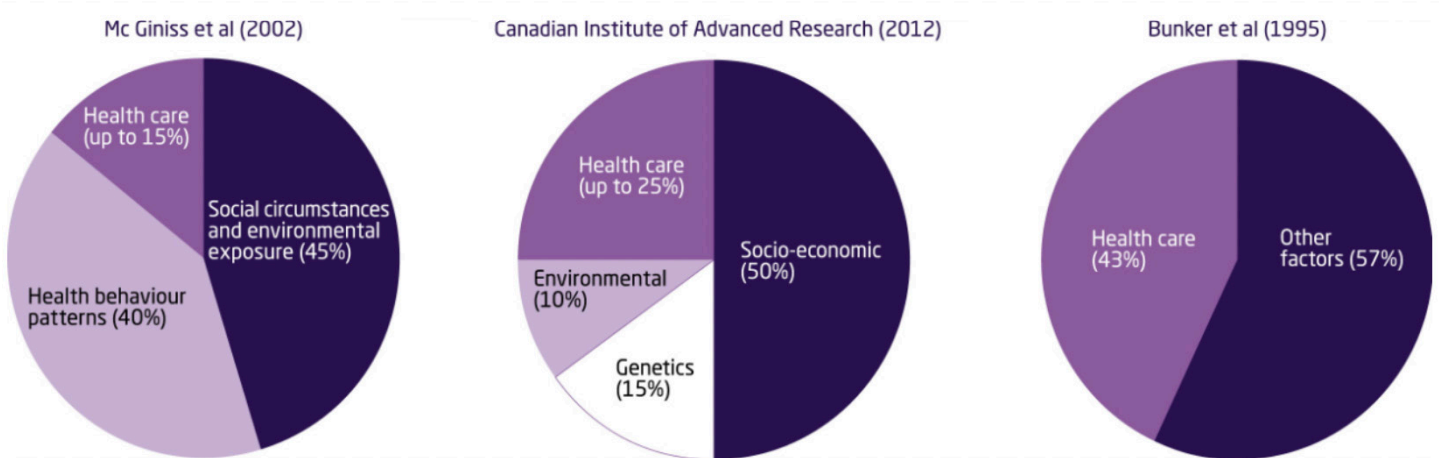
Collectively, these factors are known as the social determinants of health. Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks (healthypeople.gov, 2019). Examples of social determinants of health include:

- Safe housing
- Healthy food
- Access to educational, economic, and job opportunities
- Access to health care services
- Quality of education and job training
- Availability of community-based resources in support of community living and opportunities for recreational and leisure-time activities
- Transportation options
- Public safety
- Social supports
- Social norms and attitudes (e.g., discrimination and racism)
- Exposure to crime and violence
- Socioeconomic conditions (e.g., poverty)
- Residential segregation
- Language/Literacy
- Culture

Health equity is defined as, "The absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other means of stratification."
WHO, 2018

The public health and health care systems implement strategies on multiple levels to improve the health of individuals and families, as well as the population at large. The five-tier pyramid, shown above, illustrates how different types of interventions affect health. Interventions and resources that positively influence social determinants of health can have the largest impact on individual and population health outcomes. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins. (healthypeople.gov, 2019).

The pie charts below are from several studies that estimated the impact of social determinants on population health. Based on the estimates below, 60 - 85% of health status is determined by social circumstances, health behavior, and/or environmental factors. Although prevention and health care services do contribute to healthy people and communities, the most effective way to impact health and health equity at the population level is to focus On social determinants of health.



MARMOT, M., & ALLEN, J. (2014). SOCIAL DETERMINANTS OF HEALTH EQUITY. AMERICAN JOURNAL OF PUBLIC HEALTH, S517 - S519

"Education is the single most important modifiable social determinant of health. Income and education are the two big ones that correlate most strongly with life expectancy and most health status measures"

- Anthony Iton, MD, JD, MPH, Senior Vice President for Healthy Communities at the California Endowment

Central Oregon aspires to create a place where health is attainable for all people. This report represents an effort to assess the current state of health and identify ways to improve.

WWW.MMSHEALTHYCOMMUNITIES.ORG

Forces of Change Focus Group Results: Address Stigma, Political Trauma, and Equity

Stigma and the lack of culturally relevant information prevent people from accessing care and other resources.
Central Oregon should:

- Identify and duplicate successful models of care integration in the region (one stop shop), including behavioral health and reproductive health services.
- Focus on equity and cultural competence.
- Consider non-medical approaches/ locations to engaging people in care.
- Acknowledge how national policies impact fear, perceptions, and access to health services and community resources for certain populations (i.e. migrant workers, immigrants, etc.).

The 2019 Regional Health Assessment focuses on social determinants and health equity by:

- Displaying data by communities, poverty status, age, race/ethnicity and other indicators where appropriate.
- Inclusion of qualitative data on health equity collected via focus groups and interviews.
- Health equity and social determinants questions and responses from

Want to learn more about Social Determinants of Health?

OFFICE OF DISEASE PREVENTION AND HEALTH PROMOTION:

WWW.HEALTHYPEOPLE.GOV/2020/TOPICS-OBJECTIVES/TOPIC/SOCIAL-DETERMINANTS-OF-HEALTH

CENTERS FOR DISEASE CONTROL AND PREVENTION:

HTTPS://WWW.CDC.GOV/SOCIALDETERMINANTS/INDEX.HTM

AMERICAN PUBLIC HEALTH ASSOCIATION:

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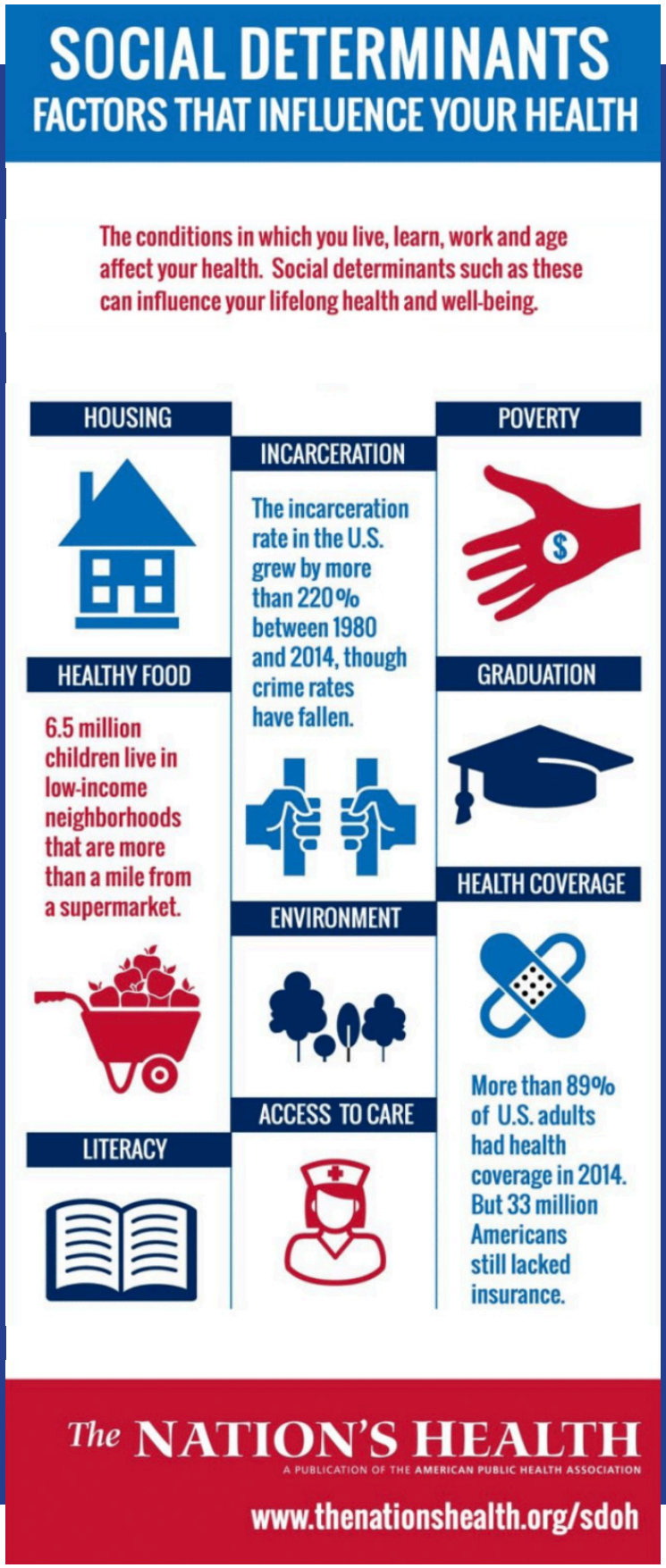


Community Themes and Strengths Focus Group Results: Promote Equity and Decrease Stigmas

Stigmas and lack of **culturally and linguistically responsive** services and resources decreases access to opportunities, including quality care. Central Oregon can address this by:

- Encouraging policies and hiring practices that promote the hiring of staff who **represent the demographics and languages** of those served. This is especially true for the Spanish-speaking community, those who identify as LBGTQ+, immigrants, and those who do not identify as white, older adults, and others.

Educating and having conversations with health care staff about other cultures, religions, and ideas. This applies to more than just health care settings, and should be incorporated throughout schools, recreational settings, and the community as a whole. Institutions may unknowingly create barriers by failing to consider and openly welcome the many varied populations within the community. This includes an organizational responsibility to provide services, documents, and information at the appropriate reading level and language, and in a manner that makes it easier to navigate programs.

PROCESS AND METHODS FOR DEVELOPMENT OF THE RHA

Overview

The Regional Health Assessment Steering Committee used an evidence-based planning process called Mobilizing for Action through Planning and Partnership (MAPP) to guide the creation of the Regional Health Assessment (RHA). Four types of assessments were used through this process:

1. **Health Status Assessment:** Quantitative health indicators describing the health status of communities in Central Oregon.
2. **Themes and Strengths Assessment:** Community focus groups hosted to capture community members' experiences with health in Central Oregon.
3. **Forces of Change Assessment:** Targeted focus groups hosted to identify external threats and opportunities. These include political and social issues affecting Central Oregon.
4. **Public Health System Assessment:** Public Health Modernization Assessment Gaps Analysis.

REGIONAL HEALTH ASSESSMENT STEERING COMMITTEE

In order to ensure a broad array of voices and expertise were represented in the development of the 2019 RHA, a Steering Committee was formed to advise and offer guidance throughout the entire process. The group was comprised of numerous topical experts and data analysts from organizations across Central Oregon. Through this collaborative process, Central Oregon partners endeavored to incorporate a variety of new data in various forms, in order to allow for this document to meet the needs and reporting requirements of a broader range of community organizations and partners. Organizations sharing their expertise on this Steering Committee included: Advantage Dental, Early Learning Hub/Better Together, Bend La Pine School District/High Desert Education Services District, BestCare Treatment Services (Jefferson County's Community Mental Health Program and regional substance use disorder provider), Central Oregon Health Council (COHC), COHC Community Advisory Council, Confederated Tribes of Warm Springs, Crook County Health Department, Deschutes County Health Services (Public Health Department and the Community Mental Health Program), Jefferson County Public Health, Mosaic Medical, St. Charles Health System, and PacificSource (Coordinated Care Organization/Medicaid/ Oregon Health Plan for Central Oregon).

REGIONAL HEALTH STATUS ASSESSMENT METHODS

The Regional Health Status Assessment includes unity Health Status Assessment Methods

The Community Health Status Assessment includes quantitative data for the three Central Oregon counties: Crook, Deschutes, and Jefferson. Comparisons to Oregon, to the U.S. as a whole, and between relevant demographic and socioeconomic groups were included when possible. Some data are not collected at the county level or may not be appropriate to report at the county level. In those instances, data may be reported at the Central Oregon region-level or state-level.

The quantitative data included in the Regional Health Status Assessment come from a variety of sources including population-level

surveys, birth and death certificates, disease registries, medical claims, and reportable disease databases, among others. Most quantitative data included in the report is population-based, meaning that it is representative of the entire population of the community, county, or region. A variety of agencies and organizations may collect and maintain their own data on indicators not included here.

Data reported in the Regional Health Status Assessment follow data use guidelines specific to each dataset. When appropriate, tables, charts, and data sources are marked with limitations. For example, some estimates may have been calculated using a small sample and may not be representative of the population as a whole. These instances are labeled throughout the document.

Some tables and charts also include 95% Confidence Intervals (CI) and/or indications of statistically significant differences between groups or geographies. A 95% CI is a range of values in which the true population value would be included 95% of the time if an infinite number of samples were taken from the population. When two CIs overlap, the estimates are not considered statistically significantly different from each other. When two CIs do not overlap, the estimates are considered statistically significantly different.

Resources are included throughout the document to learn where to find more information about a specific topic or data source.

COMMUNITY THEMES AND STRENGTHS AND FORCES OF CHANGE METHODS

From October 2018 to March 2019, a series of 24 community focus groups, with over 240 participants, were hosted throughout Central Oregon to solicit public feedback. Community outreach, focus group facilitation, and qualitative analysis was led by Steering Committee staff. The same staff led all focus groups to help assure consistency around data collection and analysis. The Community Themes and Strengths Assessment sheds light on community issues and concerns, assets and resources, and quality of life. The Forces of Change Assessment aims to determine trends, factors, and events that may impact the community or local public health system, and the threats or opportunities generated by these occurrences (NACCHO, 2015).

The Community Themes and Strengths focus groups were completed in collaboration with Abilitree, Central Oregon Veterans Outreach, Central Oregon Health Council's Community Advisory Council, Council on Aging of Central Oregon, Deschutes County Health Services, Economic Development for Central Oregon, La Pine Community Health Center, Latino Community Association, Let's Talk Diversity, Metolius City Council, NeighborImpact, Volunteers in Medicine, Westside church, Youth Action Councils/ Youth Development Councils in Crook, Deschutes, and Jefferson Counties, as well as representatives from the LGBTQ+ and the homeless populations. Twenty-one focus groups were hosted in English and three in Spanish. Additional responses were collected in written format rather than through a focus group discussion. This included the City of Sisters, Crook County Health Department, Crook County on the Move, Jefferson County Public Health, and Let's Talk Diversity Coalition. Forces of Change Focus Groups were completed with the Central Oregon Health Council's Provider Engagement Panel, Central Oregon Health Council's Operations Council, the Central Oregon Health Council's Board of Directors, and a regional prevention workgroup.

These collaborative partnerships and feedback mechanisms were created because Central Oregon believes addressing social determinants of health and health equity are crucial to a community's health. In addition to focus groups, the region distributed surveys to help understand Community Themes and Strengths. This included 202 responses to surveys collected at county fairs, 208 responses to the RHA mid-point survey, and 705 responses to the St. Charles community phone survey.

DEMOGRAPHICS

Demographic factors help inform how Central Oregon communities may evolve. The factors include, but are not limited to: population size, race and ethnicity, education level, household income, housing analysis, poverty, age, sex, and other components that influence the health of the population. Demographic factors like income, housing status, and education level are examples of social determinants of health. For more information on how social determinants affect health, please reference the section that best represents the topic of interest (i.e. Chronic Conditions, Mental Health, etc.).

POPULATION

In 2017, the estimated total population of the Central Oregon region was 233,756. From 2010 to 2017, Central Oregon grew 16.6%, which is faster than Oregon overall (8.1%). During that time, Deschutes County grew by 18.5%, Crook County by 10.2%, and Jefferson County by 9.4% (Table 1).

By city, variation in population growth is evident across Central Oregon. The highest growth is noted in Sisters (22.4%), followed by Warm Springs (14.6%), Bend (13.6%), Redmond (12.2%), La Pine (11.1%), and Madras (3.2%). A slight population decrease was noted in Prineville (-0.3%) between the 2006-2010 and the 2012-2016 5-year population estimates (Table 2).

Table 1. Population estimates of Oregon and Central Oregon counties, American Community Survey (ACS), 2017

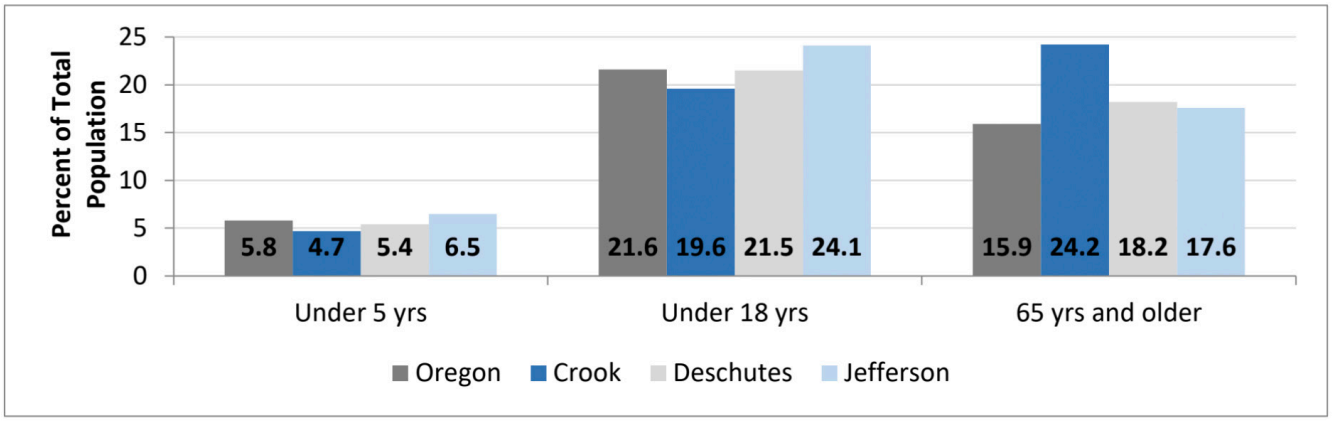
	Oregon	Crook	Deschutes	Jefferson	Central Oregon
2017 Population	4,142,776	23,123	186,875	23,758	233,756
2010 Population (last decennial census)	3,831,074	20,978	157,733	21,720	200,431
Population % change (2010 to 2017)	8.1%	10.2%	18.5%	9.4%	16.6%

Table 2. Population estimates of selected Central Oregon communities, ACS 5-year estimates

	Bend	La Pine	Madras	Prineville	Redmond	Sisters	Warm Springs CDP
2012-2016 5-year Population Estimate	84,416	1,865	6,504	9,419	27,998	2,330	3,609
2006-2010 5-year Population Estimate	74,327	1,679	6,304	9,450	24,957	1,904	3,150
Population % change from 2006-2010 to 2012-2016	13.6%	11.1%	3.2%	-0.3%	12.2%	22.4%	14.6%

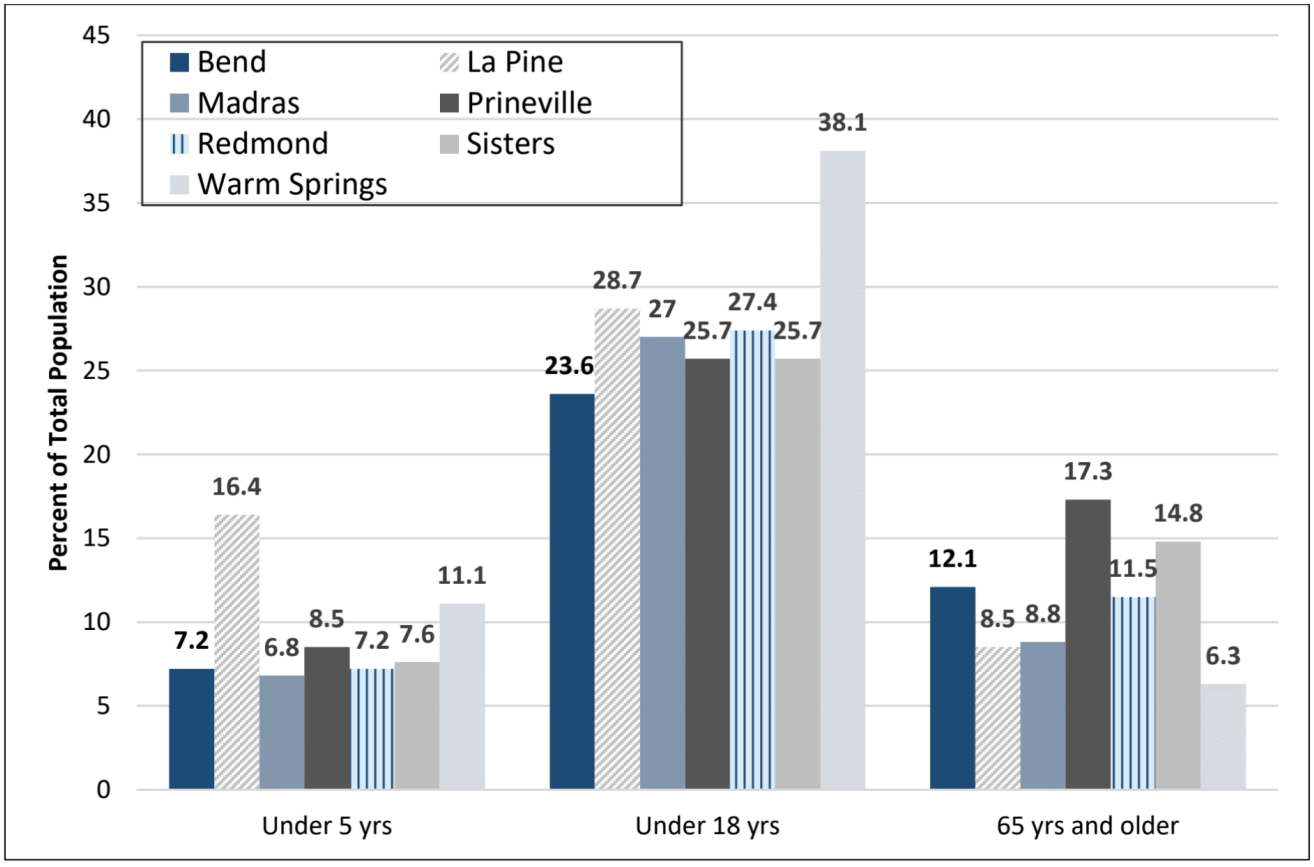
CDP: CENSUS-DESIGNATED PLACE

Figure 1. Age group characteristics of Oregon and Central Oregon counties, ACS 5-year estimates, 2012-2016



All three Central Oregon counties have a higher proportion of older adults aged 65 or over compared to Oregon as a whole. Nearly a quarter of Crook County's population is over 65 years old, compared to approximately 16% of Oregonians as a whole (Figure 1). Prineville has the highest proportion of individuals over 65 years old (17.3%). In contrast, only 6.3% of the Warm Springs population is over 65 years of age (Figure 2).

Figure 2. Age group characteristics of selected Central Oregon communities, ACS 5-year estimates, 2012-2016



"If you really want to change something, you need to start with children. They are the future."
- Deschutes County Youth

Age and sex population pyramids indicate that the population distribution of Central Oregon is more advanced in age than Oregon as a whole, especially in Crook and Deschutes County (Figure 3). There is approximately 46,200 youth under 18 years of age in Central Oregon. A detailed breakdown of youth population size estimates is in Table 3.Within Central Oregon, the community of La Pine has the highest proportion of population younger than 5 years old, and Warm Springs has the highest proportion of the population under 18 years old (Table 4).

RACE AND ETHNICITY

Crook and Deschutes Counties have a higher proportion of residents who identify as White compared to Oregon as a whole.

Figure 3. Age and sex population pyramids for Oregon and Central Oregon counties, ACS 5-year estimates, 2013-2017

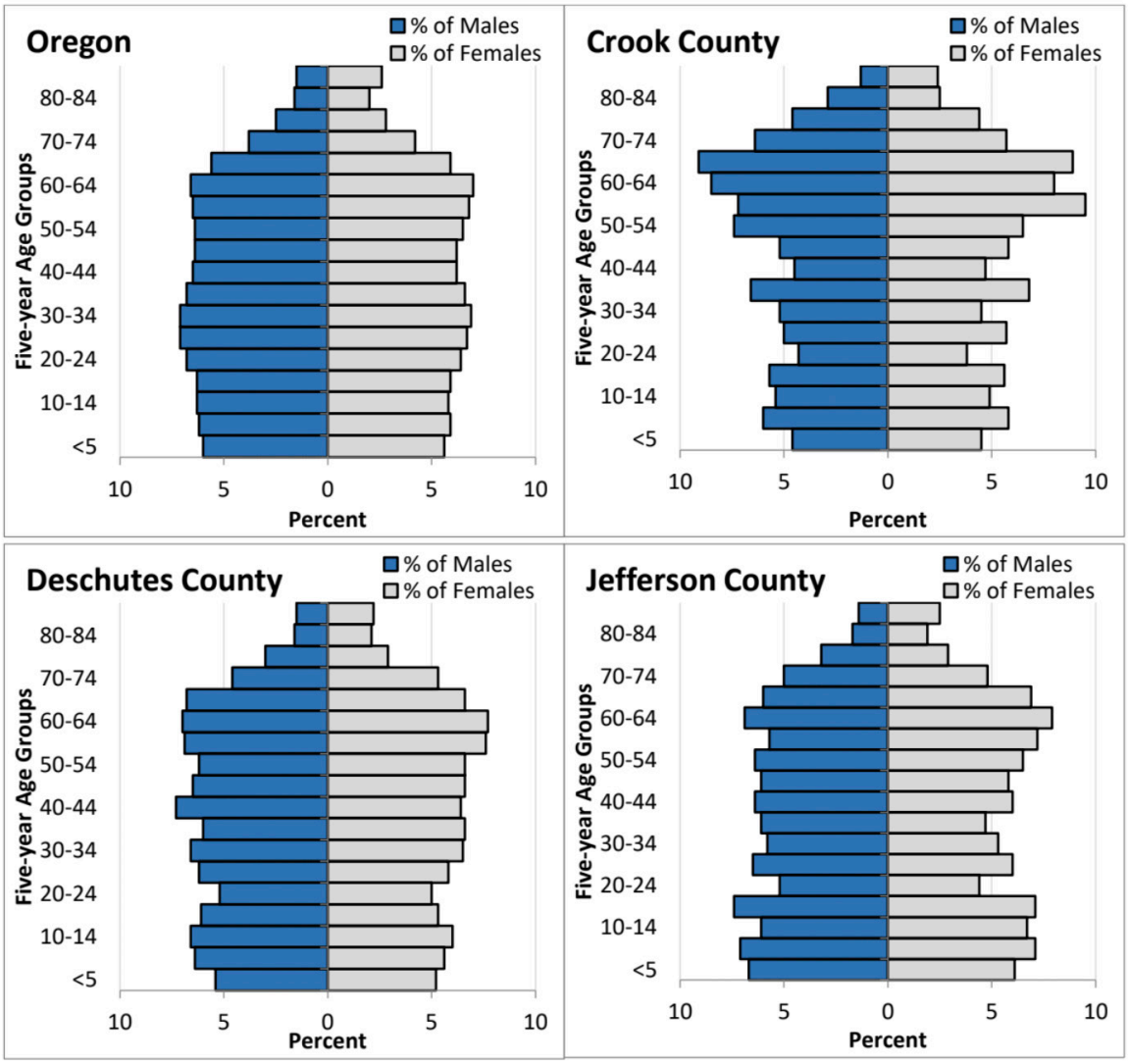


Table 3. Detailed youth age group population size of Oregon and Central Oregon counties, ACS 5-year estimates, 2012-2016

	Oregon	Crook	Deschutes	Jefferson
Age <3 years	134,903	647	5,196	805
Age 3 to 4	96,950	353	3,954	655
Age 5	47,153	324	1,750	265
Age 6 to 8	146,455	779	6,206	928
Age 9 to 11	145,058	678	6,985	942
Age 12 to 14	142,682	616	6,062	887
Age 15 to 17	145,623	789	6,461	912
Estimated total population aged <18	858,824	4,186	36,614	5,394

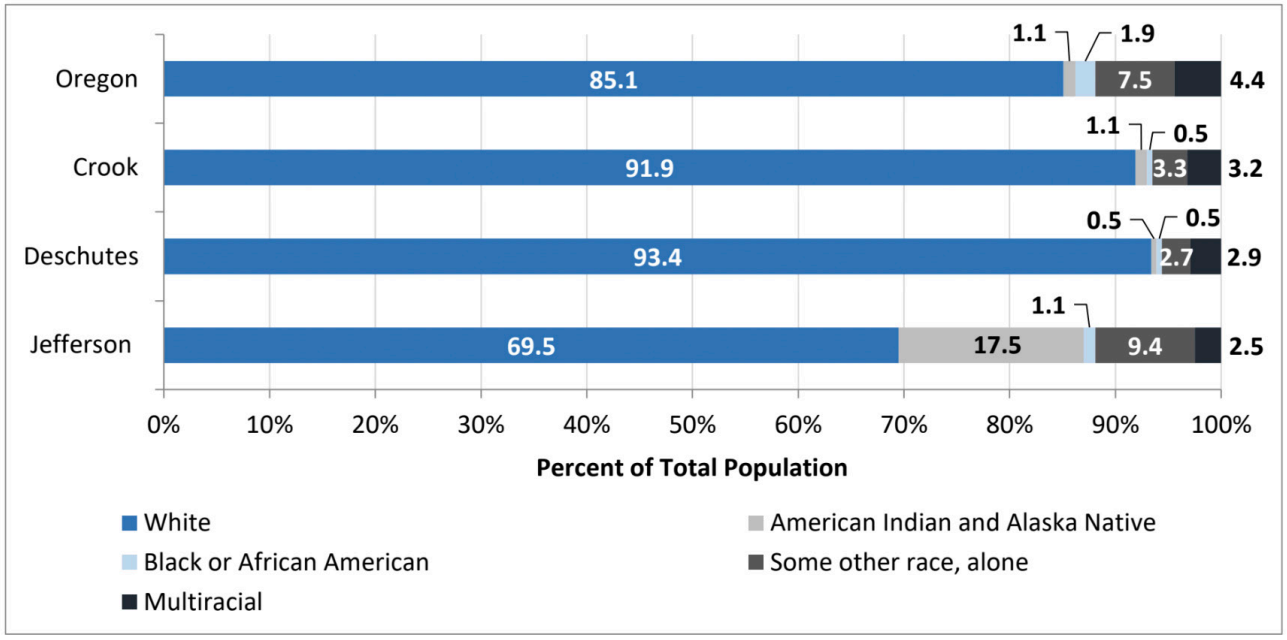
Jefferson County has a higher proportion of residents who identify as American Indian and Alaska Native compared to Oregon as a whole. In addition, a larger proportion of Jefferson County residents identified as American Indian and Alaska Native than the other Central Oregon counties (Figure 4).

In most Central Oregon communities outside of Jefferson County, at least 90% of residents identify as White. For example, in La Pine, 94.9% of residents identify as White, and in Bend 93.1% of residents identify as White. In Madras (Jefferson County), 19.3% of r esidents identify as "some other race" and in Warm Springs, 87.6% identify as American Indian or Alaska Native (Figure 5).

Table 4. Detailed youth age group population size of selected Central Oregon communities, ACS 5-year estimates, 2012-2016

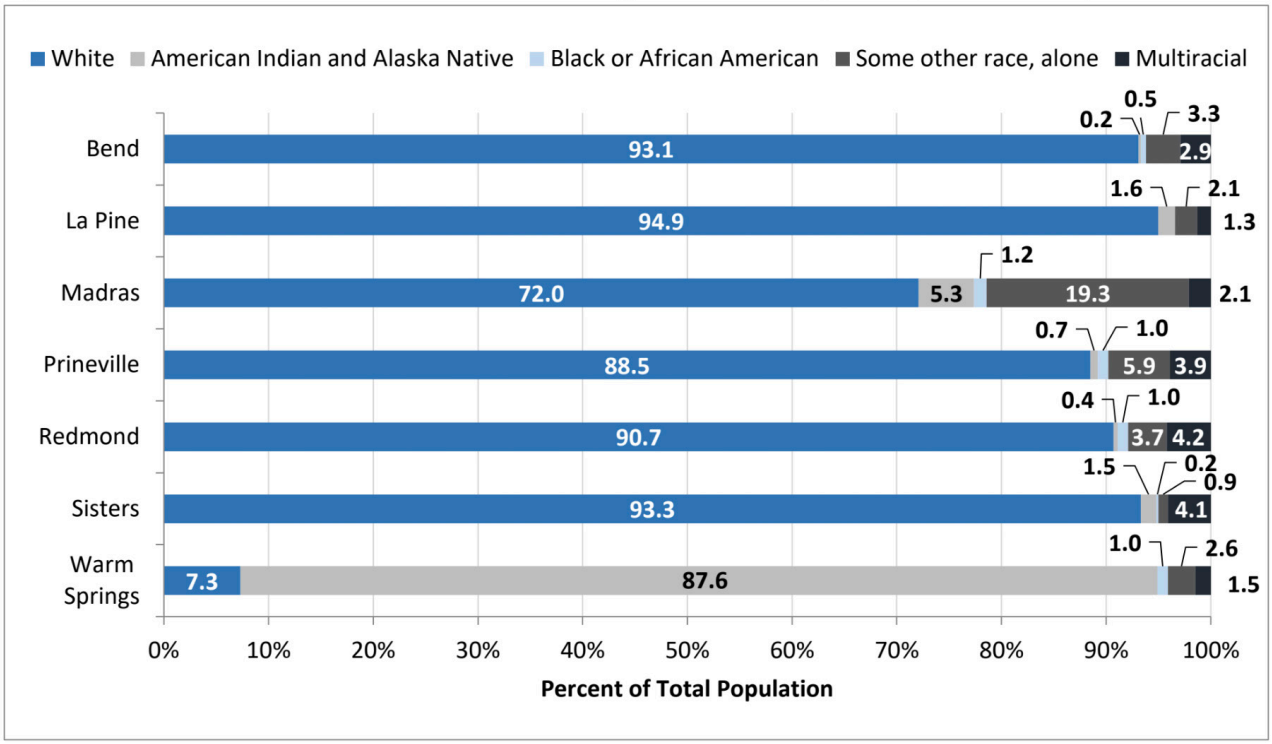
	Bend	La Pine	Madras	Prineville	Redmond	Sisters	Warm Springs CDP
Age <3 years	2,841	90	308	379	1,317	59	159
Age 3 to 4	2,273	72	341	213	945	25	108
Age 5	977	15	48	178	308	50	54
Age 6 to 8	3,515	38	323	281	1,084	93	225
Age 9 to 11	3,450	51	274	302	1,450	84	279
Age 12 to 14	3,299	72	310	298	927	138	208
Age 15 to 17	3,093	48	319	546	891	179	231
Estimated total population aged <18	19,448	386	1,923	2,197	6,922	628	1,264

Figure 4. Race characteristics of Oregon and Central Oregon counties, ACS 5-year estimates, 2016.



In addition, Crook (7.4%) and Deschutes (7.6%) Counties have a lower proportion of residents who identify as Hispanic or Latino compared to Jefferson County (19.8%) and Oregon as a whole (12.4%) (Figure 6). In Central Oregon, Madras has the highest proportion of residents who identify as Hispanic or Latino (41.4%) and La Pine has the lowest proportion of residents who identify as Hispanic or Latino (3.3%) (Figure 7).

Figure 5. Race characteristics of selected Central Oregon communities, ACS 5-year estimates, 2016.



"In order for every organization to create a race equity culture, a culture that will give you an equitable result, you have to have a diverse group of people at the table."

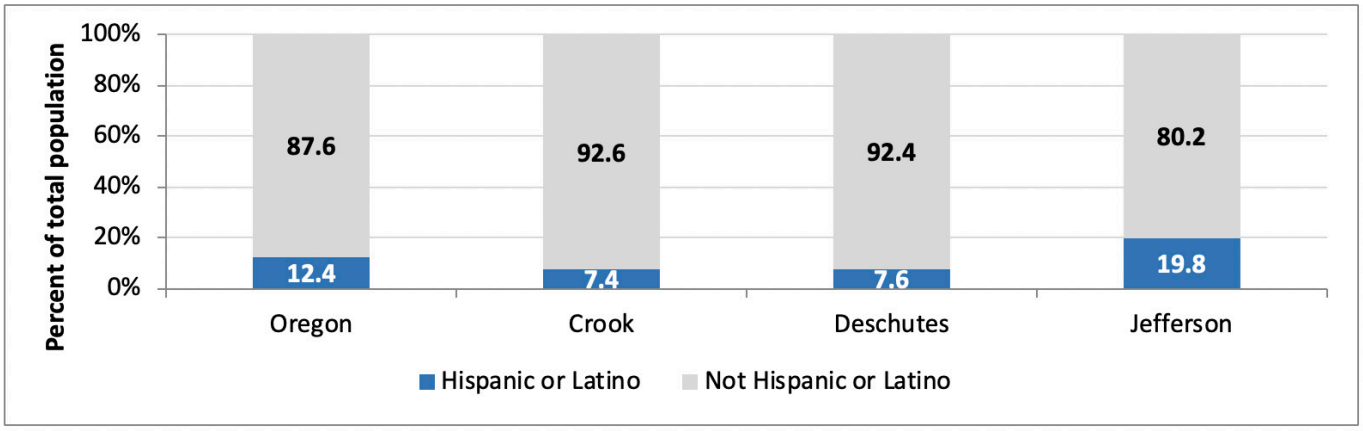
- Deschutes County Resident

"Immigration status is a problem, sometimes people are afraid to ask for help."

- Community Resident

"Language is sometimes a barrier because we are scared to ask questions."
- Community Resident

Figure 6. Ethnicity characteristics of Central Oregon counties, ACS 5-year estimates, 2016.

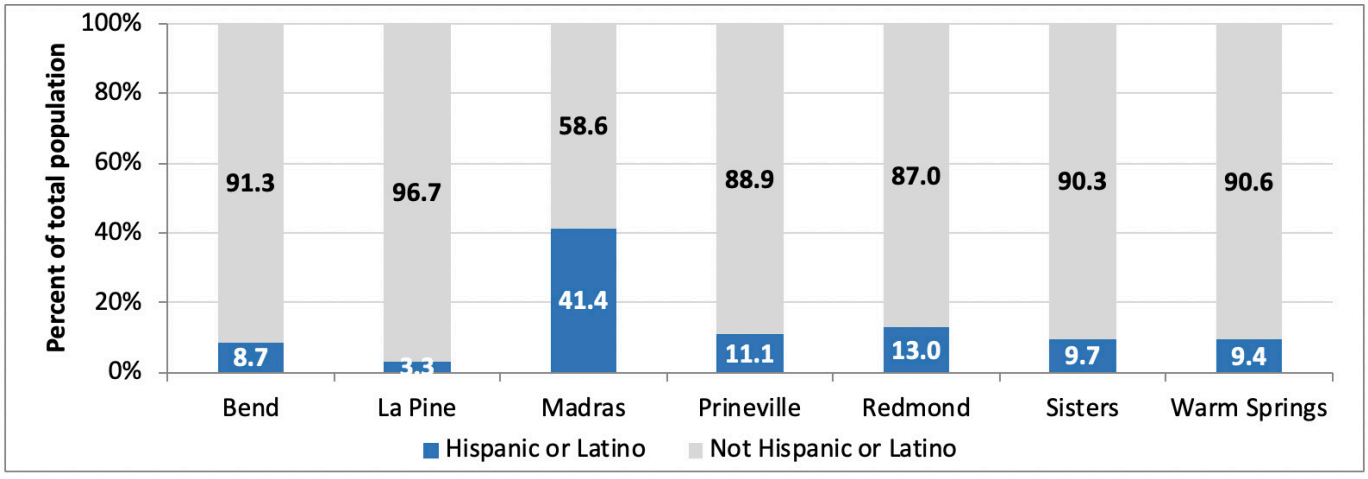


SOCIOECONOMIC STATUS

Socioeconomic status is often determined by employment status, income, and education, and is an important element in determining factors that affect population health. This section references key factors related to socioeconomic status in Central Oregon.

In Central Oregon, focus groups throughout the region identified the high cost of living as a barrier to health throughout Central Oregon. This includes the **cost of housing, healthy foods, childcare, and health care.** Although the cost of living continues to increase, wage increases are not keeping up.

Figure 7. Ethnicity characteristics of selected Central Oregon communities, ACS 5-year estimates, 2016.



Community Themes and Strengths: Address the High Cost of Living

Cost of living is consistently mentioned as a barrier to health throughout Central Oregon. This includes the **cost of housing, healthy foods, and health care**. Although cost of living continues to increase, wage increases are not keeping up.

- **High housing costs and rent** will likely continue to be a concern for Central Oregonians due to rapid population growth. The region should consider ways to increase access to affordable, safe, quality housing, options for those who cannot afford to own a home and supports for individuals on fixed incomes (i.e. older adults, those with disabilities, etc.).
- The poorest communities often have the least access to **affordable healthy foods**. While this is described as a concern across Central Oregon, it was especially pronounced in rural areas. More options for affordable fruits and vegetables, especially in rural areas, should be considered, and supportive programs expanded or bolstered (i.e. SNAP).
- Even with insurance, **health care costs** are too expensive for many families. Co-pays are often too high, insurance does not cover all needed services, and health plans themselves can be cost-prohibitive.

In Central Oregon, Deschutes County had the highest median household income ($59,152) in 2017. Jefferson County experienced the highest percent change in median household income between 2010 and 2017 (an increase of 17.0%). Crook County had the lowest median household income in 2017 ($41,777). The cost of housing is highest in Deschutes County, as evidenced by the median value of owner-occupied housing units, the median monthly owner costs, and the median gross monthly rent. Approximately 20% of all Jefferson County residents are living below the Federal Poverty level (FPL), and over one-third of Jefferson County residents less than 18 years of age live below the FPL. Deschutes County has a higher proportion of the population who have graduated from high school, have a bachelor's degree, and have earned a graduate/professional degree compared to Crook and Jefferson Counties, as well as Oregon overall. Unemployment is highest in Jefferson County (Table 5).

"Low income jobs. I can't afford to live. Hard work can't pay bills."
- Crook County Resident

"We should not have rent go up even though minimum wage is not going up"
- Deschutes County Youth

Table 5. Socioeconomic-related factors in Oregon and Central Oregon counties, ACS 5-year estimates, 2016.

	Oregon	Crook	Deschutes	Jefferson
Household income				
Median household income (2017)	$56,119	$41,777	$59,152	$48,464
Median household income (2010)	$49,260	$46,059	$53,071	$41,425
Median household income, % change 2010-2017	13.9%	-9.3%	11.5%	17.0%
Housing				
Percent of all housing units owned	61.4%	69.0%	65.3%	68.8%
Median value of owner-occupied housing units	$247,200	$172,600	$275,300	$159,400
Percent of all housing units with no vehicles	7.9%	5.0%	3.8%	4.2%
Percent of homeowners spending 35% or more of monthly income on a mortgage	25.2%	32.7%	27.7%	22.5%
Percent of renters spending 35% or more of monthly income on rent	44.0%	43.1%	44.2%	33.2%
Median monthly owner costs (among housing units with a mortgage)	$1,563	$1,234	$1,498	$1,110
Median gross monthly rent of renter-occupied units	$941	$793	$981	$793
Persons living below the Federal Poverty Level (FPL) (2016)				
Percent of persons below FPL	14.0%	14.0%	10.5%	20.1%
Percent of persons aged <18 below FPL	18.3%	26.1%	14.9%	33.6%
Percent of persons aged 65+ below FPL	8.3%	4.0%	7.7%	6.5%
Households below the Federal Poverty Level (FPL) (2016)				
Percent of households below the federal poverty level	13%	17%	11%	15%
Percent of households considered ALICE*	28%	29%	26%	34%
Education (among those aged 25+)				
Percent with high school graduation or higher	90.0%	87.6%	93.0%	83.5%
Percent with bachelor's degree or higher	31.4%	16.1%	33.3%	16.1%
Percent with graduate or professional degree	11.9%	5.8%	12.4%	4.8%
Employment (among civilian labor force)				
Unemployment, 2016	8.1%	11.3%	7.1%	13.3%
Unemployment, 2010	8.7%	9.9%	8.7%	12.7%
WIC enrollment**				
Number of families served	N/A	698	3,284	622
Percent of all pregnant women served by WIC	35%	58%	37%	62%
Percent of families with at least one wage-earning family member	N/A	63%	77%	77%

*ALICE data comes from the United Way. ALICE (Asset-Limited, Income-Constrained, Employed) households are defined as those households that earn more than the Federal Poverty Level, but less than the basic cost of living for the county. The basic cost of living is defined as an estimate of costs of housing, childcare, food, transportation, technology, healthcare, taxes, and a contingency fund equal to 10% of the household budget. Households below the poverty level and ALICE households (combined) are considered to be struggling to afford basic needs. For more information, visit www.unitedwayalice.org.

**WIC data from local WIC agency fact sheets (2017).

Table 6. Socioeconomic-related factors in selected Central Oregon communities, ACS 5-year estimates, 2016.

	Bend	La Pine	Madras	Prineville	Redmond	Sisters	Warm Springs CDP
Household income							
Median household income (2016)	$55,625	$33,566	$34,811	$31,669	$44,121	$54,500	$40,833
Median household income (2010)	$53,006	$27,388	$38,470	$37,424	$43,477	$49,931	$36,000
Median household income, % change 2010-2016	4.9%	22.6%	-9.5%	-15.4%	1.5%	9.2%	13.4%
Housing							
% of housing units owned	58.9%	47.6%	47.6%	55.2%	53.1%	54.5%	62.9%
Median value of owner-occupied housing units	$295,300	$133,800	$105,400	$133,000	$194,600	$259,500	$109,600
% of housing units with no vehicles	4.5%	9.5%	7.0%	10.2%	6.1%	3.2%	8.6%
% of homeowners spending 35% or more of monthly income on mortgage	25.5%	25.2%	22.1%	26.4%	23.1%	34.8%	4.5%
% of renters spending 35% or more of monthly income on rent	41.6%	51.0%	35.4%	50.7%	48.4%	36.3%	26.2%
Median monthly owner costs (among housing units with a mortgage)	$1,587	$1,050	$961	$1,134	$1,244	$1,621	$648
Median gross monthly rent of renter-occupied units	$1,024	$824	$808	$698	$893	$935	$517
Poverty (Federal Poverty Level: FPL)							
% of persons below FPL	12.4%	21.1%	25.2%	25.7%	20.0%	15.4%	35.7%
% of persons aged <18 below FPL	15.0%	28.2%	26.5%	34.6%	33.6%	23.4%	46.8%
% of persons aged 65+ below FPL	9.2%	22.8%	16.3%	12.4%	6.3%	7.0%	10.0%
Education (among those aged 25+)							
% with high school graduation or higher	94.7%	86.7%	73.4%	84.9%	88.6%	92.8%	80.6%
% with bachelor's degree or higher	41.6%	15.7%	13.9%	11.9%	19.6%	33.4%	9.3%
% with graduate or professional degree	14.8%	5.0%	2.9%	3.7%	5.7%	13.6%	2.8%
Employment (among civilian labor force)							
Unemployment rate	5.6%	11.8%	15.2%	12.2%	9.8%	5.9%	24.6%

CDP: Census-Designated Place

Among selected Central Oregon communities, Bend has the highest median household income in 2016 ($55,625), followed closely by Sisters ($54,500). Bend ($295,300) has the highest median value of owner-occupied housing units, and Madras ($105,400) had the lowest median value. Warm Springs ($648) had the lowest median monthly owner costs and lowest median monthly rent ($517). Sisters ($1,621) had the highest median monthly owner costs, and Bend ($1,024) had the highest median monthly rent. Warm Springs had the highest percentage of people overall (35.7%) and less than 18 years old (46.8%) living below the federal poverty level (FPL). La Pine has the highest percentage of people over 65 years (22.8%) old living below the FPL. Madras (73.4%) has the lowest proportion of the population over 25 years old with a high school degree in the region, and Warm Springs has the lowest proportion of the population over 25 years old with a bachelor's degree (9.3%) or graduate or professional degree (2.8%). Almost 25% of the civilian labor force in Warm Springs is unemployed, compared to 5.6% of the civilian labor force in Bend (Table 6).

St. Charles Community Phone Survey: Affordable Housing

From a list of possible issues that could most improve the health of the community, one in five residents point to affordable housing (22%).

Almost 60% of households in Crook County, 52.3% of households in Jefferson County, and 46.7% of households in Deschutes County earn less than $50,000 per year. Of the three Central Oregon counties, Deschutes has the highest proportion (4.3%) of households earning above $200,000 per year (Figure 8). Among Central Oregon cities, Bend has the highest proportion (5.2%) of the population where household income is above $200,000 per year (Figure 9). Almost 69% of households in Prineville earn less than $50,000 per year, in contrast to Bend where 45.6% of households earn less than $50,000 per year.

Figure 8. Percent of households earning income and benefits within selected income categories, Oregon and Central Oregon counties, ACS 5-year estimates, 2016.

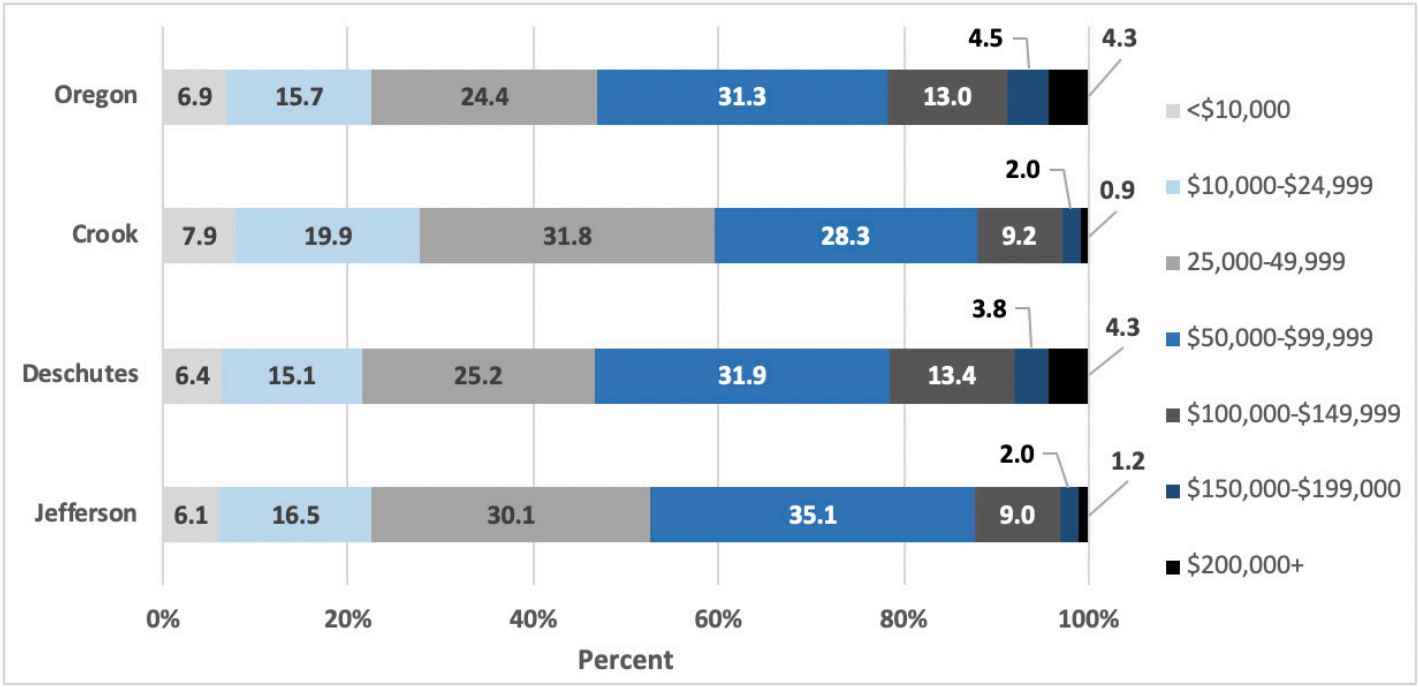
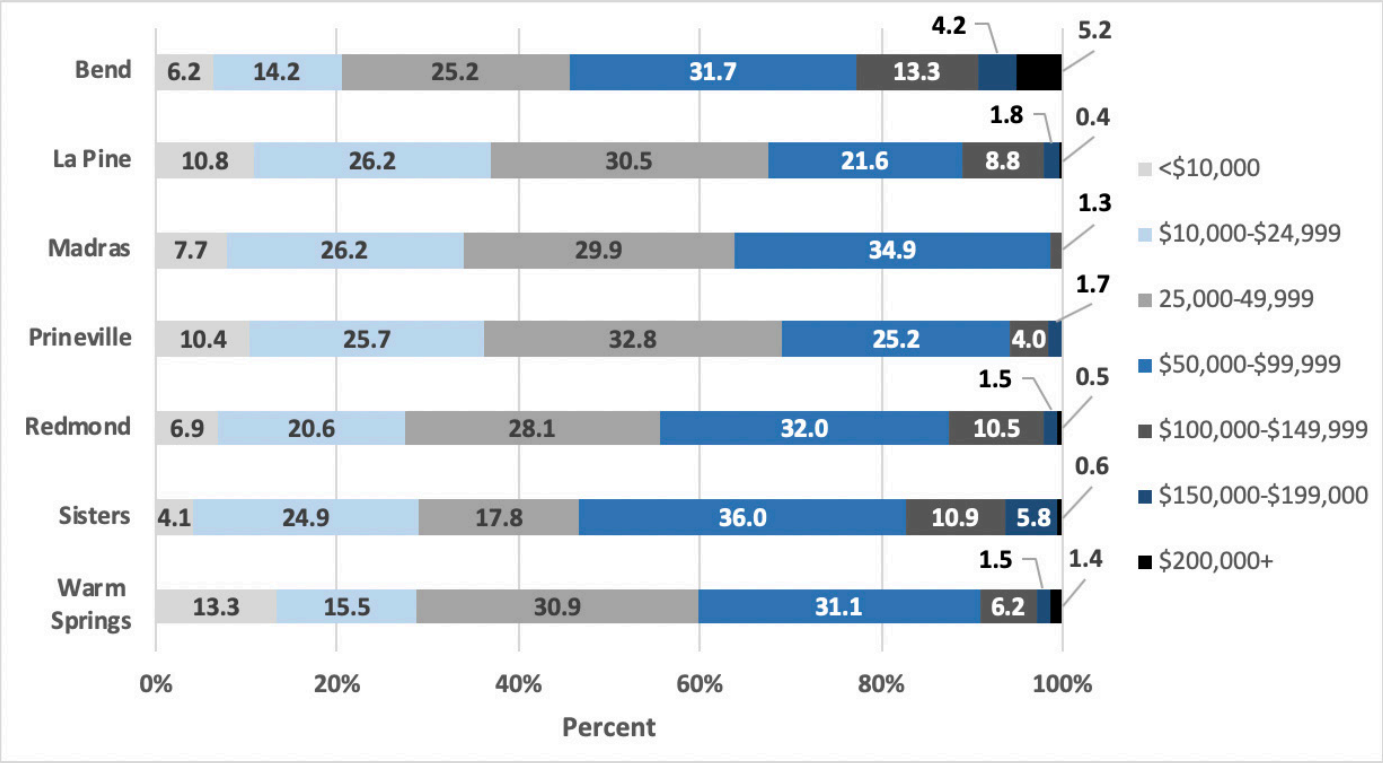


Figure 9. Percent of households earning income and benefits within selected income categories, Central Oregon communities, ACS 5-year estimates, 2016.



There are also significant racial and ethnic differences in educational attainment across Oregon as well as within Central Oregon. In Jefferson County, only 51% of residents 25 years of age and older and who identify as Hispanic or Latino, have at least a high school degree, compared to 90.2% of those 25 or older who identified as White, non-Hispanic (Figure 10). Similarly, there are differences by race/ethnicity in the percent of the population living below the Federal Poverty Line. In Jefferson County, for example, 12.8% of residents who identify as White, non-Hispanic live below the Federal Poverty Line compared to 37% of American Indian/Alaska Natives and 32% of Hispanic/Latinos (Figure 11).

Figure 10. Percent of race- or ethnicity-specific population aged 25+ with at least a high school degree, ACS 5-year estimates, 2016.

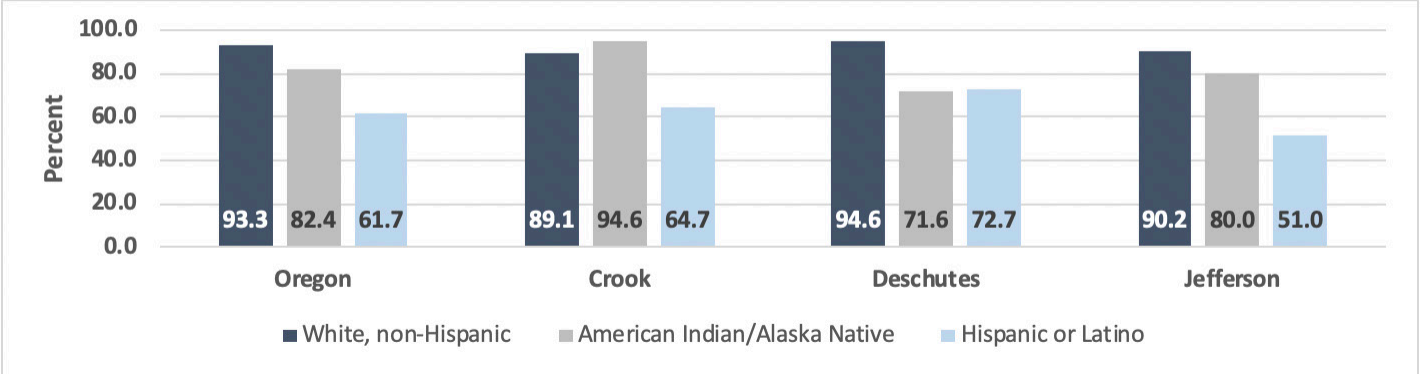
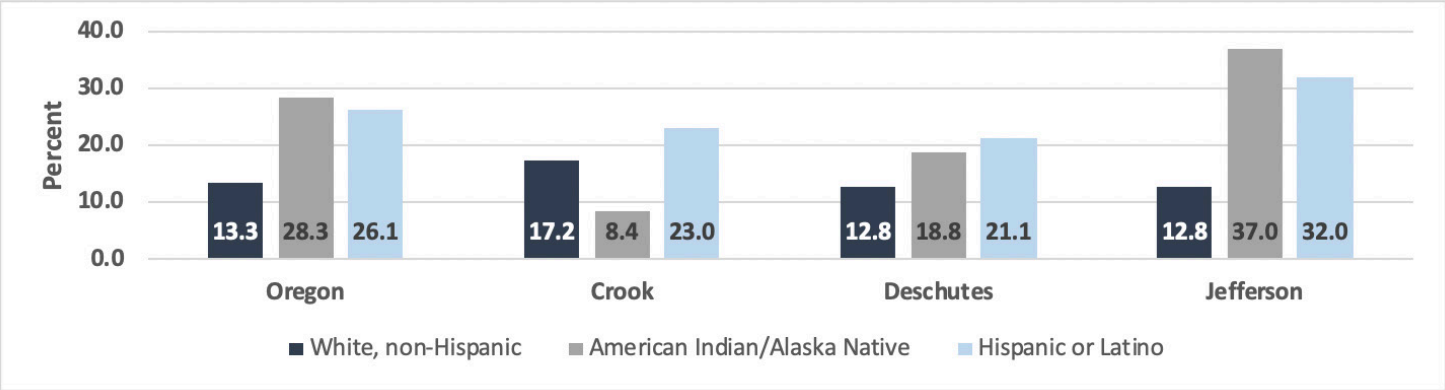


Figure 11. Percent of race- or ethnicity-specific population living below the Federal Poverty Line, ACS 5-year estimates, 2016.



Forces of Change Focus Group Results: Address the High Cost of Living

Low wage jobs in Central Oregon are often not sufficient to accommodate for the **high cost of living** especially as related to items like **housing, childcare, and healthy food.**

- **High housing costs** will likely continue to be a concern as the Central Oregon population grows. The region should focus on attracting businesses that provide **higher wages**, increasing educational opportunities in technical skills by working with Central Oregon Community College & Oregon State University-Cascades, providing wraparound services for struggling families, and leveraging organizations such as the Regional Health Improvement Plan Housing workgroup.
- Central Oregon is a **childcare** desert where the cost and limited availability of childcare can create a severe financial burden for families. The region should look for opportunities to expand work-based childcare options and revamp the local referral system for childcare resources.
- **Healthy food** is not always affordable and accessible for Central Oregonians. The region should increase availability and access to Veggie Rx (prescription) models, free and reduced lunches, farmer's markets, community gardens, and SNAP benefits at farmer's markets.

DISABILITY

Disability refers to anyone with a visual, hearing, cognitive, ambulatory, self-care, or independent living difficulty. Having different abilities may limit a person's capacity to work and provide for themselves. In Central Oregon, Crook County has the highest proportion of the population (21.6%) living with a disability. Both Crook and Jefferson Counties have a higher percentage of the population living with a disability than Oregon overall (14.7%). In all three counties and in Oregon overall, the proportion of the population living with a disability increases with age, and over one-third of people over 65 years of age live with a disability (Table 7). Of the selected Central Oregon communities, Prineville has the highest proportion of the population (22.1%) living with a disability. Over half of all adults over 65 years of age in Prineville live with a disability (Table 8).

Want to learn more about Disability?

COMMUNITY OPTIONS:

WWW.COMOP.ORG/

CENTER FOR DISEASE CONTROL AND PREVENTION:

WWW.CDC.GOV/NCBDDD/DISABILITYANDHEALTH/INDEX.HTML

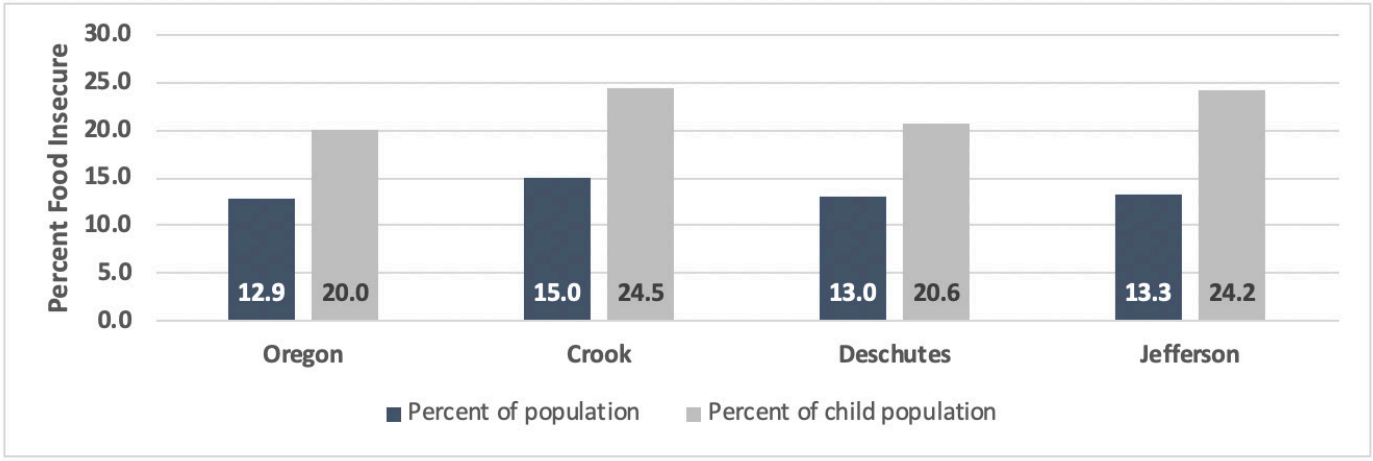
Table 7. Percent of the population in Oregon and Central Oregon counties living with a disability, ACS 5-year estimates, 2011-2015

	Oregon	Crook	Deschutes	Jefferson
Percent of total, non-institutionalized population with a disability	14.7%	21.6%	12.8%	16.5%
Percent with a disability, by sex				
Males	14.8%	24.3%	13.8%	17.7%
Female	14.5%	19.0%	11.9%	15.3%
Percent with a disability, by ethnicity/race				
White, non-Hispanic	15.9%	22.6%	13.5%	20.9%
Hispanic (of any race)	8.7%	9.8%	6.3%	7.5%
Percent with a disability, by age group				
<18	4.6%	7.2%	3.9%	3.2%
18-64	12.3%	19.1%	10.2%	15.7%
65+	37.6%	39.4%	32.1%	37.6%

Table 8. Percent of the population in selected Central Oregon communities living with a disability, ACS 5-year estimates, 2012-2016

	Bend	La Pine	Madras	Prineville	Redmond	Sisters	Warm Springs
Percent of total, non-institutionalized population with a disability	10.5%	19.1%	14.8%	22.1%	13.5%	13.3%	12.2%
Percent with a disability, by sex							
Males	10.8%	19.4%	15.1%	27.0%	12.6%	14.5%	13.9%
Female	10.2%	18.7%	14.6%	18.2%	14.3%	12.2%	10.3%
Percent with a disability, by ethnicity/Race							
White, non-Hispanic	11.3%	20.1%	22.9%	24.2%	15.8%	13.0%	20.4%
Hispanic (of any race)	5.3%	0.0%	7.1%	5.7%	2.6%	12.3%	3.9%
Percent with a disability, by age group							
<18	3.4%	2.3%	2.5%	8.1%	3.5%	2.4%	2.0%
18-64	7.8%	17.2%	16.3%	17.4%	11.3%	13.8%	14.8%
65+	31.8%	42.3%	43.5%	53.4%	35.6%	30.1%	43.2%

Figure 12. Percentage of total population and child population who are food insecure, Map the Meal Gap, Feeding America, 2016.

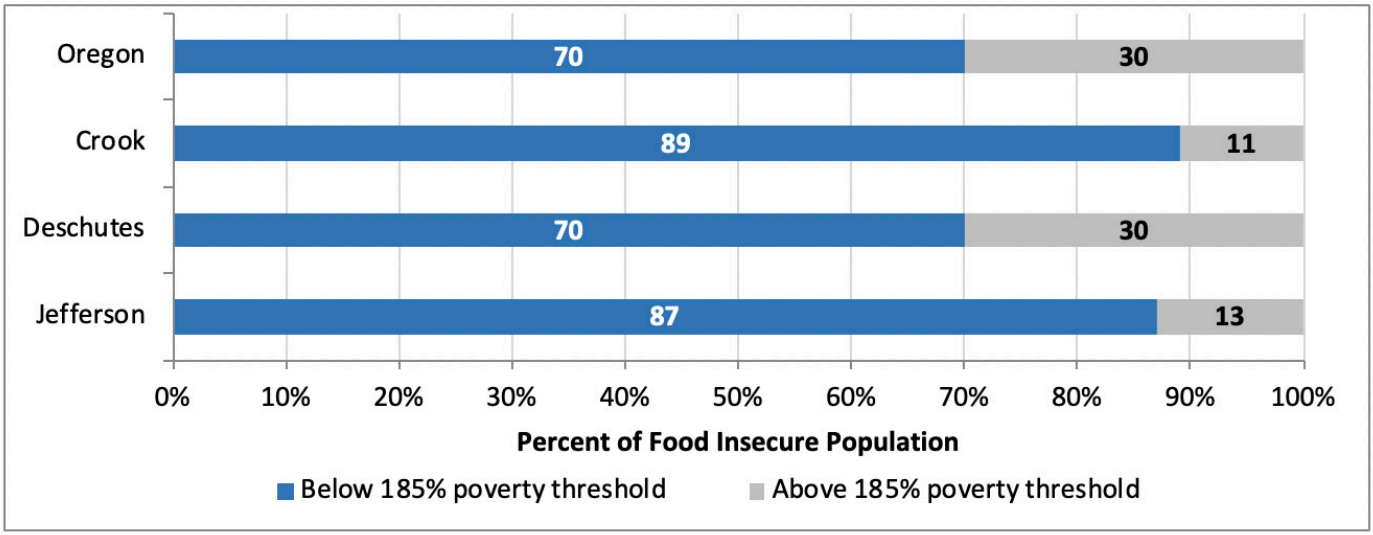


FOOD INSECURITY

Access to healthy food promotes a healthy diet and affects overall health. Healthy food must be available and affordable to the population. Food insecurity refers to having limited or uncertain access to adequate food while hunger is the condition that may result from food insecurity.
In Central Oregon, Crook County has the highest proportion of the total population (adults and children) who are food insecure. Nearly 1 out of 4 children in Crook and Jefferson Counties, and 1 out of 5 children in Deschutes County are food insecure. All three Central Oregon counties have a higher proportion of adults and children who are food insecure compared to Oregon as a whole (Figure 12).

Individuals who experience food insecurity may not be eligible for nutrition assistance

Figure 13. Percentage of food insecure population by poverty status, Map the Meal Gap, Feeding America, 2016.



programs like the Supplemental Nutrition Assistance Program (SNAP) or the Women, Infant, and Children Program (WIC). In Deschutes County, for example, 30% of food insecure persons live above 185% of the federal poverty level, which means they would likely be ineligible for most nutrition assistance programs (Figure 13).

In addition to cost, food may be difficult for people to access, especially if grocery stores are not nearby. Over 15% of Central Oregon residents have low access to grocery stores, which means that they live more than one mile from a supermarket, supercenter, or large grocery store if in an urban area, or more than 10 miles from a supermarket or large grocery store if in a rural area (Figure 14). As evidenced in community focus groups, access to affordable, healthy food, is a concern throughout Central Oregon, but it is even more of a concern in rural areas.

"We need affordable groceries."
- Crook County Youth

Want more information about Central Oregon resources and supports around access to healthy food?

THE GIVING PLATE:
WWW.THEGIVINGPLATE.ORG/

LA PINE COMMUNITY KITCHEN:
LAPINECOMMUNITYKITCHEN.ORG/THE-PRODUCE-STAND/

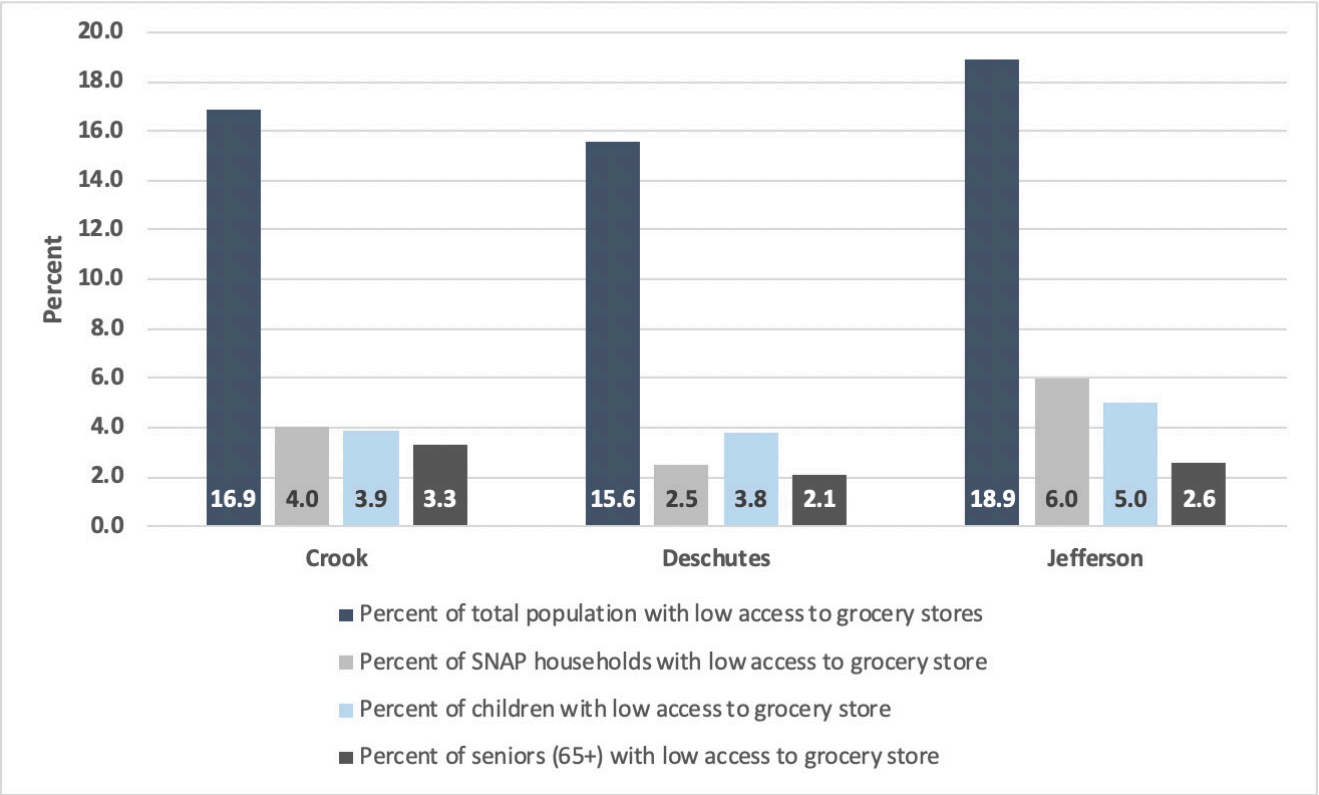
SISTERS KIWANIS FOOD BANK:
SISTERSKIWANIS.ORG/FOOD-BANK/

FAMILY KITCHEN:
WWW.FAMILYKITCHEN.ORG/

NEIGHBOR IMPACT GET FOOD:
WWW.NEIGHBORIMPACT.ORG/GET-HELP/GET-FOOD/

WIC OREGON HEALTH AUTHORITY:
HTTPS://WWW.OREGON.GOV/OHA/PH/HEALTHYPEOPLEFAMILIES/WIC/PAGES/INDEX.ASPX

Figure 14. Percentage of selected populations with low access to grocery stores, Food Environment Atlas, United States Department of Agriculture, 2015.



SAFETY AND VIOLENCE

Violence affects health in a variety of ways, including but not limited to: premature death, non-fatal injuries, and poor long-term behavioral health outcomes. Individuals can be subjected to violence in a multitude of ways, such as property crimes, direct violence, and hearing and/or seeing violence towards another. Exposure to violence as a child may result in poor health outcomes as an adult, such as a greater risk for substance use, unsafe driving behaviors, and/or risky sexual behavior (HealthyPeople.gov, 2019). Violence is one type of Adverse Childhood Experience, known as ACEs. More information about ACEs and their effect on health may be found under the section titled "Infant, Early Childhood, and Adolescent Health". Females exposed to intimate partner violence have a higher risk of physical health issues and behavioral health issues (Healthy People.gov, 2019).

The total number of annual calls to the sexual and domestic violence emergency hotline among Central Oregonians increased from 2,201 in 2013 to 2,759 in 2017 (Figure 15). In 2017, the majority (80%) of calls to the sexual and domestic violence emergency hotline were for domestic violence. The total number of people sheltered annually in a domestic violence program in Central Oregon has increased from 158 in 2013 to 231 in 2017 (Figure 16), and overall there are more adults than children sheltered (Figure 17). Most sheltered individuals (65.7%) stayed in the shelter for less than four nights (Table 9).

Want more information about how safety and violence can affect health?

OFFICE OF DISEASE PREVENTION AND HEALTH PROMOTION:

WWW.HEALTHYPEOPLE.GOV/2020/TOPICS-OBJECTIVES/TOPIC/SOCIAL-DETERMINANTS-HEALTH/INTERVENTIONS-RESOURCES/CRIME-AND-VIOLENCE

SAVING GRACE:

WWW.SAVING-GRACE.ORG/

THE NATIONAL DOMESTIC VIOLENCE HOTLINE:

WWW.THEHOTLINE.ORG/

Table 9. Services provided by sexual and domestic violence programs, Central Oregon (Crook, Deschutes, and Jefferson Counties), Striving to Meet the Need: Summary of Services Provided by Sexual and Domestic Violence Programs in Oregon, Oregon Department of Human Services, 2017

Number of calls to sexual and domestic violence emergency hotline, by primary reason for the call	**Domestic violence**	**Stalking**	**Sexual assault**	**Other calls**
	2,212	50	238	259
Number of people sheltered in a Domestic Violence program, by age	**Adults**	**Children under 6**	**Children 6-12**	**Teens**
	134	45	36	16
Number of shelter nights spent in a Domestic Violence program, by age	**Adults**		**Children**	
	2,101		1,622	

Length of shelter stays (percent of total)	**Under 4 nights**	**4-7 nights**	**8-15 nights**	**16-31 nights**	**Over 31 nights**
	65.7	5.2	2.2	6.0	20.9

Figure 15. Total number of calls to sexual and domestic violence emergency hotline in Central Oregon per year, Striving to Meet the Need: Summary of Services Provided by Sexual and Domestic Violence Programs in Oregon, Oregon Department of Human Services, 2013-2017

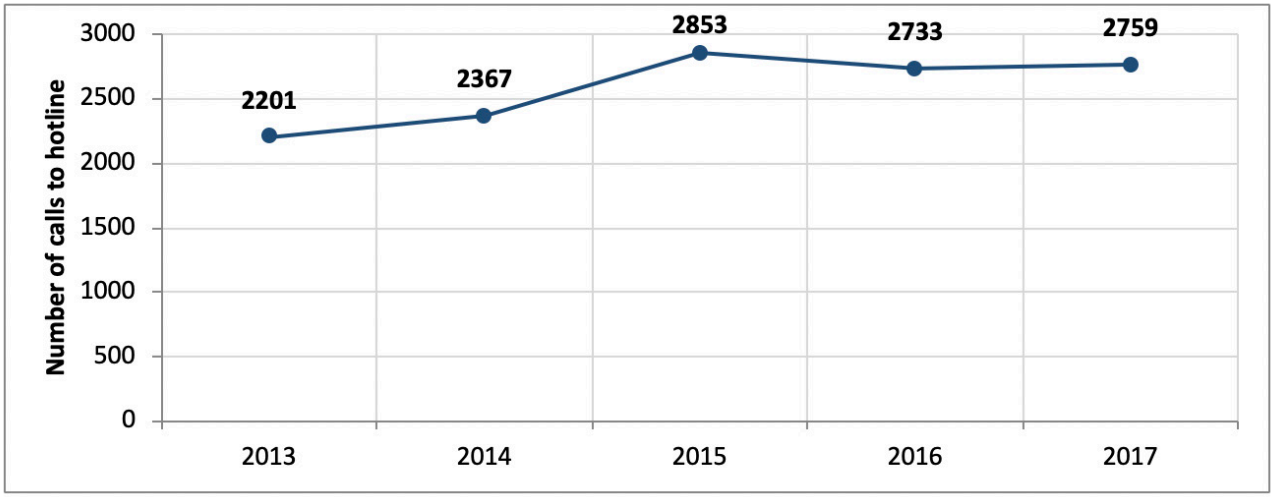


Figure 16. Total number of people sheltered in a Domestic Violence program in Central Oregon per year, Striving to Meet the Need: Summary of Services Provided by Sexual and Domestic Violence Programs in Oregon, Oregon Department of Human Services, 2013-2017

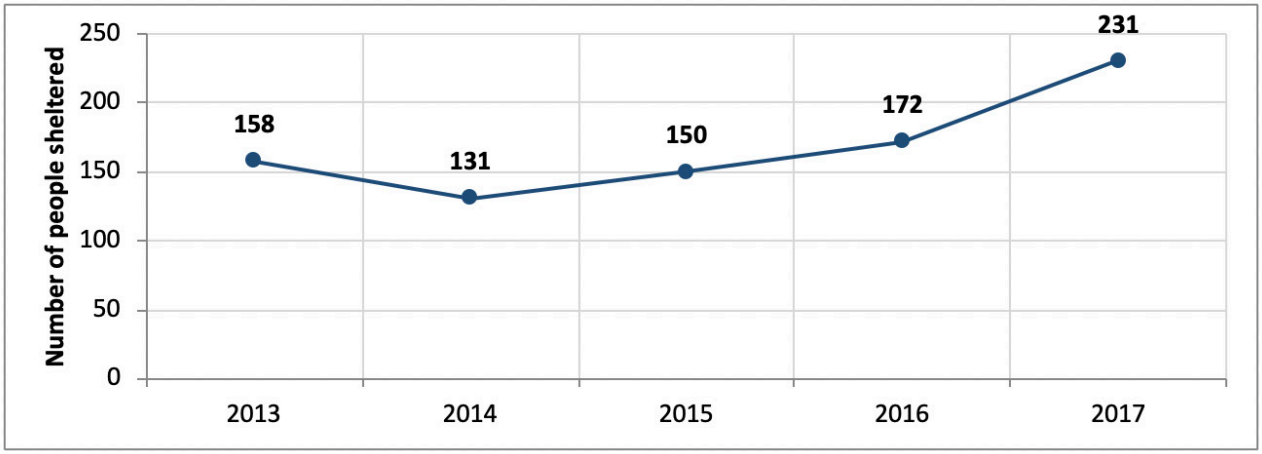
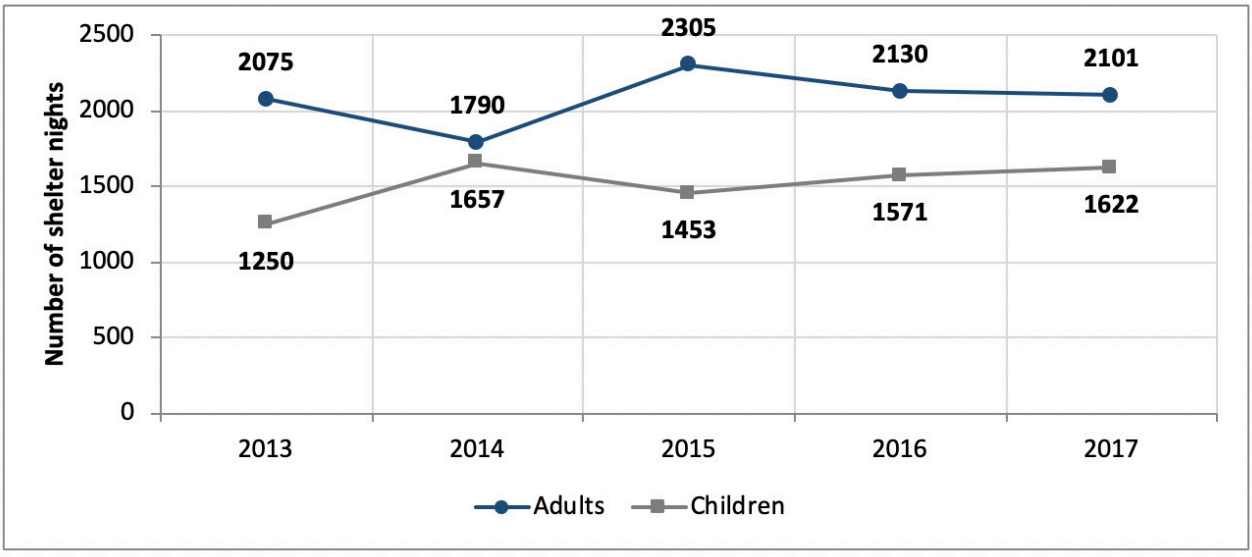


Figure 17. Total number of shelter nights spent in a domestic violence program in Central Oregon per year among adults and children, Striving to Meet the Need: Summary of Services Provided by Sexual and Domestic Violence Programs in Oregon, Oregon Department of Human Services, 2013-2017



HOMELESSNESS

Stable, healthy housing is a basic need for individuals. Quality, demand for housing, healthy living environments, and housing standards are examples of how housing impacts an individual's health. Housing quality can refer to the physical condition of an individual's home, as well as the community in which it is located. Additionally, the demand for housing and limited rental vacancies can lead to an increase in housing prices. High rent may force an individual or family into substandard housing or into a situation where they are rent-burdened, meaning more than 30% of their income is spent on housing. Low quality and/or unstable housing can contribute to an individual's physical and behavioral health conditions.

The 2018 Central Oregon point-in-time homeless count occurred on January 24, 2018. The point-in-time homeless count is a confidential survey of residents experiencing homelessness in Central Oregon and includes a count of people living in a place not meant for human habitation, sheltered in emergency shelters, or enrolled in a transitional housing program dedicated to those experiencing homelessness. Results indicated 787 people experienced homelessness in Central Oregon, which is a 1% increase from 2017. The primary reported causes of homelessness were economic, including the inability to pay rent, and unemployment (Central Oregon Homeless Leadership Coalition, 2018).

The average age of a Central Oregonian who experienced homelessness in 2018 was 31.7 years, which is younger than the Oregon median age of 39.1 years. Of Central Oregonians who experienced homelessness in 2018, 28% were children, 58% were male (Figure 18), and 81% identified as White. Approximately 11% of people who experienced homelessness identified as American Indian or Alaska Native (Figure 19).

Between the 2017 and 2018 point-in-time homeless count, the number of individuals experiencing homelessness increased by 81% in Madras, and also increased in Sisters (38%) and Warm Springs (14.1%). The number decreased 33.7% in La Pine and also decreased in Redmond, Prineville, and Bend (Table 10). During the 2016-2017 school year, Culver had the highest proportion (9.5%) of school district enrollment who experienced homelessness or were in an unstable housing situation. Redmond had the second-highest proportion (5.0%) (Table 11). Reported numbers for the Point in Time Count may vary over time due to changes in counting methods.

Want more information about quality housing in Central Oregon?

NEIGHBOR IMPACT HOUSING HELP:

WWW.NEIGHBORIMPACT.ORG/HOUSING-HELP/

OREGON HOUSING ASSISTANCE:

WWW.OREGON.GOV/OHCS/PAGES/HOUSING-ASSISTANCE-IN-OREGON.ASPX

HOUSING WORKS:

WWW.HOUSING-WORKS.ORG/

Figure 18. Gender and age group breakdown of Central Oregonians who experienced homelessness in 2018, Central Oregon Homeless Leadership Coalition, 2018

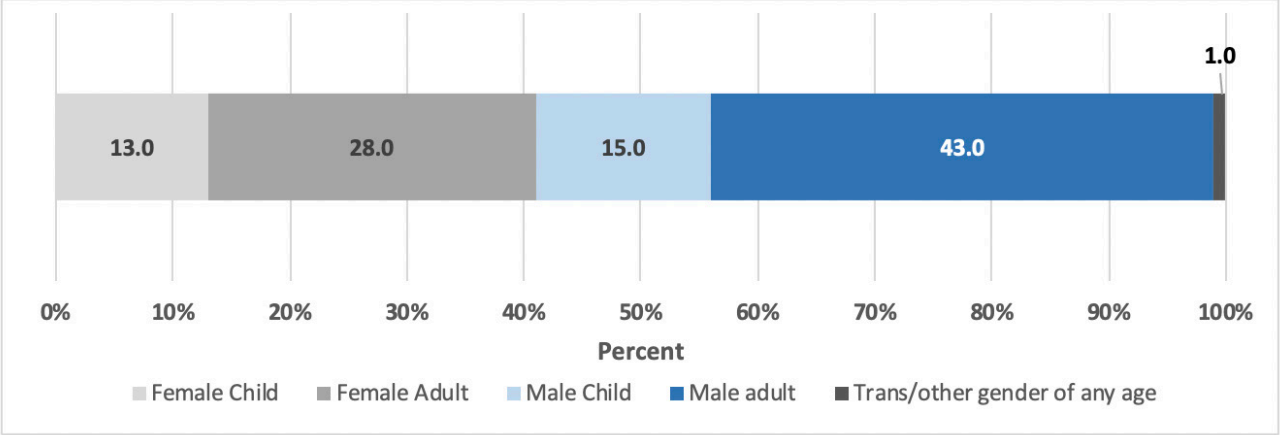


Figure 19. Race breakdown of Central Oregonians who experienced homelessness in 2018, Central Oregon Homeless Leadership Coalition, 2018

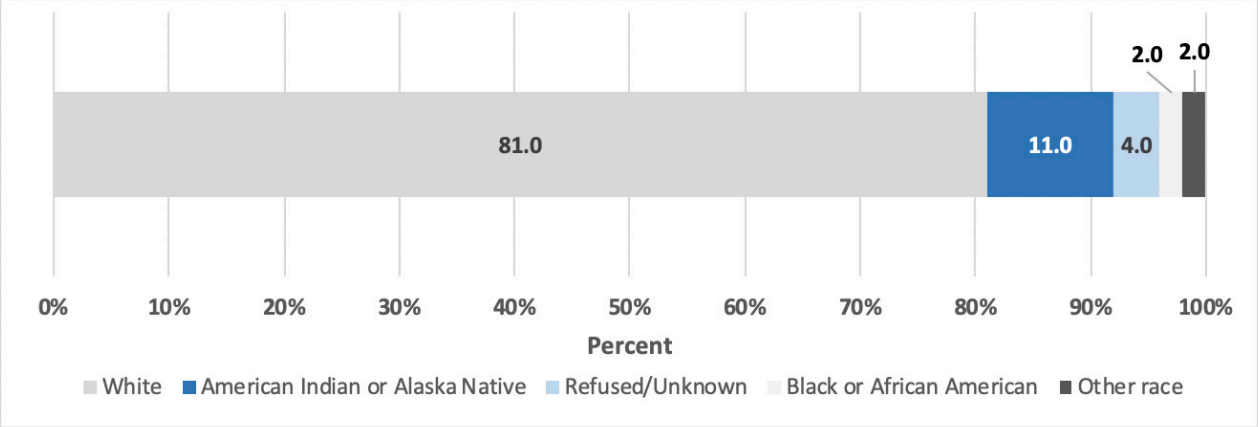


Figure 20. Ethnicity breakdown of Central Oregonians who experienced homelessness in 2018, Central Oregon Homeless Leadership Coalition, 2018

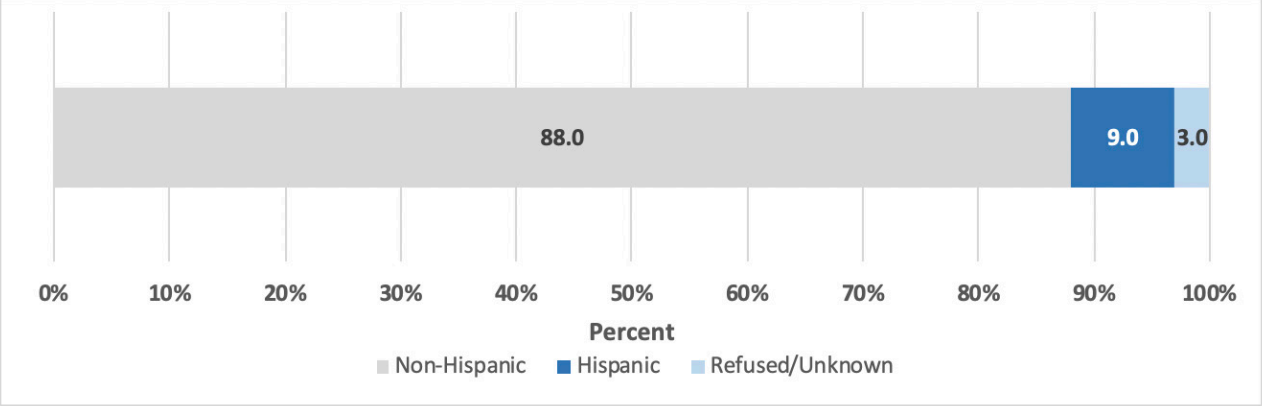


Table 10. Point-in-time homeless count estimates of selected Central Oregon communities, Central Oregon Homeless Leadership Coalition, 2018

	Bend	La Pine	Madras	Prineville	Redmond	Sisters	Warm Springs CDP
2018 estimate	508	112	105	67	233	69	73
2017 estimate	659	169	58	89	329	50	64
Percent change from 2017 to 2018	-22.9%	-33.7%	81.0%	-24.7%	-29.2%	38%	14.1%

"[We need] culturally relevant and appropriate care, reducing bias in communication and service provision, and work together with organizations to deliver education services."
- Central Oregon Community Partner

Table 11. Number and percent of students grades K-12 who experienced homelessness or were in an unstable housing situation, by school district, Oregon Department of Education, 2016-2017

School District	Number of students	Percent of district enrollment
Crook County		
Crook	81	2.7%
Deschutes County		
Bend-La Pine	510	2.8%
Redmond	366	5.0%
Sisters	39	3.6%
Jefferson County		
Ashwood	<5	0%
Black Butte	<5	3.9%
Culver	65	9.5%
Jefferson Co	75	2.5%

LANGUAGE SPOKEN

Culture can be described as a group affiliation, such as geographical groups, groups speaking certain languages, affiliation by ethnicity and/or race. Additionally, culture can be identified through individuals sharing a collection of values, customs, beliefs, and ways of communicating and/or thinking (Centers for Disease Control and Prevention, 2016). Through cultural groups, individuals learn and develop ways to communicate and those individuals may utilize more than one language to facilitate communication. At times, language can be challenging when communicating with those from another cultural group. This can create levels of misunderstanding and barriers to decisions that affect daily life and health. Examples of how language may influence health include medical care directions being incorrectly translated, or when health terminology is not understood.

Within Central Oregon, Jefferson County had the highest proportion (4.6%) of residents who spoke a language other than English and spoke English less than "very well." Almost 84% of Jefferson County residents reported that they speak only English, compared to 95.4% in Crook County and 93.6% in Deschutes County (Figure 21). When broken down by select Central Oregon communities, Madras had the highest proportion (11.8%) of residents who spoke a language other than English and spoke English less than "very well." Across most Central Oregon communities, over 90% of the population speaks only English (Figure 22). The second-most commonly spoken language is Spanish. Approximately 14% of Jefferson County residents speak Spanish, compared to 4.4% of Deschutes County, and 3.2% of Crook County residents (Table 12). Within Jefferson County, nearly a third of the Madras population speaks Spanish. Almost 9% of Redmond residents speak Spanish. In Central Oregon, La Pine has the highest proportion of residents who speak only English (96.1%) (Table 13). During focus groups throughout Central Oregon, residents identified the need to decrease bias and stigma toward others and promote culturally and linguistically appropriate health care.

Figure 21. Percent of population in Oregon and Central Oregon counties aged 5+ by language spoken, ACS 5-year estimates, 2016.

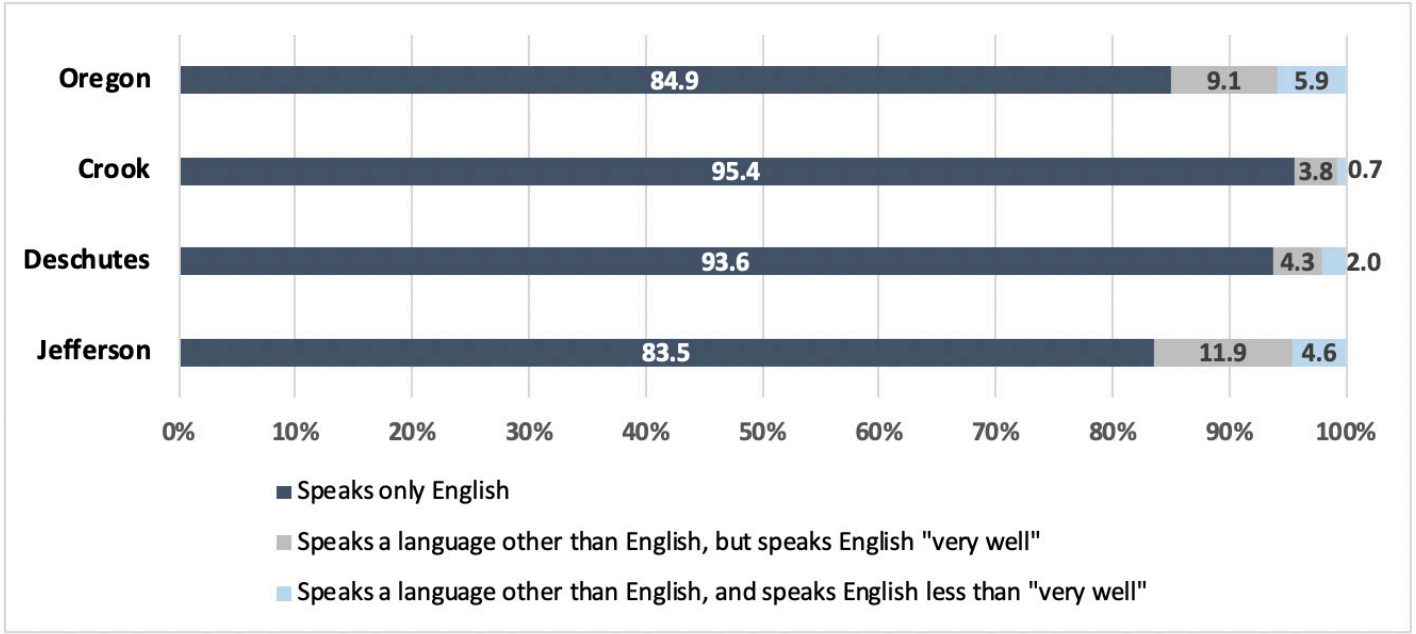


Figure 22. Percent of population in selected Central Oregon communities aged 5+ by language spoken, ACS 5-year estimates, 2016.

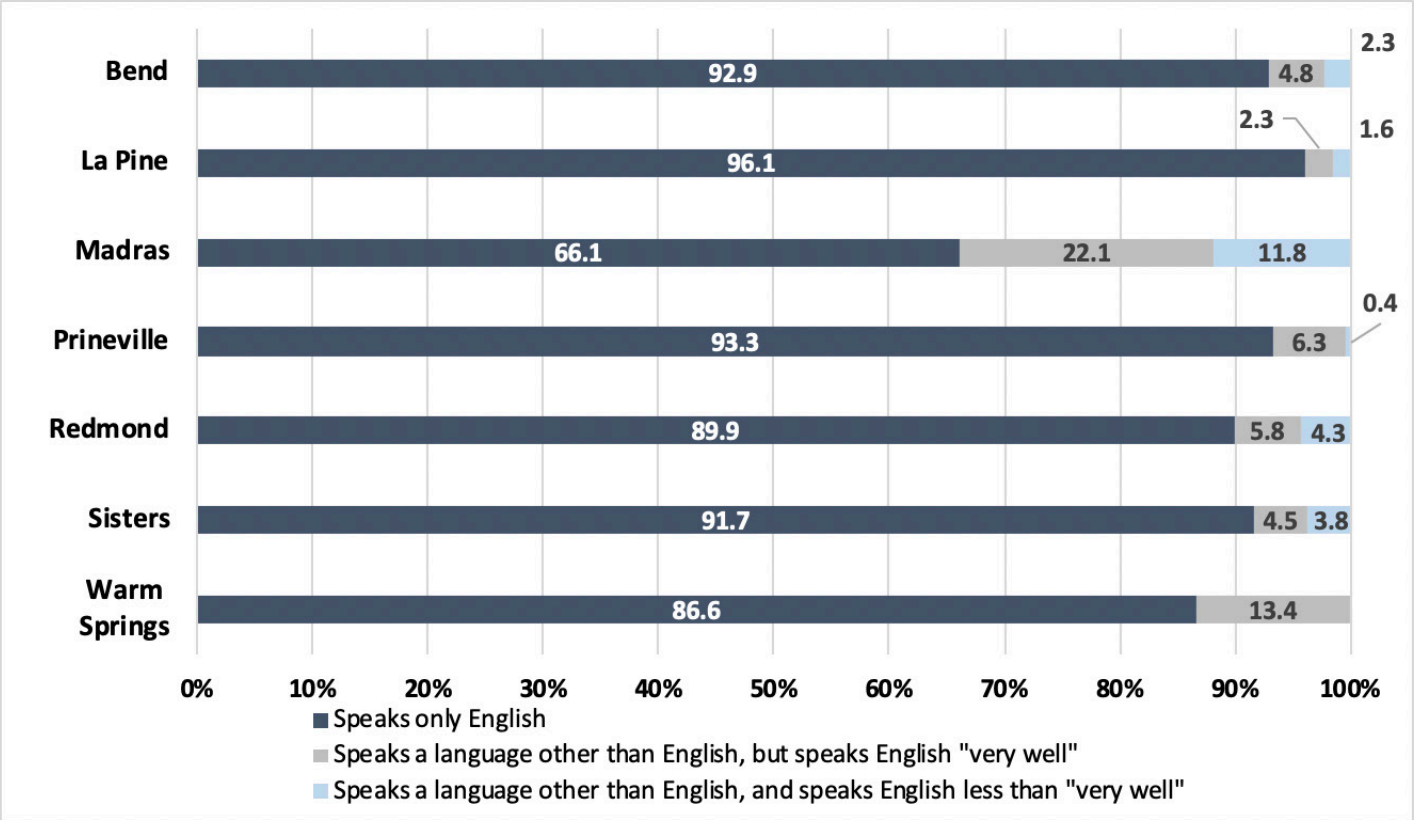


Table 12. Percent of the population in Oregon and Central Oregon counties who speak selected languages, ACS 5-year estimates, 2016

	Oregon	Crook	Deschutes	Jefferson
English only	84.9%	95.4%	93.6%	83.5%
Spanish	8.9%	3.2%	4.4%	14.1%
Other Indo-European Languages	2.5%	1.1%	1.1%	0.4%
Asian and Pacific Island Languages	3.0%	0.2%	0.7%	0.7%
Other languages	0.6%	0.1%	0.2%	1.4%

Table 13. Percent of the population in selected Central Oregon communities who speak selected languages, ACS 5-year estimates, 2016

	Bend	La Pine	Madras	Prineville	Redmond	Sisters	Warm Springs
English Only	92.9%	96.1%	66.1%	93.3%	89.9%	91.7%	86.6%
Spanish	4.7%	1.4%	32.5%	4.6%	8.8%	6.1%	5.0%
Other Indo-European Languages	1.3%	2.1%	0.0%	1.6%	0.5%	1.7%	0.2%
Asian and Pacific Island Languages	1.1%	0.5%	1.3%	0.3%	0.6%	0.0%	0.6%
Other languages	0.1%	0.0%	0.1%	0.2%	0.2%	0.5%	7.6%

CAUSES OF DEATH AND QUALITY OF LIFE

"[Quality of life is] great- if you can afford it"
- Jefferson County Resident

Some diseases and health events are more likely to lead to death and are influenced by social determinants of health. Reviewing the leading causes of death and quality of life indicators provides another perspective of health and an additional lens through which the health system can view the health of Central Oregon communities.

LEADING CAUSES OF DEATH

The five leading causes of death across all ages in Oregon are malignant neoplasms (cancerous tumors that can potentially result in death), heart disease, chronic lower respiratory disease, unintentional injuries, and cerebrovascular disease. In Oregon, the leading cause of death for people between the ages of 1 to 44 years are unintentional injuries, from 45 to 84 years are malignant neoplasms, and the leading cause of death for people over 85 years of age is heart disease (Table 14).

ALL-CAUSE MORTALITY

Mortality data provides important information about causes of death and factors that influence death rates. This includes medical considerations, disease, and disease control methods, as well as variables connected to sex, race, and ethnicity. The following information shows Central Oregon's data on deaths, death rates, and a variety of factors associated with mortality.

The mortality rate is the number of deaths in a population during a specific period of time. Figures 23 and 24 show the number of deaths per 100,000 people between the years 2013-2017. Within Central Oregon, Crook and Jefferson Counties overall mortality rates are higher than the rate in Oregon as a whole. In addition, Crook County's White, non-Hispanic mortality rate and Jefferson County's American Indian/Alaska Native mortality rate is higher than the respective race-specific mortality rate in Oregon (Figure 23). In Deschutes County, the overall mortality rate and White, non-Hispanic mortality rate, is lower than the respective Oregon rates (Figure 23).

For Oregon, and for Crook, Deschutes, and Jefferson Counties, the all-cause mortality rate for males is significantly higher than the all-cause mortality rate for females (Figure 24). Within Deschutes County, the age-adjusted all-cause mortality rate is lower among males and females than the respective Oregon rates (Figure 24).

Table 14. Leading Causes of Death by age group in Oregon, 2017, Oregon Vital Statistics Annual Report

	Rank				
Age group	1	2	3	4	5
<1	Perinatal conditions	Congenital malformations	SIDS	Unintentional Injuries	Diarrhea and gastroenteritis
1-4	Unintentional injuries	Malignant neoplasms	Congenital malformations	Homicide	Pneumonitis due to solids and liquids
5-14	Unintentional injuries	Malignant neoplasms	Suicide	Homicide	Congenital malformations
15-24	Unintentional injuries	Suicide	Malignant neoplasms	Homicide	Heart disease
25-34	Unintentional injuries	Suicide	Malignant neoplasms	Alcohol-induced	Homicide
35-44	Unintentional injuries	Malignant neoplasms	Suicide	Heart disease	Alcohol-induced
45-54	Malignant neoplasms	Heart disease	Unintentional Injuries	Alcohol-induced	Suicide
55-64	Malignant neoplasms	Heart disease	Alcohol-induced	Unintentional injuries	Diabetes mellitus
65-74	Malignant neoplasms	Heart disease	Chronic lower respiratory disease	Cerebrovascular disease	Diabetes mellitus
75-84	Malignant neoplasms	Heart disease	Chronic lower respiratory disease	Cerebrovascular disease	Alzheimer's disease
85+	Heart disease	Malignant neoplasms	Alzheimer's disease	Cerebrovascular disease	Chronic lower respiratory disease
All Ages	Malignant neoplasms	Heart disease	Chronic lower respiratory disease	Unintentional injuries	Cerebrovascular disease

Figure 23. Age-adjusted all-cause mortality rate per 100,000 population by race and ethnicity, OPHAT, 2013-2017

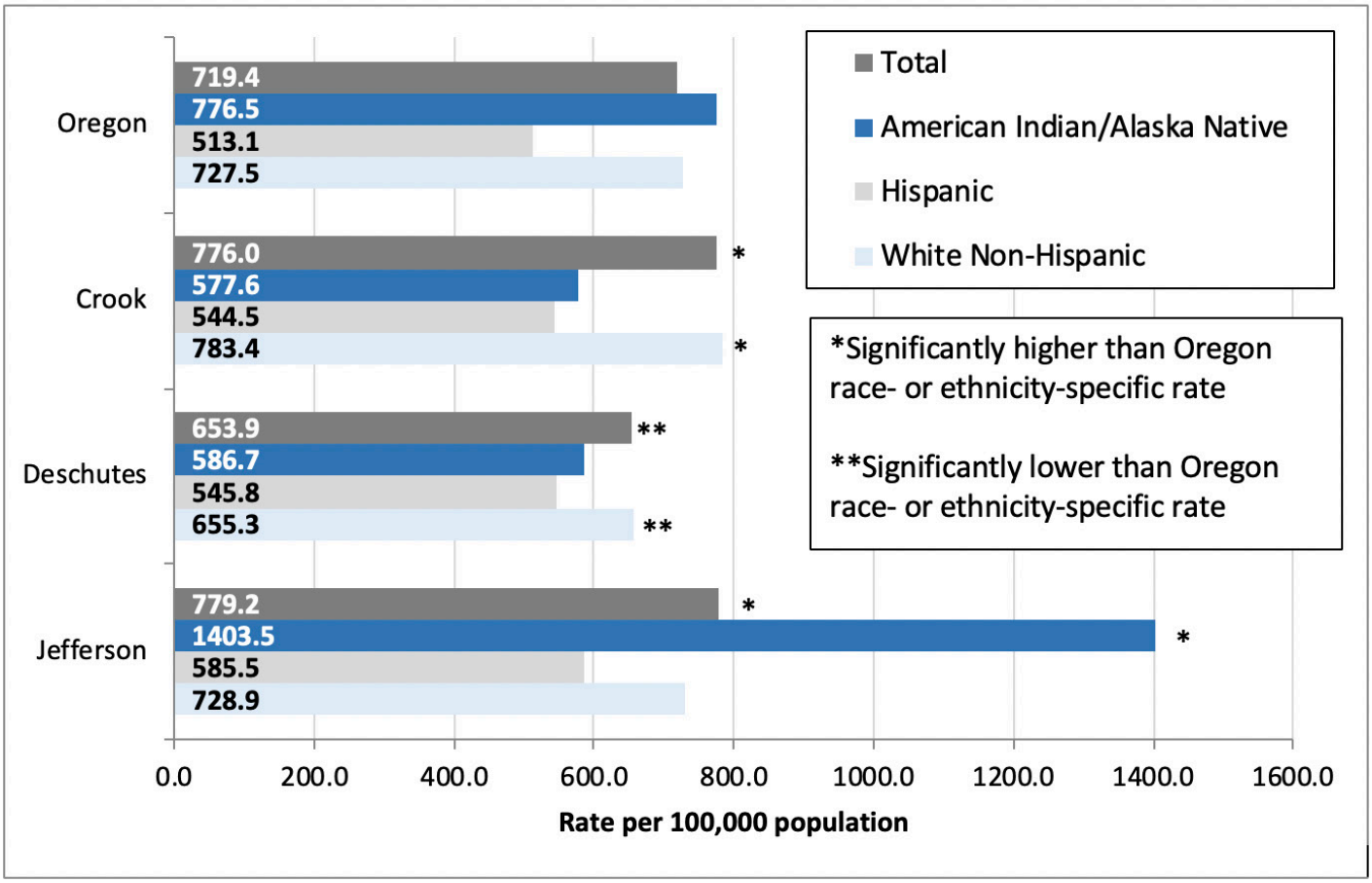


Figure 24. Age-adjusted all-cause mortality rate per 100,000 population by sex, OPHAT, 2013-2017.

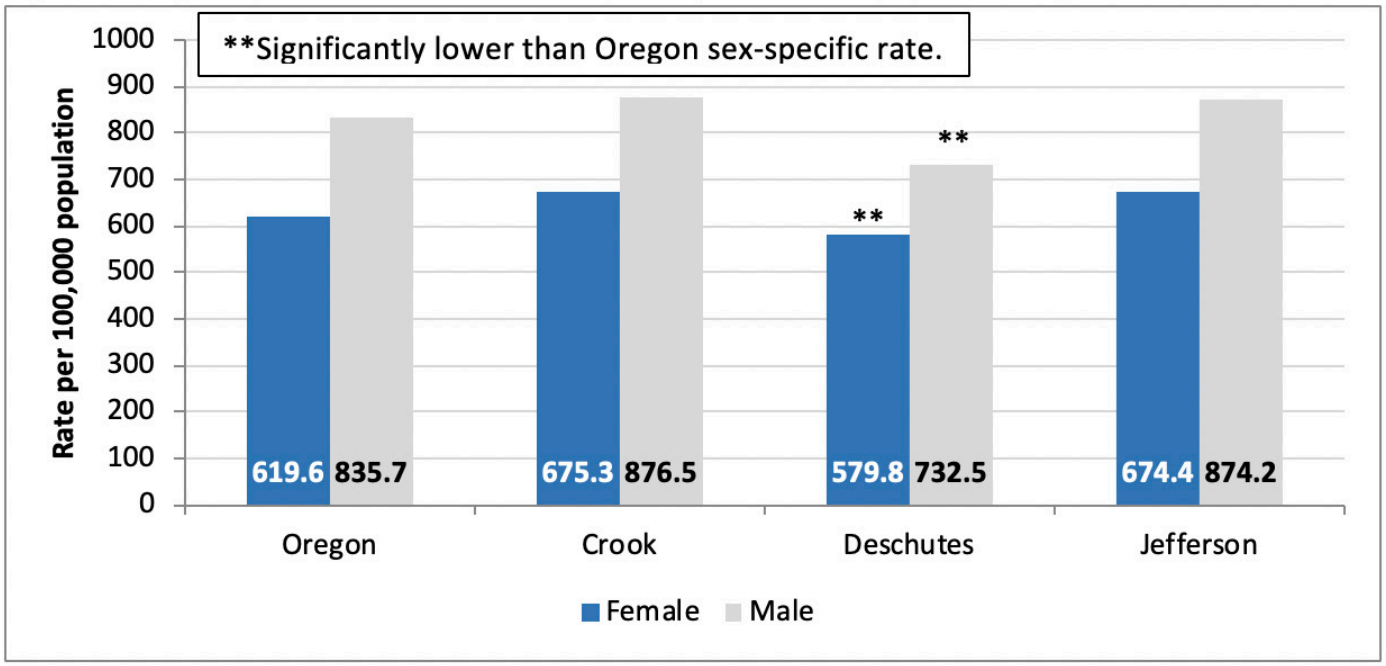


Table 15. Life expectancy (in years) at birth by race and ethnicity, OPHAT, 2017

	Oregon	Crook	Deschutes	Jefferson	Central Oregon
Total	79.6	78.9	81.3	78.7	80.7
American Indian/Alaska Native Non-Hispanic	77.4	--	76.0	69.8	72.0
Hispanic	85.1	--	84.6	81.9	84.6
White Non-Hispanic	79.6	79.3	81.5	80.0	81.1

Significantly lower than geography-specific total life expectancy

Significantly higher than geography-specific total life expectancy

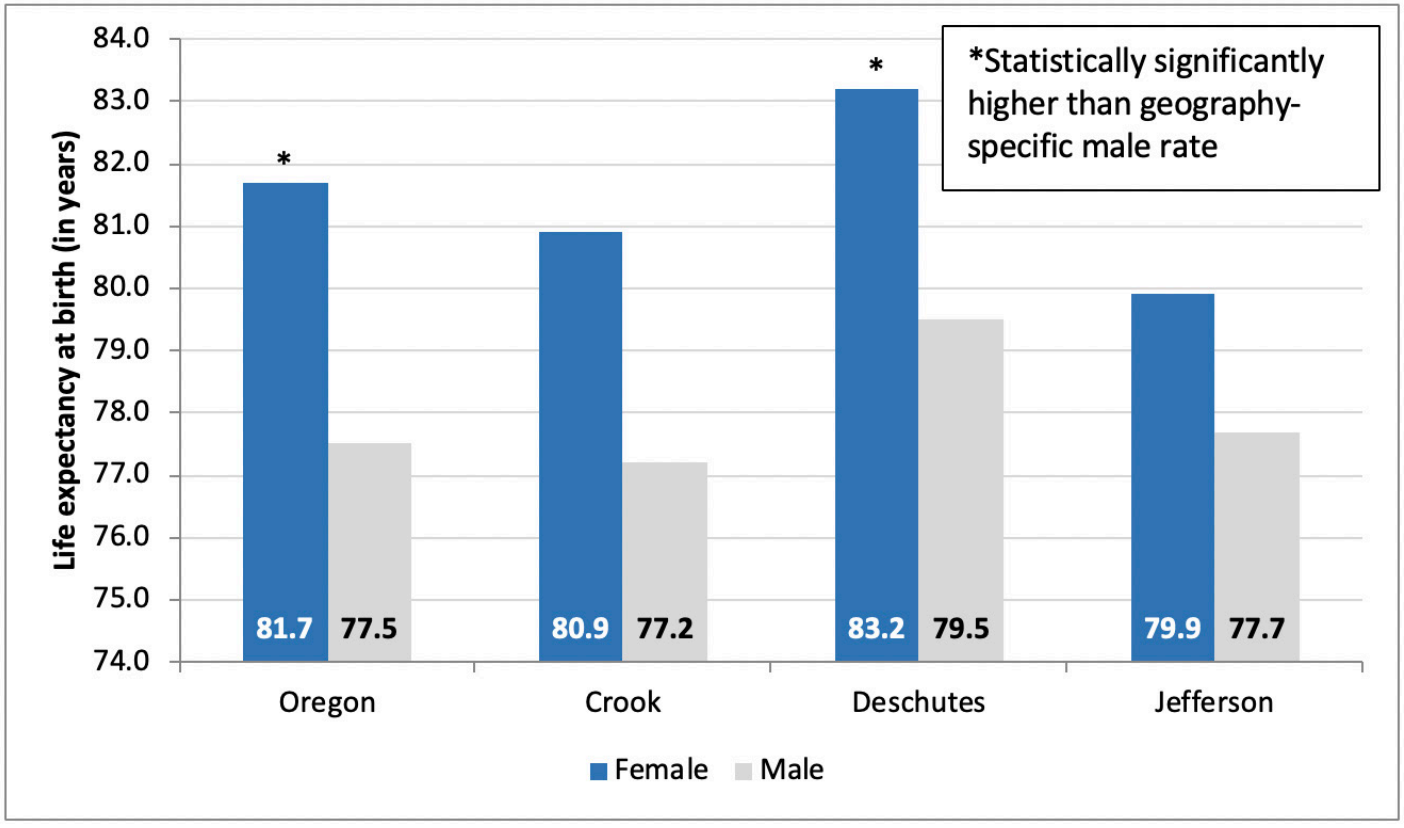
Note: Blank cells indicate too few individuals to calculate an accurate life expectancy.

LIFE EXPECTANCY

Life expectancy is a way to measure the average amount of time individuals within a population are anticipated to live. According to the Centers for Disease Control and Prevention [CDC] (2017), the average life expectancy in the United States is 78.6 years. In Oregon, the life expectancy is 79.6 years. In Central Oregon, the overall life expectancy is 80.7 years. When broken down by county, the overall life expectancy is 78.9 year for Crook, 81.3 years for Deschutes, and 78.7 years for Jefferson (Table 15).

When broken down by race and ethnicity, differences between populations can be identified. Life expectancy among Hispanics is significantly higher in Central Orgon compared to American Indian/Alaska Natives or White non-Hispanics. This higher life expectancy in Hispanics is consistent with the nationwide trend. Within Jefferson County, life expectancy among American Indian/Alaska Natives is significantly lower than Hispanic and White non-Hispanic populations. (Table 15). In Oregon and in Deschutes County, females have a significantly higher life expectancy than males (Figure 25).

Figure 25. Life expectancy (in years) at birth by sex, OPHAT, 2017.



YEARS OF POTENTIAL LIFE LOST (YPLL)

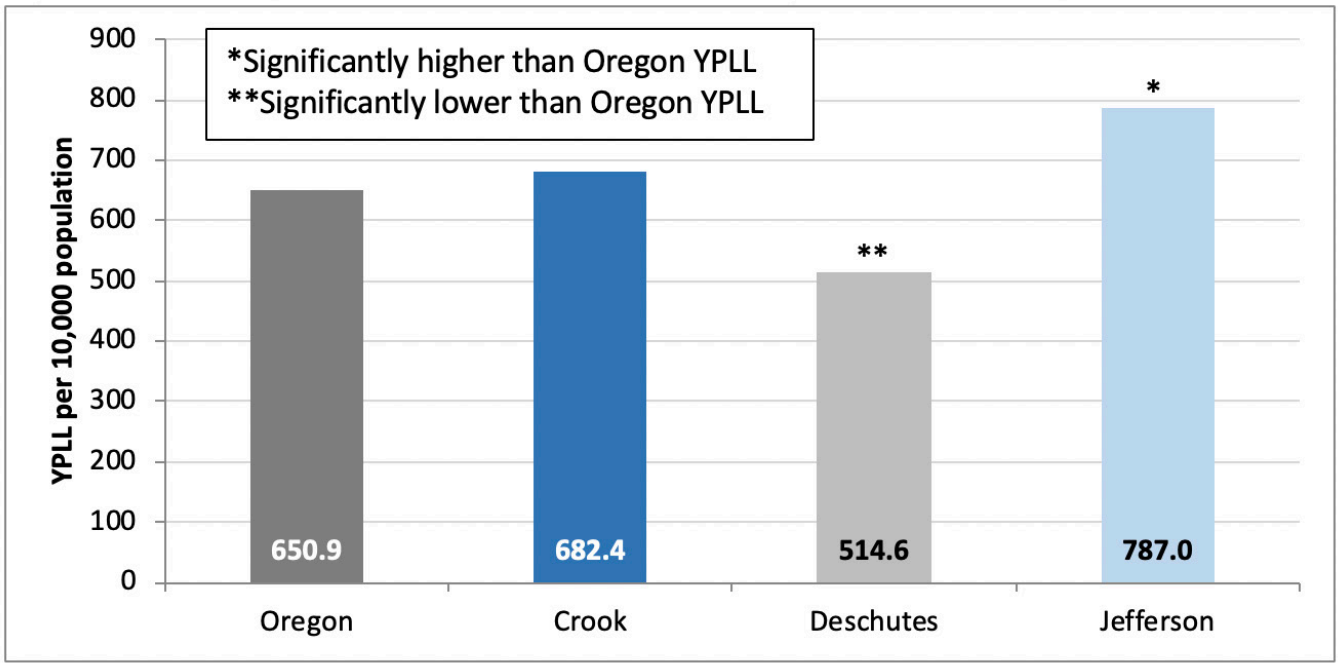
Years of Potential Life Lost (YPLL) measures the number of years of life lost due to premature death. While it is a good indicator of the burden due to death at an early age, it may not capture the full burden of chronic diseases experienced later in life. In Oregon, 650.9 years of potential life were lost before age 75 for every 10,000 people under the age of 75 years (Figure 26). In Deschutes County, YPLL is significantly lower (514.6) than Oregon (650.9), and Jefferson County's YPLL (787.0) is significantly higher than Oregon (Figure 26).

QUALITY OF LIFE, GENERAL HEALTH STATUS, AND PHYSICAL/MENTAL/ EMOTIONAL LIMITATIONS

Quality of life refers to a broad and complex idea that often involves both positive and negative aspects of a person's life (Centers for Disease Control and Prevention [CDC], 2018). Quality of life affects physical, mental, and emotional health throughout a person's life. Socioeconomic status, health status, the environment, diseases, social supports, culture, values, and education are a few factors that affect a person's quality of life. Health-related quality of life is an important outcome and is associated with chronic disease prevalence and risk factors.

In Oregon, 82.1% of the population reported themselves to be in excellent, very good, or good general health. In Central Oregon, Deschutes County had the highest proportion of adult residents who reported excellent, very good, or good general health (88.6%). Crook (76.2%) and Jefferson (81.1%) Counties had lower proportions of adult residents reporting excellent, very good, or good general health compared to Oregon as a whole (Figure 27). In Central Oregon (93.8%) and Oregon (92.1%), a significantly higher proportion of college graduates reported excellent, very good, or good general health compared to the proportion among adults with a high school education or less (Figure 28). In addition, in both Central Oregon and Oregon, adults living above the federal poverty level reported a significantly higher proportion of excellent, very good, or good health compared to the

Figure 26. Years of potential life lost (YPLL) before the age of 75 per 10,000 population, OPHAT, 2017



KURT WINDISCH PHOTO

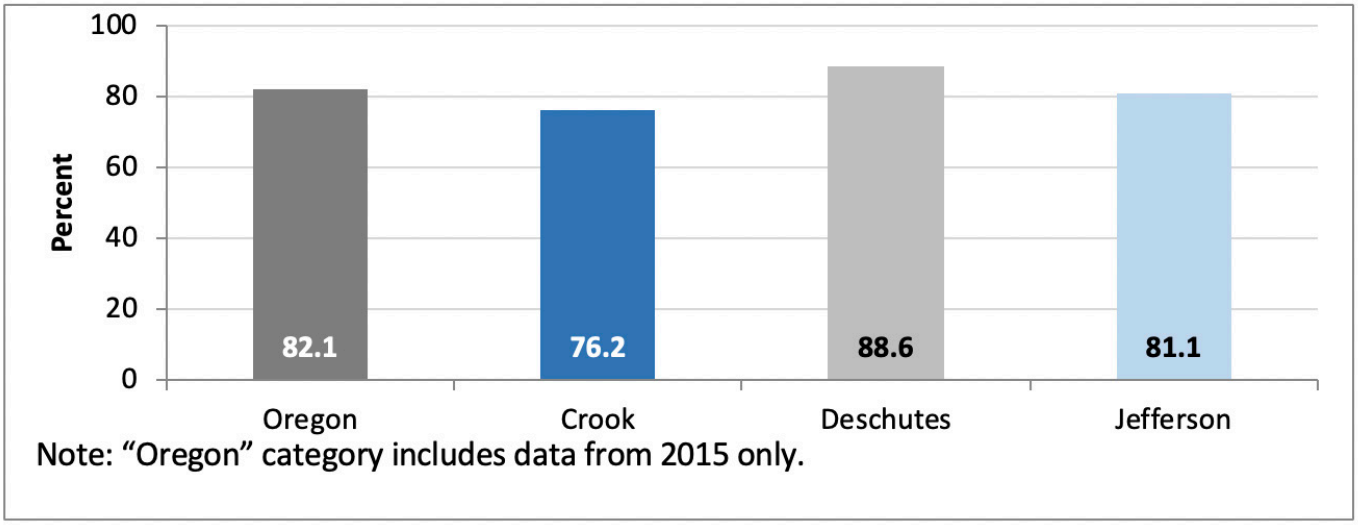
proportion of adults living at or below the federal poverty level (Figure 29). In Oregon and in Central Oregon, the proportion of adults living at or below the federal poverty level who reported limitations due to physical, mental, or emotional problems was significantly higher than the proportion of adults living above the federal poverty level (Figure 32). In Central Oregon, Deschutes County had the lowest, and Jefferson County has the highest proportion of adults who reported having any limitations due to physical, mental, or emotional problems (Figure 31).

In addition to the Behavioral Risk Factor Surveillance System (BRFSS) Quality of Life data, St. Charles Health System completed a community phone survey in 2018. More than nine in ten residents in the areas surveyed, including Bend/La Pine, Redmond/Sisters, Jefferson County, and Crook County, report a positive perception of the quality of life in their community (95%).

St. Charles Community Phone Survey: Quality of Life

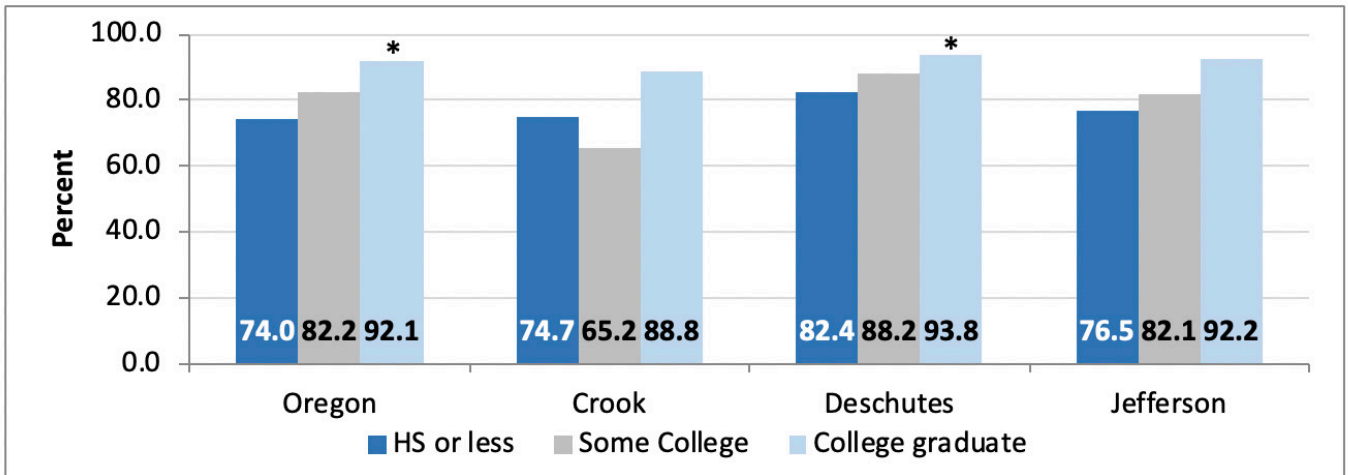
Residents in Central Oregon share a positive outlook of their quality of life: More than nine in ten residents in the areas surveyed, including Bend/La Pine, Redmond/Sisters, Jefferson County, and Crook County, report a positive perception of quality of life in their community (95%). This includes four in ten residents who say that the quality of life is very good (42%). These positive perceptions are shared across the four distinct geographic areas.

Figure 27. Age-adjusted prevalence of self-reported excellent, very good, or good general health, Oregon BRFSS, 2012-2015



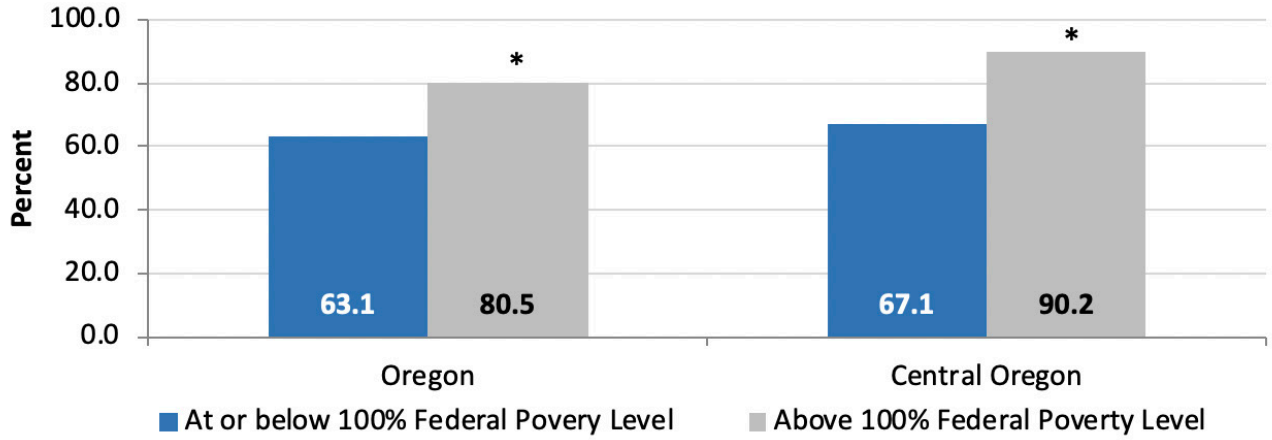
Note: "Oregon" category includes data from 2015 only.

Figure 28. Age-adjusted prevalence of self-reported excellent, very good, or good general health, by education level, Oregon BRFSS, 2012-2015



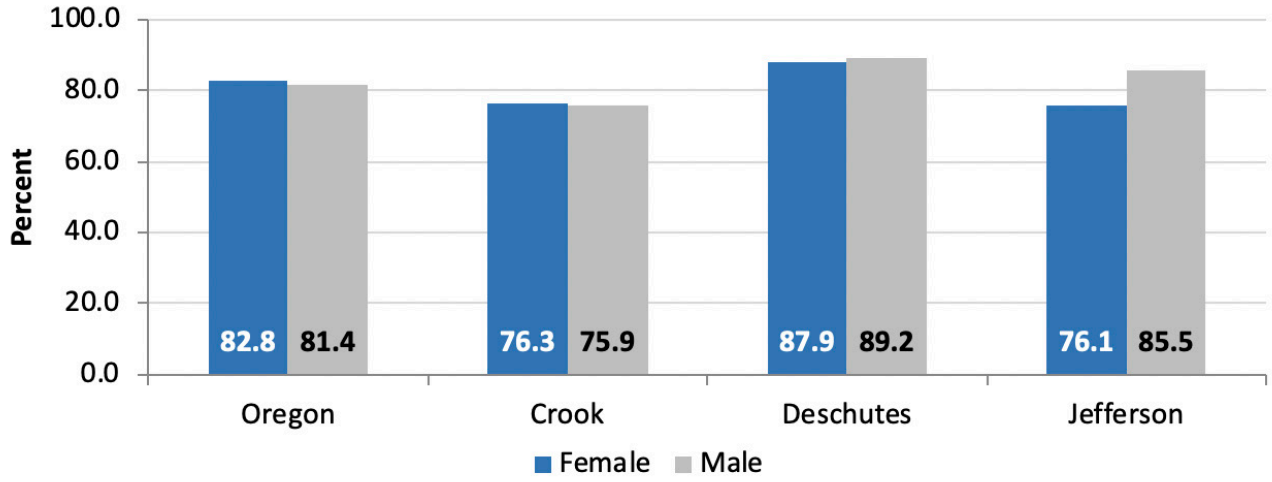
Note: "Oregon" category includes data from 2015 only.
*Significantly higher than "HS or less" group for the specified geography

Figure 29. Age-adjusted prevalence of self-reported excellent, very good, or good general health, by poverty status, Oregon BRFSS, 2012-2015



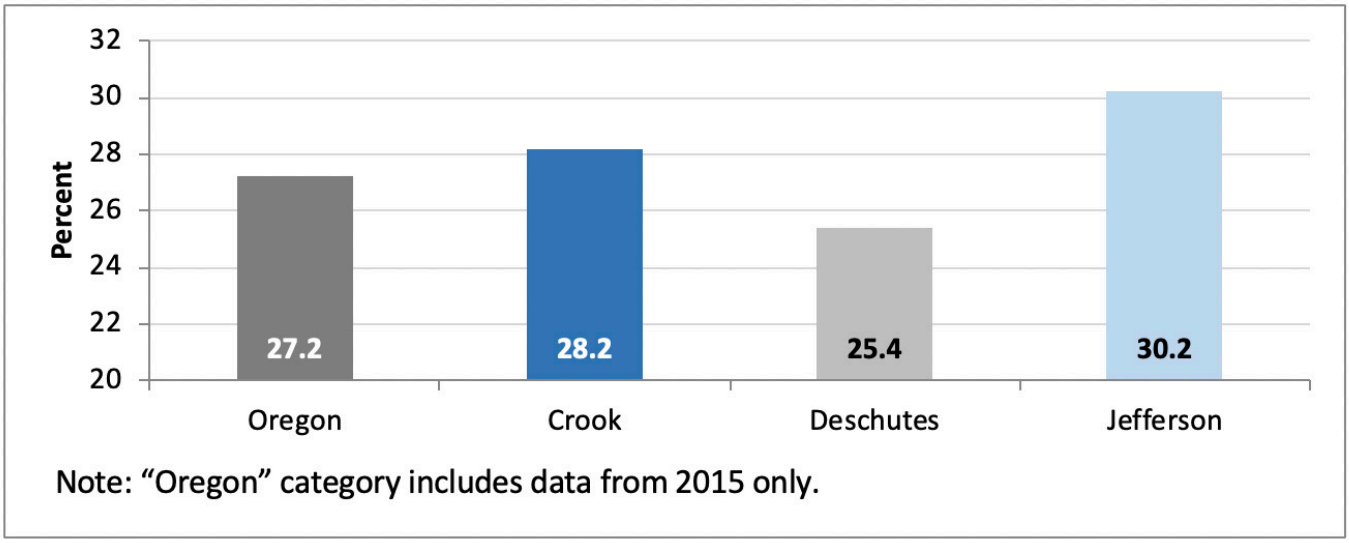
*Significantly higher than "at or below 100% Federal Poverty Level" group for the specified geography.
Note: "Oregon" category includes data from 2015 only.

Figure 30. Age-adjusted prevalence of self-reported excellent, very good, or good general health, by sex, Oregon BRFSS, 2012-2015



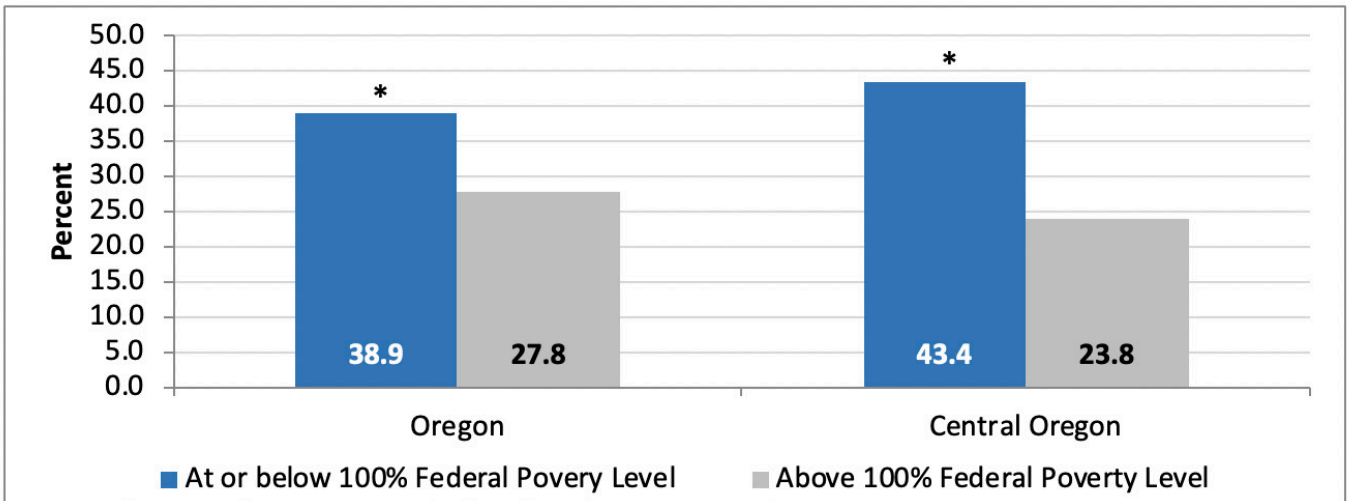
Note: "Oregon" category includes data from 2015 only.

Figure 31. Age-adjusted prevalence of having any limitations due to physical, mental, or emotional problems, Oregon BRFSS, 2012-2015



Note: "Oregon" category includes data from 2015 only.

Figure 32. Age-adjusted prevalence of having any limitations due to physical, mental, or emotional problems, Oregon BRFSS, 2012-2015



Note: "Oregon" category includes data from 2015 only.
*Significantly higher than "above 100% Federal Poverty Level" group for the specified geography

REBECKAH BERRY PHOTO

CHRONIC CONDITIONS

"The very best thing we have are our traditional foods and ways. We need to get back to them. We have adopted a complacent/entitlement mentality and picked up all the worst this country has to offer."
- Confederated Tribes of Warm Springs Resident

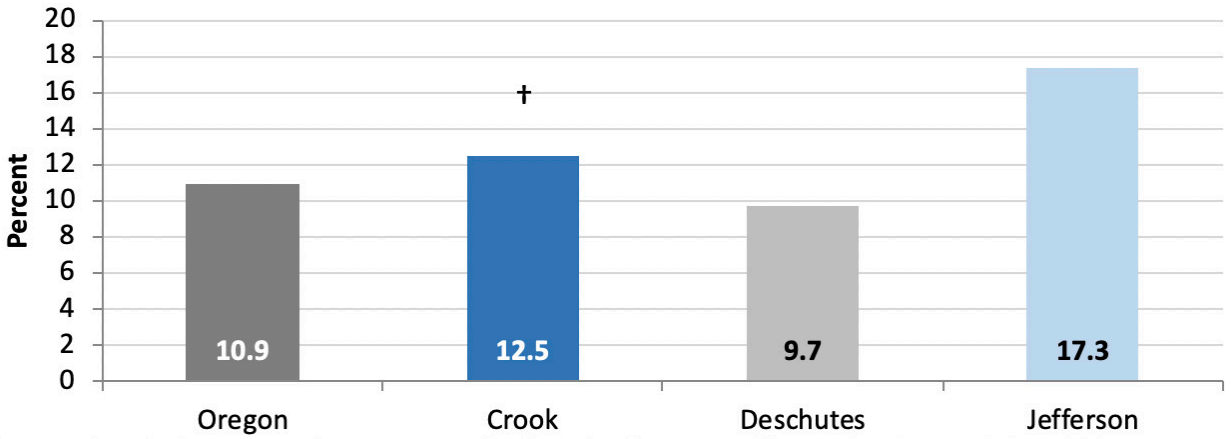
Chronic diseases are conditions that a person may live with for many years or a lifetime. Six in ten people in the United States live with at least one chronic disease, such as diabetes, cancer, or heart disease. Such chronic diseases can lead to early death, increased disability, decreased quality of life, and are a primary driver for increasing health care costs (Centers for Disease Control and Prevention [CDC], 2018). Chronic diseases can be prevented through increased physical activity, eating well, avoiding excessive alcohol consumption and tobacco use, as well as getting periodic preventive health screens (Centers for Disease Control and Prevention [CDC], 2018). Social determinants of health also play a role in the prevalence of chronic conditions, and chronic conditions can be more common or severe for minority groups (Centers for Disease Control and Prevention, 2017)

ASTHMA

Asthma is a chronic condition of the respiratory system characterized by inflammation and narrowing of the airways, making breathing difficult. While asthma affects individuals of all ages, it is one of the most common chronic diseases among children. For more information on childhood asthma go to the Infant, Child, and Adolescent Health section. Asthma increases the burden to the health care system because of potential lifelong costs associated with managing the symptoms. When an individual has to go to the Emergency Department (ED) or is hospitalized due to asthma, it is likely because the disease is not under control. Asthma self-management education is integral for achieving asthma control. Self-management education includes knowing the signs, symptoms, and triggers of an asthma attack, how to respond to an attack, using medication and devices properly, using a peak flow meter to track lung function, having an asthma action plan (AAP), and having taken a class on asthma management.

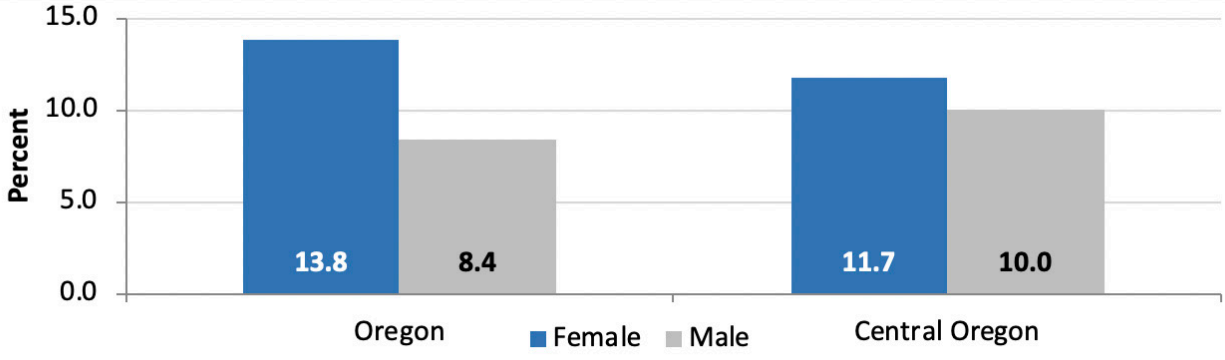
In Central Oregon, the prevalence of asthma among Deschutes County adults (9.7%) is lower than in Oregon (10.9%). The prevalence in Crook County (12.5%) and Jefferson County (17.3%) is higher than across Oregon as a whole (Figure 33). Of the three Central Oregon counties, Jefferson County had the highest rate of asthma hospitalizations per 100,000 population (56.1 per 100,000 [Figure 36]).

Figure 33. Age-adjusted percent of adults with asthma, Oregon BRFSS, 2012-2015



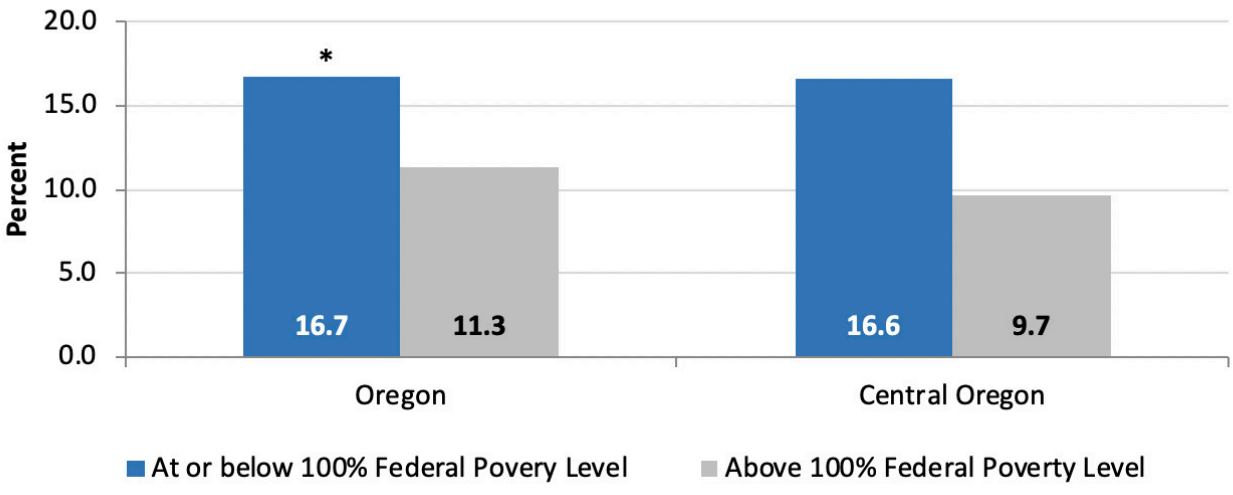
†Note: Crook County estimate was calculated using a small sample size and should be interpreted with caution.

Figure 34. Age-adjusted percent of adults with asthma, by sex, Oregon BRFSS, 2012-2015



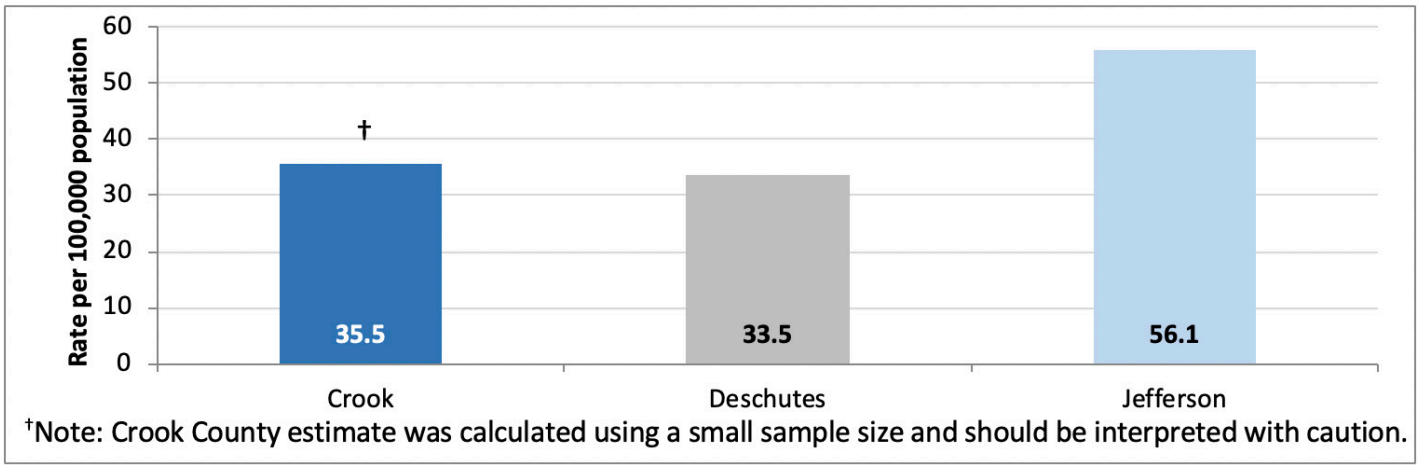
Note: "Oregon" category includes data from 2015 only.

Figure 35. Age-adjusted percent of adults with asthma, by poverty status, Oregon BRFSS, 2012-2015



Note: "Oregon" category includes data from 2015 only.
*Statistically significantly higher than "above 100% Federal Poverty Level" group for the specified geography

Figure 36. Age-adjusted rate of persons hospitalized for asthma, Oregon Hospital Discharge Dataset, 2016



†Note: Crook County estimate was calculated using a small sample size and should be interpreted with caution.

The prevalence of asthma varies by different factors. In Oregon, approximately 17% of adults living at or below the Federal Poverty Line (FPL) had asthma, which is significantly higher than the proportion of adults above the federal FPL who have asthma (about 11%) (Figure 35). The same is true in Central Oregon; a higher proportion of adults below the FPL had asthma compared to the proportion of adults above the FPL. Across Oregon and Central Oregon, the prevalence of asthma is higher among females than among males (Figure 34).

CANCER

Cancer refers to a grouping of cells that are abnormal, often grow uncontrollably, no longer functioning as intended, and may spread to other areas in the body. Cancer is the second leading cause of death in the United States (CDC, 2017), and is the leading cause of death for individuals aged 45-84 years in Oregon (Oregon Health Authority, 2018). Significant advances have been made in cancer care and early detection and treatment can help increase the chances of surviving cancer.

Similar to Oregon statewide, from 2013-2017, the age-adjusted cancer mortality rate was significantly higher among males than females in Crook and Deschutes Counties (Figure 37). The percent of adults with cancer living below the FPL (12.1%) was higher than those living above the FPL (8.8%) from 2012-2015 (Figure 38).

Across Oregon, American Indian/Alaska Natives and Hispanics had significantly lower cancer mortality rates than the total mortality rate for all racial/ethnic groups combined from 2013-2017, however, there were no statistically significant differences across racial/ethnic groups in Central Oregon for cancer mortality (Figure 39). In Deschutes County, the age-adjusted cancer mortality rate in 2017 (138.5 per 100,000 population) was significantly lower than Deschutes County's rate in 2008 (175.3 per 100,000 population) (Figure 40). From 2011-2015, the rate of newly diagnosed cancer cases was significantly higher in Crook County (468.2 per 100,000 population) than across Oregon as a whole (Figure 41).

Figure 37. Age-adjusted cancer mortality rate per 100,000 population by sex, OPHAT, 2013-2017

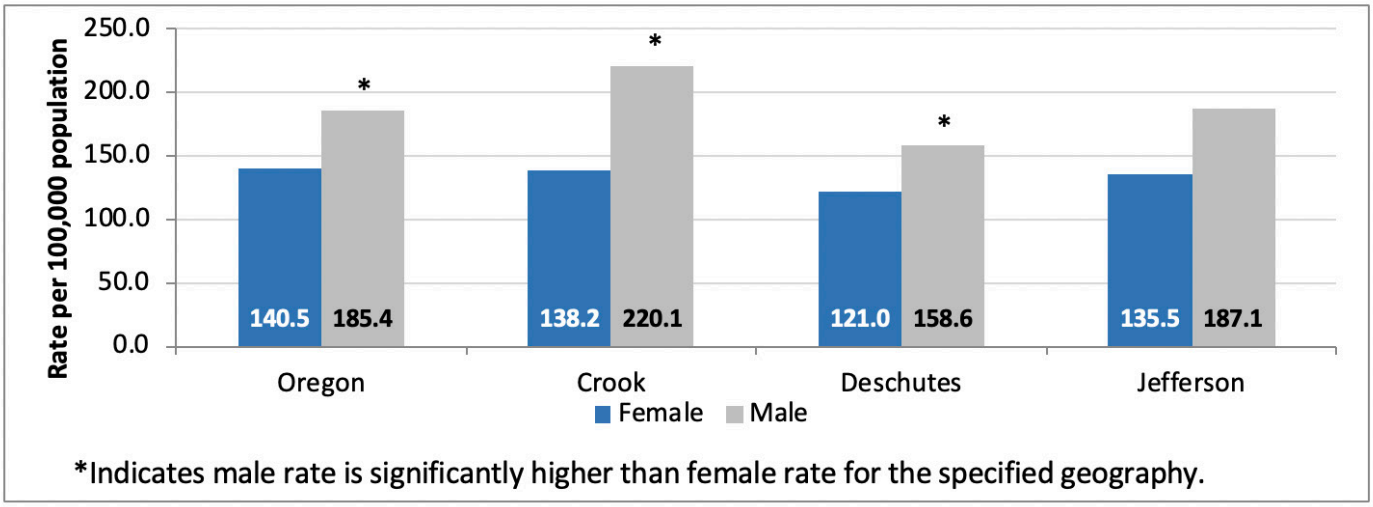
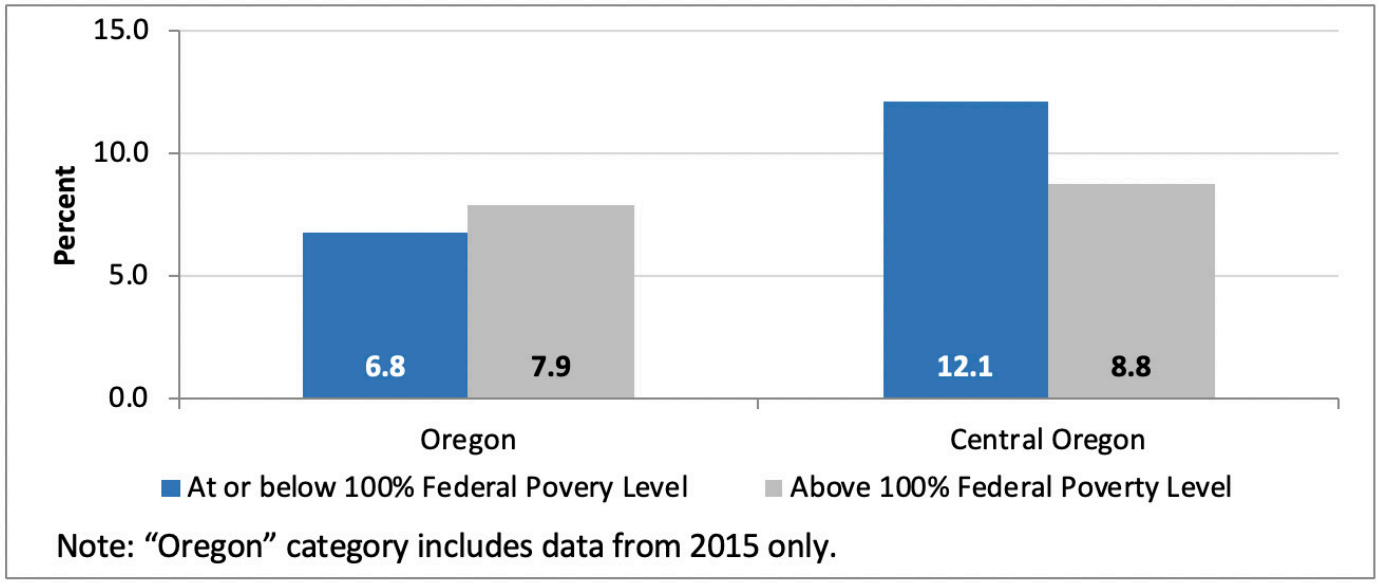


Figure 38. Age-adjusted percent of adults with a history of cancer (excluding non-malignant skin cancer), by poverty status, Oregon BRFSS, 2012-2015



Want more information about cancer?

AMERICAN CANCER SOCIETY IN OREGON:

WWW.CANCER.ORG/ABOUT-US/LOCAL/OREGON.HTML

OREGON CANCER FOUNDATION:

WWW.OREGONCANCERFOUNDATION.ORG/

Figure 39. Age-adjusted cancer mortality rate per 100,000 population by race and ethnicity, OPHAT, 2013-2017

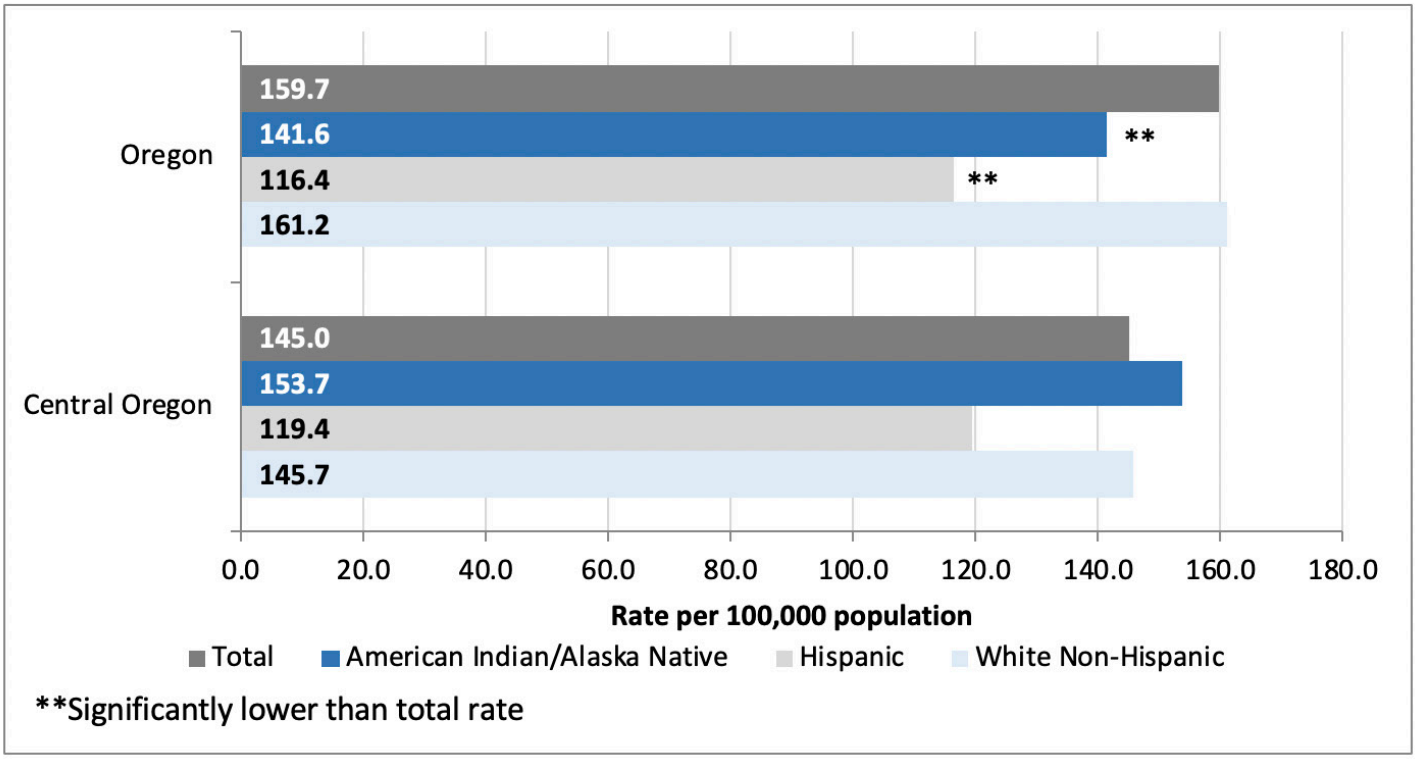


Figure 40. Age-adjusted cancer mortality rate per 100,000 population, OPHAT, 2008-2017

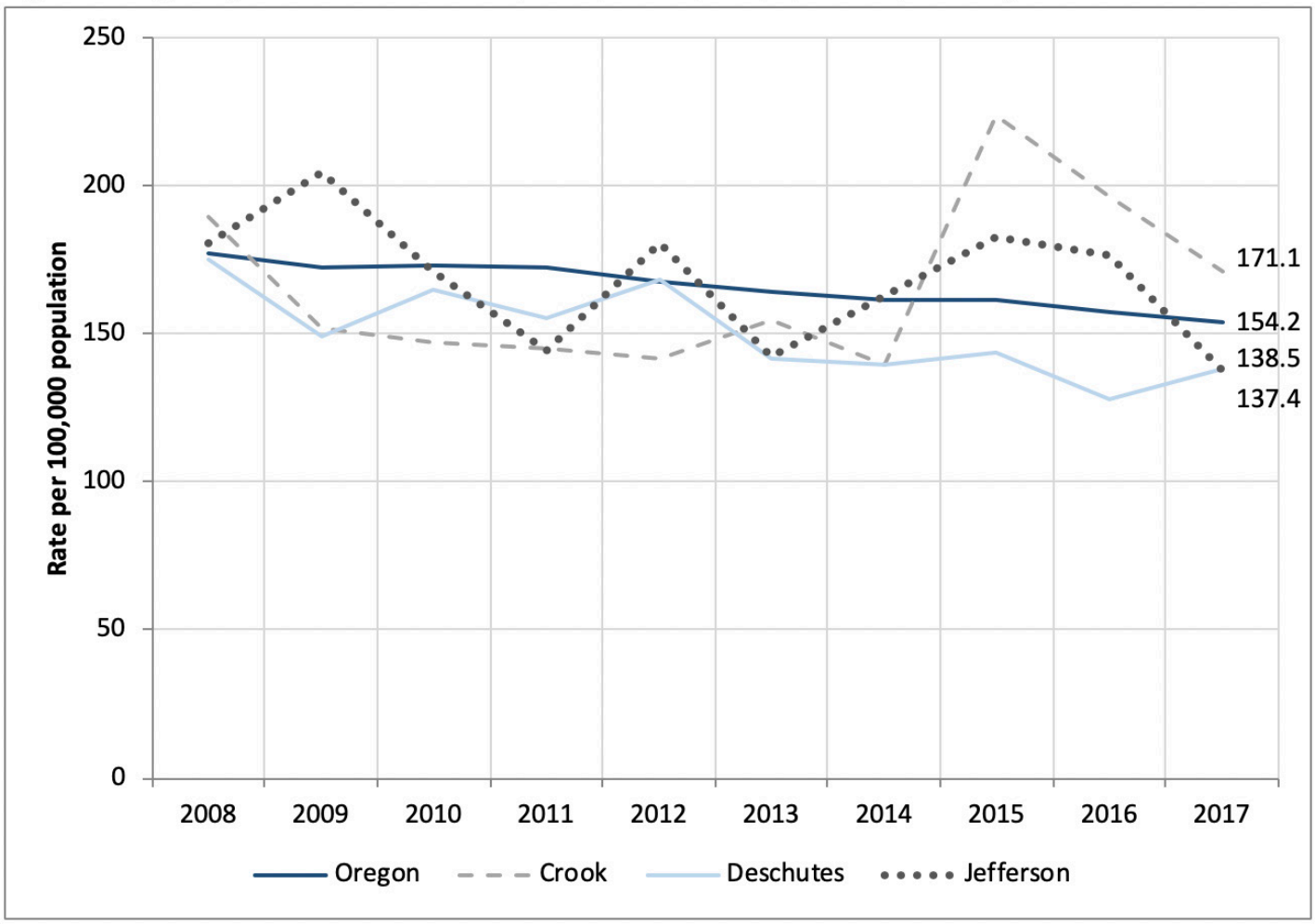
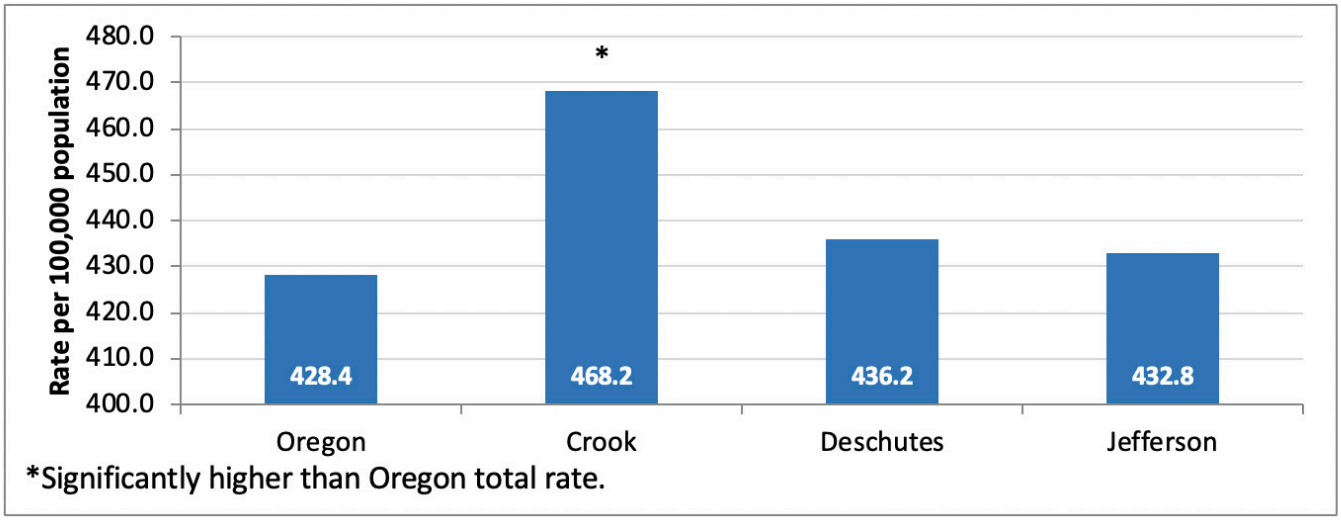


Figure 41. Age-adjusted cancer incidence rates per 100,000 population, Oregon State Cancer Profiles, National Cancer Institute, 2011-2015.



Lung cancer is the most commonly diagnosed reportable cancer. Many risk factors for lung cancer are avoidable. Tobacco use or exposure to secondhand tobacco smoke is the leading cause of lung cancer. Environmental factors like chronic exposure to asbestos or radon have been linked to lung cancer. "Inhalation of asbestos fibers has been linked to an increased risk of lung cancer in many studies of asbestos-exposed workers. This increased risk is seen with all forms of asbestos (there is no "safe" type of asbestos in terms of lung cancer risk). In general, the greater the exposure to asbestos, the higher the risk of lung cancer. Most cases of lung cancer in asbestos workers occur at least 15 years after the first exposure to asbestos." (National Cancer Institute, 2019).

In Oregon, between 2013 and 2017, 38.5 per 100,000 people (age-adjusted) died from lung cancer, which was significantly higher than Deschutes County's age-adjusted rate of lung cancer (28.4 per 100,000 population), and lower than the age-adjusted rates in Crook (38.8 per 100,000 population) and Jefferson (44.7 per 100,000 population) Counties (Table 16). Crook County had the highest age-adjusted rate of hospitalizations (51.2 per 100,000 population) (Figure 43).

Breast cancer most commonly occurs in women, but can occur in men, and is one of the most common types of cancer. The risk for breast cancer is associated with older age, White race, obesity, physical inactivity, genetic predisposition, and reproductive history. Compared to Oregon and Central Oregon, Crook County has the highest rate of breast cancer incidence (132.9 per 100,000 population) (Figure 42).

Colorectal cancer occurs in the colon or rectum. Factors related to colorectal cancer are older age, being male, Black/African American race, poor diet, smoking, a history of polyps, and genetics. Compared to Oregon and Central Oregon, Crook County has the highest mortality rate for colorectal cancer (18.5 per 100,000 population) (Table 16).

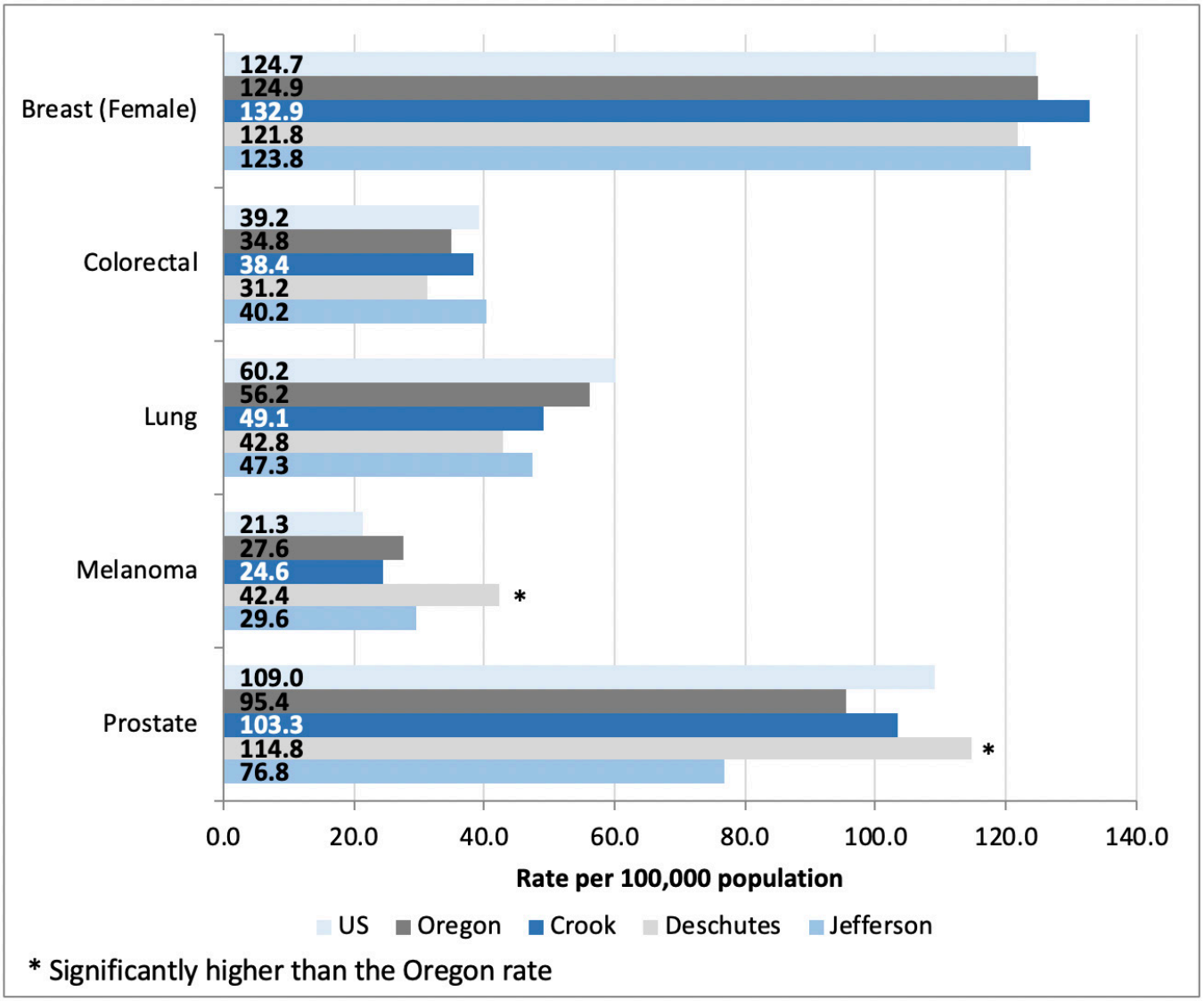
Melanoma, a type of skin cancer, is one of the most common cancers in the United States and is the most deadly of skin cancers. The risk for melanoma can be reduced by limiting exposure to the sun, avoiding sunburns (especially early in life), and not

Table 16. Age-adjusted cancer mortality rates per 100,000 population, OPHAT, 2013-2017.

Cancer Site	Oregon	Crook	Deschutes	Jefferson
Colorectal	13.5	18.5	14.7	16.8
Lung	38.5	38.8	28.4	44.7
Melanoma	2.6	1.7	2.8	0.9

Significantly lower than the Oregon rate.

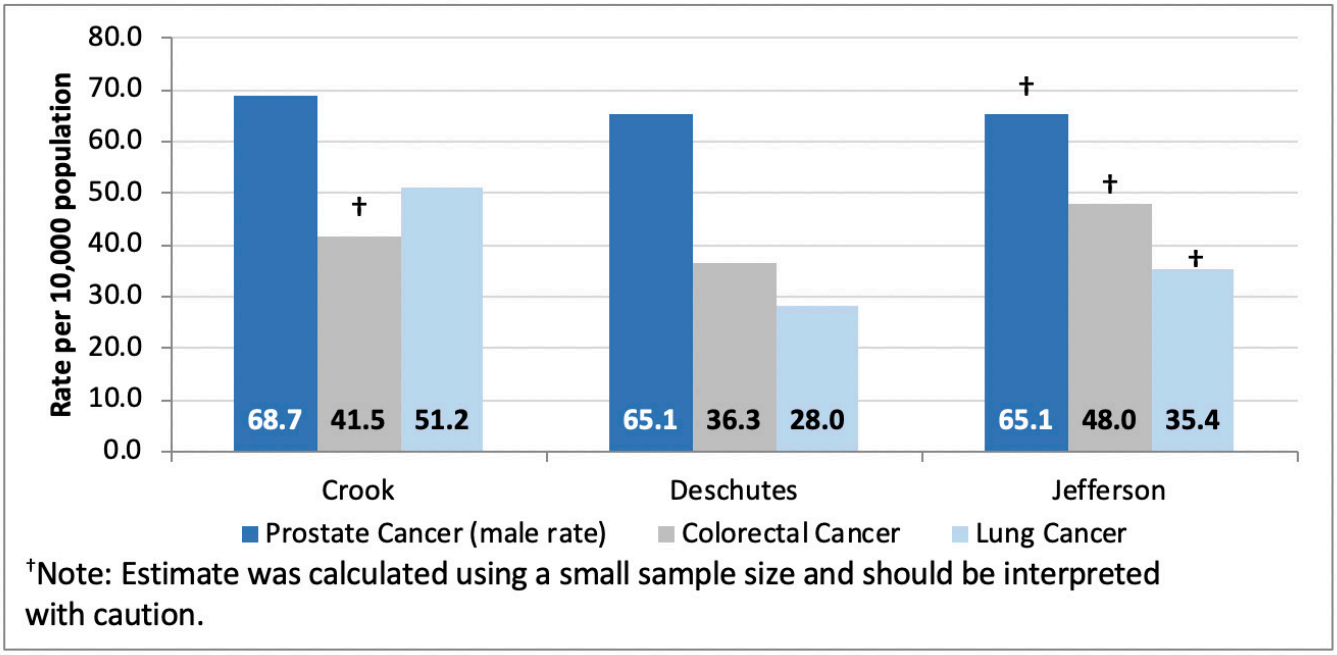
Figure 42. Age-adjusted cancer incidence rate per 100,000 population by cancer site, Oregon State Cancer Profiles, 2011-2015.



using indoor tanning beds. Other risk factors for melanoma are having lighter skin or skin that burns, reddens, or freckles easily. Within Central Oregon, Deschutes County has the highest mortality rate for melanoma (2.8 per 100,000 population) (Table 16).

The prostate is a gland found only in males. Prostate cancer is one of the most common cancers among men and when detected early can usually be treated successfully. Risk factors for prostate cancer include older

Figure 43. Age-adjusted rate of persons hospitalized for prostate cancer, colorectal cancer, and lung cancer, Oregon Hospital Discharges Dataset, 2016



†Note: Estimate was calculated using a small sample size and should be interpreted with caution.

age (65 years and older), African-American race, and family history or genetic changes. In all three Central Oregon counties, the rate of hospitalization for prostate cancer was higher than the rate of hospitalization for colorectal cancer and lung cancer (Figure 43). Deschutes County's age-adjusted incidence rate (new diagnoses) was higher for melanoma and for prostate cancer than Oregon's incidence rate of melanoma and prostate cancer (Figure 42).

CARDIOVASCULAR DISEASE

Cardiovascular disease is a classification of diseases of the heart and blood vessels. Roughly 610,000 individuals die of heart disease in the United States every year, which equals to about 1 in every 4 deaths (Centers for Disease Control and Prevention [CDC], 2017). Coronary heart disease is the most common type of heart disease. Risk factors include a poor diet, high blood pressure, high body mass index, being overweight or obese, and high blood glucose levels. Heart disease affects populations of all races and genders, but is preventable with good nutrition, exercise, by not smoking, and avoiding tobacco products.

Heart disease includes several conditions, including angina (chest pain), myocardial infarction (heart attack), and other conditions that affect the heart muscle, rhythm, or valves. All three Central Oregon counties had a lower prevalence of cardiovascular disease (including angina, heart attack, or stroke) compared to Oregon as a whole (Figure 46), but like Oregon, the age-adjusted mortality rate for ischemic heart disease (heart problems caused by narrowed heart arteries) was higher among males than among females, significantly so in Crook and Deschutes Counties.

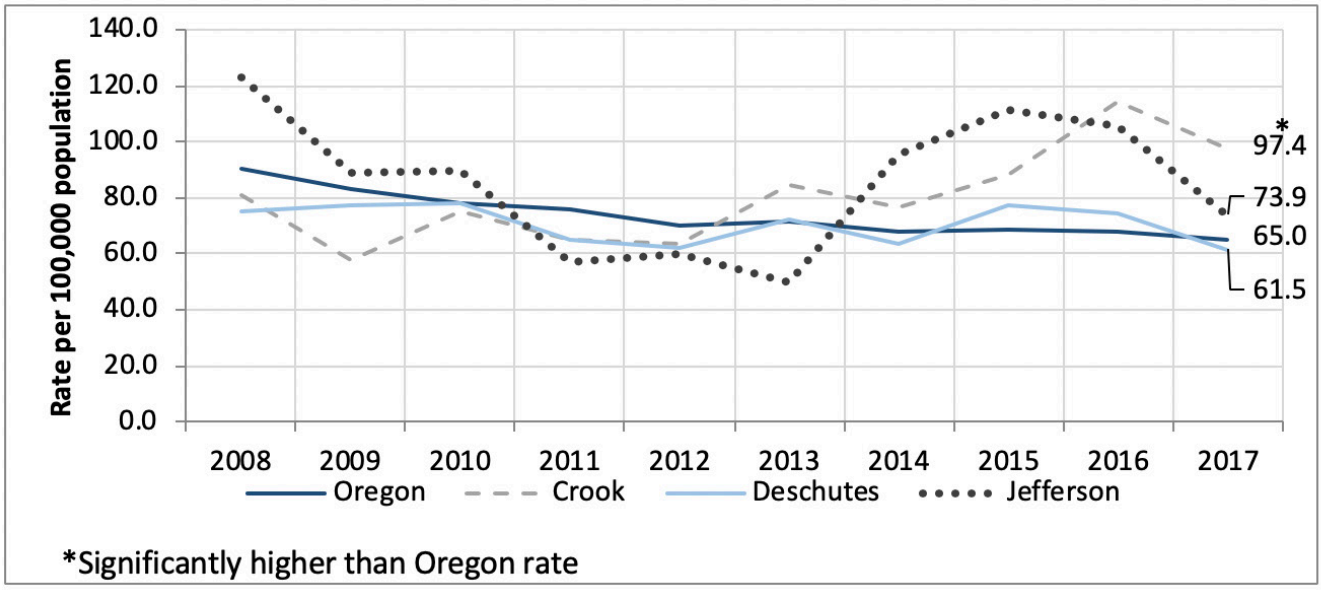
A cerebrovascular disease is a group of diseases dealing with blood flow in the brain such as stroke. Stroke is a leading cause of death and disability and is caused by a blood vessel breaking or an artery becoming clogged in the brain that leads to reduced blood flow and brain damage.

Knowing the signs and symptoms of stroke can save lives (additional information in resources). A healthy, non-smoking, lifestyle and medication can also help reduce the risk of cerebrovascular disease.

Age-adjusted prevalence of stroke in Oregon was 2.6%, compared to 1.5% in Crook County and 2.0% in Deschutes County (Figure 49). In 2017, Crook County's age-adjusted mortality rate (86.8 per 100,000 population) of cerebrovascular disease was significantly higher than Oregon's rate (39.9 per 100,000 population) (Figure 47). In addition, Crook County's mortality rate for cerebrovascular disease among females was significantly higher than Oregon's female rate, and the rate for females was higher than the rate for males in all three Central Oregon counties (Figure 48).

Of the three Central Oregon counties, Jefferson County has the highest rate (851.2 per 100,000 population) of persons hospitalized for heart disease, and Deschutes County has the lowest (579.4 per 100,000 population) (Figure 50). Jefferson County also has the highest rate of persons hospitalized for stroke (343.6 per 100,000 population), and Deschutes County has the lowest (204.0 per 100,000 population) (Figure 52).

Figure 44. Age-adjusted ischemic heart disease mortality rate per 100,000 population, OPHAT, 2007-2016.



Want to learn more about cardiovascular disease? ?

CENTER FOR DISEASE CONTROL AND PREVENTION STROKE:

WWW.CDC.GOV/STROKE/SIGNS_SYMPTOMS.HTM

OREGON HEALTH AUTHORITY HEART:

WWW.OREGON.GOV/OHA/PH/DISEASESCONDITIONS/CHRONICDISEASE

Figure 45. Age-adjusted mortality rate of ischemic heart disease by sex per 100,000 population, OPHAT, 2013-2017.

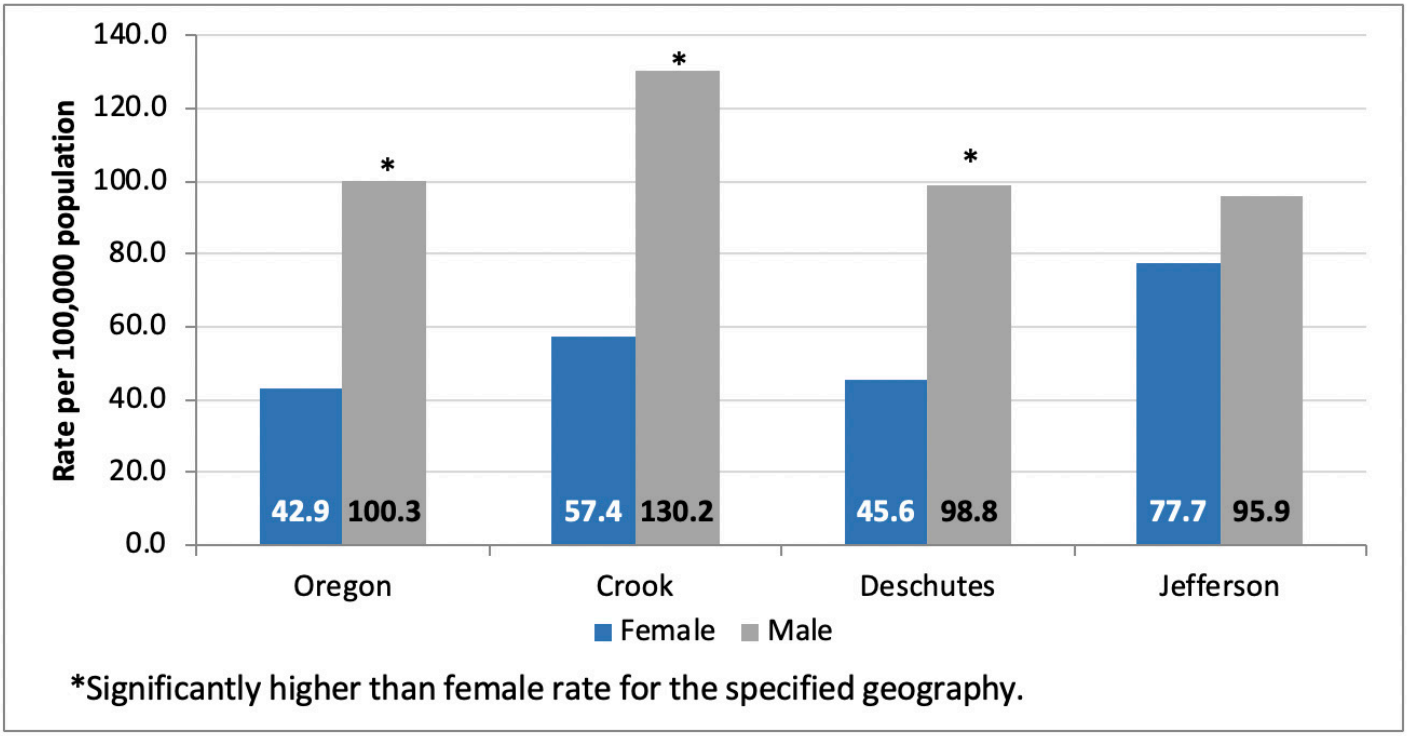
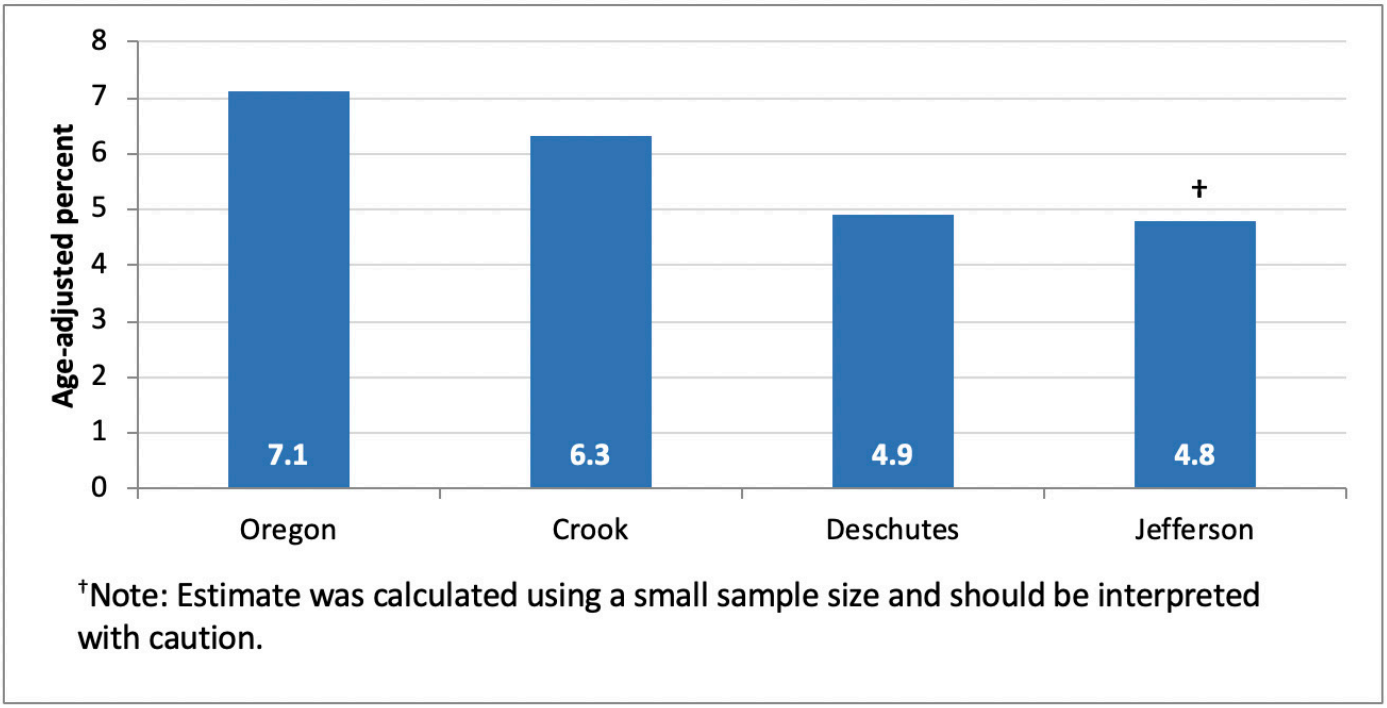


Figure 46. Age-adjusted prevalence of cardiovascular disease (including angina, heart attack, or stroke), Oregon BRFSS 2012-2015.



"Hypertension awareness and control is improving gradually throughout Central Oregon and saving lives!"

- Central Oregon Provider

Figure 47. Age-adjusted cerebrovascular disease mortality rate per 100,000 population, OPHAT, 2008-2017.

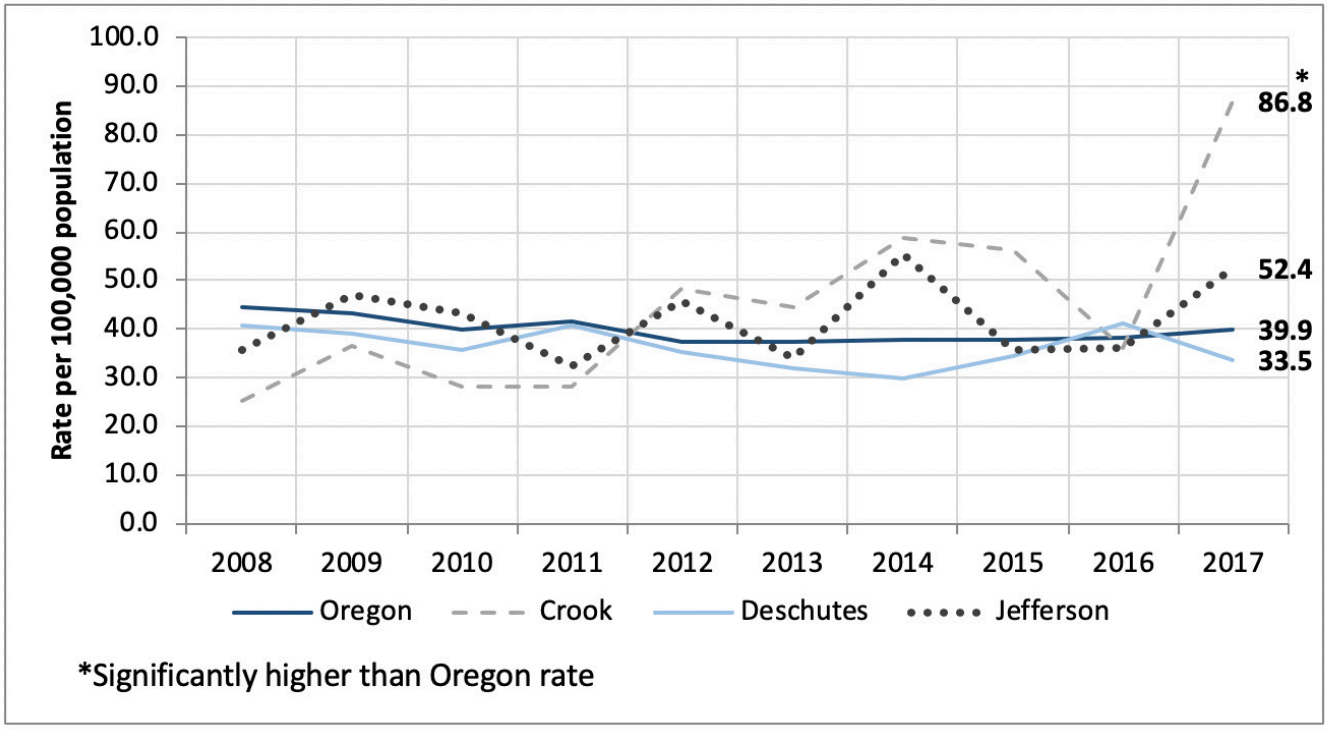


Figure 48. Age-adjusted mortality rate of cerebrovascular diseases by sex per 100,000 population, OPHAT, 2013-2017.

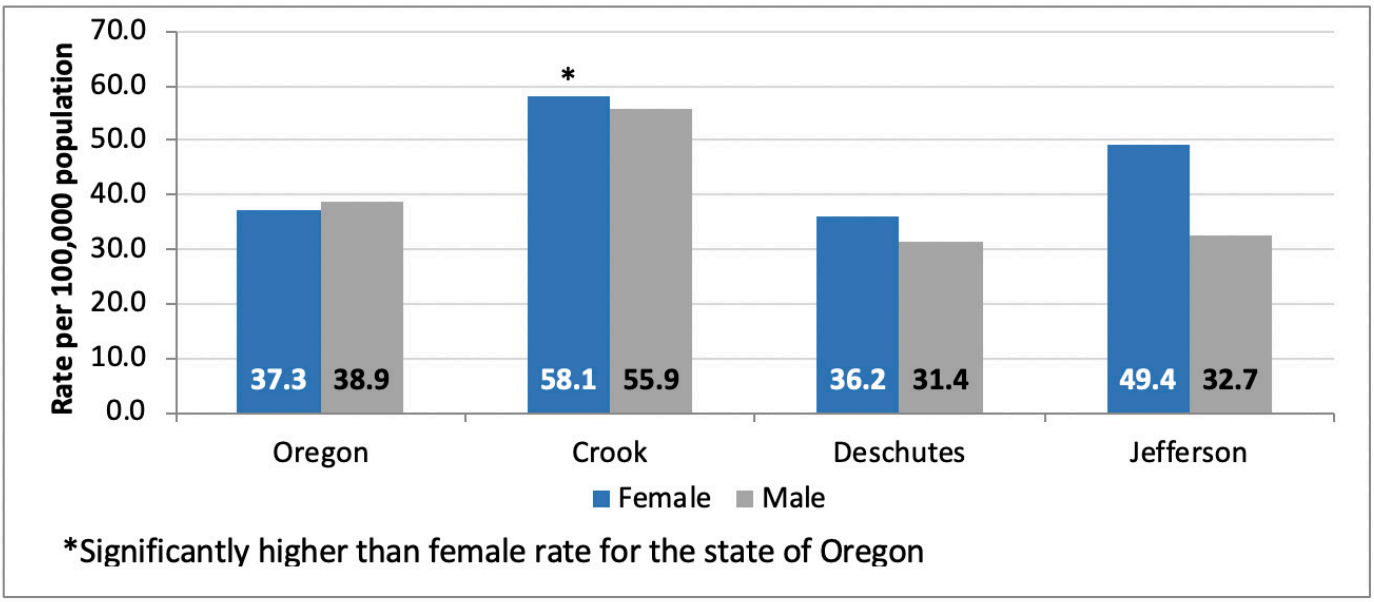
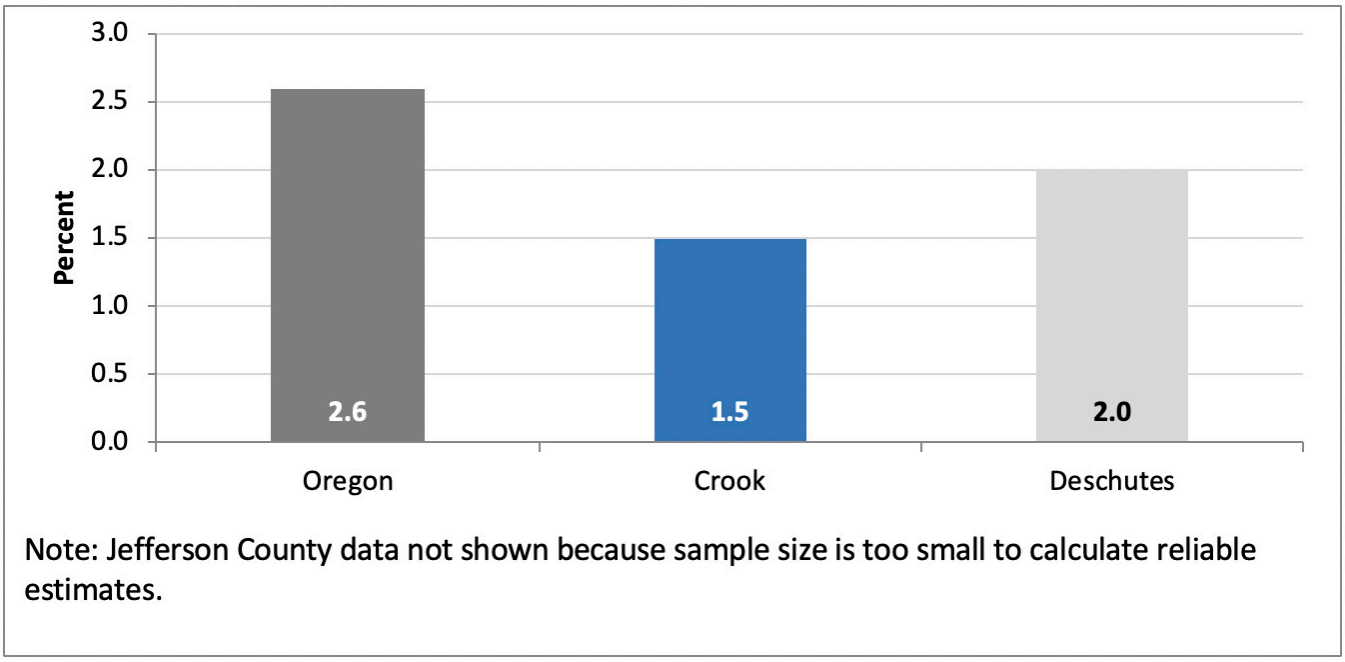


Figure 49. Age-adjusted prevalence of stroke, Oregon BRFSS, 2012-2015.



Note: Jefferson County data not shown because sample size is too small to calculate reliable estimates.

Figure 50. Age-adjusted rate of persons hospitalized for heart disease per 100,000 population, including heart attack, Oregon Hospital Discharges Dataset, 2016

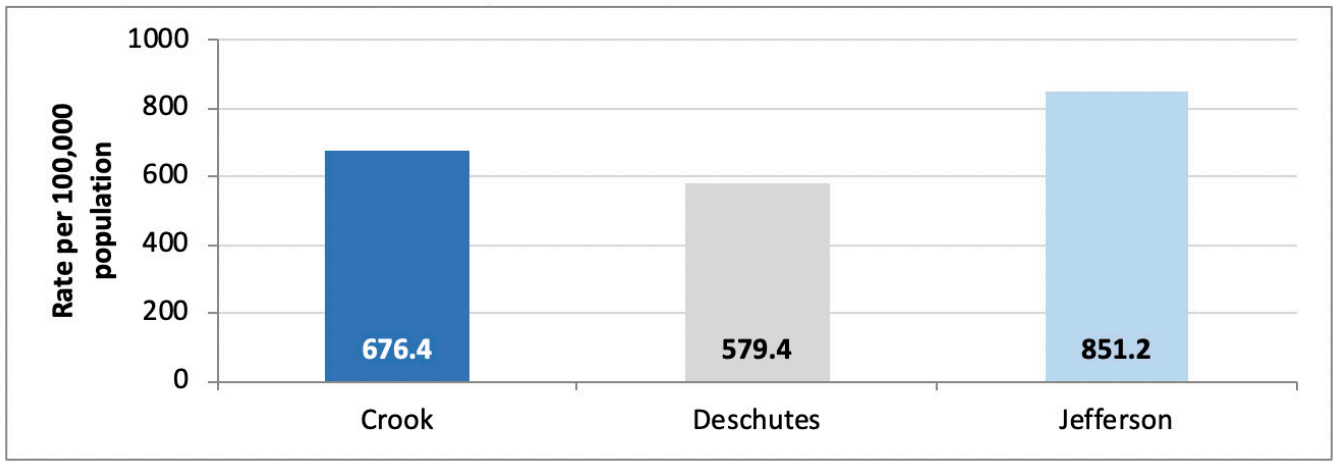


Figure 51. Age-adjusted rate of persons hospitalized for heart attack per 100,000 population, Oregon Hospital Discharges Dataset, 2016

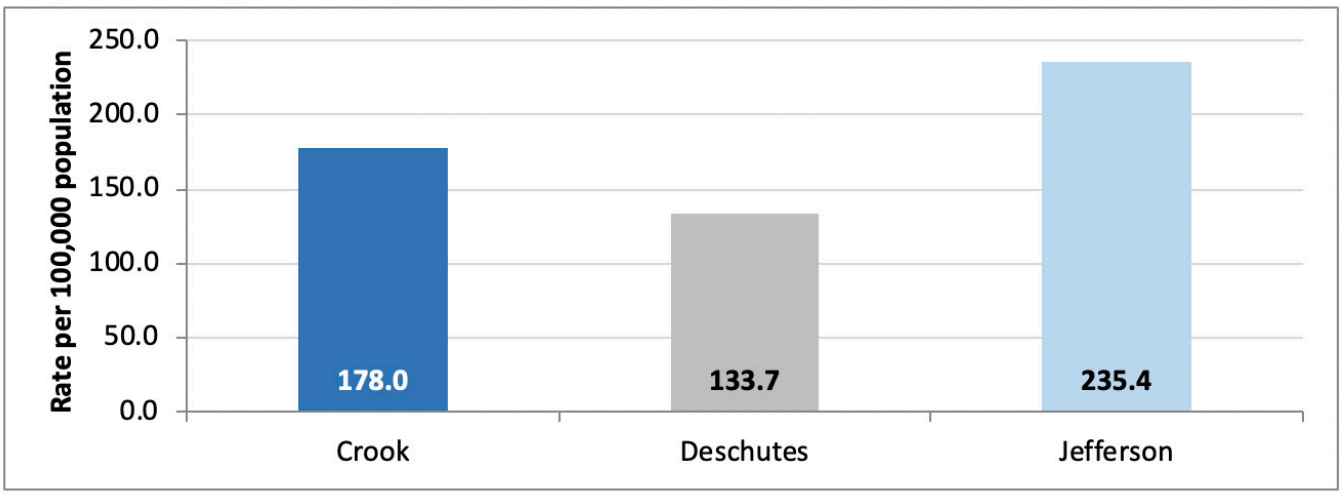
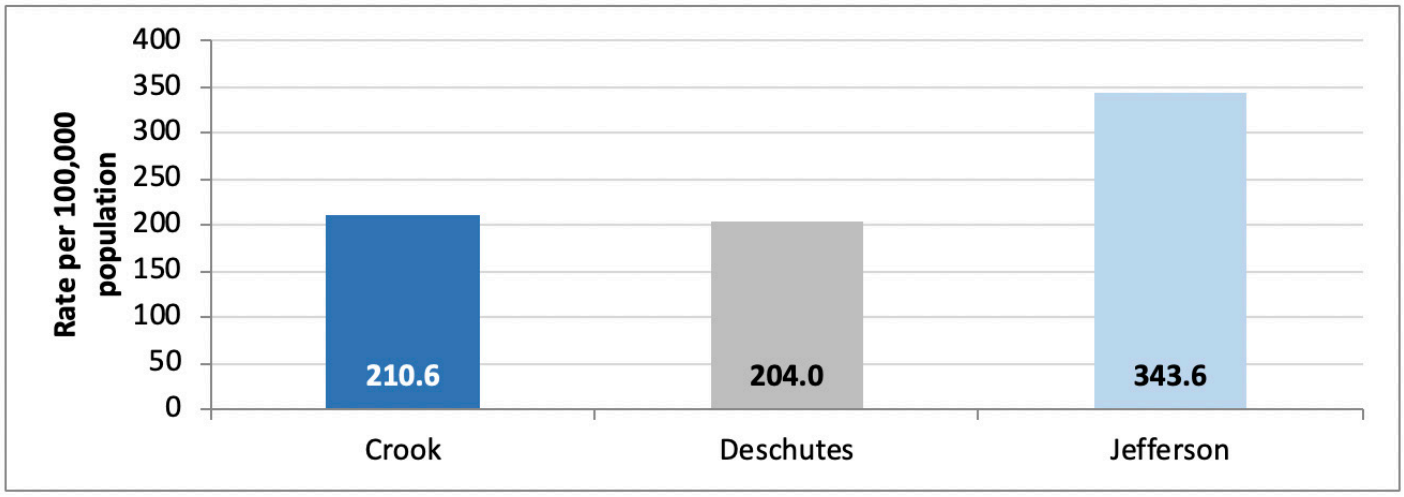


Figure 52. Age-adjusted rate of persons hospitalized for stroke per 100,000 population, Oregon Hospital Discharges Dataset, 2016



DIABETES

Diabetes is a chronic (long-lasting) health condition that affects how the body turns food into energy. Diabetes is characterized by having high blood sugar (glucose) levels, and if left untreated, can lead to serious health complications, such as heart disease, blindness, stroke, kidney disease, and more. As of 2017, more than 100 million adults in the United States were diagnosed as having pre-diabetes or diabetes (Centers for Disease Control and Prevention [CDC], 2017). There are several types of diabetes, including prediabetes, type 1, type 2, and gestational diabetes. Type 1 diabetes is an autoimmune disorder usually diagnosed at an early age. Type 2 diabetes is often diagnosed in adulthood. If you have type 2 diabetes, cells don't respond normally to insulin; this is called insulin resistance. People who are at risk for developing type 2 diabetes may be diagnosed with pre-diabetes, which is characterized by high blood glucose levels, but not high enough to be diagnosed as diabetes. Pre-diabetes places a person not only at risk for developing diabetes but also heart disease and stroke, however, this risk can be lowered significantly by losing weight and exercising. Gestational diabetes can develop during pregnancy in women who don't already have diabetes and often resolves once the baby is born. If left untreated, gestational diabetes may cause problems for the mother and baby. In addition, gestational diabetes puts women at increased risk for later developing type 2 diabetes.

A key part of diabetes control is self-management education, which includes taking classes to learn how to self-monitor blood glucose and maintain a healthy lifestyle, as well as monitoring key clinical outcomes like blood A1C levels, and eye and foot health.

In Oregon from 2012-2015, 8.6% of the population has diabetes. Of the three Central Oregon counties, Jefferson County had the highest prevalence of diabetes (16.0%) and Deschutes County had the lowest (4.8%) (Figure 53). Deschutes

"As the tremendous advancements in diabetes treatment and technology move forward, the greatest challenge facing clinicians is championing access for their patients. With timely intervention to the treatments and technologies that fit the individual patient's needs, we can very effectively manage type 2 diabetes and put patients on solid footing for health, avoidance of complications, and normal life expectancy."

- Central Oregon Provider

"It's sad that people in poverty only have access to the worst foods in this country."
- Deschutes County Youth

County's age-adjusted mortality rate from diabetes in 2015-2017 (14.8 per 100,000 population) was significantly lower than Oregon's rate (23.8 per 100,000 population), and Jefferson County's rate (40.2 per 100,000 population) was significantly higher than Oregon's rate. In Oregon and in Deschutes County, the age-adjusted diabetes mortality rate was significantly higher among males than females (Figure 55), and of the three Central Oregon counties, Jefferson County had the highest rate of persons hospitalized for diabetes (Figure 56). It is important to note that persons with diabetes may not have diabetes listed as the cause of death. Mortality rates attributed to diabetes are likely underestimated because of the many complications/comorbidities that often accompany this condition (Rodrigueza, et al., 2019).

Want to learn more about diabetes and resources in Central Oregon?

CENTRAL OREGON HEALTH COUNCIL DIABETES RESOURCES:

HTTP://COHEALTHCOUNCIL.ORG/DIABETES-RESOURCES/

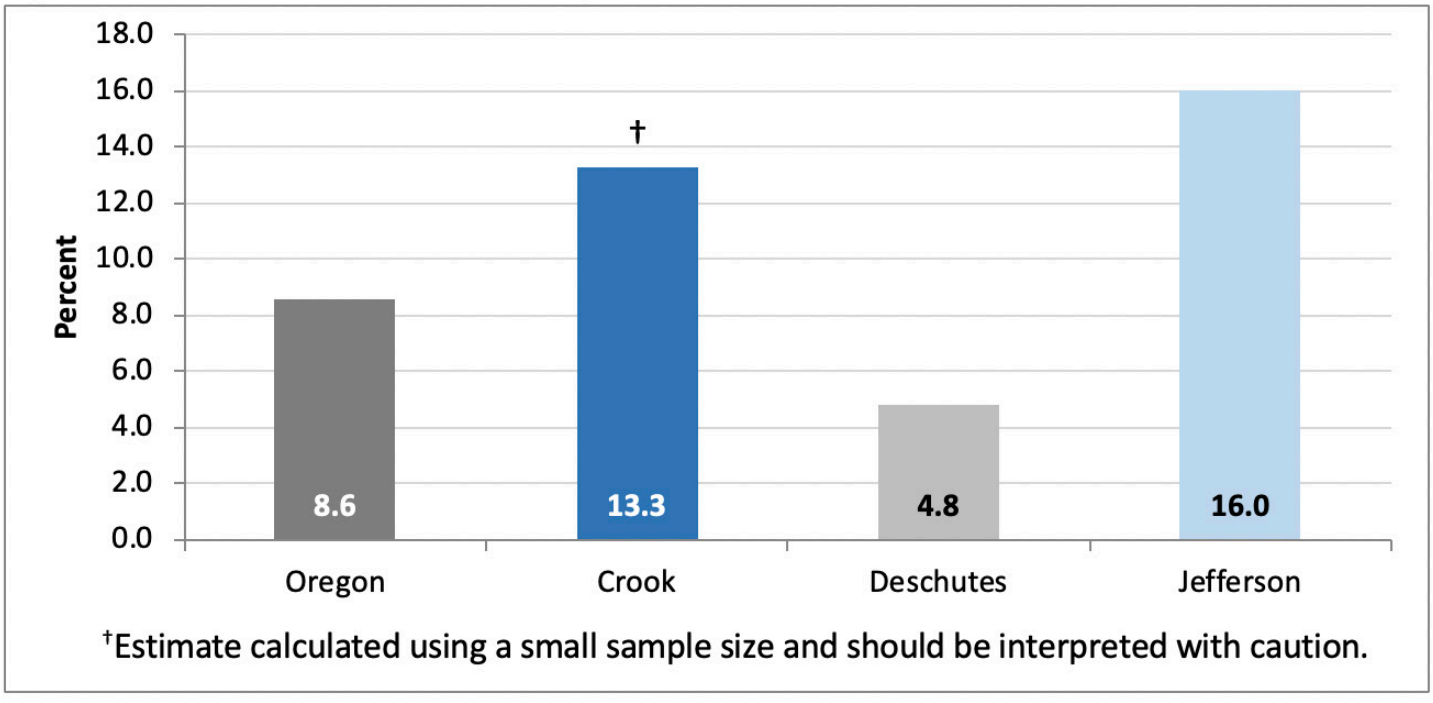
AMERICAN DIABETES ASSOCIATION:

WWW.DIABETES.ORG/

OREGON HEALTH AUTHORITY CHRONIC CONDITIONS:

WWW.OREGON.GOV/OHA/PH/DISEASESCONDITIONS/CHRONICDISEASE/

Figure 53. Prevalence of diabetes, Oregon BRFSS, 2012-2015.



†Estimate calculated using a small sample size and should be interpreted with caution.

Figure 54. Age-adjusted diabetes mortality rate per 100,000 population, OPHAT, 2009-2017.

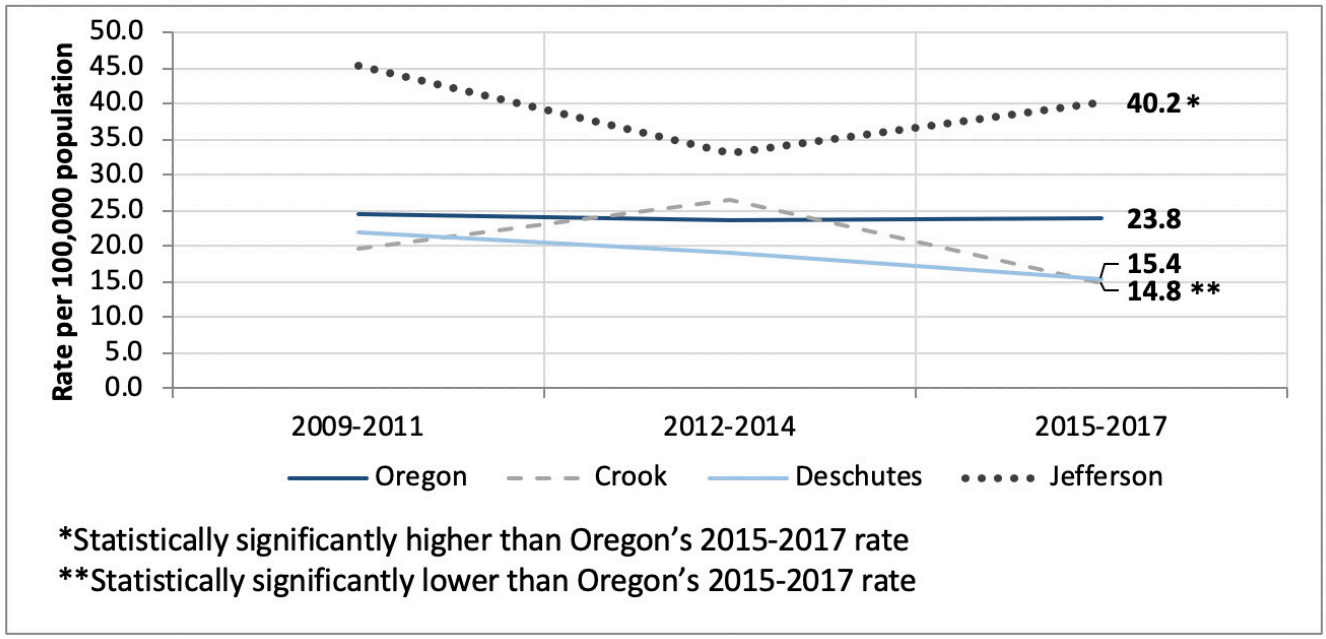


Figure 55. Age-adjusted diabetes mortality rate per 100,000 population by sex, OPHAT, 2013-2017

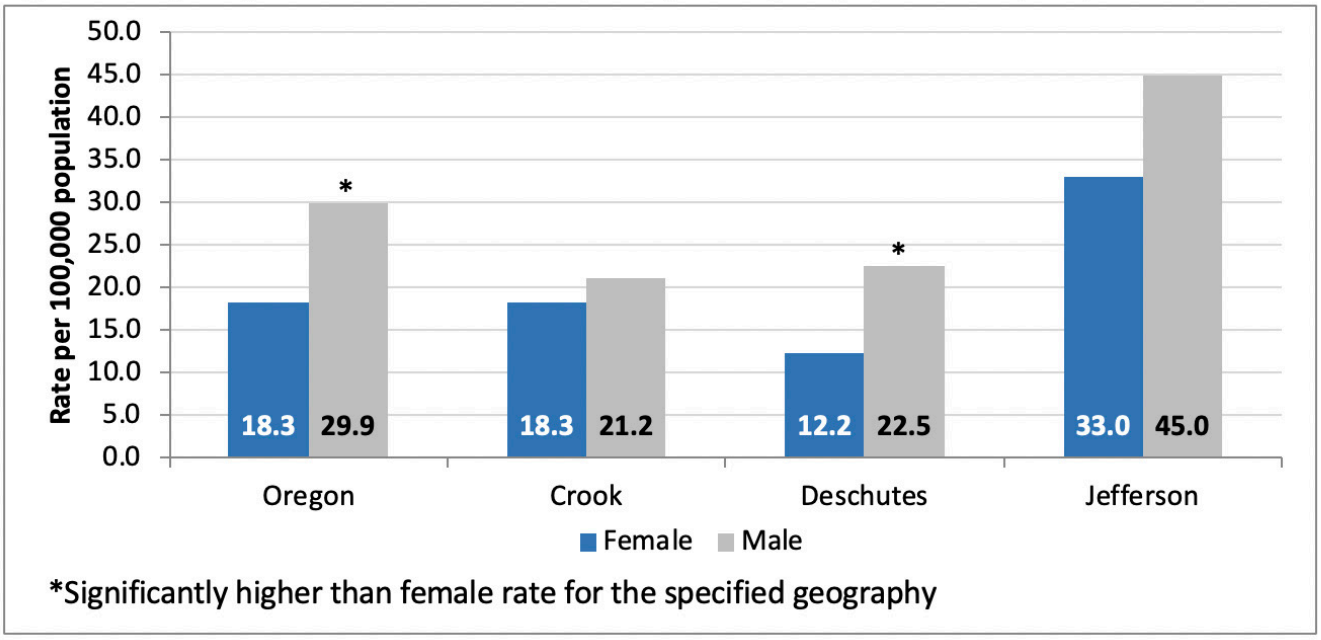
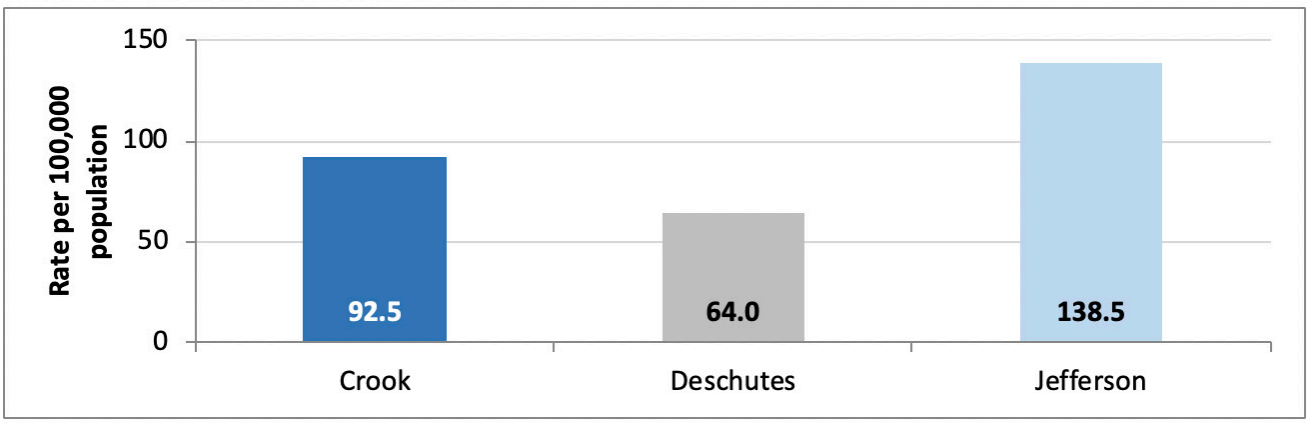


Figure 56. Age-adjusted rate of persons hospitalized for diabetes per 100,000 population, Oregon Hospital Discharges Dataset, 2016



CHRONIC DISEASE RISK FACTORS

Several factors increase a person's risk of developing a chronic (long-term) disease. While some people are genetically predisposed to developing a chronic disease, many other factors can be changed. These include avoiding tobacco, eating healthy, avoiding drinking too much alcohol, getting screened regularly for certain health conditions, becoming more physically active, getting enough sleep, and making healthy choices at work, school, and in the community (Centers for Disease Control and Prevention [CDC], 2018). All of these factors can impact health risks such as high body mass index (BMI). Additionally, individuals with significant and chronic mental health and substance use problems are particularly prone to develop one or more chronic diseases. For more information on substance use and health, please refer to the Alcohol, Tobacco, and Drug section.

Of the three Central Oregon counties, Crook County has the highest percentage of adults who have high blood pressure (48.8%), and who report no physical activity outside in the last month (29.3%). By comparison, in Oregon overall, 27.6% of people reported high blood pressure, and 16.8% reported no physical activity outside in the last month (Figure 57).

Tobacco cigarette smoke is associated with many chronic diseases and smoking causes more than 480,000 deaths per year in the US (Centers for Disease Control and Prevention [CDC], 2017). This equates to almost one in five deaths annually (Centers for Disease Control and Prevention [CDC], 2017). Cigarette smoking and even exposure to cigarette smoke can lead to a higher risk of heart disease, cancers, stroke, asthma, and other disease. In Oregon, 17.9% (age-adjusted) of adults currently smoke.

Want to learn more about chronic disease risk factors?

CENTER FOR DISEASE CONTROL AND PREVENTION CHRONIC DISEASE:

HTTPS://WWW.CDC.GOV/CHRONICDISEASE/ABOUT/INDEX.HTM

CENTER FOR DISEASE CONTROL AND PREVENTION ALCOHOL AND PUBLIC HEALTH:

WWW.CDC.GOV/ALCOHOL/INDEX.HTM

Within Central Oregon, a higher proportion of Crook County residents smoke (26.3%) compared to Oregon (17.9%), Deschutes County (17.3%), and Jefferson County (12.7%). In both Central Oregon and in Oregon, a higher proportion of males smoke compared to females (Figure 59). In addition, in both Oregon and in Central Oregon, a significantly higher proportion of adults living at or below the FPL smoke compared to the proportion of those living above the FPL (Figure 60). A higher proportion of people with a high school education or less smoke compared to college graduates (Figure 61).

Figure 57. Age-adjusted percent of adults who reported chronic disease risk factors, Oregon BRFSS, 2012-2015.

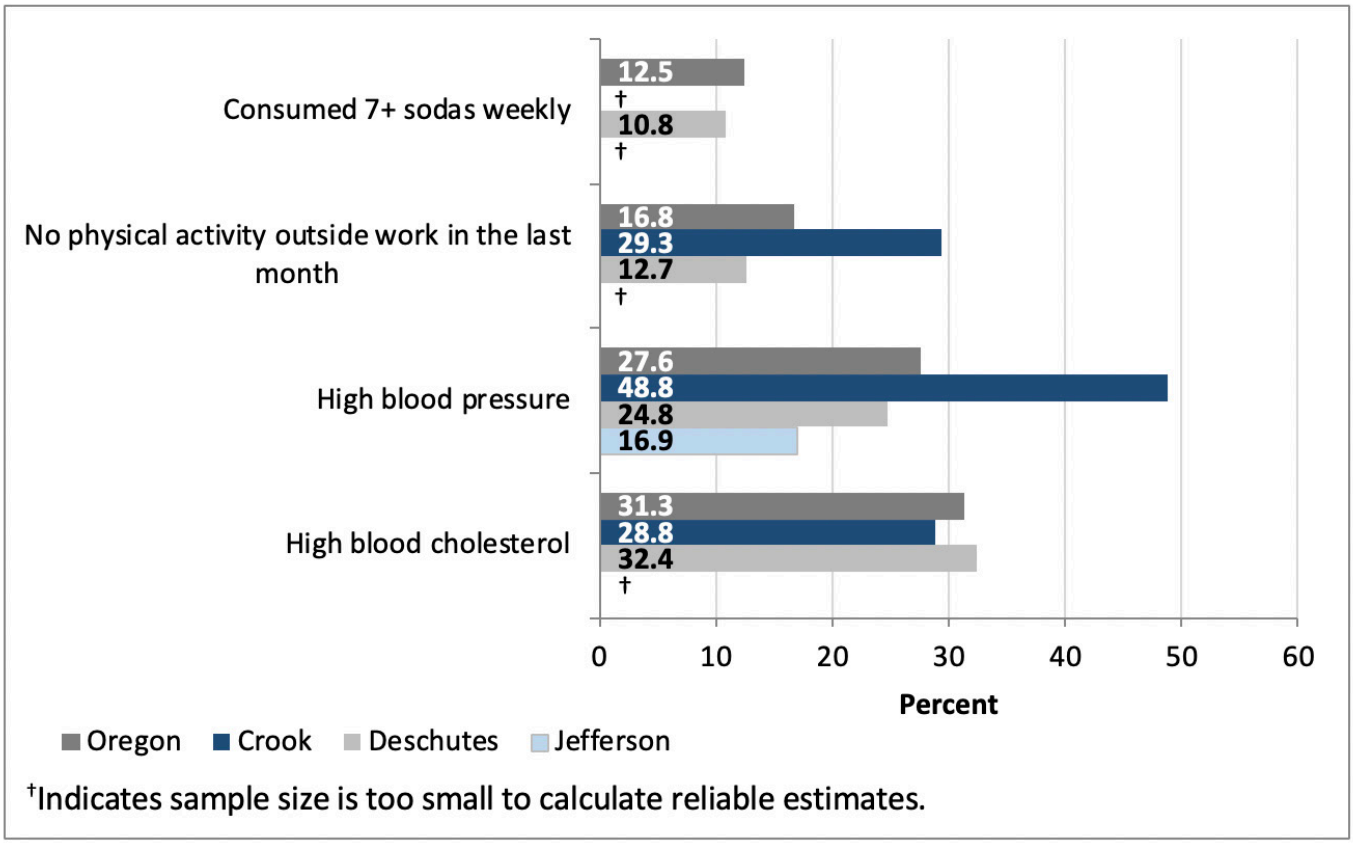


Figure 58. Age-adjusted percent of adults who currently smoke, Oregon BRFSS, 2012-2015.

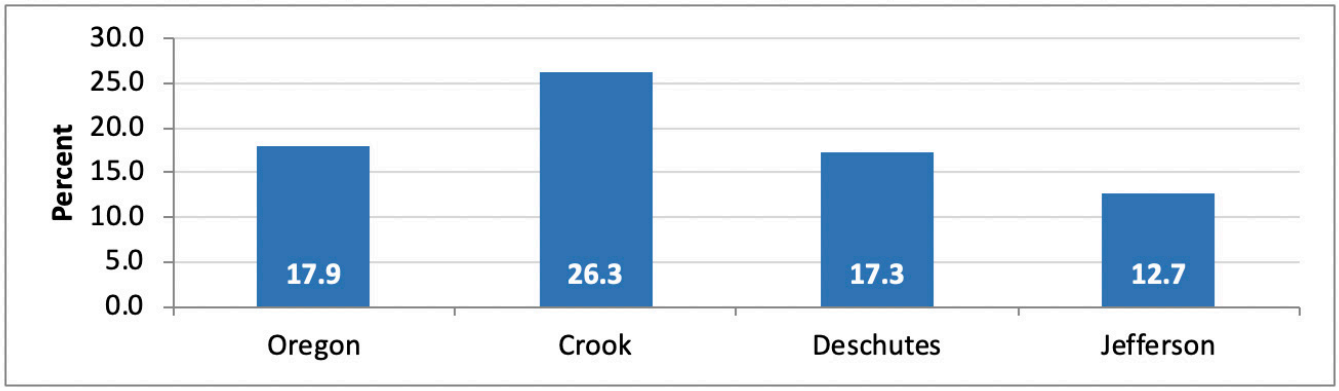


Figure 59. Age-adjusted percent of adults who currently smoke, by sex, Oregon BRFSS, 2012-2015

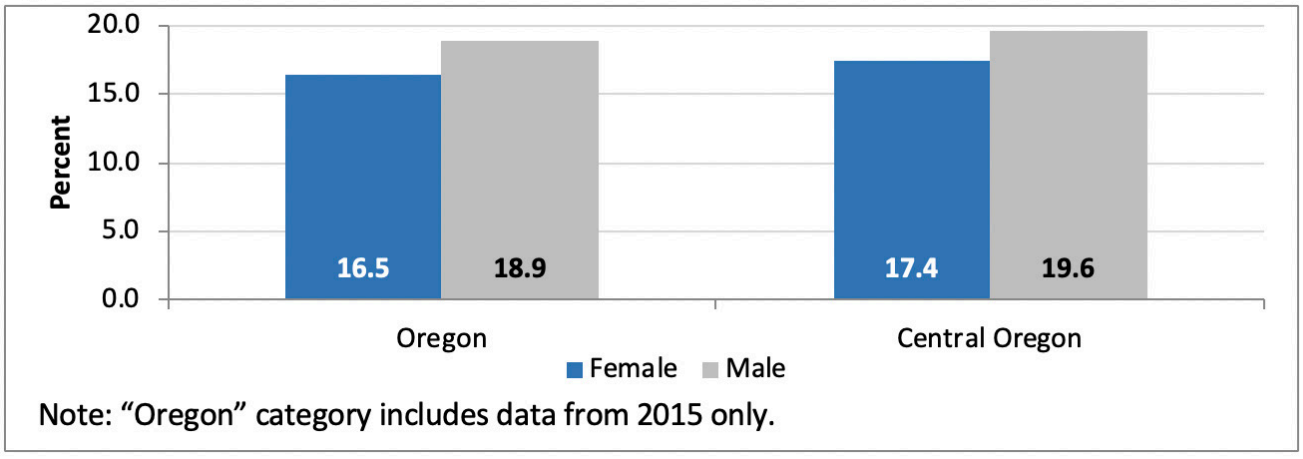
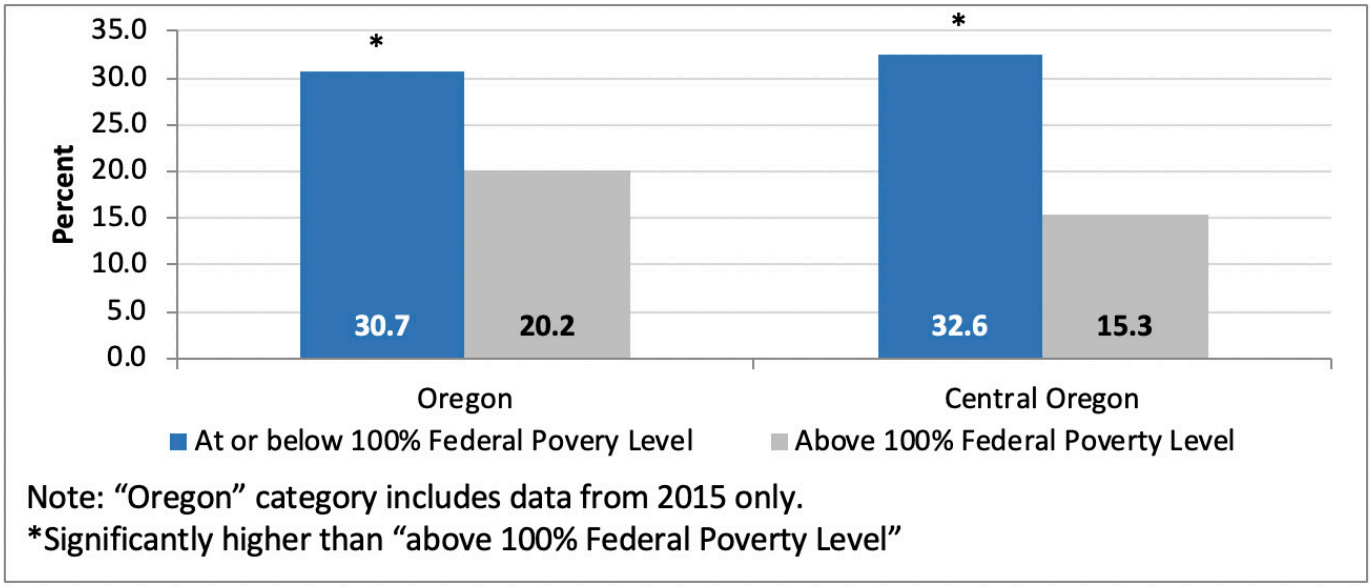
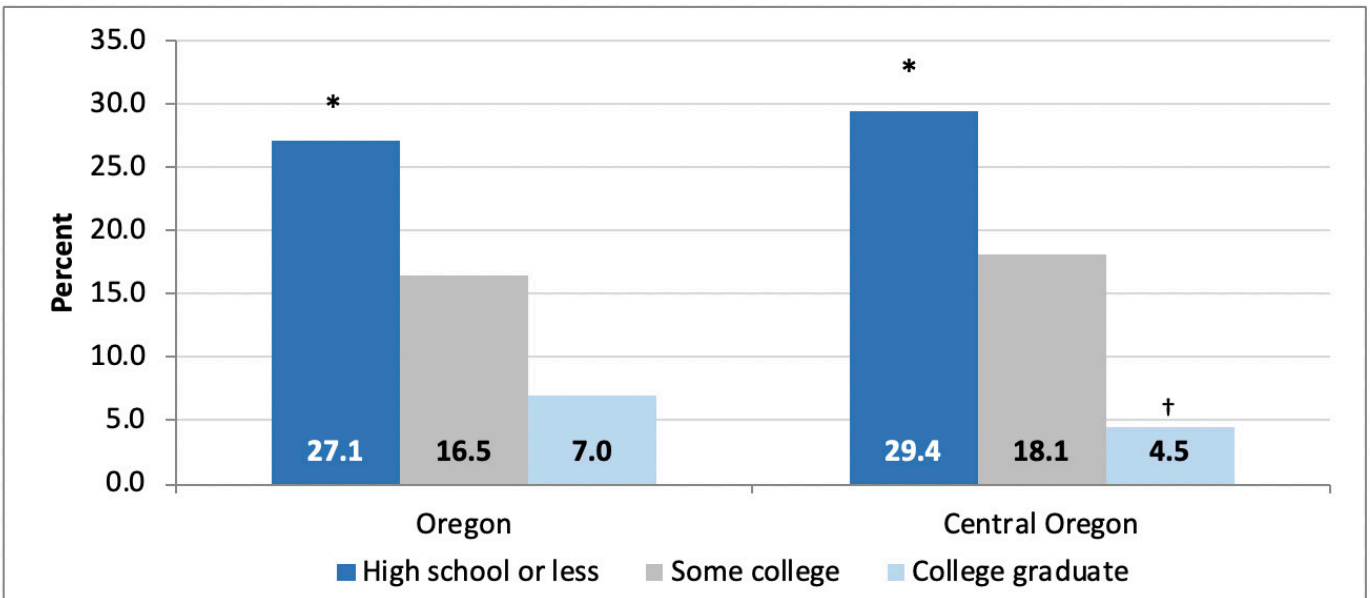


Figure 60. Age-adjusted percent of adults who currently smoke, by poverty status, Oregon BRFSS, 2012-2015



Note: "Oregon" category includes data from 2015 only.
*Significantly higher than "above 100% Federal Poverty Level"

Figure 61. Age-adjusted percent of adults who currently smoke, by education level, Oregon BRFSS, 2012-2015



Note: "Oregon" category includes data from 2015 only.
†Estimate calculated using a small sample size and should be interpreted with caution.
*Significantly higher than "Some college" and "college graduate" categories

Body Mass Index (BMI) is a number calculated from an individual's weight and height. BMI can be used as a screening tool to distinguish if an individual's weight might be putting that person at risk for chronic health conditions. Many chronic diseases are associated with being overweight (BMI between 25 and 29) or obese (BMI 30 or greater), including heart disease, cancer, diabetes, and stroke. In some populations, such as those living with serious and persistent mental illnesses (SPMI), are prone to living with higher BMI's, as SPMI can lead to sedentary lifestyles and lower levels of physical activity.

Approximately 73% of Jefferson County residents are classified as overweight, compared to about 55% of Deschutes County residents (Figure 62). In Central Oregon and in Oregon, a larger proportion of males than females are classified as obese (Figure 63). In Central Oregon, a significantly higher proportion of those living at or below the FPL are classified as obese compared to the proportion among those above the FPL (Figure 64). In Oregon and in Central Oregon, a significantly lower proportion of college graduates are classified as obese, compared to the proportion of those with "some college" or "high school or less" (Figure 65).

Figure 62. Age-adjusted percent of adults who are classified as overweight and obese, Oregon BRFSS, 2012-2015.

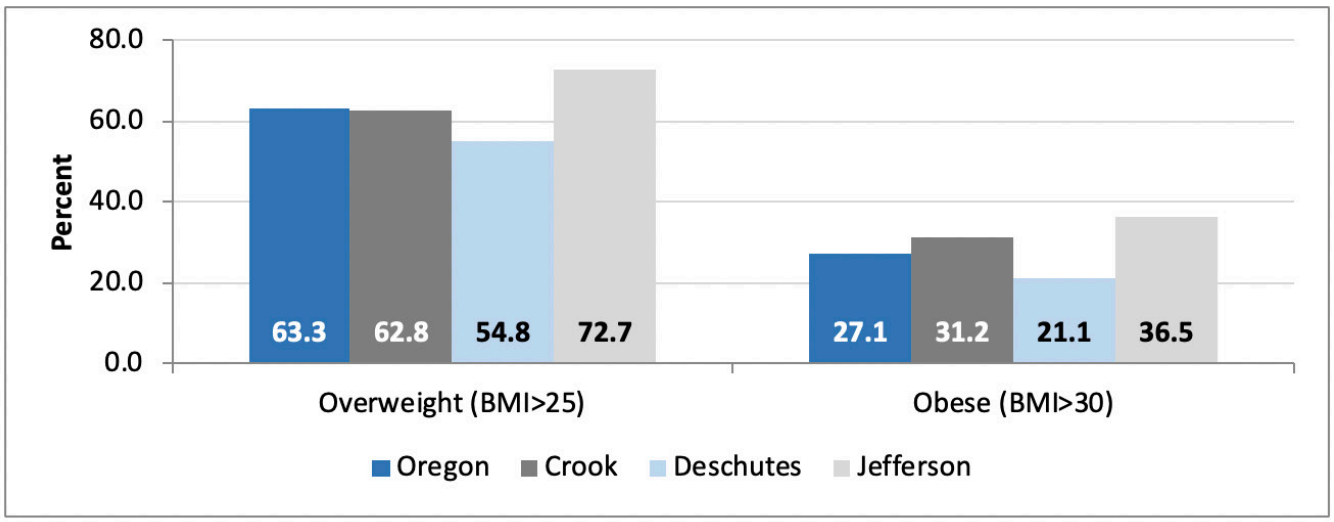
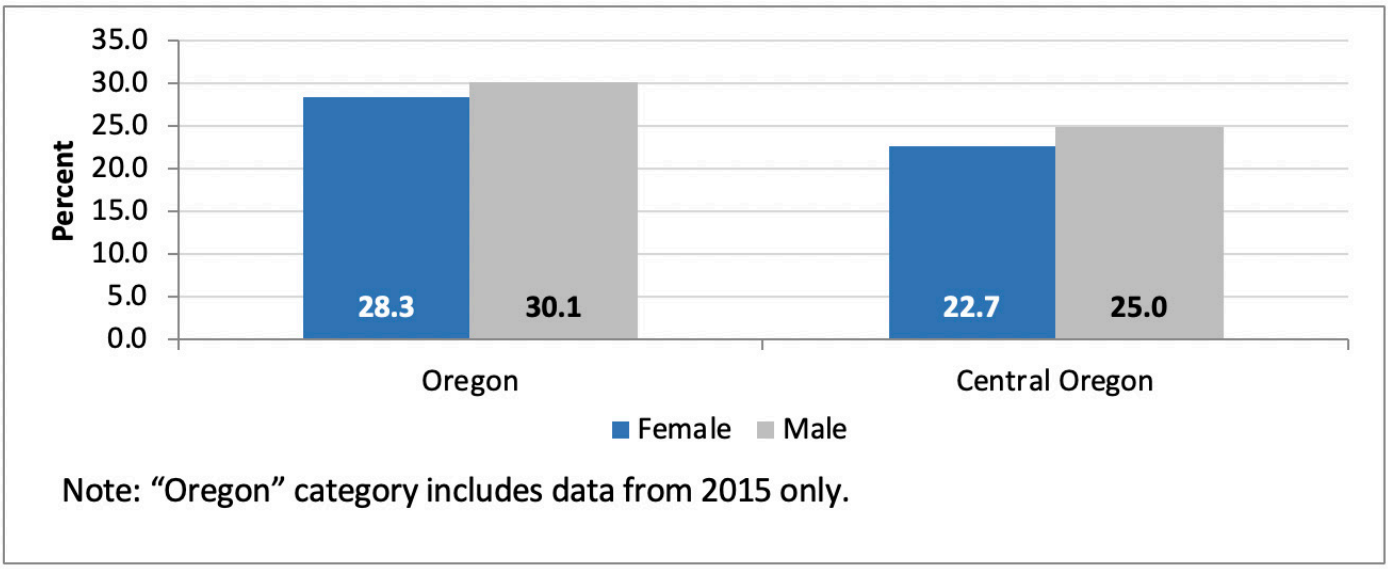
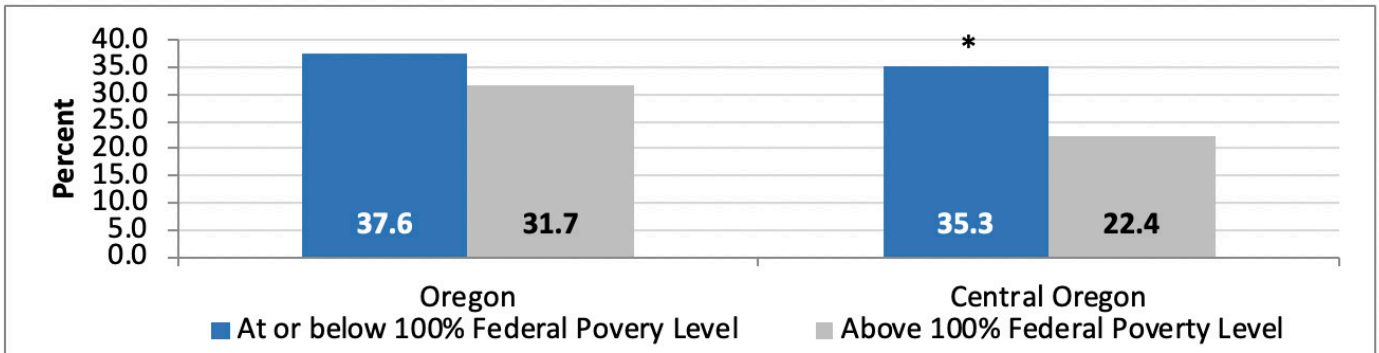


Figure 63. Age-adjusted percent of adults who are classified as obese, by sex, Oregon BRFSS, 2012-2015



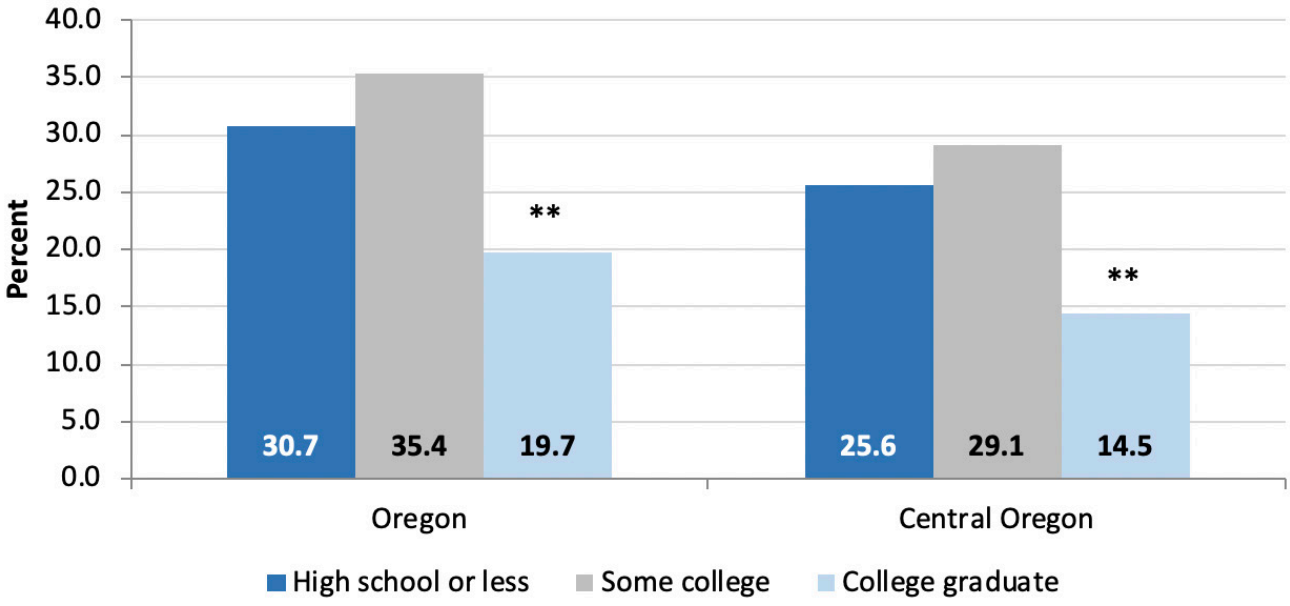
Note: "Oregon" category includes data from 2015 only.

Figure 64. Age-adjusted percent of adults who are classified as obese, by poverty status, Oregon BRFSS, 2012-2015



Note: "Oregon" category includes data from 2015 only.
*Significantly higher than "above 100% Federal Poverty Level" group for the specified geography

Figure 65. Age-adjusted percent of adults who are classified as obese, by education level, Oregon BRFSS, 2012-2015



Note: "Oregon" category includes data from 2015 only.
**Significantly lower than "High school or less" and "Some college" categories

CHRONIC DISEASE SCREENINGS

According to the Centers for Disease Control and Prevention [CDC] (2019), six in ten Americans are living with at least one chronic disease. Screenings potentially prevent chronic disease and chronic disease severity by helping detect disease earlier. This allows for early intervention and treatment and may help avoid the disease altogether. Examples of preventive screenings for chronic diseases include, but are not limited to: monitoring blood cholesterol or blood pressure to help decrease risk of heart disease and stroke, the PAP test for cervical cancer, HbA1c for pre-diabetes or diabetes, mammograms for breast cancer, fecal occult blood test or colonoscopy for colorectal cancer, total body skin check for melanoma, as well as chronic disease risk factor screens for mental health status, alcohol use, and other substance use.

Of the three Central Oregon counties, Crook County had the highest age-adjusted proportion (89.5%) of residents who had a cholesterol check (Figure 66), but the lowest proportion (55.2%) of residents who had a mammogram in the last two years. By comparison, 72.8% (age-adjusted) of people in Oregon overall had a cholesterol check in the last five years, and 75.5% had a mammogram. The Deschutes and Jefferson County percentages are similar to Oregon overall. For colorectal cancer screenings, a lower proportion of Crook (57.0%) and Jefferson County (51.4%) residents are current for colorectal cancer screenings compared to Oregon as a whole (64.8%) (Figure 67).

Figure 66. Age-adjusted prevalence of having had a cholesterol check in the last 5 years, Oregon BRFSS 2012-2015.

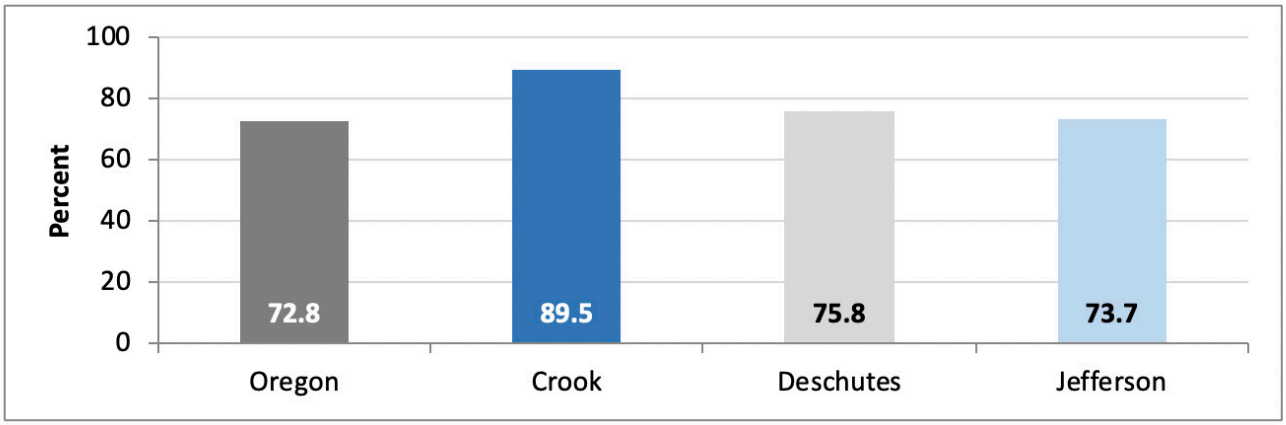
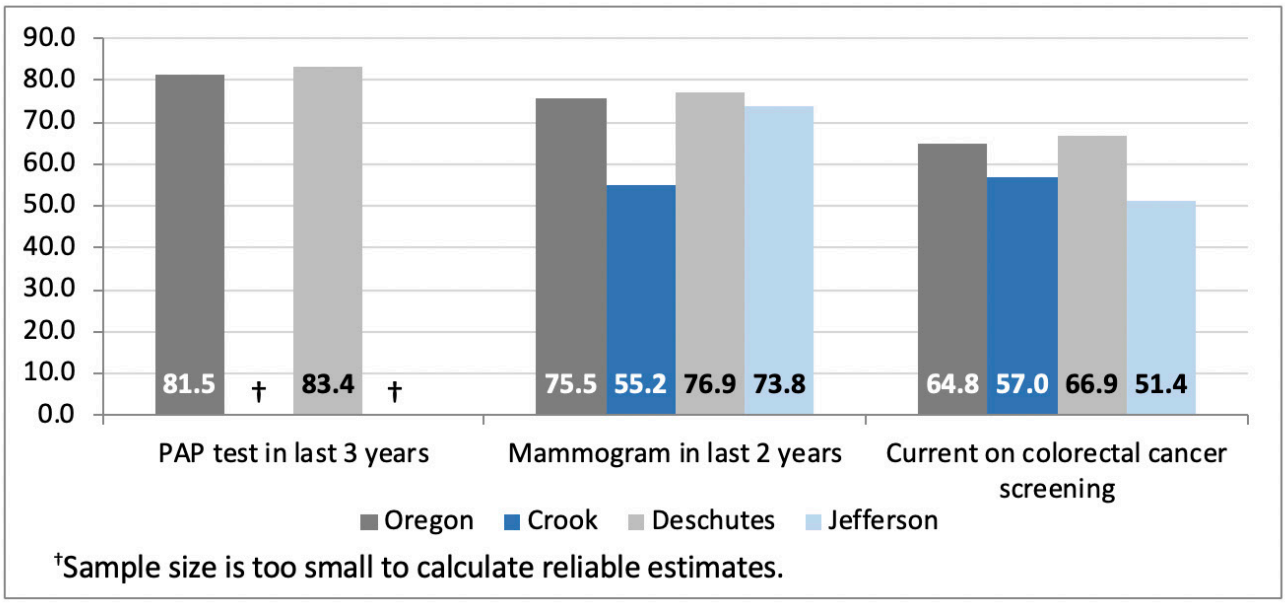


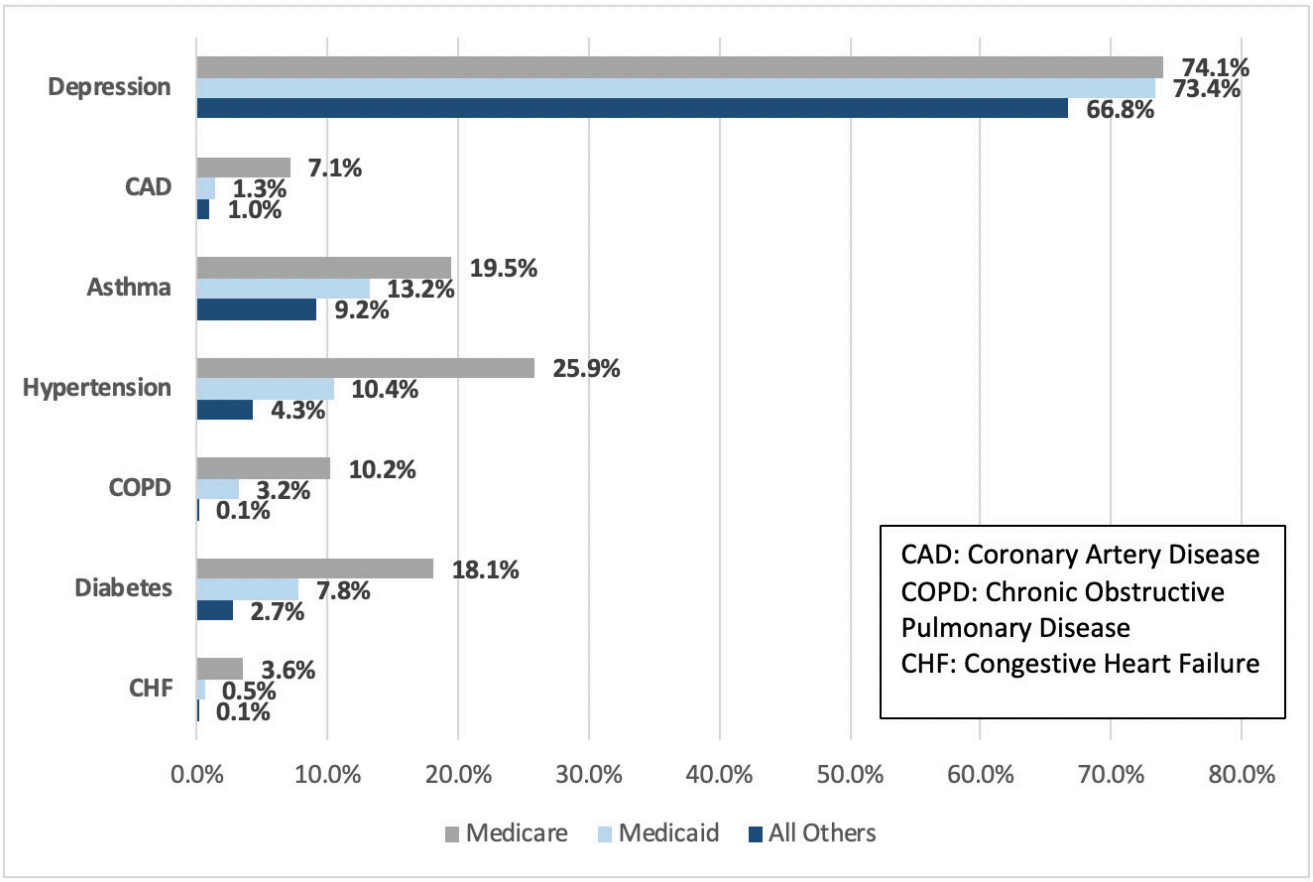
Figure 67. Age-adjusted prevalence of having received select cancer screenings, Oregon BRFSS 2012-2015.



MENTAL HEALTH AND CHRONIC CONDITION COMORBIDITIES

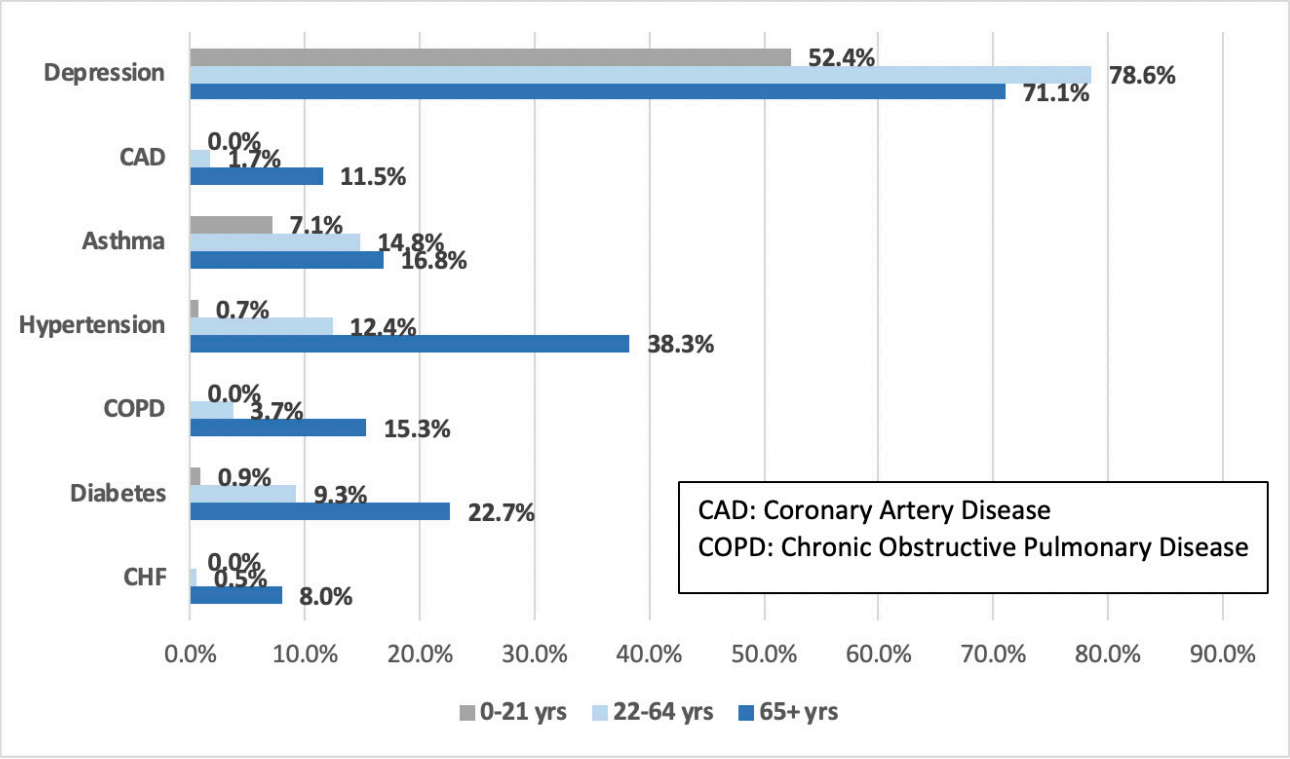
Mental health is important to an individual's well-being, ability to live a full life and maintain healthy interpersonal relationships (HealthyPeople.gov, 2019). Poor mental health can be associated with many chronic diseases, including cardiovascular disease, diabetes, asthma, and arthritis, among others. Everyday mental health care is just as important as everyday physical health care. In addition, chronic conditions are typically associated with behavioral health concerns. Individuals with untreated mental health conditions are often at higher risk for unsafe and unhealthy behaviors, such as violence, suicide, poor nutrition, physical inactivity, and/or alcohol/drug use. For more information about mental health, please reference the mental health section.

Figure 68. Percent of PacificSource Central Oregon members with severe and persistent mental illness who also have other chronic conditions, 2015-2017, by Medicare, Medicaid and all other lines of business



Depression is the most common comorbid (two or more diseases or conditions occurring at the same time) condition among PacificSource Central Oregon members with severe and persistent mental illness (SPMI). For example, among PacificSource Central Oregon Medicaid members who have a SPMI, 73% also have depression (Figure 68). Among PacificSource Central Oregon members with a SPMI who are aged 22-64 years, 78.6% also have depression (Figure 69).

Figure 69. Percent of PacificSource Central Oregon members with severe and persistent mental illness who also have other chronic conditions, 2015-2017, by age group



BRANDON NIXON PHOTO

COMMUNICABLE DISEASES

Communicable disease refers to infectious diseases that are caused by pathogenic microorganisms, such as bacteria and viruses. Communicable diseases can be transmitted from one person to another or can spread from an animal to an individual. Diseases can be spread in different ways, including contact with bodily fluids, through touch, through the air, and through insect or animal bites (American Public Health Association, 2018). Public health officials track infections that are important to population health in order to help stop their spread. Public health surveillance helps monitor outbreaks and disease burden, describes the burden of new or emerging disease, and locates and informs people exposed to a communicable disease.

IMMUNIZATIONS

Immunizations are one way to help prevent contracting a communicable disease by helping make people more resistant to the disease. This typically occurs through the

Want more information about immunizations?

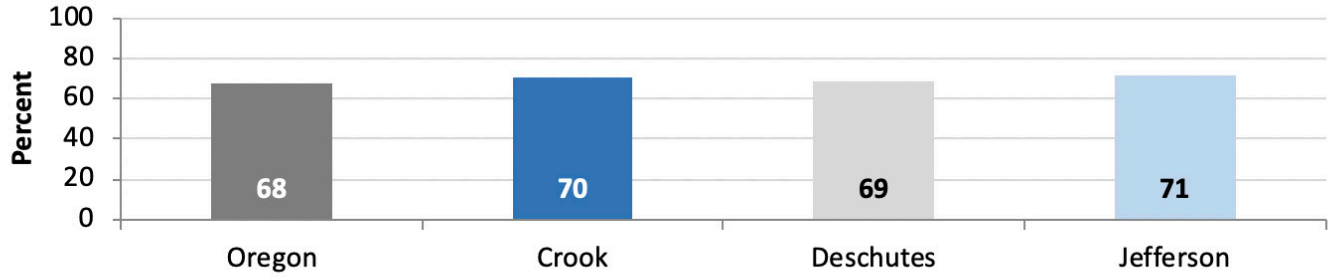
CENTER FOR DISEASE CONTROL AND PREVENTION VACCINES:

WWW.CDC.GOV/VACCINES

OREGON HEALTH AUTHORITY VACCINES AND IMMUNIZATIONS:

WWW.OREGON.GOV/OHA/PH/PREVENTIONWELLNESS/VACCINESIMMUNIZATION

Figure 70. Two-year-old up-to-date immunization rates, ALERT, Oregon, 2017



Note: Up-to-date rates refer to the 4:3:1:3:3:1:4 series of immunizations, which includes 4 DTaP, 3 Polio, 1 MMR, 3 HepB, 3 Hib, 1 Varicella, and 4 PCV.

application of a vaccine. Vaccinations work by stimulating an individual's immune system to help protect them from potential infection or disease in the future. Immunizations are a proven way to control and eliminate life-threatening infectious diseases in communities.

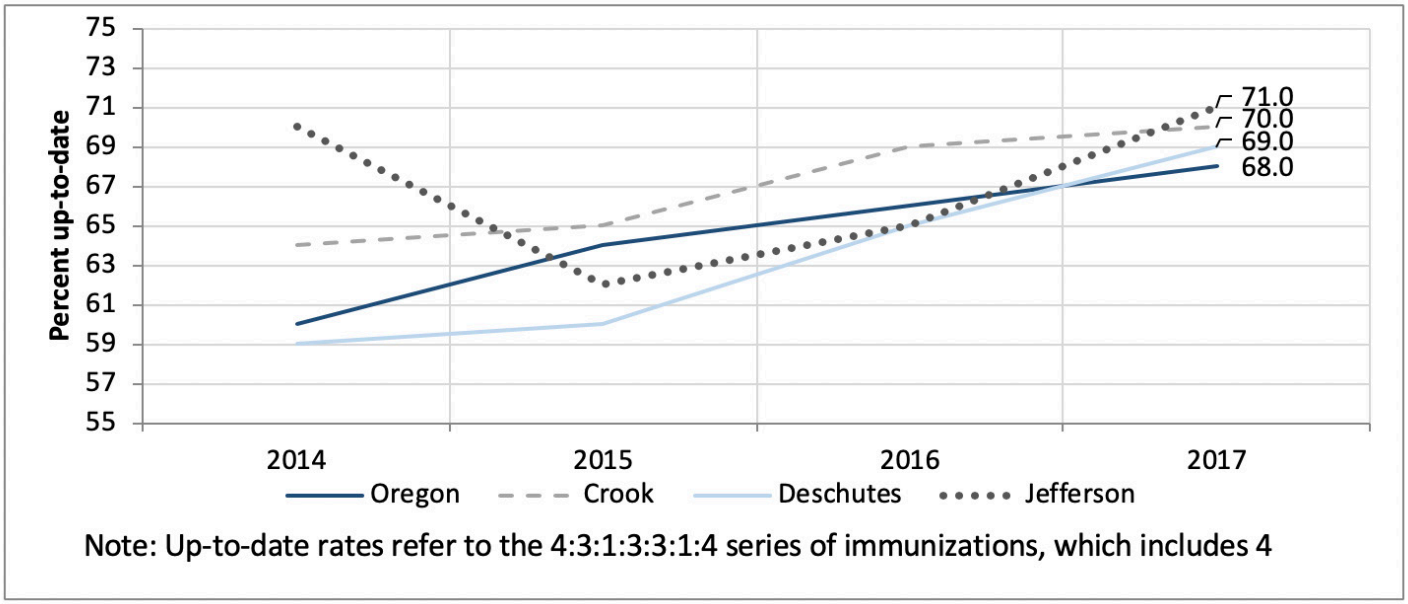
The two-year-old up-to-date immunization rate in Oregon is 68%, which is lower than the rates in Crook (70%), Deschutes (69%), and Jefferson (71%) Counties. Two-year-old immunization rates have increased over the past three years in all three Central Oregon counties (Figure 70). For adolescents, Jefferson County has higher immunization rates for Tdap, meningococcal, HPV, and influenza, than Crook, Deschutes, and Oregon overall. Across all three Central Oregon counties, less than 25% of all adolescents received a flu vaccine during the 2016-2017 flu season (Figure 72).

VACCINE PREVENTABLE DISEASES

Despite having a vaccine available, the diseases below still occur throughout Central Oregon.

- Influenza (flu) is a vaccine-preventable disease that causes mild to severe respiratory illness. In the United States, thousands of influenza-associated deaths occur each year. The severity of influenza varies year-to-year depending on what versions of the virus are spreading, the timing of flu season, and how well the vaccine matches the viruses that are causing illness. Another key factor is how many people are vaccinated.
- Between 2008 and 2017, the incidence rates of Haemophilus influenzae, a bacterial infection, in Central Oregon was the same as the Oregon rate (1.8 per 100,000 population) (Table 17). The rate of meningococcal disease was similar in Central Oregon (1.1 per 100,000 population) and Oregon (0.7 per 100,000 population) (Table 17).
- Between 2008 and 2017, the incidence rate of Pertussis (whooping cough) was significantly lower in Central Oregon (7.8 per 100,000 population) than in Oregon overall (11.2 per 100,000 population) (Table 17). Over the past ten years, pertussis cases peaked in Central Oregon in 2014 (66 cases) and have since decreased (Figure 73).
- Other vaccine-preventable diseases are not shown here because they occur infrequently.

Figure 71. Two-year-old up-to-date immunization rates, ALERT, Oregon, 2014-2017



Note: Up-to-date rates refer to the 4:3:1:3:3:1:4 series of immunizations, which includes 4

Figure 72. Adolescent (aged 13-17 years) immunization rates by type of vaccine, ALERT, Oregon, 2017.

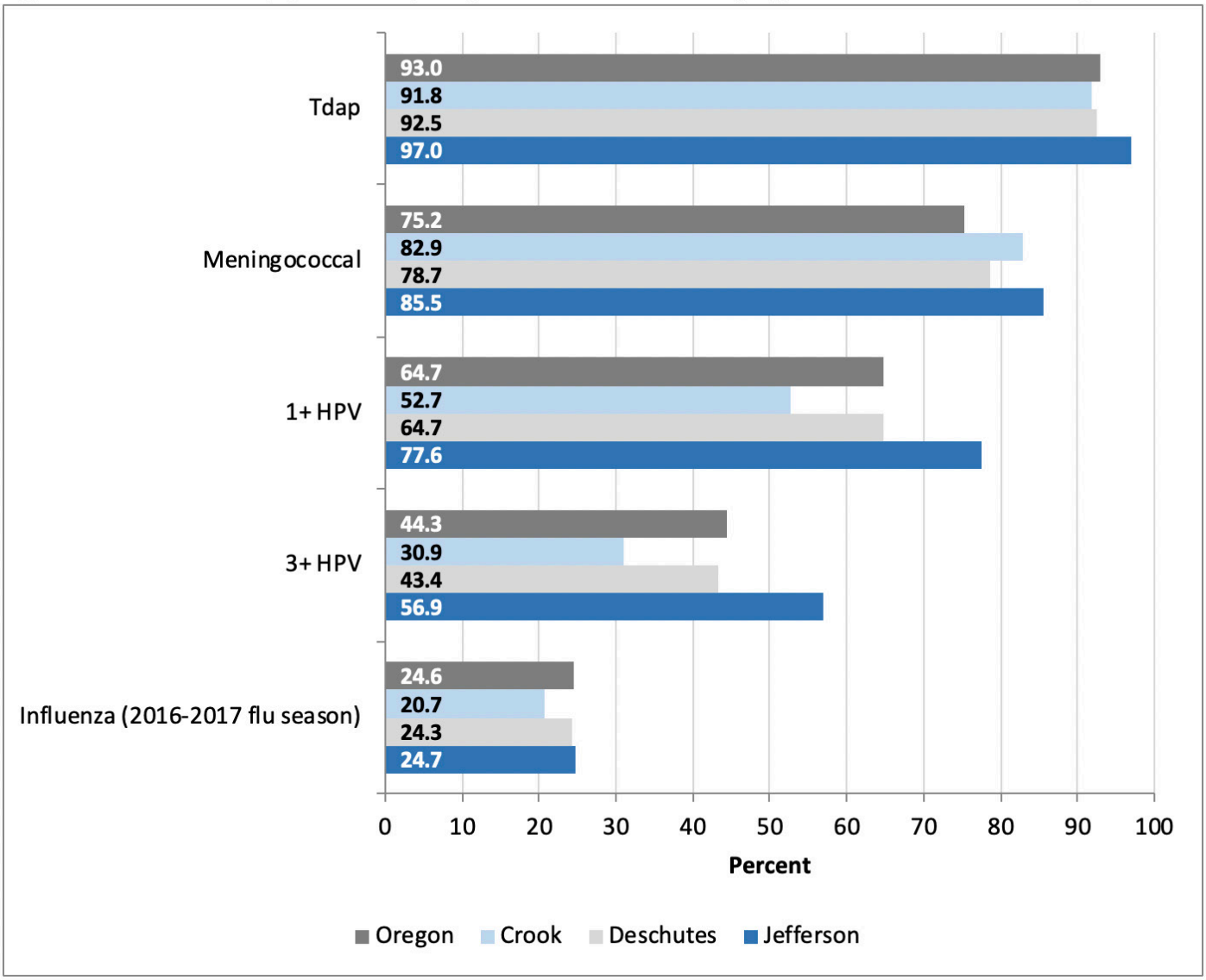
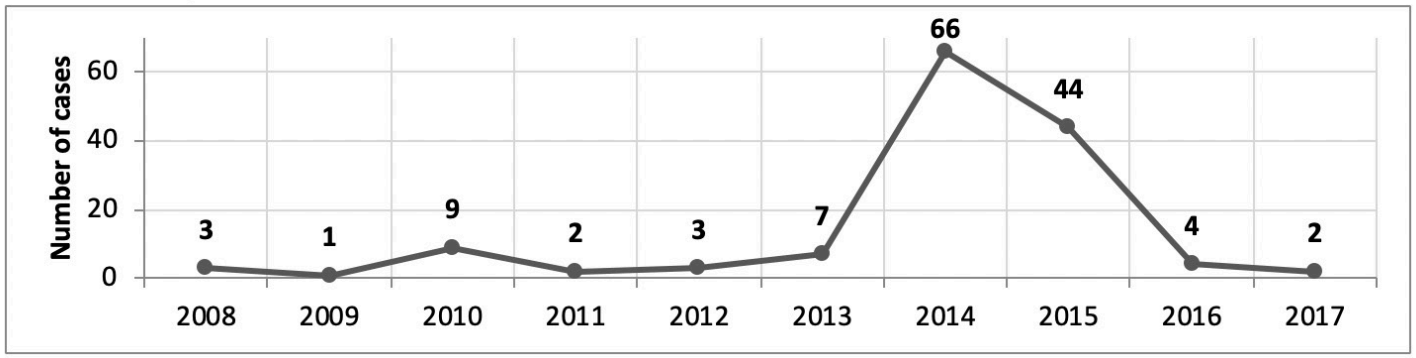


Table 17. Age-adjusted rate per 100,000 population of select vaccine-preventable diseases, OPHAT, 2008-2017

	Oregon Rate per 100,000 (# of cases)	Central Oregon Rate per 100,000 (# of cases)
Haemophilus influenzae	1.8 (802)	1.8 (42)
Meningococcal disease	0.7 (276)	1.1 (20)
Pertussis (whooping cough)	11.2 (3,872)	7.8 (144)

Significantly lower than Oregon rate

Figure 73. Annual number of pertussis cases, ORPHEUS, Central Oregon counties (Crook, Deschutes, and Jefferson), 2008-2017



HEPATITIS

Hepatitis is a disease that is characterized by inflammation of the liver. There are five main hepatitis viruses, labeled as type A, B, C, D, and E. The most common in the United States are hepatitis A, B, and C. Some hepatitis viruses are spread through sexual activity, others via contact with blood or items contaminated with blood, and some are spread through contaminated food and water. While hepatitis A, B, and C can be acute infections, hepatitis B and C can progress into a serious, lifelong chronic disease and can lead to cirrhosis and liver cancer (WHO, 2018). Hepatitis A and B can be prevented with a vaccine. Although there is no vaccine for hepatitis C, treatment options are available, and it can be cured.

Central Oregon's rate of chronic hepatitis B (4.0 per 100,000 population) and chronic hepatitis C (118.0 per 100,000 population) were significantly lower than Oregon as a whole (Table 18).

"People who inject need better access to naloxone and sterile syringes so that they can keep themselves and their community safer and alive. Making supplies more readily available to help reduce harm associated with drug injection prevents disease and death."

- Deschutes County Syringe Exchange Program

Table 18. Age-adjusted rate per 100,000 population of hepatitis, OPHAT, 2008-2017		
	Oregon Rate per 100,000 (# of cases)	Central Oregon Rate per 100,000 (# of cases)
Hepatitis A	0.5 (187)	0.5 (12)
Hepatitis B (acute)	0.9 (343)	0.6 (12)
Hepatitis B (chronic)	11.6 (4,598)	4.0 (87)
Hepatitis C (acute)	0.7 (245)	0.6 (11)
Chronic Hepatitis C (past or present)	128.2 (54,752)	118.0 (2,754)
	Significantly lower than Oregon rate	

SEXUALLY TRANSMITTED INFECTIONS

Sexually Transmitted Infections (STIs) are preventable with proper precautions, testing, and can be managed with appropriate testing and treatment. STIs are generally spread through sexual contact but can also be spread by other contacts with infected bodily fluids (WHO, 2016). Clinicians and public health staff work diligently to stop the spread of STIs via screening and helping patients with partner notification. In Oregon, the use of expedited partner therapy allows a patient to provide medication to their sexual partners without a health care provider first examining the partner.

Chlamydia is the most commonly reported STI in the United States and in Central Oregon. If left untreated, Chlamydia can lead to infertility and tubal pregnancy. From 2008 to 2017, chlamydia rates increased in both Oregon and Central Oregon, and in 2017 Jefferson County's chlamydia incidence rate was significantly higher than Oregon's (Figure 74). For the 15-39-year-old age groups in Jefferson County and 18-19-year-old age group in Deschutes County, the chlamydia incidence rate was significantly higher than Oregon's age-specific rates. Deschutes County's chlamydia incidence rate among the 25-39-year-olds was significantly lower than the Oregon age-specific rate (Figure 75). Across Oregon and in all three Central Oregon counties, the incidence rate for chlamydia was significantly higher among females than among males, and in Jefferson County, the chlamydia incidence rate in females was nearly double Oregon's female rate (Figure 76).

Want more information about STIs? ?

CENTER FOR DISEASE CONTROL AND PREVENTION STDS:

WWW.CDC.GOV/STD

AMERICAN SEXUAL HEALTH ASSOCIATION:

HTTP://WWW.ASHASEXUALHEALTH.ORG/STDSSTIS/

Figure 74. Age-adjusted chlamydia incidence rate per 100,000 population, OPHAT, 2008-2017

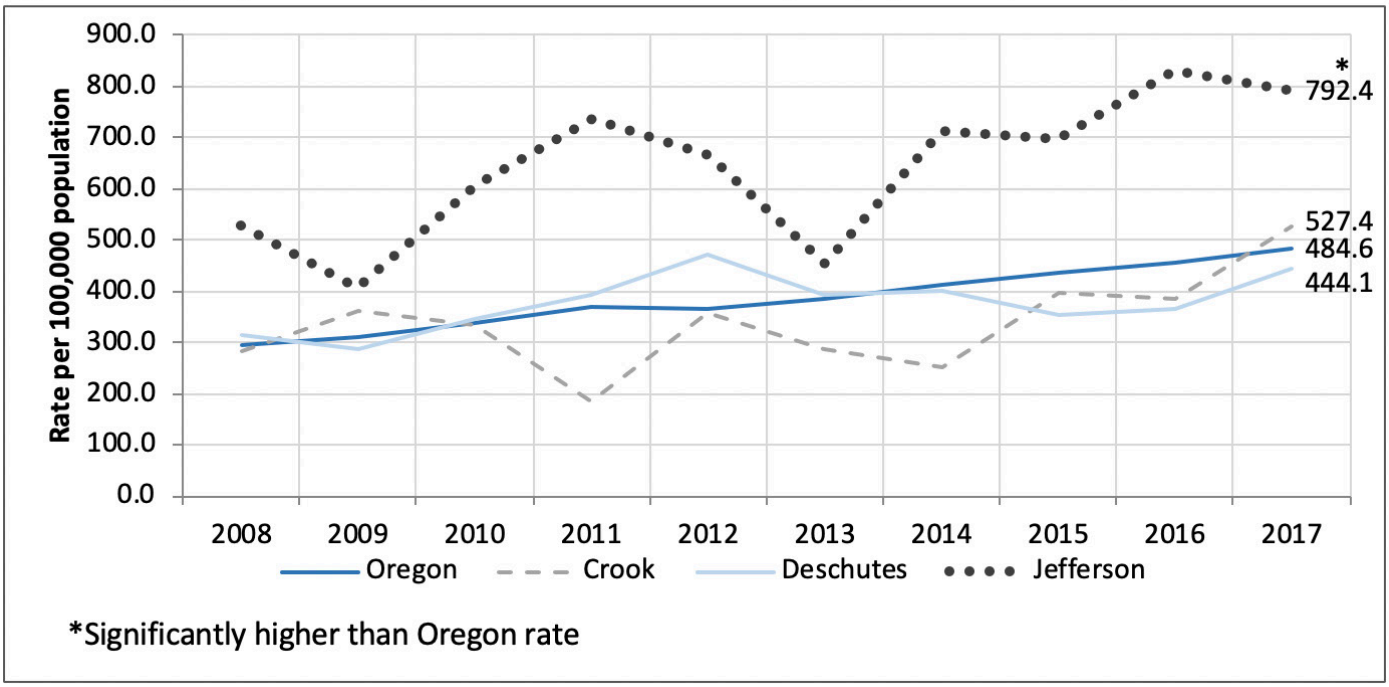


Figure 75. Chlamydia incidence rate per 100,000 population by age group, OPHAT, 2013-2017.

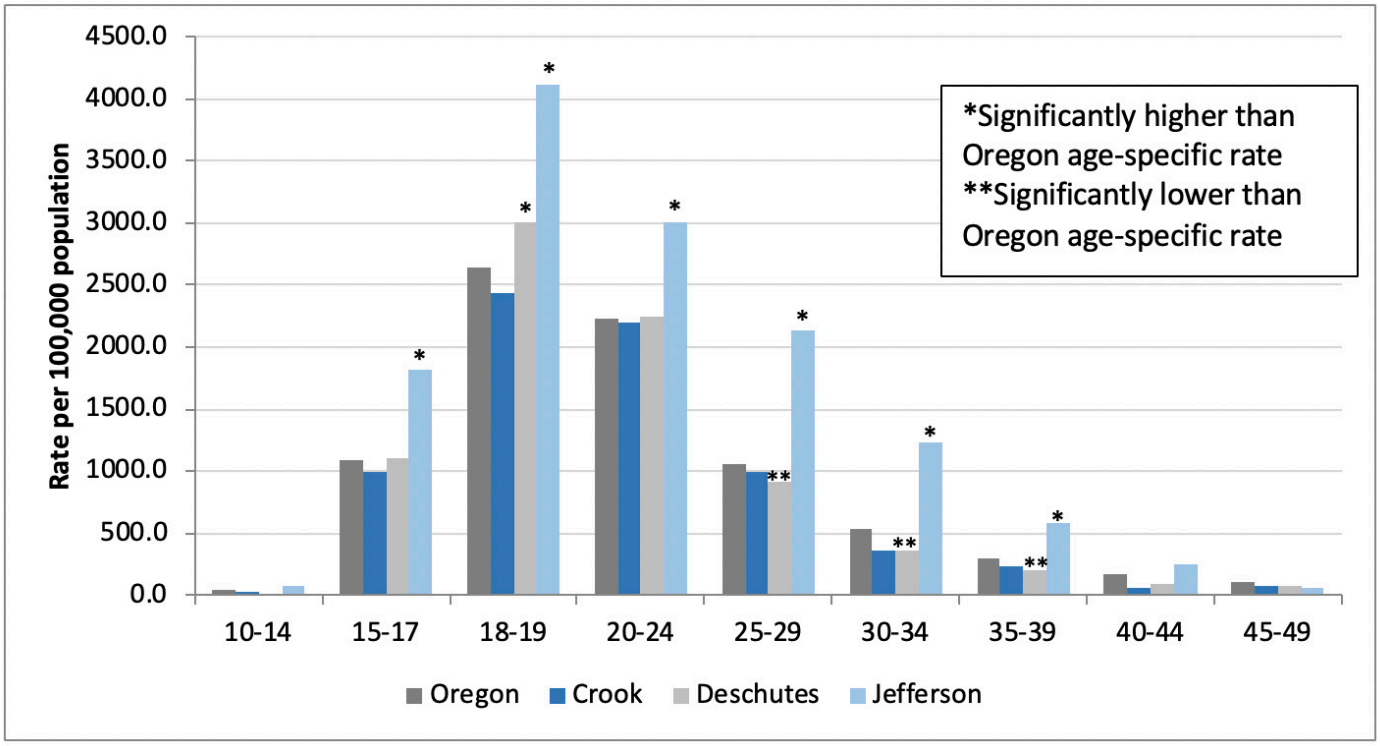
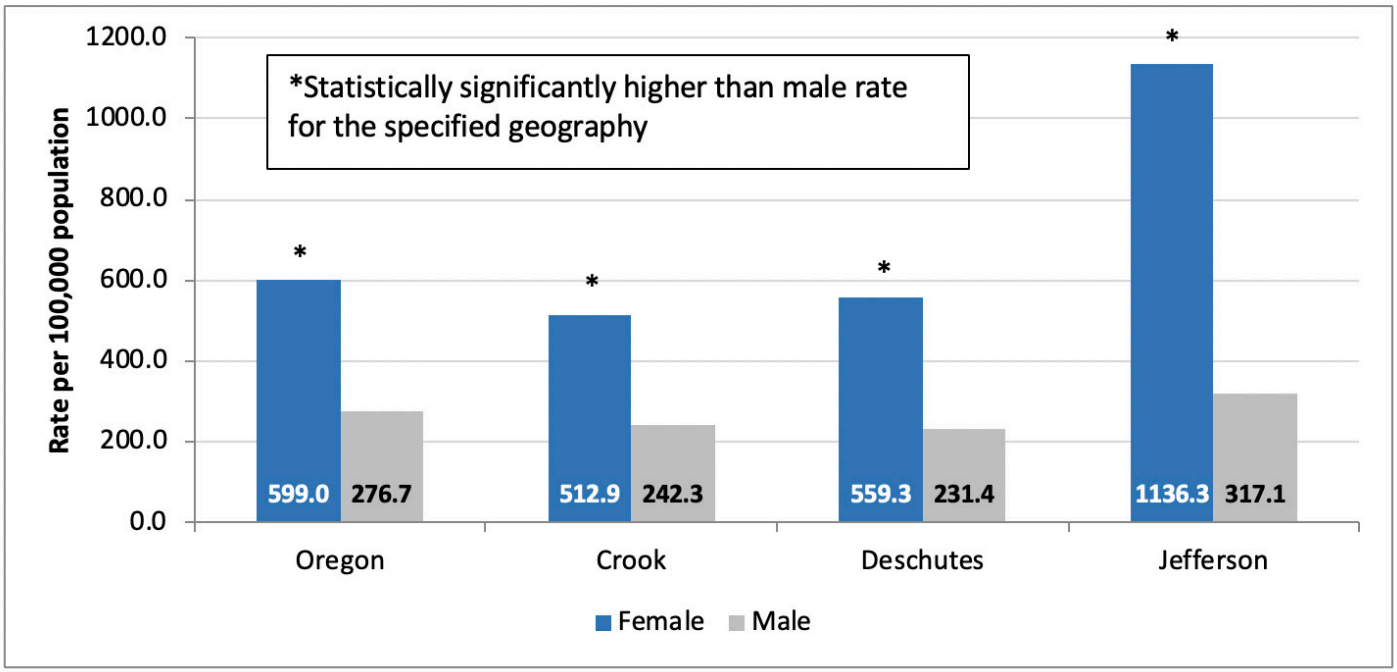


Figure 76. Age-adjusted chlamydia incidence rate per 100,000 population by sex, OPHAT, 2013-2017



Gonorrhea is another common STI that is readily treatable yet has serious long-term effects (pelvic inflammatory disease, ectopic pregnancy, infertility) if left untreated. Both chlamydia and gonorrhea can be present without symptoms, so women and men with specific risks should be tested annually. Oregon's gonorrhea rate was 87.7 per 100,000 population, which is higher than the Crook (65.9 per 100,000 population) and Deschutes County (29.4 per 100,000 population) rates, but lower than the Jefferson County rate (119.7 per 100,000 population). Jefferson County's rate was significantly higher than Oregon's rate, and Deschutes County's rate was significantly lower (Figure 77). In addition, in Jefferson County, the gonorrhea incidence rate among females was significantly higher than among males. In Deschutes County and across Oregon as a whole, the male rate was higher than the female rate (Figure 79). When broken down by age, the gonorrhea incidence rate in the 20-49-year-old age groups in Central Oregon was significantly lower than the Oregon age-specific rate (Figure 78).

Syphilis is a rare but serious STI. The number of new syphilis cases has been increasing in Central Oregon since 2012 (Figure 80). Like gonorrhea, syphilis has serious long-term effects if left untreated (dementia, paralysis, severe headaches, blindness).

Human Immunodeficiency Virus (HIV) is transmitted via infected bodily fluids, such as blood, semen, vaginal secretions, and breast milk. If not appropriately treated, HIV can lead to the development of Acquired Immune Deficiency Syndrome (AIDS) and is a serious chronic disease that makes a person susceptible to many other infections and diseases. Over the past ten years, there were 55 new HIV cases diagnosed among Central Oregon residents. The number of newly diagnosed HIV cases per year in Central Oregon has ranged from 2 in 2015 to 9 in 2017 (Figure 83). Nearly a quarter (23.7%) of Central Oregonians living with diagnosed HIV are over 60 years of age, and only 4.5% are younger than 30 years old (Figure 81). Most (85.3%) Central Oregonians living with diagnosed HIV are male (Figure 82).

Figure 77. Age-adjusted gonorrhea incidence rate per 100,000 population, OPHAT 2013-2017

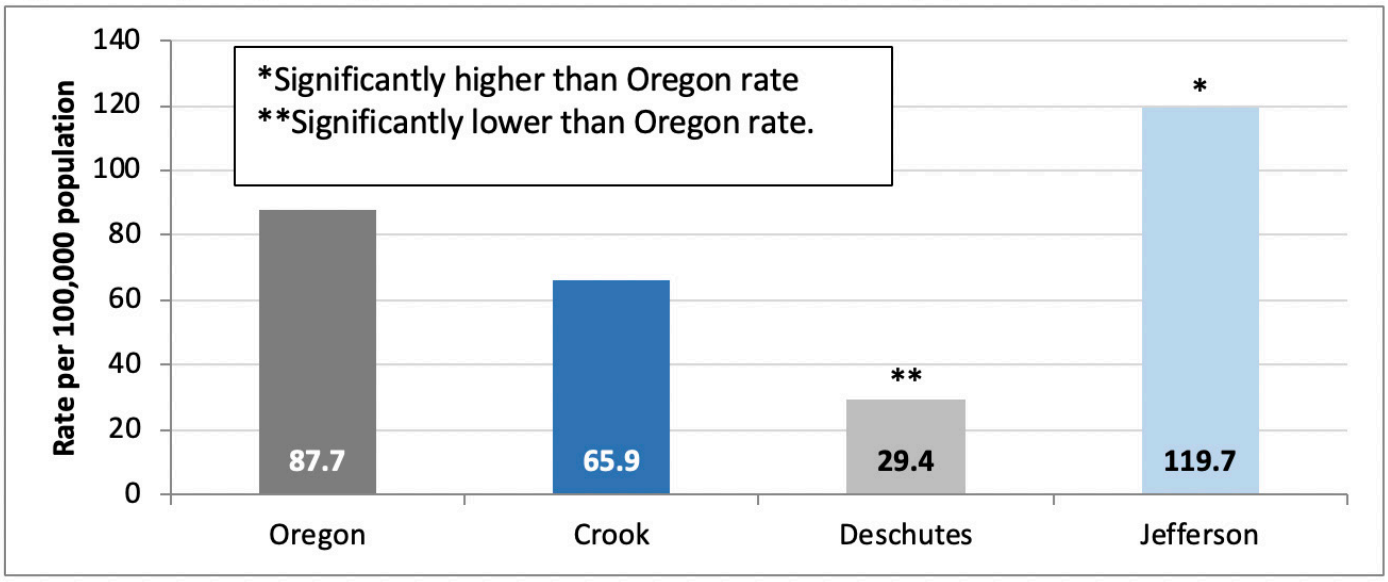


Figure 78. Gonorrhea incidence rate per 100,000 population by age group, OPHAT, 2013-2017.

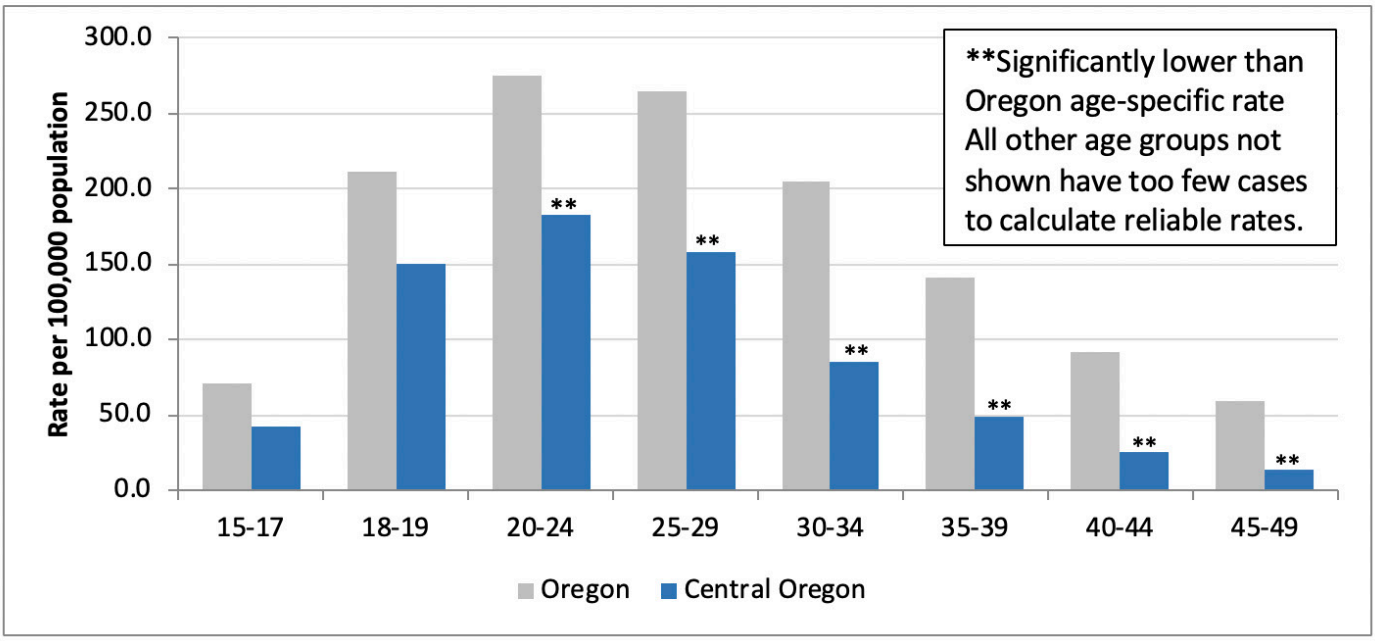


Figure 79. Age-adjusted gonorrhea incidence rate per 100,000 population by sex, OPHAT, 2013-2017

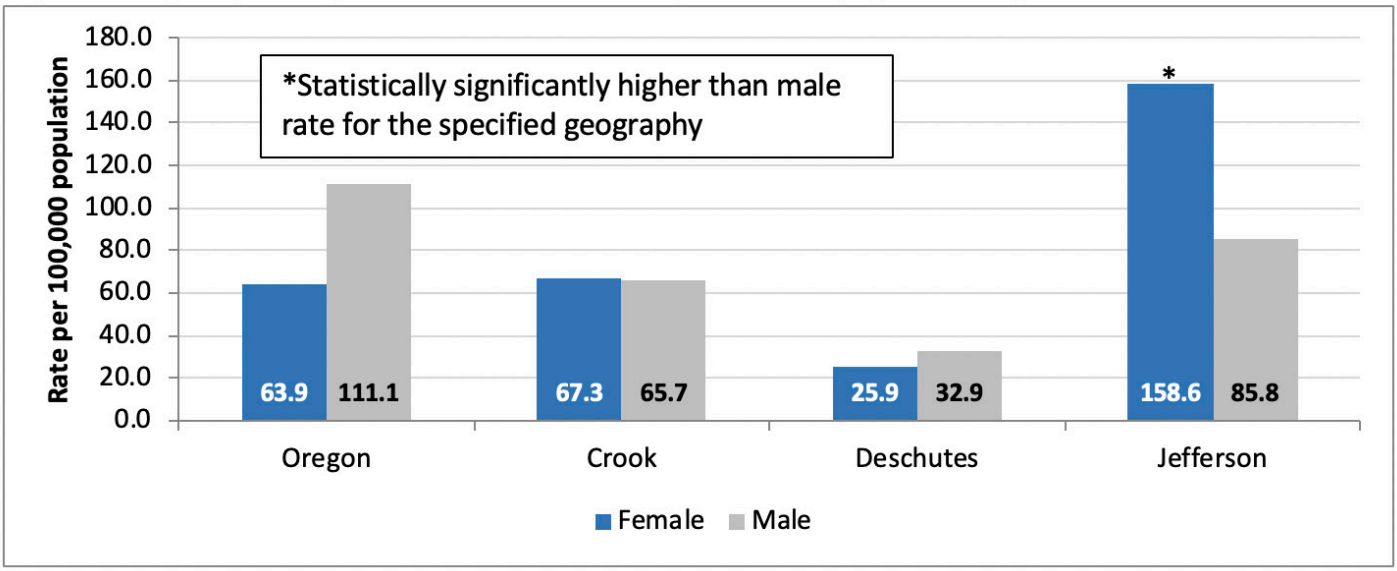


Figure 80. Number of new syphilis cases diagnosed per year, Central Oregon Counties, 2009-2018.

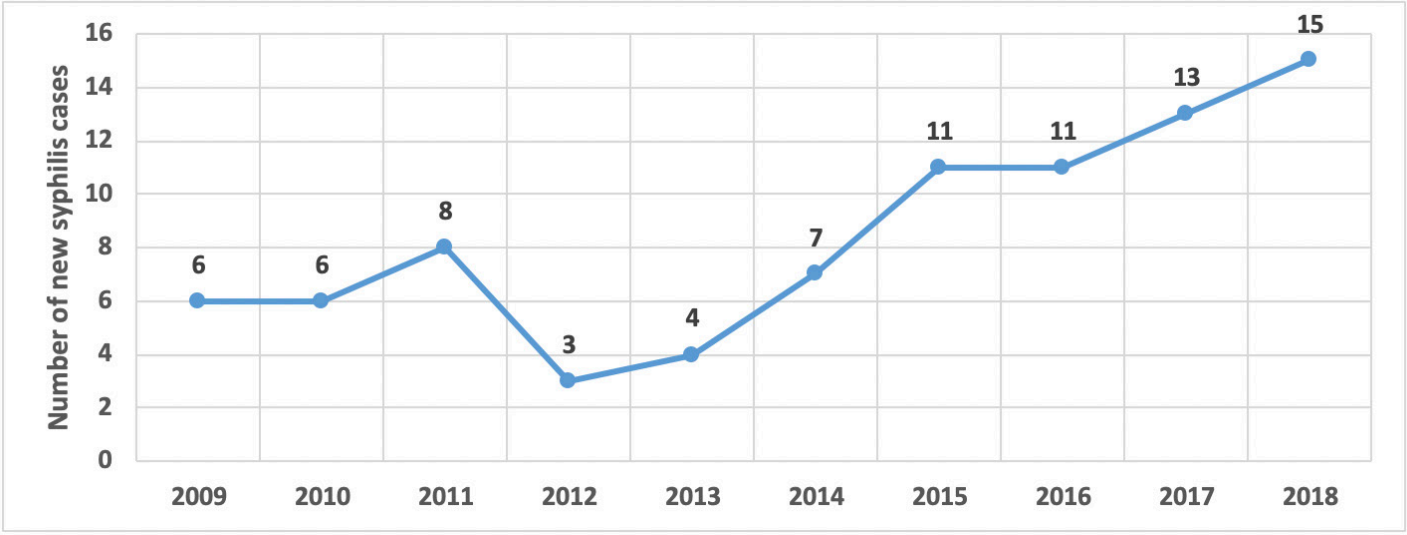


Figure 81. Percent of all people living with diagnosed HIV in Central Oregon by age group, 2018.

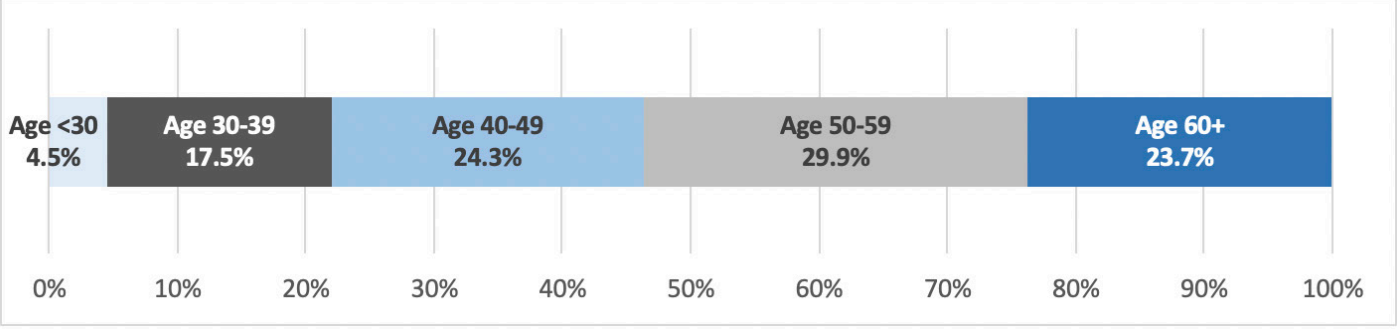


Figure 82. Percent of all people living with diagnosed HIV in Central Oregon by sex at birth, 2018.

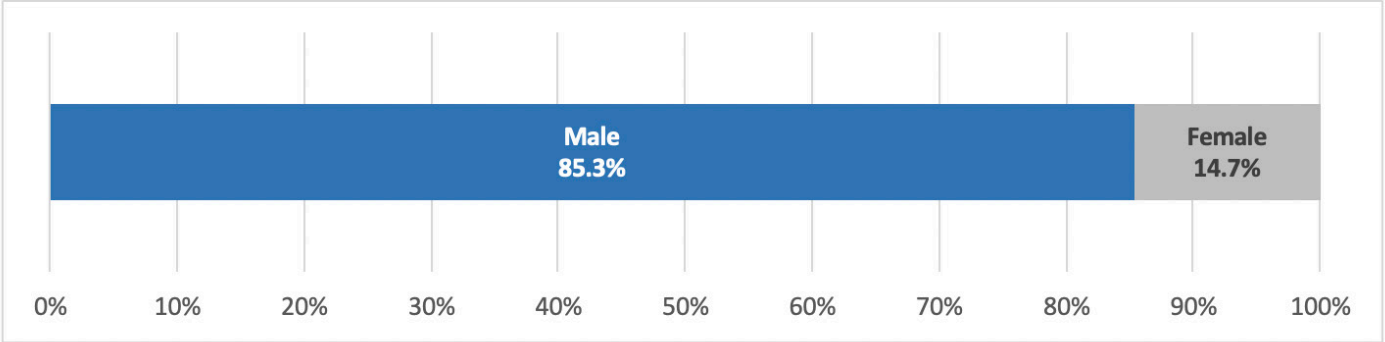


Figure 83. Number of new HIV cases diagnosed per year, Central Oregon Counties, 2009-2018.

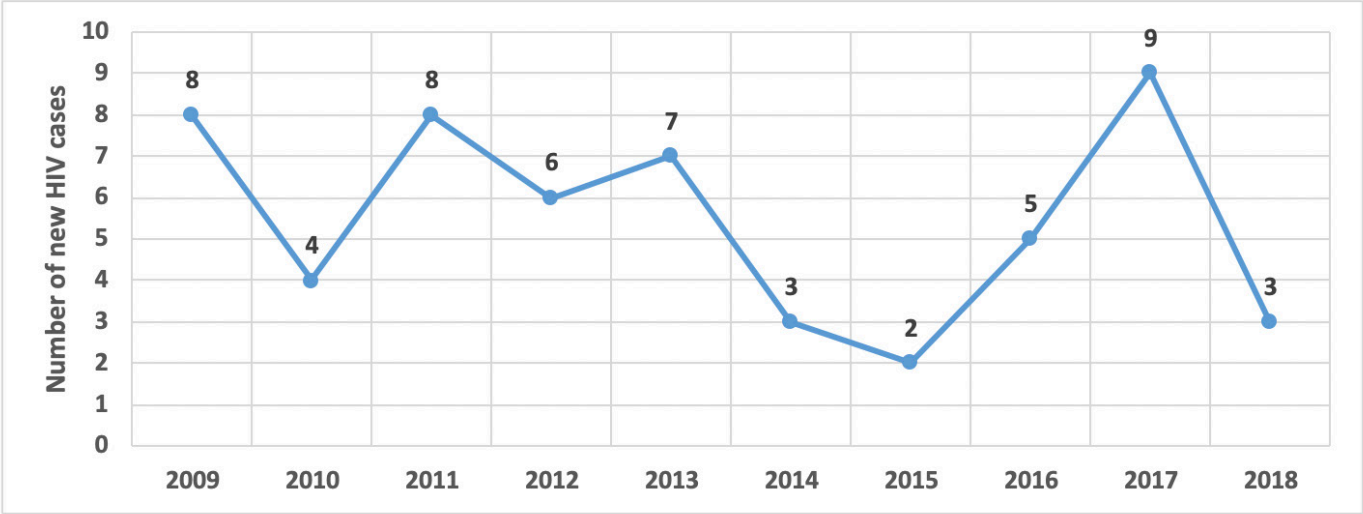


Table 19. Number of vector-borne disease cases reported in Oregon and Central Oregon, ORPHEUS, 2009-2018

	Oregon (including Central Oregon counties)	Central Oregon
Colorado tick fever	10	10
Dengue fever	60	3
Hantavirus	14	7
Lyme disease	526	18
Malaria	166	7
Rocky mountain spotted fever	27	3
West Nile virus	62	3

VECTOR-BORNE DISEASES

Vectors are living entities that can transmit infectious diseases from animals to individuals or between individuals (World Health Organization [WHO], 2017). These vectors often are bloodsucking insects, such as mosquitos, which are the most common disease vector (WHO, 2017). Other vectors can include flies, ticks, fleas, and others. Vector-borne diseases are rare in Central Oregon, however, all Colorado tick fever cases and approximately half of all Hantavirus cases in Oregon over the past ten years occurred in Central Oregon counties. Incidence of other reported diseases (e.g., malaria) may have been acquired outside of the indicated geographic area (Table 19).

DIARRHEAL DISEASE

Diarrheal diseases are often associated with contaminated water or food. In children under five years of age, diarrheal diseases are one of the highest leading causes of death worldwide. Diarrheal diseases can be prevented through proper hygiene, acceptable sanitation, and safe drinking water (WHO, 2017). Many efforts are made by public health officials to ensure clean drinking water and food safety guidelines are followed. Please see the Healthy Environments section for more information.

Over the past ten years, Crook, Deschutes, and Jefferson Counties had a significantly higher rate of Campylobacteriosis, E. Coli (STEC), Giardiasis, and Vibriosis (non-cholera) than Oregon as a whole. During the same time frame, all three Central Oregon counties had significantly lower rates of Legionellosis and Cryptosporidiosis than Oregon overall (Table 20).

HEALTH CARE ASSOCIATED INFECTIONS

Health Care Associated Infections (HAIs) are acquired while receiving treatment for surgical and/or medical conditions. Significant effort is focused on the prevention of HAIs, and hospitals and health care providers have instituted processes and protocols to help reduce the incidence of HAIs in their facilities. HAIs include central line-associated bloodstream infections (CLABSI), infections related to coronary artery bypass grafts (CABG), and Clostridium difficile infections. (HealthyPeople.gov, 2019).

The Standardized Infection Ratio (SIR) is a measure used to track HAI prevention progress. According to the CDC (2019), the SIR compares the number of infections in a facility or state to the number of infections that were "predicted" or would be expected to have occurred based on previous years of reported data (national baseline). Lower SIRs are better. There were no CLABSI in Madras, Redmond, or Prineville in 2017; however, the Prineville hospital had a significantly higher SIR for hospital-onset C. difficile infection compared to the national baseline (Table 21). The influenza vaccination rates for health care providers were above 90% during the 2016-2017 flu season for all four Central Oregon hospitals (Figure 84).

OUTBREAK DATA

A disease outbreak occurs when cases of disease exceed normal expectations and are often caused by an infection, transmitted via person-to-person contact, through the environment, animal-to-person contact, or other pathways (WHO, 2019). In Central

Figure 84. Health care worker Influenza Vaccination Rates for Central Oregon Hospitals, 2016-2017.

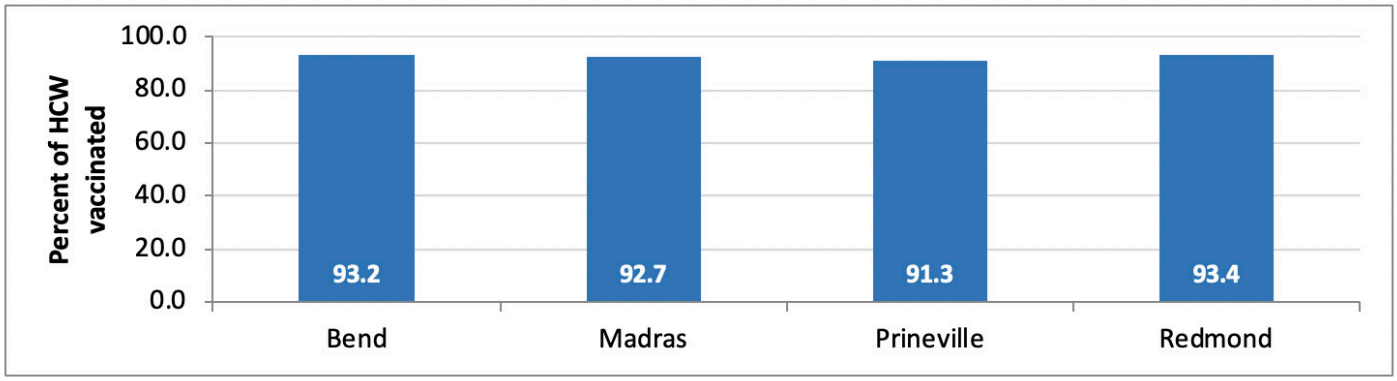


Table 20. Age-adjusted incidence rate per 100,000 population of water-borne diseases, OPHAT, 2008-2017

	Oregon Rate (# of cases)	Crook Rate (# of cases)	Deschutes Rate (# of cases)	Jefferson Rate (# of cases)	Central Oregon Rate (# of cases)
Campylobacteriosis	22.3 (8,897)	41.0 (76)	30.0 (509)	31.8 (69)	31.1 (654)
Cryptosporidiosis	5.6 (2,169)	4.8 (8)	1.8 (29)	0.6 (2)	1.9 (39)
E. coli (STEC)	4.3 (1,607)	13.7 (25)	6.0 (91)	3.4 (7)	6.4 (123)
Giardiasis	10.2 (3,892)	6.9 (16)	15.4 (249)	11.0 (23)	14.2 (288)
Legionellosis	0.7 (323)	0 (0)	0.2 (5)	0 (0)	0.1 (5)
Salmonellosis (non-typhoidal)	11.4 (4,384)	10.9 (22)	10.8 (170)	10.1 (21)	10.8 (213)
Shigellosis	2.1 (797)	0.9 (2)	1.2 (18)	6.9 (15)	1.8 (35)
Vibriosis (non-cholera)	0.5 (218)	1.7 (3)	1.2 (23)	0.9 (2)	1.2 (28)
Yersinosis	0.6 (248)	0.8 (2)	0.5 (9)	0 (0)	0.5 (11)

Significantly higher than Oregon rate

Significantly lower than Oregon rate

Note: STEC refers to Shiga-toxin producing E.Coli.

Oregon, most (61%) outbreaks occurred in Long Term Care facilities (Figure 85), and nearly half (47.1%) of all outbreaks were caused by norovirus. The second most common outbreak, about a quarter of all outbreaks, was from influenza (Figure 86).

Most people (68.0%) affected by outbreaks in Central Oregon were female (Figure 87), and half of all outbreak-associated cases were in people over 75 years of age. Only 16% of all outbreak-associated cases were people under 20 years old (Figure 88).

Table 21. Standard Infection Ratios of selected Healthcare-Associated Infections among Central Oregon health care facilities, Oregon Health Authority, Healthcare-Associated Infections, 2017

	Oregon	Bend	Madras	Redmond	Prineville
CLABSI – All adult and pediatric ICUs and wards	0.731	0.396	0	0	0
Hospital-onset C. difficile infection	0.825	1.098	1.06	0.233	1.34

SIR is statistically significantly lower than national baseline or facility had 0 infections

SIR is statistically significantly higher than the national baseline

CLABSI: Central Line-Associated Bloodstream Infections

Figure 85. Percent of all Central Oregon outbreaks by facility type, 2013-2018

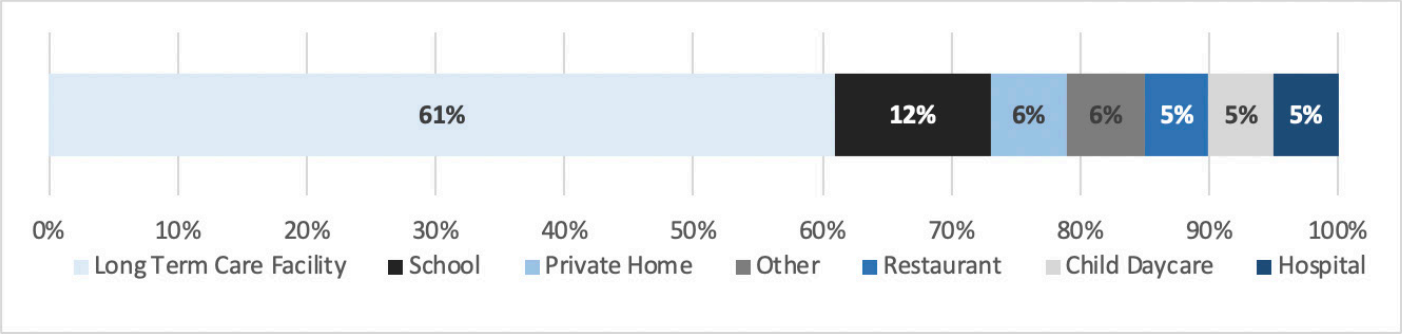


Figure 86. Percent of all Central Oregon outbreaks by pathogen, 2013-2018

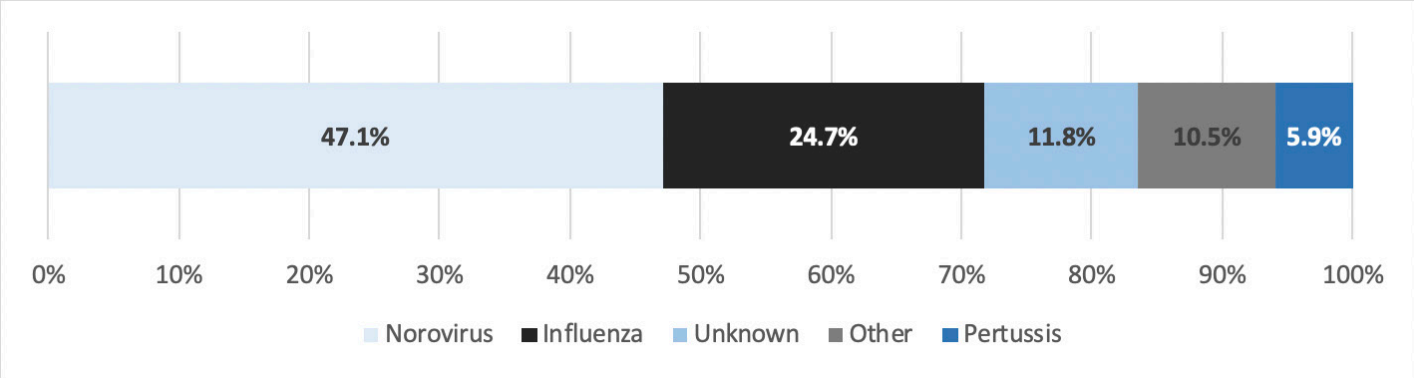


Figure 87. Percent of all Central Oregon outbreak-associated cases by sex, 2013-2018

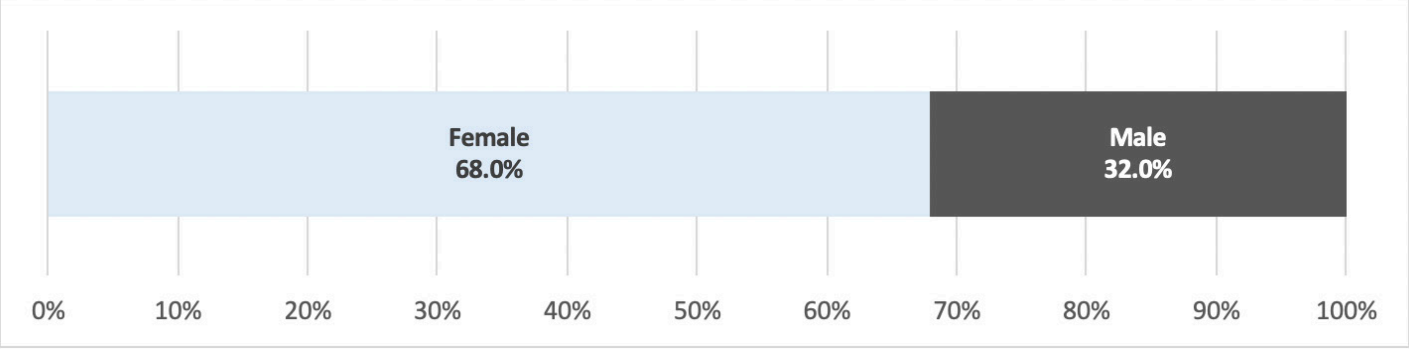
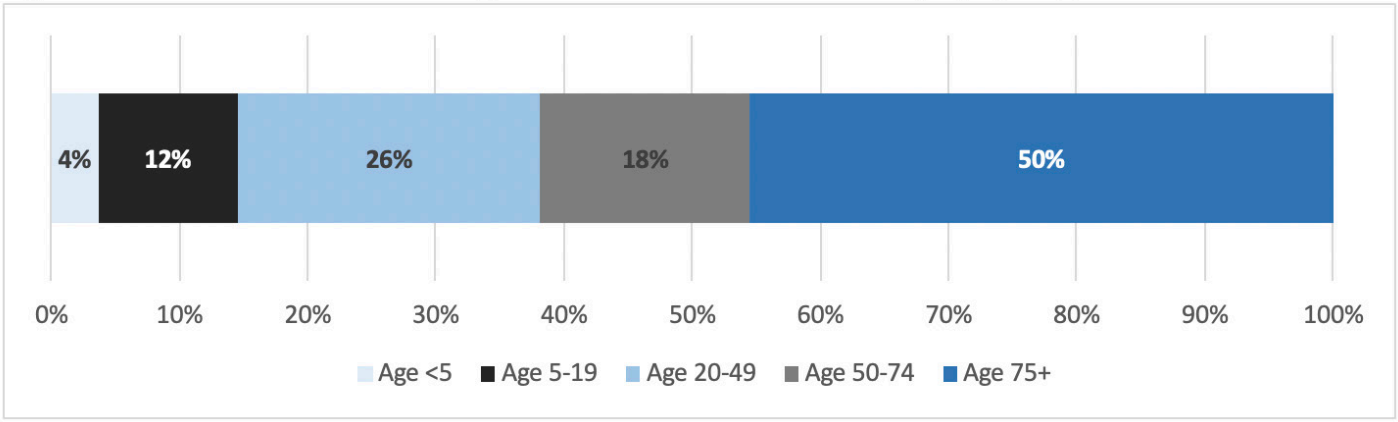


Figure 88. Percent of all Central Oregon outbreak-associated cases by age group, 2013-2018



KURT WINDISCH PHOTO

MATERNAL HEALTH AND PREGNANCY

The health of a child begins with a healthy mother and a healthy pregnancy. Maternal health has improved over the years in the United States, yet many women continue to struggle with severe pregnancy complications, and the number of women who are diagnosed with chronic health conditions that can result in high-risk pregnancies has increased (CDC, 2017). Factors like not using tobacco, alcohol, or other drugs, maintaining a healthy weight, receiving prenatal care, maintaining good oral health, breastfeeding, preventing injuries, as well as preventing or mitigating adverse childhood experiences (ACEs) are key for starting an infant's life in a healthy manner. Maternal health supports fundamental human wellbeing and is partially dependent on services that allow mothers to access affordable and quality health care and social support before, during, and beyond pregnancy (WHO, 2016). For more information about the health of the child after birth, please reference the Infant, Early Childhood, and Adolescent Health section.

PRENATAL CARE

Prenatal care includes routine health care checkups and screenings to assure healthy births. Starting prenatal care in the first trimester of pregnancy can help detect and prevent complications. The Adequacy of Prenatal Care Utilization Index (Kotelchuck Index) is a useful tool to measure prenatal care services and progress.

Table 22 shows the percent of births, by trimester, for when prenatal care began. The percentage of births in Deschutes County for when prenatal care started in the first trimester is higher than Oregon overall, highest in Central Oregon (Figure 89), and increased each year from 2014-2016. In Central Oregon since 2010, Deschutes County has the highest percentage of births for when prenatal care began in the first trimester (Figure 89). The percentage of births in Jefferson County for when prenatal care started in the first trimester was lower than Oregon overall in 2015 (Table 22). The Healthy People 2020 goal for the proportion of pregnant women who receive prenatal care beginning in the first trimester is 77.9%. In 2017, Jefferson County had a significantly lower percentage (59.8%) of births that were classified as having "adequate" prenatal care compared to Oregon as a whole (73.9%) (Figure 90). The Healthy People 2020 goal for the proportion of pregnant women who receive early and adequate prenatal care is 77.6%.

Table 22. Percent of births for when prenatal care began in the first, second, or third trimester, OPHAT, 2014-2016

County	Began in 1st Trimester				Began in 2nd Trimester				Began in 3rd Trimester			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Crook	70.4	78.8	80.9	79.8	25.2	17.8	15.7	17.8	3.4	2.9	2.6	1.9
Deschutes	81.0	83.1	87.6	84.4	16.7	14.3	10.5	13.5	1.7	2.1	1.6	1.9
Jefferson	68.5	68.1	67.6	73.9	22.9	26.2	27.7	21.4	7.5	5.0	3.2	3.1
Oregon	77.5	79.0	79.7	79.9	17.8	16.5	15.5	15.3	4.0	3.8	3.9	3.9

Significantly higher than Oregon percentage

Figure 89. Percent of births for when prenatal care began in the first trimester, OPHAT, 2010-2017.

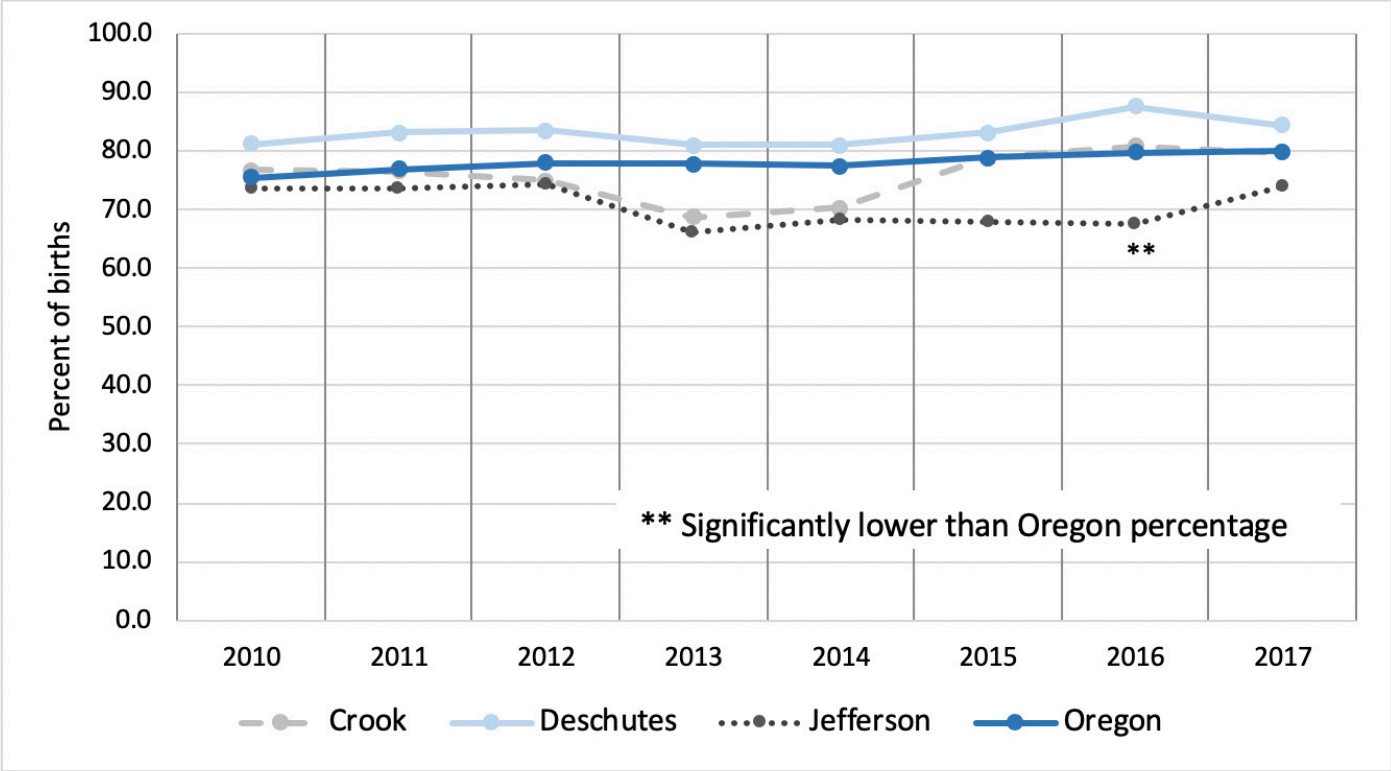


Figure 90. Percentage of births with adequate, inadequate, or no prenatal care, OPHAT, 2016-2017.

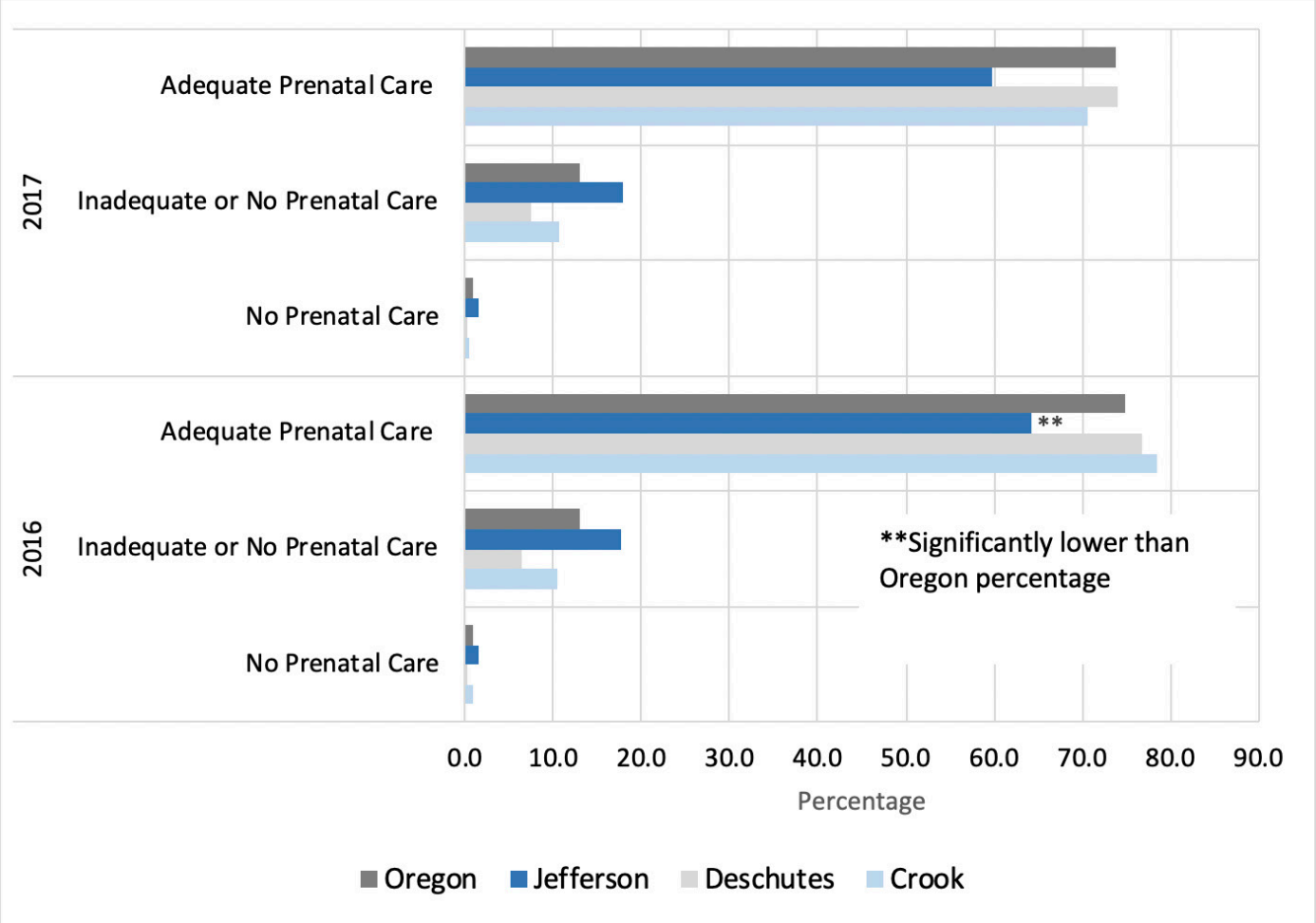


Table 23. Fertility rate per 1,000 women aged 15-44 by race and ethnicity, Central Oregon and Oregon, OPHAT, 2016-2017.

	American Indian or Alaska Native, Non-Hispanic	Hispanic	White, Non-Hispanic
Crook	Unreliable estimate	79.1	71.1
Deschutes	32.1	69.6	52.7
Jefferson	77.4	70.4	65.4
Oregon	49.9	66.7	52.6

Crook County estimate for American Indian or Alaska Natives is statistically unreliable due to a small number of individuals in this category

Significantly higher than Oregon race- or ethnicity-specific rate

Significantly lower than Oregon race- or ethnicity-specific rate

PREGNANCIES AND BIRTHS

Health care is extremely important during and immediately after birth, during which times when important safety topics can be discussed and breastfeeding implemented. Reviewing the birth rates in an area can help identify a specific population's fertility patterns and identify the need for reproductive health services.

Within Central Oregon and Oregon overall, Jefferson County had the highest fertility rate from 2012 to 2017, followed by Crook, and then Deschutes County. From 2012 to 2017 the Jefferson County fertility rate was significantly higher than Oregon overall, and Crook County's fertility rate was significantly higher than Oregon Statewide in 2014-2015 and 2016-2017 (Figure 91).

In Central Oregon, Jefferson County had the highest fertility rate among American Indians or Alaska Natives (Table 23). Crook County had the highest fertility rate among Hispanics and White, non-Hispanics, and in Deschutes County, the fertility rate for American Indians and Alaska Natives was significantly lower than the American Indian and Alaska Native fertility rate statewide (Table 23). In 2016-2017, the fertility rate in Jefferson County was significantly higher than the Oregon rates among 20 to 29-year-olds and was significantly higher in Crook County among 18 to 29-year-olds (Figure 92).

From 2010 to 2017 Oregon and Deschutes County's pregnancy rates decreased, and Crook County's rate increased (Figure 93). The pregnancy rates in Jefferson and Crook Counties were higher than across Oregon as a whole. Of the three Central Oregon counties, Deschutes County had the lowest pregnancy rate per 1,000 women aged 15-44 (64.9) and Crook County had the highest (79.4). All three Central Oregon counties had higher pregnancy rates per 1,000 women than across Oregon as a whole (63.7) (Figure 94).

Figure 93 shows the crude birth rate (the rate of live births in an area at a point in time) from 2010 to 2016. In Oregon, Jefferson County, and Deschutes County, crude birth rates decreased between 2010 and 2017, while Crook County's crude birth rates increased.

Want more information about Maternal Health and Pregnancy?

OREGON DEPARTMENT OF EDUCATION EARLY LEARNING:

OREGONEARLYLEARNING.COM/HEALTHY-FAMILIES-OREGON

OREGON HEALTH AUTHORITY HEALTHY PEOPLE AND FAMILIES:

WWW.OREGON.GOV/OHA/PH/HEALTHYPEOPLEFAMILIES

NEIGHBOR IMPACT HEALTH START:

WWW.NEIGHBORIMPACT.ORG/GET-HELP/HEAD-START/

Figure 91. Total fertility rate per 1,000 women, Oregon and Central Oregon, OPHAT, 2014-2017.

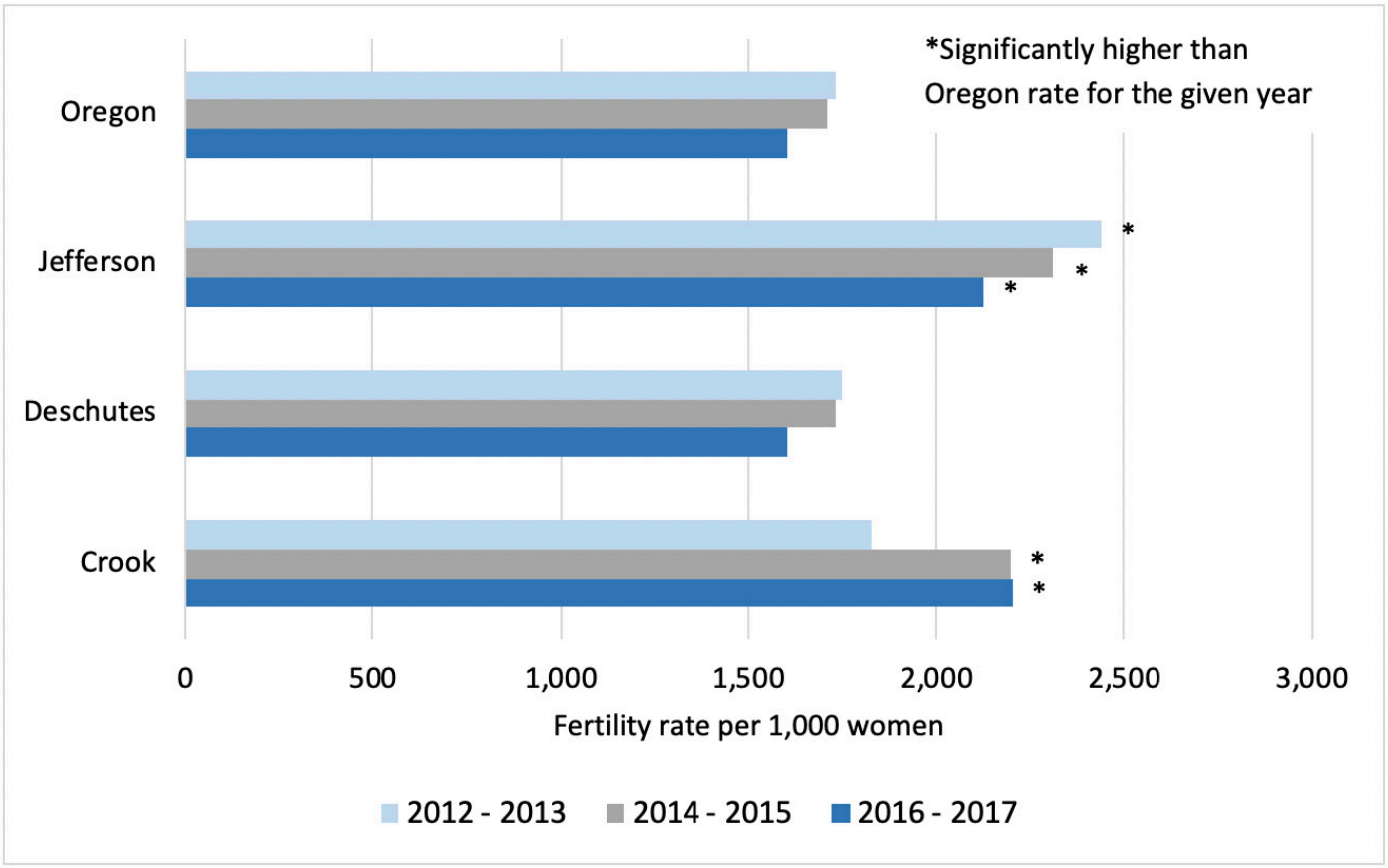


Figure 92. Age-specific fertility rate per 1,000 women, Central Oregon and Oregon, OPHAT, 2014-2017.

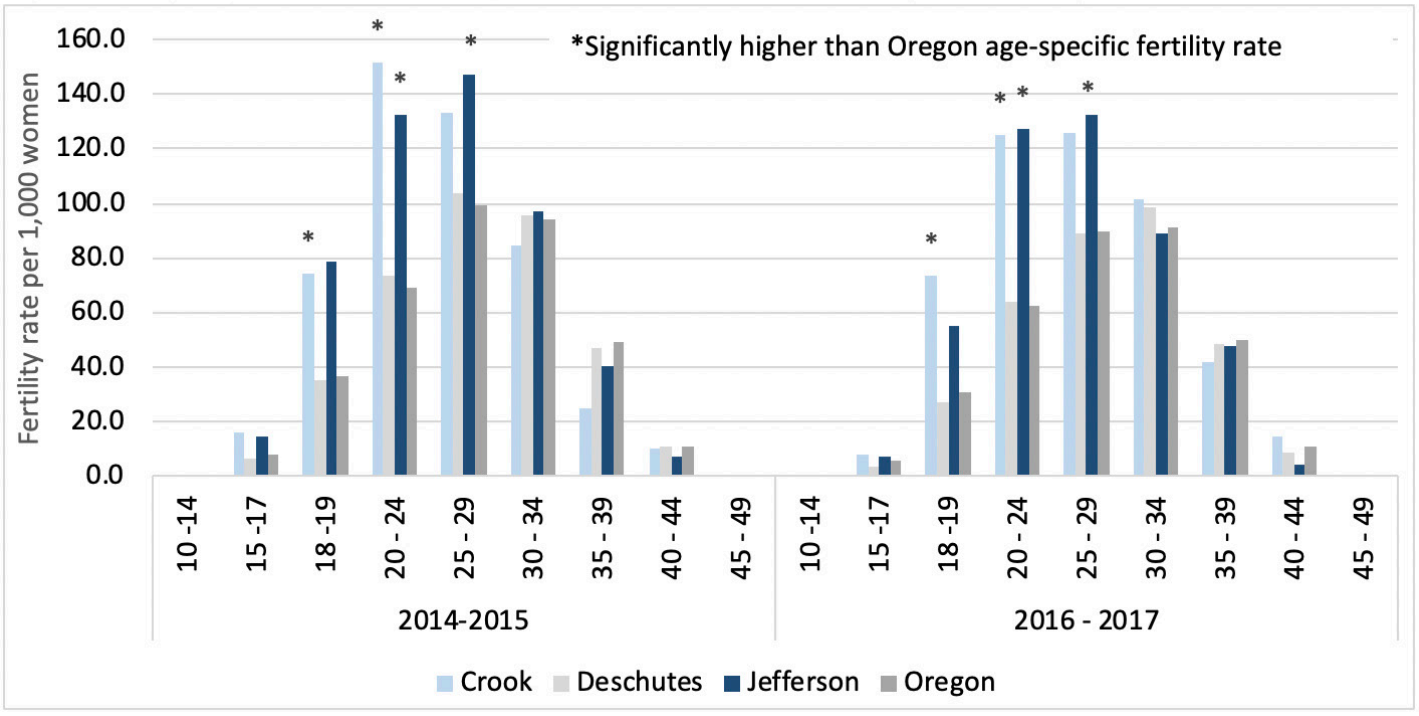


Figure 93. Crude birth rate per 1,000 persons, OPHAT, 2010-2016.

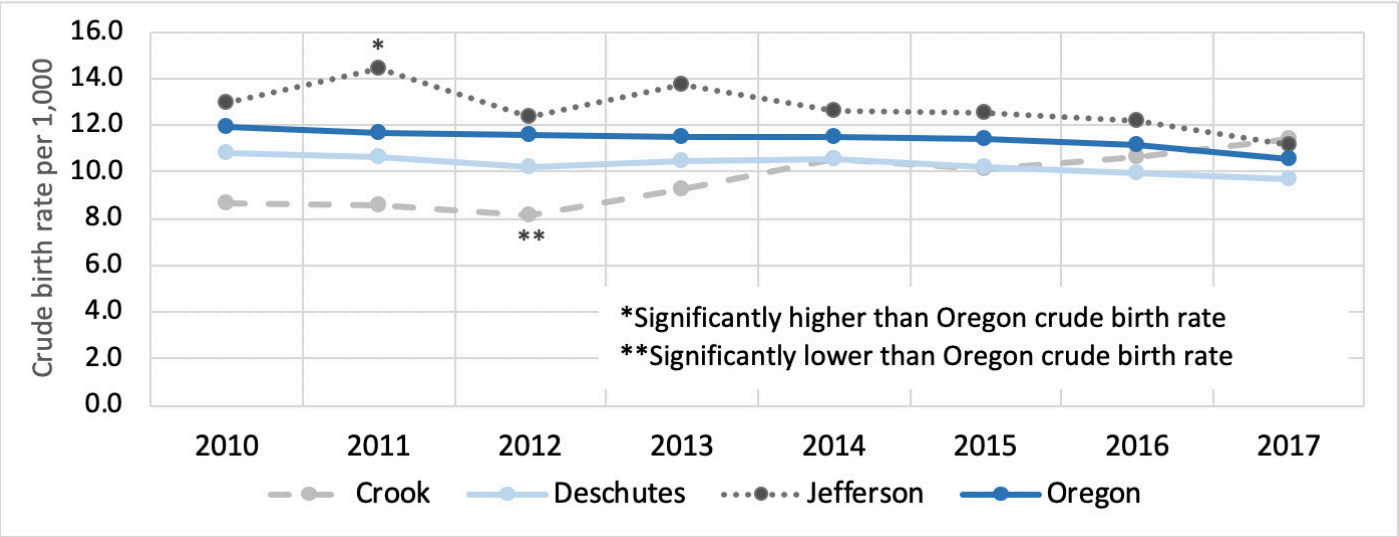


Figure 94. Pregnancy Rate per 1,000 Women aged 15-44 by county, OPHAT 2017

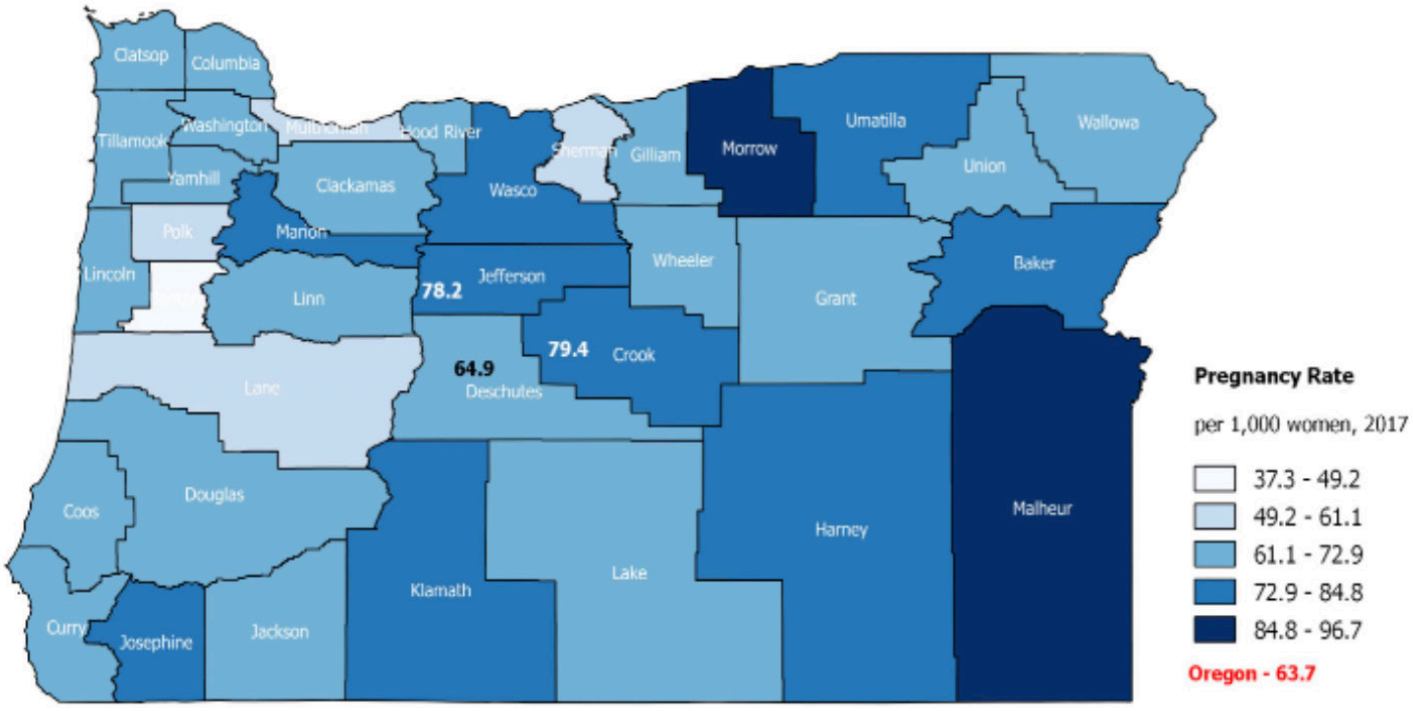
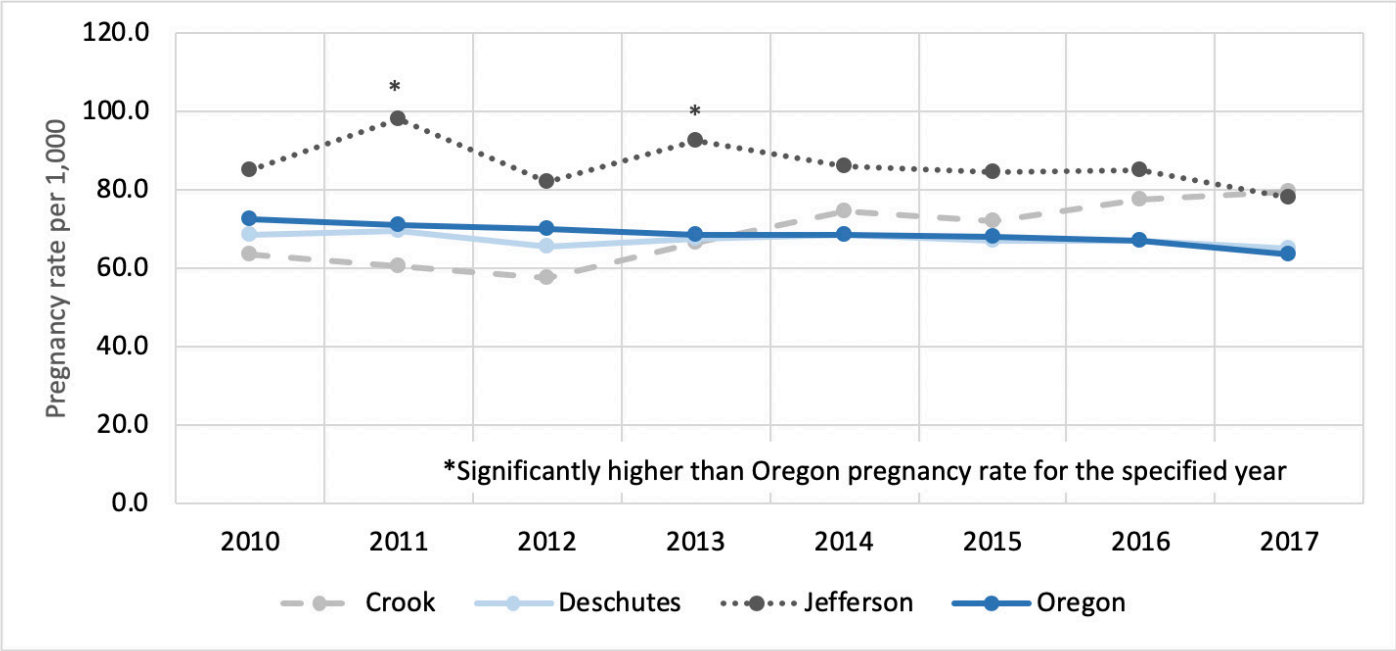


Figure 95. Pregnancy rate per 1,000 women aged 15-44, Central Oregon and Oregon, OPHAT, 2010-2017.



PREGNANCY RISK FACTORS

There are several risk factors related to poor pregnancy outcomes, such as the use of tobacco, alcohol, certain medications, and controlled substances, mental health-related issues, weight problems, and poor nutrition during pregnancy (CDC, 2017). Other factors like maternal age and existing health conditions may also complicate a pregnancy. Social determinants of health, such as education, may also be correlated to health outcomes in Central Oregon.

When broken down by educational attainment, Crook County (22.2%) and Jefferson County (26.7%) had a higher percentage of births for which the mother's education was high school or less compared to Oregon (17.7%). Deschutes County (13.6%) had a lower percentage of births for which the mother's education was high school or less compared to Oregon (Figure 97).

Preterm births are when a baby is born before 37 weeks' gestational age. Babies born preterm have a higher risk of death and disability. In Jefferson County between 2014 and 2017 and Crook County during 2014-2015, there was a significantly higher percentage of births classified as preterm (<37 weeks) compared to Oregon as a whole (Figure 96).

"Staff are finding that about half of the women who self-report as drug users, or are likely drug users, are not showing up in statistics because they're smart enough not to give a urinalysis at the doctor's office."

- Moms Outreach Mentoring Services Program Staff

Figure 96. Percent of births that were preterm, Central Oregon and Oregon, OPHAT, 2012-2017.

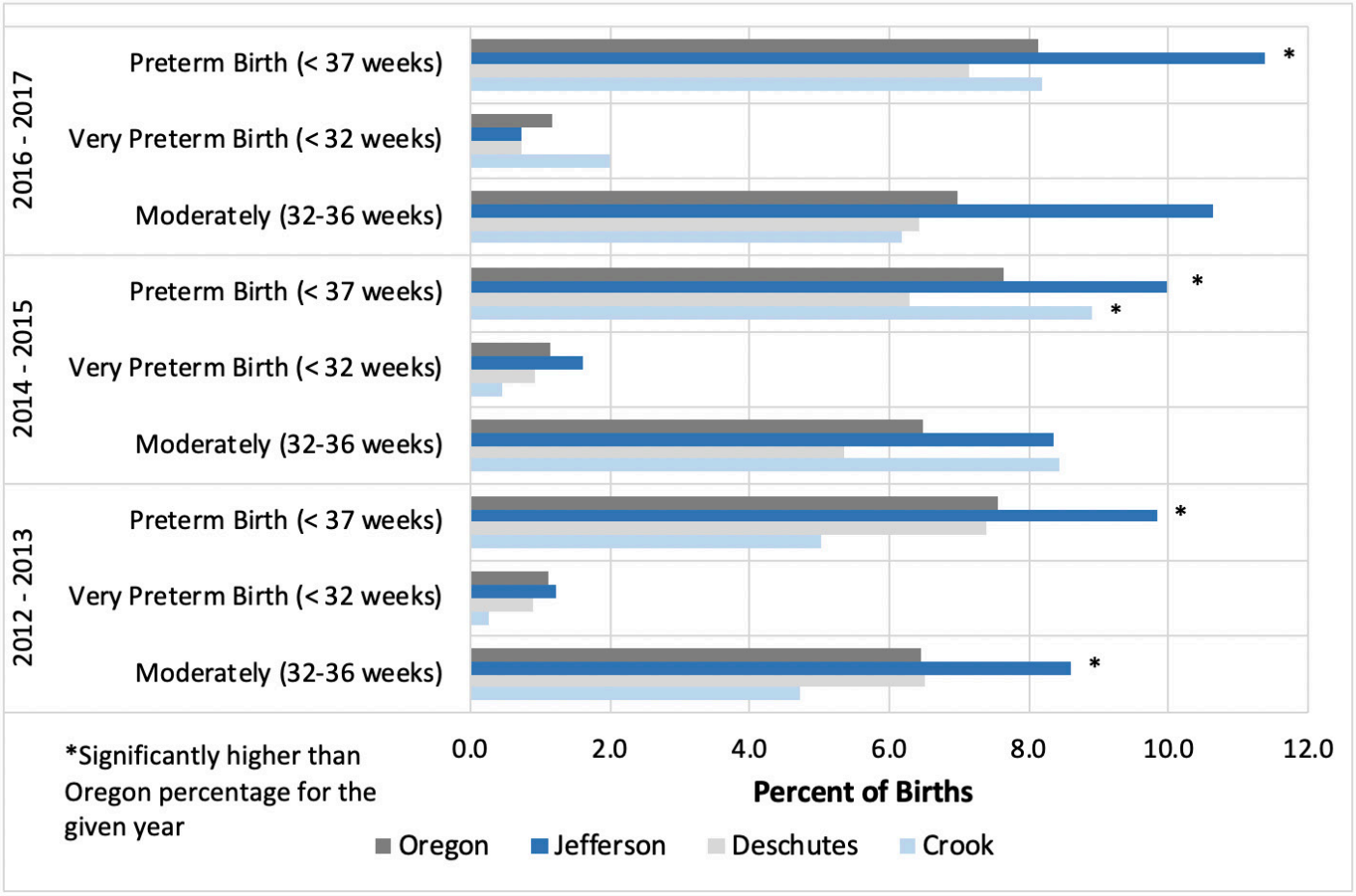
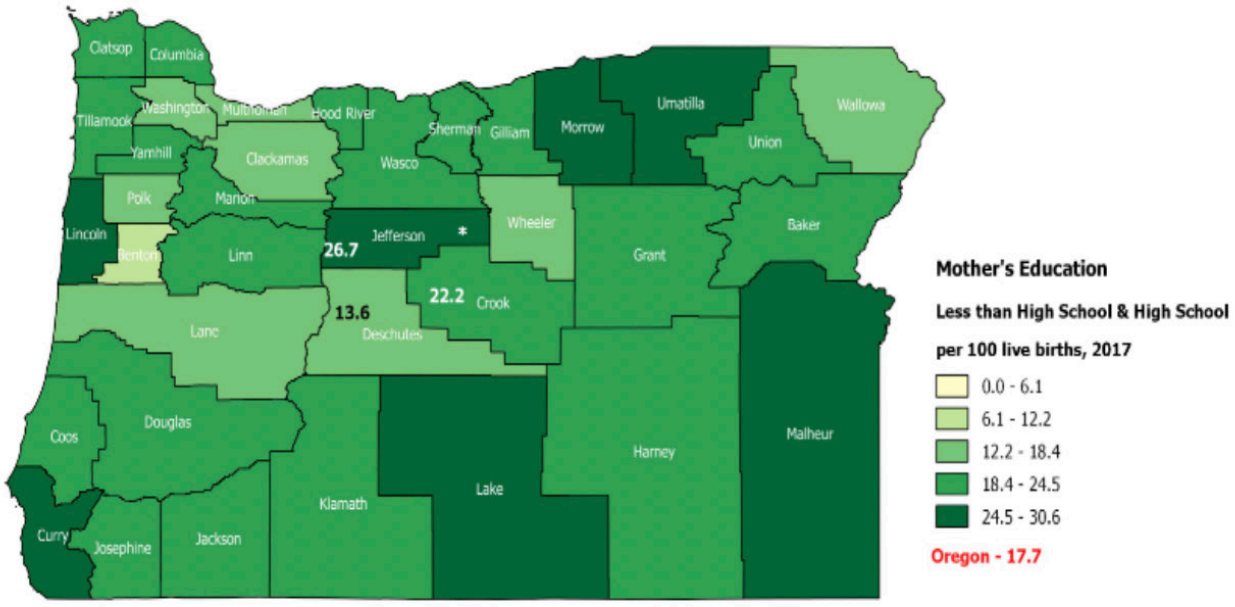


Figure 97. Percent of births for which mother's education was high school diploma or less, OPHAT, 2017



* Significantly higher than Oregon percentage of births for which mother's education was high school diploma or less

All three Central Oregon counties had a higher percentage of births paid for by Medicaid/ Oregon Health Plan (OHP) than Oregon overall, and a significantly higher percentage of births in Jefferson County were paid for by Medicaid/OHP compared to Oregon overall (Table 24). In all three Central Oregon counties and across Oregon statewide, a higher percentage of births among Hispanics and American Indians and Alaska Natives were paid for by Medicaid /OHP compared to White, non-Hispanics (Figure 99).

From 2016 to 2017, a higher percentage of births in Crook and Jefferson County were paid for by the OHP than by private insurance. In Deschutes County and across Oregon as a whole, a higher percentage of births were paid for by private insurance than by OHP (Figure 98).

In 2015 in Central Oregon, approximately 15% of pregnant women reported that they argued with their husband or partner more than usual in the 12 months before their baby was born (Figure 100). Approximately 1.2% of pregnant women in Central Oregon reported that they were homeless or had to sleep outside, in a car, or in a shelter during the same period (Figure 100).

It is important to receive dental care and maintain a healthy weight during pregnancy. In 2015, approximately 68% of pregnant women in Central Oregon had their teeth cleaned by a dentist or dental hygienist, which is higher than the percentage across Oregon statewide (54%) (Table 25).

The percentage of births for which the mother had pre-pregnancy obesity (BMI > 30) was higher in 2017 than in 2008 for all three Central Oregon counties and across Oregon statewide. In 2017, Jefferson County had the highest percentage of mothers who were classified as obese during pre-pregnancy (39.7%), and Deschutes had the lowest (19.1%) (Figure 102). In 2017, across all geographies, the percentage of Hispanic and American Indian and Alaska Native, non-Hispanic births for which the mother was classified as obese was higher than among White, non-Hispanics (Figure 103). Statewide, about 3% of births had a mother who was classified as underweight at pre-pregnancy. In Central Oregon, the percentage of births that had a mother classified as underweight at pre-pregnancy ranged from around 2.7% (in Crook and Jefferson Counties) to 3.3% (in Deschutes County) (Figure 104). The percent of births for which the mother had gestational diabetes was higher in Jefferson County than in Crook and Deschutes Counties (Figure 101).

Table 24. Percent of births by insurance payment source for delivery, OPHAT, 2016-2017

	Medicaid/ OHP	Other Payment	Private Insurance	Self-Pay
Crook	61.6	2.4	34.6	1.4
Deschutes	45.5	0.9	50.7	2.9
Jefferson	73.0	4.0	21.3	1.7
Oregon	44.7	1.4	51.9	2.0

Significantly higher than Oregon Medicaid/OHP percentage

Significantly lower than Oregon private insurance percentage

In 2015, 2016, and 2017, a significantly higher percentage of Crook County pregnant women smoked compared to Oregon statewide. In 2017, remarkably, roughly 20% of Crook County pregnant women smoked, compared to 9% across Oregon (Figure 105).

Figure 98. Percent of births by insurance type used for delivery, Central Oregon and Oregon, OPHAT, 2010-2017.

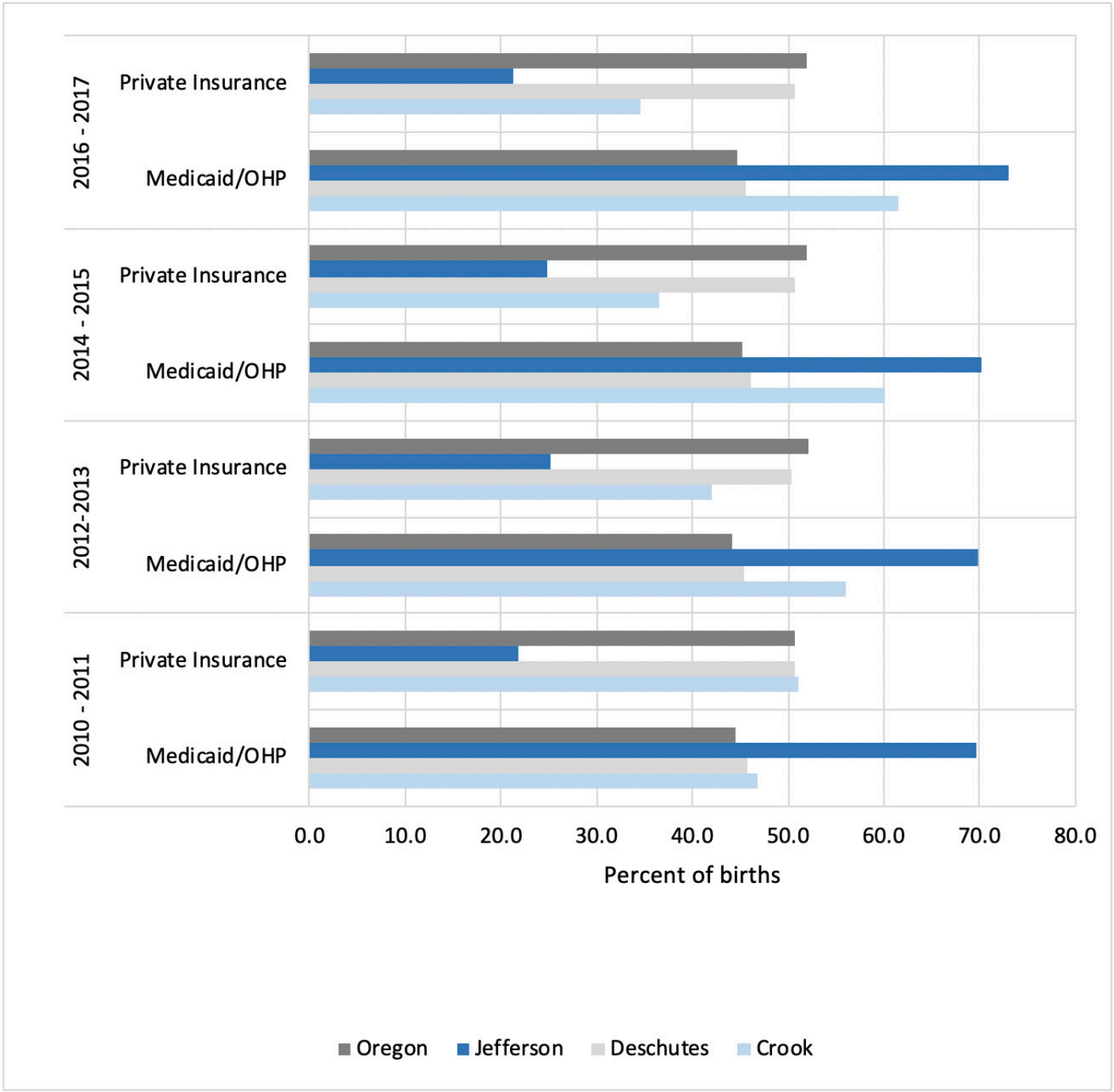


Figure 99. Percent of births by insurance type used for delivery, by race and ethnicity, Central Oregon and Oregon, OPHAT, 2016-2017.

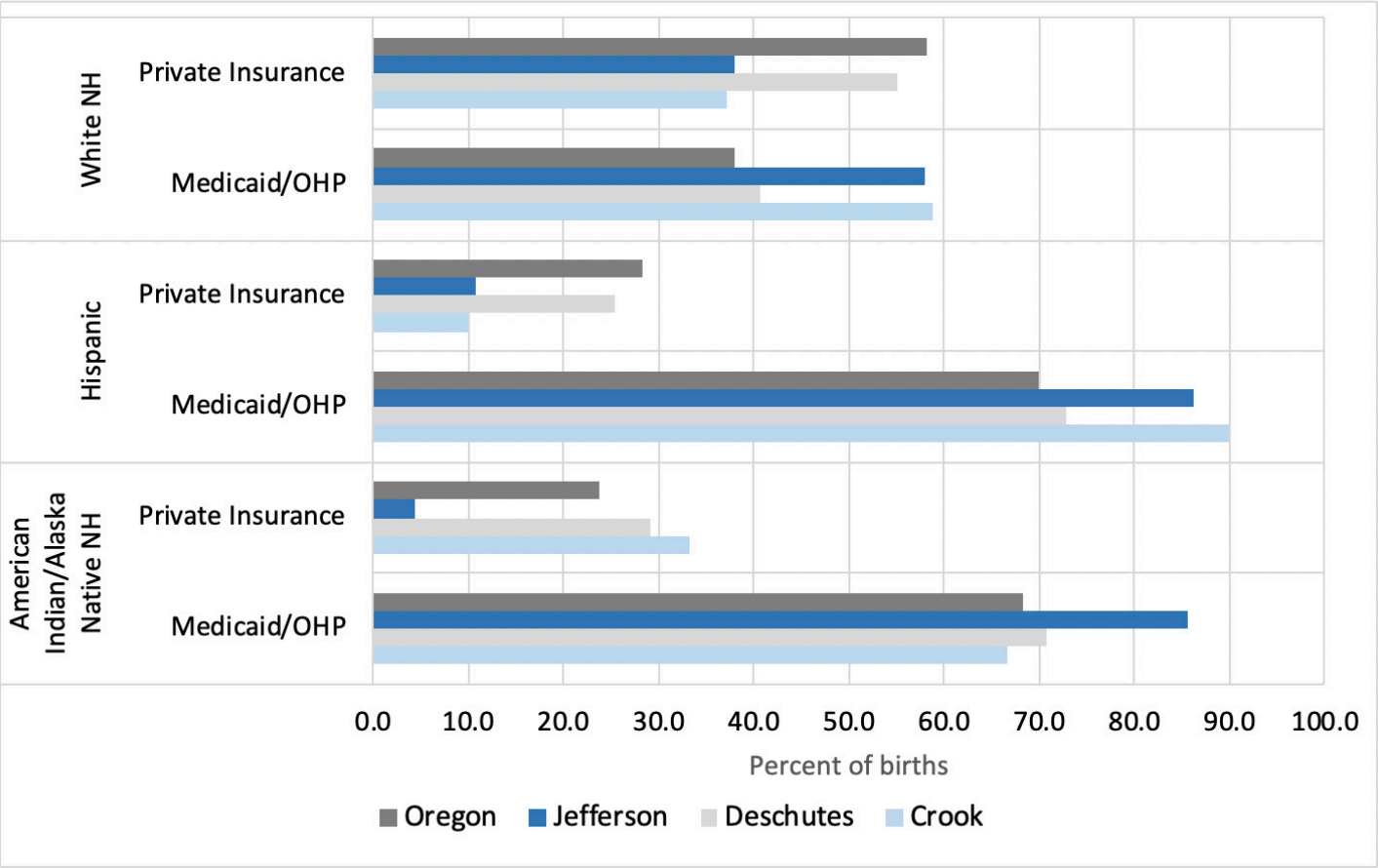


Table 25. Percent of pregnant women who had their teeth cleaned by a dentist or dental hygienist during the 12 months before pregnancy, Oregon PRAMS, 2013-2015

	Had teeth cleaned			Did not have teeth cleaned		
	2013	2014	2015	2013	2014	2015
Central Oregon	61.2	58.9	67.9	38.8	41.1	32.1
Oregon	57.0	50.5	53.5	43.0	49.5	46.5

Figure 100. Percent of pregnant women who experienced prenatal stress during the 12 months before their new baby was born, Central Oregon and Oregon, Oregon PRAMS, 2013-2015.

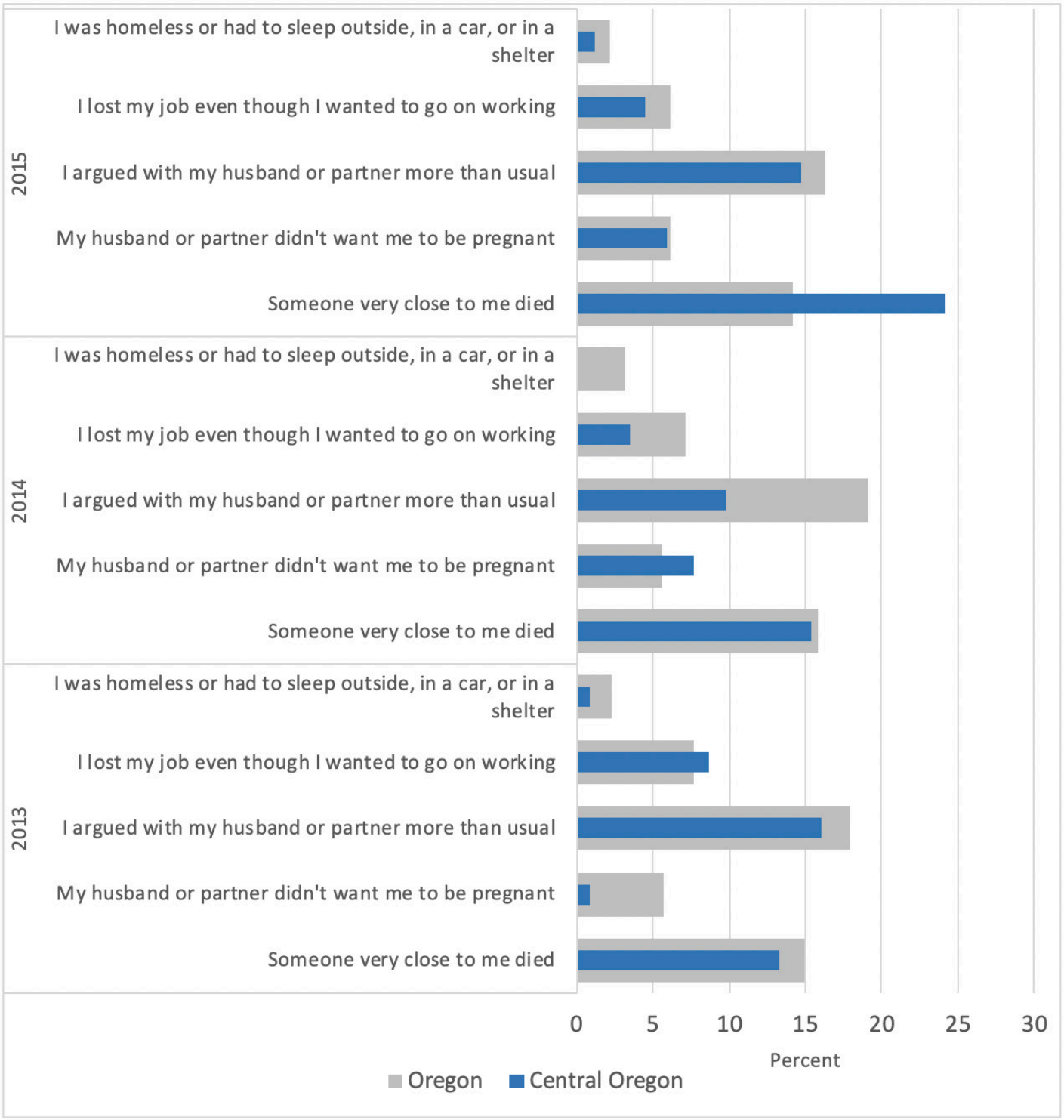


Figure 101. Percent of births for which the mother had maternal gestational diabetes, OPHAT, 2017

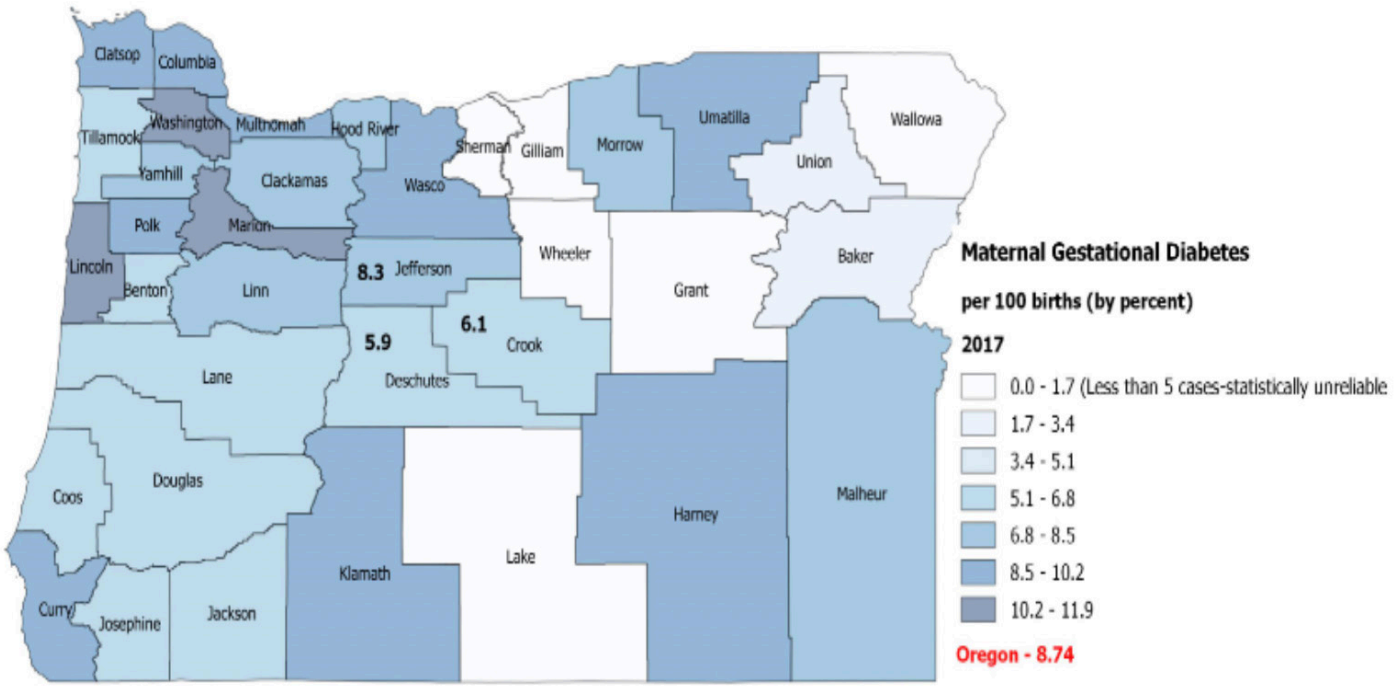


Figure 102. Percent of births for which mother had pre-pregnancy obesity (>= 30 body mass index), OPHAT, 2008-2017

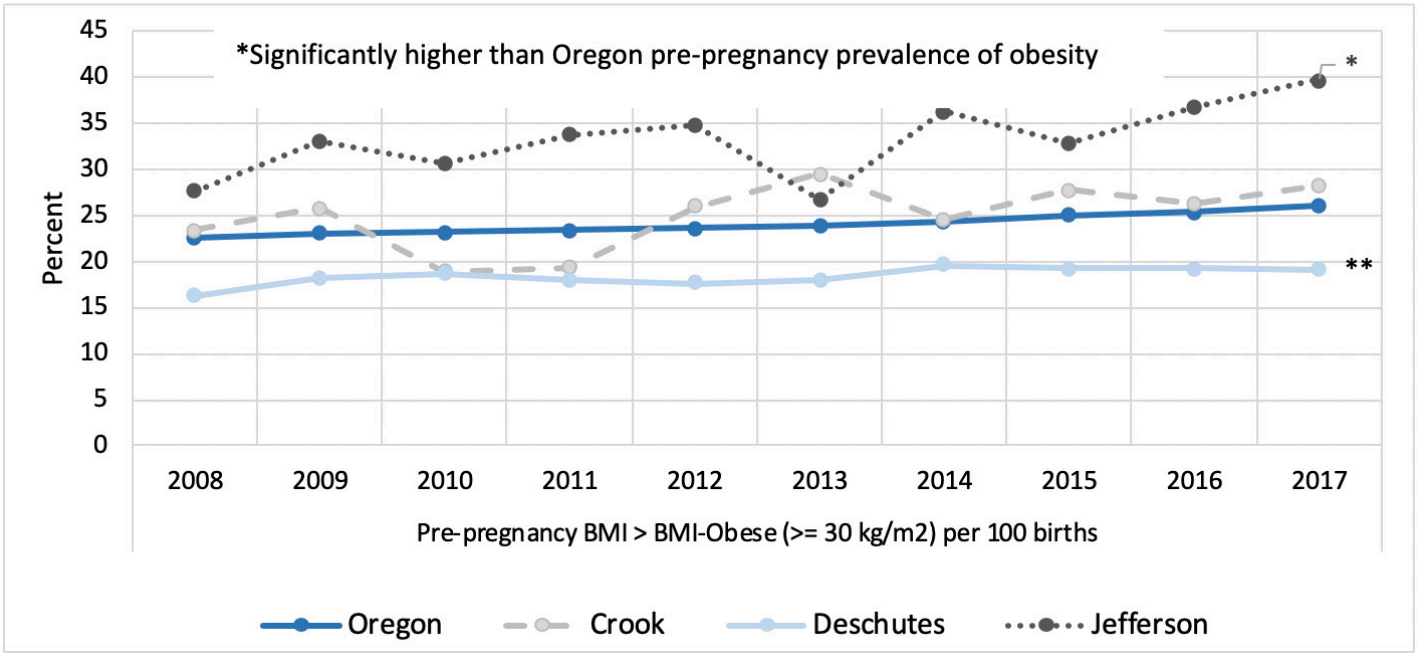


Figure 103. Percent of births to mothers with pre-pregnancy obesity (>= 30 body mass index), by race/ethnicity, OPHAT, 2014-2017

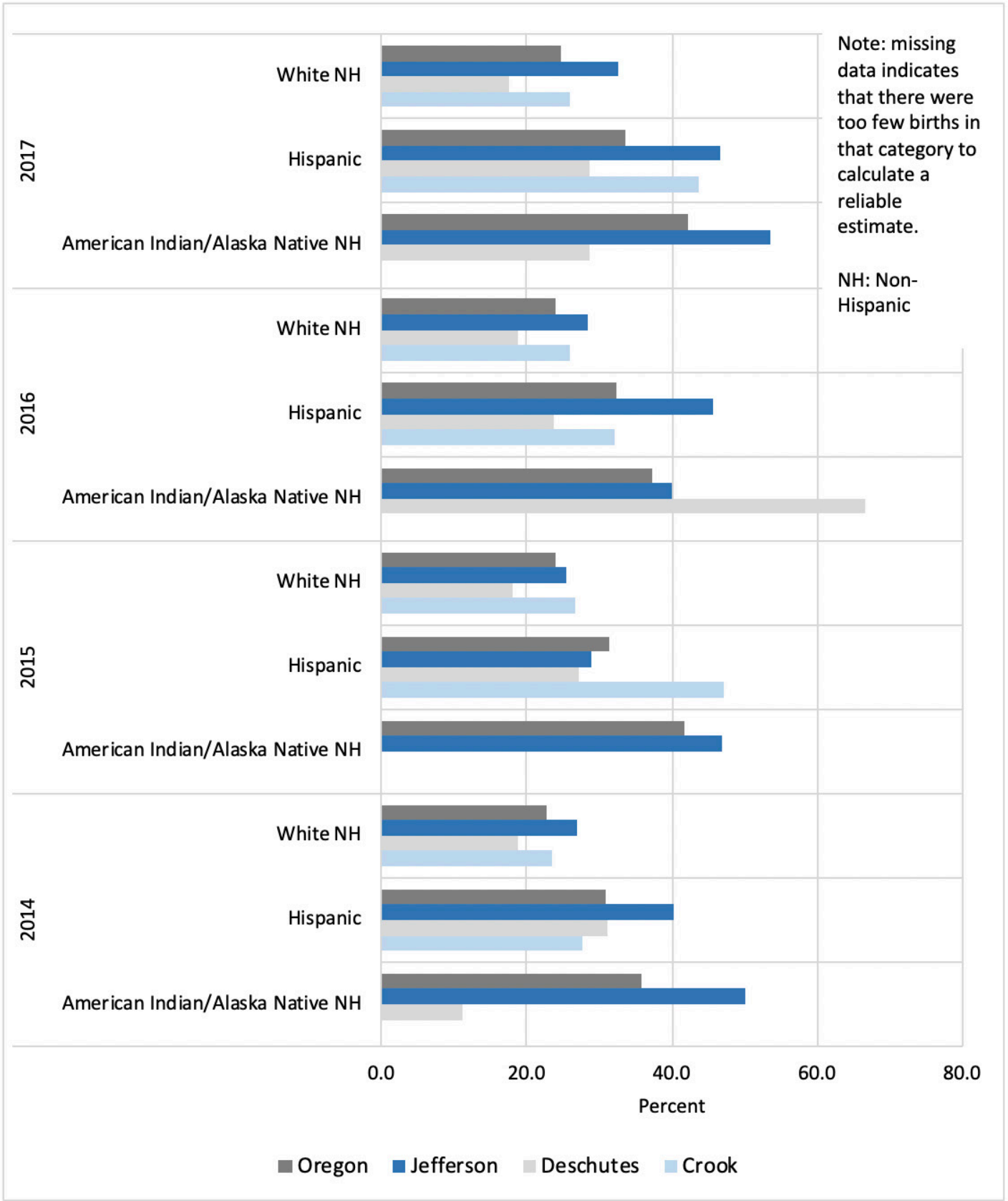


Figure 104. Percent of births for which mother was underweight (<= 18.5 body mass index) pre-pregnancy, OPHAT, 2008-2017.

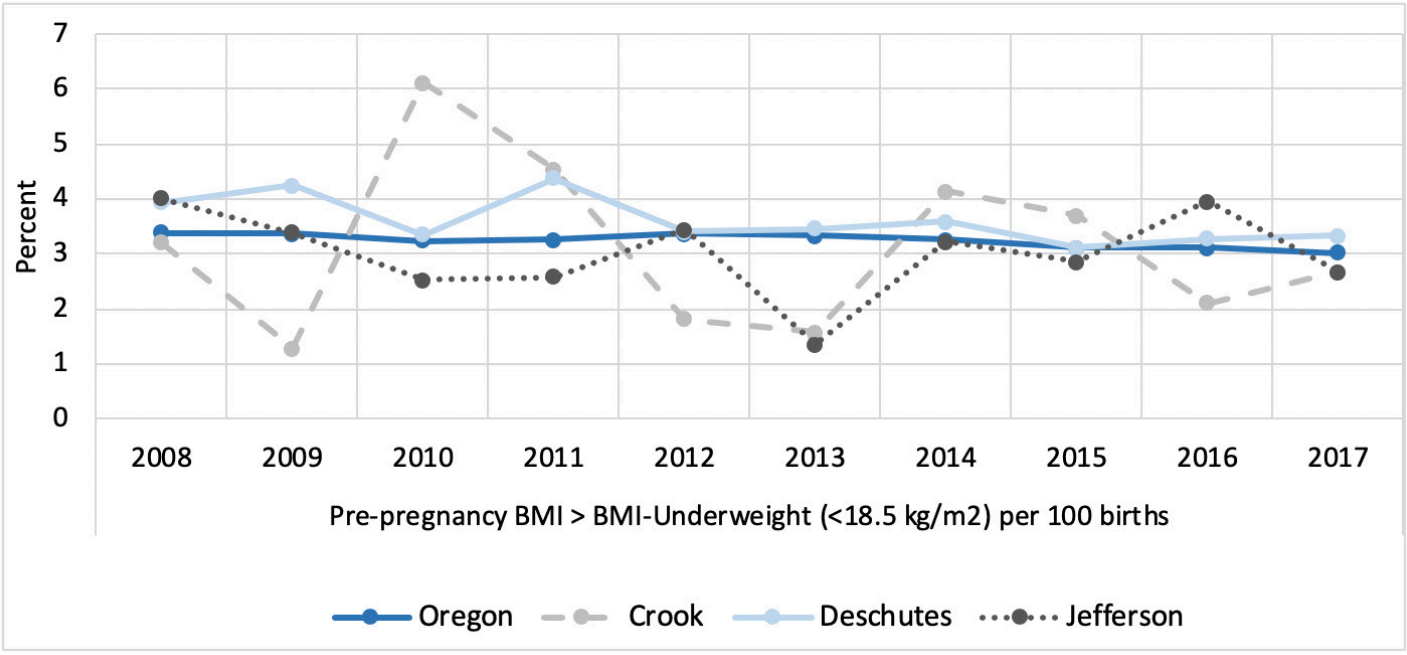
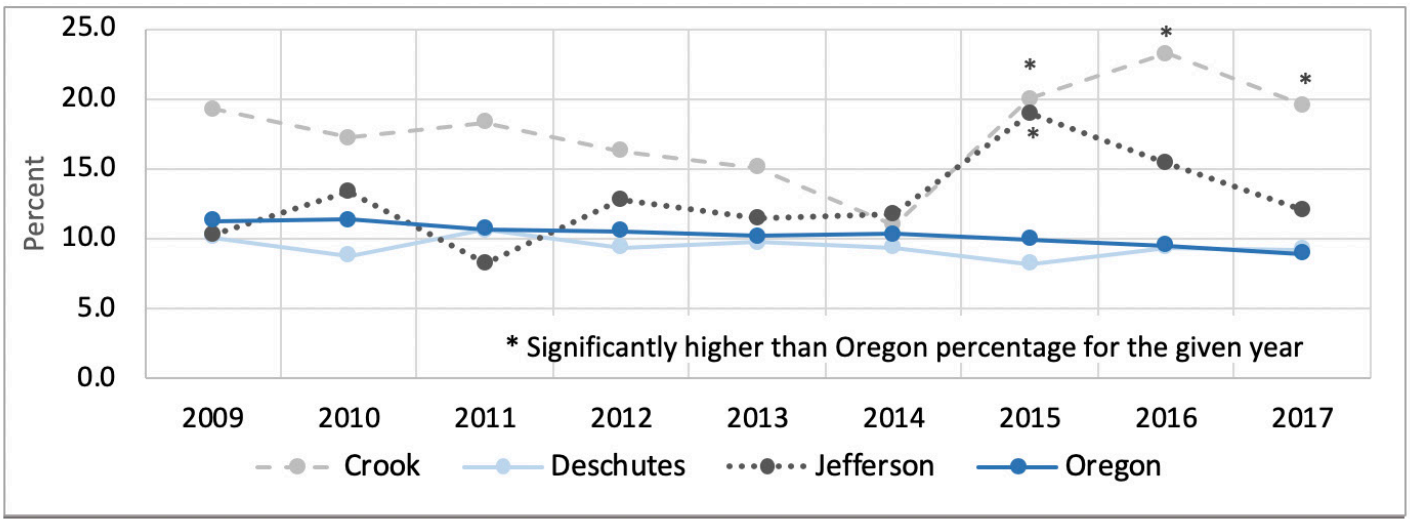


Figure 105. Percent of pregnant women who smoked during pregnancy, Central Oregon and Oregon, OPHAT, 2009-2017.



TEEN PREGNANCY

According to the CDC (2019), from 2016 to 2017, the United States teenage population's birth rate dropped 7%. Birth rates fell 10% for women between the ages of 15 to 17, and 6% for women ages 18 to 19. Though the United States teenage birth rates are lowering, the teenage pregnancy rate is significantly higher than other western nations. Research shows that teen mothers are less likely to complete high school, are more likely to live in poverty, and are more likely to have babies who are premature or have a low birth weight. Children of teenage parents are more likely to struggle in school, not complete high school, experience more health issues, become a teen parent as well, experience unemployment in their early working years, and become incarcerated within their adolescent years (CDC, 2019).

Within Central Oregon in 2017, both Crook and Jefferson County had significantly higher pregnancy rates among 18 to 19-year-olds compared to Oregon statewide (Figure 106). In addition, Jefferson County (11.0 per 1,000 women) had higher pregnancy rates among 15-17-year-olds compared to Oregon statewide (9.0 per 1,000 women) (Figure 106). Among 18-19-year-olds, rates of teen pregnancy were significantly higher among Jefferson County Hispanics, White non-Hispanics, and American Indian and Alaska Native non-Hispanics than the respective race- or ethnicity-specific rates across Oregon as a whole (Table 26). Similarly, Crook County 18-19-year-old Hispanics and White non-Hispanics had higher rates of teen pregnancy compared to the respective Oregon race- or ethnicity-specific rates (Table 26).

Table 26. Teen pregnancy rates age 15-17 years per 1,000 females, by race/ethnicity, Central Oregon and Oregon, OPHAT, 2015-2017

	Age 15-17			Age 18-19		
	American Indian or Alaska Native, NH	Hispanic	White NH	American Indian or Alaska Native, NH	Hispanic	White NH
Crook	-	38.7	13.9	-	98.8	78.4
Deschutes	10.1	15.1	7.1	0.0	59.8	39.5
Jefferson	9.4	21.4	10.7	99.4	92.1	53.0
Oregon	13.5	16.7	7.7	56.0	65.1	38.6

Significantly higher than the Oregon rate for the specified age group and race/ethnicity group

NH: Non-Hispanic

Missing data indicates that there were too few pregnancies to calculate a reliable rate.

Figure 106. Age-specific teen pregnancy rates per 1,000 women, Central Oregon and Oregon, OPHAT, 2012-2017.

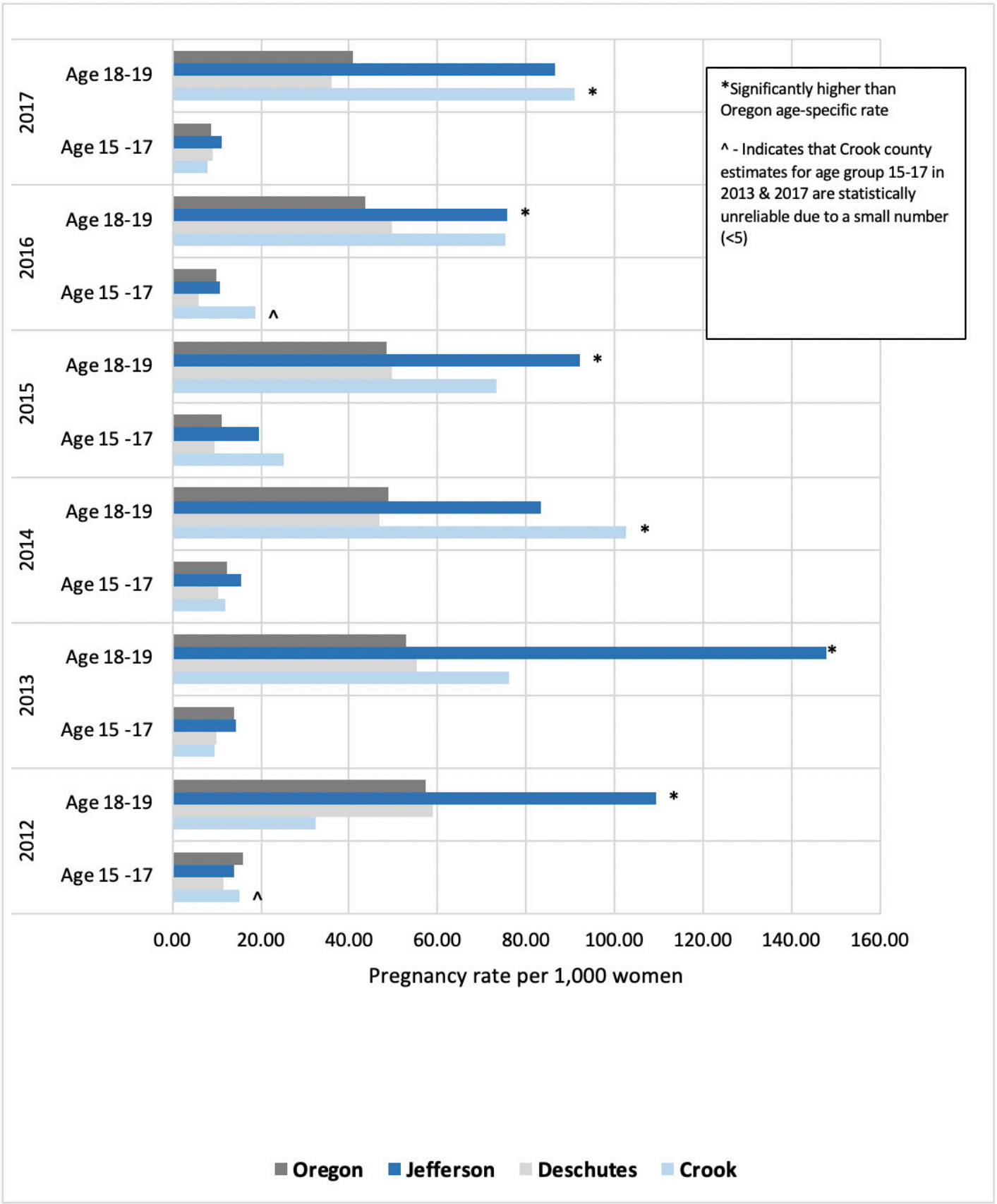
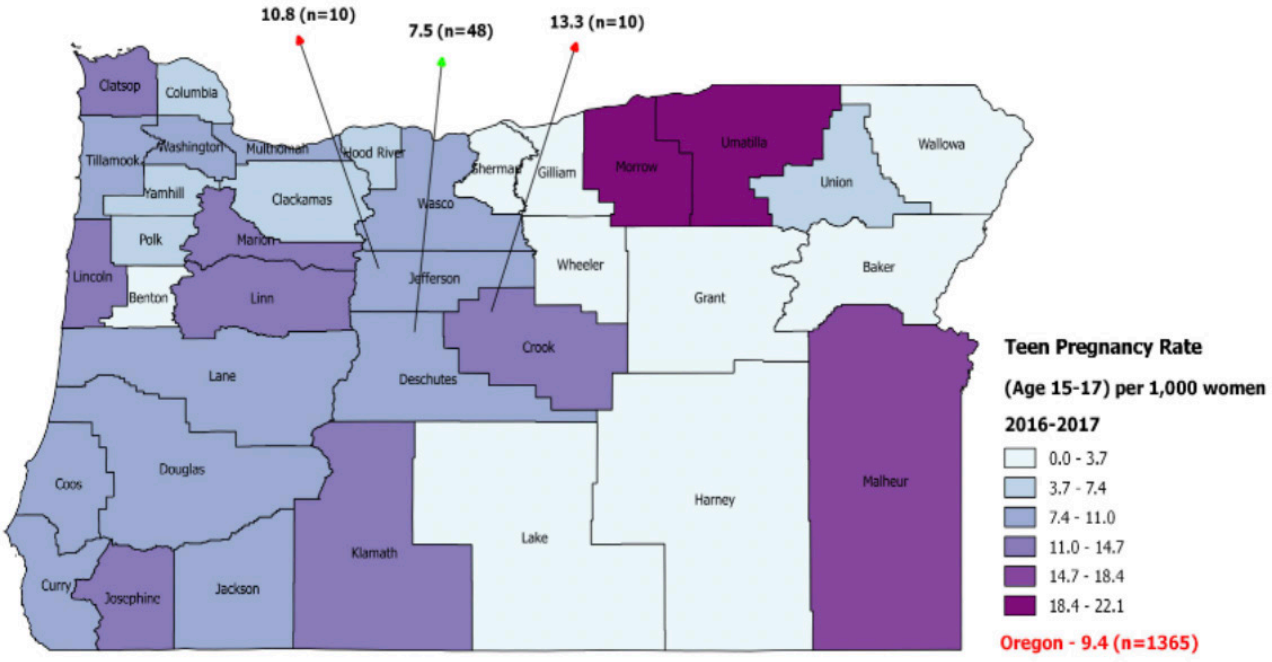


Figure 107. Pregnancy Rates among 15-17-year-olds, per 1,000 women, Oregon Counties, OPHAT, 2016-2017



UNINTENDED PREGNANCY AND PREGNANCY INTENTION

Unintended pregnancy refers to pregnancies that are mistimed, unplanned, or unwanted. According to a study in the United States, less than half (45%) of pregnancies in 2011 were unintended, a decrease since 2008 (Finer & Zolna, 2016). Unintended pregnancies can increase the risk of problems for the mother and baby (CDC, 2016). Measuring rates of unintended pregnancy helps gauge a population's need for contraception and family planning.

Between 2008 and 2017, Crook County had lower abortion rates among women aged 15-44 compared to Oregon overall, and the rate was significantly lower in 2011 and 2017 (Figure 108). Deschutes County had a significantly higher proportion of abortions that were performed at less than nine weeks gestation compared to Oregon as a whole, and a significantly lower proportion of abortions that were performed between 13 to 20 weeks' gestation (Table 27).

In Central Oregon, Approximately 45% of women who recently had a baby indicated they wanted to be pregnant at the time they got pregnant, 5.6% indicated they did not want to be pregnant at that time or any time in the future, and about 38% indicated they wanted to be pregnant at a different time (Figure 110).

Figure 108. Abortion rate per 1,000 women aged 15-44, Central Oregon and Oregon, OPHAT, 2017.

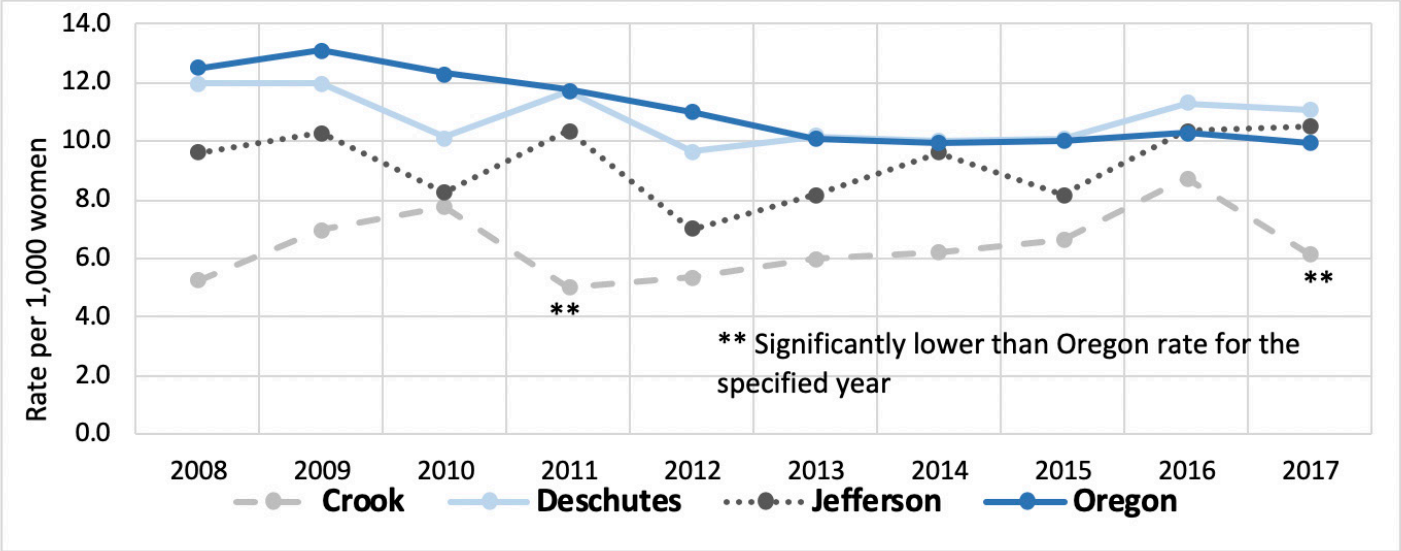


Table 27. Percent of all abortions by gestational age, Central Oregon and Oregon, OPHAT, 2013-2017

	Gestational Age					
	Less than 9 weeks	**9 to 12 weeks**	**13 to 16 weeks**	**17 to 20 weeks**	**21 to 22 weeks**	**23 or more weeks**
Crook	71.2	18.9	7.3	Unreliable estimate	Unreliable estimate	Unreliable estimate
Deschutes	75.4	18.0	4.1	1.7	0.6	Unreliable estimate
Jefferson	59.9	23.1	10.4	4.0	Unreliable estimate	Unreliable estimate
Oregon	69.4	19.4	6.3	3.1	1.0	0.8

Significantly higher than Oregon percentage for the specified gestational age

Significantly lower than Oregon percentage for the specified gestational age

Estimates based on small counts (<5) are unreliable and are not included above.

Figure 109. Abortion rate per 1,000 women age 15 to 44, by county, OPHAT 2017

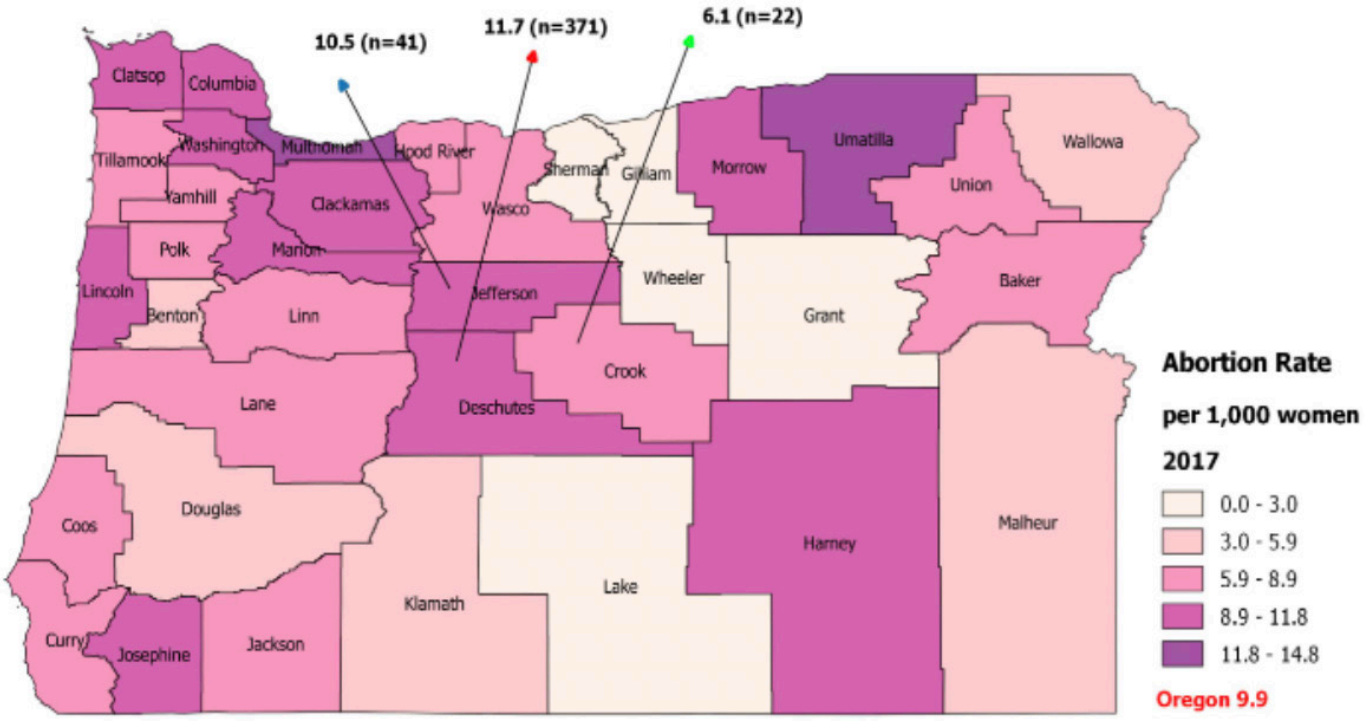
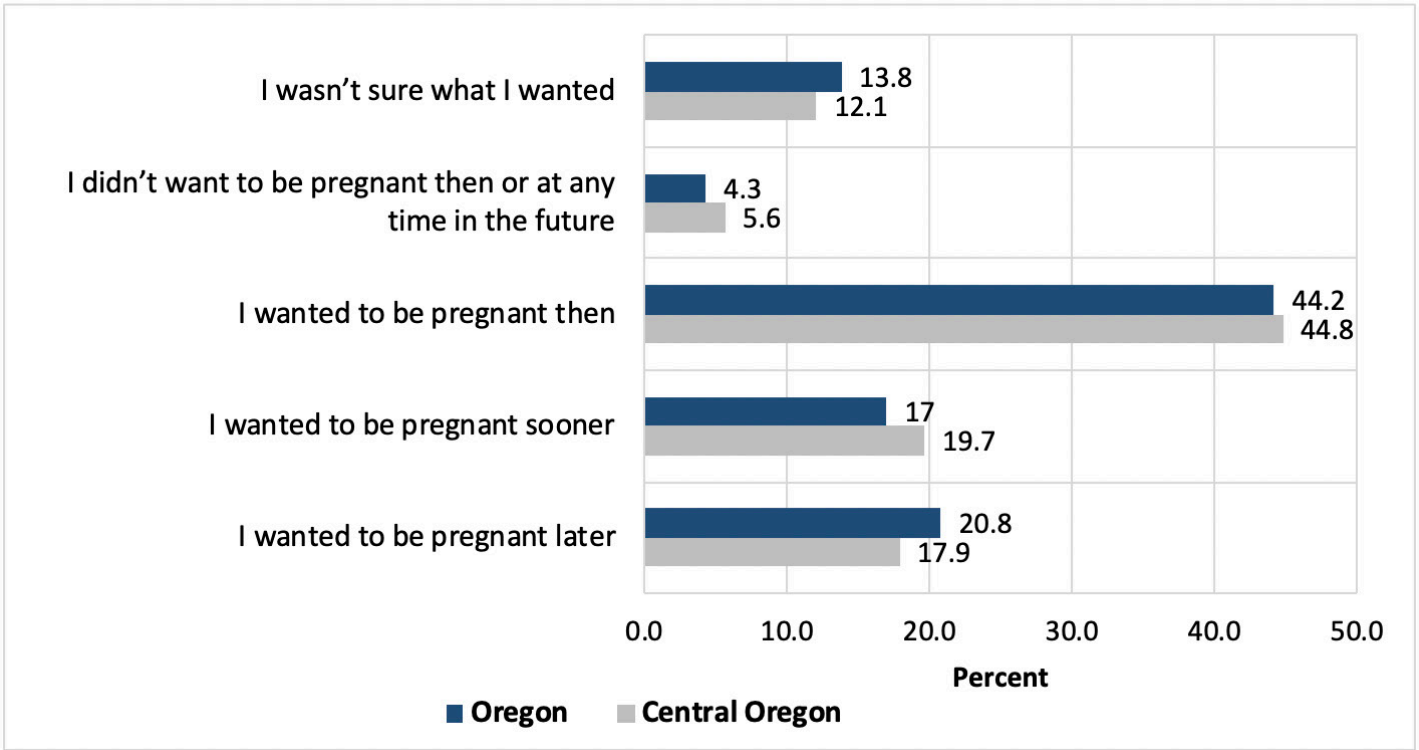


Figure 110. Intention and timing of most recent pregnancy among mothers, Central Oregon, and Oregon, Oregon PRAMS, 2015.



SUBSTANCE/ALCOHOL USE DURING PREGNANCY

Substance use during pregnancy can be harmful to the health of the mother and child. Common substances used while pregnant include alcohol, tobacco, marijuana, and other illicit drugs. According to a 2012 United States survey, over 380,000 babies are exposed to illicit substances, 550,000 babies are exposed to alcohol, and over one million are exposed to tobacco prior to birth (Forray, 2016). No amount of alcohol is safe to use while pregnant and all types of alcohol are harmful to the mother and baby (CDC, 2018).

Pre-pregnancy and prenatal substance/alcohol use is a public health priority that is associated with abnormal fetus development, physical and mental disabilities, miscarriage, and stillbirth (Public Health Reports, 2016). Living in an unhealthy environment such as living with an alcohol user and/or smoker can lead to maternal health distress and negative behavior (BMC Public Health, 2016).

In 2015, a lower proportion of pregnant women in Central Oregon (61%) reported having zero or less than one drink weekly during the three months before they got pregnant compared to Oregon (70%) (Figure 111). The percentage of Central Oregon pregnant women who reported having had any alcoholic drinks in the past two years increased between 2013 and 2015 (Figure 112). The vast majority (98%) of pregnant women in Central Oregon had zero or less than one drink per week during the last three months of their pregnancy. Approximately 2% reported having one to three drinks per week during the last three months of pregnancy (Table 28). In 2014, 11.4% of Central Oregon pregnant women lived with someone very close to them who had a problem with drinking or drugs, which was a slight increase from 7.5 in 2013 (Figure 113). In 2015, this percentage decreased to 5.3%, which is significantly lower than in Oregon overall (Figure 113).

Figure 111. Percent of pregnant women who had alcoholic drinks during the three months before they got pregnant, by the number of drinks in an average week, Oregon PRAMS, 2013-2015.

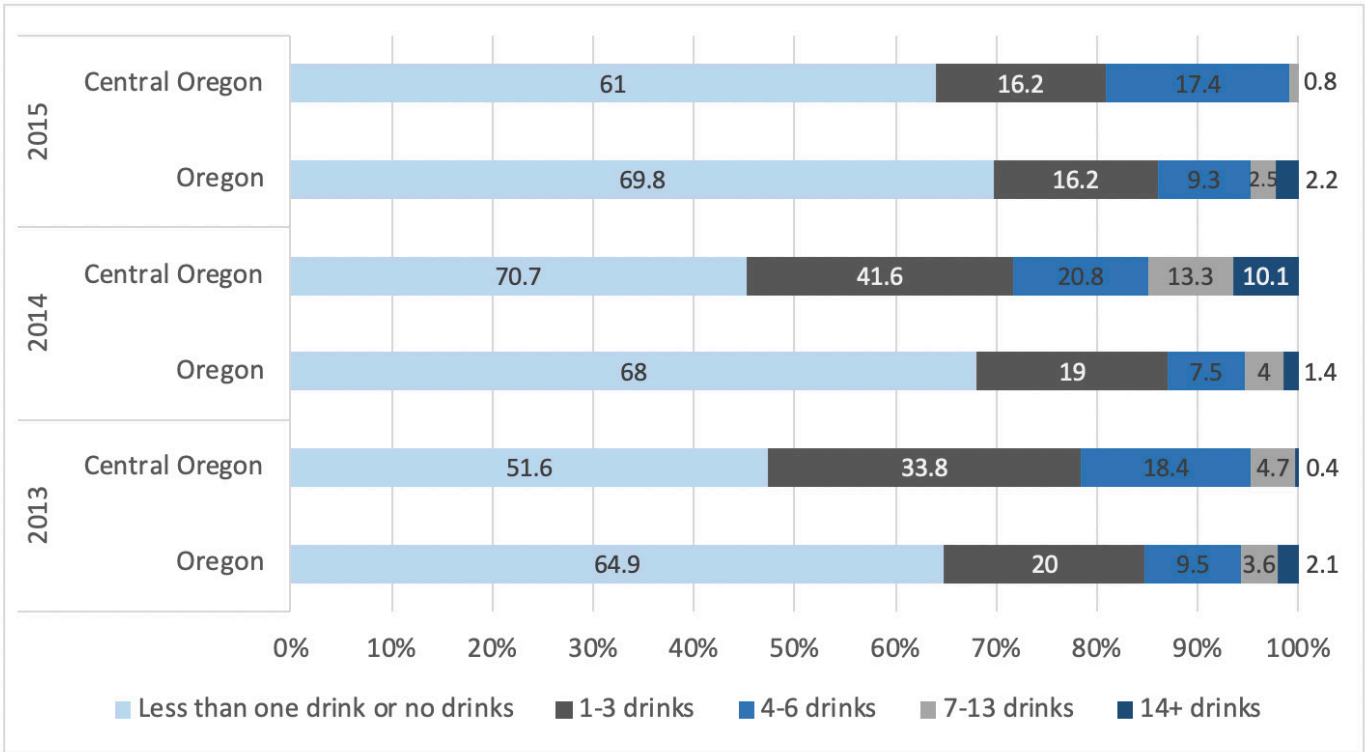
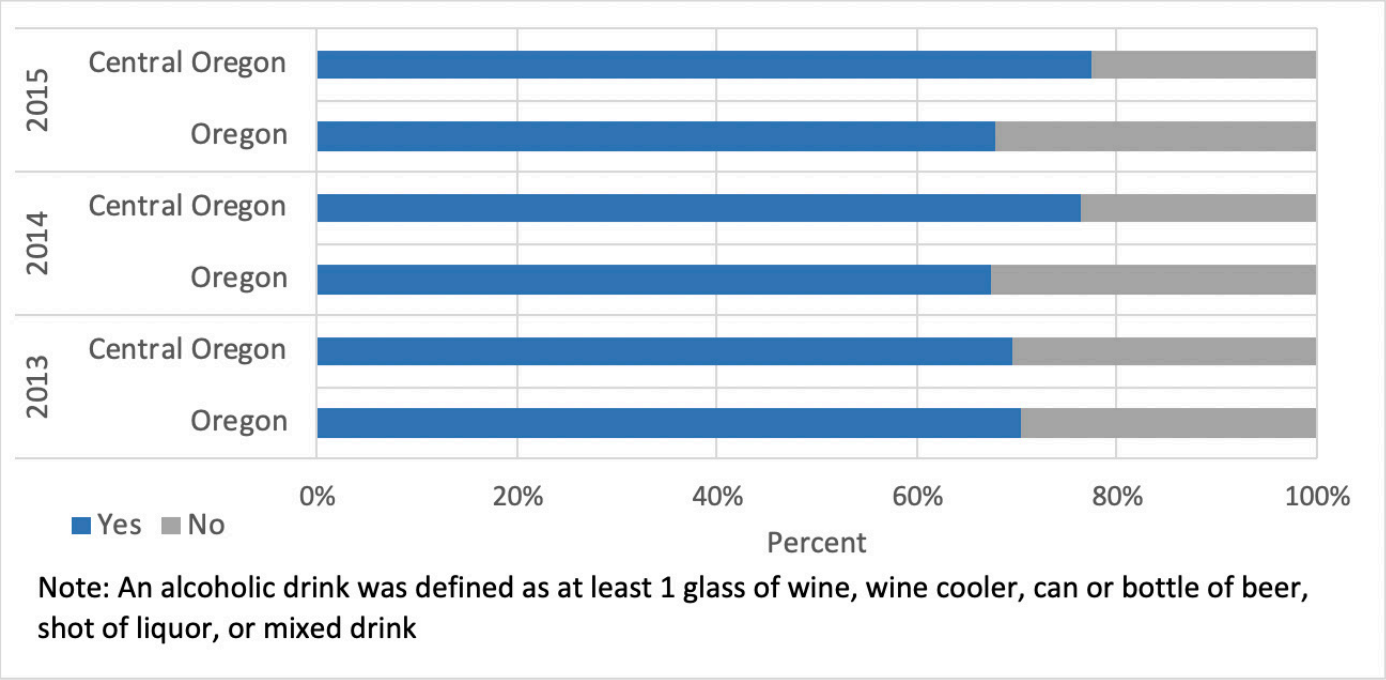


Figure 112. Percent of pregnant women who had any alcoholic drinks in the past 2 years, Oregon PRAMS, 2013-2015.

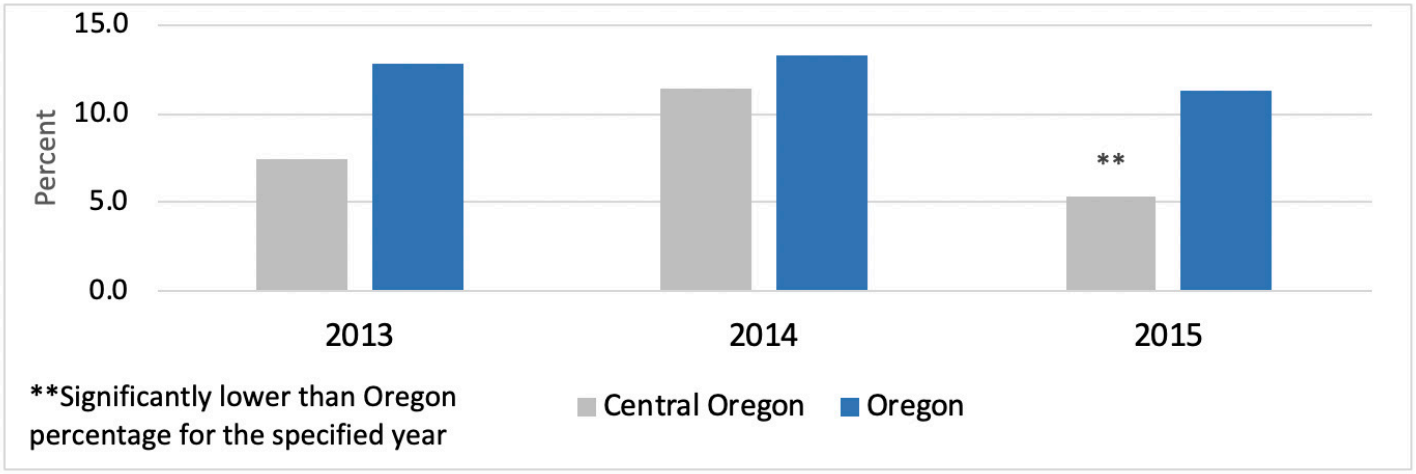


Note: An alcoholic drink was defined as at least 1 glass of wine, wine cooler, can or bottle of beer, shot of liquor, or mixed drink

Table 28. Percent of pregnant women who had alcoholic drinks during the last three months of their pregnancy, by the number of drinks in an average week, Oregon PRAMS, 2013-2015.

	7-13 drinks	4-6 drinks	1 to 3 drinks	No drinks or less than one drink
Central Oregon	-	-	1.8	98.2
Oregon	0.1	0.2	1.7	98.0

Figure 113. Percent of pregnant women who lived with someone very close to them that had a problem with drinking or drugs, Central Oregon and Oregon, Oregon PRAMS, 2013-2015.



BRANDON NIXON PHOTO

INFANT, EARLY CHILDHOOD, AND ADOLESCENT HEALTH

Children are exposed to and react to environmental and physical exposures differently than adults. There are specific developmental milestones that pertain to children related to their development that indicate the progress of a child's physical, socio-emotional, cognitive, and linguistic development (HealthyPeople.gov, 2019). The early years are very important as this is the time in life when the brain is developing quickly and has a high level of capacity to change therefore impacting the overall wellbeing and health of an individual (World Health Organization, 2019). During middle childhood and adolescence, the development includes primary skills learned include building relationships, establishing health patterns and behaviors, and exploration that will prepare them for adulthood (HealthyPeople.gov, 2019). Infant and early childhood, (ages 0-3), childhood (ages 4-11), and adolescent (ages 12-19) health each require public health and health care services with different approaches (CDC, 2018).

Forces of Change focus groups in Central Oregon identified the need to focus on youth, including preventing Adverse Childhood Experiences (ACEs), addressing school dropout risk factors (i.e. alcohol and drug use), and educating and providing services for vulnerable populations, such as the children of migrant workers.

Want more information about infant, child, and adolescent health?

CDC MILESTONES:

WWW.CDC.GOV/NCBDDD/ACTEARLY/MILESTONES

CDC HEALTHY YOUTH:

WWW.CDC.GOV/HEALTHYYOUTH

Forces of Change Focus Group Results: Focus of Youth

Central Oregon should focus on **prevention of Adverse Childhood Experiences (ACES)** and address risk factors to limit **school dropout rates**, including **alcohol and drug** use, as well as services and education for children of migrant workers. The region should also focus on:

- Making sure use of alcohol and drugs are not normalized.
- Teaching life skills by using things like the Alcohol, Tobacco, and Other Drug curriculum in schools.
- Focus on supporting childhood education.

There are many opportunities for collaboration between organizations such as: TRACEs (Trauma, Resilience and Adverse Childhood Experiences) partnership, Mothers' Outreach Mentoring Services (MOMS), High Desert Education Service District, Regional Perinatal Care Program, Students Against Destructive Decisions (SADD), Drug Diversion Program, Community behavioral and public health.

BREASTFEEDING

Breastfeeding provides many health benefits for infants to get adequate nutrients that will promote babies' healthy growth. Through breastfeeding, there are several short and long-term health conditions that can be reduced for both the infant and mother. Benefits for infants can include: reduced risk of asthma, obesity, ear and respiratory infections, type 2 diabetes, gastrointestinal infections, and/or Sudden Infant Death Syndrome (SIDS) (CDC, 2018). Benefits for the mother can include lowered risk of breast cancer, ovarian cancer, high blood pressure, and type 2 diabetes (CDC, 2018). Additionally, breastfeeding is a low-cost method for feeding infants that also promotes bonding between a mother and baby. Recommendations suggest exclusively breastfeeding a baby for at least six months and then supplementing solid food with breast milk. Many mothers initiate breastfeeding, but several barriers lead to discontinuation or decreased breastfeeding as the infant grows.

In Central Oregon and in Oregon overall, most mothers (over 80%) received breastfeeding information at the hospital immediately after birth (Table 29). Most babies in Central Oregon and across Oregon as a whole are breastfed (Figure 114). Over 90% of babies born in Crook and Deschutes County from 2015 to 2017 were breastfed. Approximately 82.2% of babies born in Jefferson County were breastfed, which is significantly lower than the percentage across Oregon as a whole (Figure 114). WIC (Women, Infants, and Children) served over 7,500 individuals in Central Oregon in 2018, the majority of WIC mothers initiated breastfeeding (Table 30).

Want more information on breastfeeding?

CENTER FOR DISEASE CONTROL AND PREVENTION BREASTFEEDING:

WWW.CDC.GOV/BREASTFEEDING

OFFICE OF WOMEN'S HEALTH:

WWW.WOMENSHEALTH.GOV/BREASTFEEDING

Table 29. Percent of mothers who reported various breastfeeding practices at the hospital after birth, Oregon PRAMS, 2015

	Got breastfeeding information	Learned how to breastfeed	Breastfed in the first hour	Breastfed my baby in the hospital	My baby was fed only breast milk there	Got advice to breastfeed whenever my baby wanted
Central Oregon	90.6	80.9	75.0	100.0	87.1	97.1
Oregon	96.6	86.1	84.4	98.2	80.4	92.2

Figure 114. Percentage of all births for which the mother breastfed, Oregon Vital Statistics Birth Data, 2012-2017.

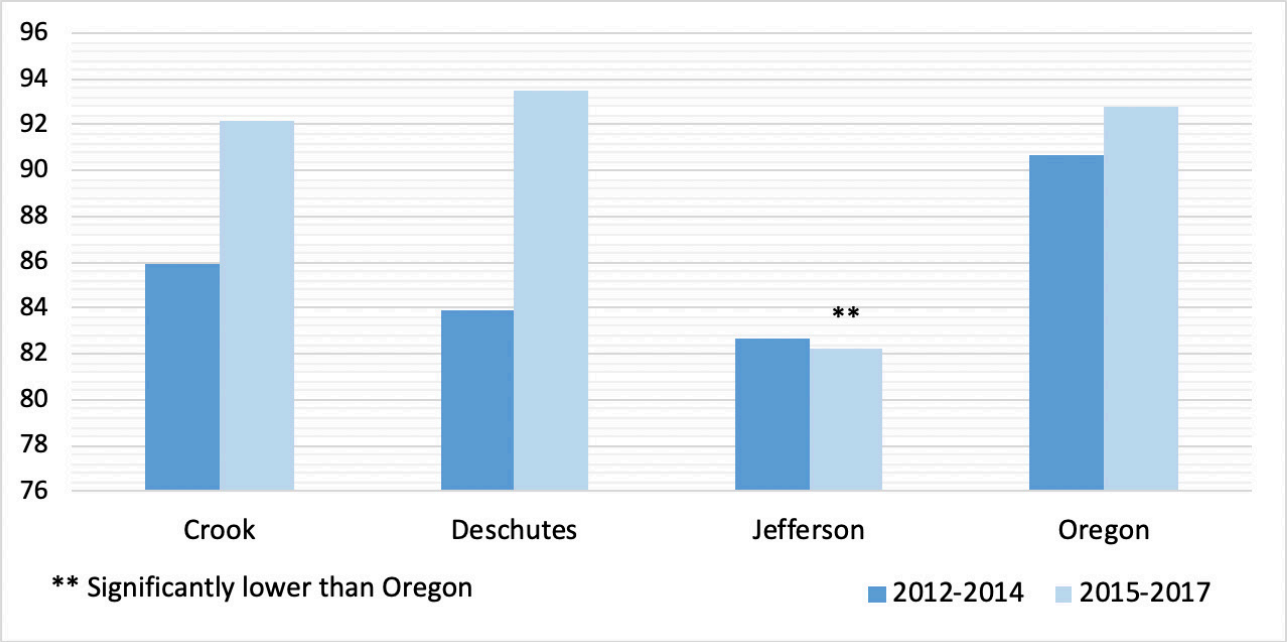


Figure 115. Percentage of mothers who began and continued to breastfeed their babies, Central Oregon and Oregon, Oregon PRAMS, 2013-2015.

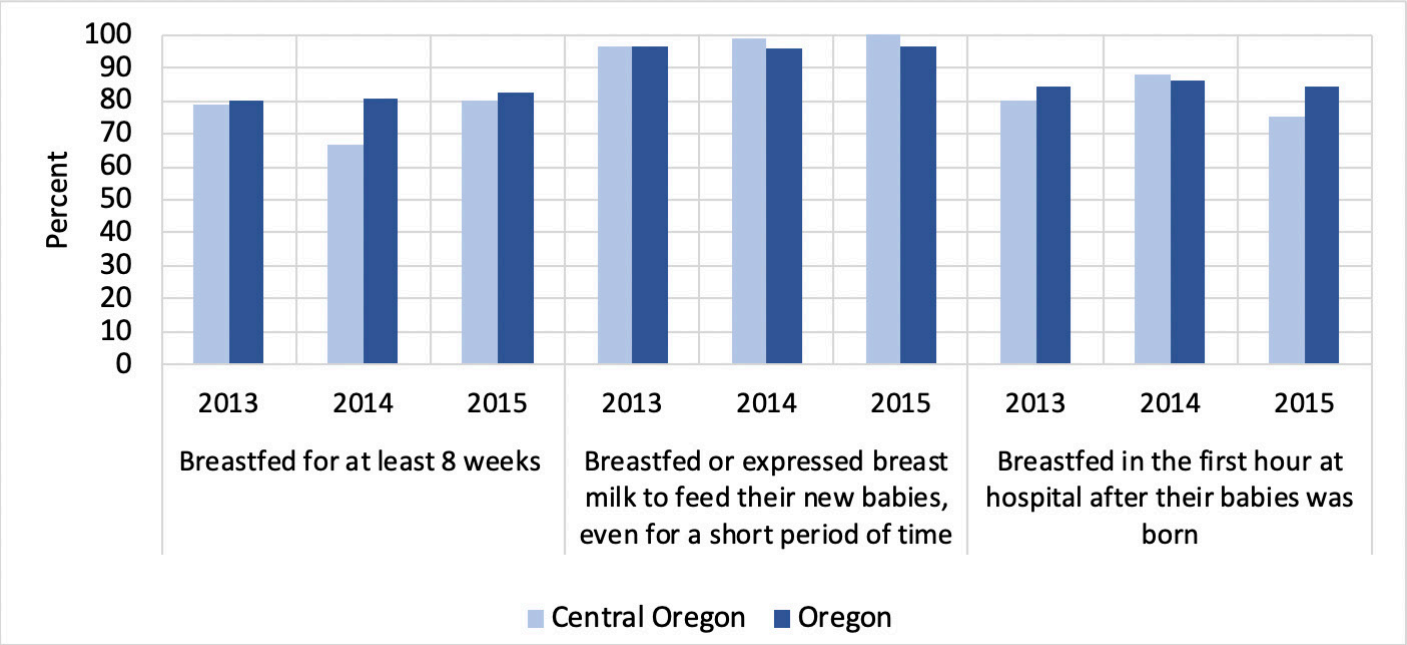


Table 30. Percent of mothers enrolled in WIC who breastfed, and the number of WIC clients served in Central Oregon, WIC County Data Reports, 2018

	Oregon	Crook	Deschutes	Jefferson
Number of individuals served	131,912	1,172	5,428	1,067
Percent initiated breastfeeding	95	99	97	99
Percent still breastfeeding at six months	35	28	41	31

Want more information about childhood health?

CENTER FOR DISEASE CONTROL AND PREVENTION CHILD DEVELOPMENT:

WWW.CDC.GOV/NCBDDD/CHILDDEVELOPMENT

U.S DEPARTMENT OF EDUCATION EARLY LEARNING:

WWW.ED.GOV/EARLY-LEARNING/RESOURCES

Figure 116. Neonatal (age <28 days) and post-neonatal (28 days to <1 year of age) infant mortality rate, OPHAT, 2016-2017

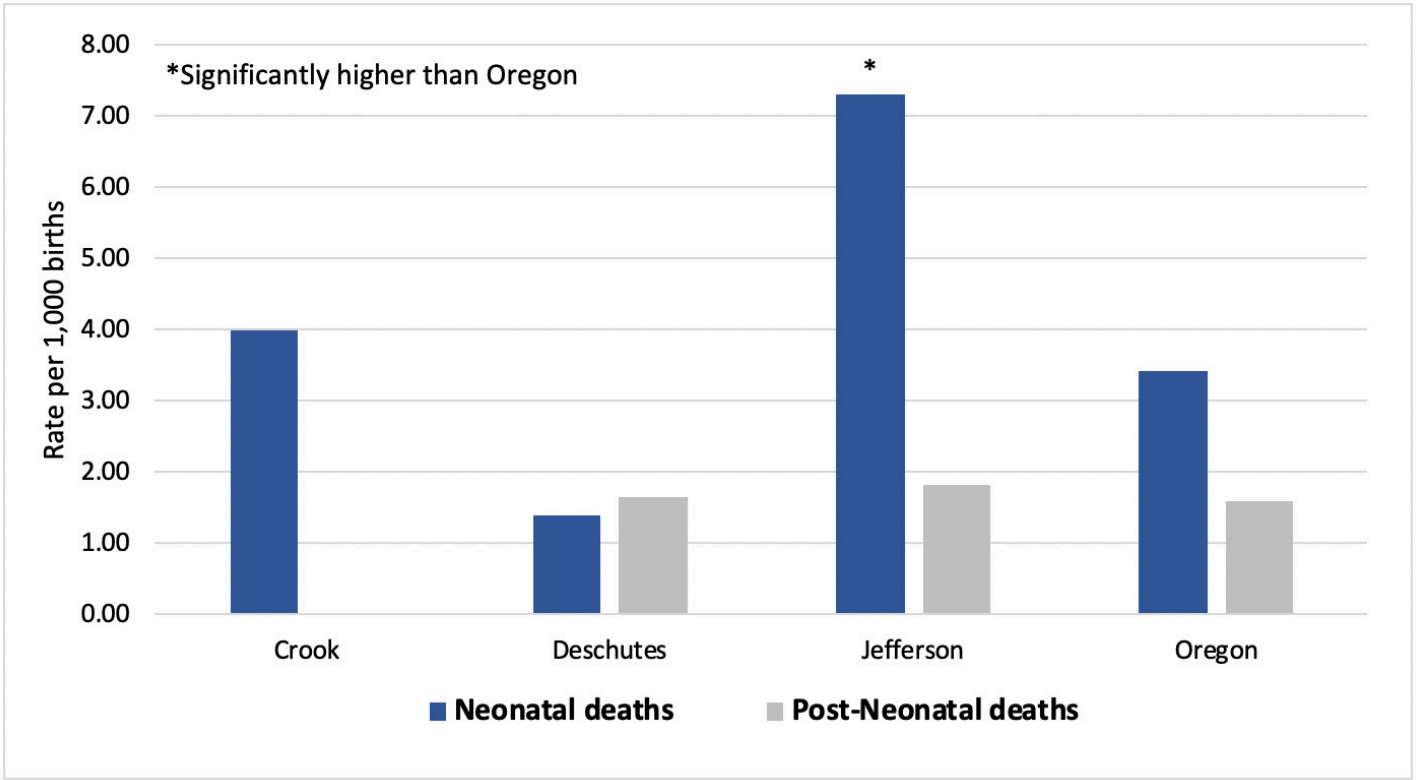
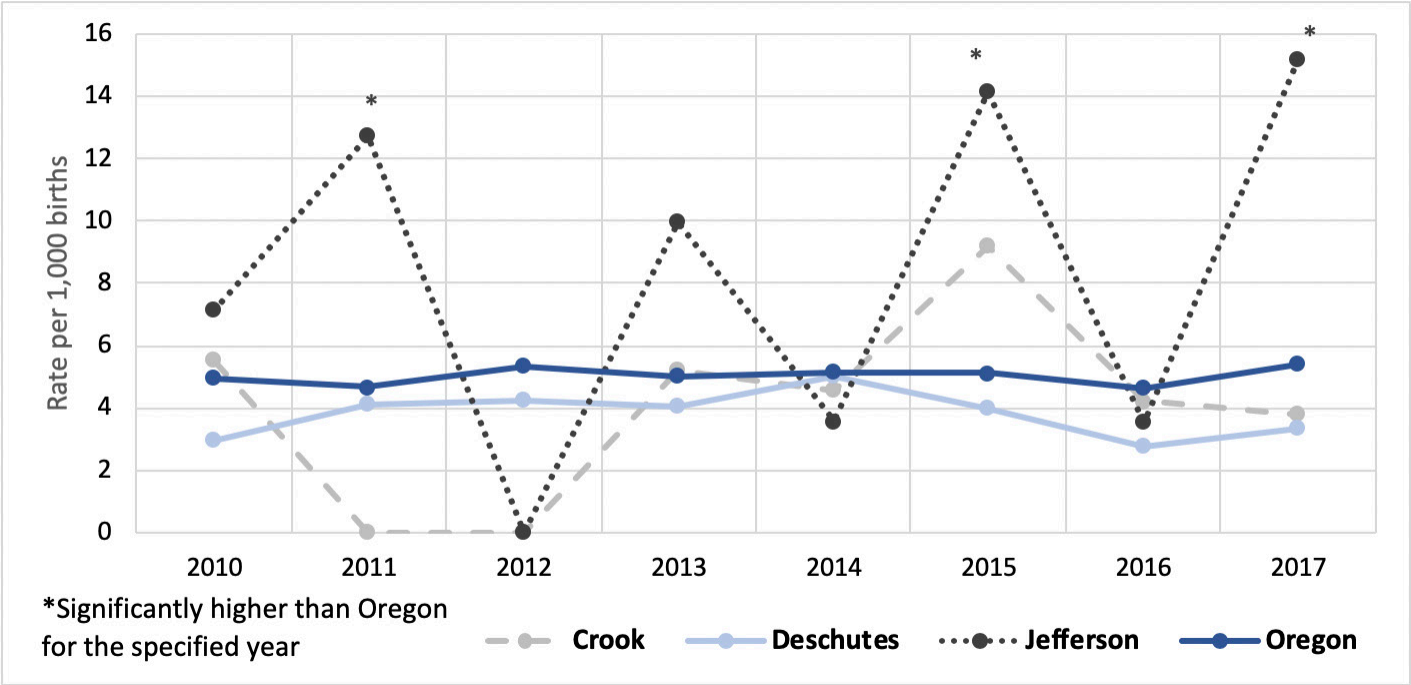


Figure 117. Infant mortality rate per 1,000 live births, OPHAT, 2010-2017.



INFANT MORTALITY AND CHILDHOOD HEALTH

Infant mortality is the death of an infant before his or her first birthday. Infant mortality serves as an important measure for the health status of a population because it is associated with access to quality medical care, health status, public health policies and practices, and social, economic, environmental, and political conditions. Childhood health indicators are important to monitor and measure children's well-being.

Childhood health indicators are important to monitor and measure children's well-being. As identified earlier, children who are healthy and living well in their earlier years are more likely to have better health as adults. Additionally, they are also more educated and contribute more to their community. Good nutrition, access to physical activity, abstinence from alcohol and other drugs of abuse, and emotional support have been linked to better academic performance. Academic performance is measured regularly throughout a child's primary and secondary school years and ends in on-time graduation from high school. Early care and education services play an important role in a young child's dietary and physical activity behaviors.

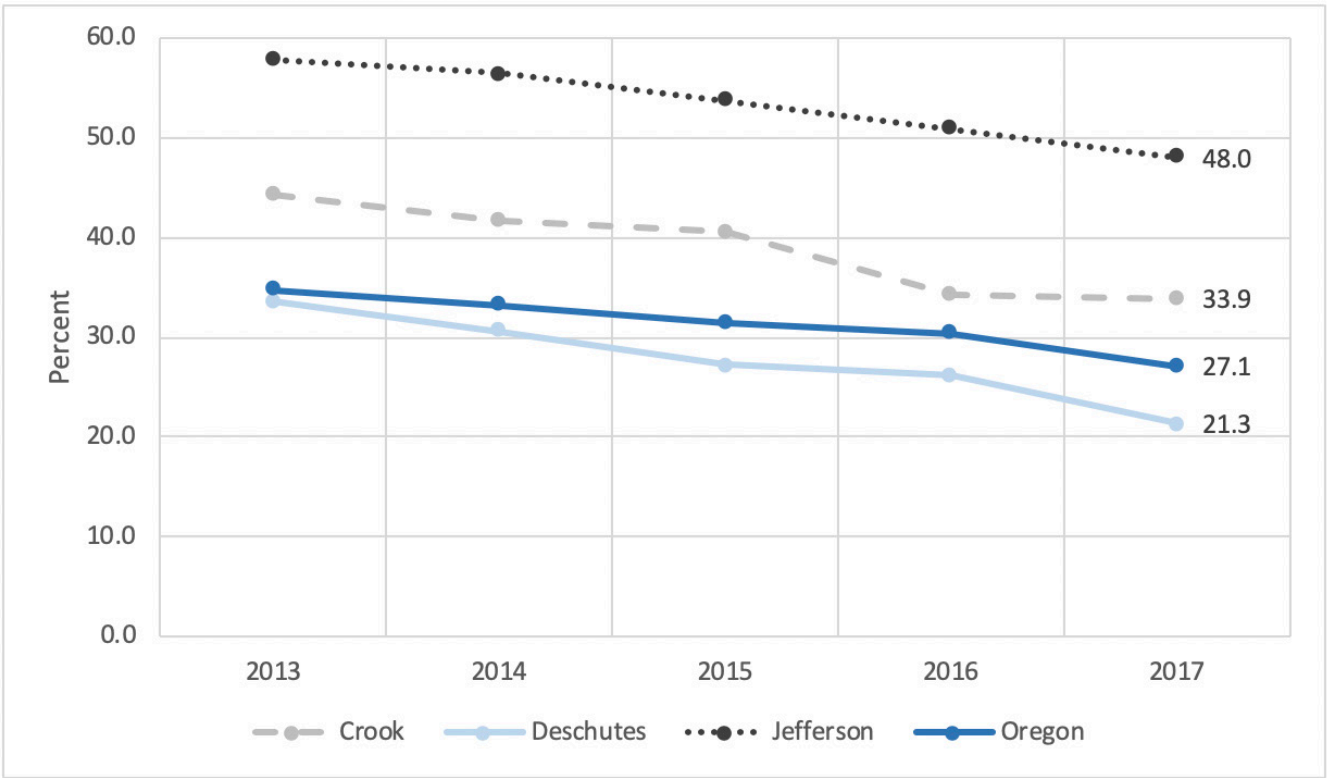
From 2016 to 2017, Jefferson County had a significantly higher neonatal (newborn) mortality rate than Oregon as a whole (Figure 116). In 2011, 2015, and 2017, Jefferson County's infant mortality rate per 1,000 births was significantly higher than Oregon's rate (Figure 117).

CHILD AND FAMILY SUPPORT

Many programs that support children through the family structure are the most effective for vulnerable Central Oregonians and provide financial and emotional help. Helping families be healthy, strong, and safe is important to overall health and well-being in a community. Some children and families need extra support in order to ensure they receive the healthiest start in life. This includes various services to support children, promote safety, and strengthen families in an effort to prevent abuse and neglect. The Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance for Needy Families (TANF) programs work to provide nutritional and financial support for low-income families and individuals that help them become self-sufficient. Other state services, such as access to Employment Related Day Care (ERDC) funds, home visiting, Relief Nursery programs, Oregon Department of Human Services Children and Youth Division, and other programs, are available to help families provide the best for themselves including free or reduced lunch and foster care.

The percentage of children enrolled in SNAP decreased in all three Central Oregon counties and across Oregon as a whole between 2013 and 2017. Jefferson County had the highest percentage of children enrolled in SNAP in 2017 (48.0%) (Figure 118). Of the three Central Oregon counties, Jefferson County had the highest percentage of children enrolled in SNAP. Jefferson and Malheur County are the only two counties in Oregon with children SNAP enrollment above 41.7% (Figure 119). The percentage of children enrolled in TANF decreased in all three Central Oregon counties and across Oregon as a whole between 2013 and 2017 (Figure 120). Jefferson County had the highest percentage of children enrolled in TANF in 2017 (9.2%) (Figure 120).

Figure 118. Percent of children enrolled in the Supplemental Nutrition Assistance Program (SNAP), Kids Count Data Center, 2013-2017.



In 2017, around 37% of births in Deschutes County were to a mother who was enrolled in WIC for 1 to 9 months of her pregnancy (Figure 121). In Crook and Jefferson Counties, 58.2% and 62.3% of births, respectively, were to a mother enrolled in WIC for 1 to 9 months of her pregnancy (Figure 121).

Figure 119. Percent of children enrolled in the SNAP program, Kids Count Data Center, 2017

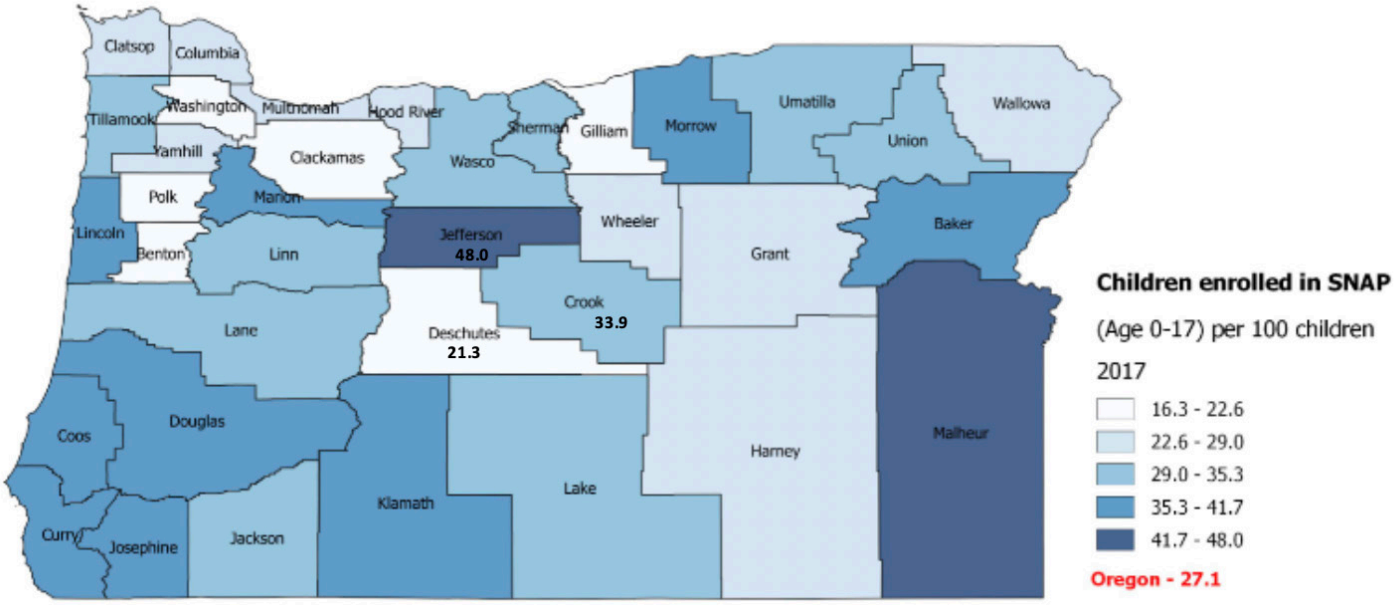
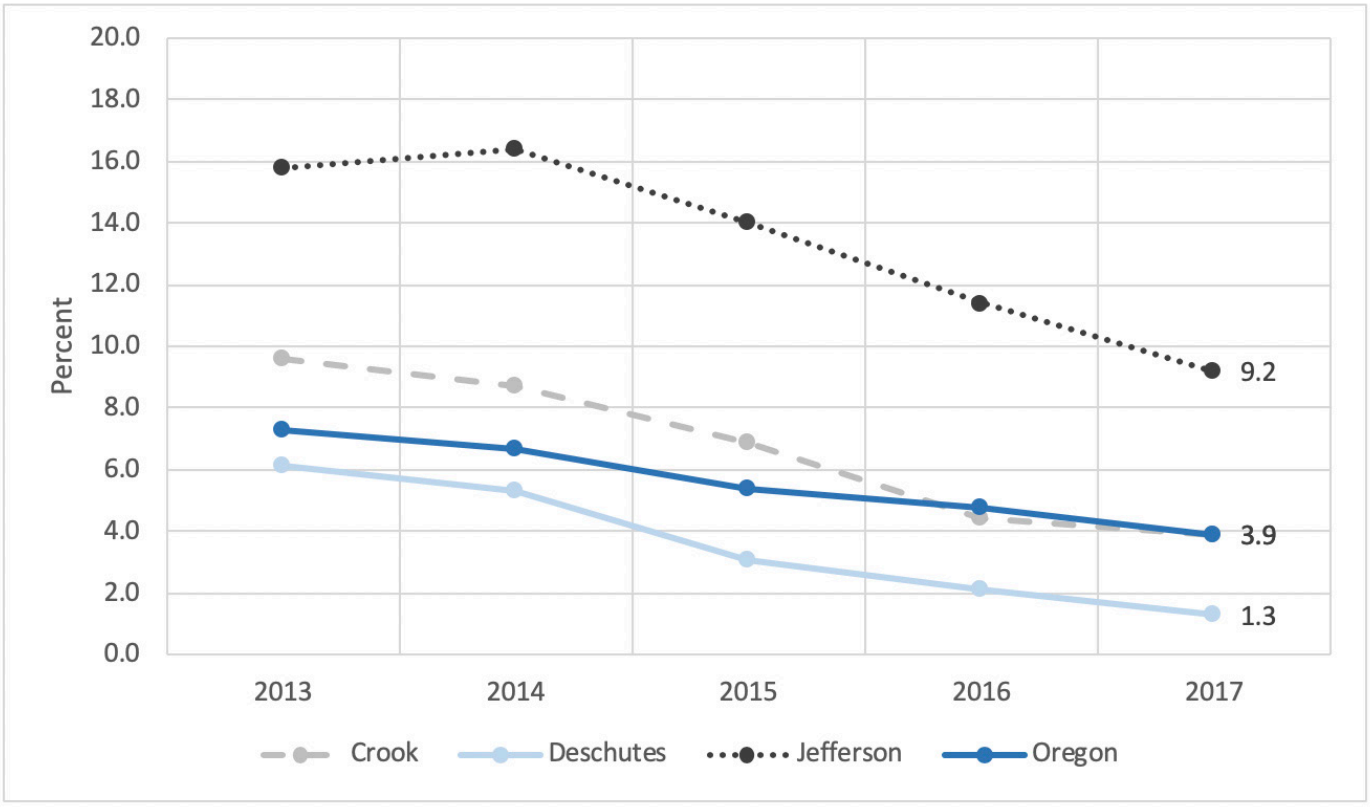


Figure 120. Percent of children enrolled in Temporary Assistance for Needy Families (TANF), Kids Count Data Center, 2013-2017.



Across Oregon and in all three Central Oregon counties, the percentage of public-school students who were eligible for free or reduced lunches decreased between 2012-2013 and 2017-2018 (Figure 122). In 2017-2018, 42% of Deschutes County public school students were eligible for free or reduced lunches, compared to 74% in Jefferson County (Figure 122).

A higher percentage of households with children under 18 years were headed by a single parent in Jefferson County (45%) than in Crook (28%) or Deschutes County (28%) (Table 31).

Figure 121. Percent of births for which the mother was enrolled in WIC for 1 to 9 months of pregnancy, OPHAT, 2012-2017.

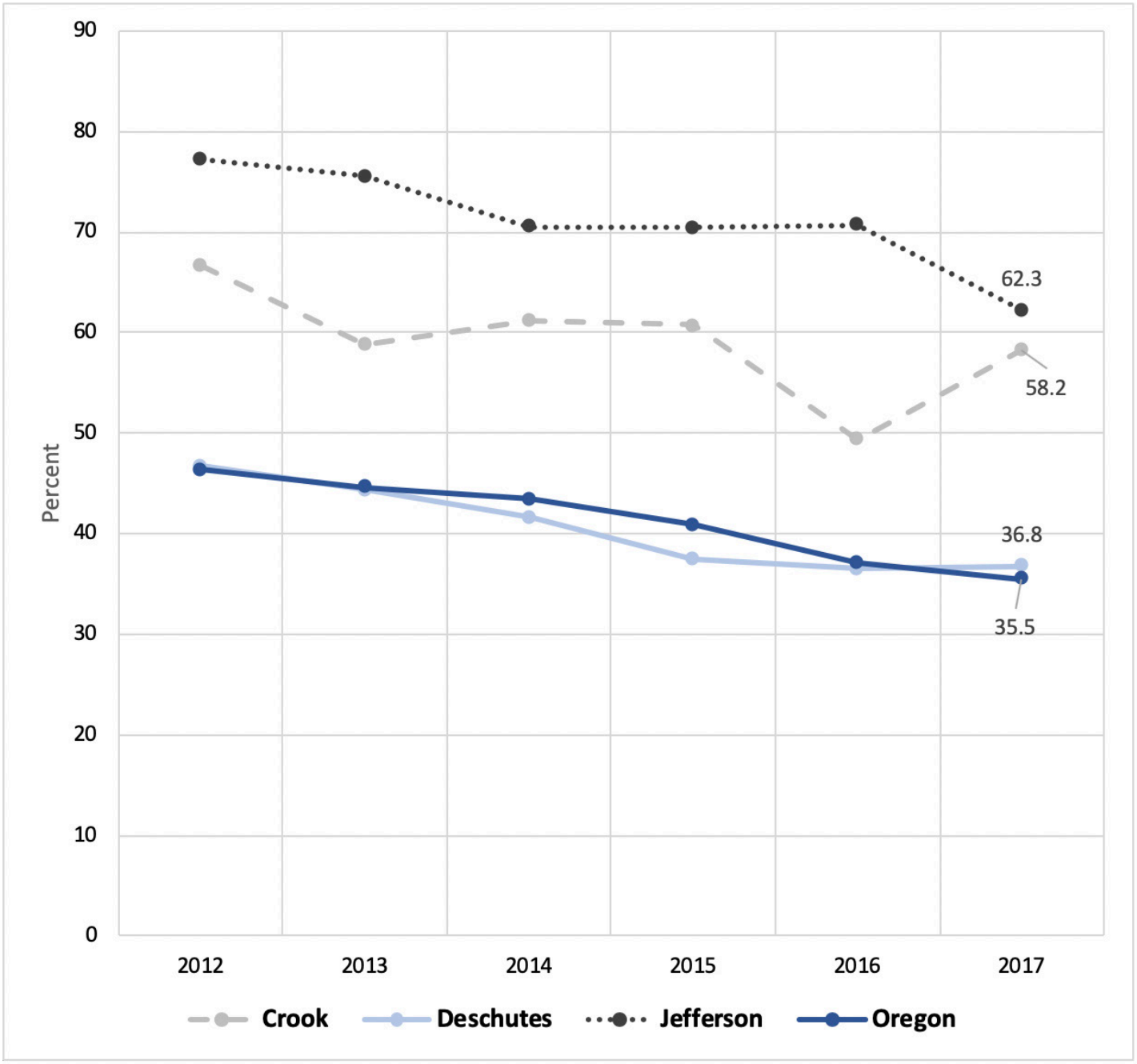
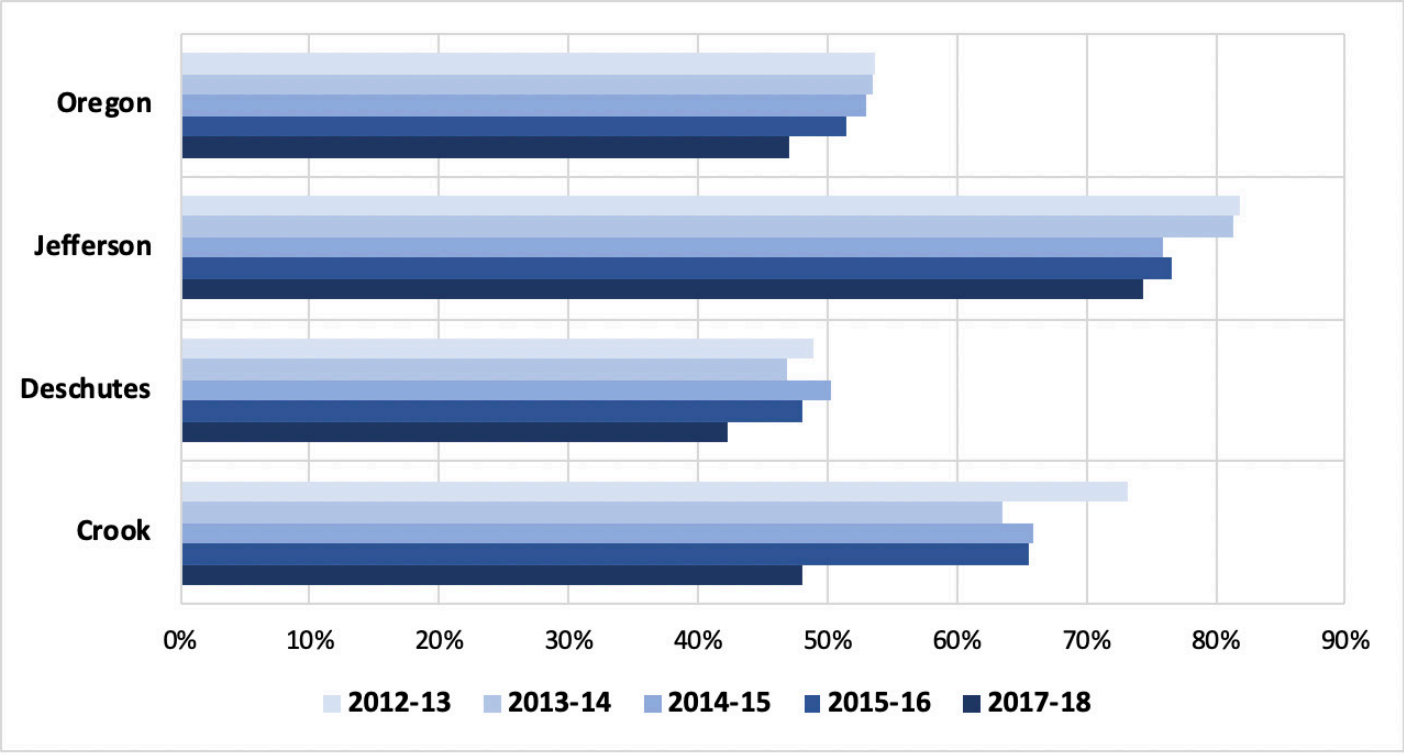


Table 31. Number and percentage of households with children under 18 years headed by a single parent, ACS 5-year estimates, 2012-2016		
	Single-Parent Households	Percentage of total households
Crook	1,177	28%
Deschutes	10,034	28%
Jefferson	2,399	45%
Oregon	261,521	31%

Figure 122. Percent of public-school students who were eligible for free or reduced lunch, Kids Count Data Center, 2012-2018



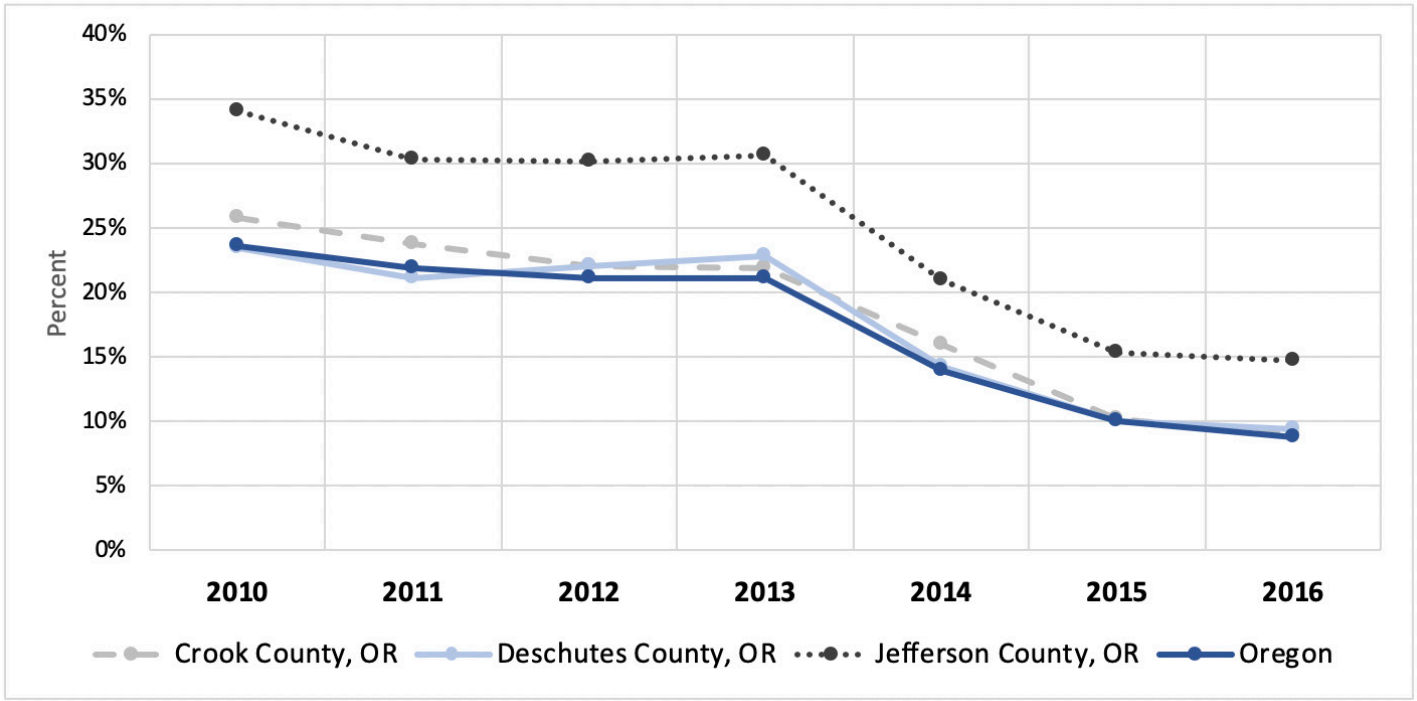
CHILD AND ADOLESCENT HEALTH RISK FACTORS

Child and adolescent health may depend on multiple factors, including social and economic conditions, educational level, racial and ethnic identity, and the health care system. Family behavior and health are also crucial influences on children's health. Many of the risk factors for child and adolescent health is the same as adults. Adolescents are defined roughly between the ages of 10 and 19 (World Health Organization [WHO], 2018). Roughly 1.2 billion people of the world's population are adolescents (WHO, 2018). Many are healthy, however, there are still preventable deaths and illnesses in this population (WHO, 2018). Addressing the specific risks connected to these preventable deaths and illnesses may require different approaches, depending on the age group. Avoiding these risks early in life may be important for leading a long and healthy life.

The percent of children under the age of 18 who are uninsured has been decreasing in Central Oregon and across Oregon as a whole since 2013 (Figure 123). Of the three Central Oregon counties, Jefferson County has the highest percentage of births considered low birth weight (7.9%). 6.8% of Deschutes County births and 3.4% of Crook County births are considered low birth weight (Figure 124). In 2016, of the three Central Oregon counties, the percentage of children aged <18 who lived at or below the federal poverty level was highest in Jefferson County (24.7%) and lowest in Deschutes County (14.2%) (Figure 125).

In 2015, a significantly higher percentage of Jefferson County 8th and 11th-grade students used e-cigarettes than the percentage across Oregon as a whole (Figure 126). A significantly higher percentage of Crook County 8th and 11th graders used other types of tobacco compared to Oregon as a whole (Figure 126). In 2015, over 30% of Crook and Deschutes County 11th graders used alcohol in the past 30 days, and 28.5% of Jefferson

Figure 123. Percent of children under the age of 18 who are uninsured, American Community Survey, 2010-2016



County 11th graders used alcohol in the past 30 days. The percent of 11th graders reporting alcohol use decreased for all three counties between 2013 and 2015 (Figure 127). Among Central Oregon 8th graders in 2015, Jefferson County had the highest percentage who used prescription drugs, marijuana, cigarettes, and alcohol compared to the other Central Oregon counties (Figure 127).

Figure 124. Percent of births that are considered low birth weight (<2500 grams) by county, OPHAT, 2017

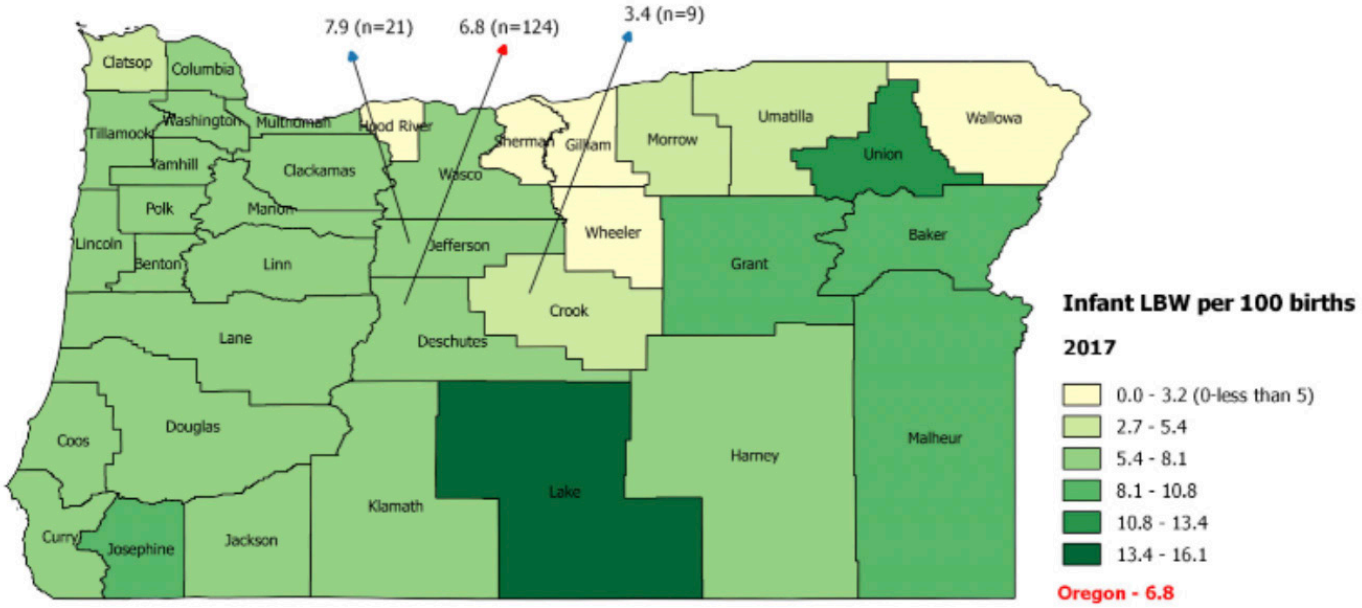
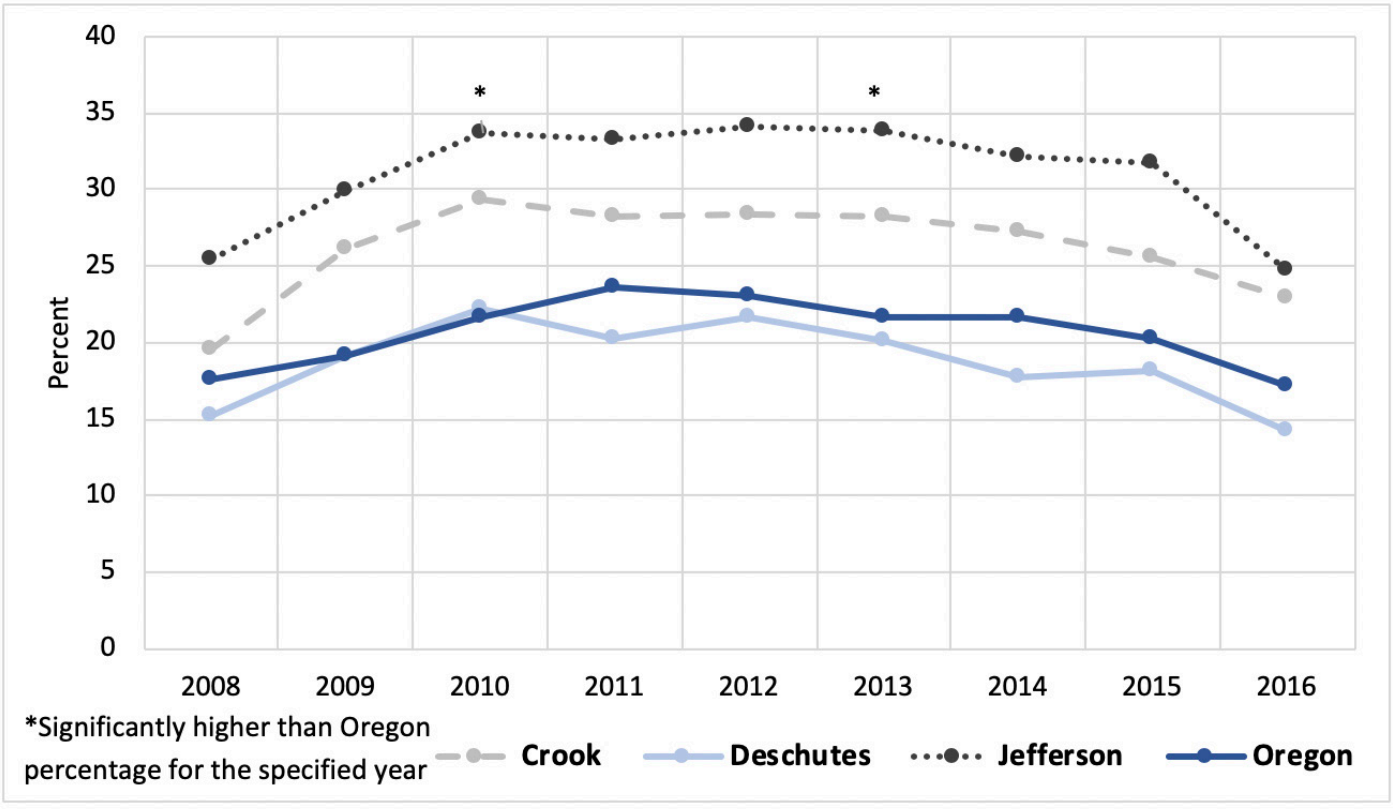


Figure 125. Percentage of children aged <18 who live in families who live at or below the federal poverty level, Kids Count Data Center, 2008-2016.



"Sometimes people will have their friends over 21 buy products like alcohol or cigarettes."
- Jefferson County Youth

Figure 126. Percentage of 8th and 11th-grade students who smoked or used tobacco products during the last 30 days, Oregon Healthy Teens Survey, 2013-2015.

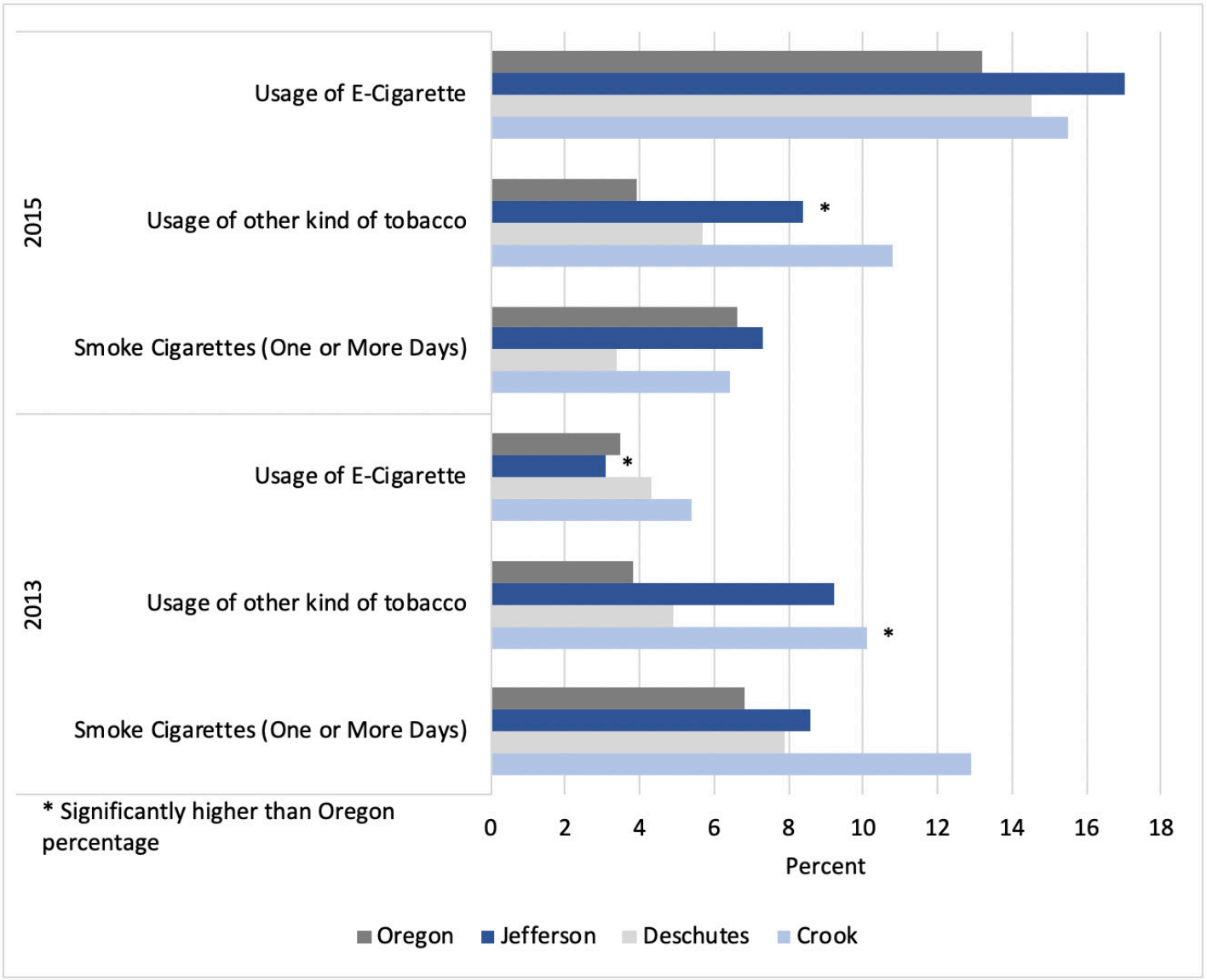
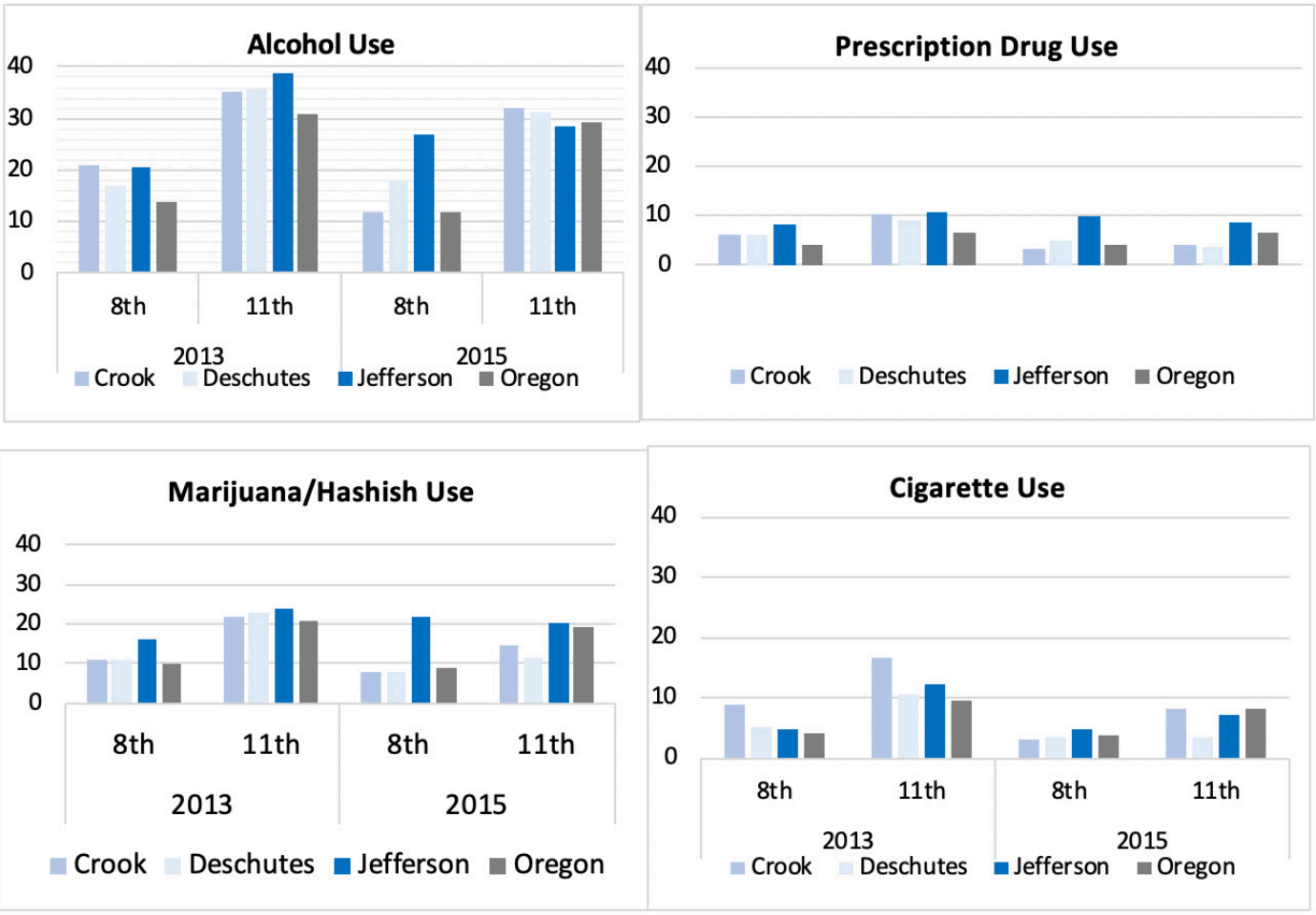


Figure 127. Percent of 8th and 11th-grade students who used tobacco, alcohol, and other drugs over the past 30 days, Oregon Healthy Teens Survey, 2013 and 2015



In 2015, approximately 10% of Jefferson and Crook County 8th and 11th-grade students reported eating one or fewer servings of fruits and vegetables per day over the past week, compared to 6% of Deschutes County students (Figure 128). Approximately three out of four of Crook County 8th and 11th-grade students reported visiting a convenience store or fast food restaurant over the past week (Figure 128). In 2015, around 88% of Deschutes County 8th and 11th graders reported using motorized transportation between home and school, which is significantly higher than across Oregon as a whole (74%) (Table 32). However, only 3% of Deschutes County 8th and 11th graders reported having no physical activity, which is significantly lower than across Oregon (9.2%) (Table 32). 71% of Jefferson County 8th and 11th-grade students reported that they had no physical education classes at school, which is significantly higher than across Oregon (52.4%) (Table 32).

Of the three Central Oregon counties, Crook County had the lowest percentage of public-school students who lacked a fixed, regular, and adequate nighttime residence during the 2015-2016 academic year (Figure 129).

Figure 128. 8th and 11th-grade student nutrition indicators during the past seven days, the Oregon Healthy Teens Survey, 2013-2015

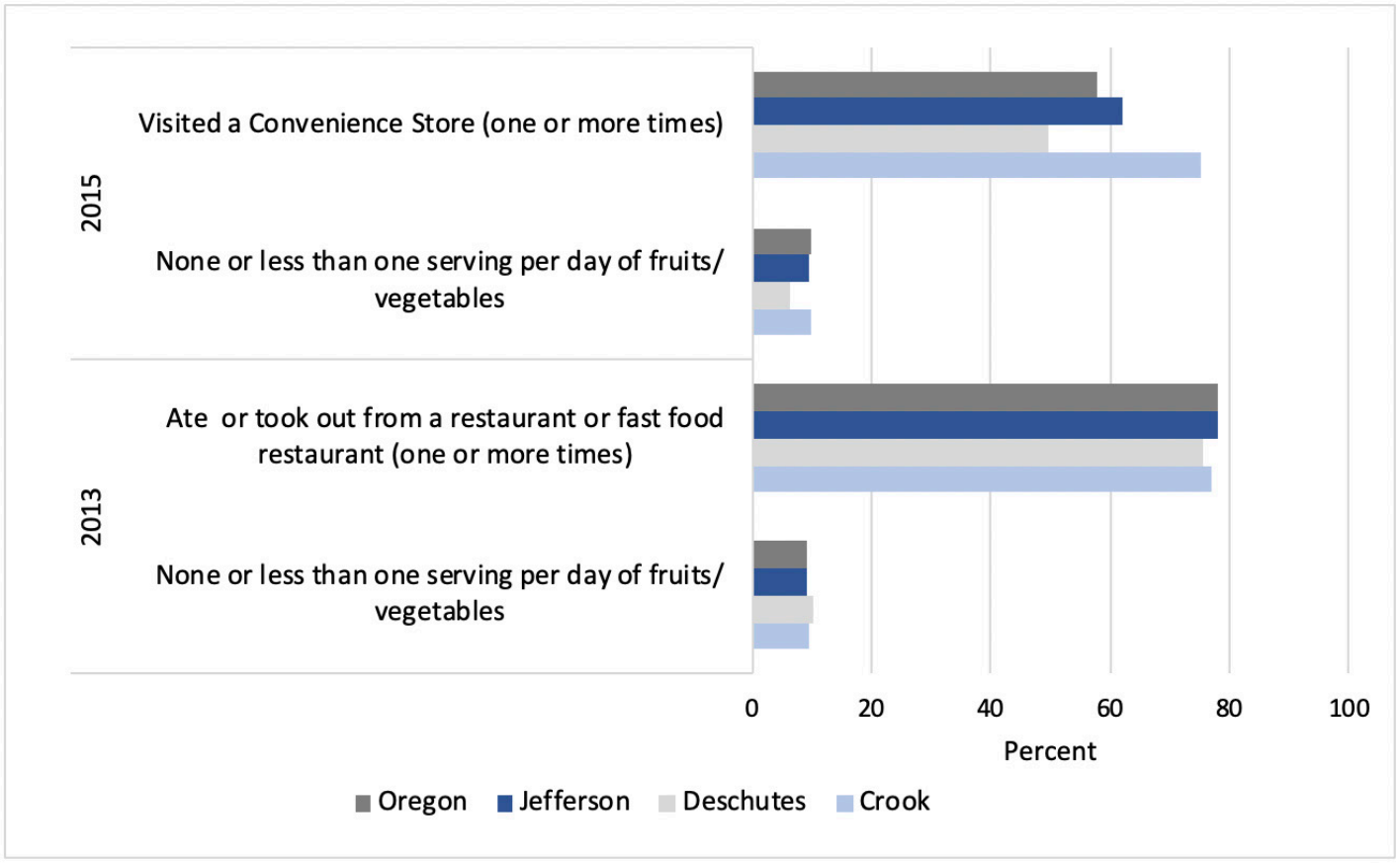


Figure 129. Public school students who lack a fixed, regular, and adequate nighttime residence during the academic year per 100 students, Oregon Department of Education "Homeless Education Program: McKinney-Vento Act," 2015-2016

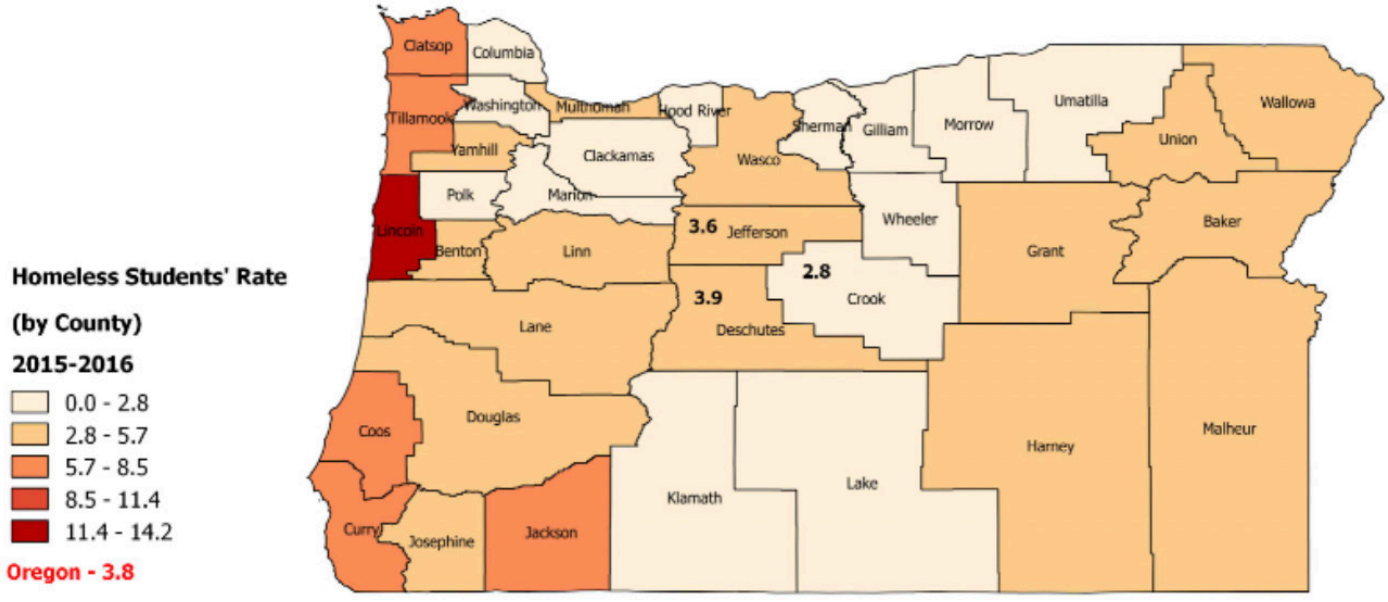


Table 32. 8th and 11th-grade student physical activity indicators, Oregon Healthy Teens Survey, 2013-2015					
		Crook	Deschutes	Jefferson	Oregon
2013	No physical activity	6.1	9.3	8.4	8.7
	<3 days physical activity in the past week	187	13.6	15.1	24.4
	No physical education classes at school	58.9	41.9	44.1	45.3
	Use motorized transportation between home and school	73.8	81.1	70.1	71.5
2015	No physical activity	8.0	2.9	8.9	9.2
	<3 days physical activity in the past week	11.8	7.8	18.3	14.1
	No physical education classes at school	52.4	30.6	71.4	42.3
	Use motorized transportation between home and school	76.8	88.4	75.3	73.7
	Significantly higher than Oregon				
	Significantly lower than Oregon				

ADVERSE CHILDHOOD EXPERIENCES (ACES)

Adverse Childhood Experiences (ACEs) are important public health issues and refer to stressful events in the first 18 years of an individual's life which can impact that individual's health outcomes as an adult. Those early experiences, such as parental incarceration, abuse (mental, verbal, physical, sexual), poverty, substance abuse, and others, create a large effect on future violence, health outcomes, risky behaviors, victimization, and perpetuation of that individual (Centers for Disease Control and Prevention [CDC], 2016). Children can gain both positive and negative experiences easily from their environments that impact their future life and health. Adverse Childhood Experiences such as violence and neglect could lead to damaging consequences, such as risky health behaviors, physical and mental chronic health conditions, lower career potential, and early death (CDC, 2016).

The more adverse childhood experiences one has, the higher the risk of the following health conditions: asthma, depression, anxiety, substance use disorder, post-traumatic stress disorder, smoking, stroke, and diabetes, among others (CDC, 2016; McLaughlin, 2017). Children in non-parental care, such as living with grandparents or in foster care, are particularly likely to have experienced a high number of ACEs compared to children living with two biological parents. ACEs can be prevented through some of the following actions: parenting training programs, intimate partner violence prevention, social support for parents, mental health and/or substance abuse treatment (if needed), and more (CDC, 2016). In 2016, the most commonly reported types of ACEs among adults 18 or older in Oregon included household substance abuse and emotional abuse (Oregon Health Authority, 2018). For more information about mental health in general, please refer to the Mental Health section.

Want to learn more about adverse childhood experiences (ACEs)?

CENTER FOR DISEASE CONTROL AND PREVENTION ACES:

WWW.CDC.GOV/VIOLENCEPREVENTION/CHILDABUSEANDNEGLECT/ACESTUDY/INDEX.HTML

SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION ACES:

HTTPS://WWW.INTEGRATION.SAMHSA.GOV/CLINICAL-PRACTICE/TRAUMA

If you'd like to explore more data on children's health complexity, please visit Oregon Health Authority's Transformation Center page.

CHILDREN'S HEALTH COMPLEXITY DATA REPORTS:

WWW.OREGON.GOV/OHA/HPA/DSI-TC/PAGES/CHILD-HEALTH-COMPLEXITY-DATA.ASPX

KURT WINDISCH PHOTO

CHILDREN IN DHS CUSTODY

Complex policy, social, and family contexts together contribute to children being removed from their homes to live in foster care or with relatives. Oregon's Department of Human Services (DHS) aims to keep children and youth healthy and safe by providing foster care, adoption, and child services. Through furnishing a safe, supportive, and loving home to children, a higher probability of stable health outcomes from childhood into adulthood can occur. DHS' aim is to keep families together, but if this cannot occur, the secondary aim is to provide a safe and supportive household for that child. When children are in DHS custody, there are a variety of temporary living arrangements that can be identified by the family court system, such as a state-certified foster family or with an identified relative. In Oregon, roughly 45.1% of children who were victims and required child protective services in 2017 were 6 years old or younger (Oregon.gov, 2018). Alcohol and drug issues were the largest stressors identified (46.7%) contributing to the need for child protective services (Oregon.gov, 2018). Of all the children leaving foster care in 2017, 56.5% were reunited with their families (Oregon.gov, 2018).

Both Crook and Jefferson County's rates of child abuse per 1,000 children increased from 2015 to 2016 and decreased from 2016 to 2017 (Figure 132). Despite the decrease in 2017, both Crook and Jefferson County had significantly higher rates of child abuse per 1,000 children in 2017 compared to Oregon (Figure 132).

Across Central Oregon, approximately 10-12% of child abuse/neglect reports were made by medical providers. In Jefferson County, 26.5% of reports were made by the police, compared to 15.2% in Deschutes County and 22.1% in Crook County. Approximately 21.5% of reports were made by schools in Deschutes County, compared to 13.7% in Crook County and 15.8% in Jefferson County (Table 33).

Want to learn more about Oregon children in DHS?

OREGON DEPARTMENT OF HEALTH AND HUMAN SERVICES FOSTER CARE:

WWW.OREGON.GOV/DHS/CHILDREN/FOSTERCARE

Figure 130. Percentage of Children Experiencing at Least 1 day in Foster Care by Age, Oregon Department of Human Services, 2015-2017

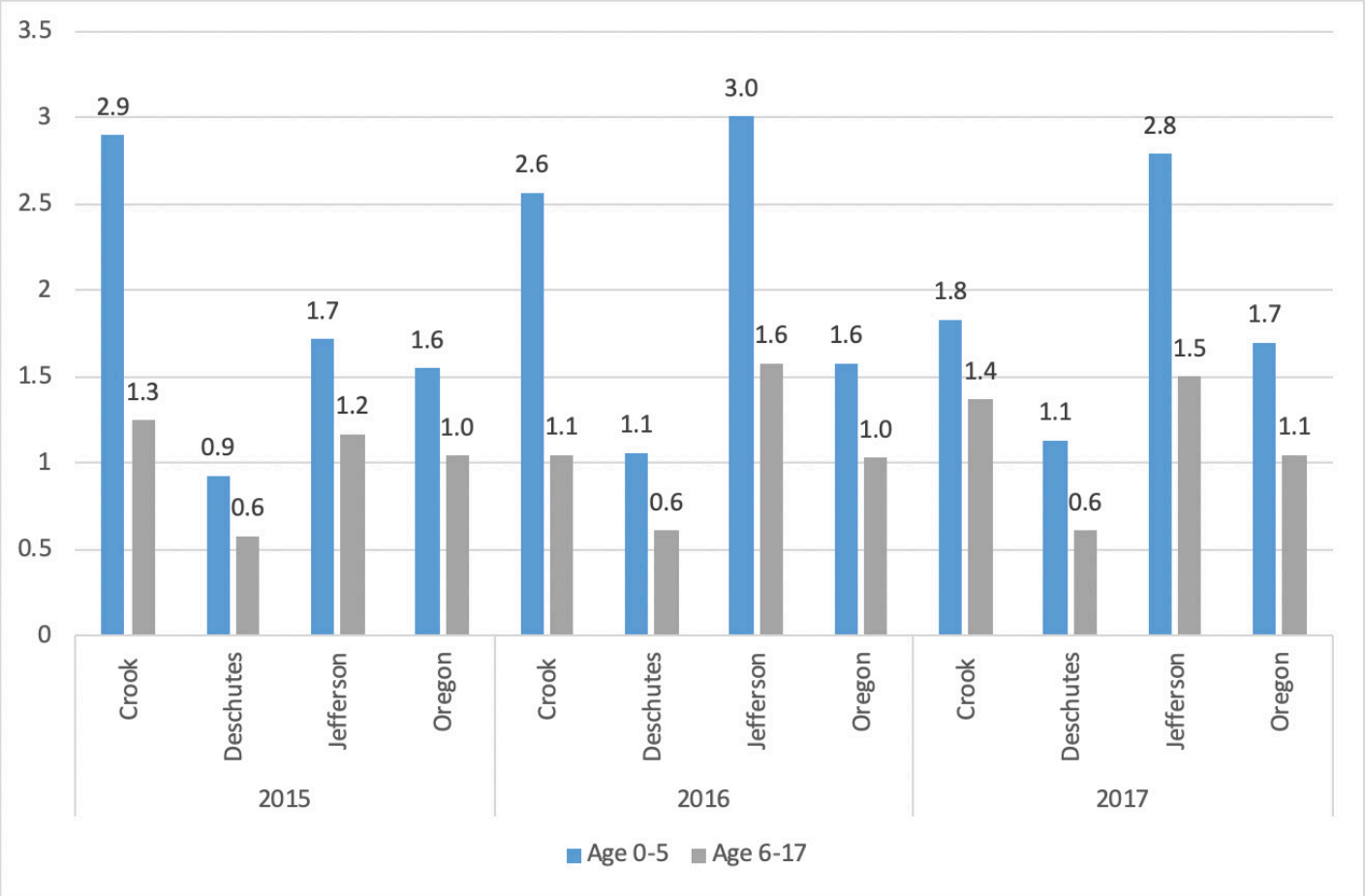


Table 33. Percent of child abuse or neglect reports by reporting source, Oregon Department of Human Services, 2018

	Medical	Parent/Self	Police	School	Others
Crook	12.5	5.6	22.1	13.7	46.1
Deschutes	10.2	6.8	15.2	21.5	46.2
Jefferson	9.8	2.7	26.5	15.8	45.1
Oregon	10.0	5.8	16.8	21.9	45.5

Figure 131. Children (age 0-21 years old) in foster care per 1,000 children, Child Welfare Data (Oregon Department of Human Services), 2018

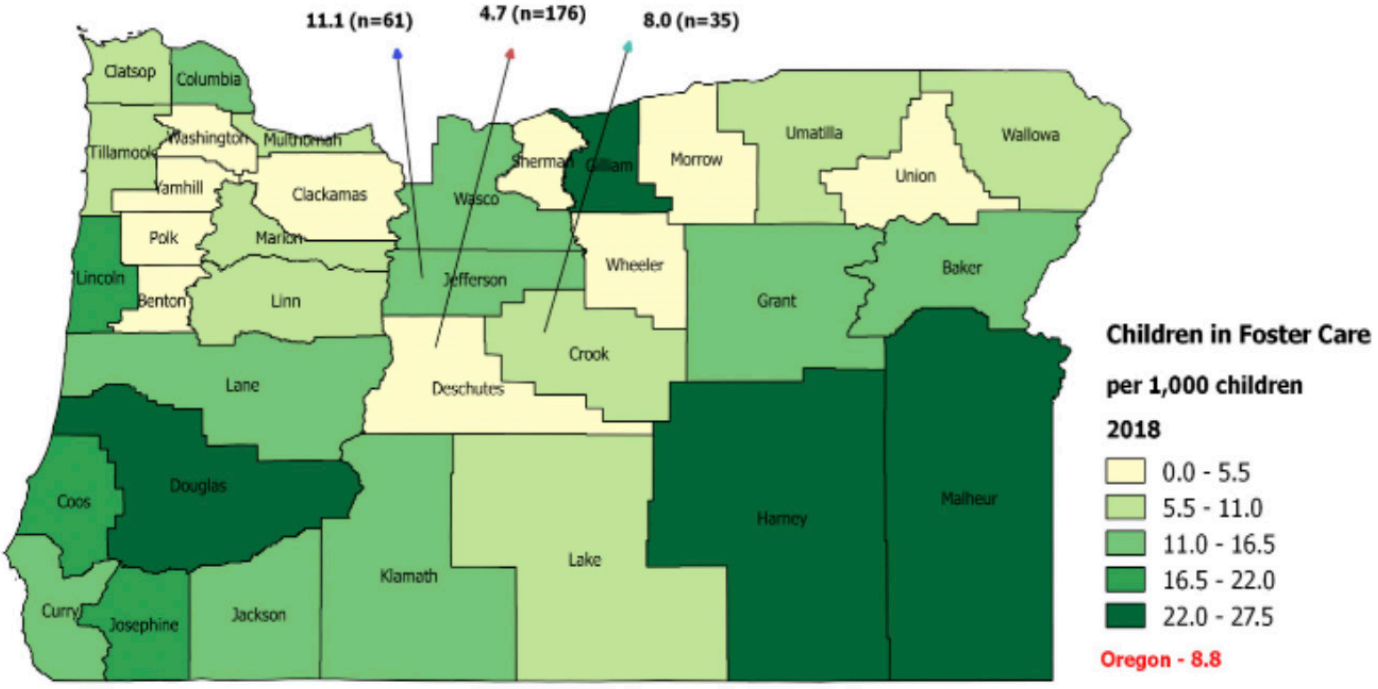
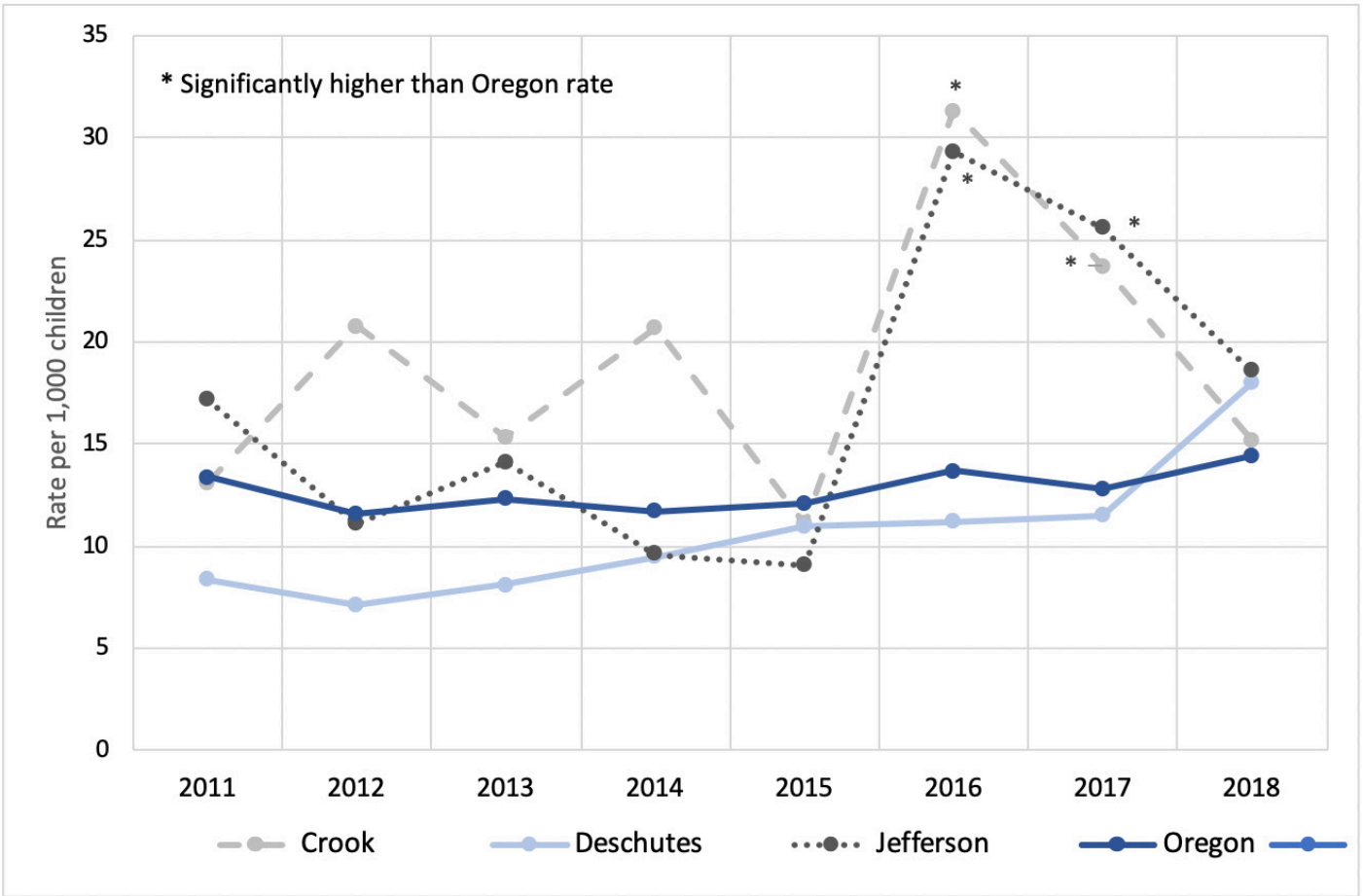


Figure 132. Child Abuse Victim Rate per 1,000 children, Oregon Department of Human Services, 2011-2018



DEVELOPMENTAL SCREENING

The American Academy of Pediatrics recommends that all children be screened for general development using a validated questionnaire at ages 9, 18, and 24 or 30 months. Developmental screenings are critical for the early detection and referral of physical, mental, and behavior delays. Early intervention treatment services can greatly improve a child's development (CDC), and achieve better health, get better care, and in turn, lower overall health and education costs in Oregon (Oregon Health Authority, 2017).

In 2017-2018, among publicly insured children aged 0-3, Deschutes County had the highest percentage who had a developmental screening (Figure 133). For example, 77.4% of continuously enrolled publicly insured children aged 0-3 had a screen in Deschutes County, compared to only 44.4% in Jefferson County (Figure 133). The percentage of publicly insured children aged 0-3 who had a developmental screening increased in all racial and ethnic groups between 2016-2018. American Indian /Alaskan Native children had the lowest percent of developmental screening among publicly insured Central Oregon children according to claims submitted, within primary care (37.2% compared to 77.8% of Hispanic or Latino children) in 2017-2018 (Figure 134). Most American Indian/Alaskan Native children in Central Oregon, however, are served through Indian Health Services (IHS), otherwise, the PacificSource CCO publicly insures the Central Oregon population.

Figure 133. Percent of children aged 0-3 with a developmental screening among publicly insured children, Distributed by the Oregon Pediatric Improvement Partnership for Pathways from Developmental Screening to Services Stakeholder Meeting (1.7.2019), 2016-2018

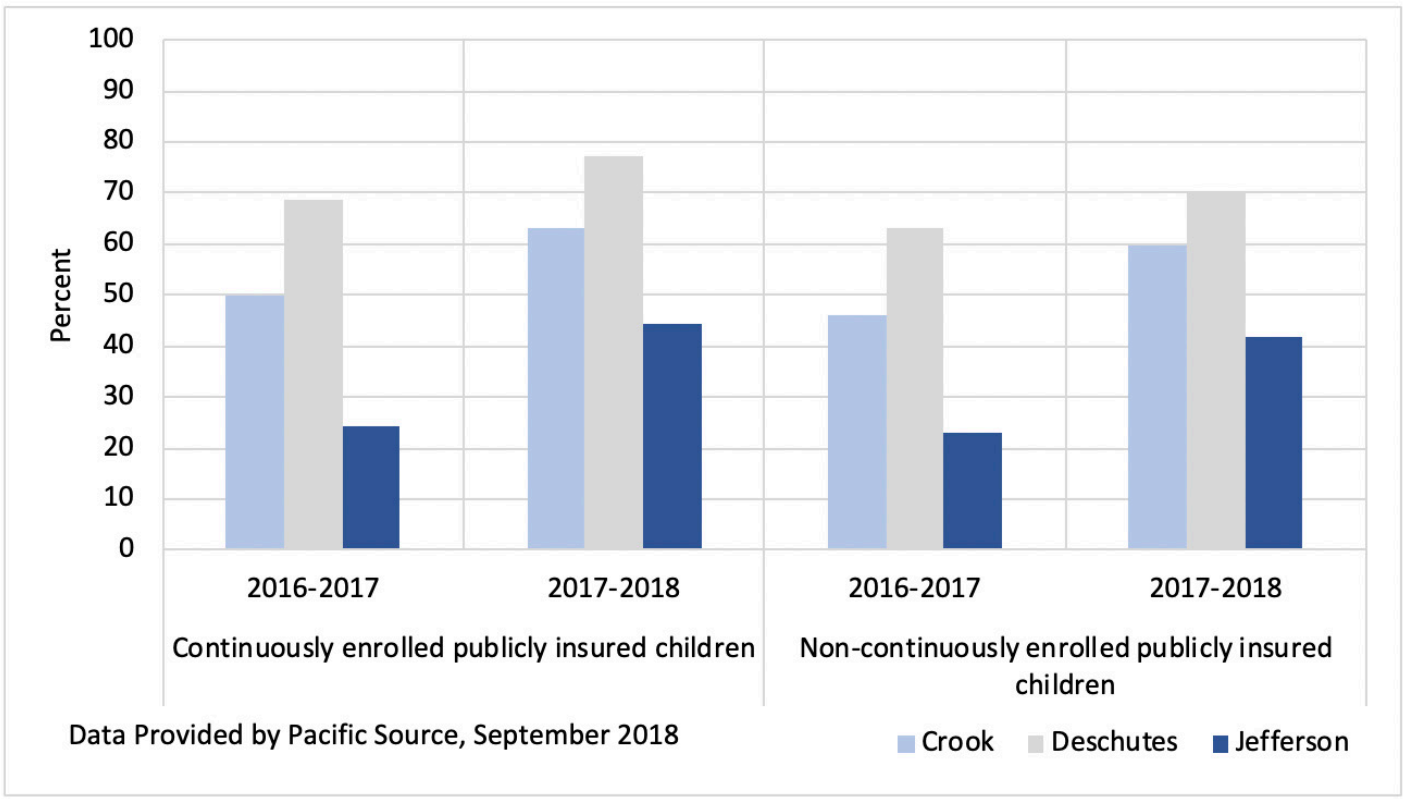
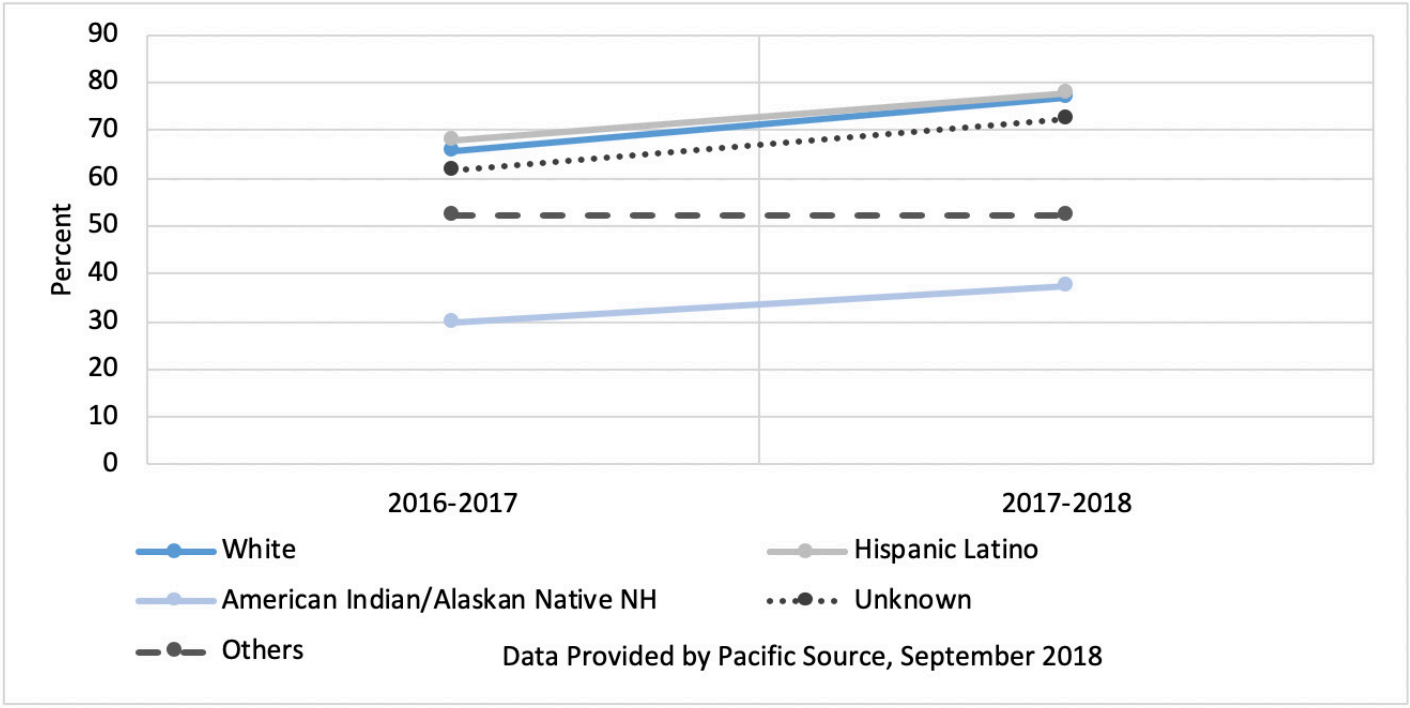


Figure 134. Percent of children aged 0-3 with a developmental screening among publicly insured Central Oregon children by race/ethnicity, Distributed by the Oregon Pediatric Improvement Partnership for Pathways from Developmental Screening to Services Stakeholder Meeting (1.7.2019), 2016-2018



EDUCATION: EARLY CHILDHOOD EDUCATION, KINDERGARTEN READINESS, 3RD GRADE ENGLISH LANGUAGE ARTS, ATTENDANCE, ABSENTEEISM, GRADUATION

Education is a social determinant of health. A significant body of evidence demonstrates the relationships between childhood well-being and academic progression, and children's health is a key factor for a successful education. Education is crucial for the social, physical, economic, and mental well-being of an individual. Research has indicated that the educational status (particularly of the mother) provides a significant predictor of health outcomes (Zimmerman, Woolf, & Haley, 2015). United States adults without a high school diploma by age 25 can die nine years earlier than college graduates (Zimmerman, Woolf, & Haley, 2015).

EARLY CHILDHOOD EDUCATION

Education begins as early as when life starts through the infant's parents. Programs such as Head Start can support parents during the early years of children's lives. Early childhood education (ECE) begins around the 3-year mark and aims to improve the social and cognitive development of children as well as prepare them for kindergarten and elementary school years (Centers for Disease Control and Prevention [CDC], 2016). All ECE programs are required to provide one or more of the following skill sets: activities addressing cognitive development or socio-emotional development, motor skills, reading, and skills working with numbers (CDC, 2016). Such programs may also offer other services, such as social services, health care, meals, recreation, and parental support(s) (CDC, 2016).

Want to learn more about early childhood education?

OREGON DEPARTMENT OF EDUCATION EARLY LEARNING:

HTTPS://OREGONEARLYLEARNING.COM/

U.S DEPARTMENT OF EDUCATION EARLY LEARNING:

WWW2.ED.GOV/ABOUT/INITS/ED/EARLYLEARNING/INDEX.HTML

Oregon has adopted Spark, a quality rating and improvement system for regulated early child care and education programs. However, nearly one-third of child care in Central Oregon is exempt from regulation because care is provided by family, friends, and/or neighbors, is provided for three or fewer children, or provided in a preschool setting for less than four hours a day. Of the regulated providers in Central Oregon, a majority (approximately two-thirds) are licensed-only, meaning that they have met the base requirements for regulation. Programs rated at a 3 to 5-star level are exhibiting a higher quality of care as indicated by the Spark assessment. Crook County had a higher proportion of 3-star and 5-star early childhood education programs than Deschutes and Jefferson Counties (Figure 135). Across Central Oregon, most (60%) early childhood education programs were licensed only. Only 13% of early childhood education programs were rated 5-star (Figure 136).

The percent of children aged 0-5 with access to certified/regulated childcare slots was significantly higher among 0-2-year-olds, 3-5-year-olds, and 0-5-year-olds overall in Jefferson County compared to Oregon (Figure 137).

Figure 135. Quality ratings of Central Oregon early childhood education programs, Oregon Spark (Quality Rating Information System), 2017-2018.

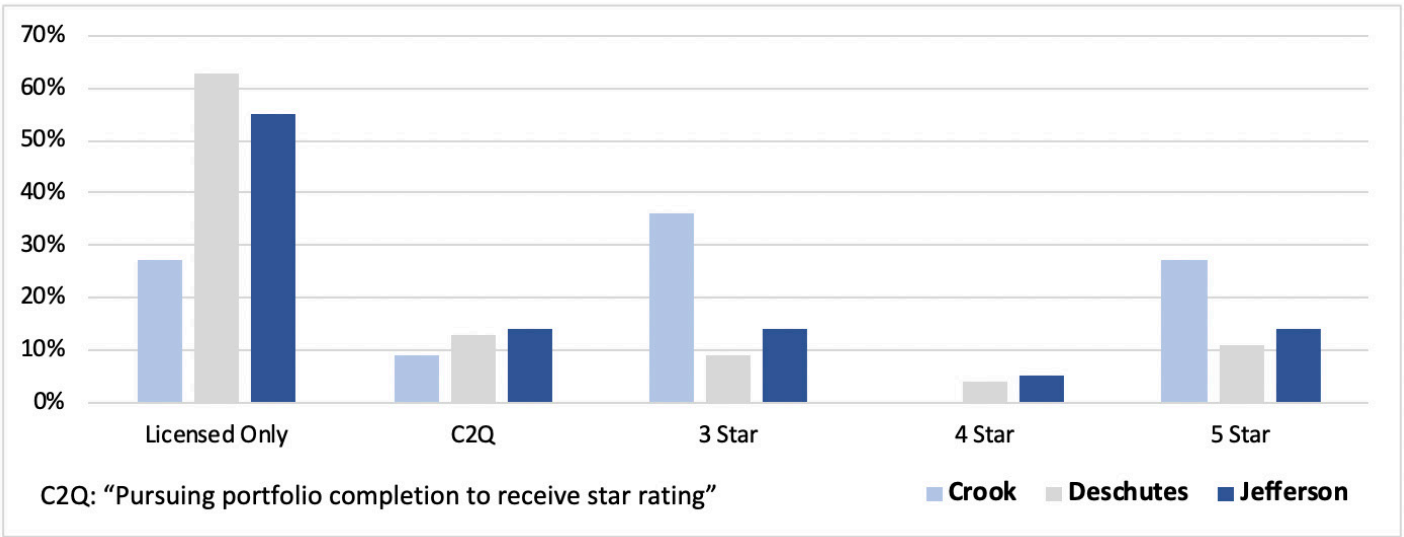


Figure 136. Quality rating summary of Central Oregon early childhood education programs, Oregon Spark (Quality Rating Information System), 2017-2018.

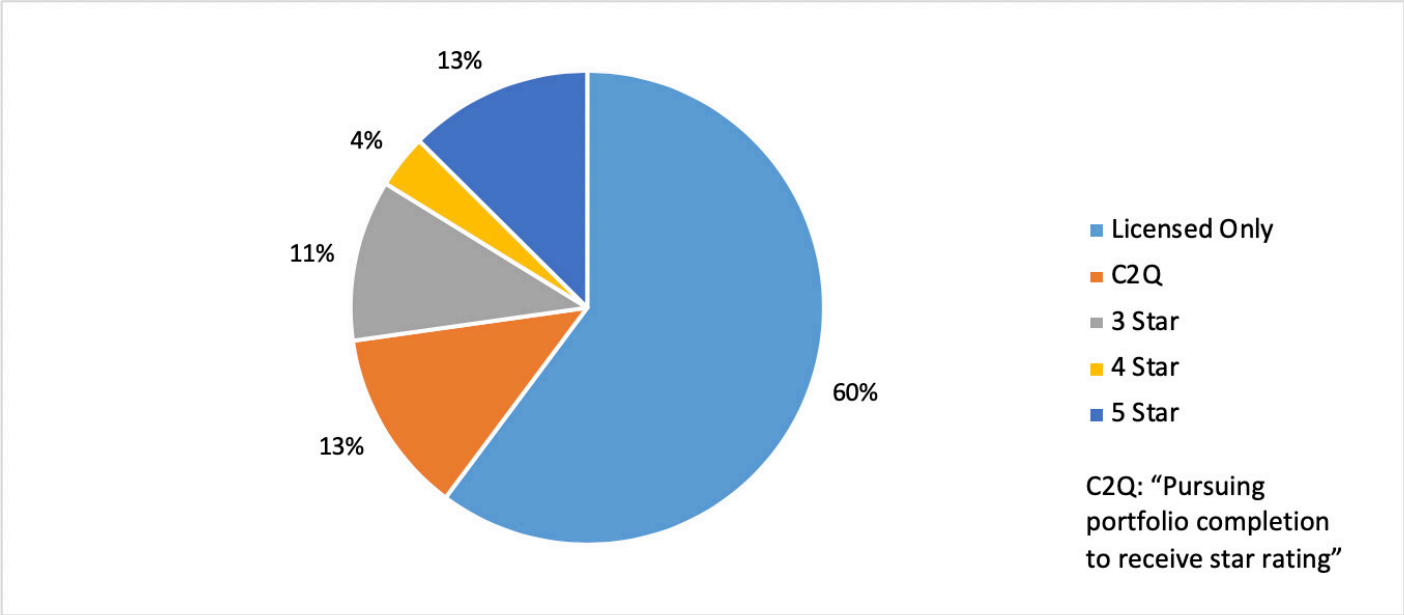
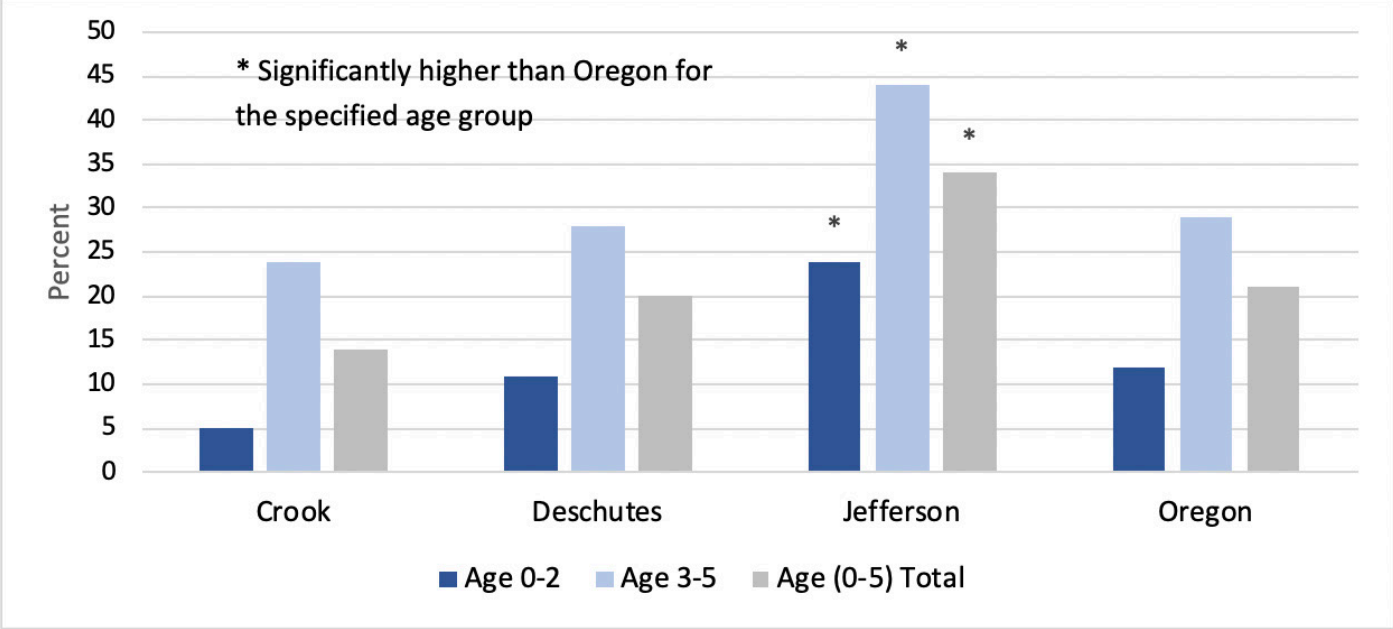


Figure 137. Percent of children aged 0-5 with access to certified/regulated childcare slots, Oregon's Child Care Deserts Report, 2019.



KINDERGARTEN READINESS

When children enter kindergarten (roughly five years old), ensuring that they have the necessary cognitive and social skills to prepare them for early academic success and continued development is important. This is known as kindergarten readiness. Oregon utilizes the Oregon Kindergarten Assessment, which measures learning styles and mathematical skills (Oregon.gov, n.d.). The purpose of this tool is to help forecast the future academic success of Oregon children as they progress through their educational years. In turn, the information will aim to increase educational support for families with children, prior to kindergarten.

In Central Oregon, early literacy (letter names) had a decreasing trend from 2016 to 2018 (Table 34). In 2018, Jefferson County School District had the lowest kindergarten assessment average score (3.1) and Culver School District had the highest (11.3) in the Letter Sounds on early literacy assessment compared to all other Central Oregon school districts (Table 34). The proportion of kindergarteners to total district enrollment was highest in Ashwood (83.3%) (Table 35).

3RD GRADE ENGLISH LANGUAGE ARTS

Research has shown that students' language arts skill level by the third grade is an indicator of student performance throughout the remainder of their educational years, impacting graduation rates (Healthy People.gov, 2019). One study showed that 26 percent of students who were struggling to read in 3rd grade and who also lived in poverty for at least a year between their 2nd and 11th grades dropped out or did not finish high school on time (Healthy People.gov, 2019).

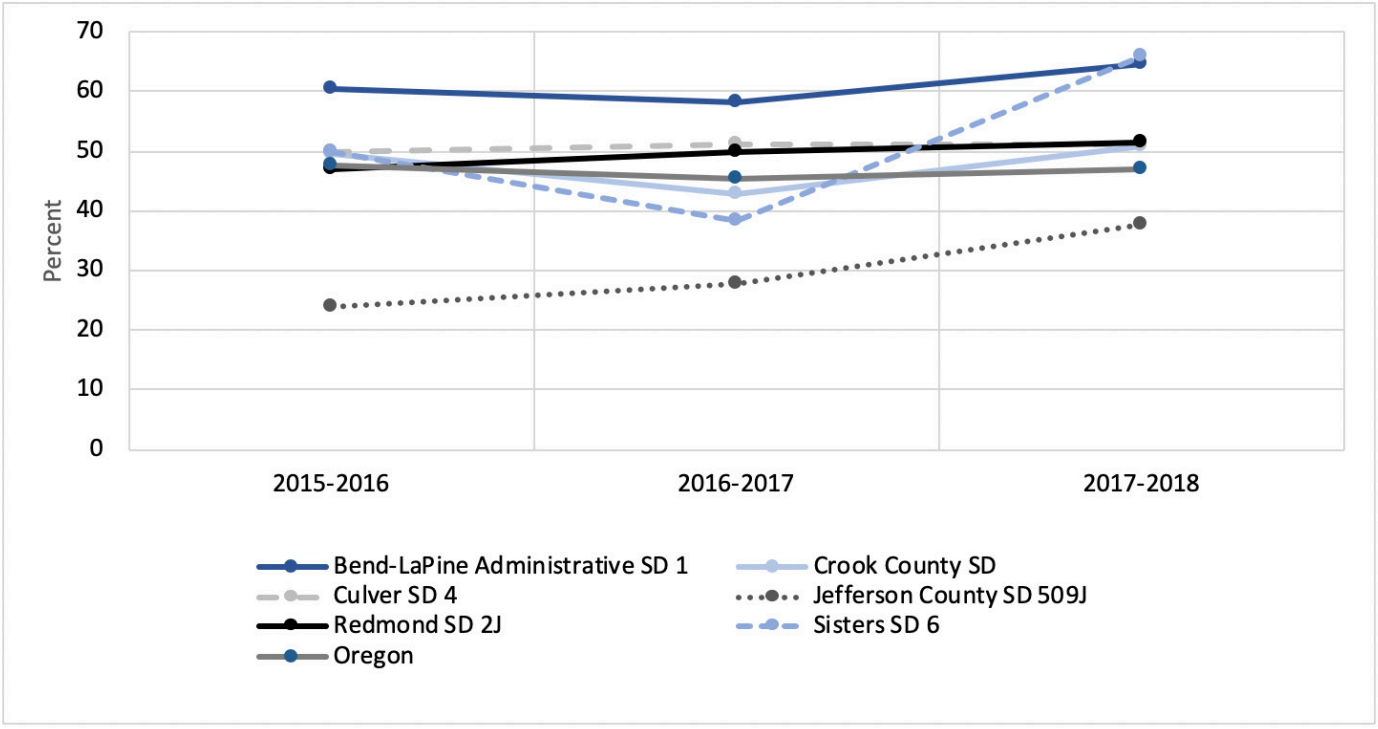
Of Central Oregon school districts in 2017-2018, the Sisters School District and the Bend-La Pine School District had the highest percentage of third-graders who met or exceeded language arts proficiency standards (66.0% and 64.7%, respectively) (Figure 138). Jefferson County had the lowest percentage of third-graders meeting or exceeding language arts proficiency standards (37.8%) (Figure 138).

Table 34. Kindergarten assessment average scores (0-26) for letter sounds on the early literacy section, Oregon Department of Education, 2016-2018

	School Districts	2016	2017	2018
Crook	Crook County School District	9.3	7.9	8.2
Deschutes	Bend La Pine School District	11	11	9.9
	Redmond School District	9.9	7.6	7.4
	Sisters School District	8.5	9.0	8.1
Jefferson	Culver School District	6.6	9.5	11.3
	Jefferson County School District	5.3	4.2	3.1
Central Oregon		9.8	9.2	8.4

Table 35. School enrollment distribution by percentage, Oregon Department of Education, 2017-2018				
	School District	K5	Grade 6-8	Grade 9-12
Crook	Crook County School District	47.7	23.1	29.3
Deschutes	Bend-La Pine School District	45.3	23.6	31.1
	Redmond School District	42.4	23.0	34.6
	Sisters School District	36.5	22.5	41.0
Jefferson	Ashwood School District	83.3	16.7	-
	Black Butte School District	76.5	23.5	-
	Culver School District	43.7	26.4	29.9
	Jefferson County SD 509J	51.1	22.2	26.6

Figure 138. Percent of third-graders meeting or exceeding language arts proficiency standards, Oregon Department of Education, 2015-2018.



Third-grade reading is a strong predictor of graduation. Among economically disadvantaged students, the percent of third-grade students meeting or exceeding language arts proficiency standards in most Central Oregon school districts and Oregon statewide was lower than among all students. The Jefferson County school district, however, had a similar percentage meeting language arts standards between the two groups (Figure 139). Of note, the percent of Jefferson County students who met or exceeded language arts standards increased from 33.5% in 8th grade to 59.5% in 11th grade (Table 36).

Figure 139. Percent of third-grade students meeting or exceeding language arts proficiency standards, overall and economically disadvantaged students, Oregon Department of Education, 2017-2018.

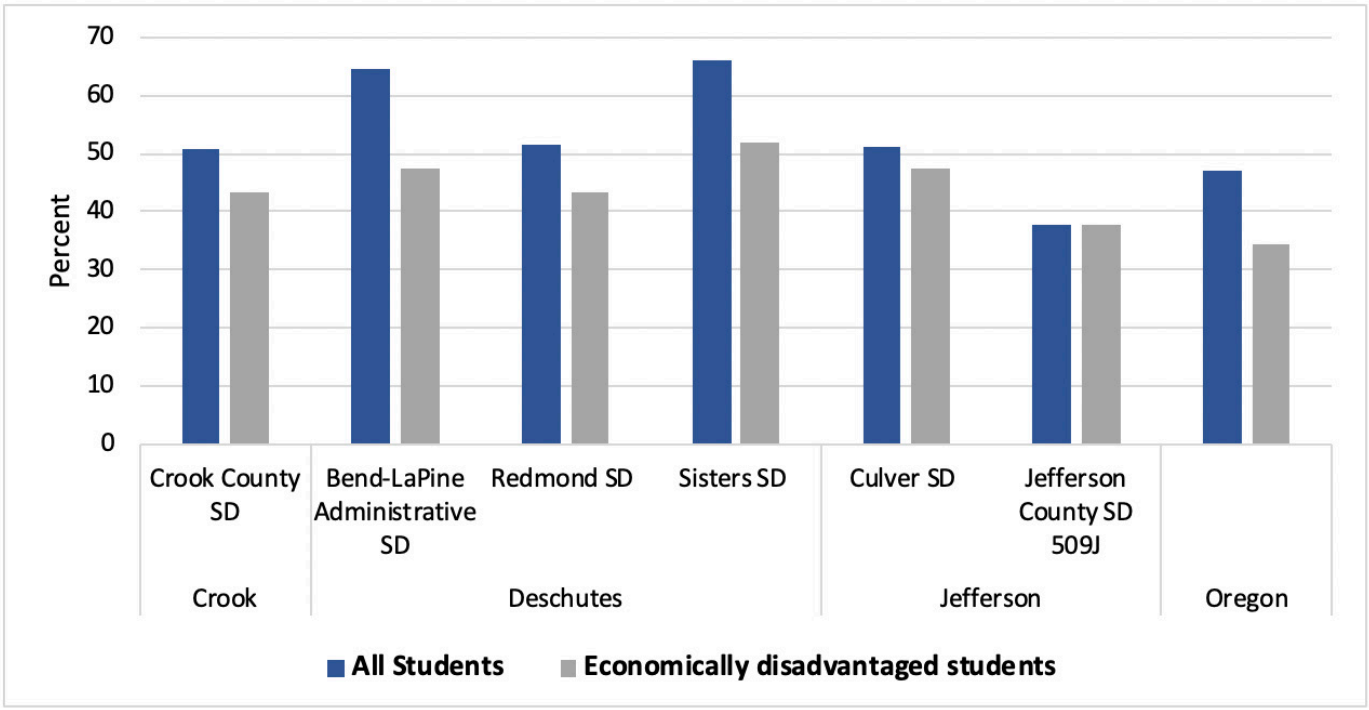


Table 36. Percent of students who meet or exceed standards for language arts, by grade and school district, Oregon Department of Education, 2017-2018.

	Grade level						
	3rd Grade	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	11th Grade
Bend-La Pine Administrative SD 1	64.7	60.8	69.3	57.3	59.8	62.3	53.8
Crook County SD	50.9	48.6	53.3	50.9	64.3	59.5	68.7
Culver SD 4	51.0	47.2	56.6	50.0	61.2	64.2	63.3
Jefferson County SD 509J	37.8	35.1	29.3	27.3	36.6	33.5	59.5
Redmond SD 2J	51.6	52.8	62.5	48.8	56.0	54.0	60.2
Sisters SD 6	66.0	62.3	66.3	61.2	58.2	73.3	75.0

Significantly lower than other school districts' averages

In general, a higher proportion of white third-grade students met or exceeded reading standards than students of other races or ethnicities. In the Crook County school district and in the Bend-La Pine school district, however, the percent of multi-racial students who met or exceeded reading standards was higher than the percentage among White students (Figure 140).

Of the Central Oregon school districts in 2017-2018, the percentage of eighth-grade students meeting or exceeding math and science proficiency standards was highest among Sisters School District students and lowest among Jefferson County School District students (Table 37). Approximately 91.0% of Sisters School District students met or exceeded science proficiency standards, compared to 27.3% of Jefferson County School District students. Approximately 55.7% of Sisters School District students met or exceeded math proficiency standards, compared to 10.2% of Jefferson County School District students (Table 37).

Figure 140. Percent of third-grade students meeting or exceeding reading standards, by race/ethnicity, Oregon Department of Education, 2017-2018.

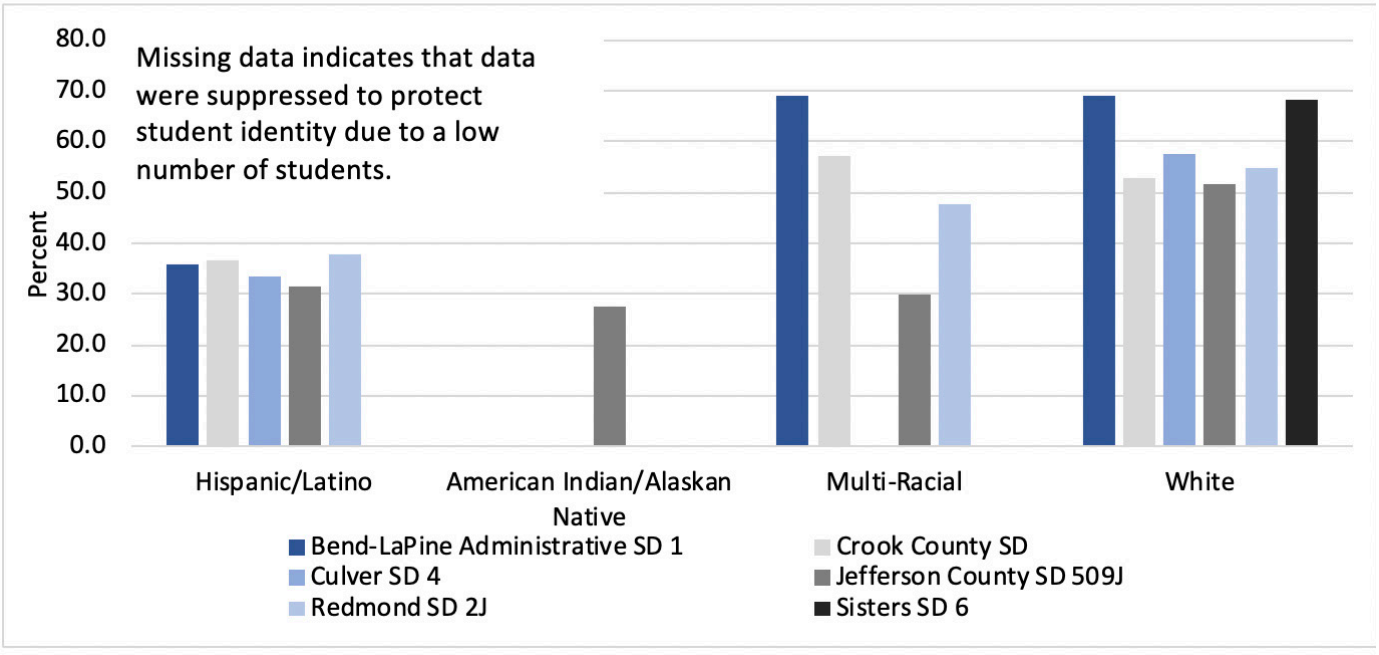


Table 37. Percent of eighth graders meeting or exceeding science and math proficiency standards, Oregon Department of Education, 2015-2018.

	Science			Math		
	2015-2016	2016-2017	2017-2018	2015-2016	2016-2017	2017-2018
Bend-La Pine Administrative SD 1	70.3	67.3	63.6	47.8	46.7	49.0
Crook County SD	67.9	66.2	72.6	39.1	37.4	42.3
Culver SD 4 (Jefferson county)	64.3	67.9	57.4	28.1	45.1	41.5
Jefferson County SD 509J	34.9	36.7	27.3	19.1	22.6	10.2
Redmond SD 2J	65.3	63.0	58.6	40.1	44.7	36.4
Sisters SD 6	94.7	85.4	91.0	59.2	51.1	55.7

Significantly lower than all other Central Oregon school district's students' proficiency

ATTENDANCE AND ABSENTEEISM

Certain chronic health conditions have been associated with student absenteeism (Centers for Disease Control and Prevention [CDC], 2017). Chronic absenteeism is often related to community, family, and child health factors and can contribute to health problems. Many health conditions such as hunger, respiratory illness, depression, fear of bullying, and dental pain are barriers to children attending school.

In Central Oregon, the percentage of 6th and 9th-grade students who regularly attended school was lower among economically disadvantaged students than among all students. A higher percentage of 6th-grade students who identified as an underserved race or ethnicity attended school compared to all students. Among 9th graders, a lower percentage of students who identify as underserved races or ethnicities had regular attendance (Table 38). Approximately 30% of kindergarteners in the Jefferson County school district were absent 10% of school days or more. Over half (52.4%) of Redmond School District 12th graders and nearly half (46.1%) of Bend-La Pine School District 12th graders were absent 10% of school days or more (Table 39). Among Central Oregon 8th and 11th graders, absenteeism due to physical health problems was the most commonly reported reason for school absence. The percent of 8th and 11th graders reporting physical health absence in Crook and Jefferson County decreased between 2013 and 2015 (Figure 141).

Table 38. Percent of sixth and ninth graders who regularly attended school (>90% of scheduled school days), overall, economically disadvantaged, and underserved race/ethnicity, Oregon Department of Education, 2017-2018

	6th Grade			9th Grade		
	Total	Economically disadvantaged students	Students who identify as underserved races or ethnicities	Total	Economically disadvantaged students	Students who identify as underserved races or ethnicities
Central Oregon	81.2	79.9	82.2	75.3	71.2	71.8
Oregon	84.2	76.3	82.6	78.6	67.6	73.9

"Underserved races/ethnicities" is defined as students who identify as Black/African American, Hispanic/Latino, American Indian/Alaska Native, or Native Hawaiian/Pacific Islander.

Table 39. Percent of students missing 10% of school days or more, by grade level, Oregon Department of Education, 2017-2018

Grades	School Districts						
	Crook County SD	Bend-La Pine SD	Redmond SD	Sisters SD	Culver SD	Jefferson County SD	Oregon
Kindergarten	22.6	16.8	24.4	21.2	28.6	30.5	20.6
Grade 1	12.4	14.9	16.9	16	38.5	22.7	17.0
Grade 2	16.3	15.1	13.2	23.3	6.3	22.7	14.6
Grade 3	9.3	13.6	14.2	<5.0	21.3	21.5	13.9
Grade 4	12.6	15.2	16.2	13.2	14.3	21.2	14.3
Grade 5	13.6	19.3	17.4	23.1	9.4	23.5	14.5
Grade 6	11.7	18.5	21.2	15.4	15.0	23.8	15.9
Grade 7	13.8	24.3	25.4	14.1	21.6	22.8	19.1
Grade 8	19.6	23.7	28.8	15.7	25.9	27.3	21.2
Grade 9	20.2	24.8	28	19.6	20.0	22.2	21.4
Grade 10	25.9	29.0	32.3	18.9	15.7	24.0	26.1
Grade 11	27.7	41.4	45.3	29.1	22.0	28.8	30.5
Grade 12	37.1	46.1	52.4	19.1	12.5	30.1	39.7

Significantly higher than other school district's 11 &12 graders' average

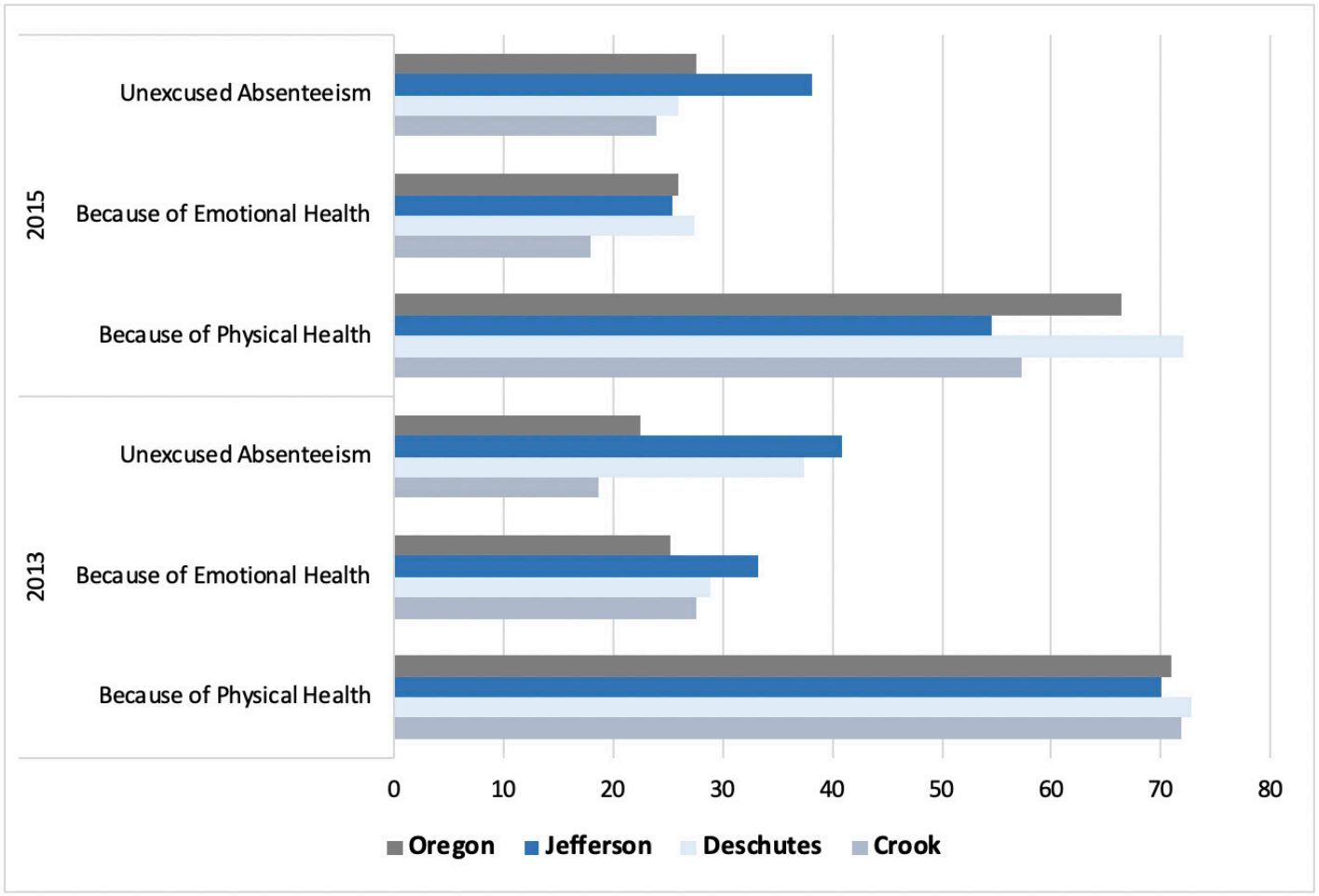
The positive youth development (PYD) benchmark is calculated based on responses to six questions related to well-being and social connectedness: physical health status, mental health status, level of volunteerism, having a supportive adult in their life, amount of self-confidence and problem-solving ability. PYD is a philosophy and theoretical framework that emphasizes building on and cultivating strengths inherent in all youth, rather than minimizing or correcting risky or undesirable behaviors (Oregon.gov, 2017). In 2015, nearly half (47.8%) of Jefferson County 8th and 11th grade students did not meet the positive youth development benchmark, compared to 39% statewide (Table 40).

Table 40. Percent of 8th and 11th grade students meeting Positive Youth Development benchmark, Oregon Healthy Teens Survey, 2013-2015

	2013		2015	
	Meets benchmark	Does not meet benchmark	Meets benchmark	Does not meet benchmark
Crook	67.2	32.8	64.8	35.2
Deschutes	61.9	38.1	71.7	28.3
Jefferson	54.3	45.7	52.3	47.8
Oregon	63.6	36.4	61.0	39.0

BRANDON NIXON PHOTO

Figure 141. Percent of 8th and 11th graders reporting unexcused absence or absence for emotional or physical health reasons during the past 12 months, Oregon Healthy Teens Survey, 2013-2015.



GRADUATION

High school graduation is a key factor for health outcomes into adulthood. Not completing high school can be linked to many negative outcomes, such as low wages, poverty, and limited employment opportunities (HealthyPeople.gov, 2019). Factors that may result in a student dropping out of high school may include family, community issues, and/or components relat ed to the school (HealthyPeople.gov, 2019). Individuals who do not graduate high school are more likely to report they have overall worse health and many individuals report suffering from at least one chronic health issue, such as diabetes, hepatitis, and/or asthma (HealthyPeople.gov, 2019).

Despite a gradual decline in the statewide four-year high school graduation rate during 2014-2018, most school districts in Central Oregon have seen an increase (Figure 142). In 2017-2018, the Culver School District had a significantly higher four-year graduation rate (95.1%) compared to Oregon as a whole (78.7%) (Table 41). In 2017-2018, in the Sisters and Culver school districts, the proportion of economically disadvantaged students who graduated from high school in four years was 90.9% and 94.0%, respectively, both of which were significantly higher than among Oregon economically disadvantaged students (73.5%) (Figure 143).

Figure 142. Percent of high school students who graduated in four years, by school district, Oregon Department of Education, 2014-2018.

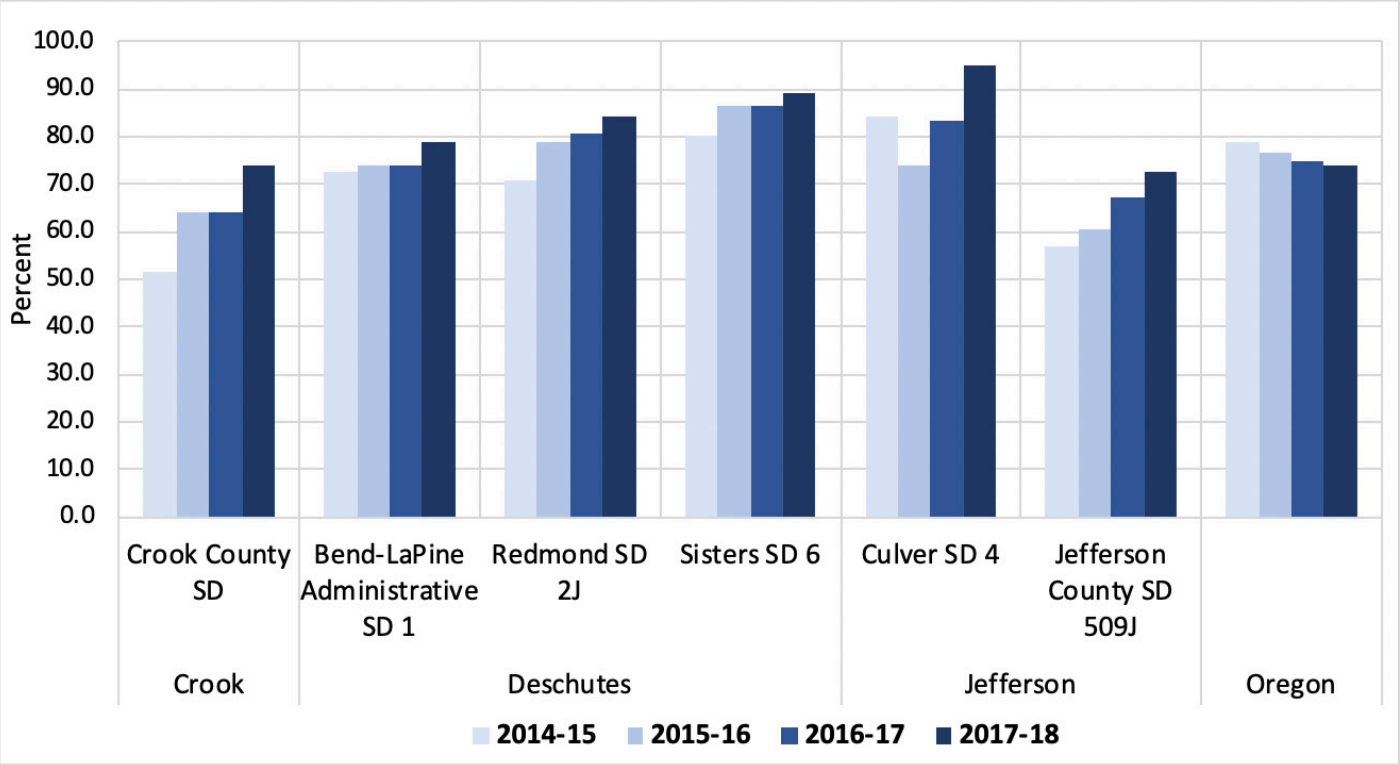


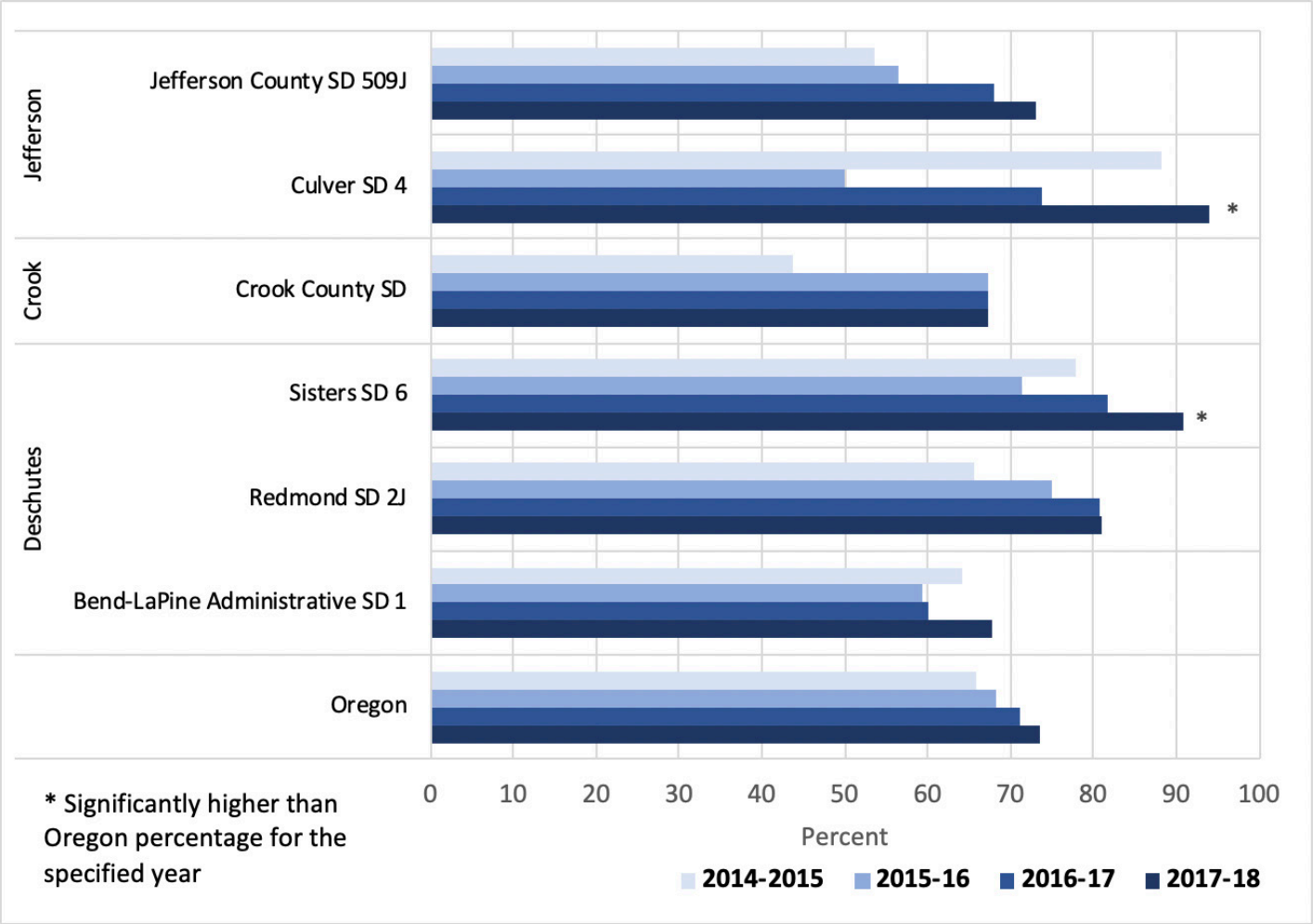
Table 41. Four- and five-year high school graduation rates, by school district, Oregon Department of Education, 2017-2018

	School District	4-year graduation	5-year graduation
Crook	Crook County School	78.1	72.3
Deschutes	Bend La Pine	81.9	82.2
	Redmond	82.9	83.1
	Sisters	89.3	92.1
Jefferson	Culver	95.1	84.3
	Jefferson County School District 509-J	77.5	74.1
Oregon		78.7	80.0

Significantly higher than Oregon

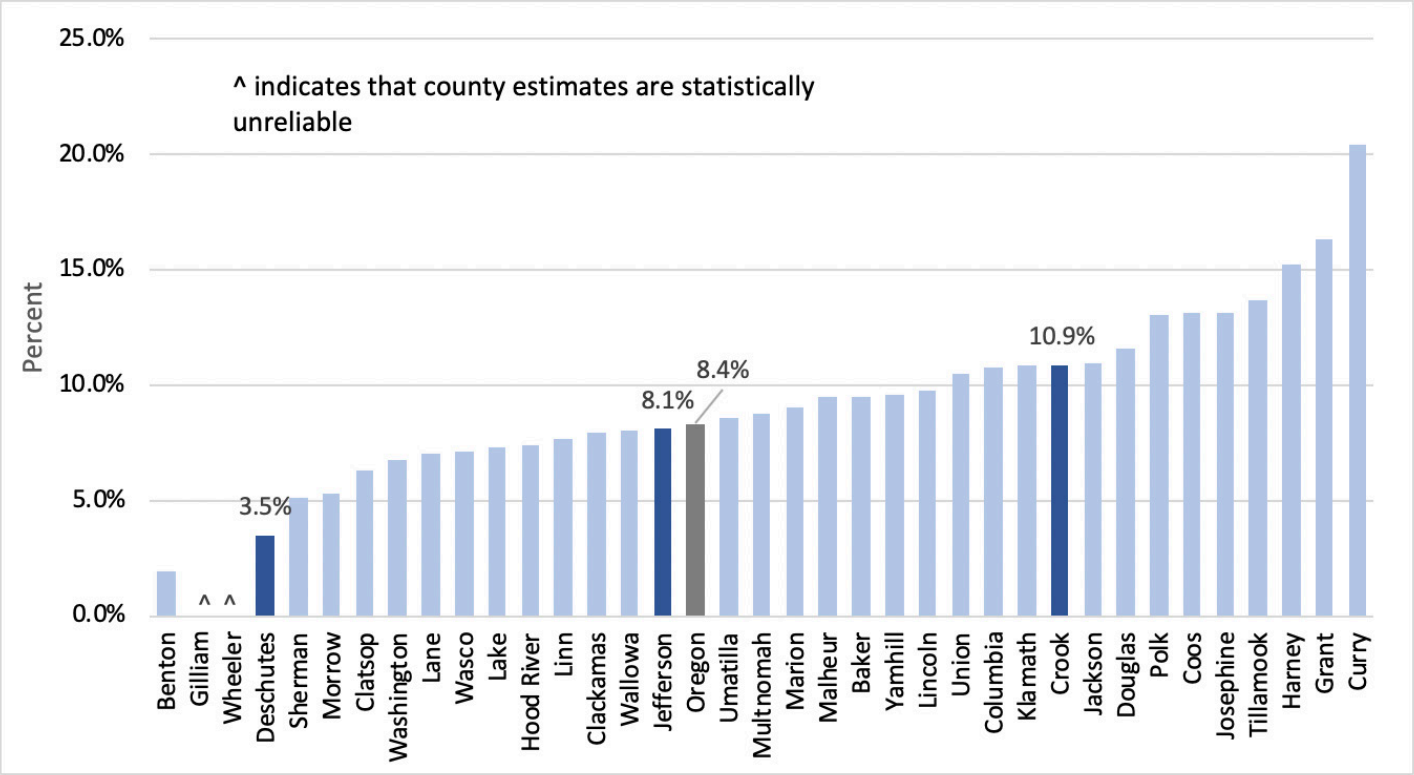
Note. The 4-year and 5-year graduation rates are for different cohorts. The 4-year graduation rate includes the cohort of students who entered high school in 2014-2015, and the 5-year graduation rate includes the cohort of students who entered high school in 2013-2014.

Figure 143. Percent of economically disadvantaged students who graduated high school in four years, Oregon Department of Education, 2014-2018.



From 2011 to 2015 approximately 8.4% of adolescents aged 16-19 were not in school and were not employed across Oregon. In Central Oregon, 3.5% of Deschutes County and 10.9% of Crook County adolescents aged 16-19 were not in school and were not employed (Figure 144).

Figure 144. Percent of adolescents aged 16-19 who are not in school and not employed, US Census Bureau, American Community Survey, 2011-2015.



KURT WINDISCH PHOTO

MENTAL HEALTH

"I believe that historical trauma is the root cause of most of the health problems in the community. It usually leads to depression."
- Confederated Tribes of Warm Springs Resident

Mental health refers to the psychological, emotional, and social well-being of an individual, and is an important part of a person's overall health. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices. Mental health challenges, particularly depression, can increase the risk of other physical health problems such as stroke and heart disease. Likewise, living with a chronic health condition can increase the risk of mental illness (CDC, 2018). Mental illness refers to diagnosable mental disorders. Roughly one in five adults in the United States, about 43.8 million, experience mental illness in a given year (NAMI, 2019). People with co-occurring mental health and substance use disorders have a higher incidence of trauma and adverse childhood experiences (ACEs) that increase the risk for developing physical/mental health and substance use problems (SAMHSA, 2019). Access to safe, affordable housing is crucial to the recovery of those struggling with mental health and co-occurring substance use disorders. When this need isn't met, people cycle in and out of homelessness, jails, shelters, and hospitals. As more and more psychiatric hospitals have closed, there has also been a corresponding increase in the mentally ill homeless population, from 33% to over 50% chronically homeless (SAMHSA, 2019). Individuals with significant and chronic mental health and substance use problems are particularly prone to develop one or more chronic diseases. Please reference the Chronic Disease section for more information about mental health and chronic disease comorbidities.

Want more information on mental health support?

NATIONAL ALLIANCE ON MENTAL HEALTH FIND SUPPORT:

WWW.NAMICENTRALOREGON.ORG

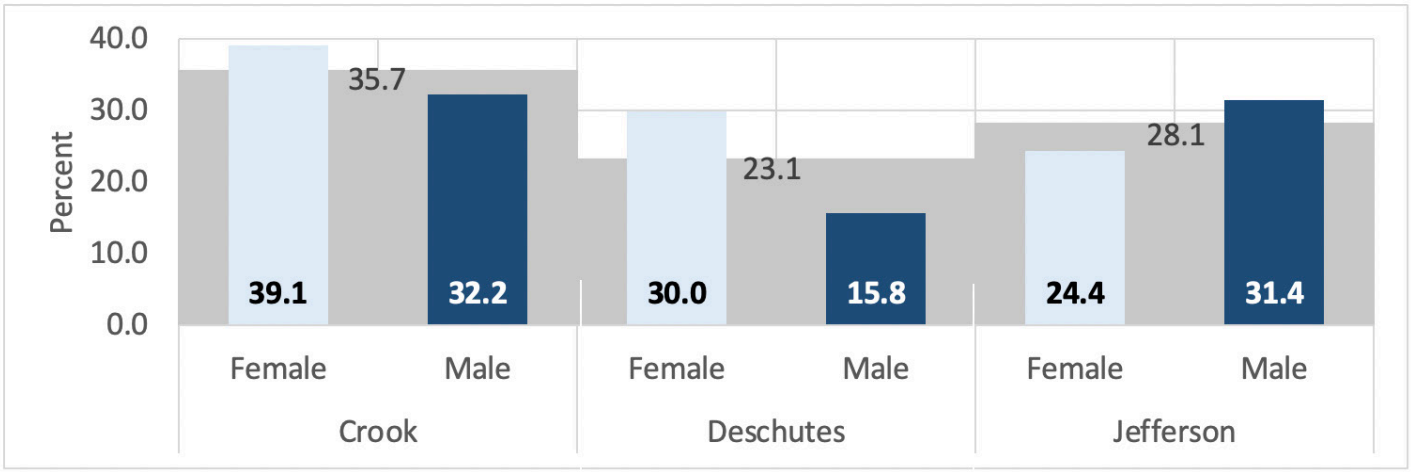
SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION SUPPORT:

HTTPS://WWW.SAMHSA.GOV/FIND-HELP/RECOVERY

OREGON HEALTH AUTHORITY ADDITIONS AND MENTAL HEALTH SERVICES:

WWW.OREGON.GOV/OHA/HSD/AMH/PAGES/INDEX.ASPX

Figure 145. Age-adjusted percent of adults who have been diagnosed with depression, overall and by sex, Oregon BRFSS, 2012-2015.



"Mental Health is especially hard on the street... You're exposed to a lot more. It's not a typical situation."
- Deschutes County Resident

ADULTS

Mental health conditions are linked to many factors; environment, lifestyle, and genetics can influence whether an individual develops mental health conditions. A stressful home environment or job, as well as a traumatic event, can increase an individual's susceptibility. Each year, roughly one in five adults nationwide experience a mental health condition. One in 17 live with a serious and persistent mental illness, such as schizophrenia, bipolar disorder, or obsessive-compulsive disorder. Serious and persistent mental illness (SPMI) among people ages 18 years and older is defined as "having, at any time during the past year, a diagnosable mental, behavior, or emotional disorder that causes serious functional impairment, that substantially interferes with or limits one or more major life activities" (SAMHSA, 2019).

In Central Oregon from 2012-2015, 35.7%, 23.1%, and 28.1% of adults were diagnosed with depression in Crook, Deschutes, and Jefferson Counties, respectively (Figure 145). In Crook and Deschutes Counties, a higher proportion of females reported having a depression diagnosis compared to males, however, in Jefferson County, the ratios were reversed (Figure 145). Approximately one in four adults over 55 years of age reported a diagnosis of depression (Figure 146). Among adults with diabetes, approximately 50% also reported depression (Figure 147).

Want more information on severe mental illness (SMI)?

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICE MENTAL HEALTH:

WWW.MENTALHEALTH.GOV/

Figure 146. Age-specific percent of adults diagnosed with depression, overall and by age group (18-34, 35-54, and 55+ years), Oregon BRFSS, 2012-2015.

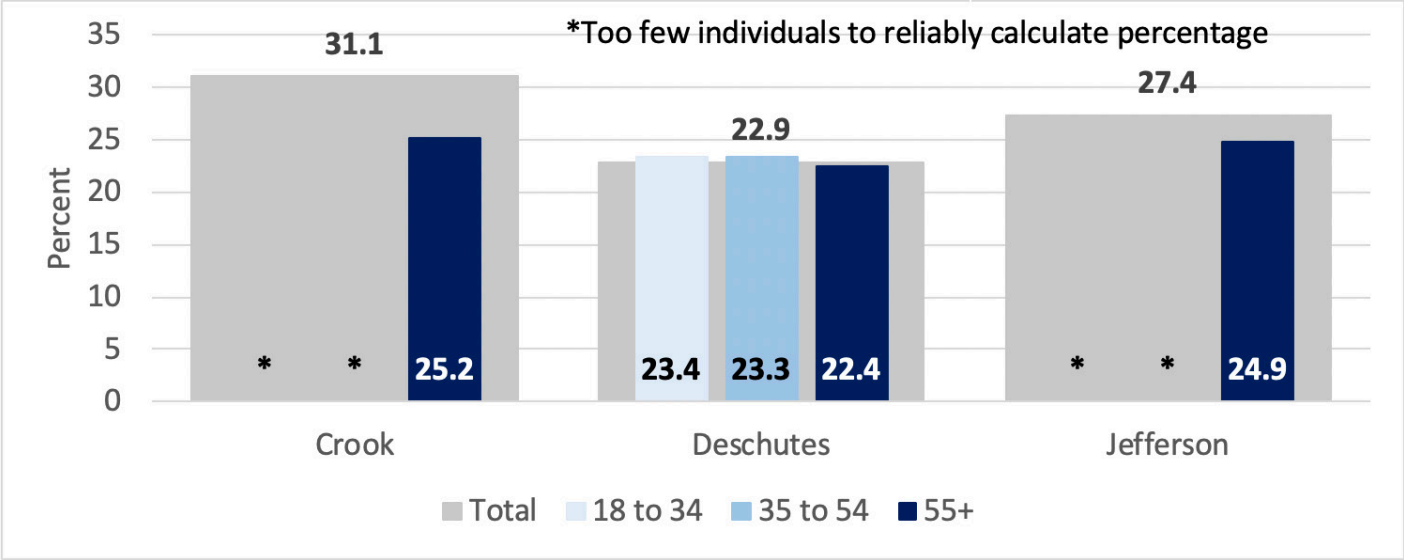
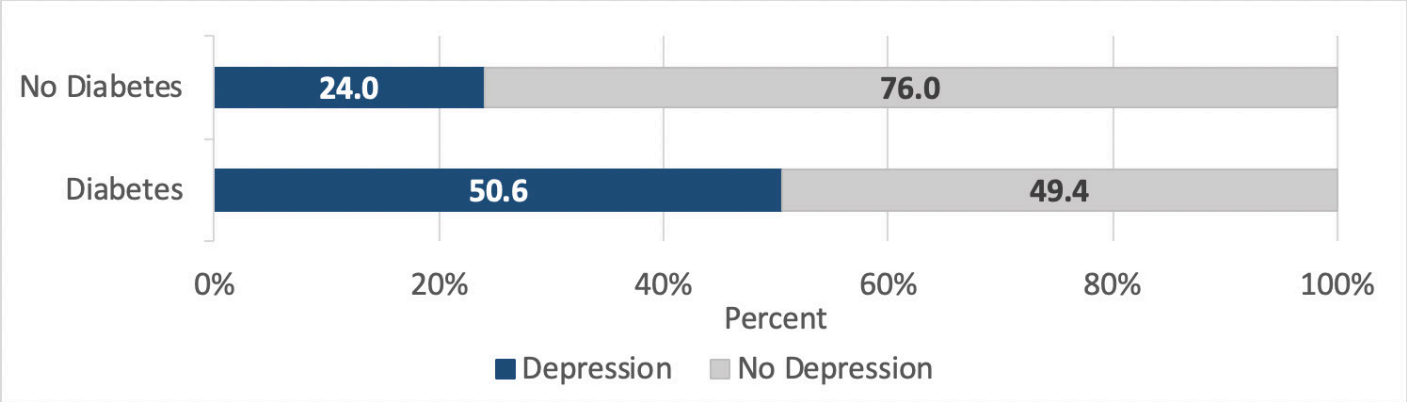


Figure 147. Self-reported proportion of people with and without diabetes who have been diagnosed with depression, Central Oregon, Oregon BRFSS, 2012-2015.



YOUTH

While many youths are physically and emotionally healthy, roughly one in every four meet the criteria for lifetime mental disorder. The presence or absence of a variety of protective and risk factors can affect youth mental health, and preventive measures can promote positive mental health and prevent or lessen mental health issues. These include academic achievement and/or connecting with two or more of the following: school, peers, athletics, employment, and culture. Youth with mental health issues may experience challenges related to their community, relationships, school, and within their homes (youth.gov, 2019). Several mental illnesses affect youth and need to be addressed promptly to assure proper development. Health care providers can diagnose issues early and, if necessary, provide treatment. Other professionals, such as teachers, can communicate concerns to parents or guardians. In Oregon (2012-2013), 12.7% of youth between the ages of 12 and 17 years experienced at least one major depressive episode compared to the United States average of 9.9%

"A lot of people have depression and anxiety."
- Jefferson County Youth

(SAMHSA, 2014). Adverse Childhood Experiences (ACEs) impact health and mental health across the lifespan. For more information on ACEs in youth, please reference the Infant, Early Childhood, and Adolescent Health section.

Across Oregon and Central Oregon, the percent of students who reported feeling sad or hopeless every day for two weeks has increased. In Oregon and in Deschutes County, the highest proportion of these students were 11th graders (Figure 148). In Jefferson County, the percentages of 6th and 11th graders were similarly high, and the percentages for 6th, 8th, and 11th graders in Crook County were all very similar.

Data for general mental and emotional health are available for Crook County for 2013-2014, for Jefferson County for 2015-2016, and Deschutes County for 2016-2017. In Crook County, 58.2% of 11th graders reported excellent or very good mental and emotional health, compared to 63% of 6th graders (Figure 151). In Jefferson County, 38.6% of 8th graders reported excellent or very good mental and emotional health, compared to 60.9% of 6th graders (Figure 152). In Deschutes County, 40.8% of 11th graders reported excellent or very good mental and emotional health, compared to 52.6% of Deschutes County 6th graders Figure 153).

Across Oregon and in Deschutes County, the proportion of 6th, 8th, and 11th-grade students who reported seriously considering suicide has increased over time (Figure 149). These increases may also be apparent in Crook and Jefferson Counties; however, the trend is less clear (Figure 149). Across Oregon overall, the percent of students who reported they have attempted suicide has increased slightly over time, and again, the trend is less clear in Central Oregon (Figure 150). In Central Oregon, a higher percent of 8th graders report that they have attempted suicide compared to 6th and 11th graders (Figure 150).

Want more information on youth mental health?

OREGON HEALTH AUTHORITY CHILDREN'S BEHAVIORAL HEALTH SYSTEM:

WWW.OREGON.GOV/OHA/HSD/AMH/PAGES/CHILD-MENTAL-HEALTH.ASPX

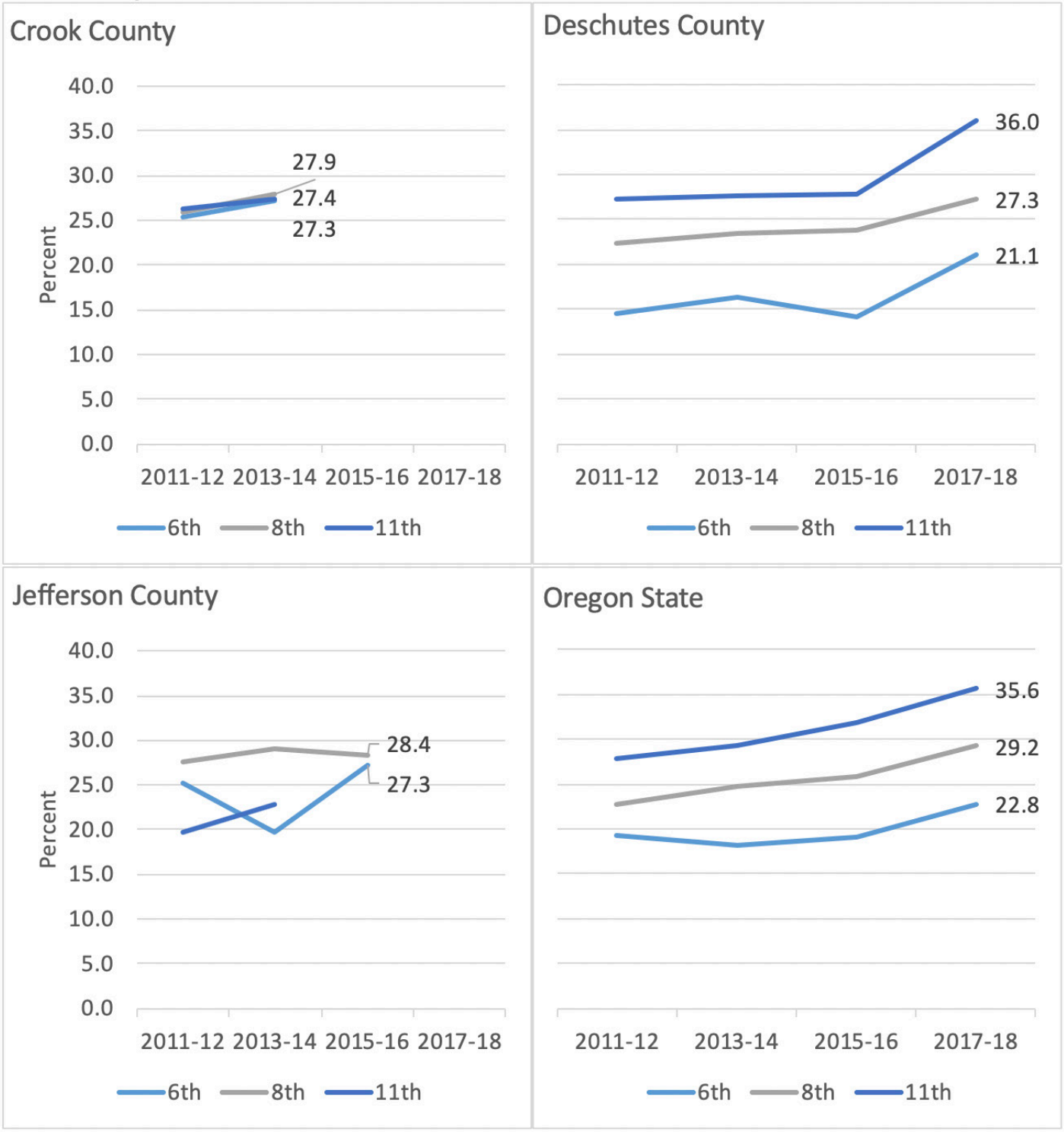
NATIONAL ALLIANCE ON MENTAL ILLNESS:

WWW.NAMI.ORG/FIND-SUPPORT/TEENS-AND-YOUNG-ADULTS

+

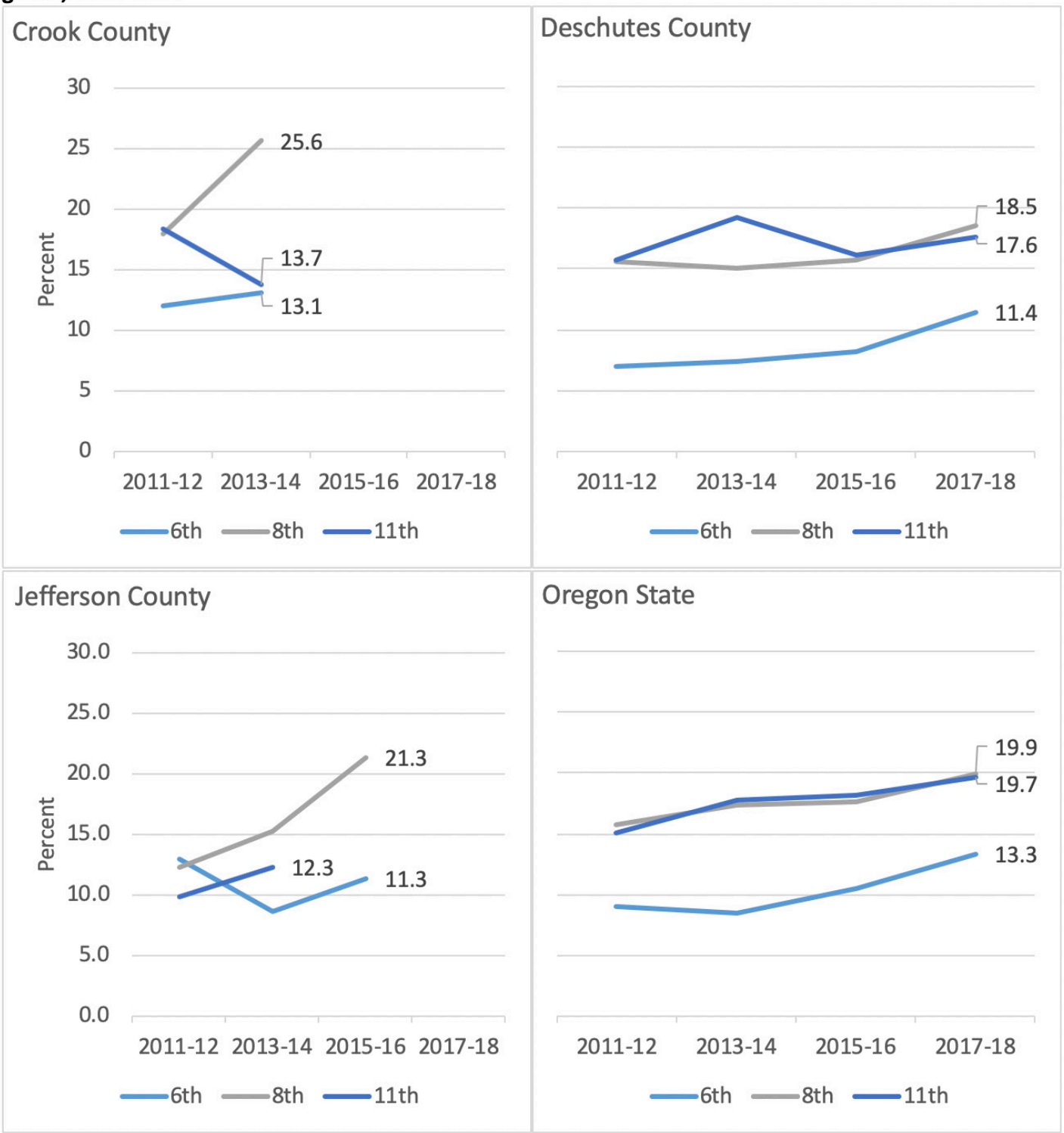
HTTP://NAMICENTRALOREGON.ORG/RESOURCES-YOUTH/

Figure 148. Percent of students reporting feeling sad or hopeless every day for two weeks or more, 6th, 8th, and 11th grade, 2012-2018.



"Bullying is a problem at the middle school, and they don't do anything about it."
- Jefferson County Youth

Figure 149. Percent of students who reported seriously considered attempting suicide, 6th, 8th, and 11th grade, 2012-2018



"It's pretty consistent that the average Adverse Childhood Experience score for kiddos seen at Deschutes County Behavioral Health is six out of ten."

- Behavioral Health Provider

Figure 150. Percent of students who reported actually attempting suicide, 6th, 8th, and 11th grade, 2012-2018.

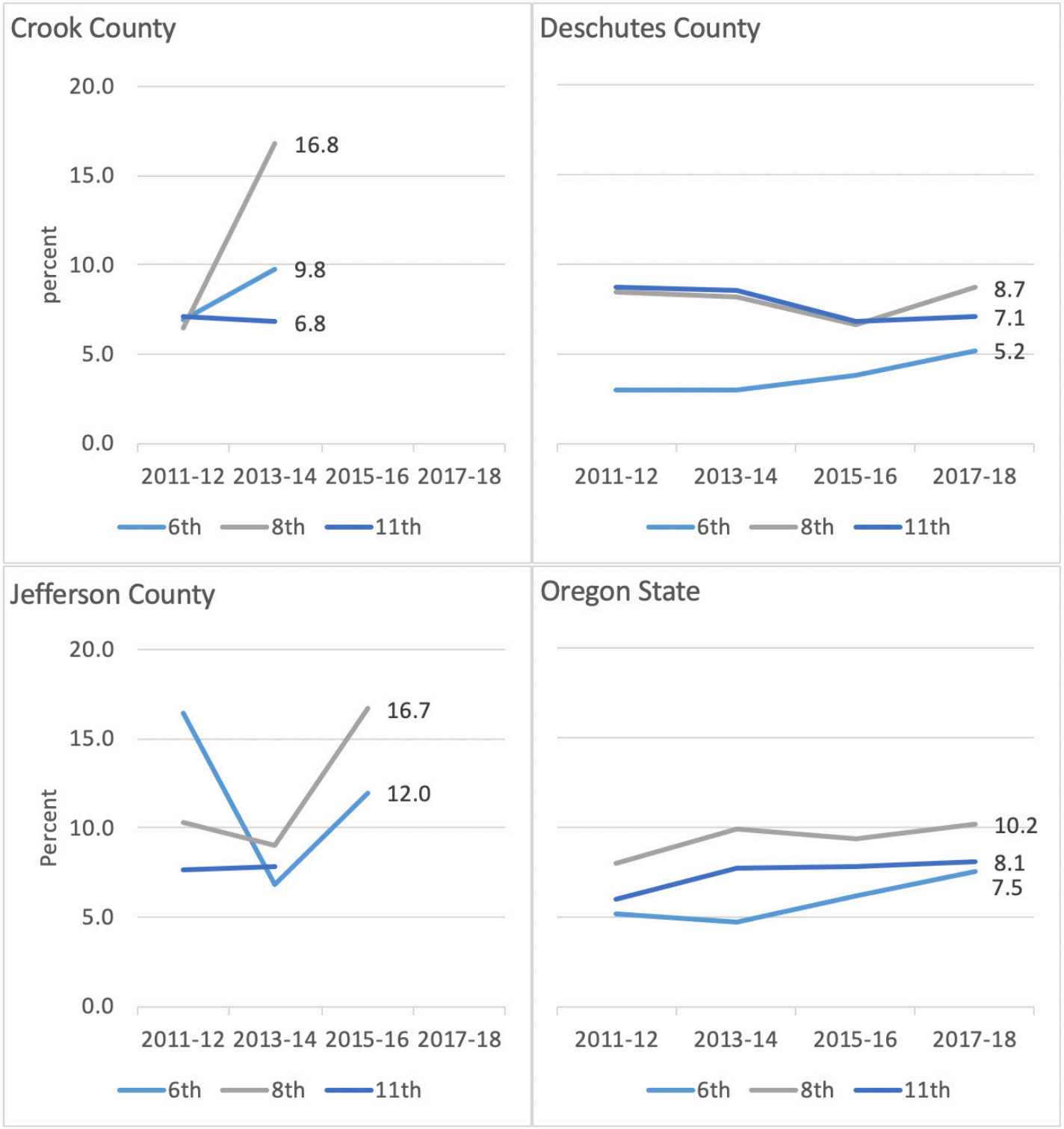


Figure 151. General mental and emotional health status, Crook County and Oregon, Oregon Student Wellness Survey, 2013-14.

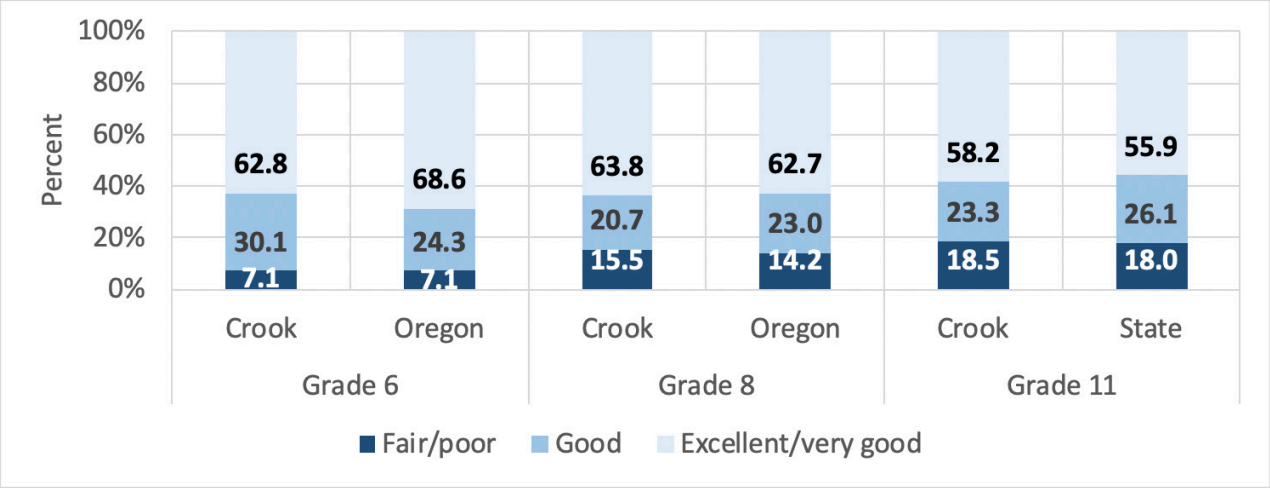


Figure 152. General mental and emotional health status, Jefferson County and Oregon, Oregon Student Wellness Survey, 2015-2016.

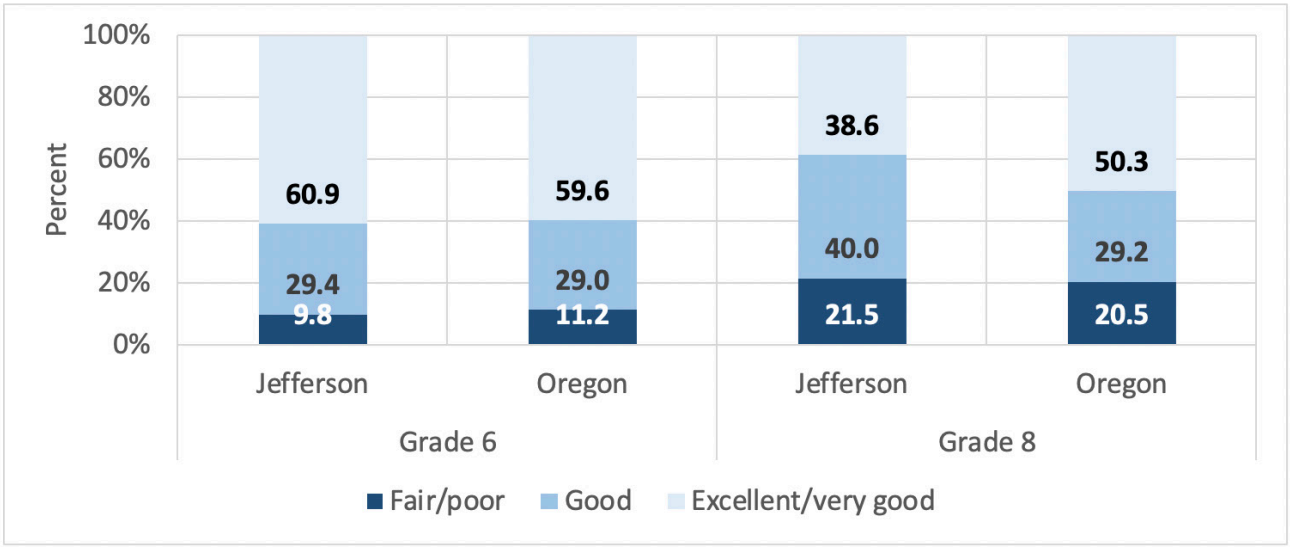
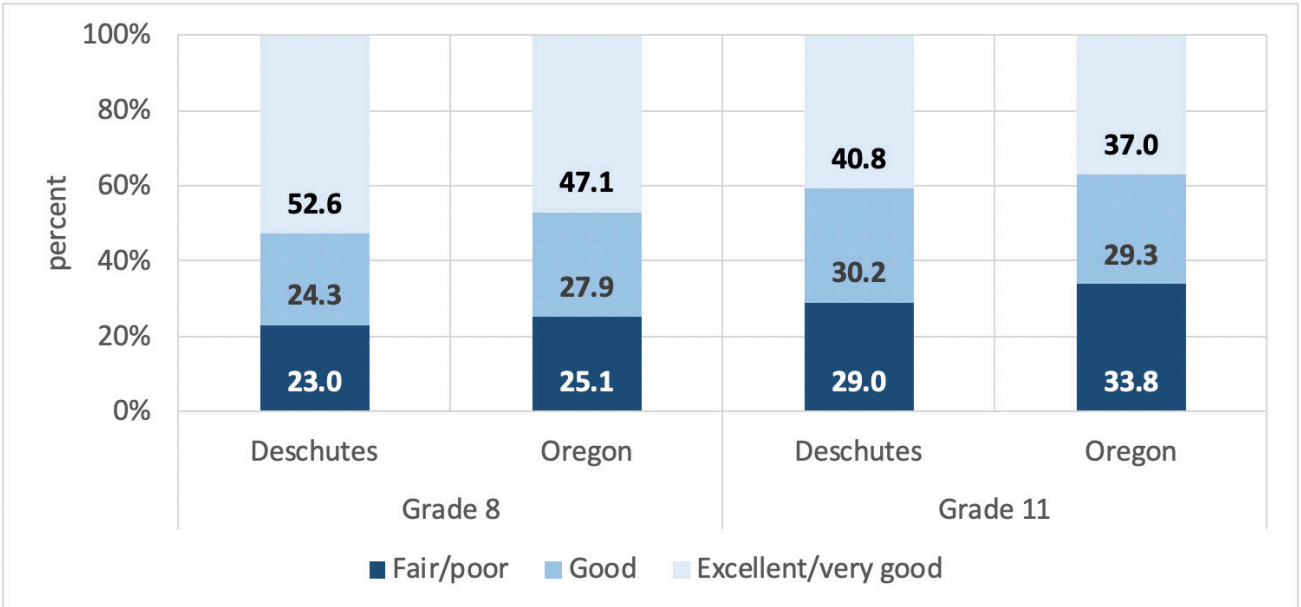


Figure 153. General mental and emotional health status, Deschutes County and Oregon, Oregon Healthy Teens Survey, 2016-2017



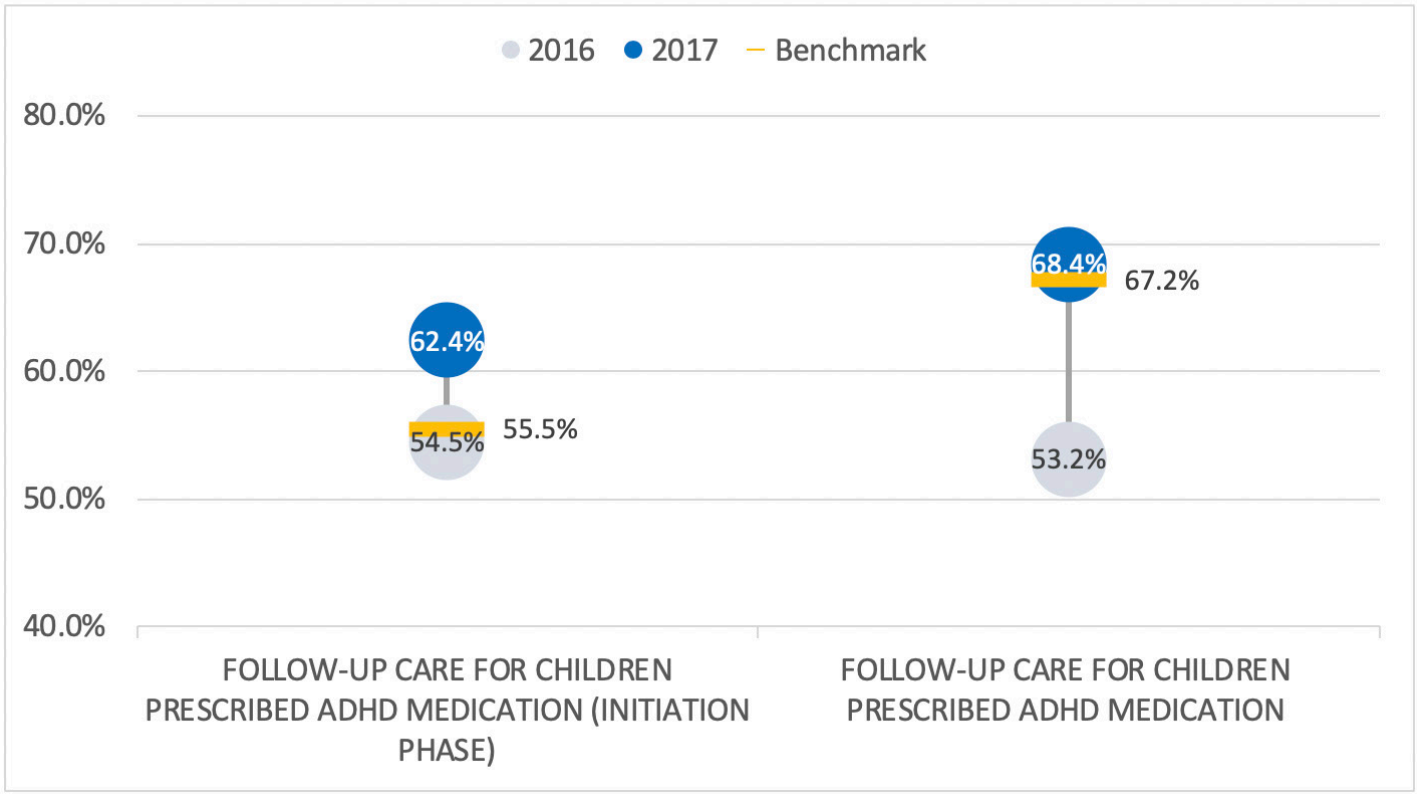
CCO MEASURES FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER:

Coordinated Care Organizations (CCOs) manage the Oregon Health Plan (Medicaid). The Oregon Health Authority uses quality health metrics to show how well CCOs are improving care, making quality care accessible, eliminating health disparities, and curbing the rising cost of health care. The CCO metrics in the document are tracked by PacificSource, the Central Oregon CCO.

The percentage of children (ages 6-12) who had one follow-up visit with a provider during the 30 days after receiving a new prescription for attention deficit hyperactivity disorder (ADHD) medication increased 7.8% from 2016 to 2017 (Figure 154), exceeding state benchmark/goal.

The percentage of children (ages 6-12) who remained on ADHD medication for 210 days after receiving a new prescription and who had at least two follow-up visits with a provider within 270 days after the initiation phase increased 15.2% from 2016 to 2017 and exceeded the benchmark of 67.2% (Figure 154).

Figure 154. Coordinated Care Organization measures for follow-up care for children prescribed ADHD medication



SUICIDE

Suicide is death caused by self-directed violence with an intent to die. Suicide is a complex health issue involving risk factors such as a history of depression or other mental health conditions, alcohol or drug abuse, family history of suicide or violence, physical illness, feeling alone, or previous suicide attempt(s). Suicide can have lasting harmful impacts on individuals, families, and communities. The goal of suicide prevention involves the reduction of risk factors and an increase in factors that promote resilience. Risk factors include lack of support and access to mental health services and social isolation. Resilience can be increased through positive connections to family, friends, community, and positive coping skills. (CDC, 2018). In 2012, the Oregon suicide rate (17.7 per 100,000) was 42% higher than the national average (Oregon Health Authority, 2015).

The number of suicides in Central Oregon fluctuates from year to year, from a high of 66 in 2017 to a low of 32 in 2013. The suicide mortality rate in Central Oregon is similar to the rate in Oregon (Figure 155). The suicide mortality rate in Central Oregon (2008 and 2017) is over three times higher among males than females (Figure 156), and the mortality rate was higher among American Indian/Alaska Natives, and White, non-Hispanics in Central Oregon than Oregon overall (Figure 157). The mortality rate from suicide among Hispanics in Central Oregon was lower than in Oregon overall (Figure 157). In Central Oregon, the age-specific suicide mortality rate for 15 to 24-year-olds and 25 to 44-year-olds were significantly higher than in Oregon overall (Figure 158). More than 50% of suicides were completed using firearms (Figure 159).

Want more information on suicide prevention?

If you or someone you know needs help call the National Suicide Prevention Lifeline:

(800) 273-8255

NATIONAL SUICIDE PREVENTION LIFELINE:

SUICIDEPREVENTIONLIFELINE.ORG/

SUICIDE PREVENTION RESOURCE CENTER:

WWW.SPRC.ORG/

LINES FOR LIFE:

HTTPS://WWW.LINESFORLIFE.ORG/

CENTRAL OREGON SUICIDE PREVENTION ALLIANCE:

WWW.PREVENTSUICIDECO.ORG

"I see a big gap for children of color compared to white children. It seems it is getting bigger and it is hard to explain to younger siblings. Some families struggle with mental health or poverty issues and the gaps continue to become larger when comparing white versus minorities."

- Deschutes County Youth

Figure 155. Age-adjusted suicide mortality rate per 100,000 population, and number of annual deaths by suicide in Central Oregon and Oregon, OPHAT, 2008-2017.

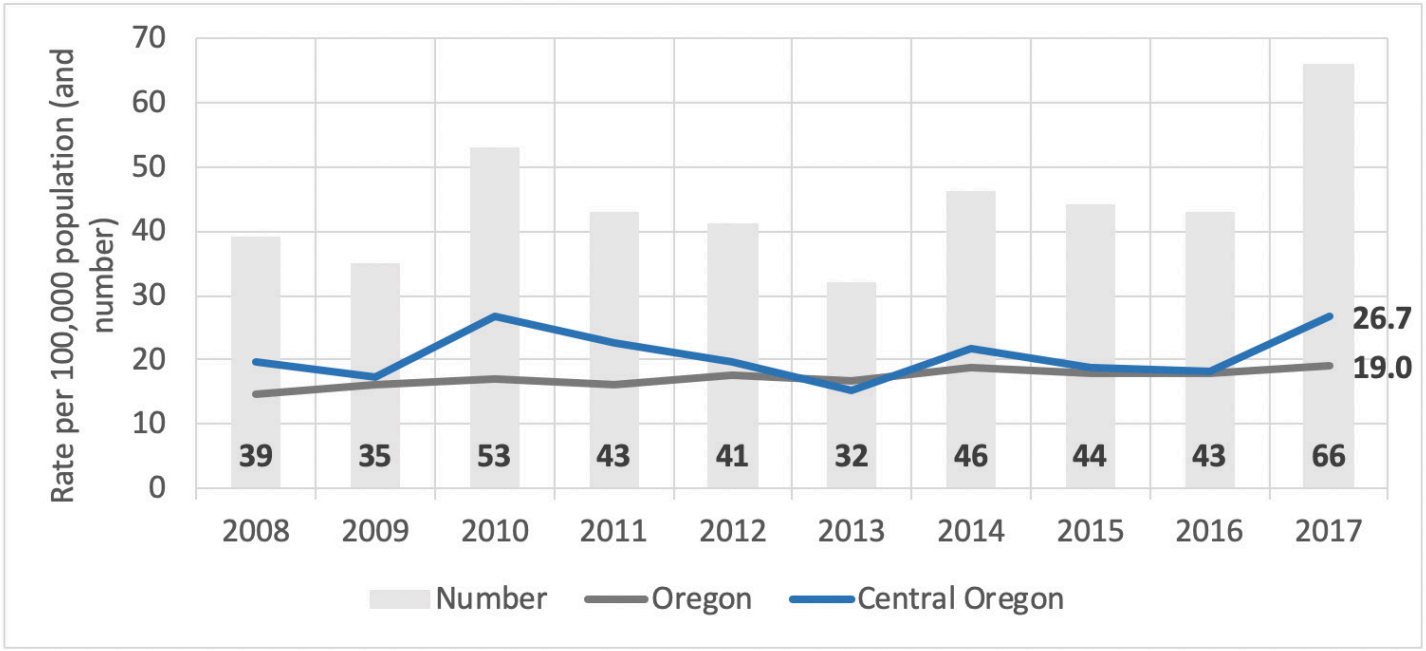
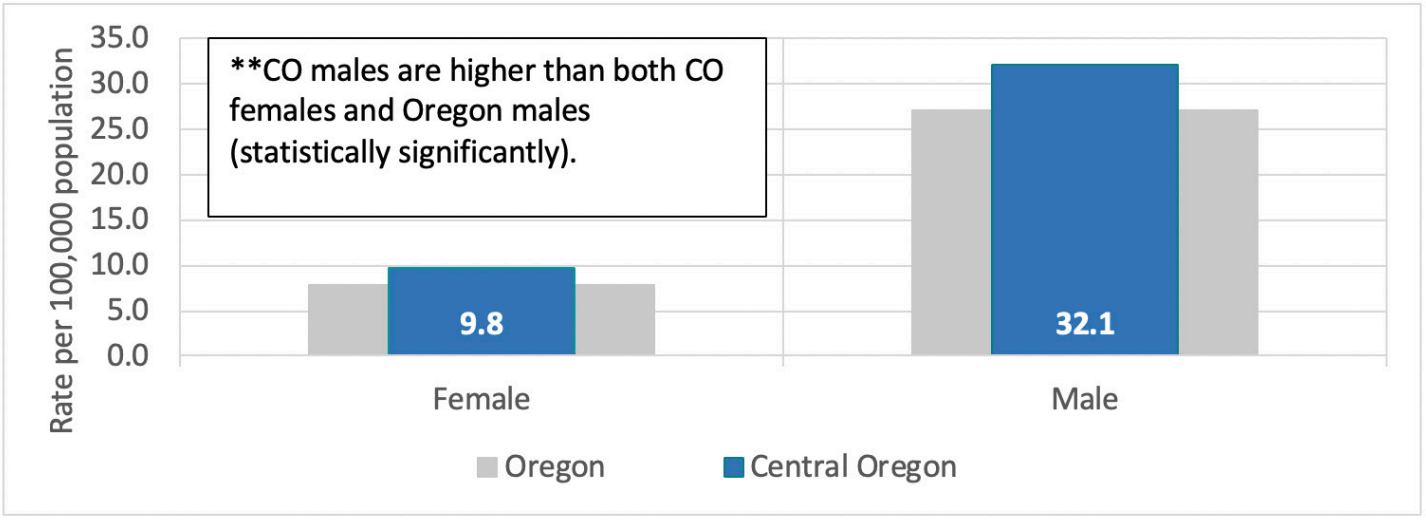
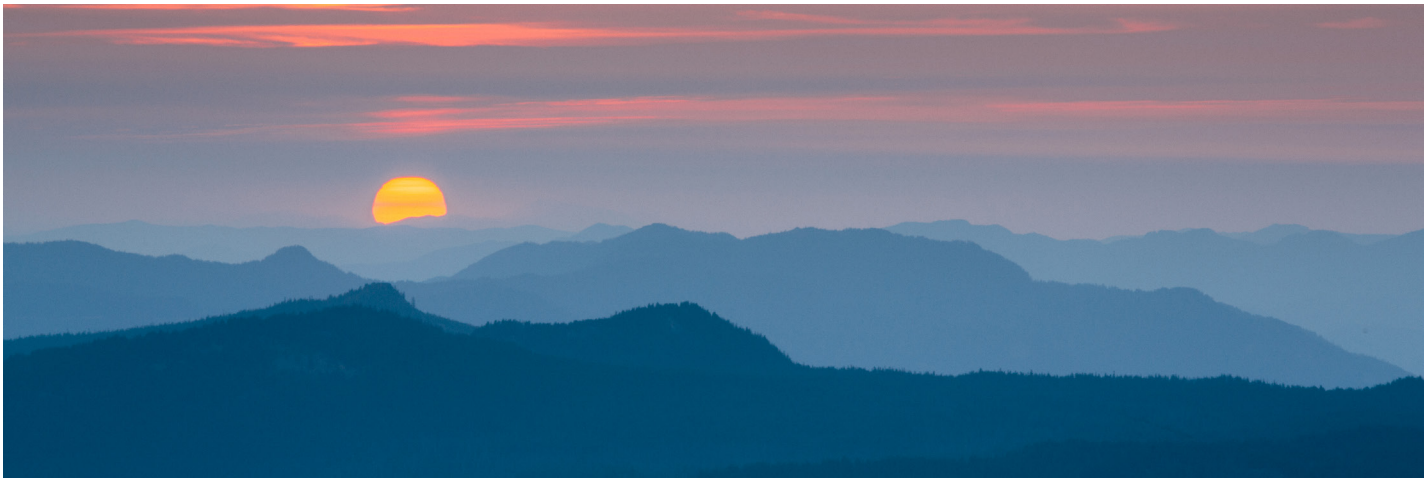


Figure 156. Age-adjusted suicide mortality rate per 100,000 population by sex, Central Oregon and Oregon, OPHAT, 2008-2017.





KURT WINDISCH PHOTO

Figure 157. Age-adjusted suicide Mortality rate per 100,000 by race/ethnicity, Central Oregon and Oregon, OPHAT, 2008-2017

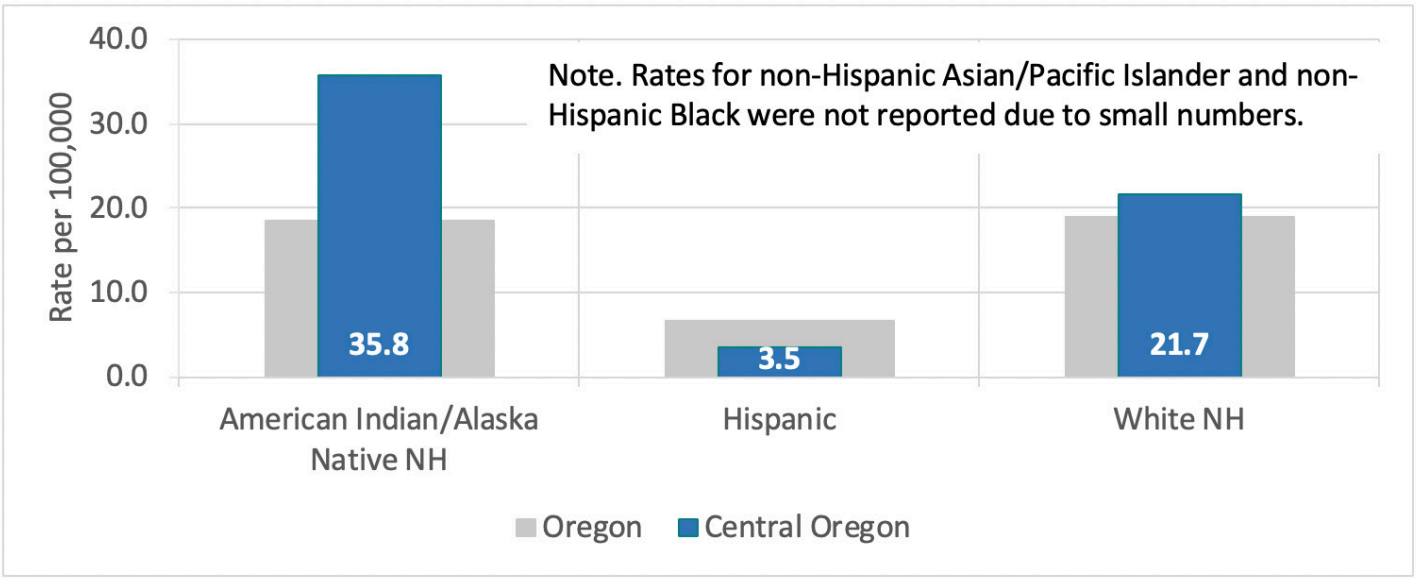


Figure 158. Age-specific Suicide Mortality rate, Central Oregon and Oregon, OPHAT, 2008-2017.

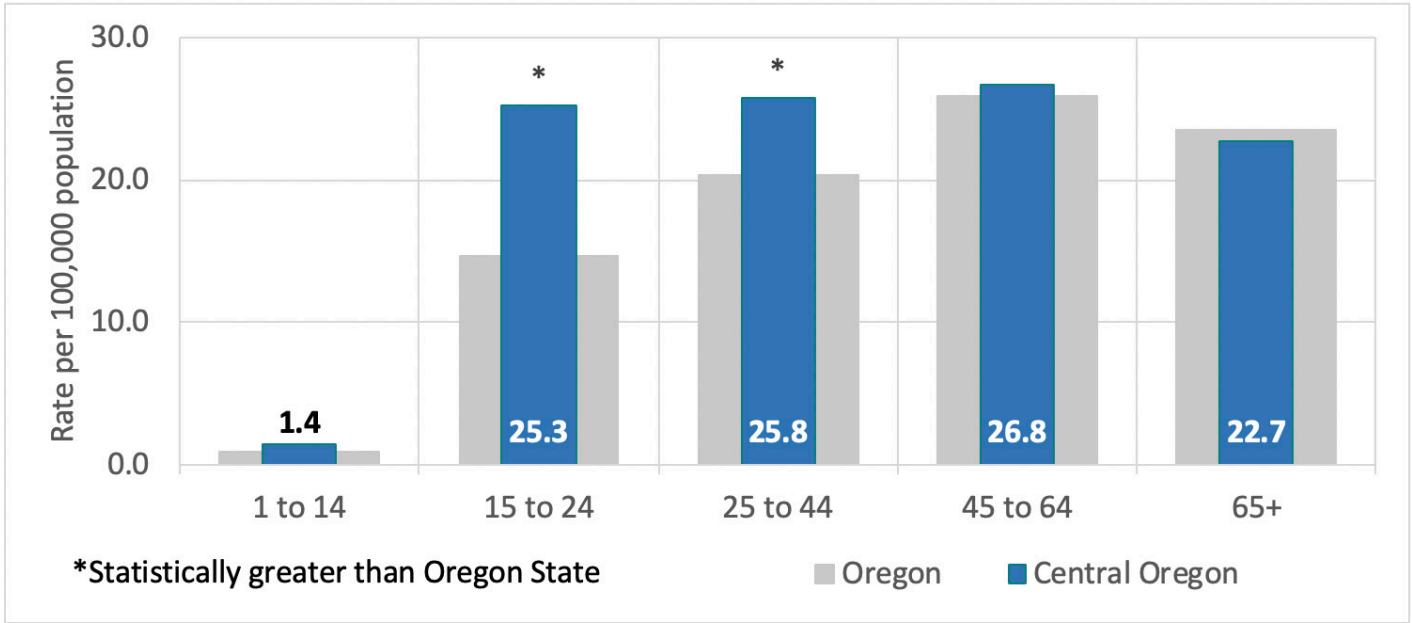
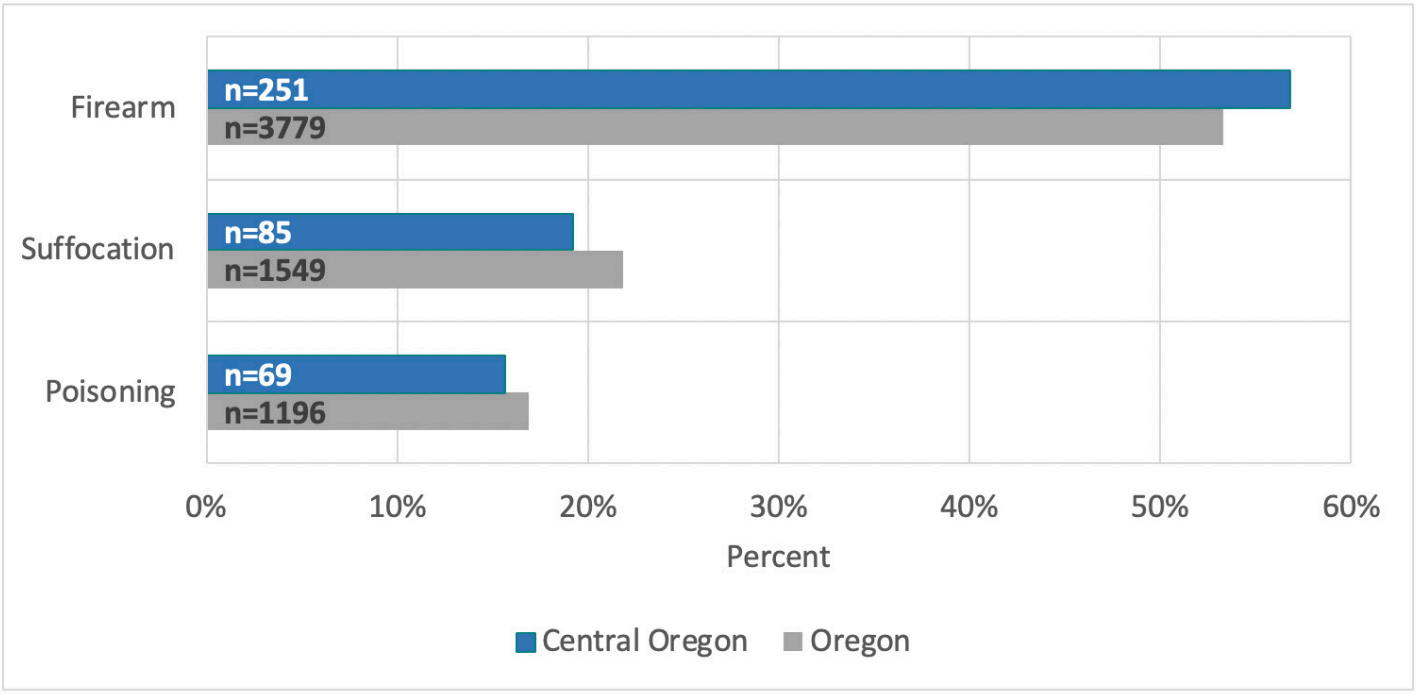


Figure 159. Leading suicide mortality mechanism (by the percentage of completion), Central Oregon and Oregon, OPHAT, 2018-2017.



MENTAL HEALTH-RELATED HOSPITALIZATIONS AND EMERGENCY DEPARTMENT VISITS

The majority of individuals with mental health conditions do not require hospitalization, however, in particular circumstances, hospitalization is needed in order to monitor, diagnose, stabilize, and/or manage medication(s). Hospitalization and emergency department (ED) visits due to mental health conditions can be reduced through appropriate outpatient care. Regarding mental health-related hospitalizations, depression is the third most common cause of hospitalizations for those ages 18-44 years old nationwide (Centers for Disease Control and Prevention [CDC], 2018). Additionally, roughly one in eight visits to EDs in the U.S. are related to mental health and/or substance use disorders (Weiss, Barrett, Heslin, & Stocks, 2016). In the U.S., between 2007 and 2011, the rate of ED visits connected to mental health issues and/or substance use disorders increased by over 15% (Weiss, Barrett, Heslin, & Stocks, 2016).

In 2016 and 2017, there were 1,707 inpatient hospitalizations at St. Charles in Bend with a primary diagnosis of "any mental health", which is approximately 5% of all inpatient hospitalizations per year (Figure 160). Roughly one-third of all patients with a primary diagnosis involving mental health had a diagnosis of depression, a quarter had a diagnosis of bipolar disorder, and one out of five a primary diagnosis of schizophrenia (Figure 161). The majority (65%) of these patients were residents of Deschutes County, 7% were from Crook, and 5% were from Jefferson County, 19% were from another county, and 4% of patient's counties were unknown (Figure 163). Ninety-two percent of patients with a primary diagnosis of "any mental health" were from Oregon, 4% were from other states, and 4% were unknown (Figure 162).

Figure 160. All inpatient stays in St. Charles Hospital where "any mental health" was primary diagnosis from 2016-2017, by major behavioral and mental disorder category

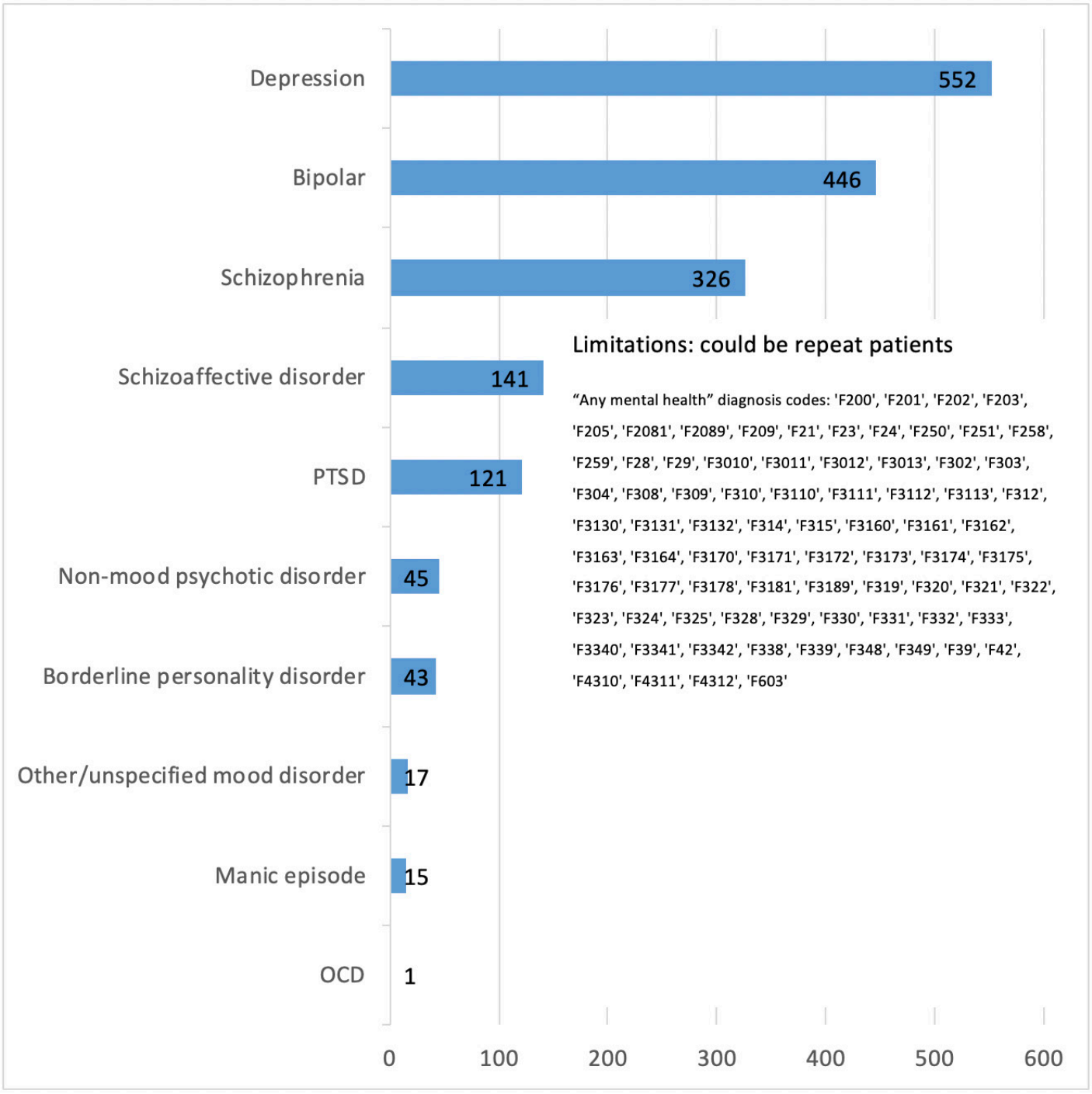


Figure 161. Top Diagnoses for all inpatient stays in St. Charles Hospital where "any mental health" was primary diagnosis from 2016-2017

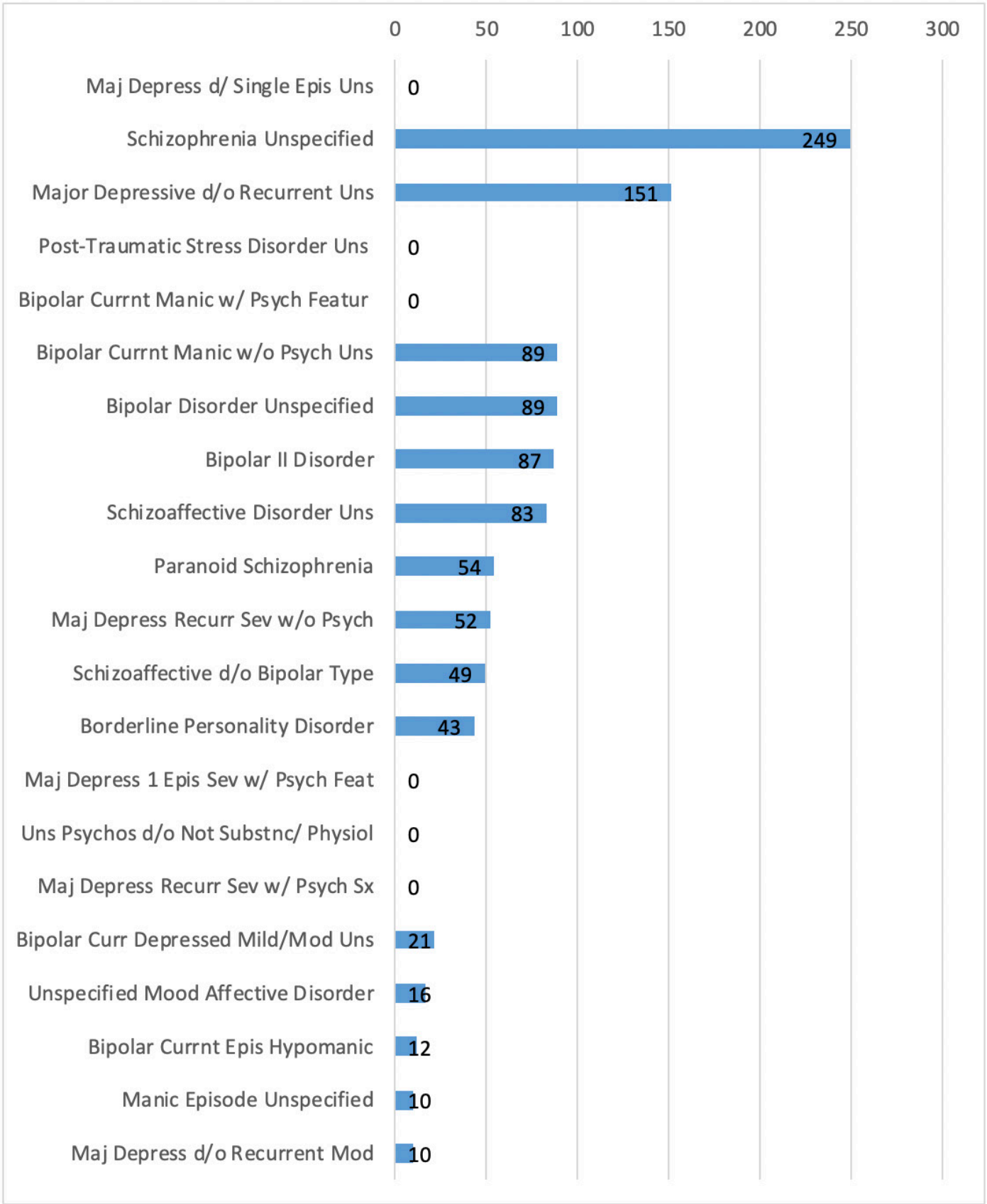


Figure 162. Percent of all inpatient stays in St. Charles Hospital where "any mental health" diagnosis was primary diagnosis from 2016-2017, by patient state

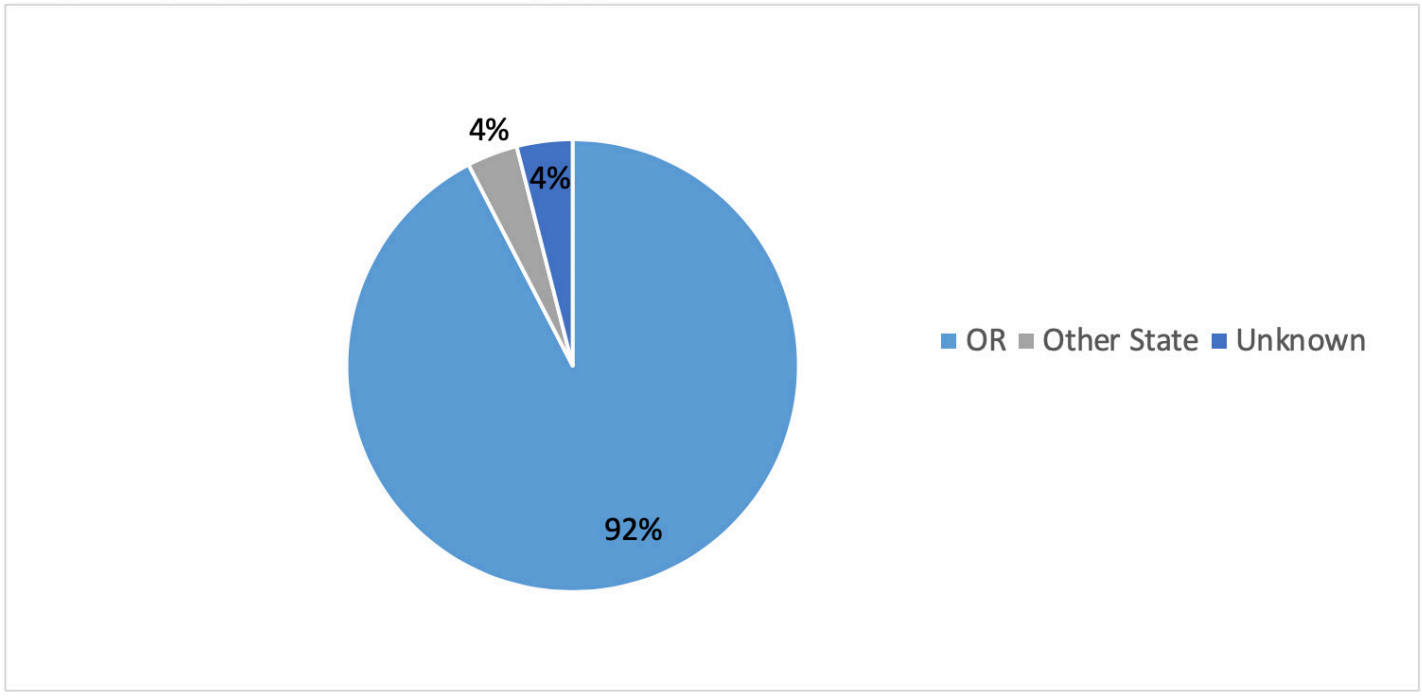


Figure 163. Percent of all inpatient stays in St. Charles Hospital where "Any mental health" diagnosis was the primary diagnosis, by patient county, 2016-2017

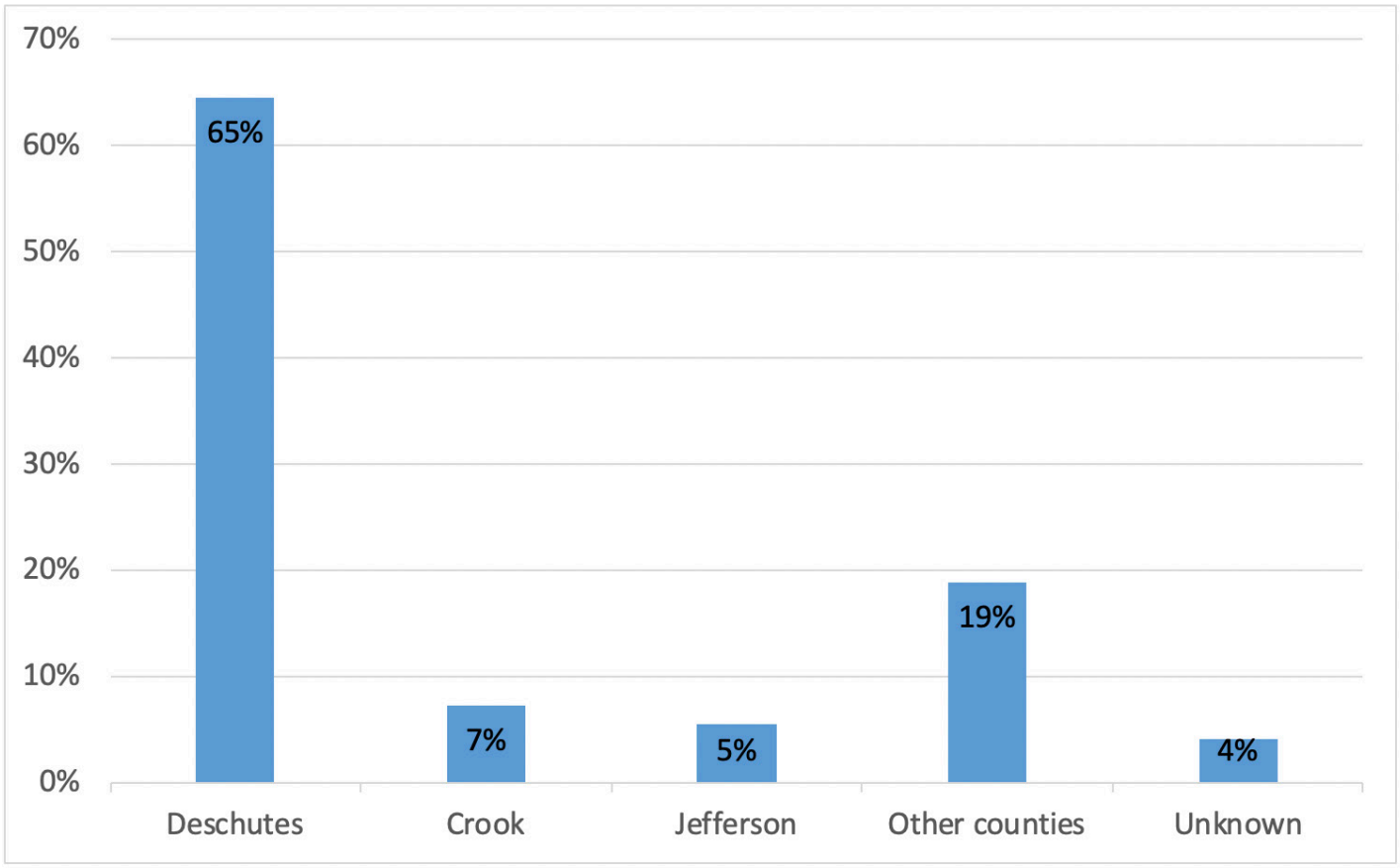
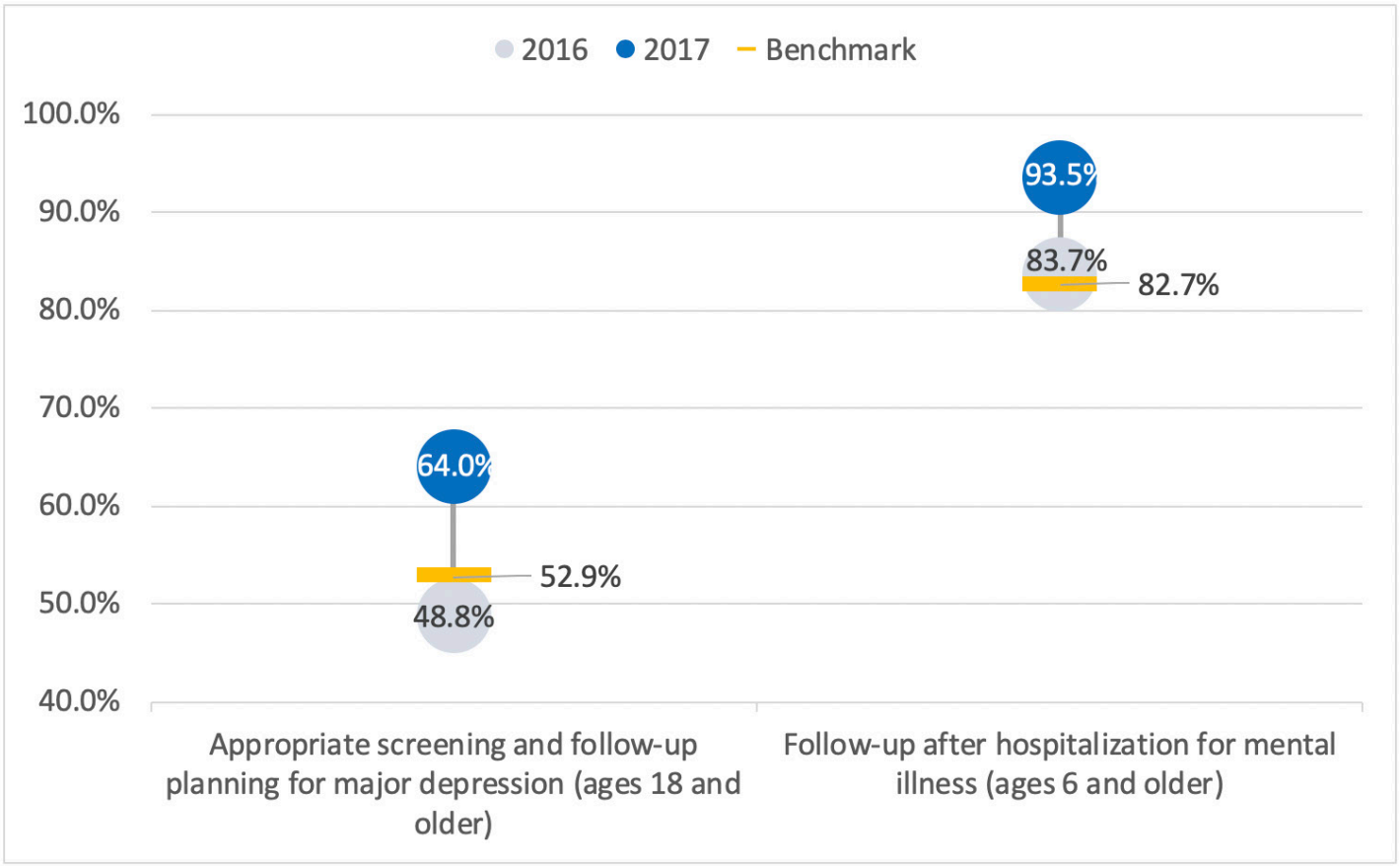


Figure 164. Percentage of adult patients (ages 18 and older) who had appropriate screening and follow-up planning for major depression and percentage of members (ages 6 and older) who received a follow-up visit with a health care provider within seven days of being discharged from a mental illness-related hospitalization, CCO Measure, 2016 and 2017



CCO MEASURES FOR DEPRESSION SCREENING AND HOSPITALIZATION FOLLOW-UP:

In 2016 and 2017, 48.8% and 64.0% of adult patients (ages 18 and older), respectively, had appropriate screening and follow-up planning for major depression. The benchmark was 52.9% (Figure 164).

The benchmark for the percent of members (ages 6 and older) who received a follow-up visit with a health care provider within seven days of being discharged from a mental illness-related hospitalization was 82.7%. The percentages who met this in 2016 and 2017 was 83.7% and 93.5%, respectively (Figure 164).

ALCOHOL, TOBACCO, AND DRUG USE

Substance use disorders occur when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home (SAMSHA, 2019). As with other diseases and disorders, the likelihood of developing an addiction differs from person to person, and biological, environmental and other factors increase the risk of addiction (NIDA, Science of Addiction). Many people with mental health disorders use substances to self-medicate symptoms. Mental illness can increase substance abuse and misuse, just as substance misuse can increase mental illness symptoms. Although taking drugs at any age can lead to addiction, research shows that the earlier a person begins using drugs, the more likely they are to develop serious problems. Addiction stems from the harmful effects that drugs have on the brain and may result from a mix of factors such as unstable family relationships, exposure to physical or sexual abuse, genetics, or mental illness (NIDA, Science of Addiction). Heavy drinking, tobacco use, and drug use are associated with higher rates of all-cause mortality, chronic disease, violence, and abuse. Addiction is preventable, treatable, and can be successfully managed (NIDA, 2018). Research shows that individualized treatment to address the physical, psychiatric, environmental, and social factors, provide improved and sustainable outcomes (NIDA, 2018).

Want more information on alcohol?

CENTER FOR DISEASE CONTROL AND PREVENTION:

HTTPS://WWW.CDC.GOV/ALCOHOL/FACT-SHEETS.HTM

NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM:

HTTPS://WWW.NIAAA.NIH.GOV/

ALCOHOL

Alcohol consumption is associated with a variety of short and long-term health concerns, such as high blood pressure, types of cancers, violence, and car accidents. For more information on these health effects, please reference the Chronic Conditions, Mental Health, and/or Unintentional Injuries sections. To minimize these health problems, the United States Dietary Guidelines for Americans suggests alcohol be consumed in moderation, if at all. Two in three adults, however, report drinking above moderate levels at least once a month. Some groups should not engage in drinking at all. These include pregnant women or women who may be pregnant, individuals under 21 years, people taking certain medications, those in substance abuse recovery, and those who are required to utilize skill, alertness, and coordination, such as when driving a car (CDC, 2016). The majority of people who use alcohol at levels that impact their health and mental health do not meet dependency criteria and are inappropriate for specialty treatment programs. Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an evidence-based practice that targets patients in primary care with nondependent substance use. It is a strategy for intervention prior to the need for more extensive or specialized treatment. Individuals living with mental health and substance use disorders are at higher risk of involvement with the criminal justice system for minor offenses related to their illness, and many are less likely to have access to safe housing. For more information about mental health, please go to the Mental Health section.

The total percent of deaths due to alcohol and drugs is too low to calculate for Crook and Jefferson Counties (Tables 165 and 166), however, in Deschutes County, over half of all alcohol/drug related deaths were from alcohol. In 2017, 30 deaths in Deschutes County were due to chronic alcoholic liver disease or another alcohol-induced cause (Figure 165).

The rate of alcohol-induced deaths was higher in Oregon overall (17.4 per 100,000 population) than in Deschutes County (14.4 per 100,000 population) (Figure 166). From 2015 to 2017 the highest alcohol-induced mortality rate was in Jefferson County (33.2 per 100,000 population) (Figure 167). Jefferson County's rate was nearly double the rate in Crook County, Deschutes County, and across Oregon (Figure 167).

When broken down by age, over one-third (37%) of adults aged 18 to 34 in Central Oregon reported binge drinking on at least one occasion over the past 30 days, compared to around 7% of those over 55 years of age (Figure 168). Nearly half (45%) of young males (18 to 34 years old) and approximately 30% of females in Central Oregon reported binge drinking at least once over the past 30 days (Figure 169). The percent of adults who reported heavy drinking in Deschutes and Jefferson Counties was lower than the percentage who reported heavy drinking across the state as a whole (Figure 170). Although, a greater percent of Central Oregon males reported heavy drinking between the ages of 18 to 54, a greater percentage of females over 55 years of age reported heavy drinking (Figure 171).

Heavy Drinking:

Defined as consuming an average of more than two drinks per day for men or more than one drink per day for women.

Binge Drinking:

Defined as four or more drinks for a woman and five or more drinks for a man on an occasion.

Figure 165. Percent of total alcohol or drug deaths due to alcohol, Deschutes County and Oregon, and the number of deaths (Deschutes County) due to chronic alcoholic liver disease and other alcohol-induced conditions, 2012-2017, Vital Statistics Annual Report Volume 2, Table 6-18.

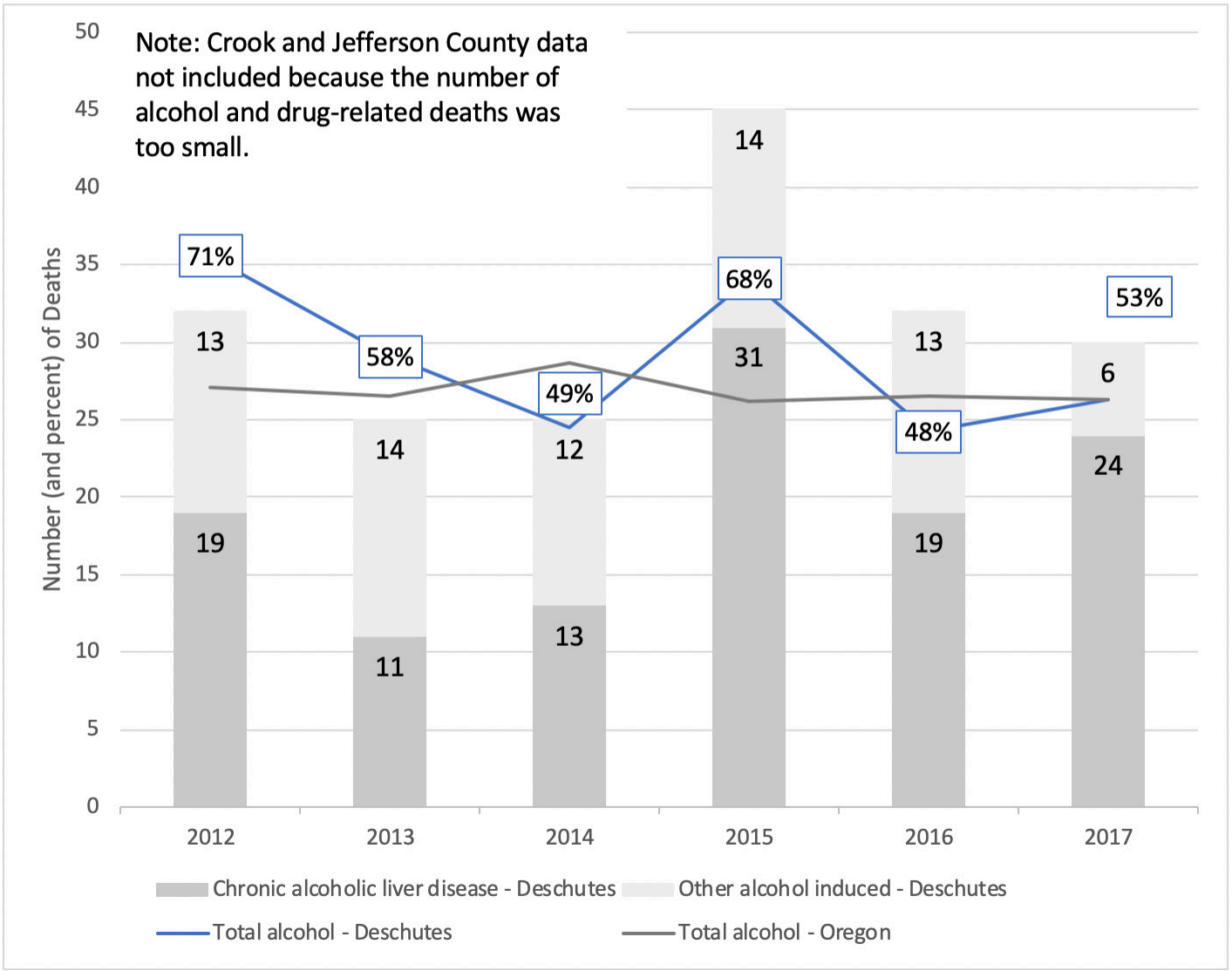


Figure 166. Alcohol-induced mortality rate and number of deaths, Deschutes County and Oregon, CDC WONDER, 2008-2017

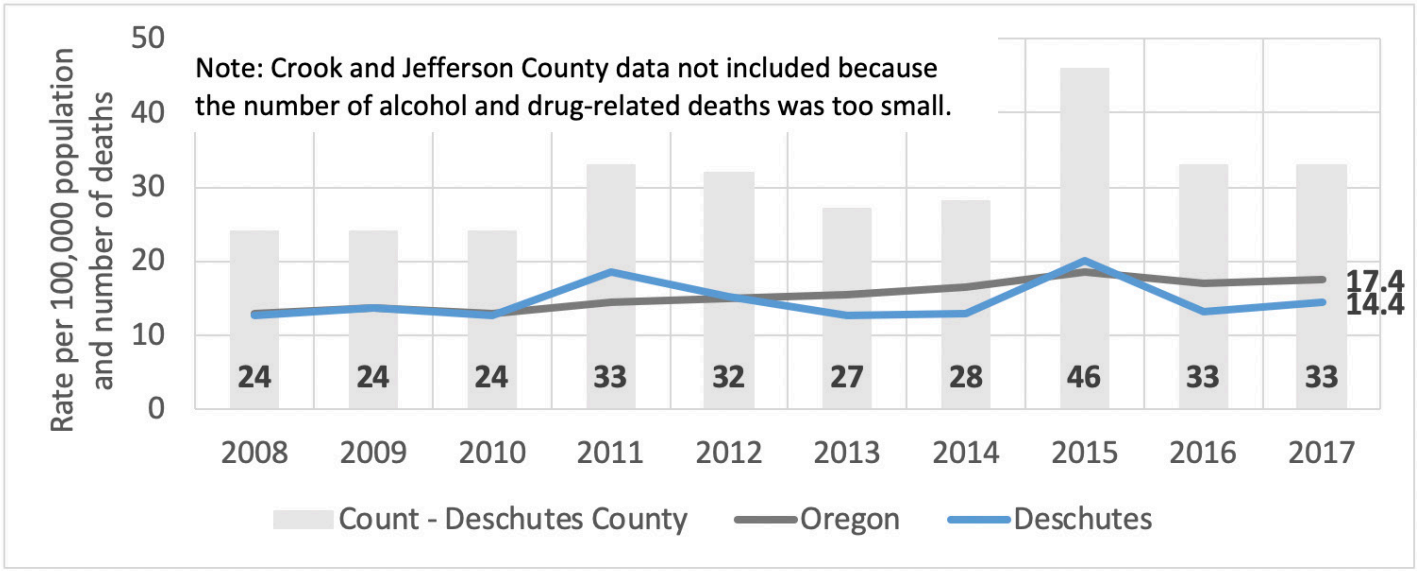


Figure 167. Age-adjusted alcohol-induced mortality rate, by county, 2008-2011 to 2015-2017

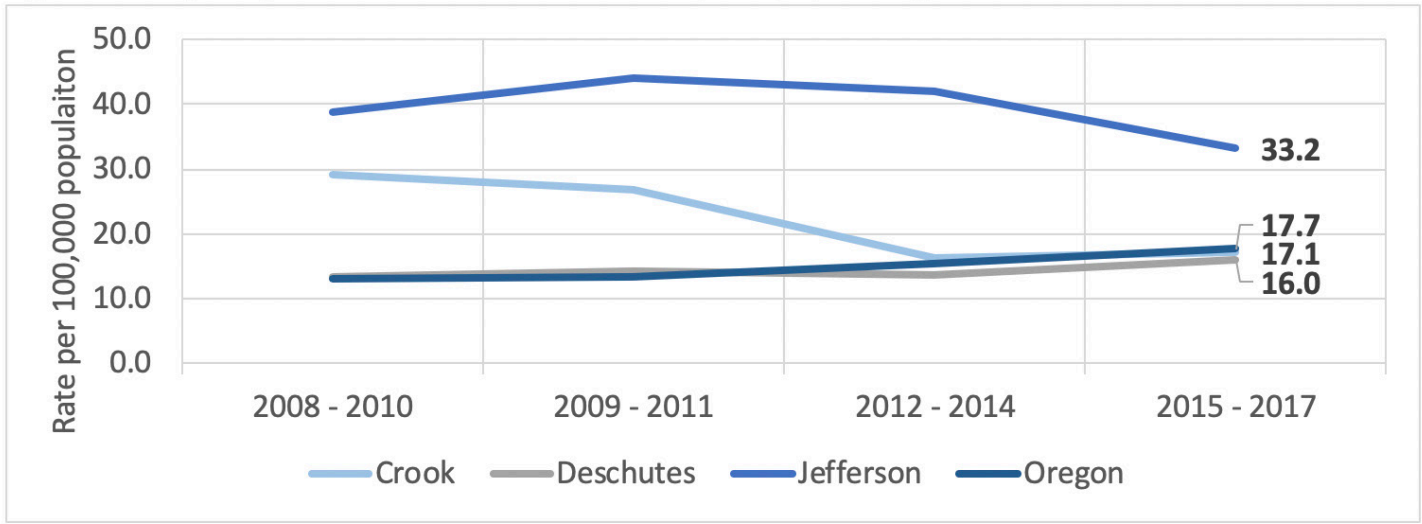


Figure 168. Percent of adults who reported binge drinking on at least 1 occasion in the past 30 days by age, Central Oregon, Oregon BRFSS, 2012-2015.

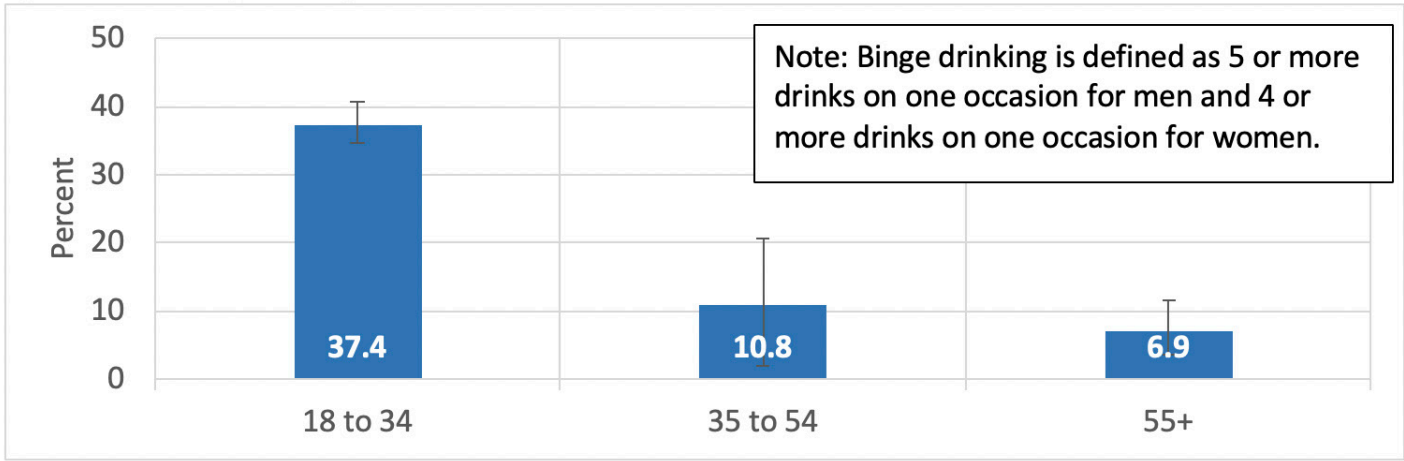


Figure 169. Percent of adults who reported binge drinking on at least 1 occasion in the past 30 days by age, overall and by sex, Central Oregon, Oregon BRFSS, 2012-2015.

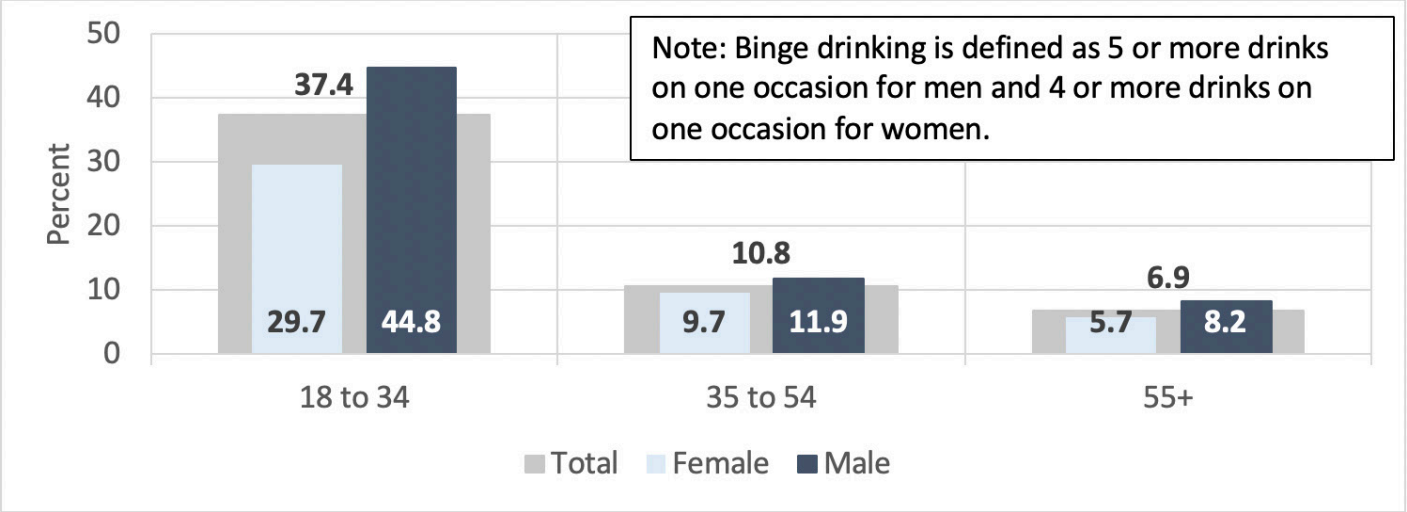


Figure 170. Percent of adults who reported heavy drinking within the past month, age-adjusted, Oregon BRFSS, 2012-2015

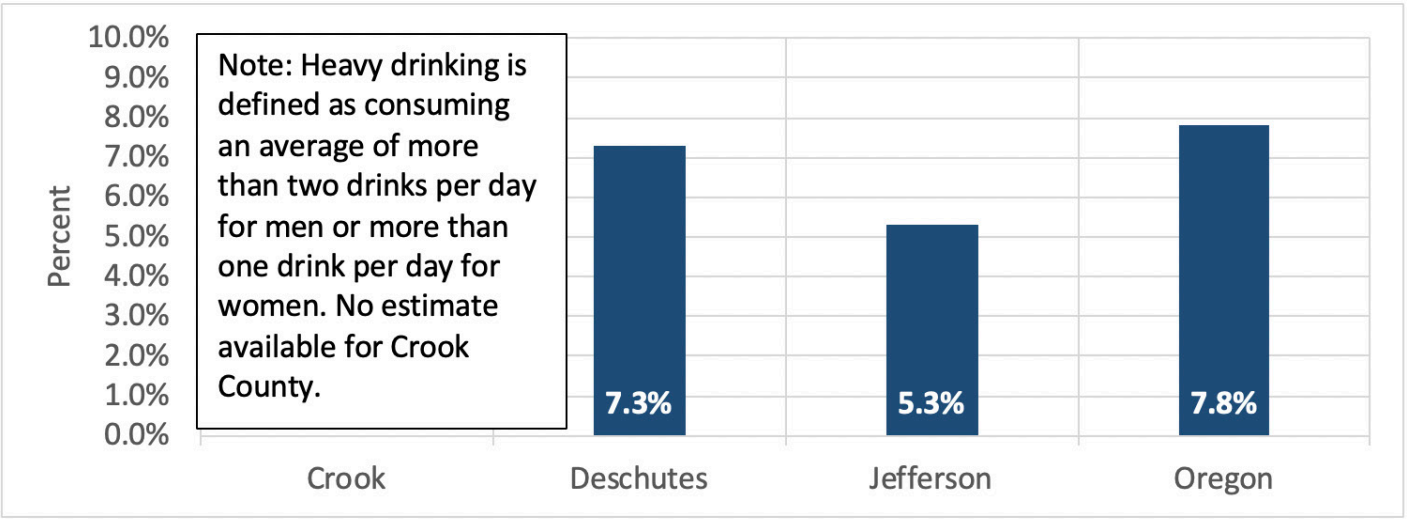
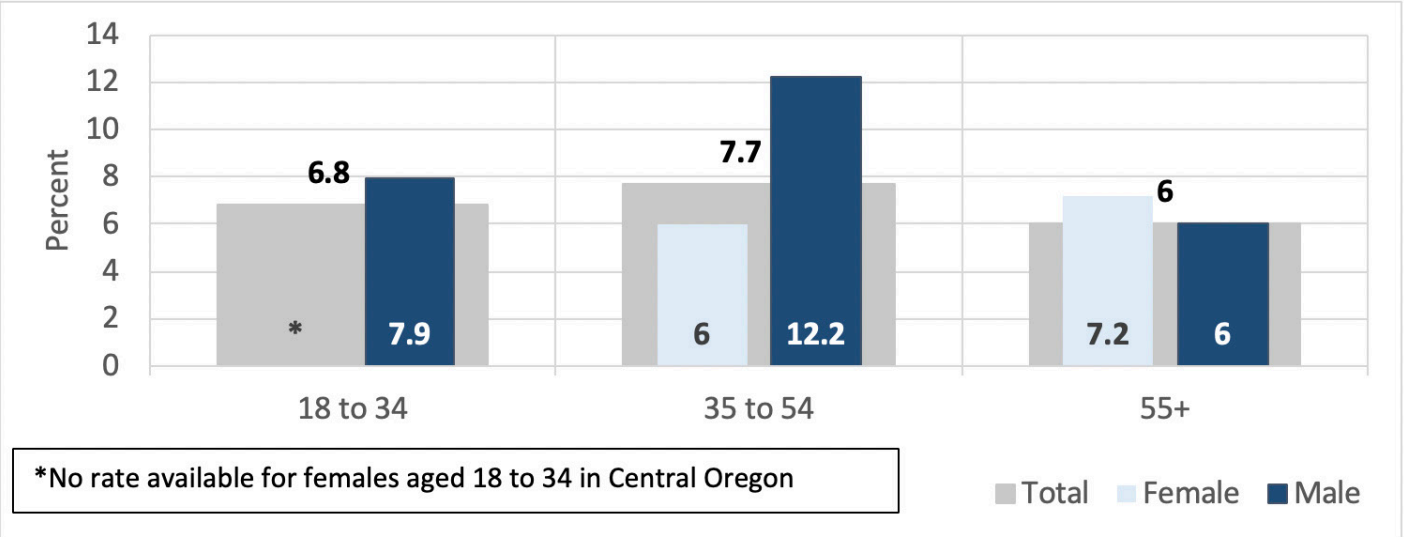
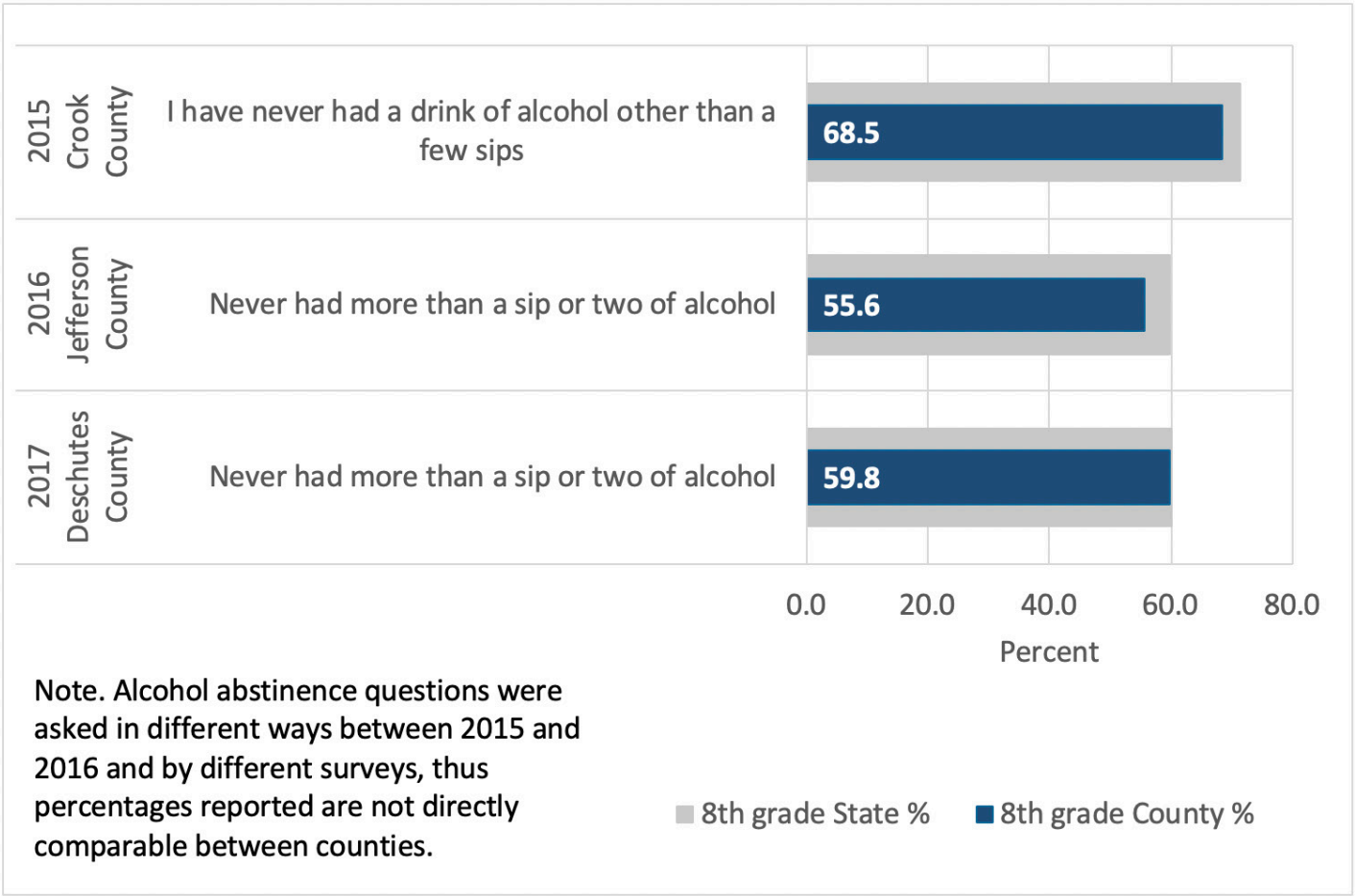


Figure 171. Percent of adults who reported heavy drinking in the past 30 days, by age and sex, Central Oregon, Oregon BRFSS, 2012-2015



Alcohol use in youth under 21 years of age is illegal. In Central Oregon, data on students who abstain from alcohol use are available for Crook County in 2015, Jefferson County in 2016, and Deschutes County in 2017. Based on this data, more than half of all Central Oregon 8th graders report abstaining from alcohol use, ranging from 68.5% in Crook County (2015) to 55.6% in Jefferson County (2016) (Figure 172). Deschutes county data is the only current information provided for alcohol use and binge drinking rates. Approximately 30% of Deschutes County 8th graders report ever using alcohol, around 8% report that they currently use alcohol, and roughly 3% report current binge drinking (Figure 173). Just over 60% of Deschutes County 11th graders report ever using alcohol, 35% report that they currently use alcohol, and close to 23% report current binge drinking (Figure 174).

Figure 172. Percent of 8th graders who abstain from alcohol use, Central Oregon and Oregon, Oregon Student Wellness Survey, 2016 and Oregon Healthy Teens Survey, 2015, 2017



Note. Alcohol abstinence questions were asked in different ways between 2015 and 2016 and by different surveys, thus percentages reported are not directly comparable between counties.

Figure 173. Percent of Deschutes County 8th graders who are current binge drinkers, current alcohol users, and have ever used alcohol, Oregon Healthy Teens Survey, 2017

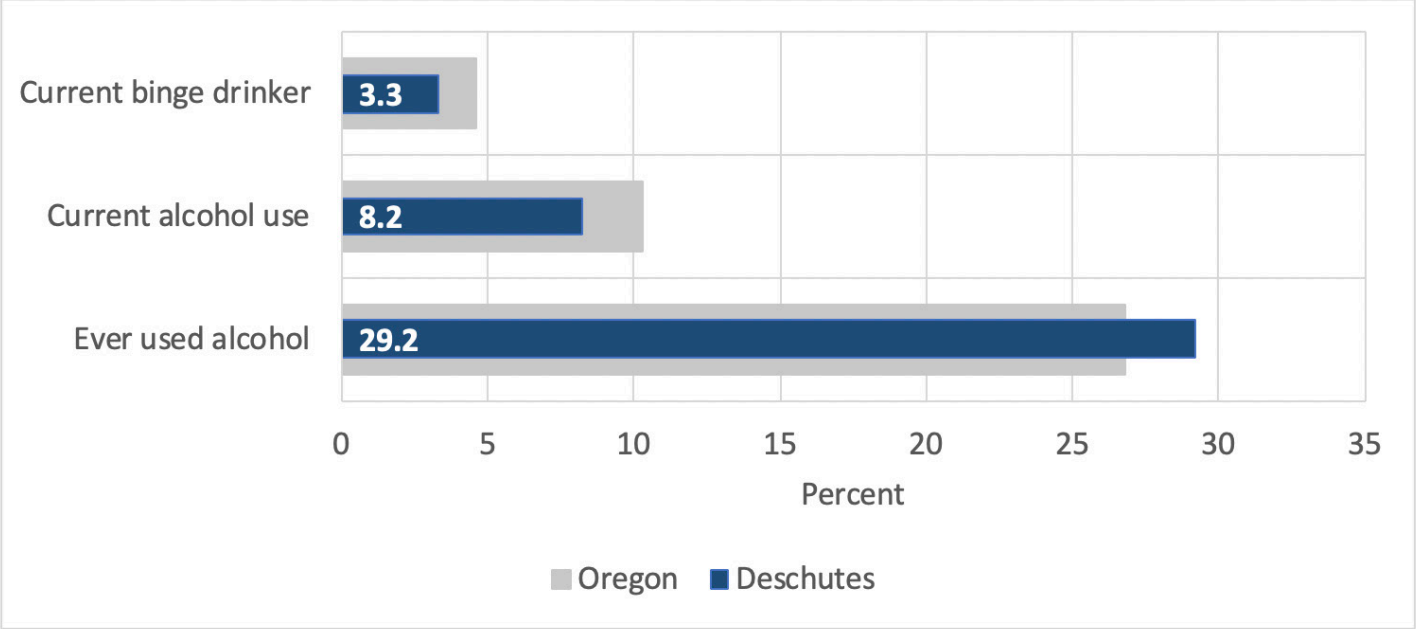
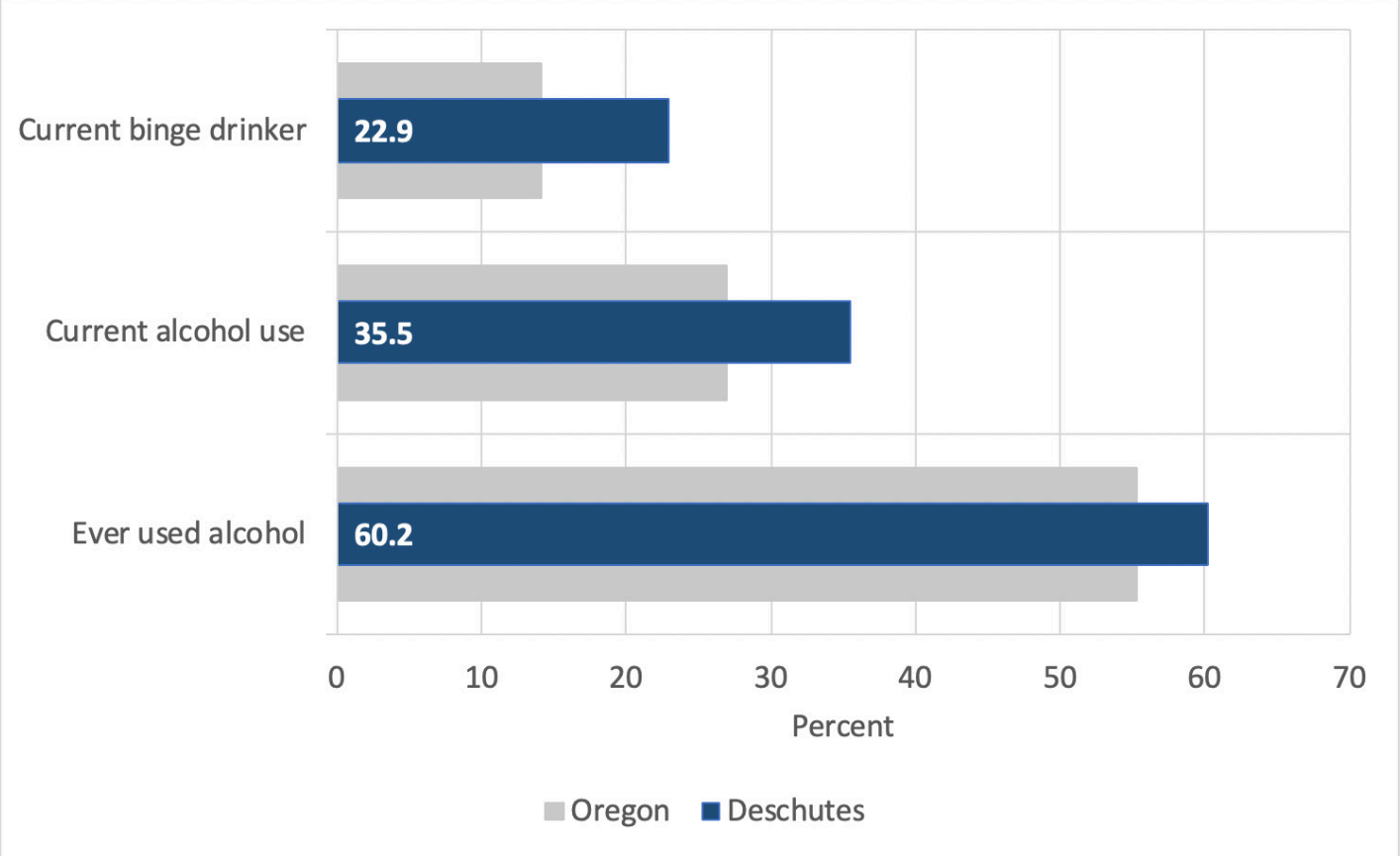


Figure 174. Percent of Deschutes County 11th graders who are current binge drinkers, current alcohol users, and have ever used alcohol, Oregon Healthy Teens Survey, 2017



TOBACCO

Smoking is the leading cause of preventable death. In 2017, roughly 34.3 million United States adults reported smoking, 15.8% of men and 12.2% of women. Use of cigarettes and smokeless tobacco are initiated and established primarily during adolescence. Nearly nine out of 10 cigarette smokers first tried smoking before the age of 18 years, with roughly 98% first smoking by the age of 26. Cigarette smoking is responsible for more than 480,000 deaths per year in the United States, and of those, 41,000 deaths are related to secondhand smoke (CDC, 2018).

Tobacco use causes multiple diseases such as cancer, respiratory disease, and other adverse health outcomes. For more information on these diseases, please reference the Chronic Conditions section. Over 16 million Americans live with smoking-related diseases. For every individual who dies of a smoking-related issue, another 30 or more individuals live with a serious smoking-related condition. Adults exposed to secondhand smoke can develop health issues, such as lung cancer or coronary heart disease, while children who are exposed have an increased risk for sudden infant death syndrome (SIDS), severe asthma, slowed lung growth, and other health issues (CDC, 2019).

In Oregon, 17.9% of adults report smoking. In Central Oregon, 26.3%, 17.3%, and 12.7% of adults report smoking in Crook, Deschutes, and Jefferson Counties, respectively (Figure 178). Between 2008-2017, tobacco-related mortality rates decreased by 21% in Crook County, 10% in Deschutes, 33% in Jefferson, and 11% across Oregon (Figure 175). In Central Oregon, the overall age-adjusted mortality rate from tobacco was highest in Jefferson County, followed by Crook, and Deschutes. Across Oregon and in the three Central Oregon counties, the mortality rate from tobacco-related causes was lower among the Hispanic population than among the American Indian/Alaska Native and White, non-Hispanic populations (Figure 176). When broken down by age, the mortality rate from tobacco-related causes was highest among those over 65 years old in both Central Oregon and Oregon overall (Figure 177).

Want more information on tobacco?

CENTER FOR DISEASE CONTROL AND PREVENTION TOBACCO:

WWW.CDC.GOV/TOBACCO/CAMPAIGN/TIPS/INDEX.HTML

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES SMOKING:

HTTPS://SMOKEFREE.GOV/

OREGON HEALTH AUTHORITY:

HTTPS://SMOKEFREEOREGON.COM/RESOURCES/QUIT/I-WANT-TO-QUIT/

Figure 175. Age-adjusted all-cause mortality rate from tobacco-related causes (and 10-year percent change), OPHAT, 2008-2017

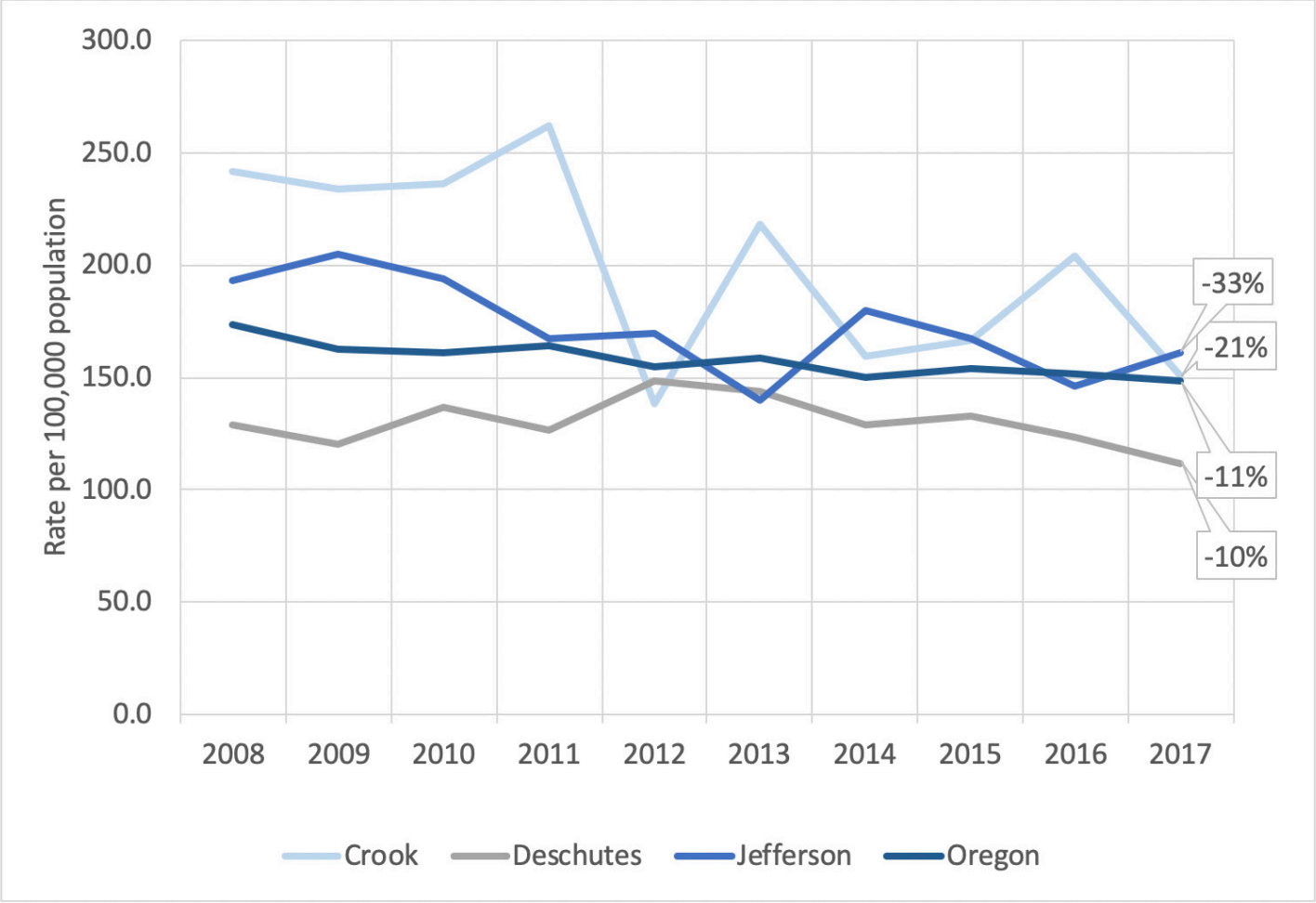


Figure 176. Age-adjusted mortality rate from tobacco-related causes by race/ethnicity and by county, OPHAT, 2008-2017

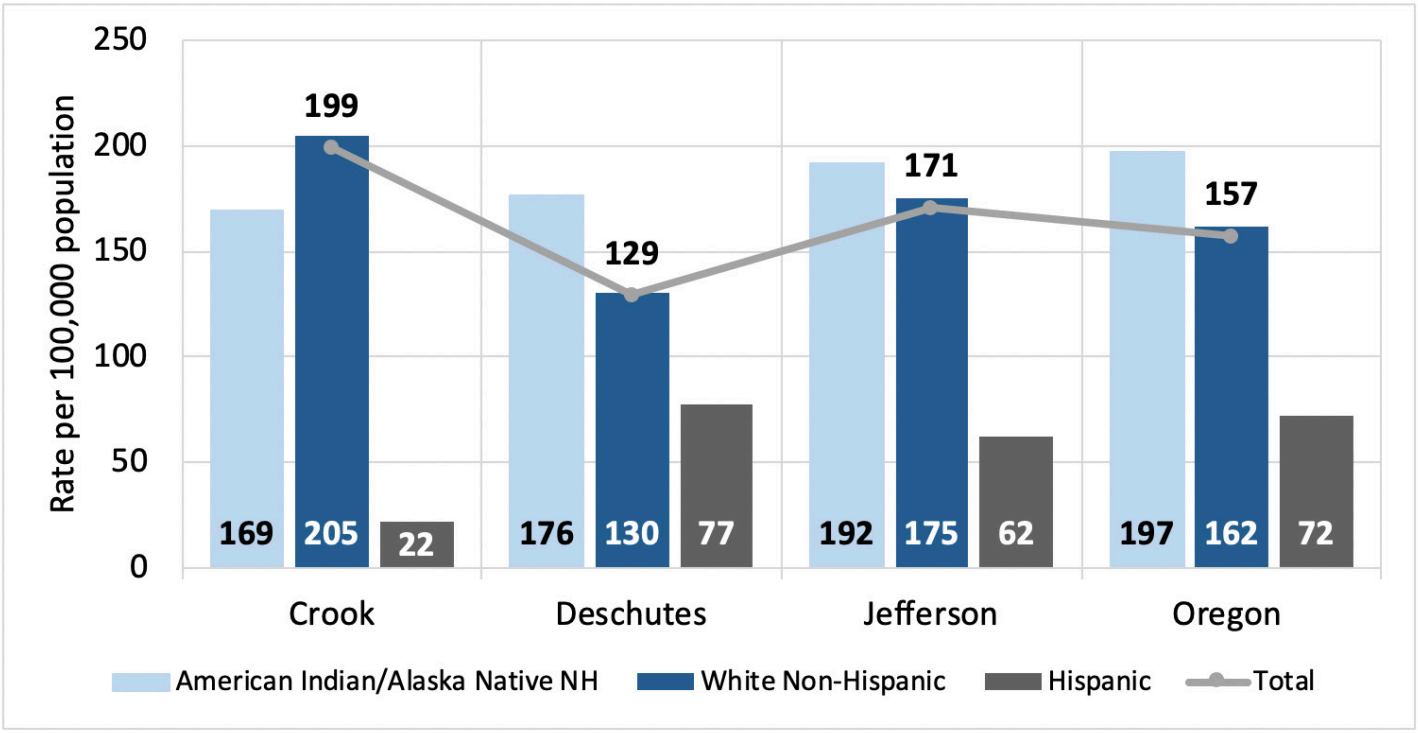
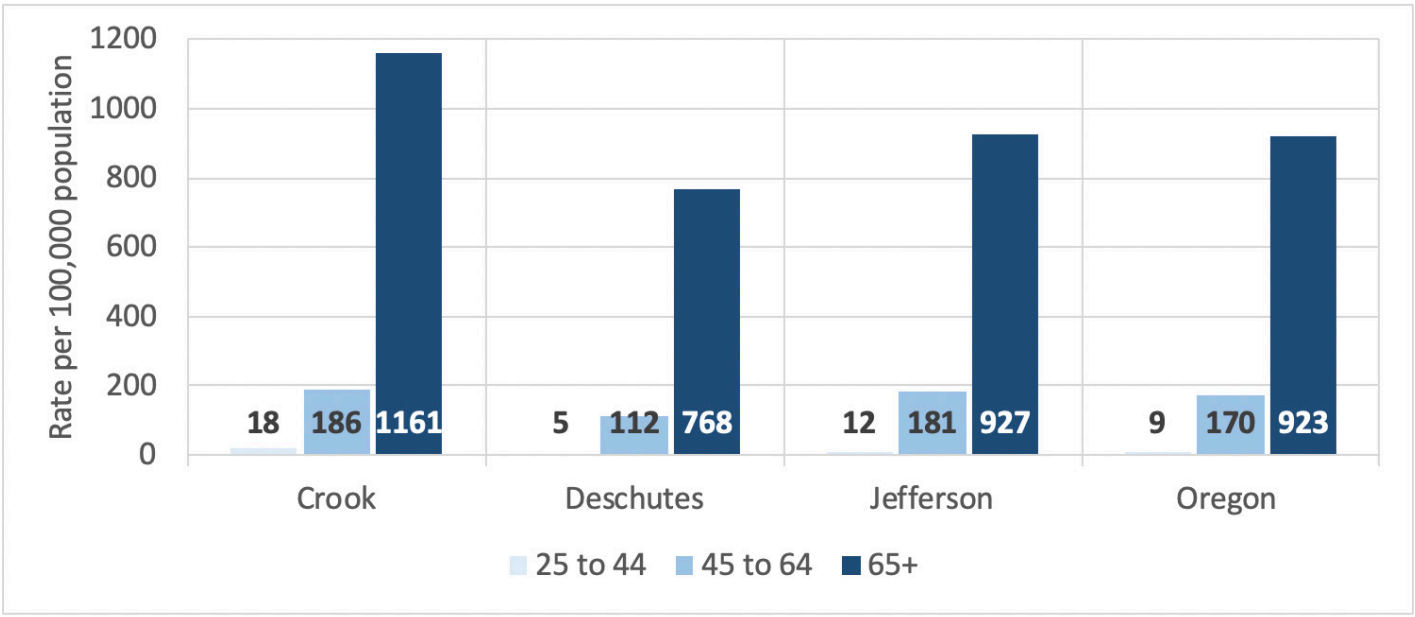


Figure 177. Age-specific mortality rate from tobacco-related causes, OPHAT, 2008-2017.



Data on youth who abstain from tobacco use is available in 2015 for Crook County, 2016 for Jefferson County, and 2017 for Deschutes County. Approximately 90% of 8th graders in Crook County, 87% of 8th graders in Jefferson County, and 94% of 8th graders in Deschutes County have never smoked a whole cigarette. Roughly 83% of 8th graders in Crook County, 89% of 8th graders in Jefferson County, and 94% of 8th graders in Deschutes County have never used other tobacco products (Figure 179).

Data on current tobacco use and related topics is available for Oregon overall and Deschutes County. About 10% of 8th graders in Deschutes County report that they use tobacco, around 3% smoke cigarettes, and 8% use a non-cigarette tobacco product (Figure 180). Approximately 28% of 11th graders in Deschutes County report that they use tobacco, around 10% smoke cigarettes, and 25% use a non-cigarette tobacco product (Figure 181).

In Oregon, Coordinated Care Organizations (CCO's) report on a number of health-related measures associated with the Medicaid population. In Central Oregon, from 2016 to 2017 there was a 2% reduction in smoking among residents with Medicaid, and a 1.5% increase in overall tobacco use (Table 182). From 2016 to 2017, Central Oregon saw an 8% increase in adult Medicaid tobacco users who were advised to quit by their doctor, a 9% increase of adult Medicaid tobacco users who were advised to use medication to help them quit by their doctor, and a 3% increase of adult Medicaid tobacco users who were advised other strategies to help them quit by their doctor (Table 183).

Figure 178. Percent of adults who report current cigarette smoking, Oregon BRFSS, 2012-2015

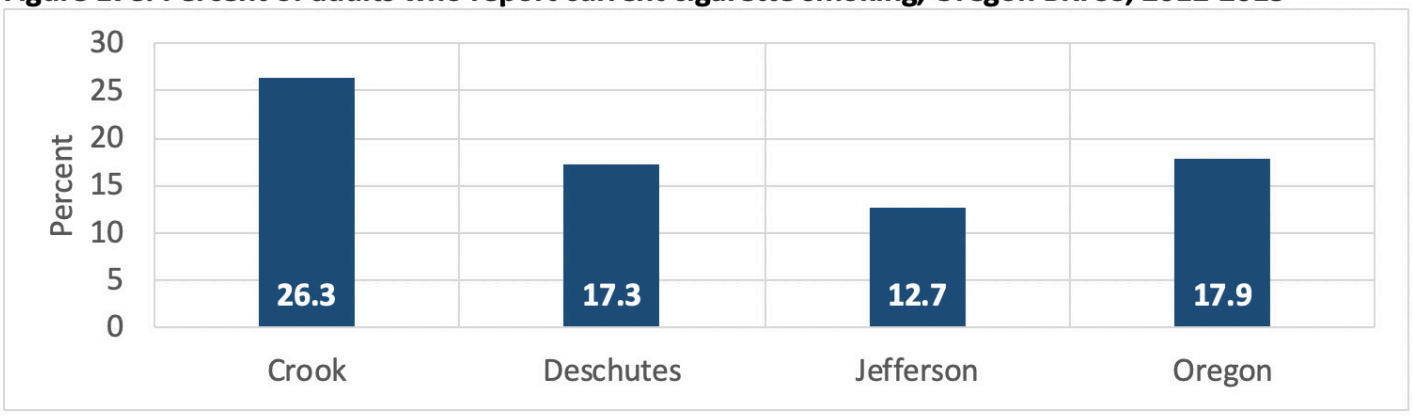


Figure 179. Percent of 8th graders who abstain from tobacco use, County and State, Oregon Student Wellness Survey, 2016, and Oregon Healthy Teens Survey, 2017.

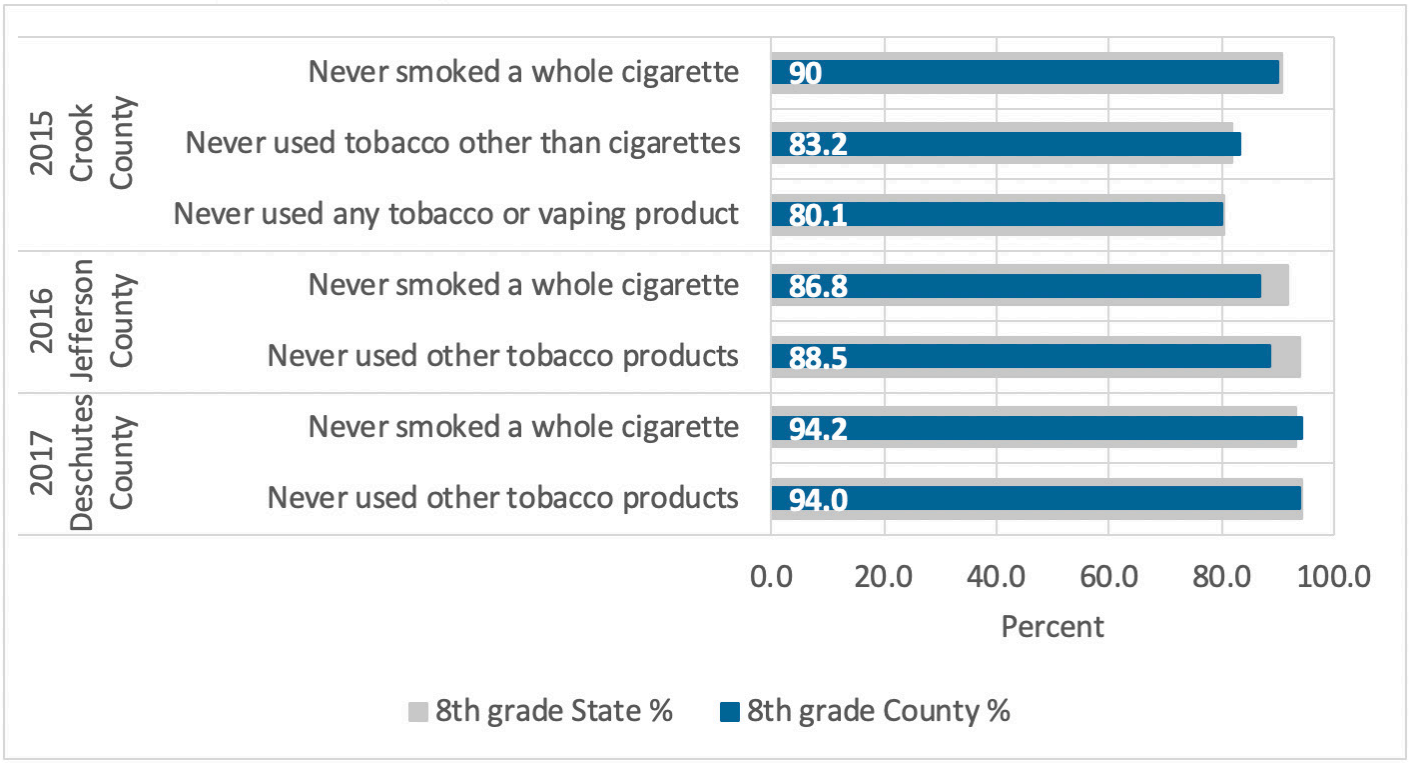


Figure 180. Current tobacco use and related topics among 8th graders, Deschutes County and Oregon, Oregon Healthy Teens Survey, 2017

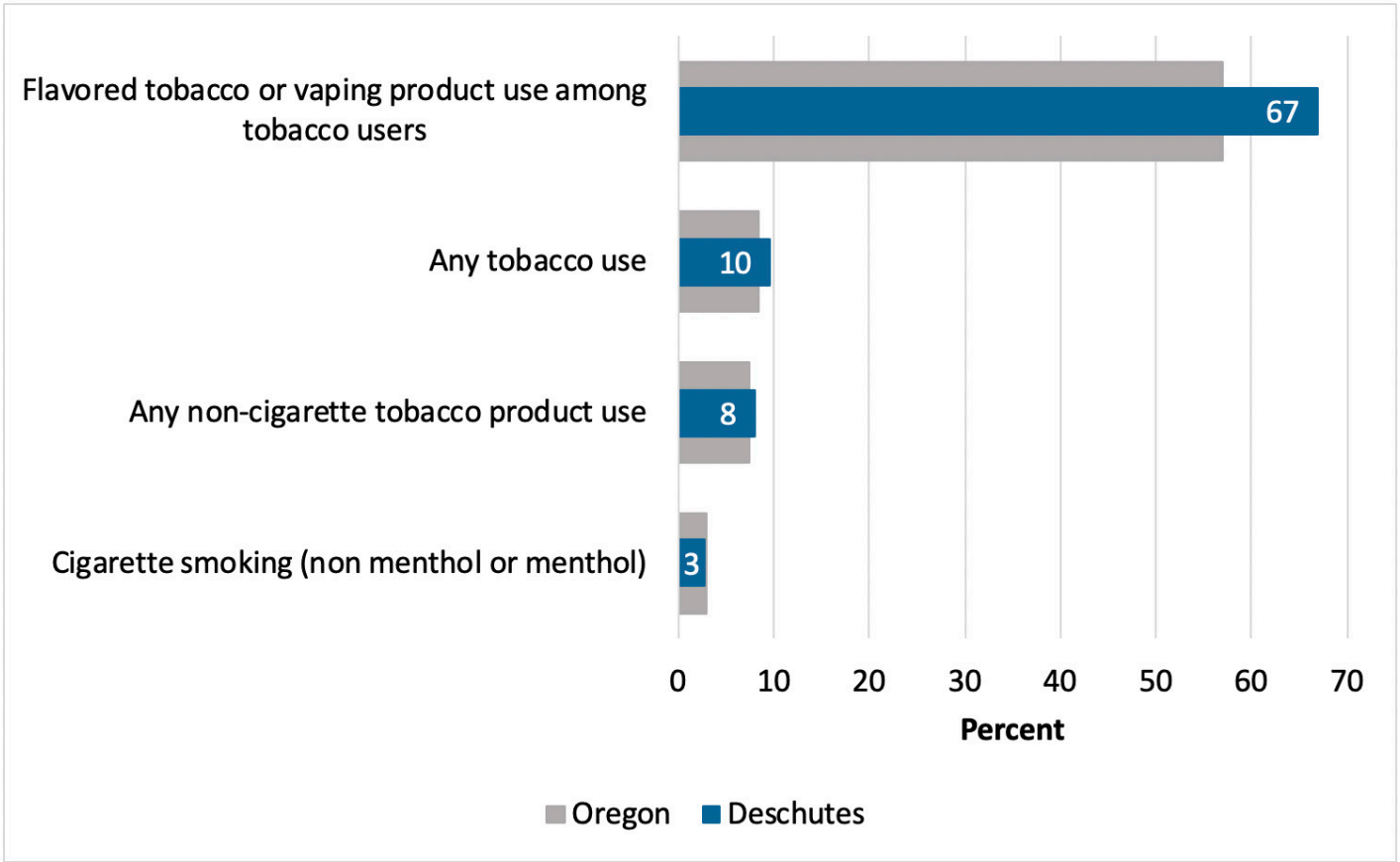


Figure 181. Current tobacco use and related topics among 11th graders, Deschutes County and Oregon, Oregon Healthy Teens Survey, 2017

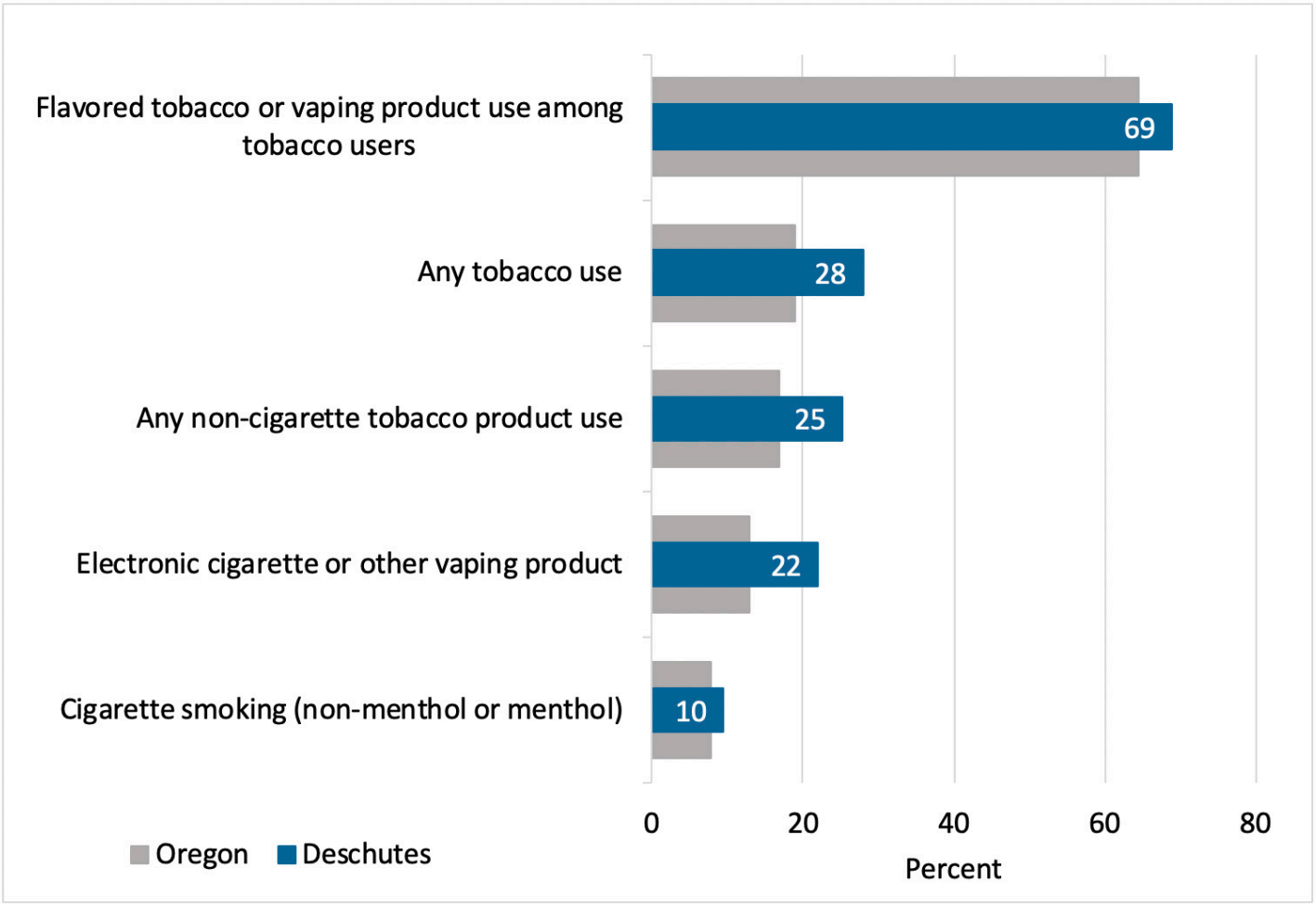


Figure 182. Change in prevalence of smoking and tobacco use, 2016-2017, CCO measures

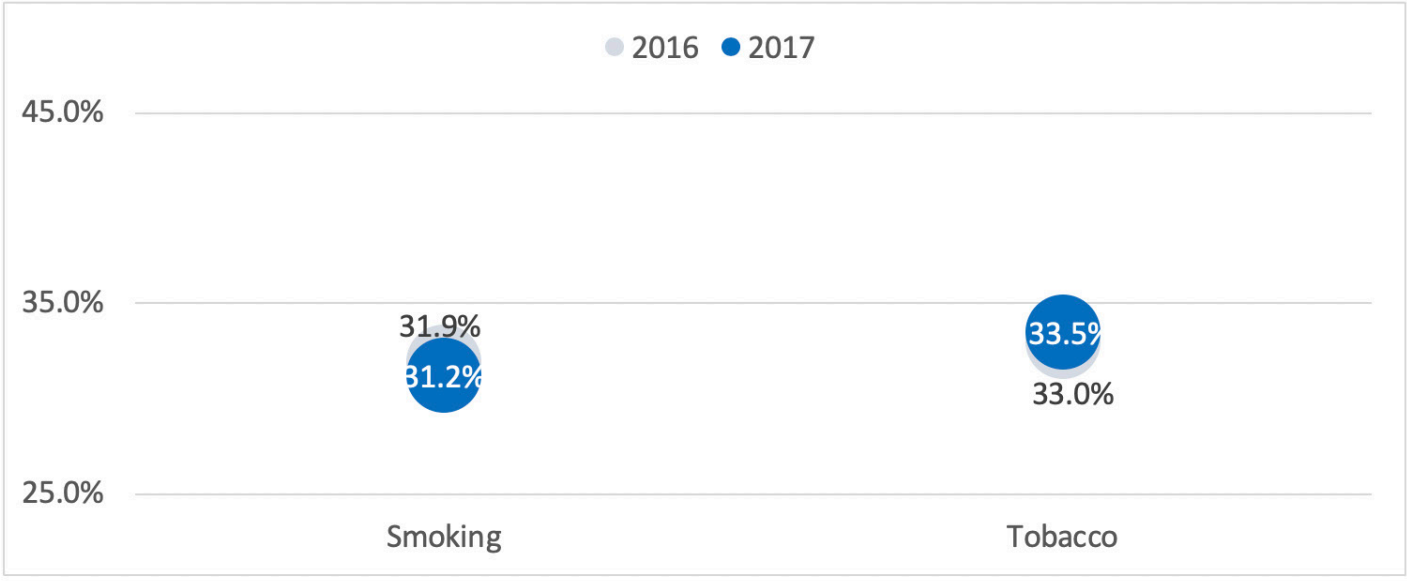
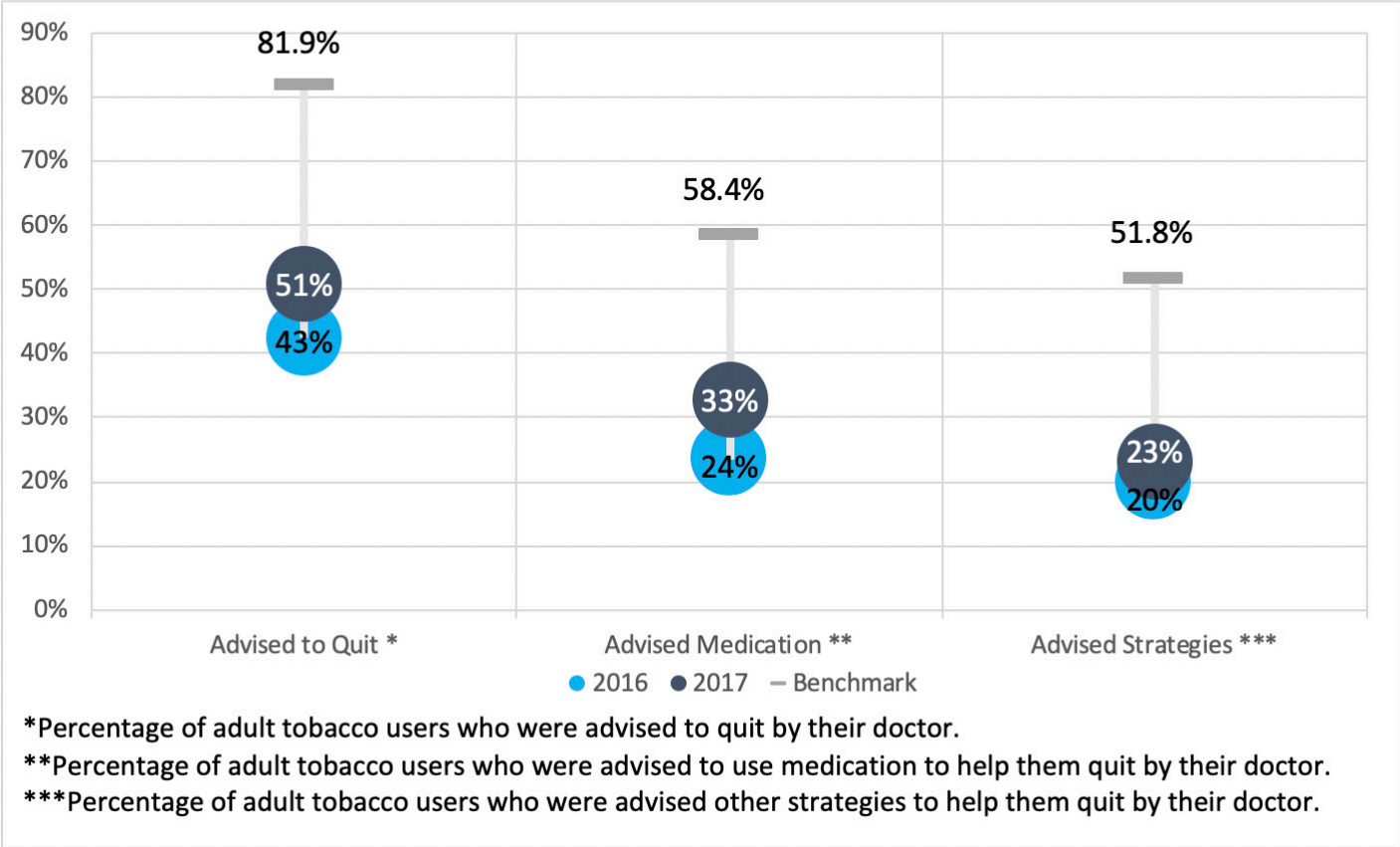


Figure 183. Medical assistance with smoking and tobacco use, PacificSource Central Oregon, CAHPS, 2016 and 2017



*Percentage of adult tobacco users who were advised to quit by their doctor.
**Percentage of adult tobacco users who were advised to use medication to help them quit by their doctor.
***Percentage of adult tobacco users who were advised other strategies to help them quit by their doctor.

DRUG USE

Deaths related to drug use have more than doubled since 2000 (NIDA, 2017). There are more illnesses, disabilities, and deaths from drug use than from any other preventable health condition (NIDA, 2019). Currently, in the United States, one in four deaths can be connected to tobacco, alcohol, and/or illicit or prescription drug use. In 2017, more than 70,000 Americans died from drug overdoses, including prescription opioids and illicit drugs (NIDA, 2019). This is twice as many as in the previous decade (NIDA, 2017). Prescription opioid use is of particular concern, and overdose deaths are almost six times higher now than they were in 1999 (CDC, 2018). An average of over 130 U.S. individuals dies from opioid overdoses daily (NIDA, 2019). The growing rate of opioid addiction, such as prescription pain relievers, synthetic opioids like fentanyl, and/or heroin, continues to be a national crisis (NIDA, 2019). Additionally, the misuse of prescription opioids has been associated with injection drug use, which places a person at risk for diseases, such as hepatitis C and HIV and at risk for other drug use like heroin (CDC, 2018). For more information about hepatitis C and HIV, please reference the Communicable Disease section. Roughly, 21% - 29% of individuals prescribed opioids for chronic pain misuse them, and around 8% - 12% develop an opioid use disorder (NIDA, 2019). Opioid overdoses rose 30% between July 2016 to September 2017 in 52 areas across 45 states, and opioid overdoses in large cities have increased by 54% across 16 states (NIDA, 2019).

"My friend just died. It wasn't supposed to happen. I think it was a hot shot. The police are treating it as a homicide. It wasn't what he thought he was taking, I don't know how he got that in his system, he's so careful about everything, I can't figure out how he overdosed. I can't believe he's gone. Narcan might've helped save him, I don't know. I just can't believe he is dead. I don't want to lose anyone else, it's been too much, too many. I'm heartbroken."

- Syringe Exchange Client

In Central Oregon and Oregon overall, overdose deaths related to methamphetamine increased, but counter to national trends, overdose deaths related to opioids actually decreased between 2012-2014 and 2015-2017 (Figure 185 and 186). All-drug overdose hospitalization rates fluctuated, but have increased in both Oregon and in Central Oregon counties since 2005-2007 (Figure 187). Risky prescribing practices have all decreased across Jefferson, Crook, and Deschutes counties, similar to Oregon statewide trends (Figure 188 to 191).

Want more information about Opioid Prevention?

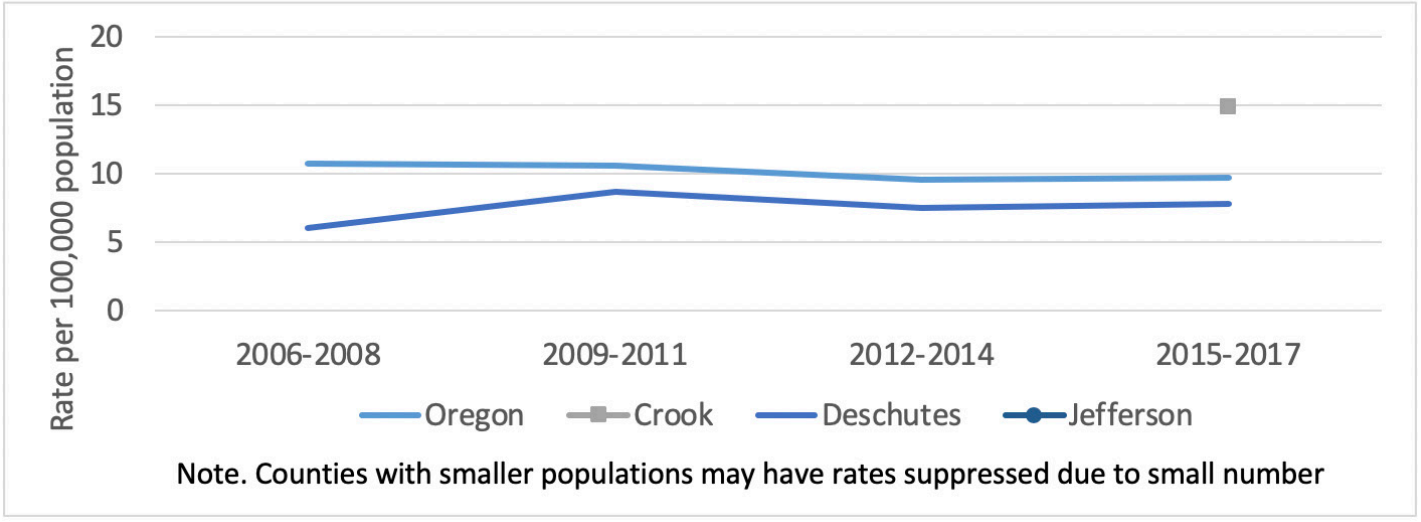
SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION OPIOID TREATMENT PROGRAM DIRECTORY:

HTTPS://DPT2.SAMHSA.GOV/TREATMENT/

OREGON HEALTH AUTHORITY HELP LINES:

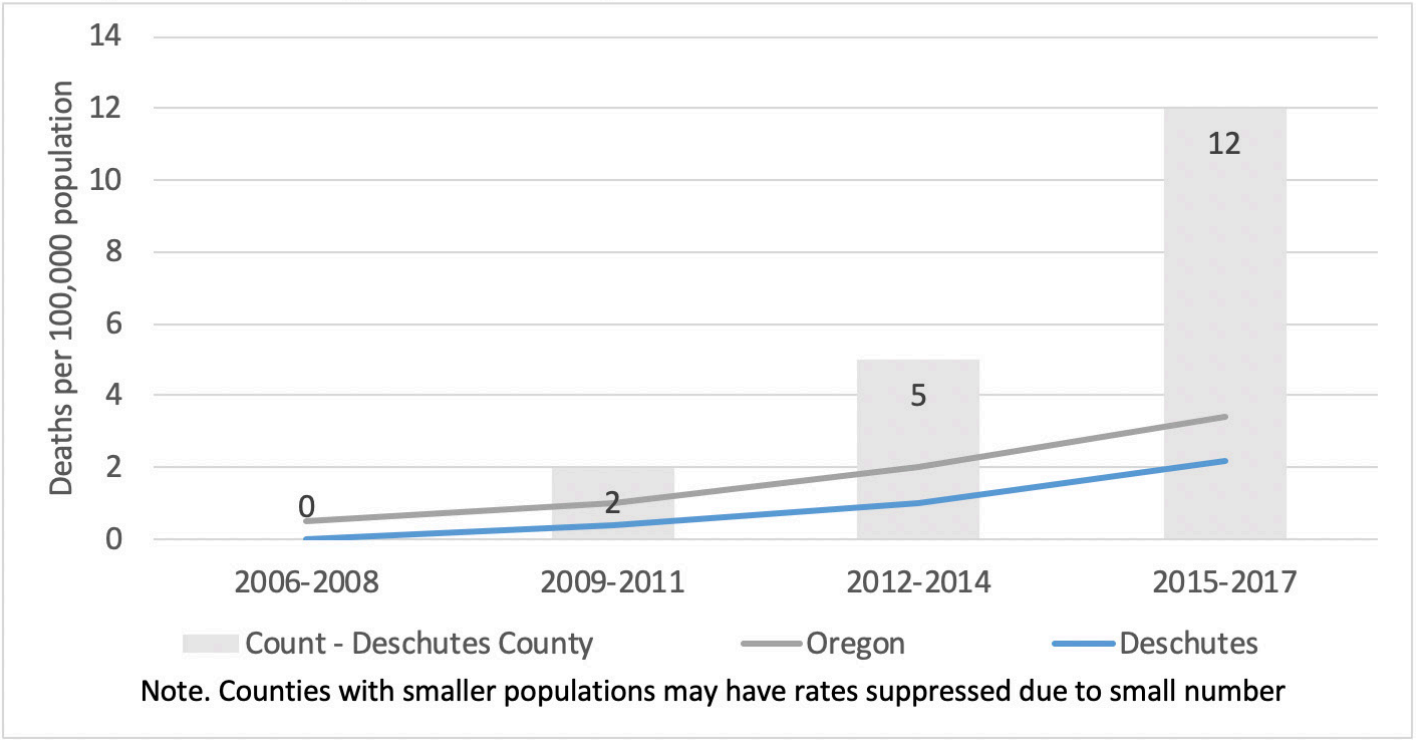
HTTPS://WWW.OREGON.GOV/OHA/HSD/AMH/PAGES/GET-HELP.ASPX

Figure 184. All drug overdose death rate, Deschutes, Crook, Jefferson, and Oregon, 3-year rates, Oregon Data Dashboards, 2006-2017



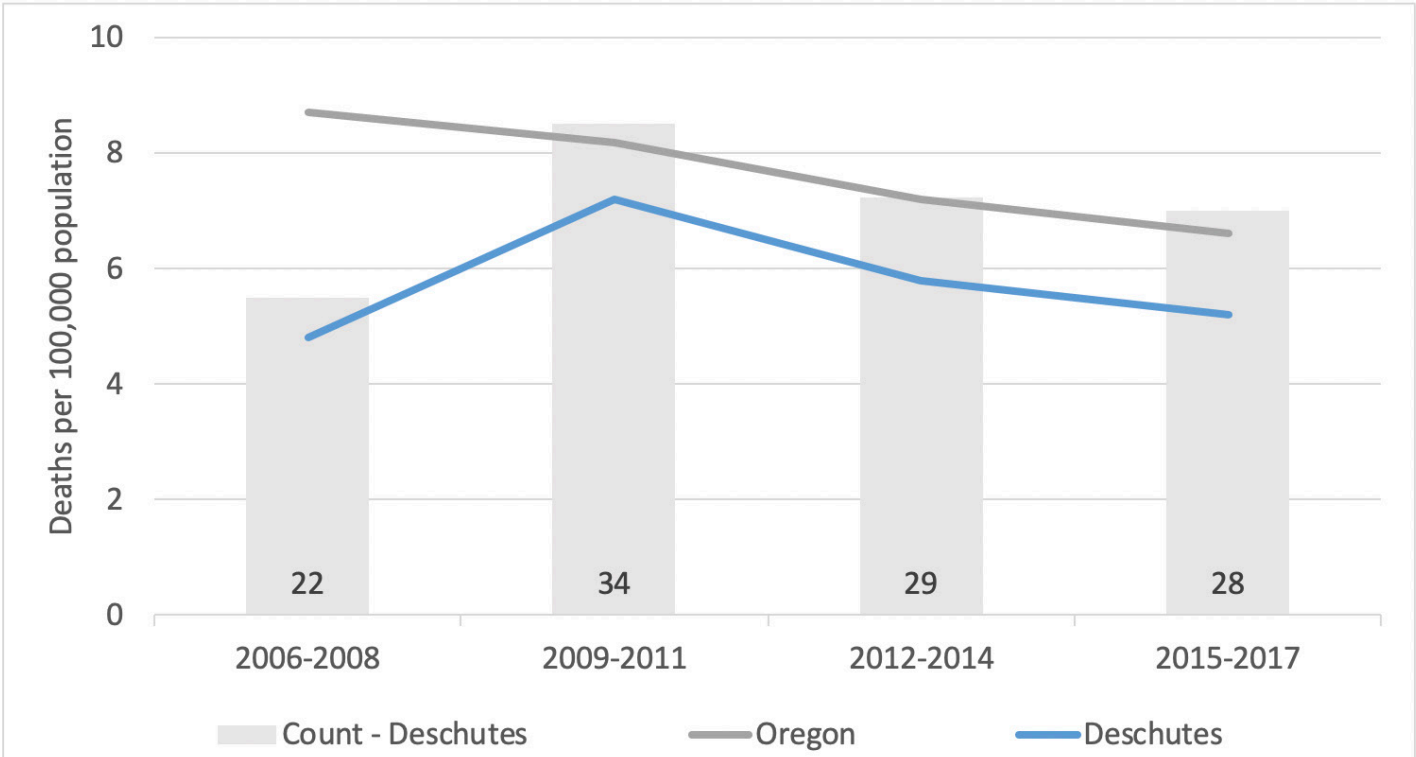
Note. Counties with smaller populations may have rates suppressed due to small number

Figure 185. 3-year methamphetamine overdose death rate, Deschutes and Oregon, and number of deaths (Deschutes County), 2006-2017, Oregon Data Dashboard



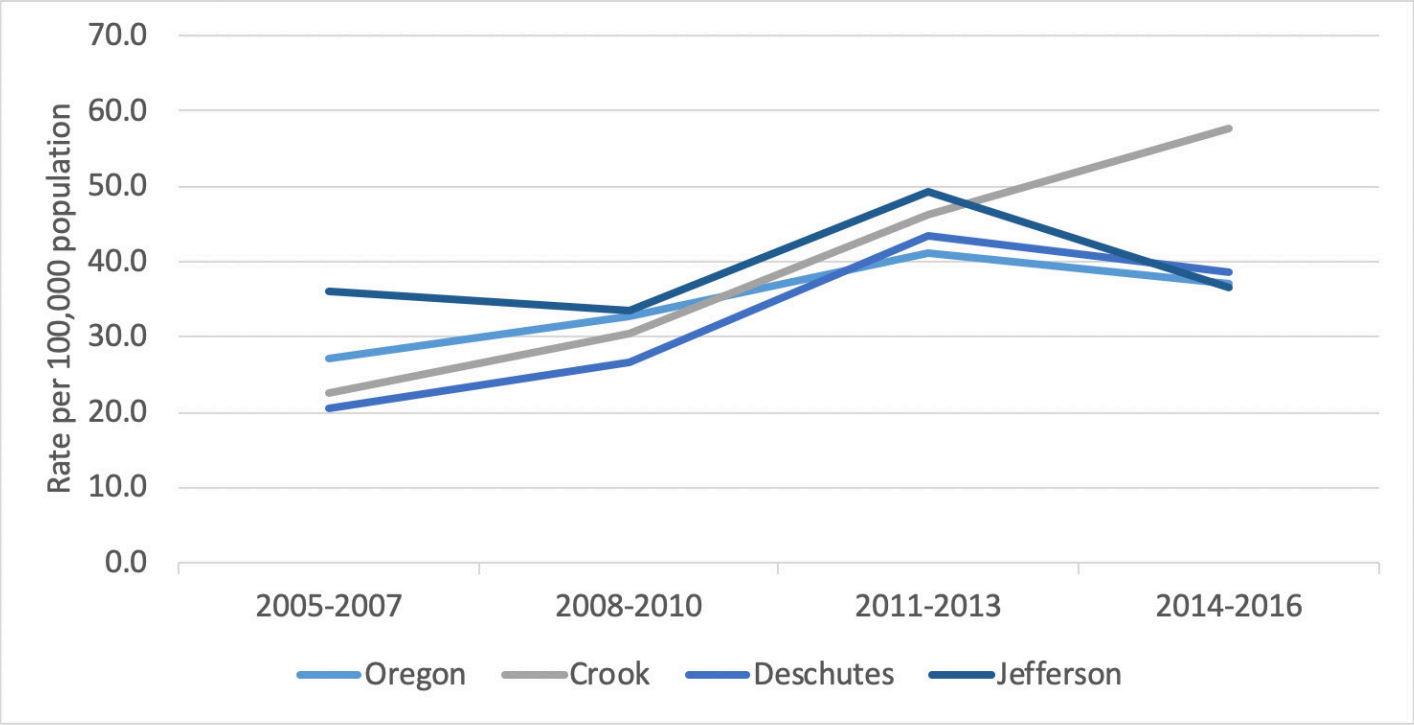
Note. Counties with smaller populations may have rates suppressed due to small number

Figure 186. 3-year opioid overdose death rate Deschutes and Oregon, and number of deaths (Deschutes County), 2006-2017, Oregon Data Dashboard



Note. Counties with smaller populations may have rates suppressed due to small number

Figure 187. 3-year all drug overdose hospitalization rate, Crook, Deschutes, Jefferson, and Oregon 2005-2016, Oregon Data Dashboard



PRESCRIPTION OPIOIDS

Establishing safe and effective access to pain treatment involves improving the way opioids are prescribed through clinical practice guidelines. An estimated 11% of United States adults report experiencing daily pain, which leads to millions who are prescribed opioids. (CDC, 2017). In Oregon, the Oregon Health Authority (OHA) created the OHA Opioid Initiative, which provides increased guidance for prescribers as well as strategies to reduce the opioid crisis (OHA, 2017).

Between 2014 and 2018, in both Oregon and Central Oregon, opioid prescription fill rates decreased (Figure 188). In addition, the number of individuals who received an opioid prescription (including tramadol) in Central Oregon decreased from 2014 to 2018 (Figure 189). Risky prescribing practices (i.e., the number of individuals receiving a prescription >90 morphine equivalency dosage (MED) from a single prescription fill, per 1,000 residents) have decreased across all three Central Oregon counties and across Oregon as a whole (Figure 190). The rate of individuals receiving an overlapping opioid/benzodiazepine prescription in Oregon and Central Oregon also decreased between 2014 and 2018 (Figure 191).

Want more information on prescription opioid prevention?

OREGON HEALTH AUTHORITY HELP LINES:

HTTPS://WWW.OREGON.GOV/OHA/HSD/AMH/PAGES/GET-HELP.ASPX

CENTER FOR DISEASE CONTROL AND PREVENTION OPIOID BASICS:

HTTPS://WWW.CDC.GOV/DRUGOVERDOSE/

Figure 188. Opioid prescription fills per 1,000 residents, 2014 Q1 - 2018 Q4, OR Opioid Data Dashboard

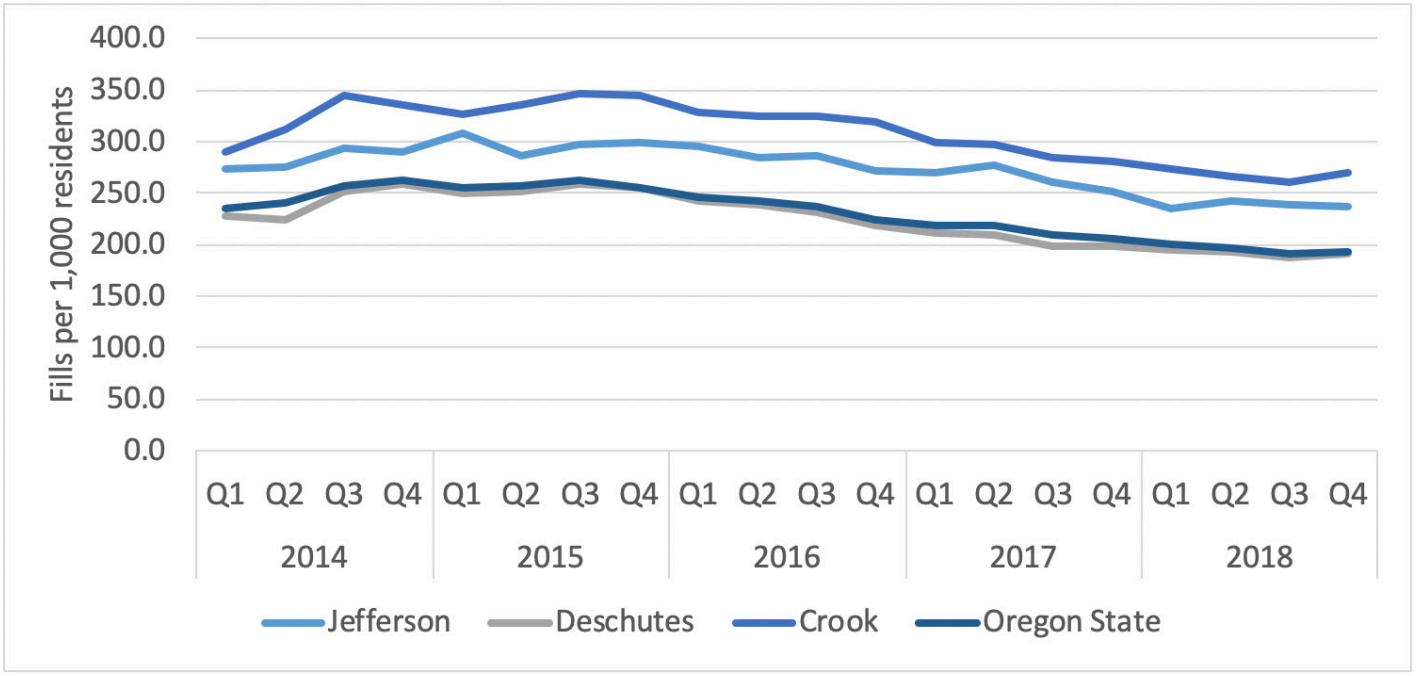


Figure 189. Number of individuals receiving an opioid prescription (including tramadol), 2014 Q1 – 2018 Q4, OR Opioid Data Dashboard

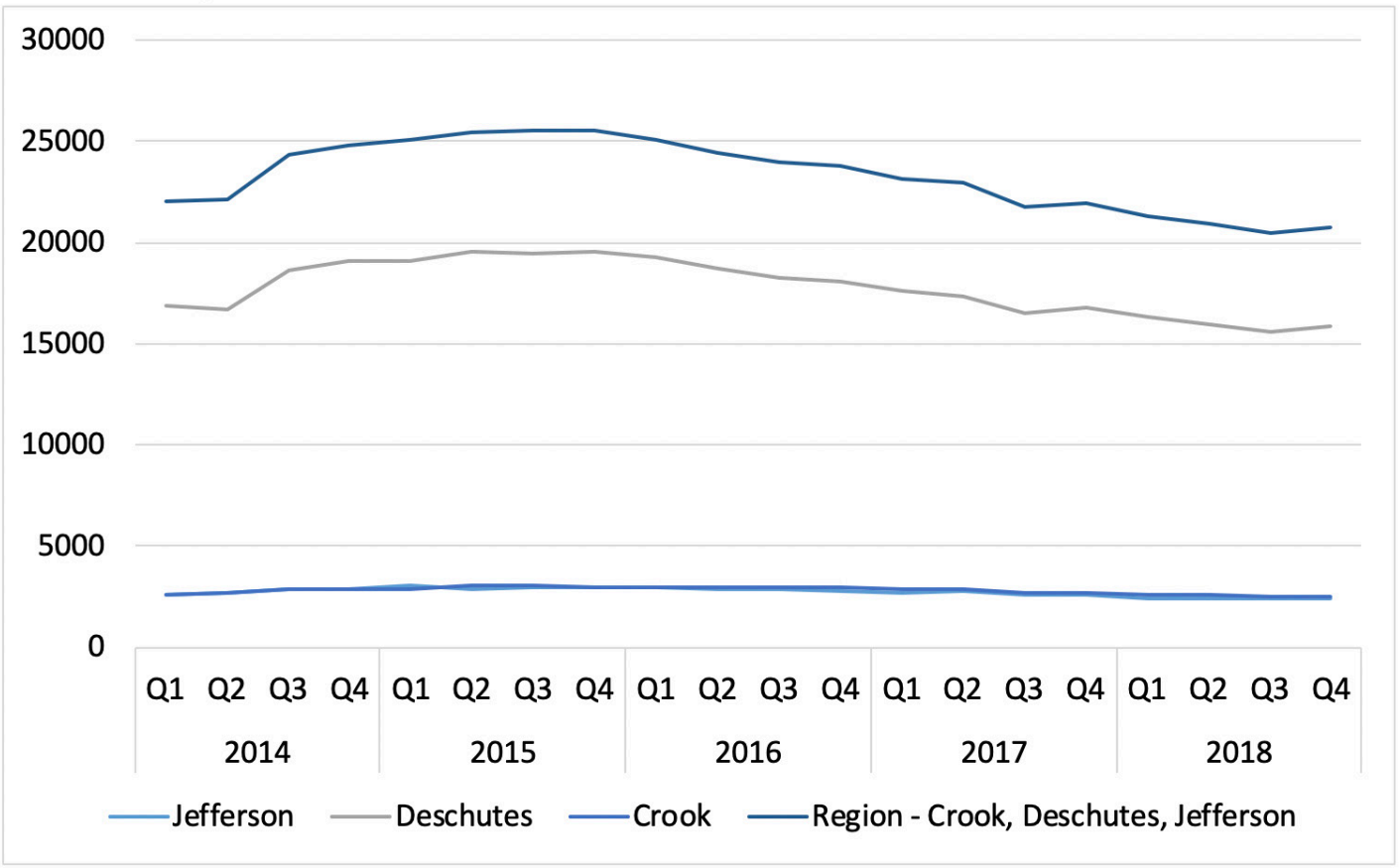


Figure 190. Number of individuals receiving a prescription >90 MED (morphine equivalent dose) from a single prescription fill per 1,000 residents, 2014 Q1 – 2018 Q4, OR Opioid Data Dashboard

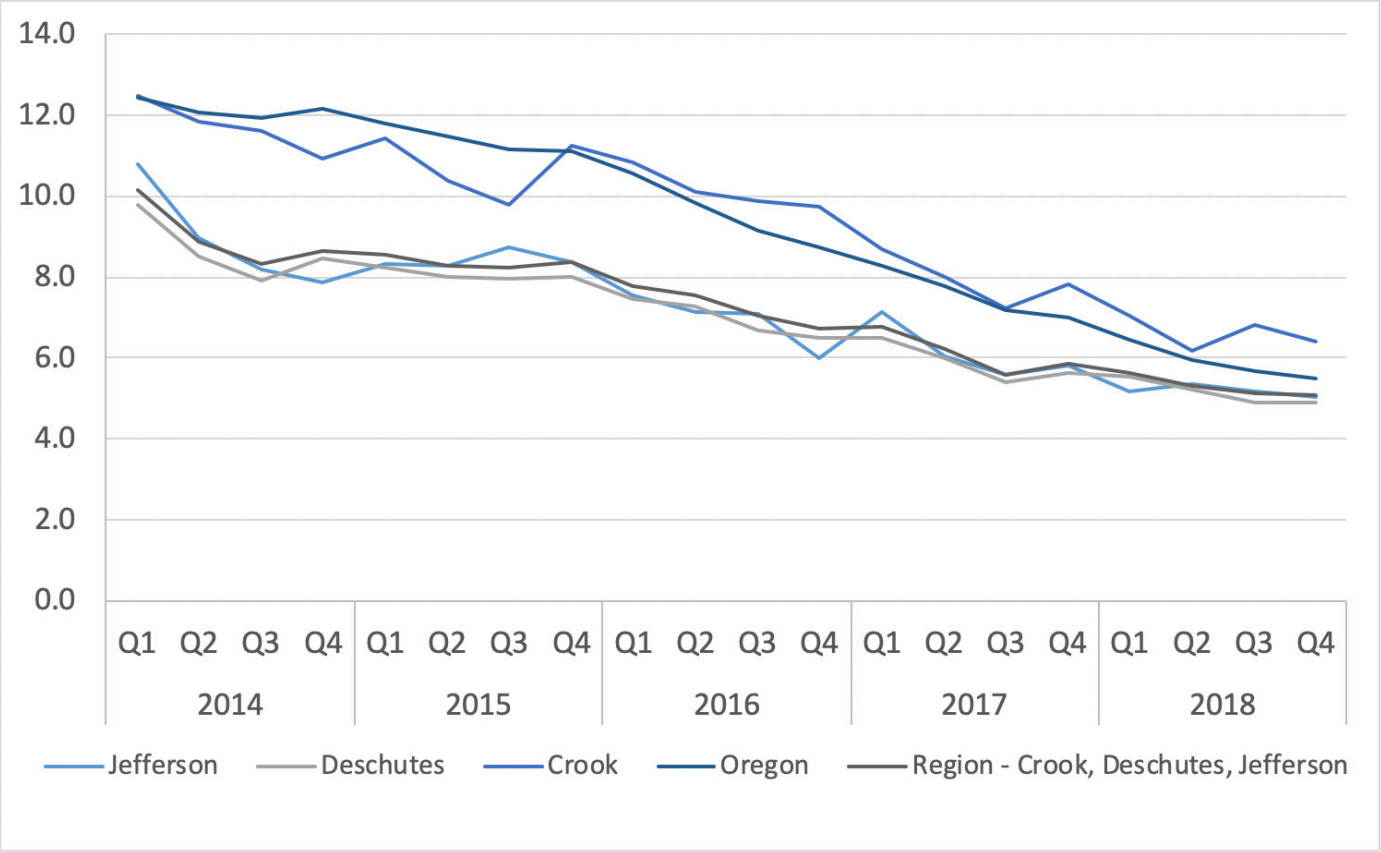
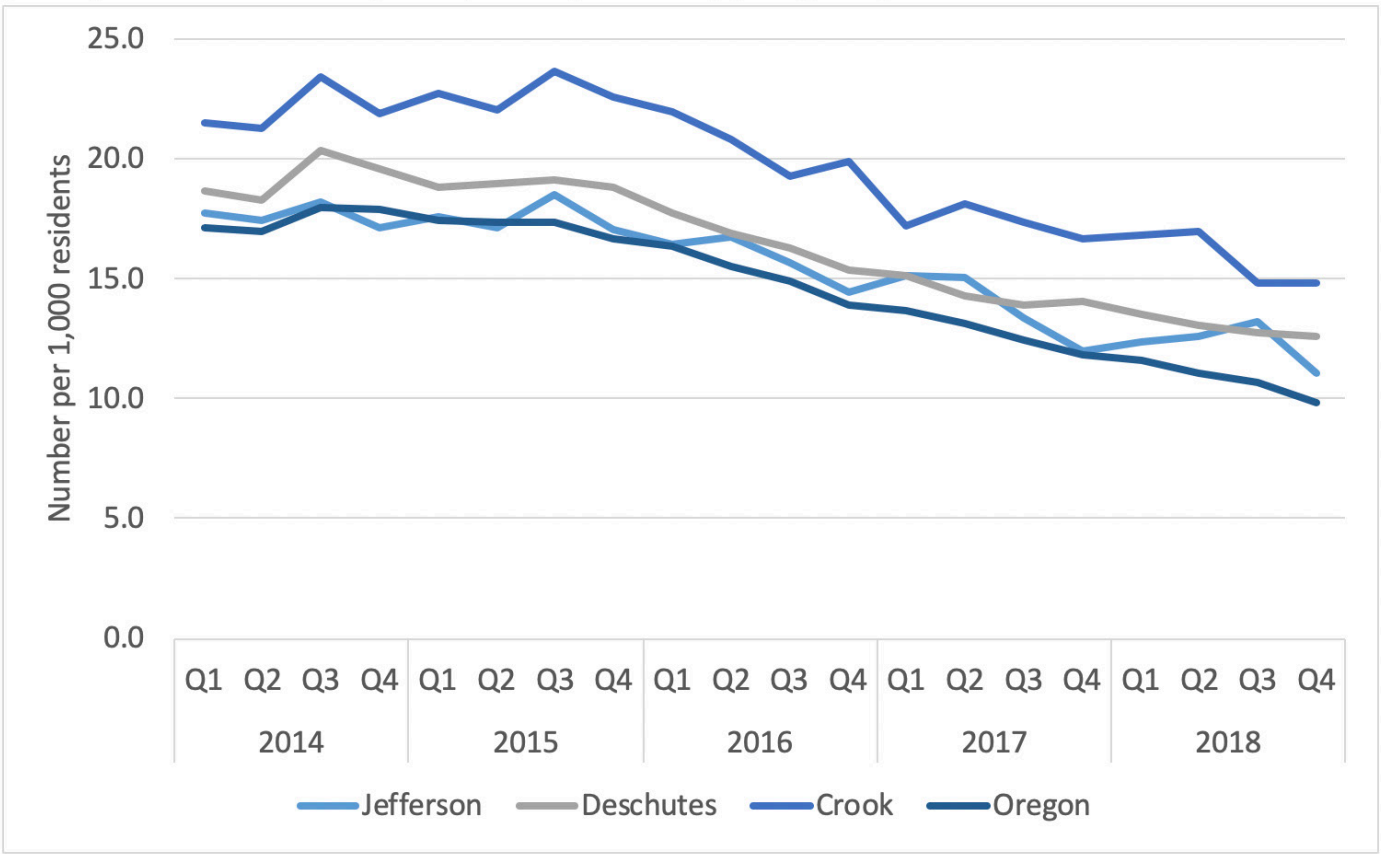
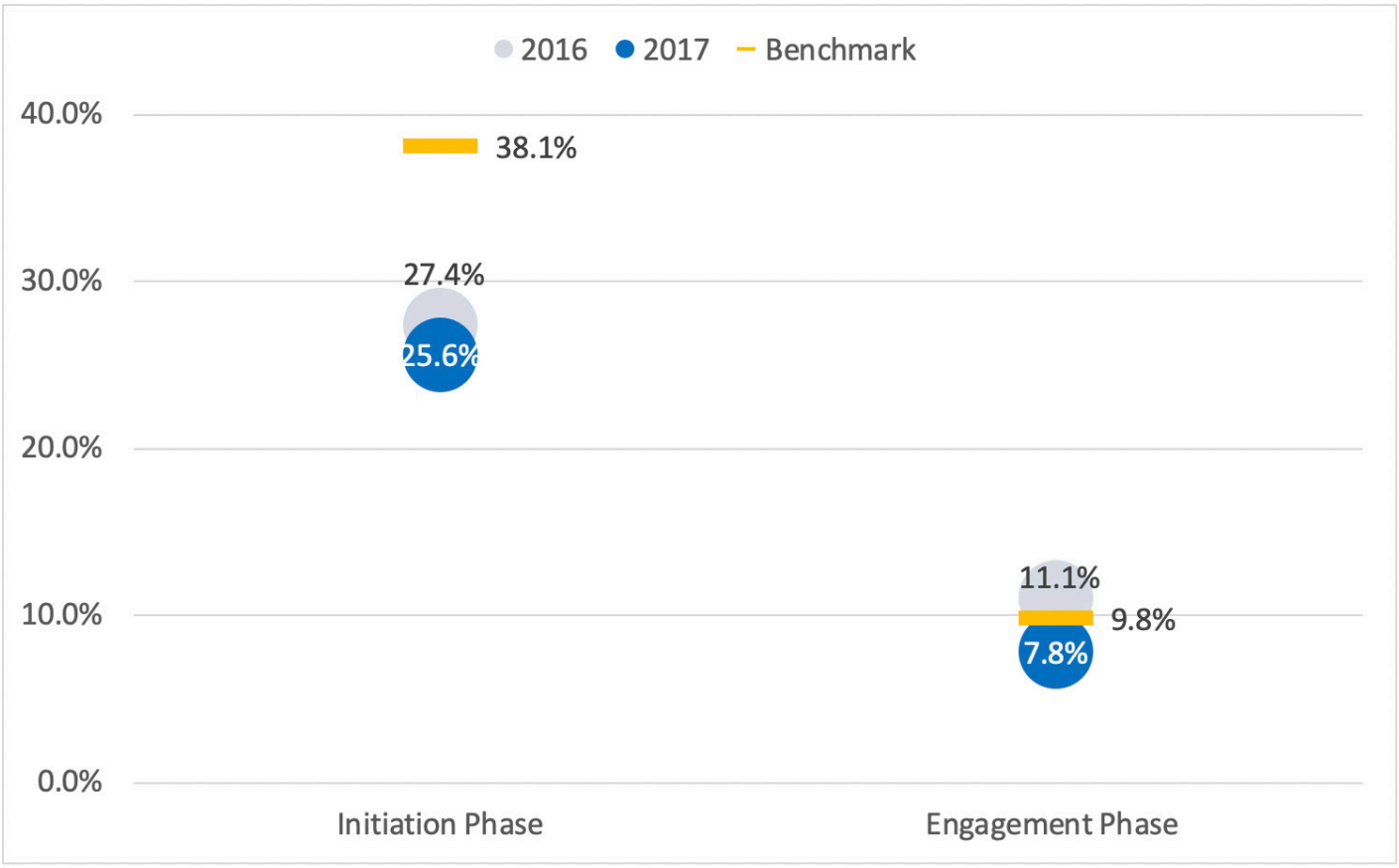


Figure 191. Number of individuals per 1,000 residents with overlapping opioid/benzodiazepine prescriptions in a calendar quarter, 2014 Q1 – 2018 Q4, Oregon Opioid Data Dashboard



The percentage of Central Oregon Medicaid members (ages 13 and older) who were newly diagnosed with alcohol or other drug dependence and who began treatment within 14 days of the initial diagnosis fell from 27.4% in 2016 to 25.6% in 2017 (Figure 192). The percentage of Central Oregon Medicaid members (ages 13 and older) newly diagnosed with alcohol or other drug dependence who had two or more additional services for alcohol or other drug dependence within 30 days of their initial treatment also decreased from 11.1% in 2016 to 7.8% 2017 (Figure 192).

Figure 192. Percentage of members (ages 13 and older) newly diagnosed with alcohol or other drug dependence and who began treatment within 14 days of the initial diagnosis and who had two or more additional services for alcohol or other drug dependence within 30 days of their initial treatment, 2016 and 2017



BRANDON NIXON PHOTO

UNINTENTIONAL INJURY

Injuries are classified by intent and mechanism. The mechanism involves the circumstances of the injury (e.g., fall, motor vehicle traffic, or poisoning). The intent involves whether the injury was purposefully inflicted (where it can be determined) or unintentional (previously "accidental"). When intentional, whether the injury was self-inflicted (suicide) or inflicted upon another person (assault). In the case of some injuries, the intent is unknown. Unintentional injuries are largely preventable events and are thus no longer considered "accidents." Many measures have been put in place in the last several decades to reduce the number of unintentional injuries including increased seatbelt use in cars, increased helmet use during many activities, promotion of life jackets while in or near water, and safe sleeping habits for babies. Injuries are caused by a variety of mechanisms and these mechanisms vary with age. A little over 161,000 deaths in the United States are related to unintended injuries, and over 58,000 were connected to unintentional poisoning (CDC, 2017). In Oregon, more than 2,500 deaths resulted from unintentional injuries in 2014. Suicide, unintentional falls, unintentional poisoning, and motor vehicles were the leading causes of unintentional deaths statewide (Oregon Health Authority, 2014).

The number of unintentional injury deaths in Central Oregon rose between 2008 and 2017. In 2017, there were 131 deaths due to unintentional injury in Central Oregon (50.6 deaths per 100,000 population) (Figure 193), and out of the three counties, Jefferson County had the highest rate of unintentional injury mortality (61.8 per 100,000 population) (Figure 194). In all three counties and across Oregon as a whole, the unintentional injury mortality rate among males is higher than females (Figure 195), and in 2017 the unintentional injury mortality rate was highest for people over 85 years of age (Figure 196). In Jefferson County, over half (57%) of all deaths due to unintentional injury were from motor vehicle traffic injuries. In Deschutes County, a higher proportion of unintentional injury deaths were from falls (Figure 197). Across the three Central Oregon counties, the highest proportion of unintentional injury deaths were from falls, followed by motor vehicles, and accidental poisonings. From 2013 to 2017, there were 178 unintentional fall-related deaths, 147 motor vehicle accident deaths, and 102 accidental poisoning deaths in Central Oregon (Figure 198). In Central Oregon, the age-adjusted unintentional injury rate for falls and for motor vehicles was around 13 per 100,000 population (Figure 199). For all age groups over five years old, motor vehicles led to the highest number of unintentional injury deaths in Central Oregon (Figure 200). Within these age groups, a higher number of males than females died due to motor vehicle crashes (Figure 200).

Figure 193. Age-adjusted unintentional injury mortality rate and number of deaths, Central Oregon and Oregon, OPHAT, 2008-2017

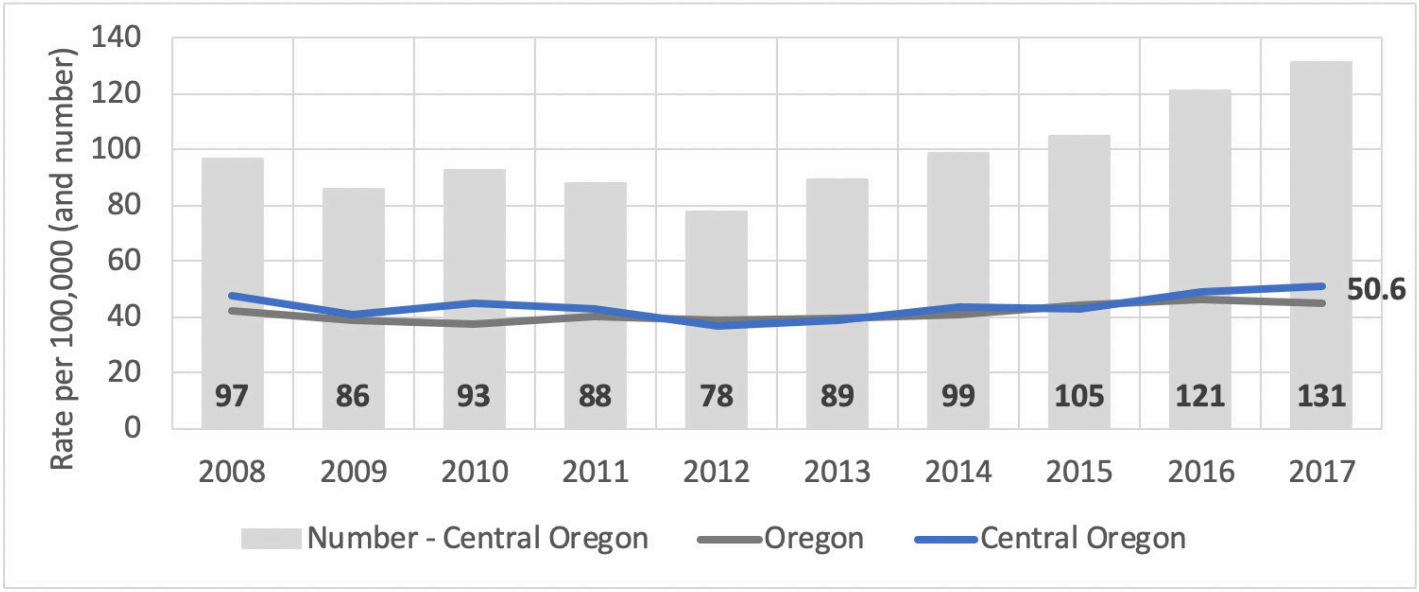


Figure 194. Age-adjusted unintentional injury mortality rate by county and state, OPHAT, 2013-2017

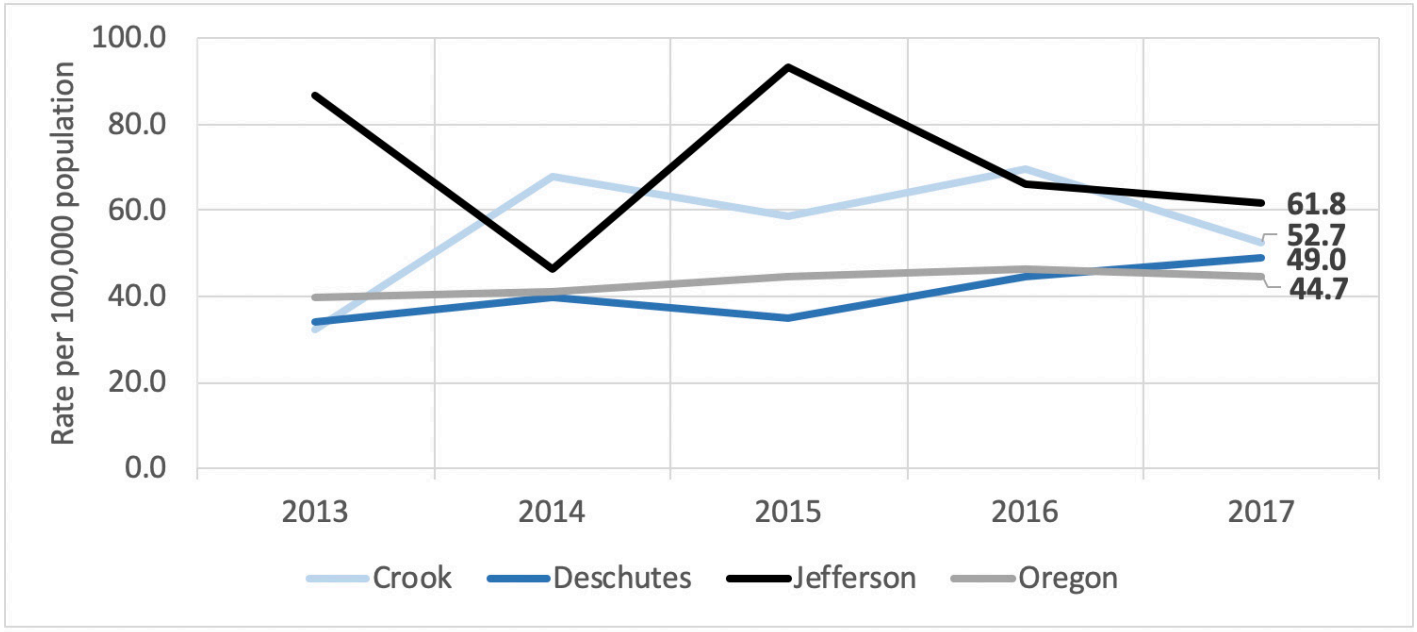
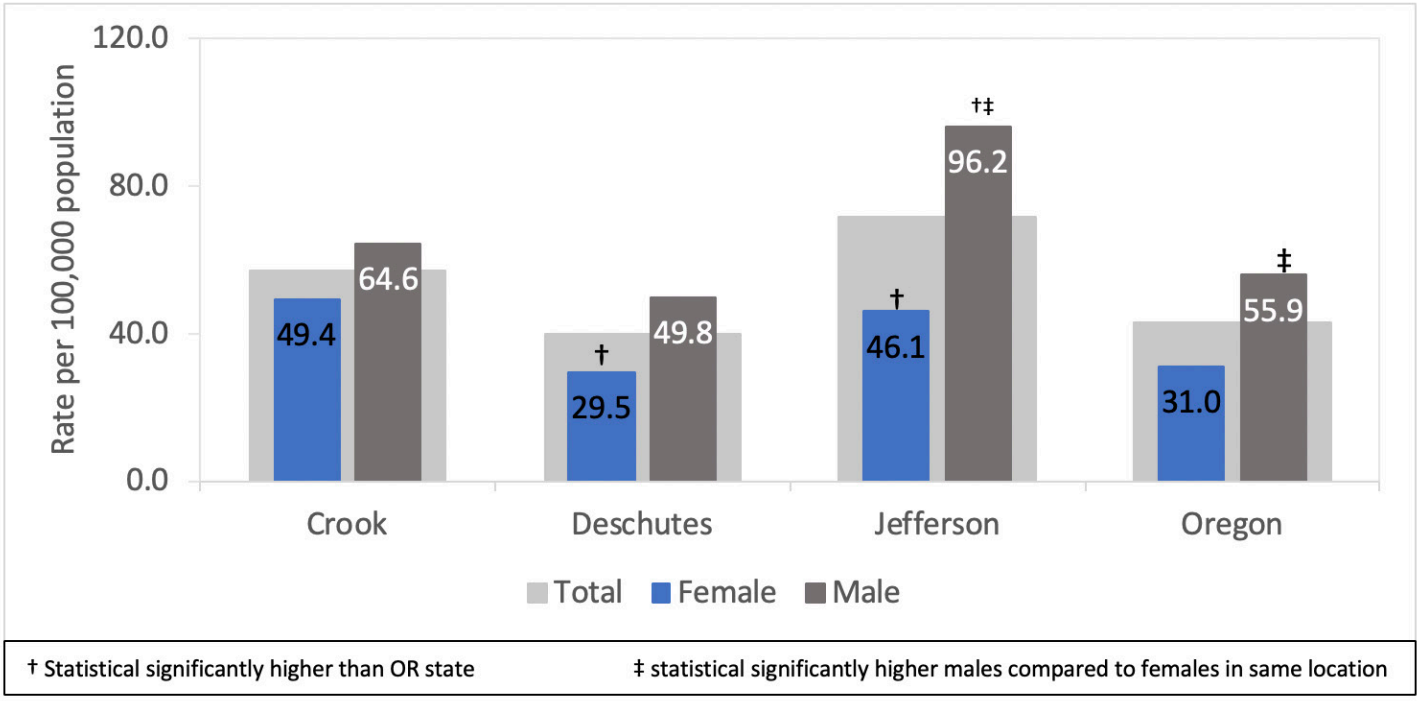


Figure 195. Age-adjusted unintentional injury mortality rate, by sex and by county, OPHAT, 2013-2017



† Statistical significantly higher than OR state

‡ statistical significantly higher males compared to females in same location

Figure 196. Unintentional injury mortality rate, by age group, Central Oregon, OPHAT, 2013-2017

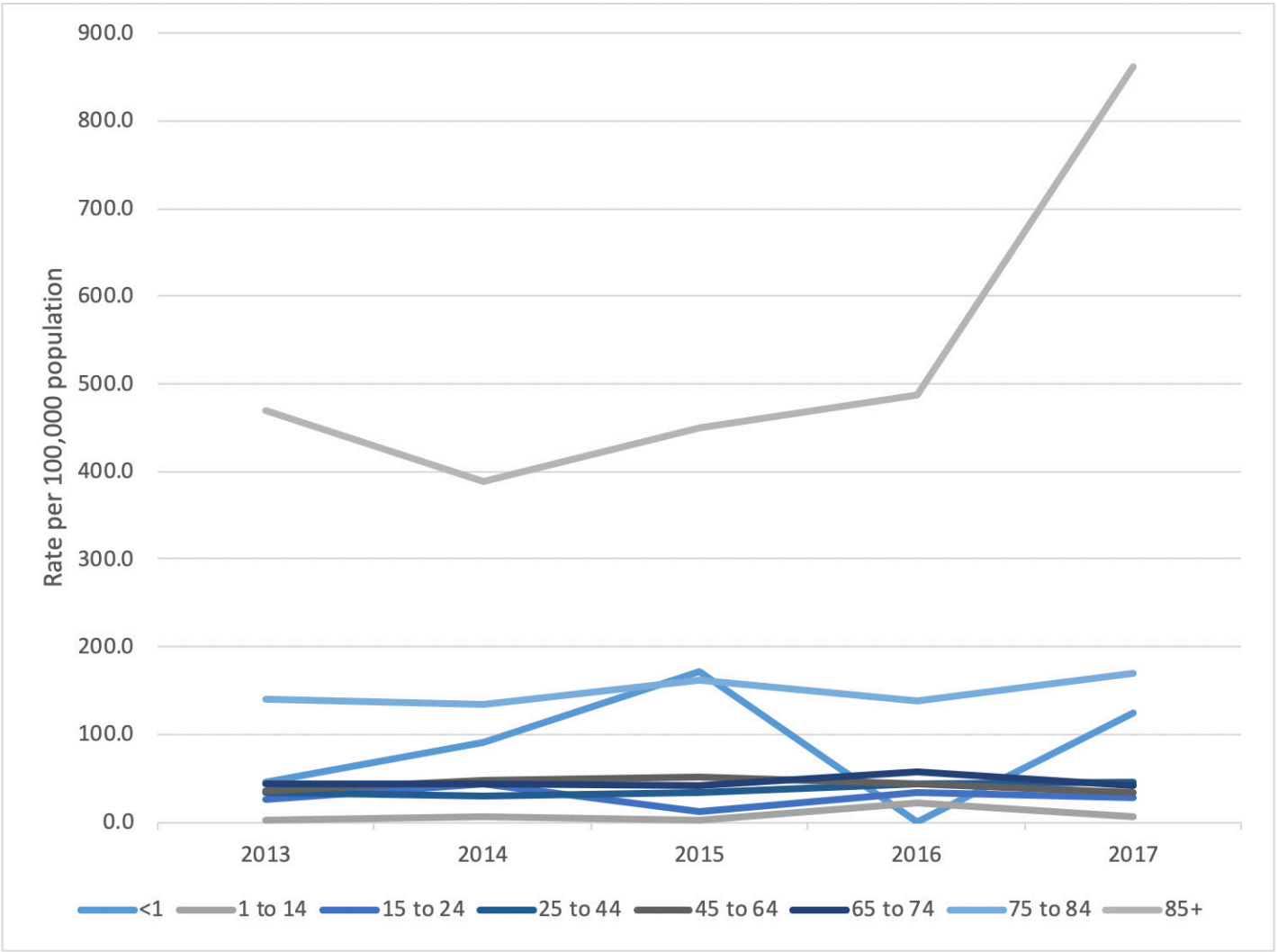
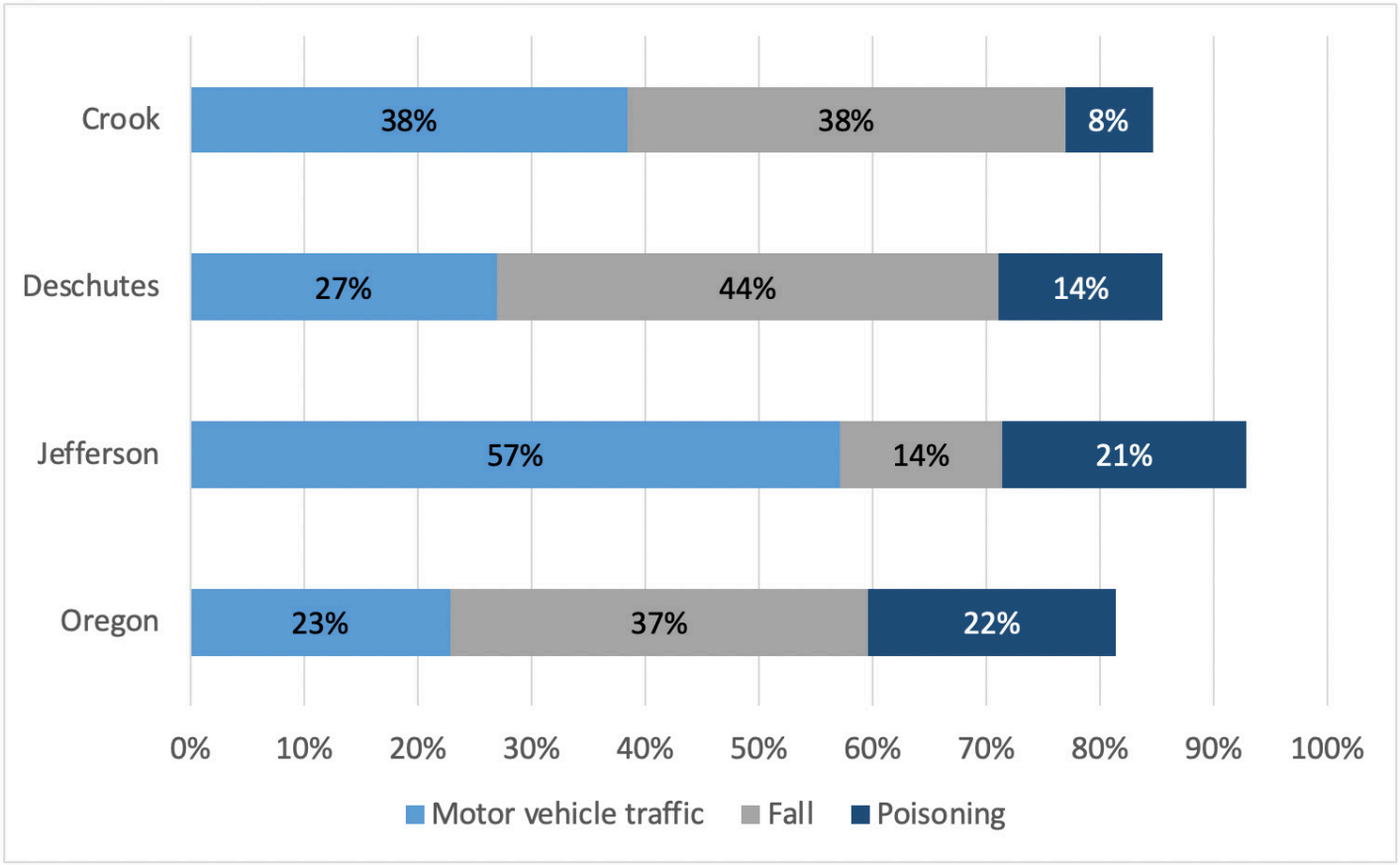


Figure 197. Top three leading causes of unintentional injury mortality (and percent of all unintentional injuries), by county and state, OPHAT, 2017.



BRANDON NIXON PHOTO

Figure 198. Percent (and number) of all unintentional injury deaths by mechanism, Central Oregon and Oregon, OPHAT, 2013-2017

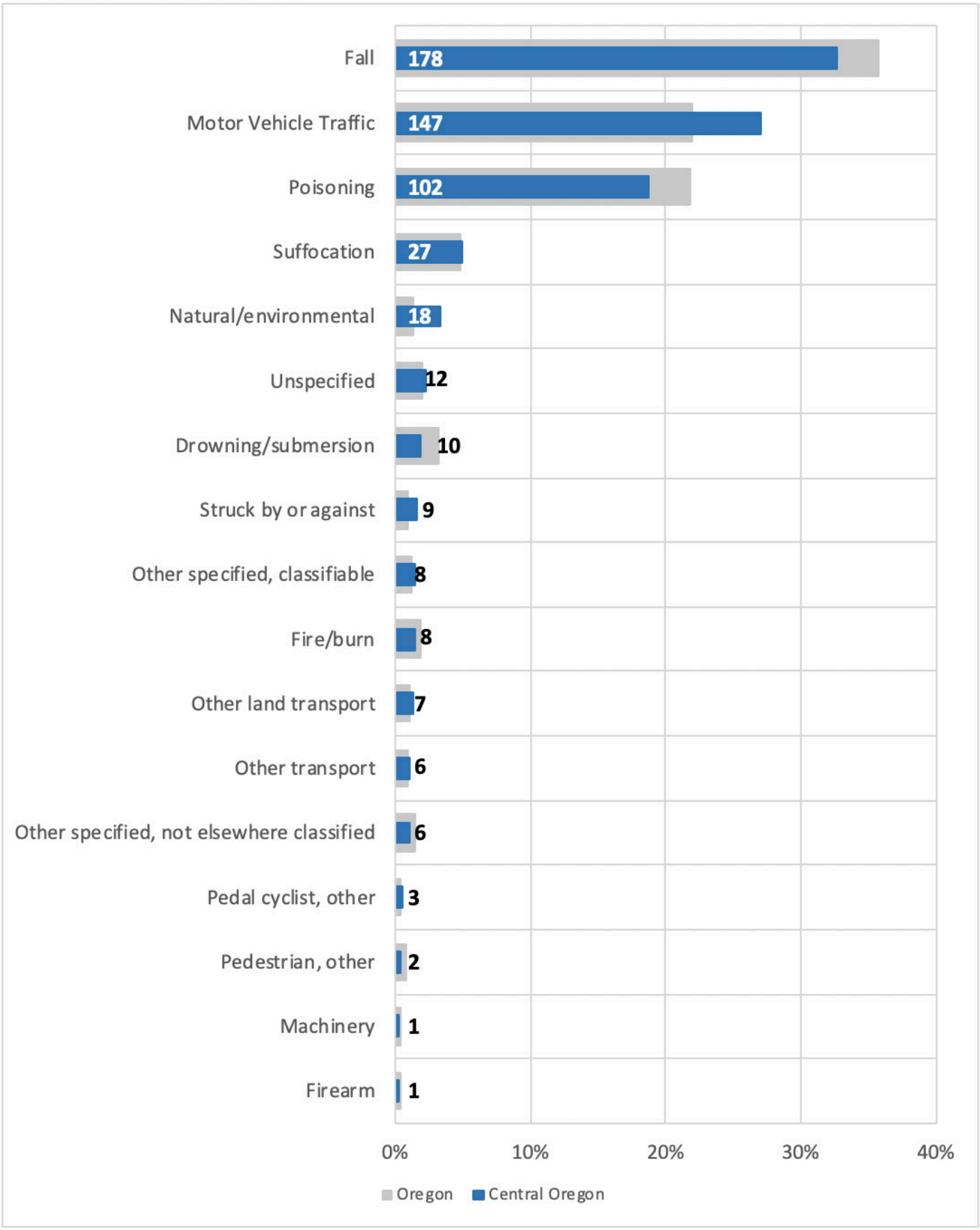


Figure 199. Age-adjusted unintentional injury mortality rate, by mechanism, Central Oregon and Oregon, OPHAT, 2013-2017

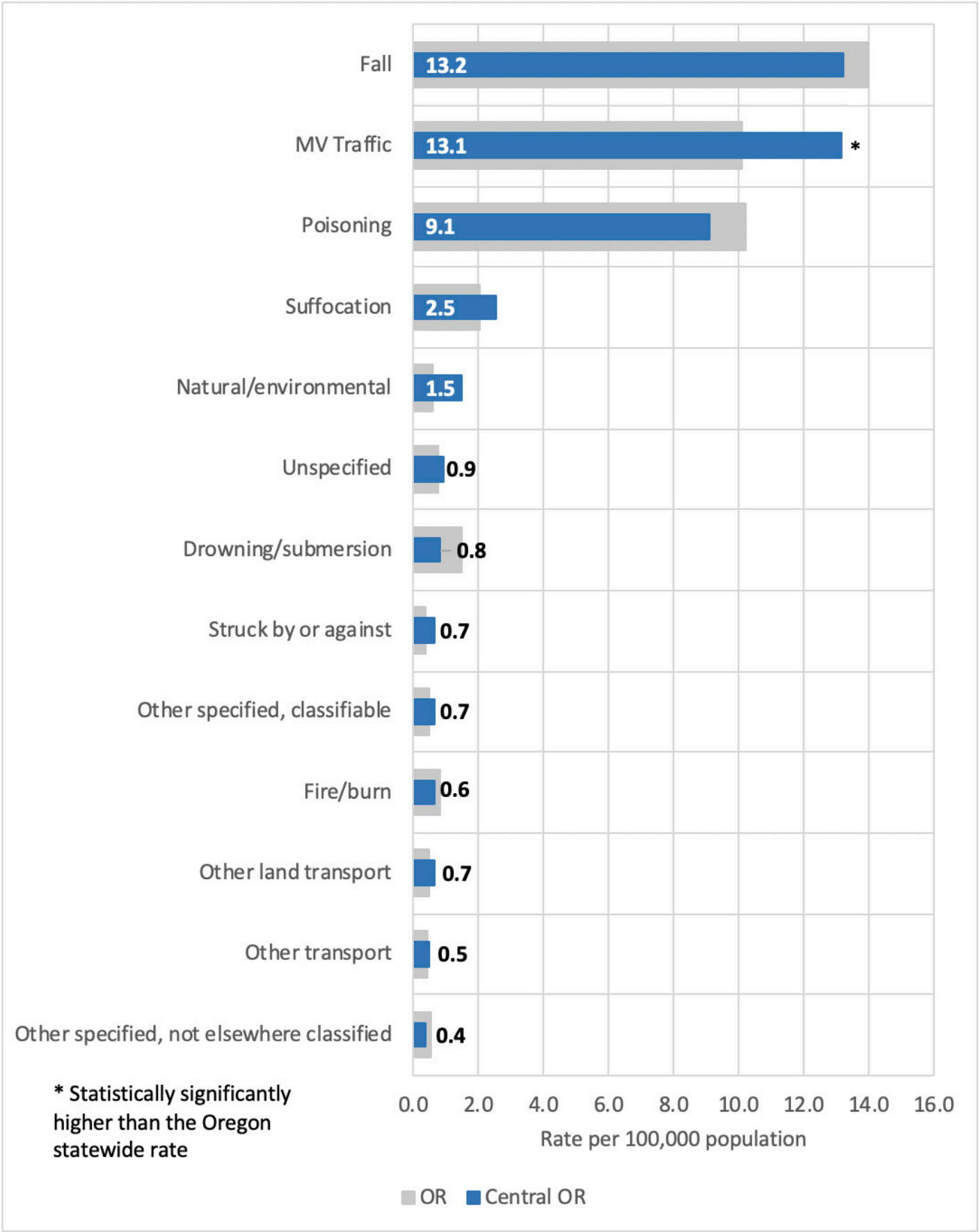
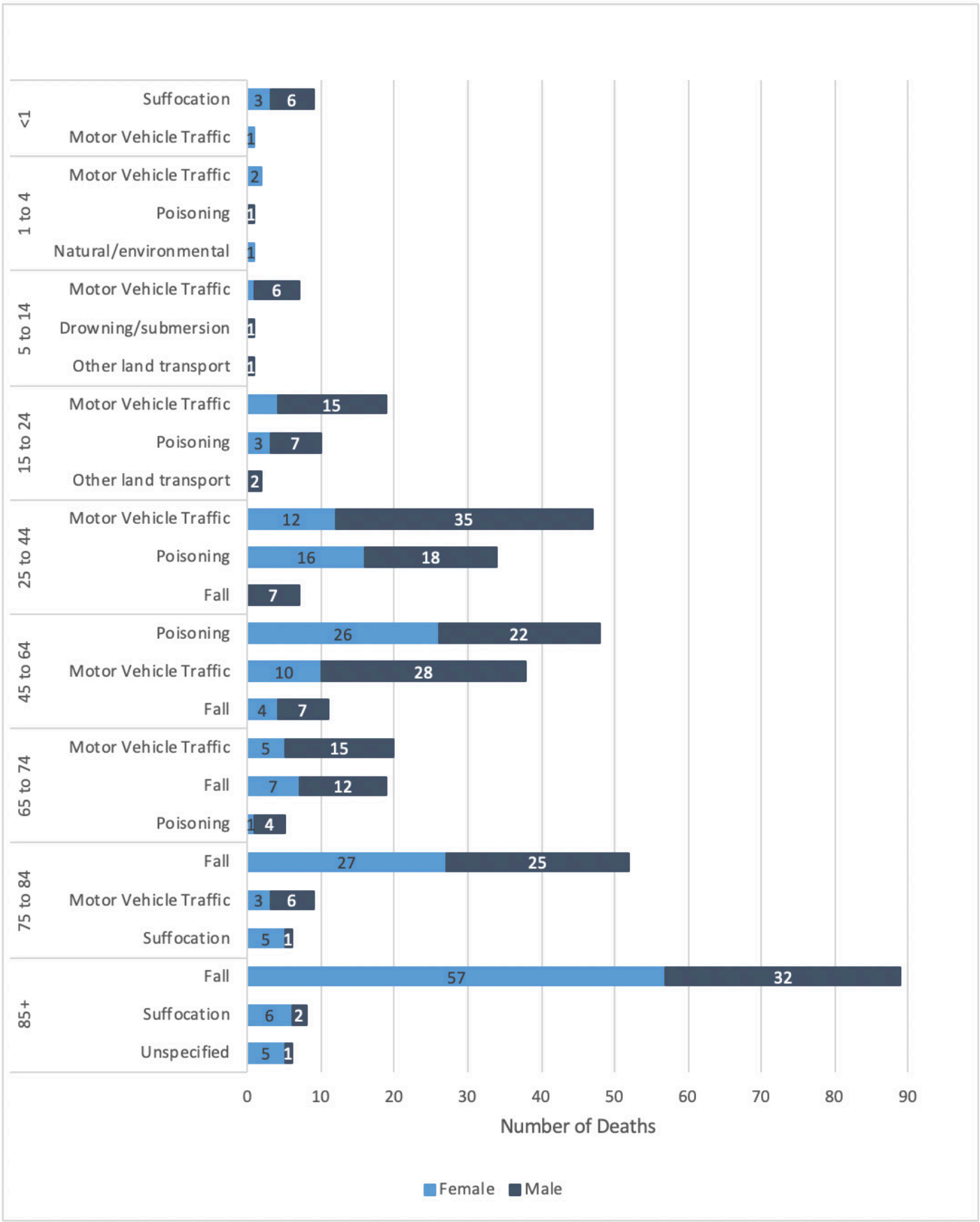


Figure 200. Leading causes of unintentional injury by age, male and females, Central Oregon, OPHAT, 2013-2017



MOTOR VEHICLE

Motor vehicle crashes (MVC) refers to any injury occurring in traffic. The person injured may be a driver or occupant of a vehicle, a pedestrian or cyclist struck by a vehicle, or a motorcyclist. Overall, the quantity and rates of MVC deaths in the U.S. have declined since 2005, but because of overall population growth, the total number of deaths increased from 2008 to 2015 (over 35,000 deaths). For individuals under 30 years of age, MVC's are the leading cause of death (CDC, 2017), with 240 deaths and 30,000 people injured in Oregon in 2016 (excluding pedestrians and bicyclists) (CDC, 2017; Oregon.gov, 2018). Preventable measures to lower motor vehicle crashes can include safety belt use, not driving while impaired, and improved motor vehicle safety in occupational settings (CDC, 2017).

In Central Oregon, the number of deaths from MVC decreased 4% from 2008 (18.2 per 100,000). In Central Oregon, the number of deaths from MVCs varies from year to year, with 15 in 2013 to 41 in 2017 (Figure 201), but the rate of deaths from MVCs decreased 4% from 2008 (18.2 per 100,000 population) to 2017 (17.5 per 100,000 population). In Oregon and in all three Central Oregon counties, the mortality rate from motor vehicles was higher among males than among females, and in Jefferson County, the motor vehicle mortality rate among males was over three times the mortality rate among females (Figure 202).

In Crook and Deschutes County, the motor vehicle mortality rate was highest among people between 15 to 24 years. In Jefferson County, it was highest among those 25 to 44 years, closely followed by those 15 to 24 years (the high rate among less than one-year-olds is unreliable due to the low number of deaths) (Figure 203). Across Oregon, the motor vehicle mortality rate was highest among those over 65 years of age. Most motor vehicle deaths in Central Oregon from 2008 to 2017 were occupants of motor vehicles, followed by unspecified mechanisms, and then motorcyclists. From 2008 to 2017, 27 motor vehicle deaths involved a pedestrian, and 6 involved a pedal cyclist (Figure 204).

Want more information on motor vehicle safety?

CENTER FOR DISEASE CONTROL AND PREVENTION MOTOR VEHICLE SAFETY:

WWW.CDC.GOV/MOTORVEHICLESAFETY/INDEX.HTML

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION MOTOR VEHICLE SAFETY:

WWW.OSHA.GOV/SLTC/MOTORVEHICLESAFETY/

Figure 201. Age-adjusted unintentional motor vehicle traffic mortality rate, number of deaths, and percent change in rate, Central Oregon and Oregon, OPHAT, 2008-2017.

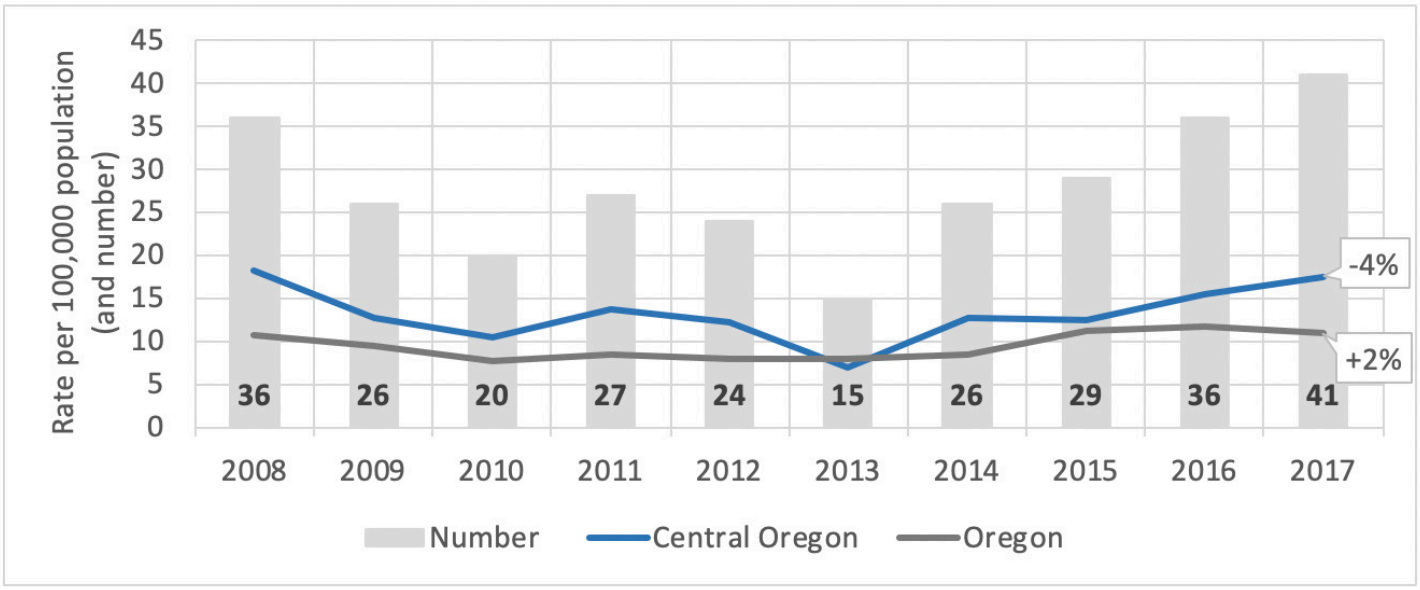


Figure 202. Unintentional motor vehicle mortality rate, female, male and total, Central Oregon, OPHAT, 2008-2017

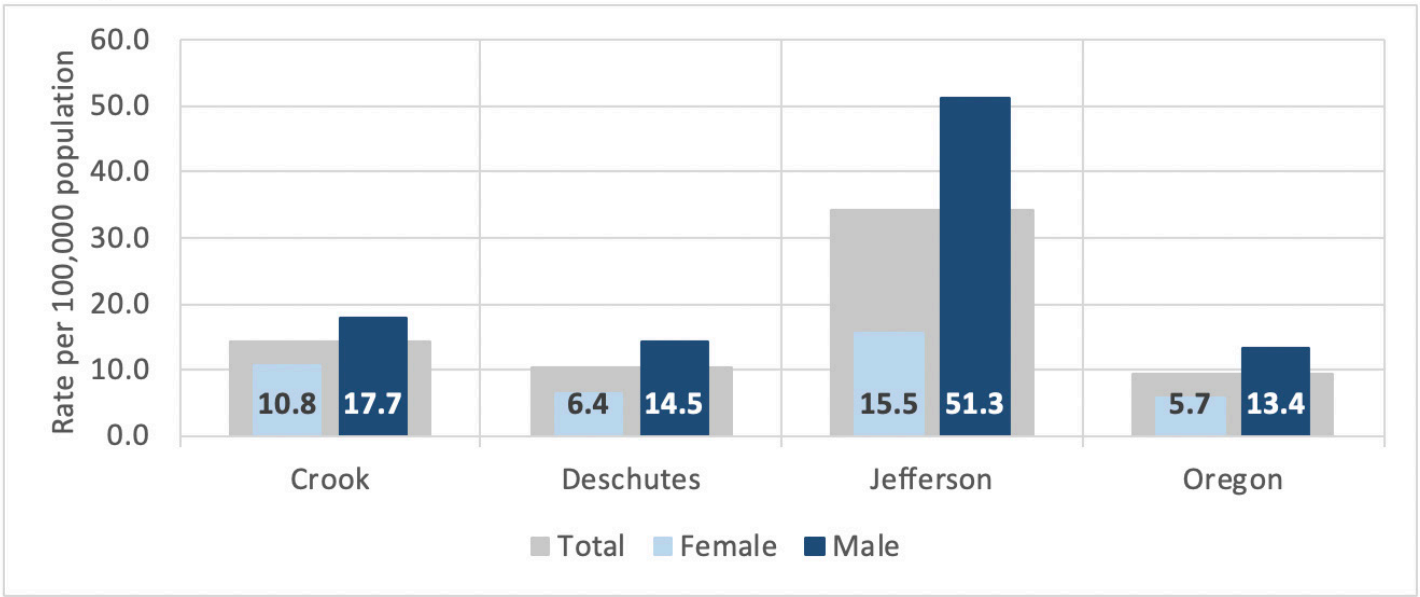


Figure 203. Unintentional motor vehicle traffic mortality rate by age group and county, OPHAT, 2008-2017

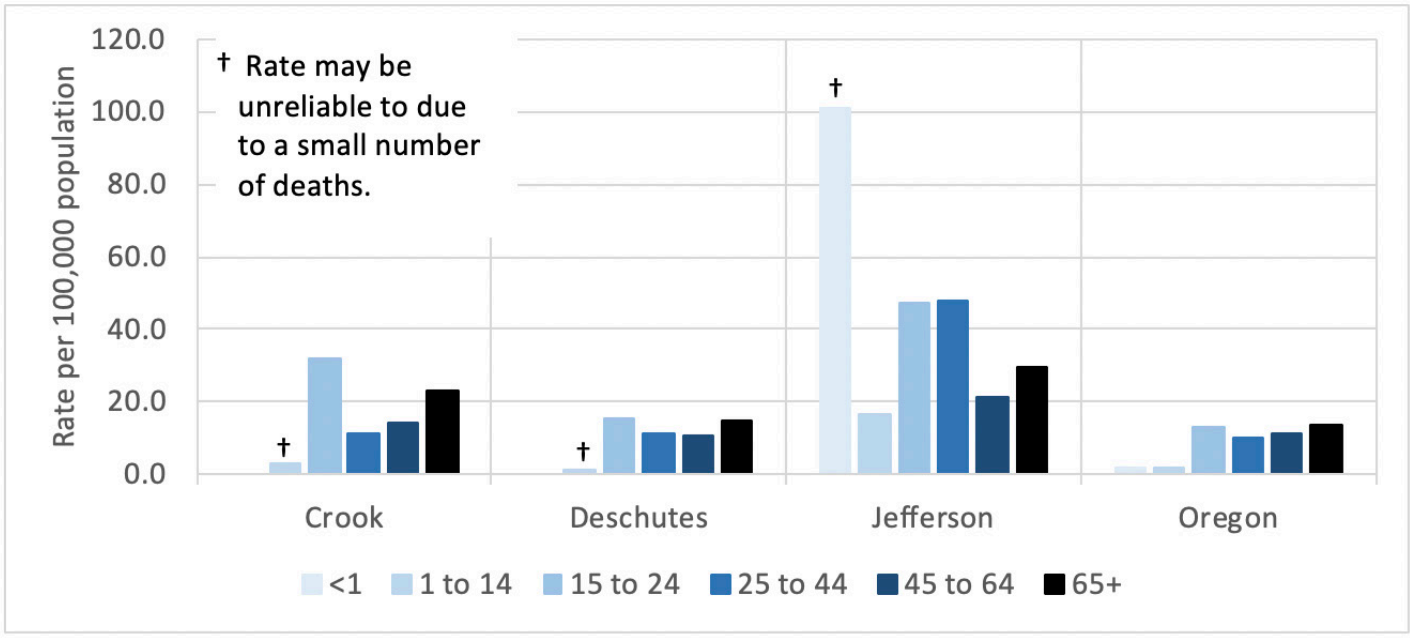
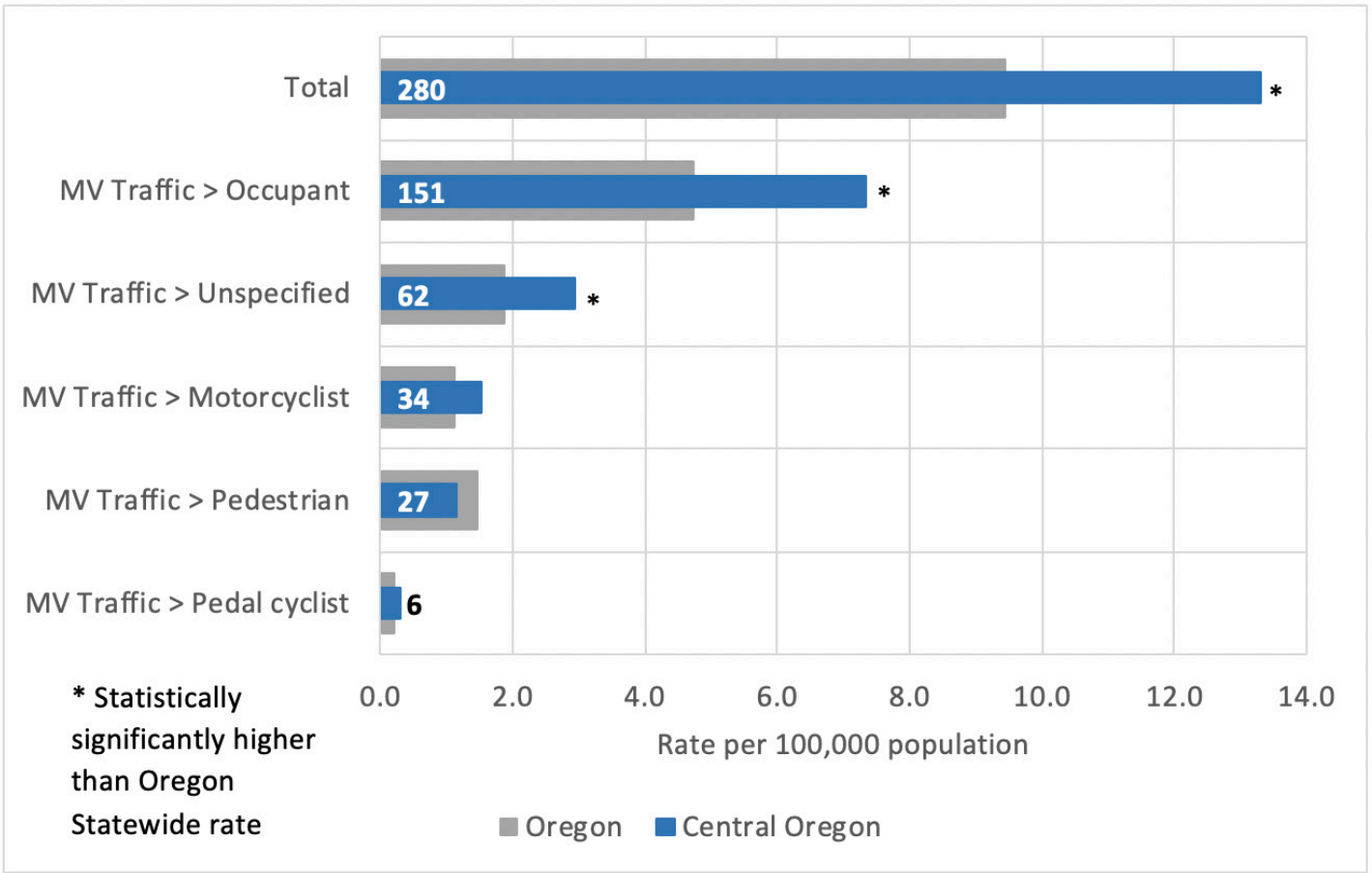


Figure 204. Motor vehicle traffic mortality rate (and number of deaths), by mechanism, Central Oregon and Oregon, OPHAT, 2008-2017



POISONING

A poison includes any substance, including medications, that is harmful to an individual's body if too much is ingested, inhaled, injected, or absorbed through the skin (CDC, 2015). Poisoning is the ingestion or inhalation of a toxic substance or a substance that if consumed in high enough quantities becomes toxic. A primary focus in recent years has been unintentional poisoning related to prescription medications. For more information about prescriptions medications and health, please reference the Tobacco, Alcohol, and Drug section.

In Central Oregon, the number of unintentional poisoning deaths has ranged between 12 in 2012 to 26 in 2016, and the overall rate of deaths decreased 24% from 2008 (10.5 per 100,000) to 2017 (8.0 per 100,000) (Figure 205). Across Oregon and in Jefferson County, the highest rate of unintentional poisoning was among those aged 45 to 64 years (Figure 206). In Crook County, the highest rate of unintentional poisoning was among those aged 25 to 44 years (Figure 206). In Deschutes County, the highest rate of unintentional poisoning was among those aged 15 to 24 years and those aged 25 to 44 years (Figure 206). In Oregon and in Deschutes County, the unintentional poisoning mortality rate was higher among males than among females (Figure 207). In Crook and Jefferson County, however, the unintentional poisoning mortality rate was higher among females than among males (Figure 207).

Figure 205. Age-adjusted unintentional poisoning mortality rate, number of deaths, and rate percent change between 2008 and 2017, Central Oregon and Oregon, OPHAT, 2008-2017.

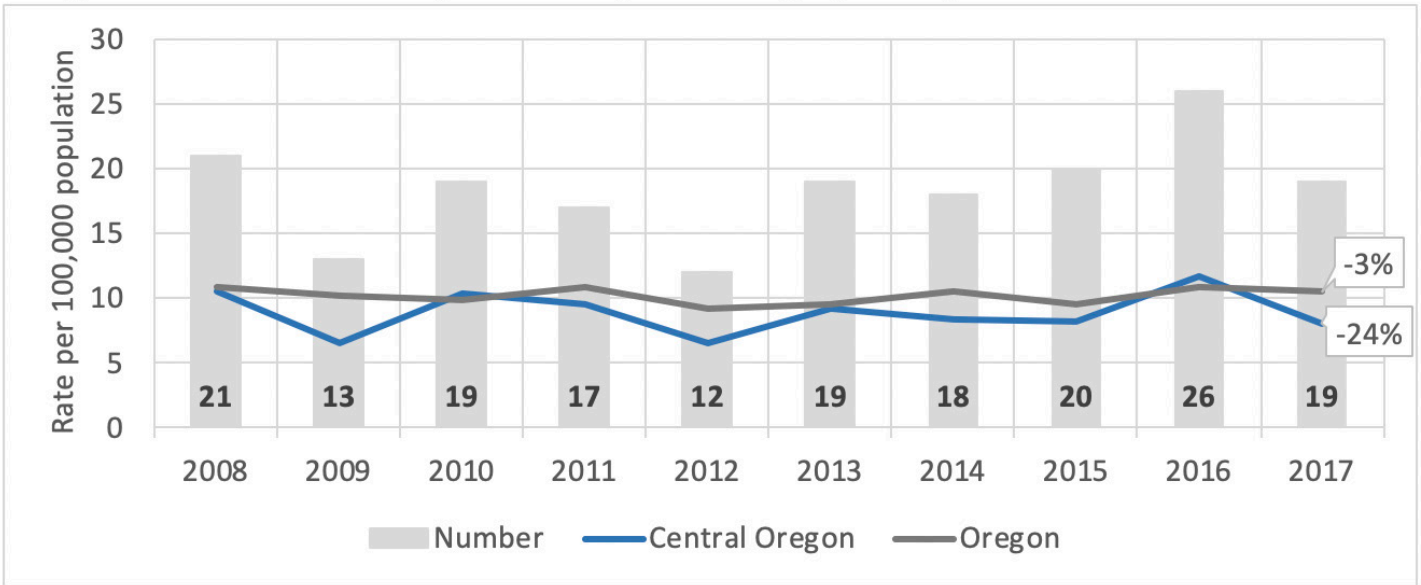


Figure 206. Age-specific poisoning mortality rate, by age group and county, OPHAT, 2008-2017

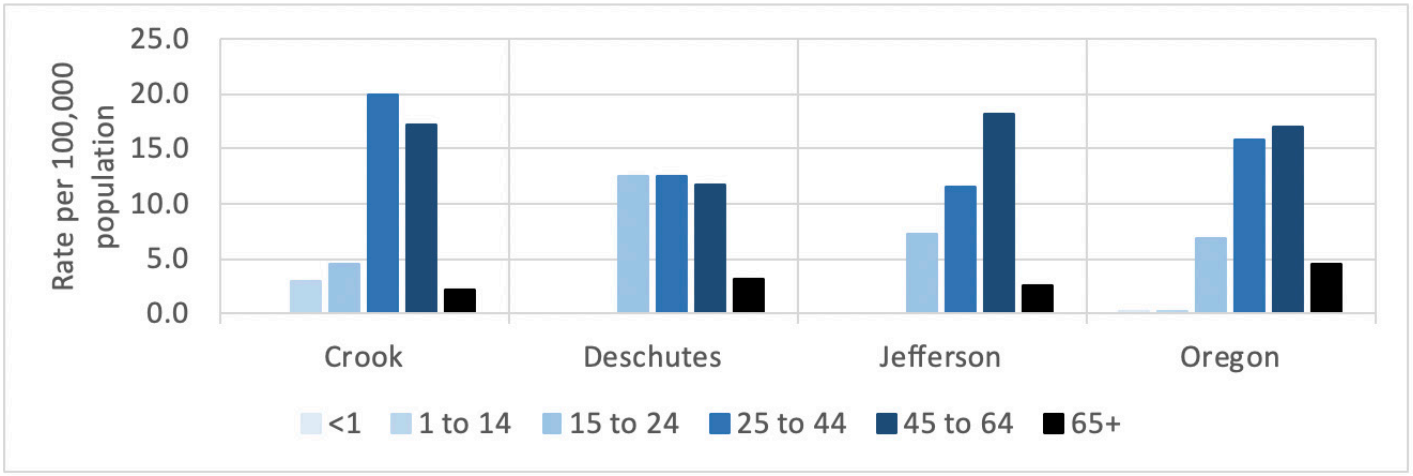
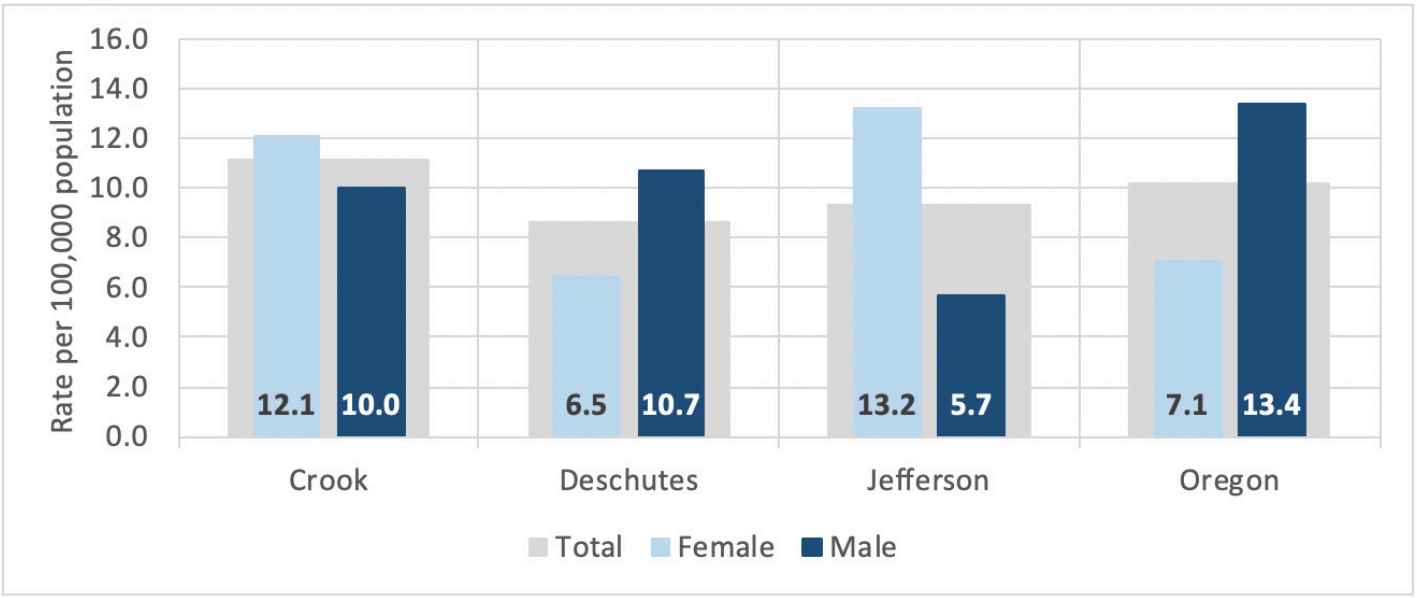


Figure 207. Age-adjusted unintentional poisoning mortality rate, overall and by male and female, OPHAT, 2008-2017.



FALLS

Falls can occur at any age but are a serious risk for young children and older adults. The highest risk for death due to a fall, however, is among older adults, especially 85 years and older. Every year, millions of older adults 65 and older in the United States fall (25%), yet less than half report this to their doctor (CDC, 2017). Though falls do not always cause injuries, falling one time doubles an individual's chances of falling again. Additionally, roughly one out of five falls cause serious injuries such as broken bones or head trauma. Such injuries impact the daily life of individuals with decreased capacity and mobility, especially for those living alone. In the United States, deaths due to falls increased by 30% between 2007 and 2016 for older adults. If fall rates continue to rise in the older adult population, seven fall deaths per hour are predicted by 2030. Such injuries, however, can be prevented through improved footwear, regular vision exams, and strength and balance exercises (CDC, 2017).

In Central Oregon, the rate of deaths from unintentional falls increased 66% from 2008 (11.0 per 100,000 population) to 2017 (18.2 per 100,000 population) (Figure 208). In Oregon and in the three Central Oregon counties, the highest mortality rate from unintentional falls was seen in older adults (65 years and older) (Figure 209). From 2008-2017, the number of deaths among 85 years and older adults in Crook, Deschutes, and Jefferson counties was 16, 129, and 16, respectively. In Oregon, Crook County, and Jefferson County, the mortality rate from unintentional falls was higher among males than among females, but in Deschutes County, the mortality rate from unintentional falls was the same among males and females (Figure 210).

Want more information about fall prevention?

CENTER FOR DISEASE CONTROL AND PREVENTION OLDER ADULT FALLS:

WWW.CDC.GOV/HOMEANDRECREATIONALSAFETY/FALLS/INDEX.HTML

NATIONAL COUNCIL ON AGING FALL PREVENTION:

HTTPS://WWW.NCOA.ORG/HEALTHY-AGING/FALLS-PREVENTION/

FALL PREVENTION RESOURCES:

WWW.OREGON.GOV/OHA/PH/PREVENTIONWELLNESS/SAFELIVING/FALLPREVENTION/PAGES/INDEX.ASPX

Figure 208. Age-adjusted unintentional fall mortality rate, number of deaths, and rate percent change between 2008 and 2017, Central Oregon and Oregon, OPHAT, 2008-2017.

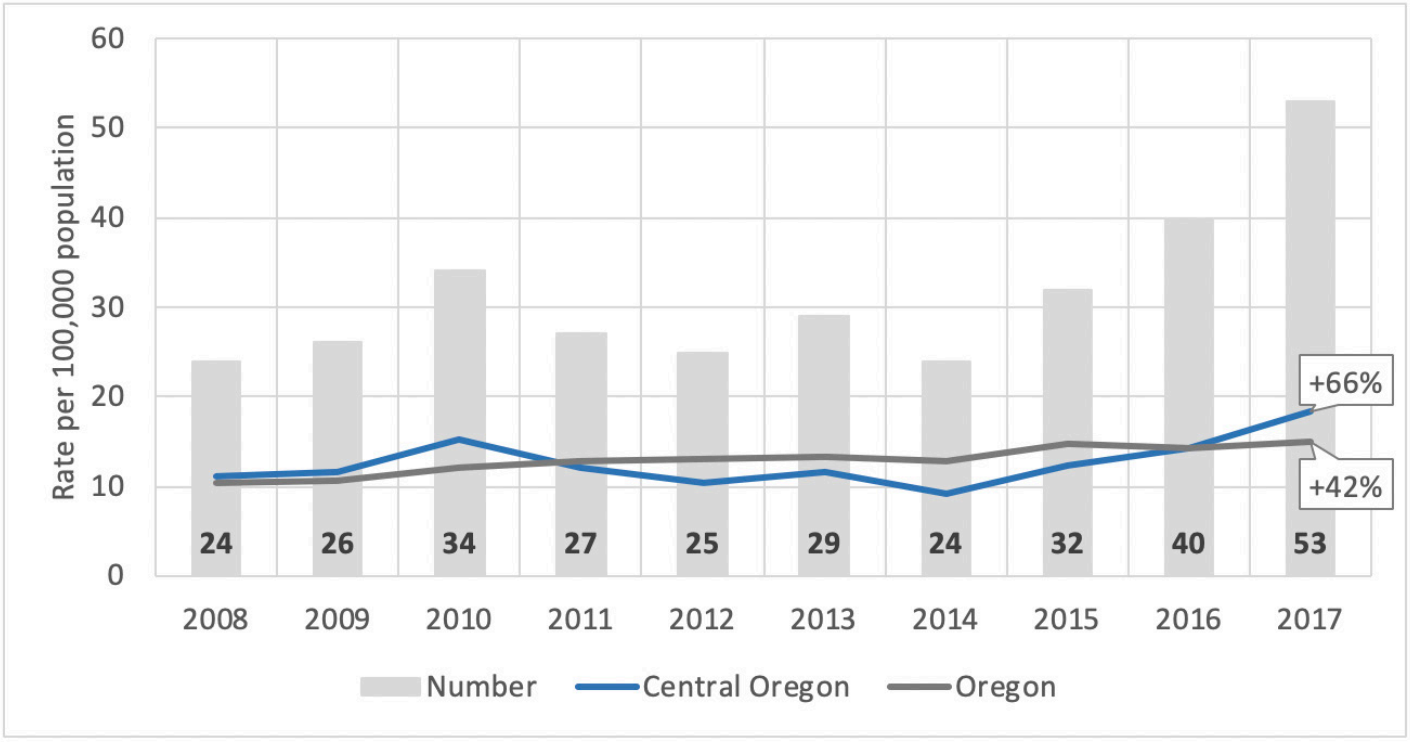


Figure 209. Unintentional fall mortality rate by age group and county, OPHAT, 2008-2017

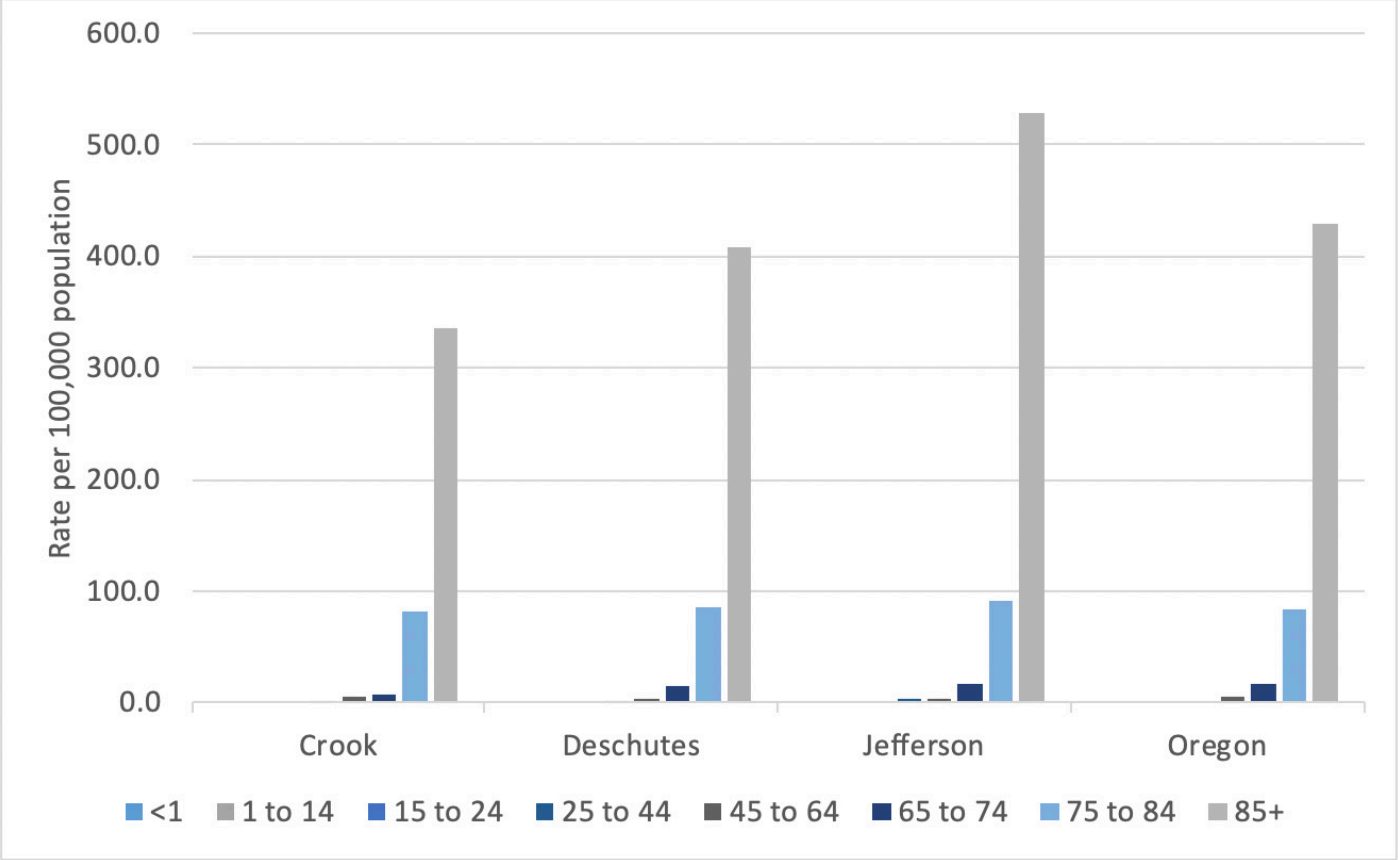
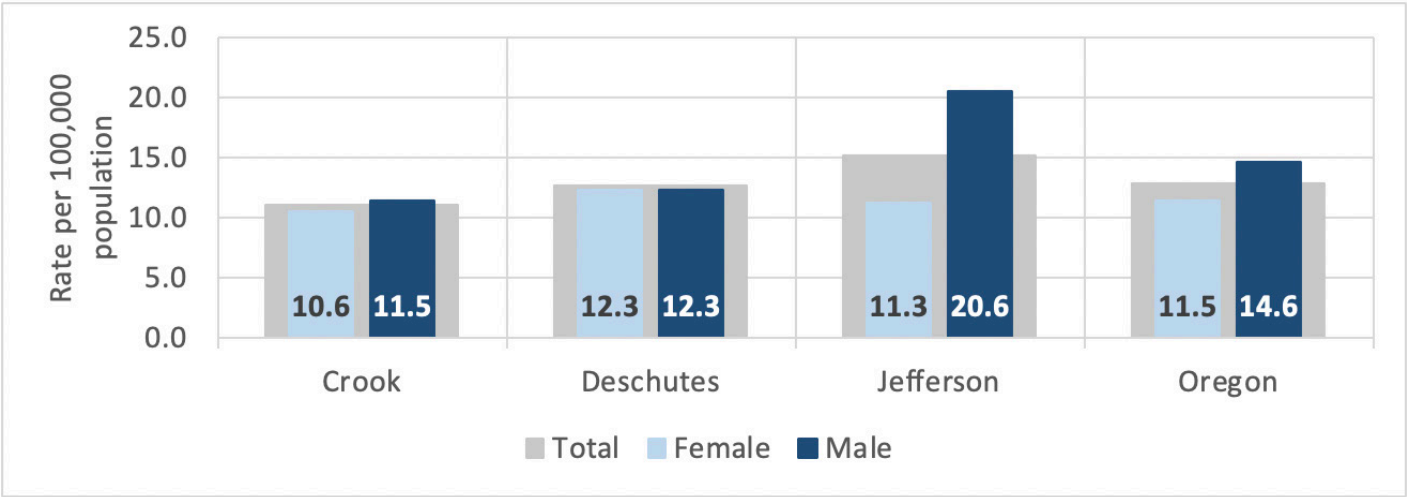


Figure 210. Unintentional fall mortality rate, overall and by sex, by county, OPHAT, 2008-2017



FIREARMS

Firearm-related deaths can involve suicide, homicide, and unintentional shootings. In Oregon in 2017, 528 deaths per 100,000 population were firearm related (CDC, 2019). The majority of firearm-related deaths were a result of suicides (63%) and homicides (33%). In the United States, studies show that suicidal acts resulting in death are strongly associated with firearm availability in the household (County Health Rankings & Roadmaps, 2018). For more information about suicide, please reference the Mental Health section. From 2008 to 2017 in Central Oregon, most firearm deaths were from suicide (86%), followed by homicide (11%). Only 1% of firearm deaths were unintentional (Figure 211).

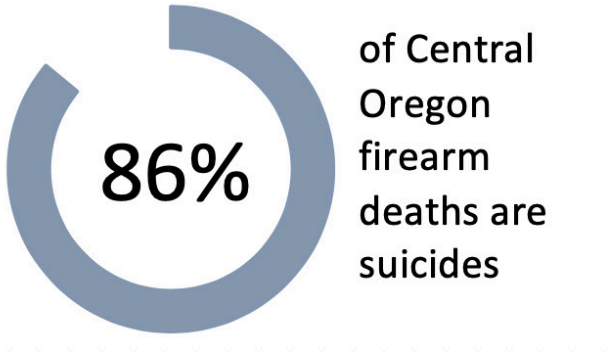
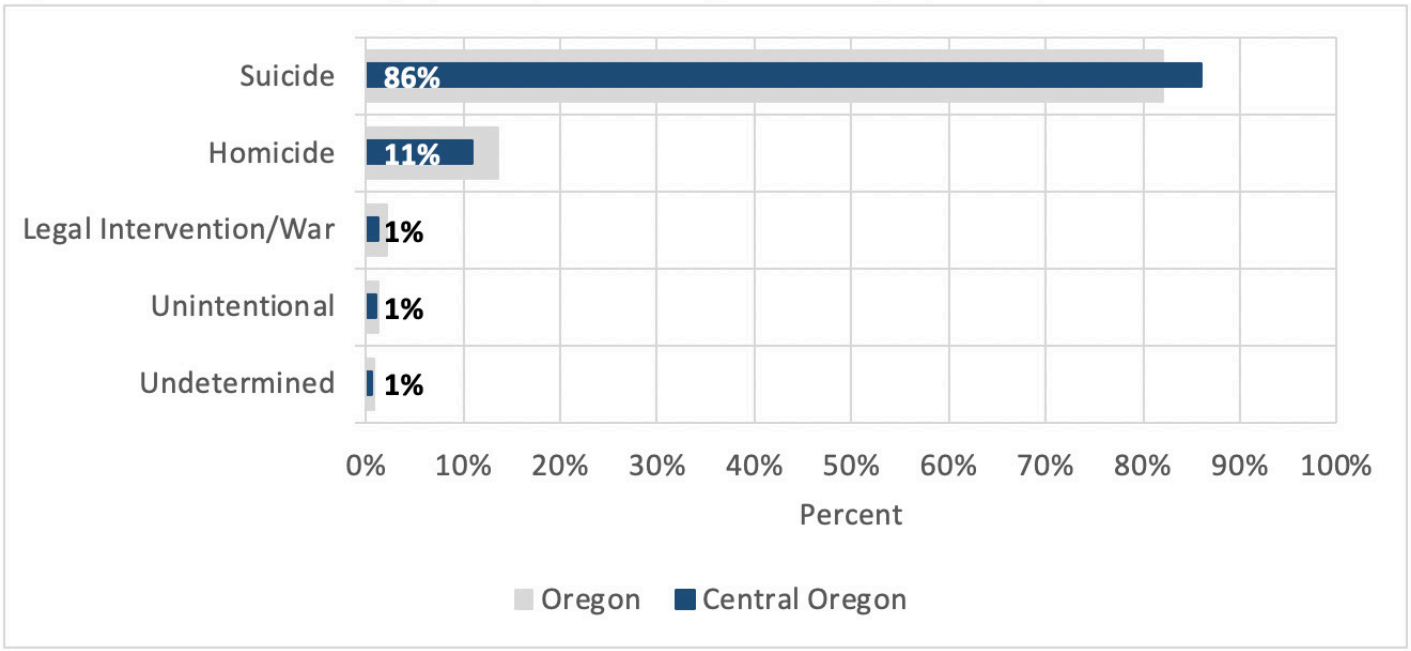


Figure 211. Firearm mortality by intent, Central Oregon and Oregon, OPHAT, 2008-2017



DROWNING

Drowning is caused by breathing difficulties from being submerged or immersed in liquid (WHO, 2018). Every day, roughly 10 people die from unintentional drowning. Of these, on average, two out of the 10 are children under the age of 14 years (CDC, 2016). Drowning is the fifth leading cause of unintentional injury death for individuals of all ages, and the second leading cause for children under 14 years old. Between 2005 and 2014, there were 3,500 fatal unintentional drownings (non-boating related) in the U.S. per year (CDC, 2016). In Oregon, 76 deaths in 2016 were from non-boat

related drownings (Oregon.gov, 2016). Drowning-related deaths can be prevented by learning how to swim, learning cardio-pulmonary resuscitation (CPR), wearing life jackets, and following pool and/or ocean safety recommendations, among others (CDC, 2016).

From 2008 to 2017 in Central Oregon, the rate of death from drowning (1.3 per 100,000; 28 total) was less than the Oregon rate (1.6 per 100,000). Approximately one-third (32%) of these deaths were among people between the ages of 45 and 64 years, and another third (32%) were among those over 65 years of age (Figure 212). In Central Oregon and across Oregon as a whole, the mortality rate for unintentional drowning was higher among males than females (Figure 213).

Want more information on drowning prevention?

CENTER FOR DISEASE CONTROL AND PREVENTION UNINTENTIONAL DROWNING:

WWW.CDC.GOV/HOMEANDRECREATIONALSAFETY/WATER-SAFETY/WATERINJURIES-FACTSHEET.HTML

AMERICAN ACADEMY OF PEDIATRICS DROWNING PREVENTION:

WWW.HEALTHYCHILDREN.ORG/ENGLISH/HEALTH-ISSUES/INJURIES-EMERGENCIES/PAGES/DROWNING.ASPX

Figure 212. Percent of total drowning mortality by age group, Central Oregon and Oregon, OPHAT, 2008-2017

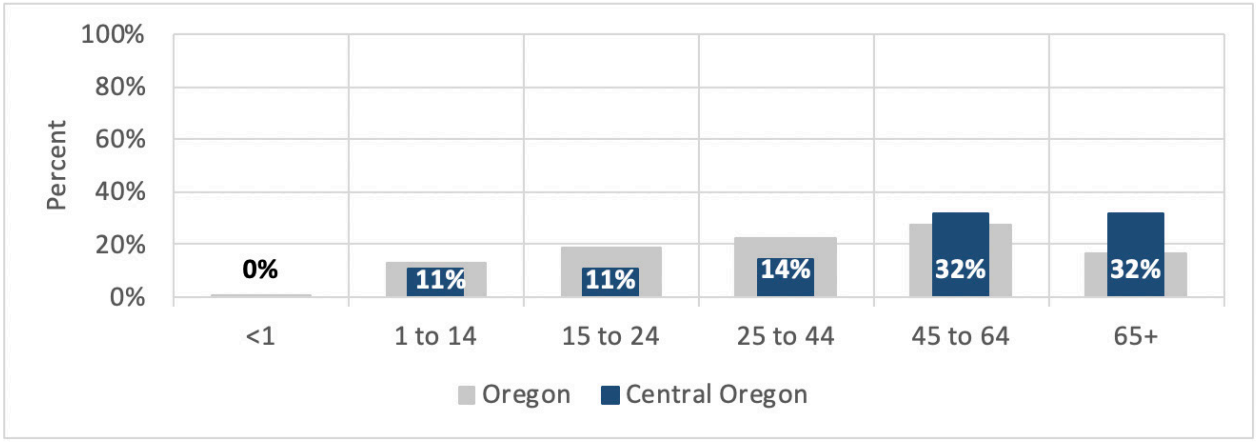
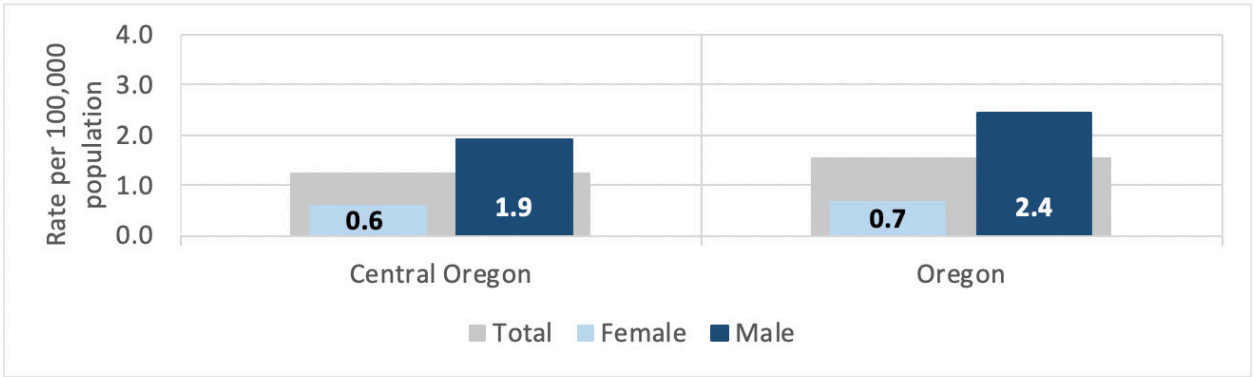


Figure 213. Unintentional drowning mortality rate, overall and by sex, Central Oregon and Oregon, OPHAT, 2008-2017

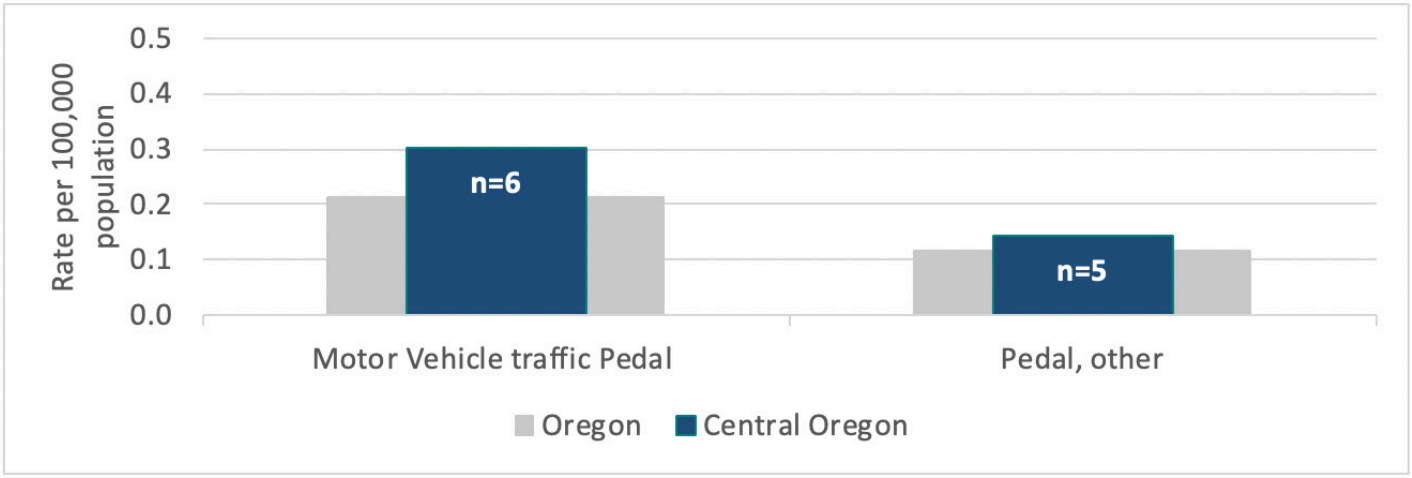


BICYCLE AND PEDESTRIAN DEATHS

In 2015, over 1,000 bicyclists died and over 5,300 U.S. pedestrians were killed in traffic crashes. Both bicyclists and pedestrians face higher risks of crash-related injuries and deaths than occupants in motor vehicles. In 2016, 10 bicyclists and 74 pedestrians died in traffic crashes in Oregon (Oregon.gov, 2018). These injuries and deaths are preventable. Safety precautions include wearing helmets, lighting, reflective wear to increase visibility, using designated crosswalks, and following bicycle roadway prompts/ signage (CDC, 2017).

The mortality rate from unintentional pedal cyclist injuries is higher in Central Oregon than across Oregon as a whole (Figure 214). From 2008-2017 in Central Oregon, there were 11 unintentional pedal cyclist deaths, 6 involving a motor vehicle. Of these, 83% (5/6) were male. During the same timeframe, there were 32 unintentional pedestrian deaths, most (27) involving a motor vehicle. Of these 27 deaths, 75% (20/27) were male, most (10) were between the ages of 45 to 64 years, and seven of these deaths were people over 65 years of age (Figure 216). The mortality rate for unintentional pedestrian injuries was lower in Central Oregon than across Oregon as a whole (Figure 215).

Figure 214. Unintentional pedal cyclist injury mortality rate and number of deaths (N=11), Central Oregon and Oregon, OPHAT, 2008-2017



Want more information on bicycle and pedestrian safety?

CENTER FOR DISEASE CONTROL AND PREVENTION HEADS UP:

WWW.CDC.GOV/HEADSUP

NATIONAL HIGHWAY TRAFFIC SAFETY ADMIRATION:

WWW.NHTSA.GOV/ROAD-SAFETY

NATIONAL CENTER FOR SAFE ROUTES TO SCHOOL:

HTTP://WWW.SAFEROUTESINFO.ORG/

Figure 215. Unintentional pedestrian injury mortality rate and number of deaths (N=32), Central Oregon and Oregon, OPHAT, 2008-2017

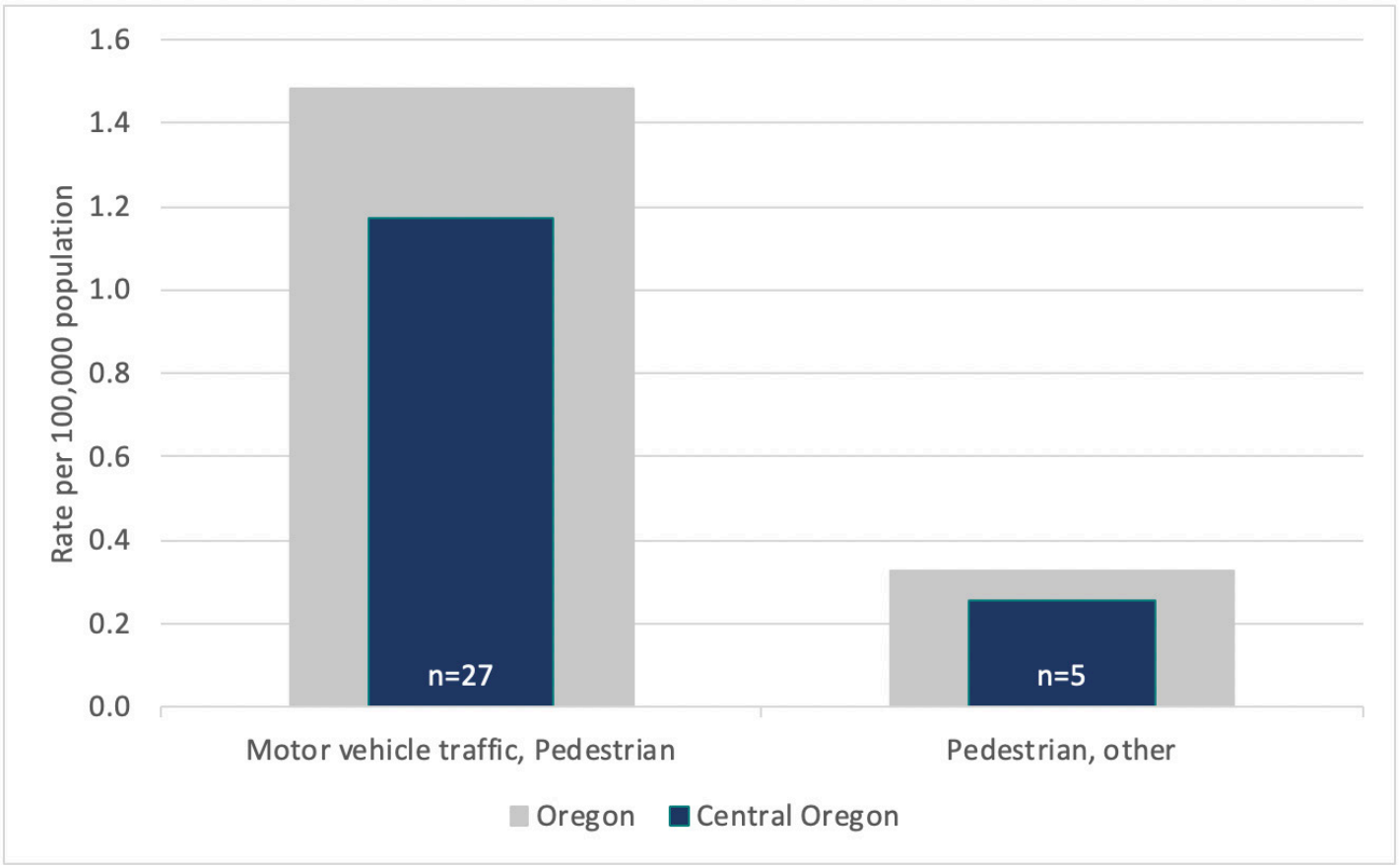
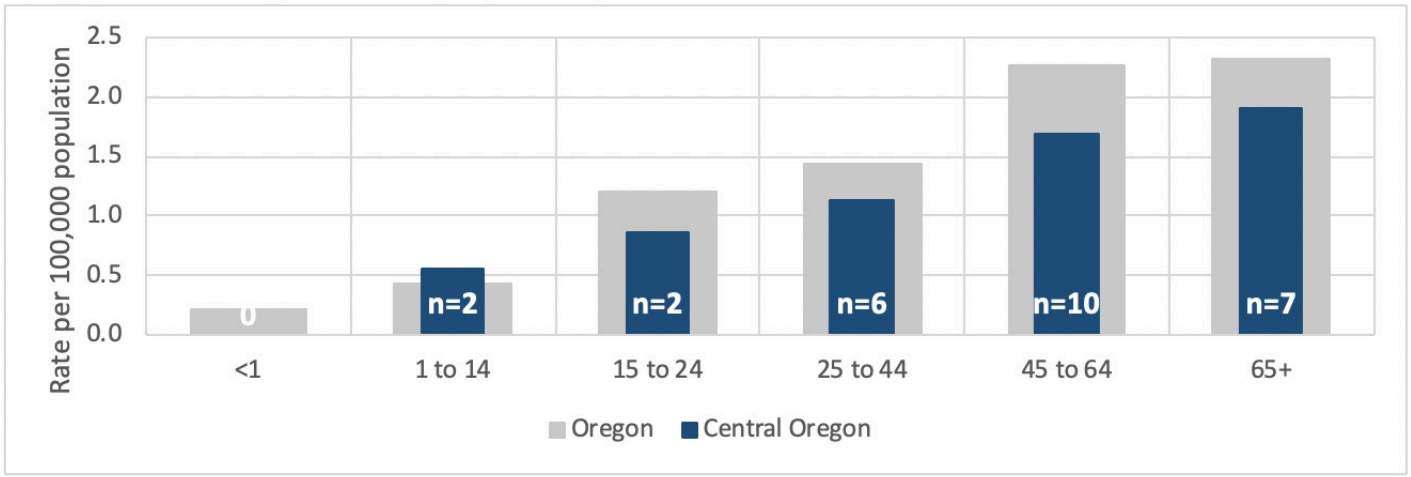


Figure 216. Unintentional pedestrian-motor vehicle traffic injury mortality rate and number of deaths, by age, Central Oregon and Oregon, OPHAT, 2008-2017



ORAL HEALTH

Oral health can affect one's ability to speak, eat, smile, and show emotions. Oral diseases ranging from cavities to gum disease and oral cancer are linked to other chronic diseases such as diabetes and heart disease. Please reference the Mental Health Section for information on the correlation between depression and diabetes. Cavities are one of the most common chronic diseases in the United States and are largely preventable. In the United States, 80% of people have at least one cavity by age 34. Untreated tooth decay causes problems with eating, speaking, and causes pain, which can disrupt learning and personal growth. It is important to maintain oral health, especially in high-risk populations, such as children and pregnant women. For more information about pregnancy and oral health, please go to the Maternal and Child Health section. Oral health prevention can include brushing, flossing, use of d ental sealants, discontinuing tobacco use, decreasing consumption of high sugar beverages, receiving regular oral health check-ups, and drinking fluoridated water or receiving fluoride treatments (CDC, 2015).

ACCESS

Of the three Central Oregon counties, Deschutes County had the highest rate of Full-Time Equivalent (FTE) dentists per 1,000 residents (0.47 per 1,000 residents), and Crook County had the lowest (0.22 per 1,000 residents) (Figure 217). Approximately one-third of Central Oregon residents who enrolled in OHP accessed dental care, ranging from 33% in Jefferson County to 30% in Crook County (Figure 218). Across Oregon and in Central Oregon, a higher proportion OHP-enrolled children compared to adult received a preventive dental service or any dental service. For example, around 40% of OHP-enrolled children in Central Oregon received a preventive dental service, compared to 14% of OHP-enrolled adults in Central Oregon (Figure 219).

Want more information on oral health?

CENTER FOR DISEASE CONTROL AND PREVENTION ORAL HEALTH:

WWW.CDC.GOV/ORALHEALTH/INDEX.HTML

AMERICAN DENTAL ASSOCIATION MOUTH HEALTHY:

WWW.MOUTHHEALTHY.ORG

Central Oregon Oral Health Practitioners:

"Periodontal disease is active and progressive especially in those that do not have their diabetes under control."

"I have seen a trend of maternal active/previous [tooth] decay and higher rates of their child having [tooth] decay."

"If [pregnant women] have not been in for a cleaning and do not have good home care, they have a higher risk of pregnancy induced gingivitis."

"I have seen a trend in tooth loss and history of many years of smoking."

Figure 217. Full-Time Equivalency (FTE) dentists per 1,000 residents, "Oral Health in Oregon's CCOs 2017 report," 2015-2016.

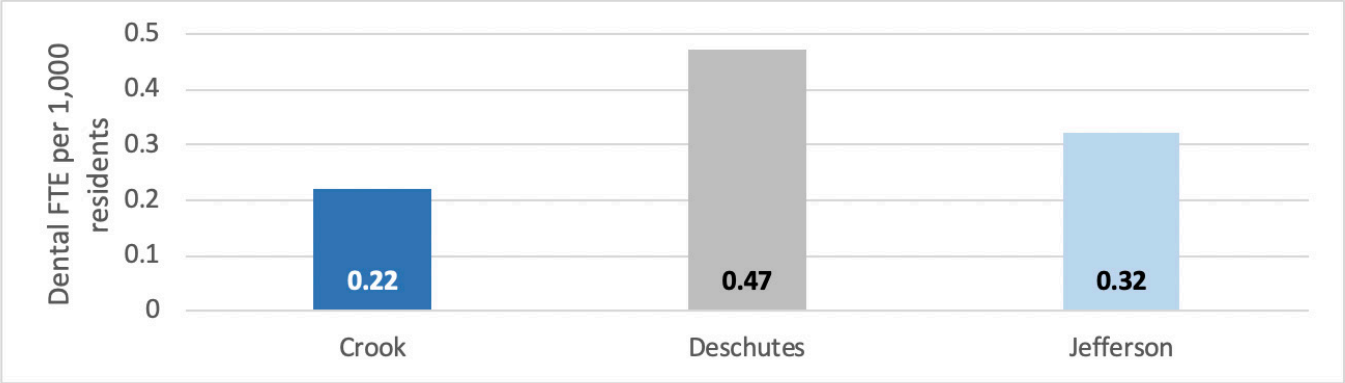


Figure 218. Percent of those enrolled in OHP who accessed dental care, "Oral Health in Oregon's CCOs 2017 report," Central Oregon, 2015.

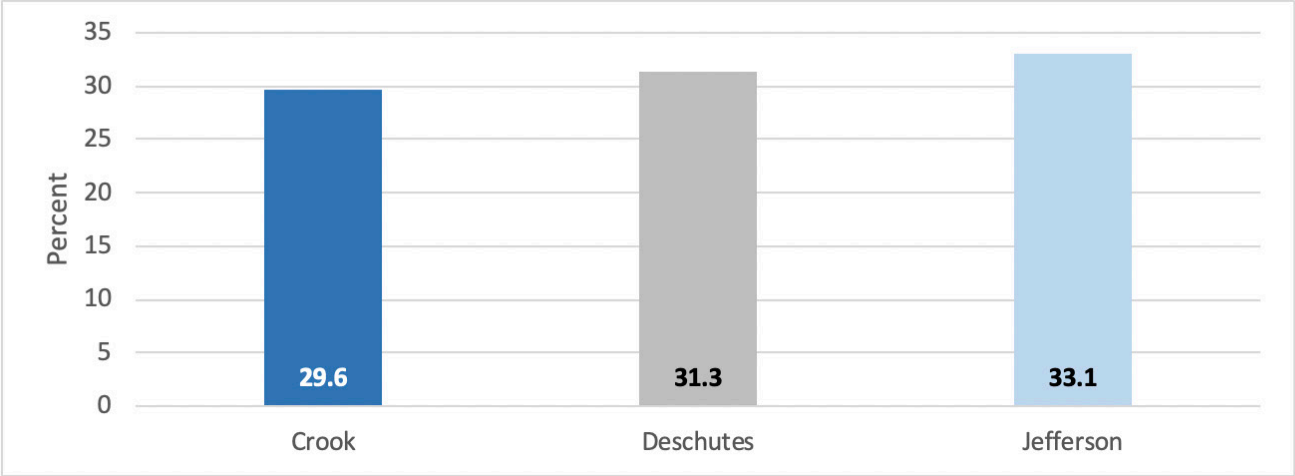
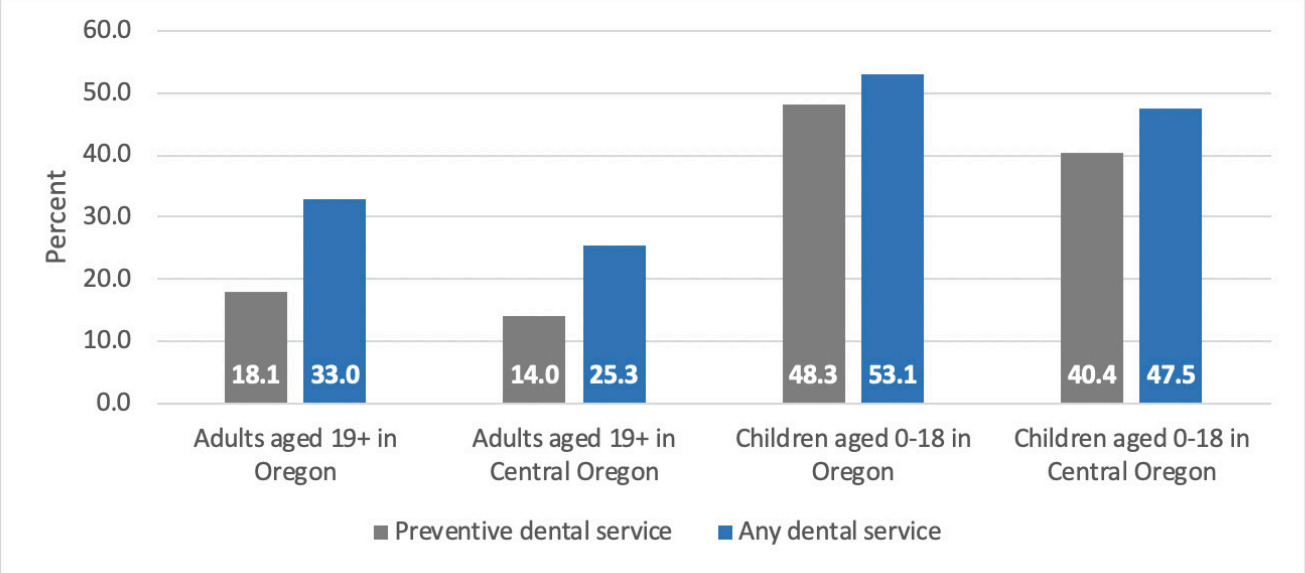


Figure 219. Percent of Oregon OHP-enrolled adults and children who received a preventive dental service and any dental service, "Oral Health in Oregon's CCOs 2017 report," 2015.



ADULT DATA

Good oral health as an adult helps maintain adult teeth, while poor oral health can be costly and painful. Increased oral health issues such as gum disease often occur as people age because of changes in saliva production, difficulty flossing and brushing, physical limitations, and/or cognitive problems (CDC, 2016). Oral health is also related to income, especially in those over 65 years of age. Many older adults are on fixed incomes and may not receive routine dental care because Medicare, the leading insurer for adults 65 years and older, provides little to no dental coverage (HealthyPeople.gov, 2019).

In Central Oregon, 63.4%, 66.8%, and 61.2% of adults visited a dentist over the previous year in Crook, Deschutes, and Jefferson County, respectively (Figure 220). In Central Oregon, Jefferson County had the highest percent of adults who have had at least one permanent tooth removed due to tooth decay or gum disease (40%), while Crook County had the highest percentage of adults who have had all permanent teeth removed due to tooth decay or gum disease (7%) (Figure 221).

Figure 220. Percent of adults aged 18+ who visited a dentist for any reason over the previous year, BRFSS, 2012-2015.

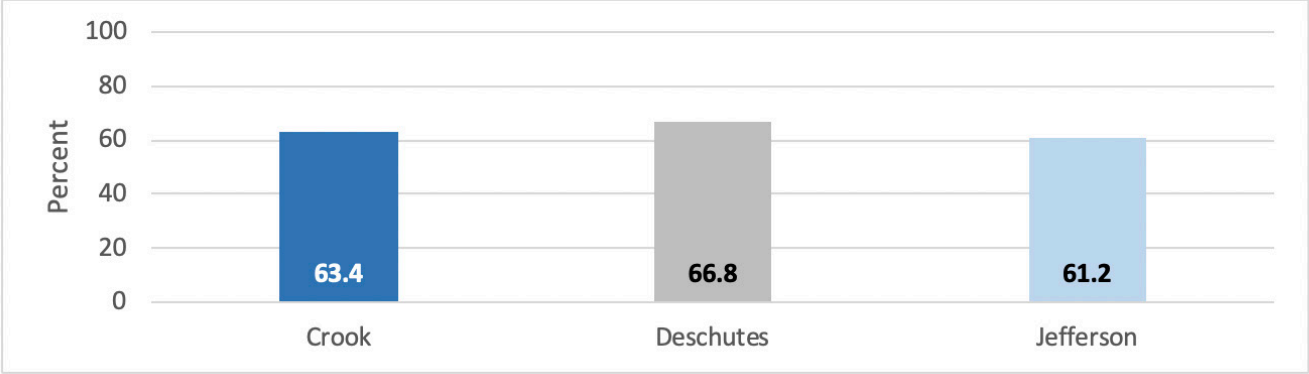
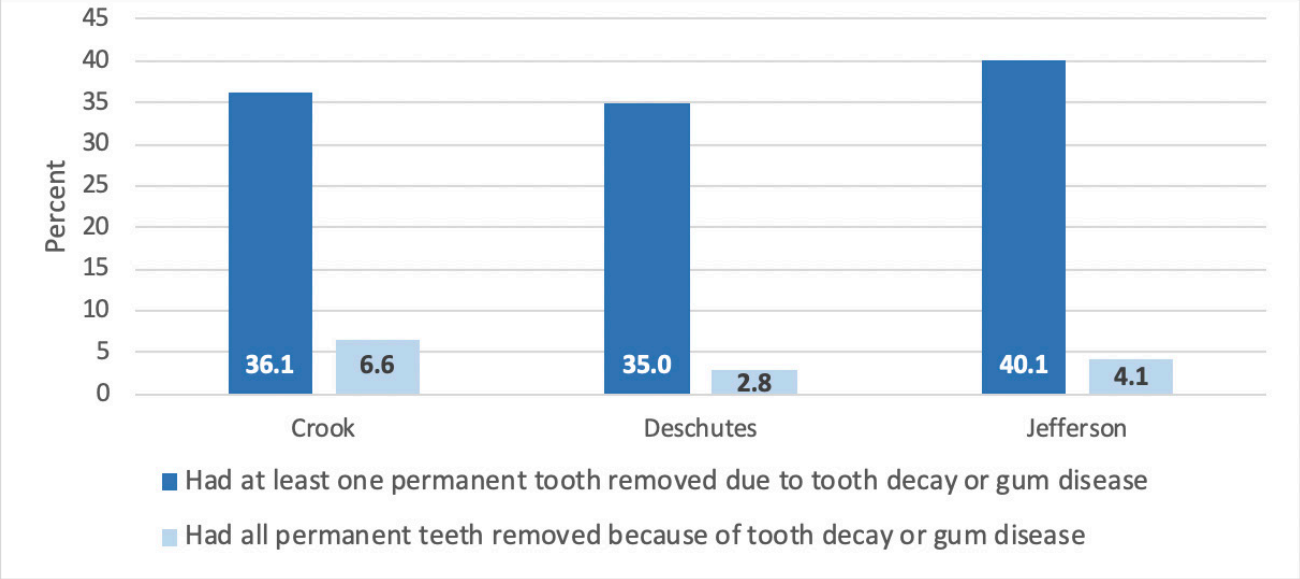


Figure 221. Percent of adults aged 18+ who have ever had permanent teeth removed because of tooth decay or gum disease, BRFSS, 2012-2015.



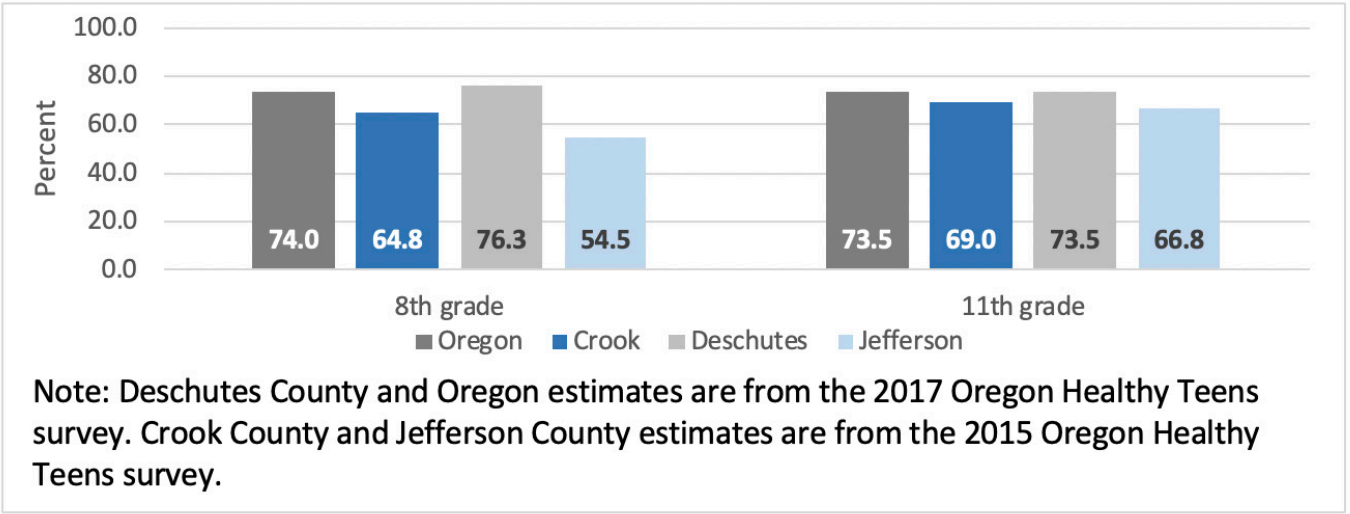
YOUTH DATA

Good oral health starts in childhood and includes regular visits to a dentist, regular brushing, and a healthy diet. Cavities are a common occurrence for United States children with roughly one in five (ages 5-11 years) experiencing at least one untreated decayed tooth. Children who experience oral health issues often have higher absences from school and lower grades compared to children who do not have oral health issues. Fluoride varnish can prevent cavities by up to one-third in primary (baby) teeth and providing children with fluoride tooth-paste will lower cavity rates in childhood. Dental sealants can lower rates of cavities in children as well (CDC, 2019).

In Oregon, 74% of 8th graders and 73.5% of 11th graders reported visiting a dentist or dental hygienist for a checkup, exam, teeth cleaning, or other dental work in the past year (Figure 222). Of the three Central Oregon counties, Deschutes County 8th (76.3%) and 11th (73.5%) graders had the highest percentage of youth who reported visiting a dentist or dental hygienist for a checkup, exam, teeth cleaning, or other dental work in the past year (Figure 222). Both Crook and Jefferson County percentages were below the Oregon average, and only half of Jefferson County 8th graders (55%) visited a dentist or dental hygienist over the previous year (Figure 222).

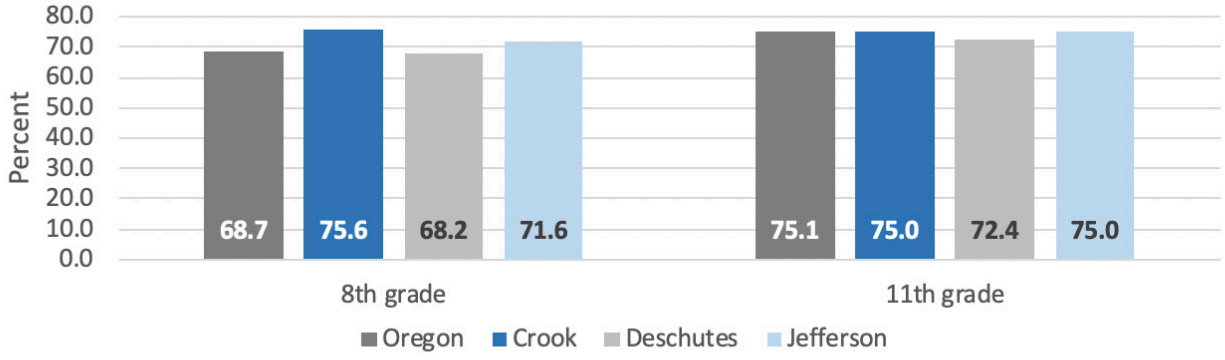
Around 75% of Crook County 8th graders reported ever having a cavity, which is higher than the statewide average (69%) and in Deschutes (69%) and Jefferson (72%) Counties (Figure 223). Most 8th and 11th grade students in Central Oregon reported brushing their teeth in the previous 24 hours. About 93% of Crook County 8th graders reported brushing their teeth in the previous 24 hours, compared to 98% of Jefferson County 8th graders (Figure 224).

Figure 222. Percent of 8th and 11th graders who reported visiting a dentist or dental hygienist for a checkup, exam, teeth cleaning, or other dental work in the past year, Oregon Healthy Teens Survey, 2015 and 2017.



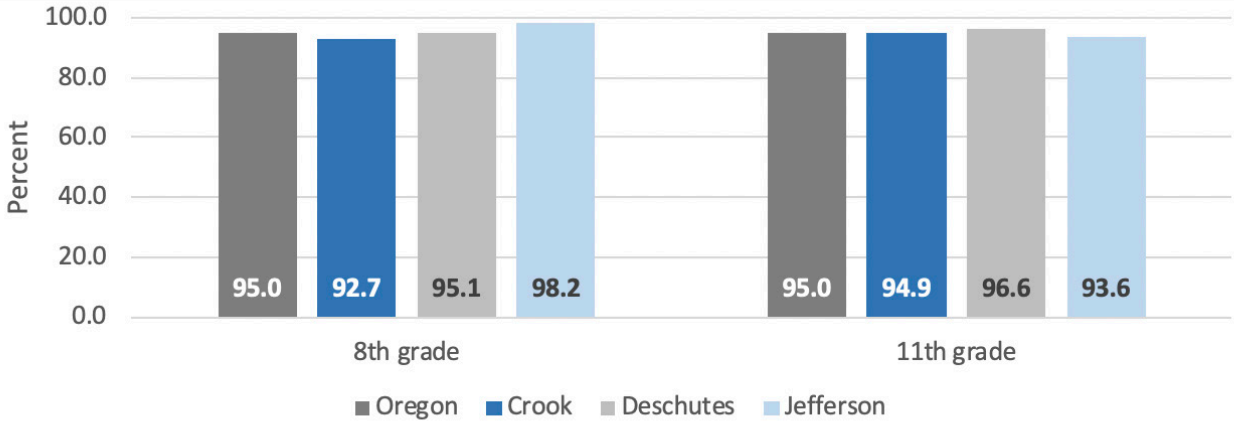
Note: Deschutes County and Oregon estimates are from the 2017 Oregon Healthy Teens survey. Crook County and Jefferson County estimates are from the 2015 Oregon Healthy Teens survey.

Figure 223. Percent of 8th and 11th graders who reported ever having a cavity, Oregon Healthy Teens Survey, 2015.



Note: Deschutes County estimates may not be representative of the county as a whole.

Figure 224. Percent of 8th and 11th graders who reported brushing their teeth in the past 24 hours, Oregon Healthy Teens Survey, 2015.



Note: Deschutes County estimates may not be representative of the county as a whole.

Of Central Oregon youth who reported specific oral health indicators, Deschutes County 8th graders had the highest percentage of students who reported missing school to visit a dentist for tooth or mouth pain (6.4%), and about 5.4% of Jefferson County 11th graders reported missing school due to a toothache (Oregon's rate was 2.7%) (Figure 225 and 226). Approximately one-in-ten (10.8%) Crook County 8th graders report that they had been injured in the mouth area playing a recreational sport, compared to about 5% of Deschutes and Jefferson County 8th graders (Figure 225 and 226).

In addition, 7.2% of Central Oregon OHP-enrolled children (aged <22) received at least two topical fluoride applications during 2015, compared with 14.5% of Oregon OHP-enrolled children (Figure 227).

Figure 225. Percent of 8th graders who reported specific oral health indicators, Oregon Healthy Teens Survey, 2015.

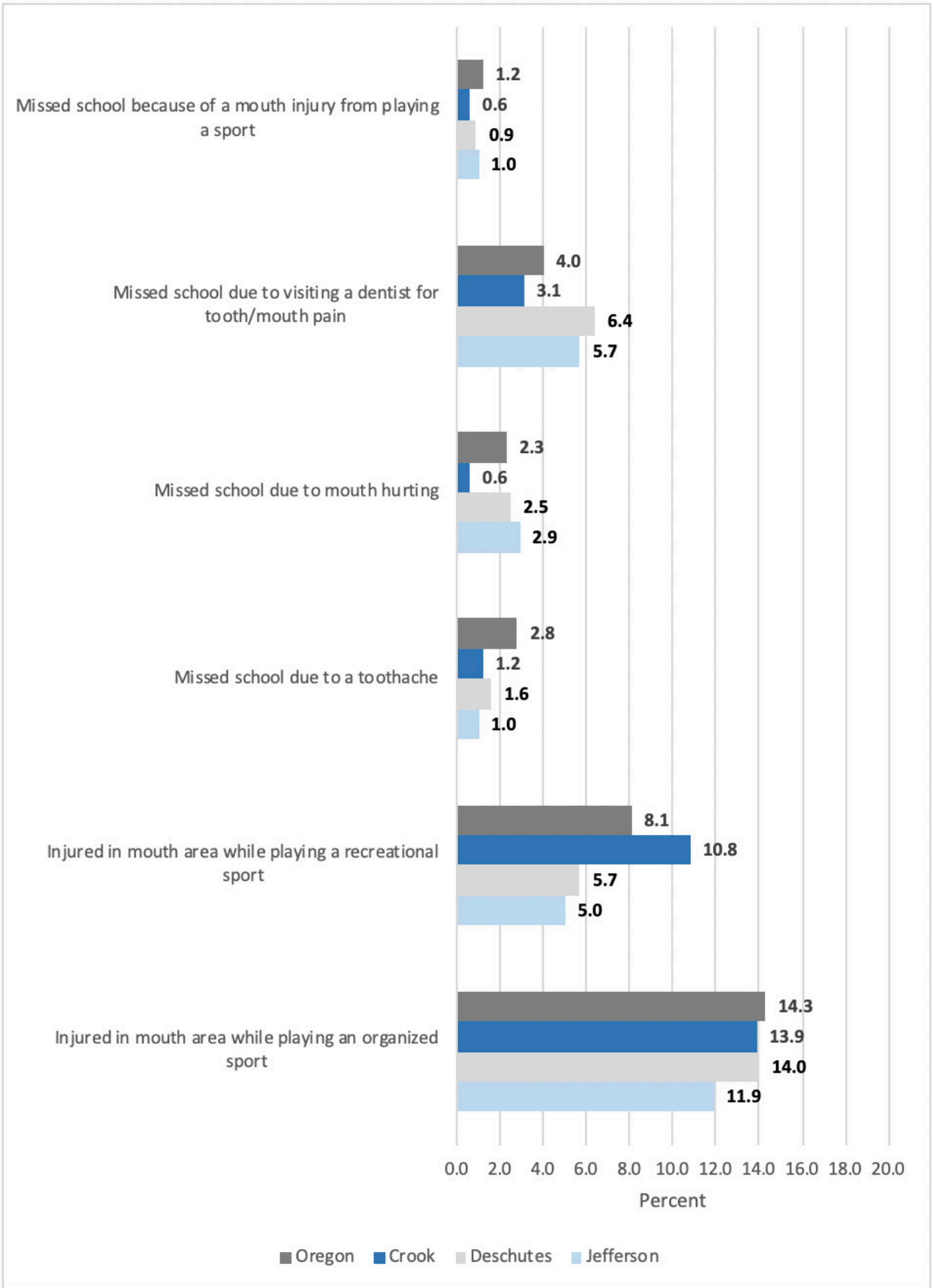


Figure 226. Percent of 11th graders who reported specific oral health indicators, Oregon Healthy Teens Survey, 2015.

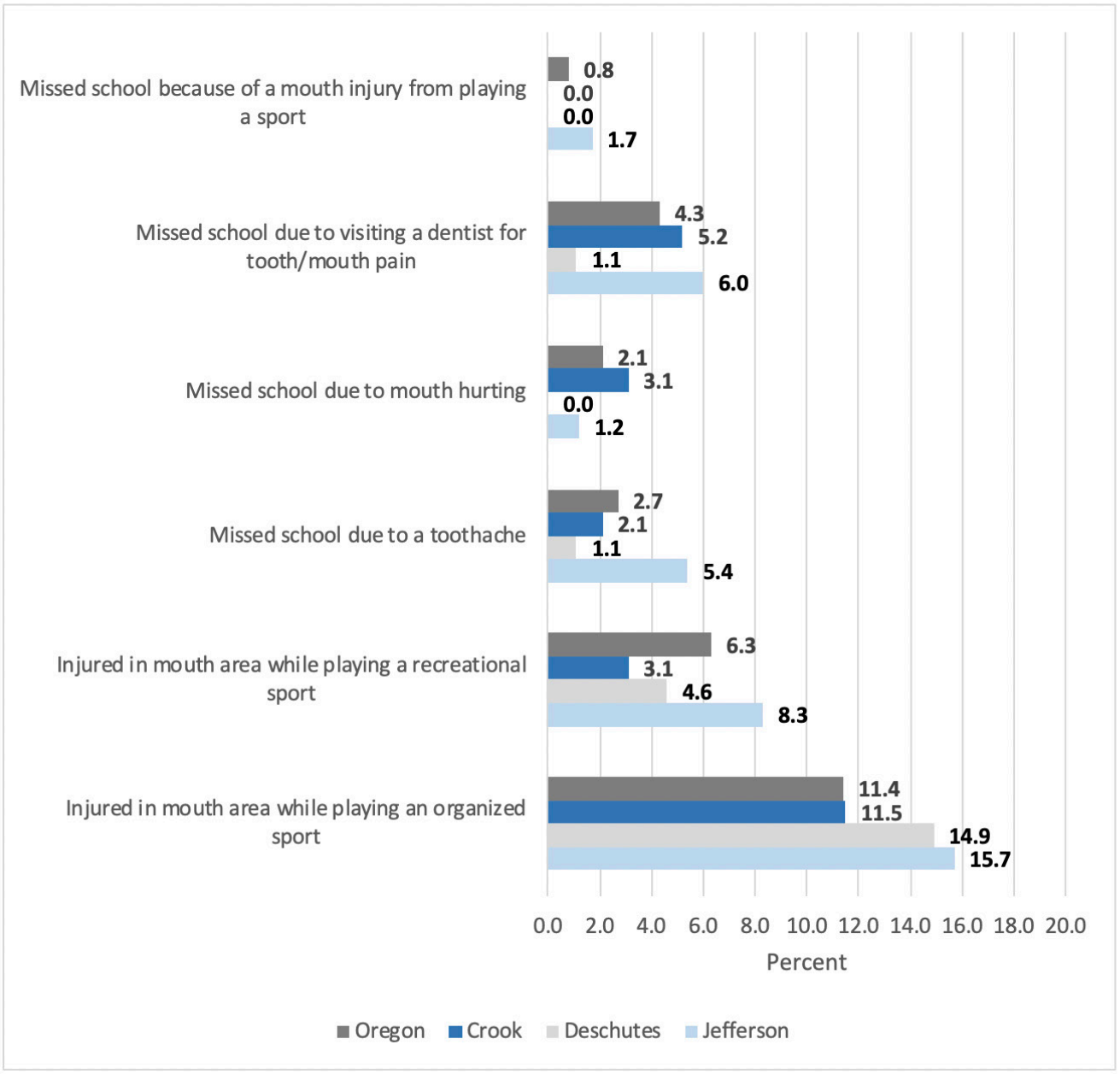
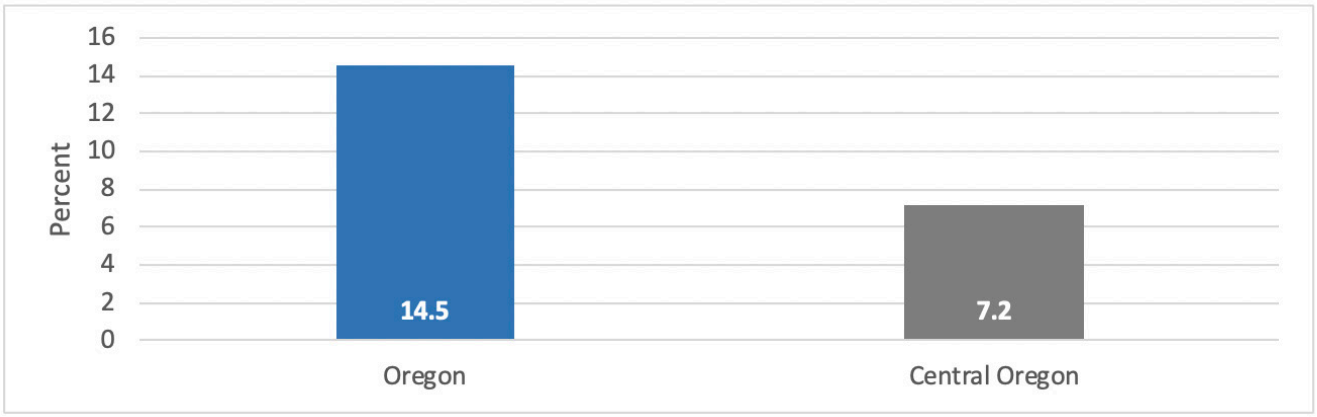


Figure 227. Percent of Central Oregon OHP-enrolled children (aged 1-21) who received at least two topical fluoride applications during 2015, "Oral Health in Oregon's CCOs 2017 report."



HEALTHY ENVIRONMENTS

"We used to be a small town and the public transit hasn't caught up."
- Deschutes County Youth

People interact with the environment constantly. As a result, where people live, learn, work, and play can dramatically affect health. These interactions can impact the quality of life, years of healthy life lived and can create health inequities (HealthyPeople.gov, 2019). Environmental health, "Addresses the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviors" (WHO, 2019). Environmental health aims to control or prevent disease, disability, and injury associated with the interactions between the environment and people, including air and water quality, the built environment, and consumer product exposures (HealthyPeople, 2019). Environmental Health Specialists in Central Oregon inspect and license several types of public facilities to assure public health and safety.

TRANSPORTATION

Transportation is a vital part of a community. It can increase access to services, move goods in and out of the area, and engage the community socially. Decisions made related to transportation impact communities and residents. There are a variety of ways to commute to school, work, and to get to and from our daily activities. How individuals choose to commute can either positively or negatively impact their own health and the health of others. In recent years, more focus has been placed on active transportation to help reduce chronic disease and obesity by encouraging commute options such as walking and bicycling. Decreasing traffic by increasing alternative transportation in communities can also decrease traffic-r elated pollution, which lessens environmental impacts on those living with chronic respiratory illnesses such as asthma (APHA, 2018). Focus groups throughout Central Oregon identified the need to work c ollaboratively across county lines to create healthy built environments that include effective and affordable public transportation systems, safe alternate commuting options, and community spaces.

Most Central Oregonians travel to work alone in a car, truck, or van. About 77% of Crook County residents, 75% of Jefferson County residents, and 74% of Deschutes County residents commute solo (Figure 230). Deschutes County had the highest proportion of residents who worked at home (10.4%) and the highest proportion of residents who walked or bicycled to work (4.5%) (Figure 230). Although 4.5% of Oregon residents travel to work using public transportation, very few Central Oregonians commuted to work using this means (Figure 230). The St. Charles phone survey identified lack of transportation as a

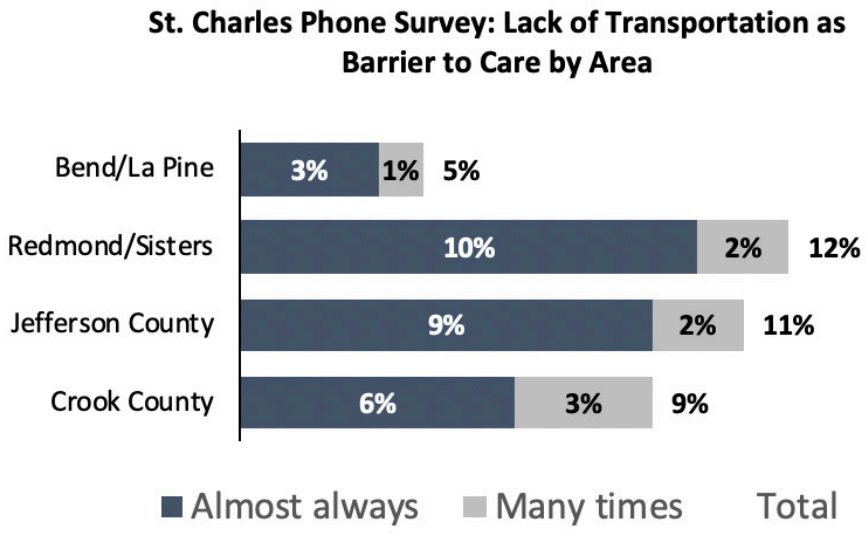
Forces of Change Focus Group Results: Design/Create Healthy Built Environments

Lack of **public transportation** affects many things, including access to care. This is especially true in rural areas, for veterans, and for those unable to drive such as older adults and people without drivers' licenses. Central Oregon can leverage bike-gifting programs, voucher programs, and other incentives for short term-solutions. Central Oregon should also consider creation of built environments that include more robust public transportation and alternative commute options as long-term solutions.

barrier to care throughout Central Oregon, especially outside of Bend. Lack of public transportation was also a main theme that arose during the Forces of Change and Community Themes and Strengths focus groups conducted throughout the region. In Central Oregon, lack of public transportation affects many things including access to care. This is especially true in rural areas for veterans, and for those unable to drive such as older adults and people without driver's licenses.

In Oregon overall, 16% of residents reported a commute time of fewer than 10 minutes, 32% between 10 to 19 minutes, and over 50% had a commute of over 20 minutes (Figure 228). Within Central Oregon, Crook County had the highest percentage of residents (29.2%) who reported a travel time to work of less than ten minutes, and Deschutes County had the most residents (65%) who reported travel time to work less than 20 minutes (Figure 228). Within Central Oregon communities, Warm Springs had the highest proportion of residents (58.4%) who reported travel time to work less than 10 minutes. La Pine and Redmond had the highest proportion of residents who reported travel time to work of 30 minutes or greater (43.7% and 26.8%, respectively) (Figure 229). Of the three Central Oregon counties, Crook County residents had the longest mean travel time to work (23.4 minutes), and Deschutes County had the shortest (18.5 minutes) (Table 42). Of the selected Central Oregon communities, La Pine had the longest mean travel time to work (23.9 minutes) and Warm Springs census-designated place had the shortest (10.1 minutes) (Table 42).

"... Even those that are using [public health services] struggle with transportation and miss appointments. Please start to recognize the barriers that some people come with."
- Central Oregon Community Partner



BRANDON NIXON PHOTO

Community Themes and Strengths Focus Group Results: Create Better Public Transportation and Built Environments

The region should work collaboratively across county lines to create healthy built environments that includes effective and affordable **public transportation systems, safe alternate commuting options, and community spaces.**

- There are not sufficient public transportation options for those who cannot drive (i.e. older population, those with disabilities, those who do not have access to a car, etc.), cannot afford to take time off work, veterans, and people living in rural areas. Central Oregon needs an affordable, reliable, and easy to access **public transportation system** for all purposes, including access to medical services.
- Infrastructure should be developed to promote **safe alternate commuting options** such as bicycling and walking. This includes more bike lanes, sidewalks, and safe road crossings. Community designers should also consider creation of **community spaces** where people can congregate, create a sense of community/ belonging for everyone, and where people can help one another.

Figure 228. Travel time to work, Oregon and Central Oregon counties, American Community Survey (ACS) 5-year estimates, 2013-2017.

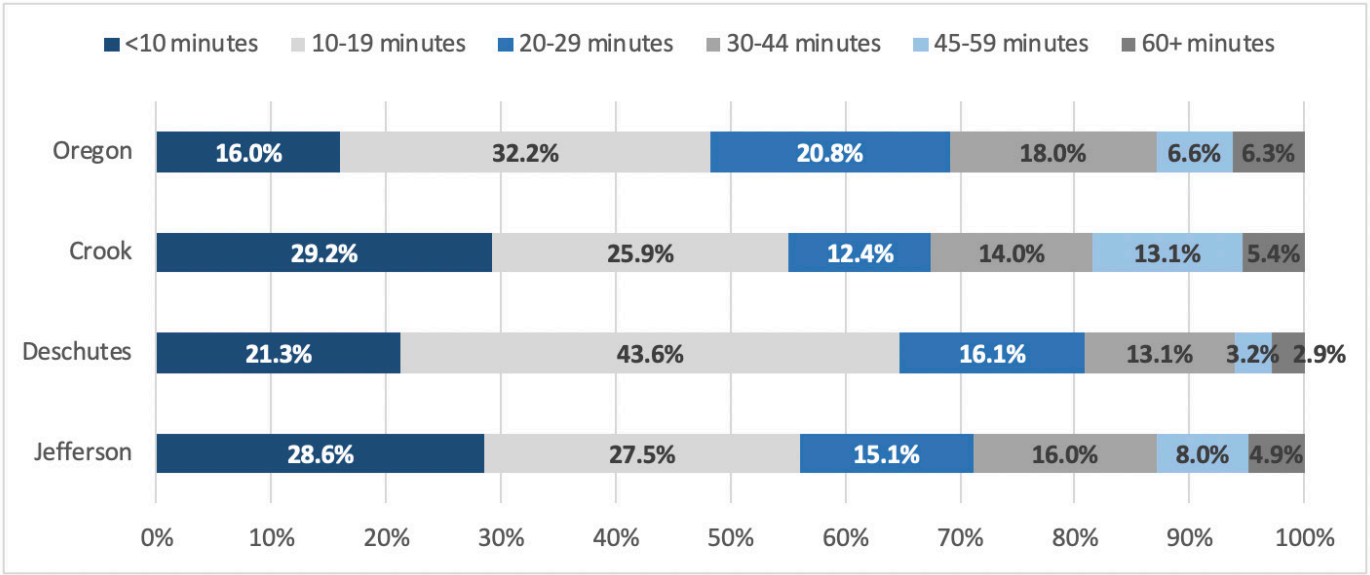
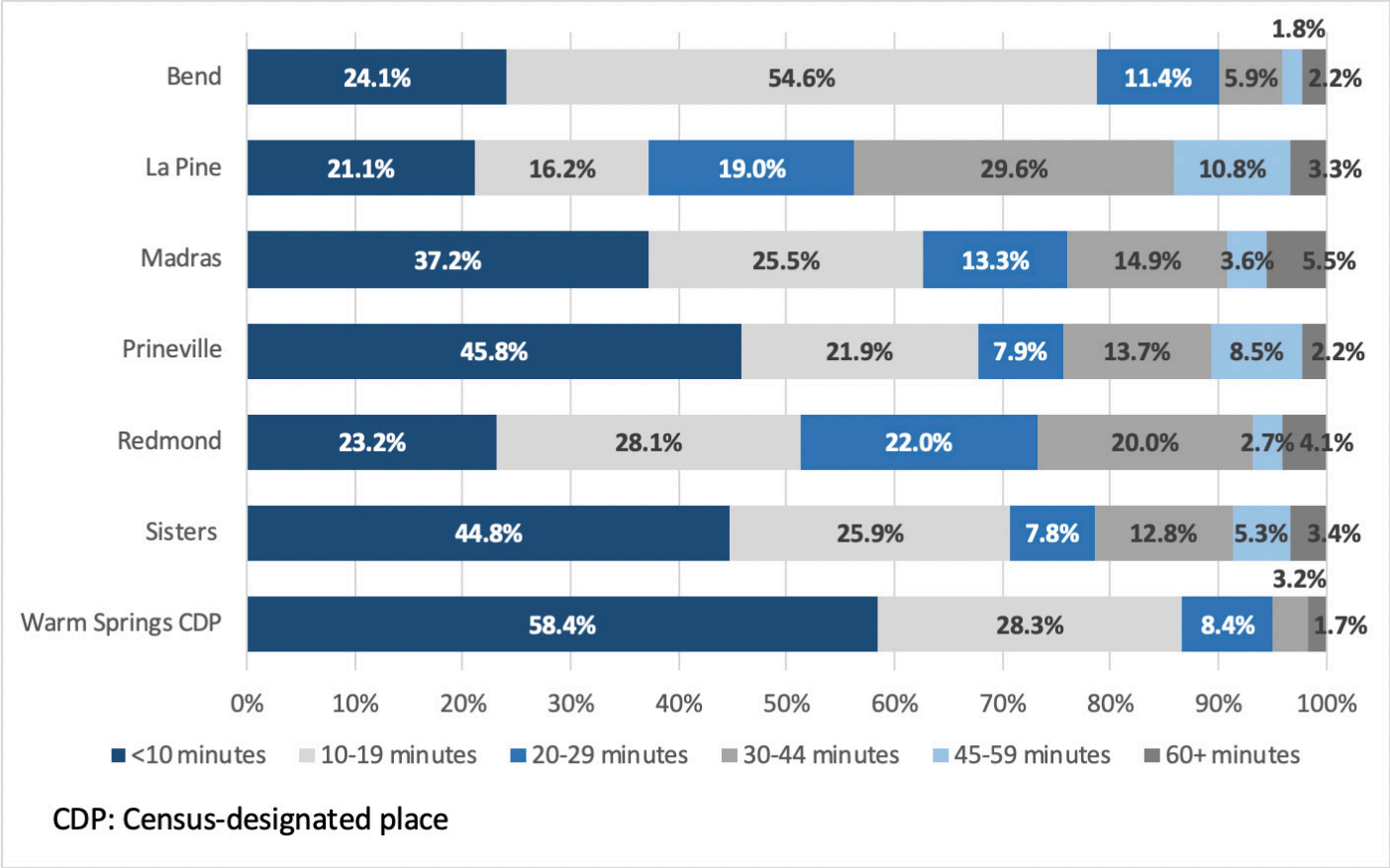


Figure 229. Travel time to work, selected Central Oregon communities, ACS 5-year estimates, 2013-2017.



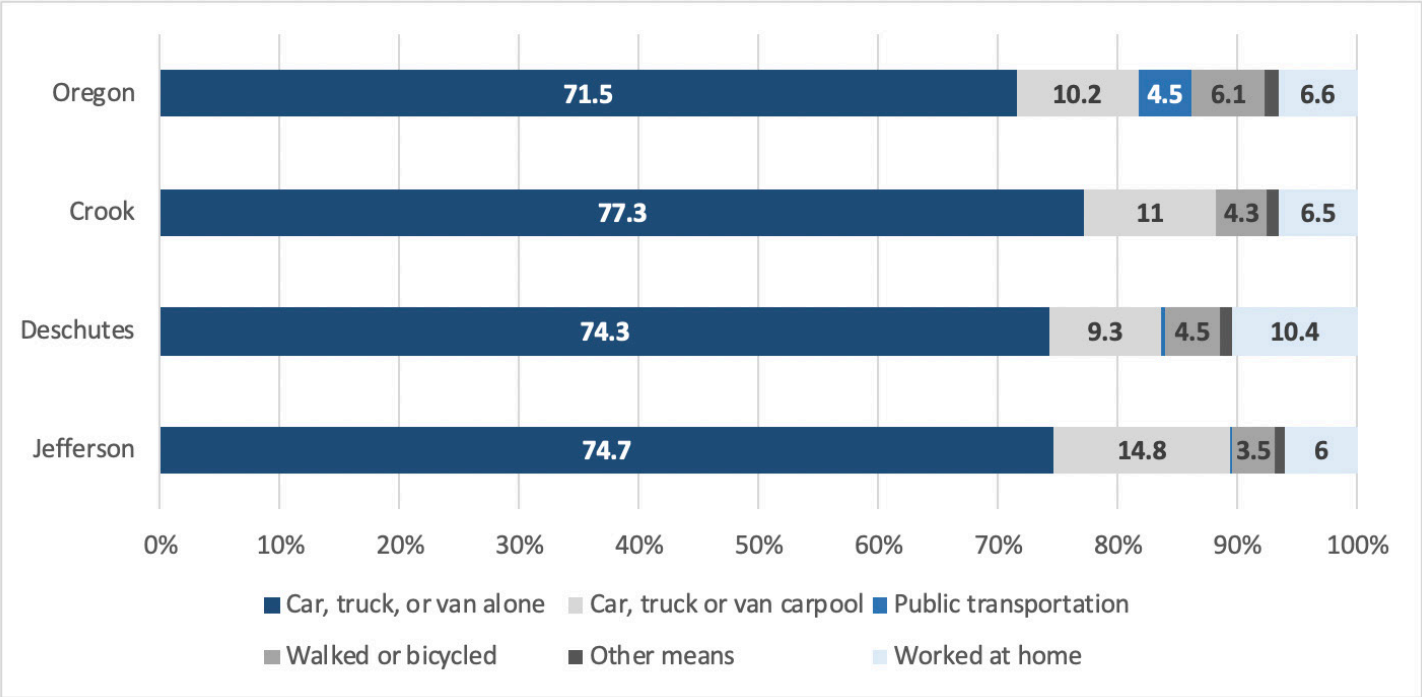
CDP: Census-designated place

Table 42. Mean travel time to work for Oregon, Central Oregon counties, and selected Central Oregon communities, ACS 5-year estimates, 2013-2017.

	Mean Travel time to work (in minutes)
Oregon	**23.5**
Crook County	**23.4**
Prineville	17.2
Deschutes County	**18.5**
Bend	15.3
La Pine	23.9
Redmond	21.1
Sisters	16.8
Jefferson County	**20.4**
Madras	18.4
Warm Springs CDP	10.1

CDP: Census-designated place

Figure 230. Means of transportation to work, ACS 5-year estimates, 2013-2017.



BUILT ENVIRONMENT

The term built environment refers to buildings, parks, plazas, streets, and transportation systems where individuals live, work, learn, and play (Frumkin, 2010; Centers for Disease Control and Prevention [CDC], 2011). These areas impact health in many ways, including how easy or difficult it is to access healthy foods, get jobs, or be physically fit. Ways that communities develop and conserve land, create and maintain roadways, and develop green spaces such as community parks, all impact the way an individual can live a healthy life (Frumkin, 2010). For instance, increased green space not only supplies the community with a place to be active and social (increasing physical and mental health) but also supplies the environment with natural landscaping, which helps control the climate (i.e. lowers rising temperatures). The built environment can be improved through regulatory measures such as building or zoning codes, or through actions such as funding to increase safe routes to schools (building sidewalks and/or bike lanes) or supporting local parks.

During Forces of Change focus groups, the built environment was mentioned as a need, specifically related to public transportation to help decrease social isolation. Also when designing, planning, and developing community spaces, green space and health should be considered in Central Oregon communities.

In Central Oregon, Jefferson County had the highest number of grocery stores per 1,000 population (0.32) and Crook County had the highest number of SNAP-authorized stores per 1,000 population (1.00) (Figure 231), however, according to community residents, access to affordable fresh produce can still be a challenge. Of the three Central Oregon counties, Deschutes County had the highest number of fast food restaurants per 1,000 population (0.79) and the highest number of full-service restaurants per 1,000 population (1.14) (Figure 232). Of the three Central Oregon counties, Jefferson County had the highest number of recreation and fitness facilities per 1,000 population (0.18) and Crook County had the lowest (0.10) (Figure 233).

Forces of Change Focus Group Results: Design/Create Healthy Built Environments

The region should work with county commissioners, city planners, policy makers, and collaborative groups to advocate for **community spaces, green space, and health considerations** when planning (Health in All Policies). This region should include creation of age-appropriate opportunities and consider ways to subsidize alternative energy sources that make sense for our region.

Social isolation is a growing concern, especially for older adults, youth, pregnant women, migrant workers, and individuals who identify as Hispanic. Central Oregon should leverage parks and recreation opportunities, as well as school activities, to help increase social connectivity. These activities should be accessible, affordable, and safe for everyone.

Figure 231. Number of grocery stores per 1,000 population (2014) and number of SNAP authorized stores per 1,000 population (2016), Food Environment Atlas, United States Department of Agriculture.

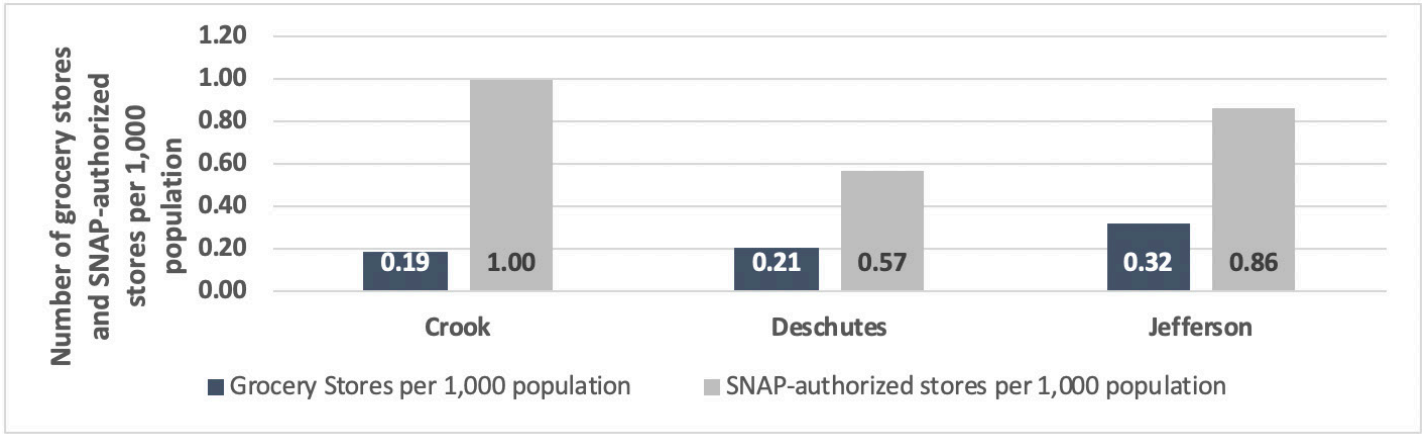


Figure 232. Number of fast food restaurants and full-service restaurants per 1,000 population, Food Environment Atlas, United States Department of Agriculture, 2014

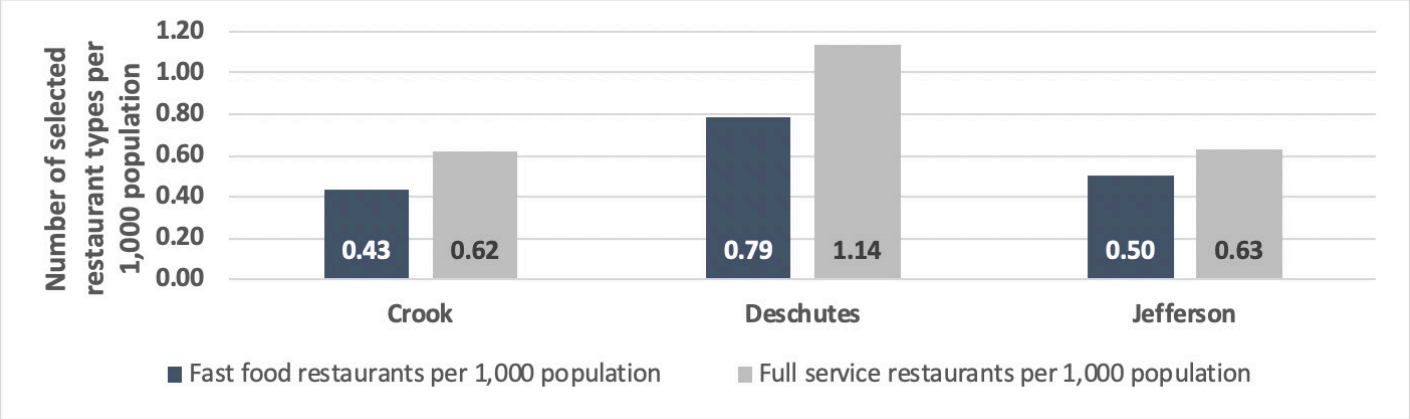
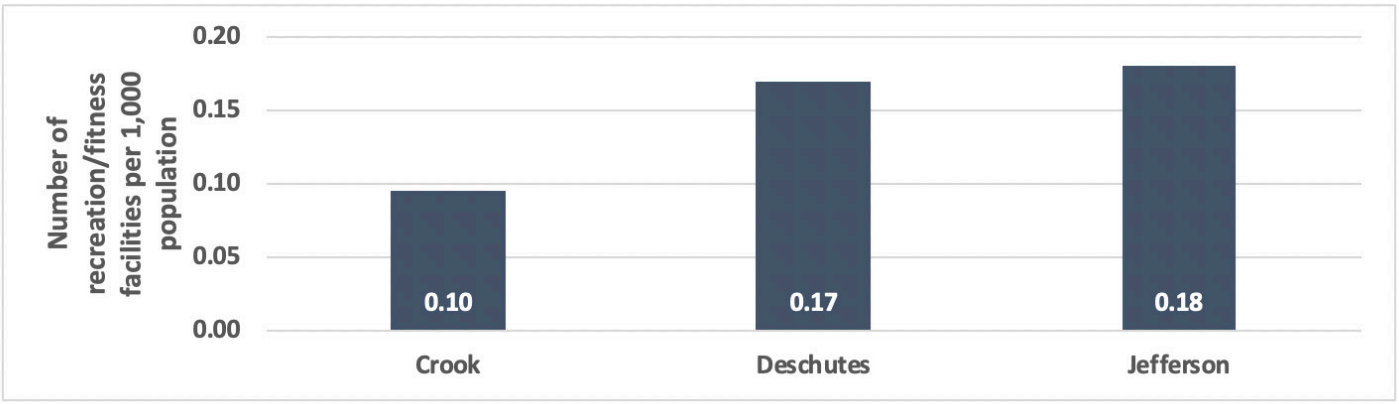


Figure 233. Number of recreation and fitness facilities per 1,000 population, Food Environment Atlas, United States Department of Agriculture, 2014



WATER QUALITY

Water contains varying levels of inorganic and organic compounds, like minerals, microorganisms, lead, nitrates, sulfates, radon, and other chemicals. Water quality refers to the levels of these compounds in the water. Water quality can be classified into several categories based on its use. For example, there are water quality standards for human consumption, use for agriculture and irrigation, domestic use, and environmental water quality (lakes and rivers). Oversight on the community's water quality can ensure safe drinking water standards as well as lowered water pollution.

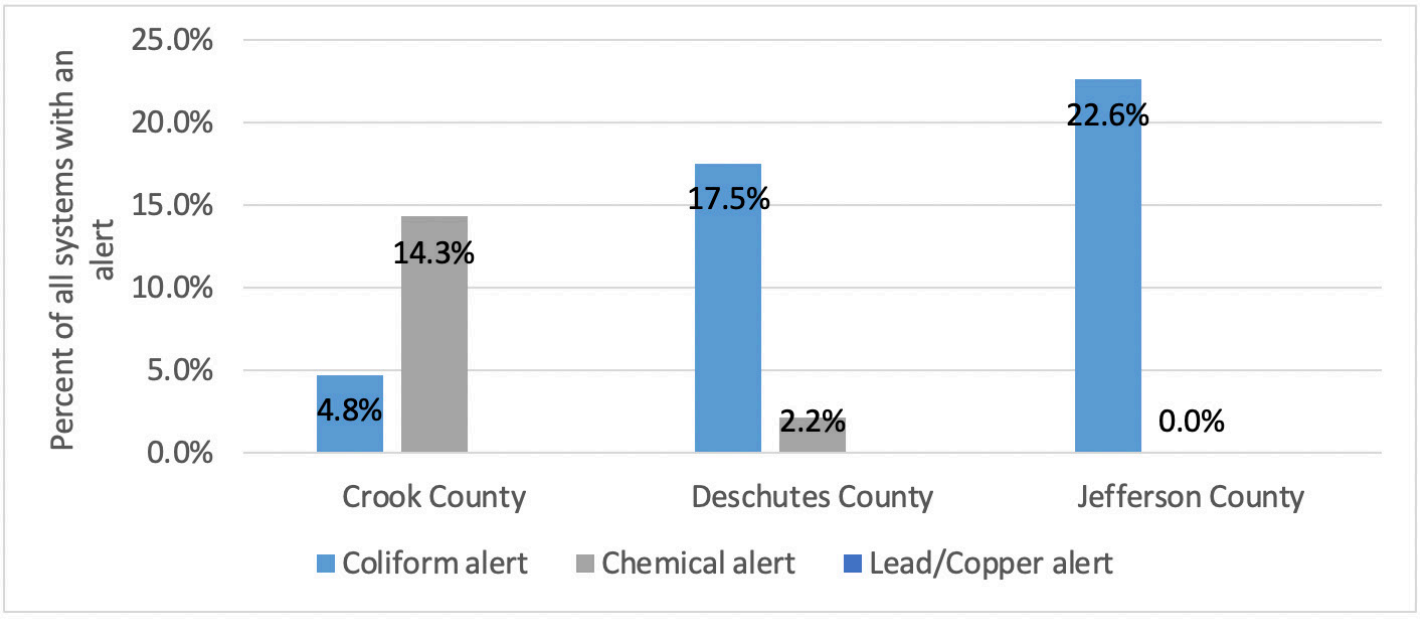
Over 20% of Jefferson County drinking water systems, 18% of Deschutes County drinking water systems, and 5% of Crook County drinking water systems had a coliform alert in 2018 (Figure 234). Approximately 14% of Crook County water systems had a chemical alert in 2018 (Figure 234).

Forces of Change Focus Group Results: Prepare for Forest Fires and Drought

Forest fires and drought are a growing concerns for Central Oregon. The community should:

- Explore emergency preparedness for potential catastrophic wildfire.
- Offer overall education and resilience planning for climate change.
- Preserve the natural areas we still have.

Figure 234. Percent of all active drinking water systems that had an alert by county, OR Drinking Water Quality Database, 2018



AIR QUALITY

Air quality refers to the number of pollutants in the air and can refer to either indoor or outdoor air. Research has identified six pollutants highly correlated to health. They are ozone, particulate matter, nitrogen oxides, sulfur oxides, carbon monoxide, and lead. The amount of these pollutants (except lead) in the air can be classified using the Air Quality Index, which is an air quality management strategy. Air pollution patterns are assessed to better understand what the community might be exposed to, with the goal of decreasing health risks. The Air Quality Index provides a health warning about the levels of pollution per day to help sensitive individuals avoid the outdoors when necessary (Frumkin, 2010). The higher the index score, the worse the air quality. There are several chronic health conditions connected to poor air quality, such as respiratory diseases like asthma, changes in lung functioning, as well as adverse pregnancy outcomes, cardiovascular diseases, and potential death. Ways one can improve air quality and/or avoid exposures include ensuring that the indoor environment is well-ventilated and surfaces are clean from dust or mold build-up, removing irritants such as aerosols, checking the community's Air Quality Index, avoiding secondhand smoke, avoid heavily trafficked areas, and carpooling and/or alternative modes of transportation such as walking or biking (National Institute of Environmental Health Sciences, 2019).

In Central Oregon, the number of unhealthy days for asthma or other lung disease increased from 2008 to 2017. Based on data from 2018 in Bend, particulate matter in the air was highest in the summer months (August and September), the increase possibly due to wildfire smoke (Figure 235 and 236).

Want more information on Air Quality?

ENVIRONMENTAL PROTECTION AGENCY AIR NOW:

WWW.AIRNOW.GOV/

CENTRAL OREGON FIRE INFORMATION:

HTTP://WWW.CENTRALOREGONFIRE.ORG/

CENTER FOR DISEASE CONTROL AND PREVENTION AIR QUALITY:

WWW.CDC.GOV/AIR/DEFAULT.HTM

Figure 235. Mean Particulate Matter (PM) 2.5 in 2018, Bend Pump Station

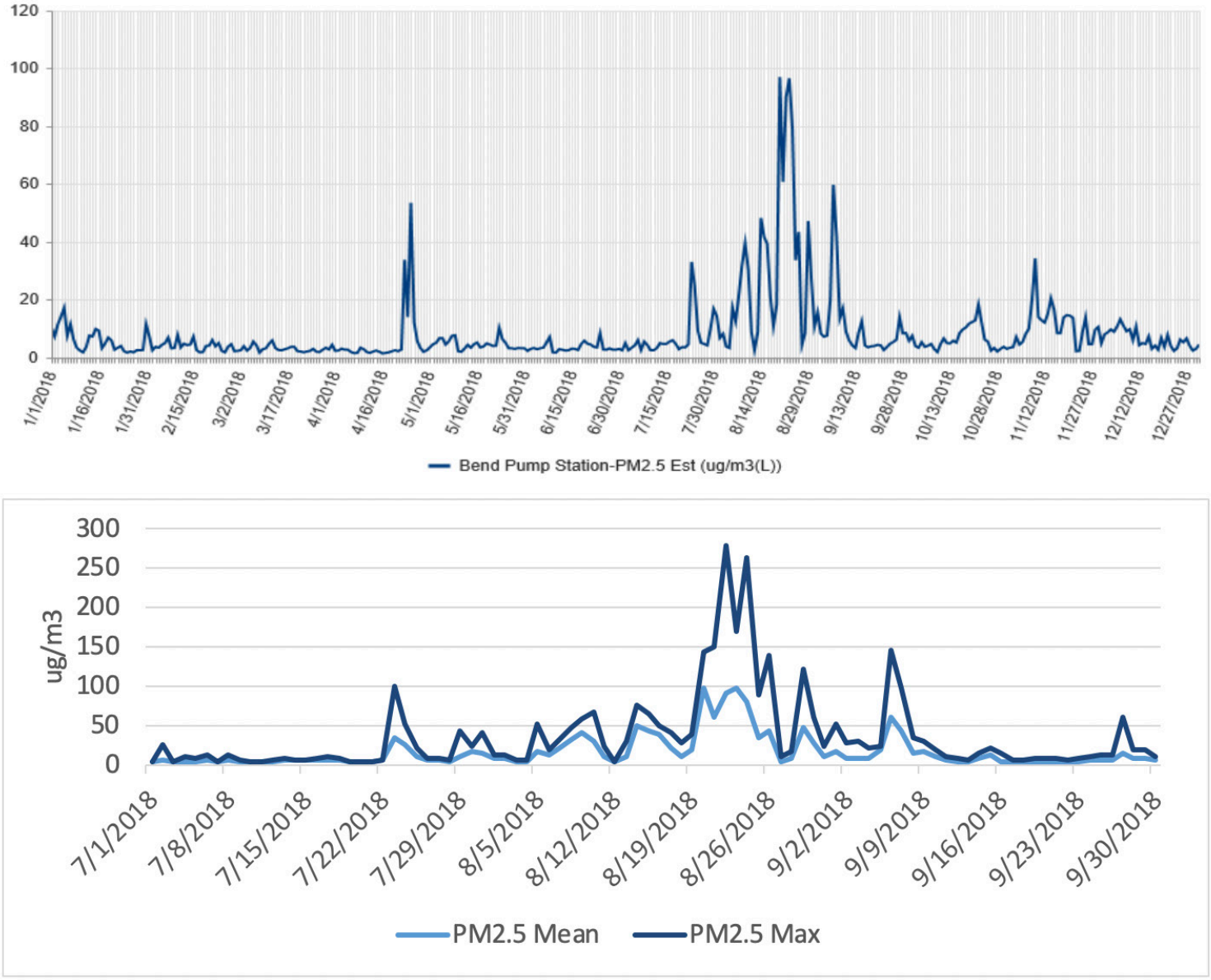
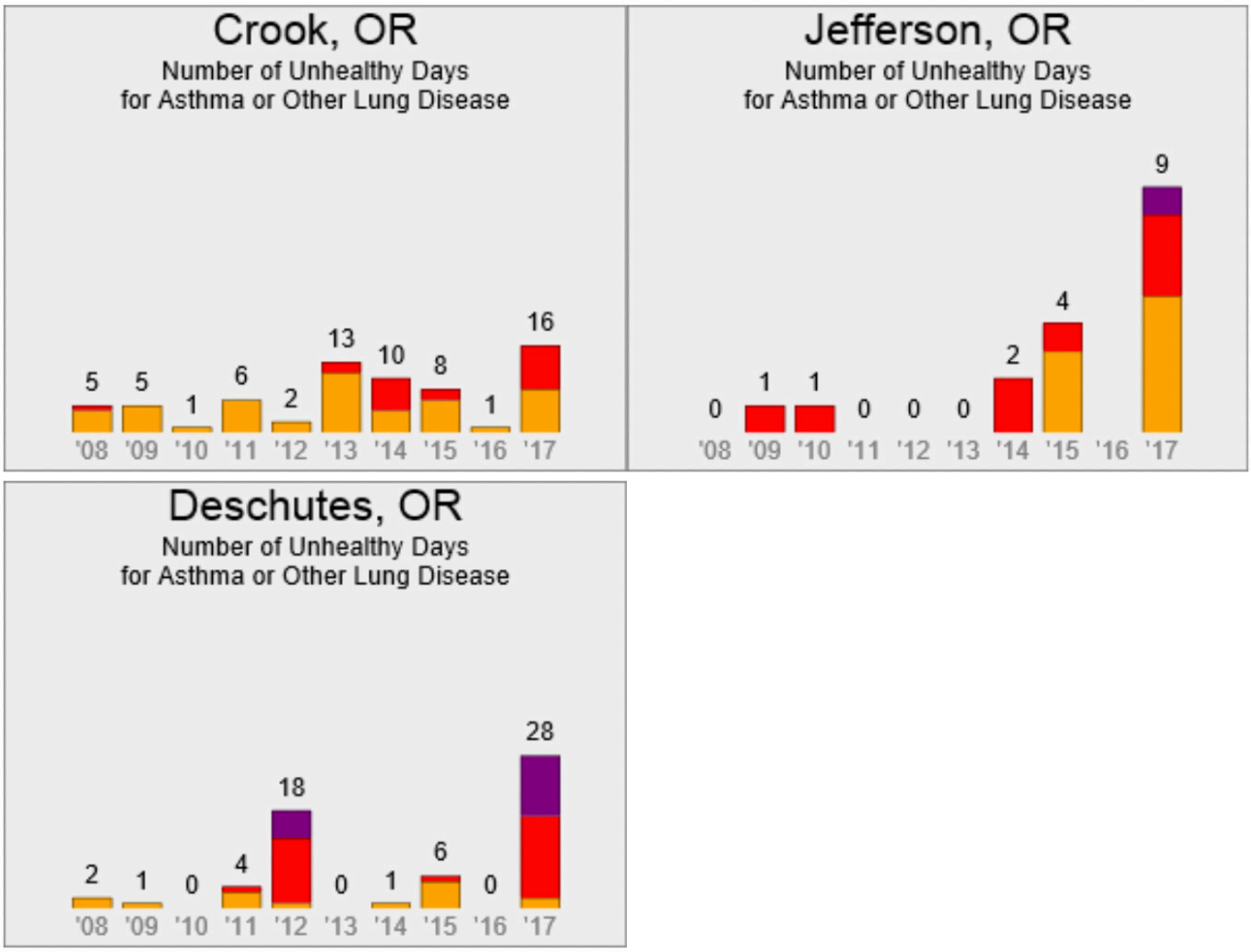


Figure 236. Number of Unhealthy Days for Asthma or other lung diseases, Crook, Jefferson, and Deschutes County, 2008-2017.



Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants, there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health alert: everyone may experience more serious health effects.
Hazardous	301 to 500	Health warnings of emergency conditions. The entire population is more likely to be affected.

Note: Values above 500 are considered Beyond the AQI. Follow recommendations for the "Hazardous category." Additional information on reducing exposure to extremely high levels of particle pollution is available here: https://www.airnow.gov/index.cfm?action=aqibasics.pmhilevels.

KURT WINDISCH PHOTO

Want more information on climate and health?

CENTRAL OREGON CLIMATE WISE REPORT:

HTTPS://CLIMATEWISE.ORG/IMAGES/PROJECTS/CENTRAL-OREGON-REPORT-FINAL.PDF

ENVIRONMENTAL PROTECTION AGENCY CLIMATE RESEARCH:

WWW.EPA.GOV/CLIMATE-RESEARCH

CENTER FOR DISEASE CONTROL AND PREVENTION CLIMATE AND HEALTH:

WWW.CDC.GOV/CLIMATEANDHEALTH/DEFAULT.HTM

CLIMATE

Climate refers to the data accumulated over long periods of time on the weather patterns connected to wind, temperature, humidity, precipitation, and other components. Changes in climate, directly and indirectly, impact the health of Central Oregonians. In January 2017, the Third Oregon Climate Assessment Report was released by the Oregon Climate Change Research Institute. The report outlines major climate change-related risks to human health. More frequent heat waves are expected to increase heat-related illness and death. More frequent wildfires and poor air quality are expected to increase respiratory illnesses. Warmer temperatures and extreme precipitation are expected to increase the risk of exposure to some vector and waterborne diseases. Access to sufficient, safe, and nutritious food may be jeopardized by climate change. Extreme climate or weather events, or even the threat of one, can lead to adverse, and sometimes lasting, mental health outcomes.

- **Rising temperatures and heat waves.** Data presented in the report predicts that Oregon's average temperature will warm by 3 to 7 degrees Fahrenheit by the 2050s. Extreme temperatures and increased frequency of heat waves will lead to increased heat-related illness and death, as well as the potential for increased risk of exposure to certain vector and water-borne diseases.

- **Wildfires**. Increased frequency of wildfires and longer wildfire seasons will result in a greater risk of wildfire smoke exposure, reduced air quality, and increased respiratory illness.

- **Changes in precipitation.** Annual precipitation is projected to increase slightly, but summers are expected to warm more than the annual rate and are likely to become drier. Precipitation in the mountains is expected to fall less as snow and more as rain, affecting the timing and amount of water resources. This could result in a greater risk of water scarcity. People living in the John Day River Basin are particularly vulnerable to the declining snowpack. Extreme precipitation events could also increase the risk of exposure to waterborne pathogens due to runoff and combined sewer outflows.

The health impacts of climate change in Oregon are expected to disproportionately affect vulnerable populations. Those identified in the report at highest risk in Oregon include "the elderly, the young, pregnant women, the poor, persons with chronic medical conditions, persons with disabilities, outdoor workers, immigrants, and limited English proficiency groups, and indigenous peoples." Forces of Change focus groups in Central Oregon also highlighted how changing climate is impacting the region. Forest fires and drought are growing concerns for Central Oregon.

ACCESS TO CARE

"[A major health concern is] getting quality care no matter what insurance you have. Doctors treat [people] different by insurance."
- Jefferson County Resident

Ensuring equal access to health care is important. Topics previously discussed highlight factors that affect access to health care, like socioeconomic status, language or cultural barriers, and transportation. Access to quality and comprehensive health care is vital to achieving health equity and increasing quality of life for all. In 2017, roughly 12.8% of the US population between the ages of 18 and 64 years old were uninsured, and roughly one in four individuals did not have a regular primary care provider at a designated health center (CDC, 2017). When there is a lack of access to health coverage and health services, preventable health conditions may not be managed. In Oregon, Coordinated Care Organizations (CCOs) have strategies to improve access to care. PacificSource is the designated CCO for Central Oregon and supports the transformation of health care within the region.

St. Charles Community Phone Survey: Insurance Coverage

Across the region, 92% of residents report carrying health insurance, and about half carry dental (55%) and vision (50%) insurance.

St. Charles Community Phone Survey: Barriers to Seeking Care

Residents say that cost prevents them from seeking care "almost always" or "many times" (27%). Similarly, about one in four residents say that they are almost always, or many times prevented from seeking care because it takes too long to get an appointment (23%).

Per the St. Charles phone survey, cost and time are some of the main reasons people report difficulty accessing care. Difficulty accessing care was also heavily reflected in community focus groups. Access to behavioral health services was the most frequently mentioned health need in Central Oregon and access to timely care and specialty care was the second most frequently mentioned concern. Community members explained that access to all types of affordable health care, including oral health, physical health, reproductive health, obstetrics, behavioral health, and specialty care, is a concern throughout Central Oregon, especially in rural areas.

Community Themes and Strengths Focus Group Results: Decrease Wait Times and Promote Specialty Care

Access to all types of affordable health care (oral health, physical health, reproductive health, obstetrics, behavioral health, specialty care, etc.,) is a concern throughout Central Oregon, especially in rural areas and for **specialty care**. The region is growing fast; however, resources are not keeping up with growth.

- **Wait times** for appointments are too long, especially for those on Medicaid and Medicare, making it even more complex and difficult to **navigate the health system**. To help with this, Central Oregon should work to assure materials are at an appropriate reading level, help people navigate the complex system (especially for preventive care), and assure that people receive equal access regardless of insurance. This includes increasing the number of providers who accept Medicaid and Medicare and increasing the number of Medicaid-insured patients seen.
- Central Oregon needs more services in **rural communities**. This could include mobile units or other strategies to provide basic care and services outside of main population centers.
- To facilitate access to care, Central Oregon should consider replicating successful models of **care integration and care coordination** (one stop shop) so that people do not have to go to as many appointments, better understand their options, and do not have to travel to so many locations. This is especially important for those who cannot drive (i.e. older adults, those with disabilities, those who do not have access to a car, etc.), cannot afford to take time off work, and those who have to travel long distances. Care coordination should focus on helping people understand available resources and helping them navigate a complicated system.

HEALTH INSURANCE STATUS

Health care insurance and the status of an individual's health insurance coverage can impact their quality of life and health outcomes. To increase access to needed, appropriate, quality care, the United States aims for every American to be insured. The quality of insurance coverage, what is covered, and the cost of care often impacts a person's decision about whether or not to seek health care, which in turn affects health outcomes and quality of life. The Affordable Care Act (ACA) increases health care coverage for Americans. This includes Medicaid expansion to increase health care coverage for low-income individuals and families as well as provide a central location (Marketplace) to shop for health care insurance plans. Throughout Oregon, Medicaid is also referred to as the Oregon Health Plan (OHP).

"Much of our health care and diagnostic needs are in Redmond or Bend. Transportation can be difficult for some people, especially our seniors."
- Crook County Resident

In 2017, roughly 28.5 million Americans did not have health insurance coverage at any point during the year (United States Census Bureau, 2018). Seven percent of Oregon's population in 2017 was uninsured, roughly 287,000 individuals (Henry J. Kaiser Family Foundation, 2019). In Oregon, the largest population who were insured in 2017 were insured through their employer (47%), followed by those insured through the Oregon Health Plan (OHP) at 23%.

In Central Oregon and Oregon overall, the highest proportion of uninsured individuals were between 18 to 64 years of age, and the lowest proportion uninsured were those over 65 years of age. Within Central Oregon, Jefferson County had the largest rate of uninsured individuals, nearly one-in-four (Figure 237). With the exception of Crook County, the proportion of residents who are uninsured was higher among those who are Hispanic or Latino. In Deschutes County, for example, approximately 28% of Hispanic or Latino residents did not have health insurance, compared to 12% of non-Hispanic or Latino residents (Figure 238). In addition, across all three Central Oregon counties, those with less than a high school level of education were the highest percentage uninsured. For instance, in Jefferson County, roughly 30% of people with less than a high school education were uninsured, compared to around 8% of those who had a bachelor's degree or higher (Figure 239).

Most people in Central Oregon insured through OHP, were younger than age 65, with the greatest number of people between the ages of 0 and 5 (Figure 240). Most Central Oregon OHP members thought they received appointments/care when needed (85%), and most received needed information/help and thought they were treated with courtesy and respect by customer service staff (92%) (Figure 241).

Figure 237. Percent of the population who are uninsured, by age group, ACS, 2012-2016 5-year estimates.

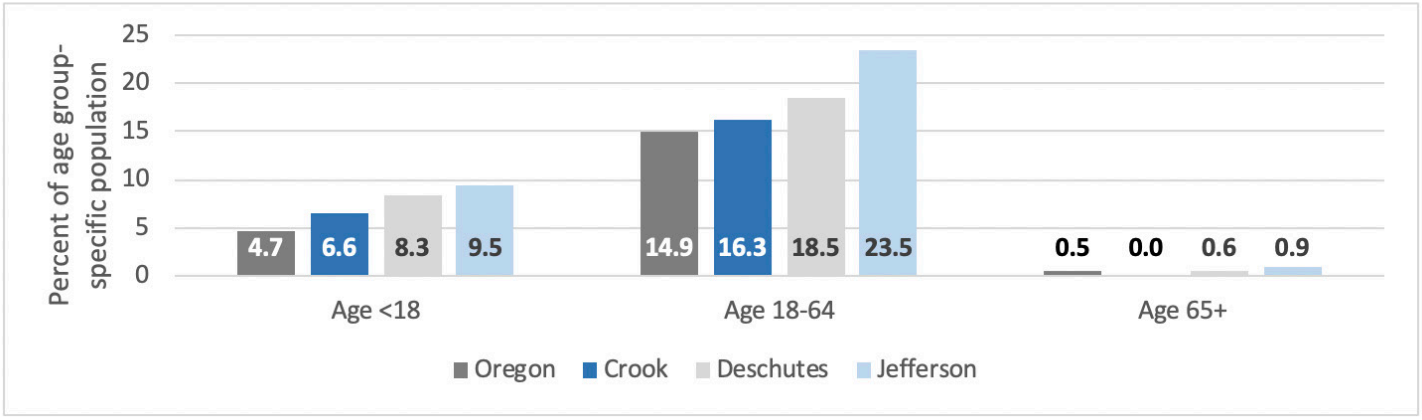


Figure 238. Percent of the population who are uninsured, by ethnicity, ACS, 2012-2016 5-year estimates.

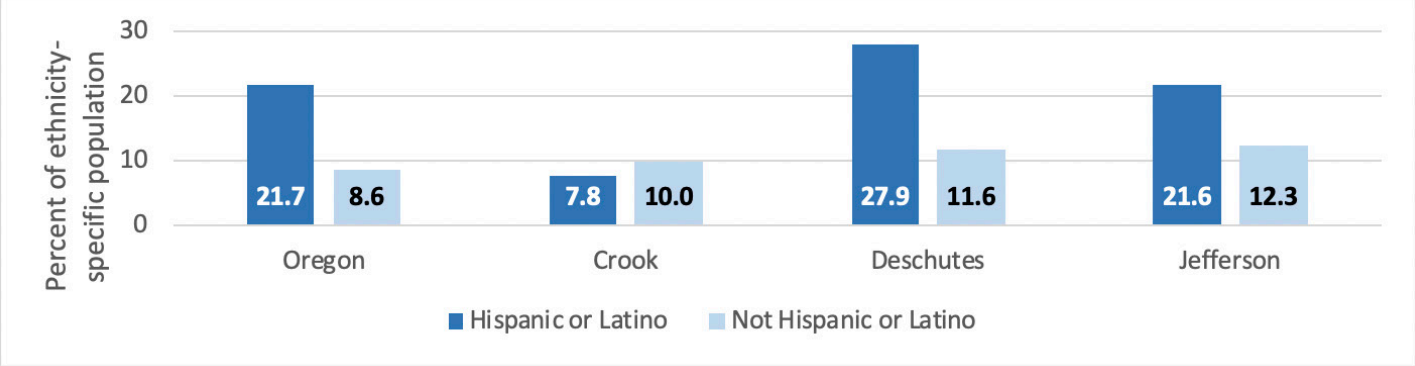


Figure 239. Percent of the population who are uninsured, by educational attainment, ACS, 2012-2016 5-year estimates.

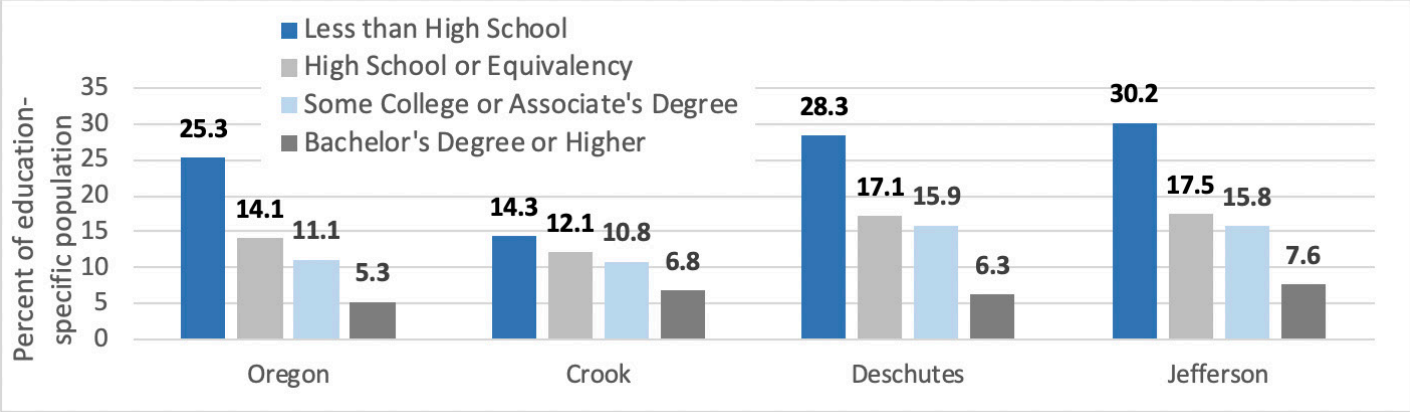
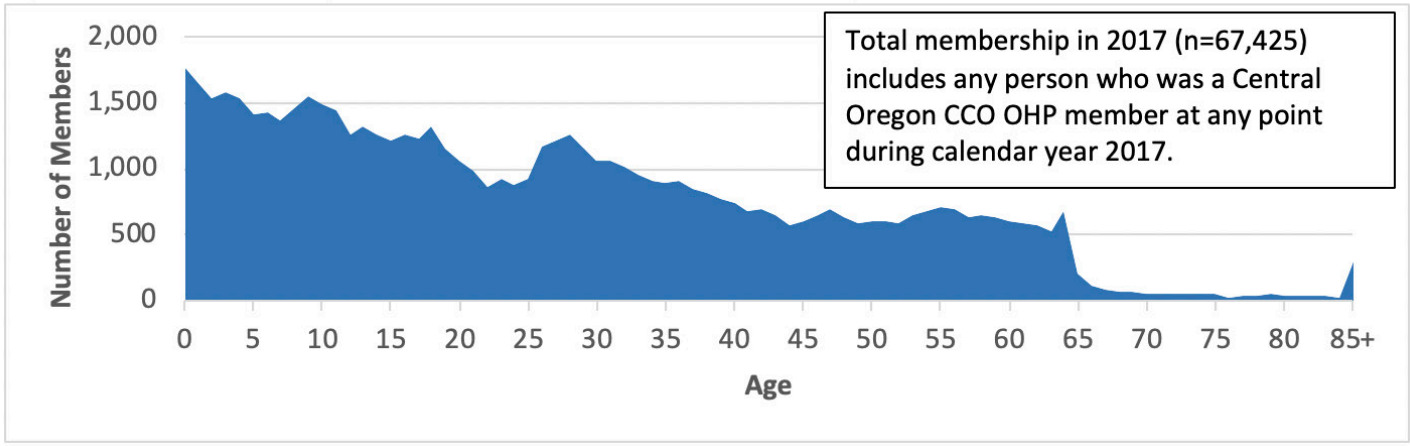


Figure 240. Central Oregon CCO total OHP membership* by age, 2017.



Force of Change Focus Group Results: Leverage Technological Advancements

Technology changes so rapidly the health system is in a constant state of reaction. The region should proactively plan for the pros and cons technology brings to the table. For instance, communication and services with clients can be improved through: telemedicine, texting, patient portals, care coordination, and social determinant of health questions in electronic health record (EHR) systems.

Within organizations, video conferencing for staff and management saves time traveling, creating increased efficiencies. The region should also consider how changing contexts, such as driverless cars and other coming changes, will potentially affect health and access to care.

In contrast, the health system should consider how increased screen time, cyber-bullying (youth), and decreased social connectivity impacts health.

Figure 241. Quality measures for Central Oregon OHP members, CAHPS Survey, 2017.

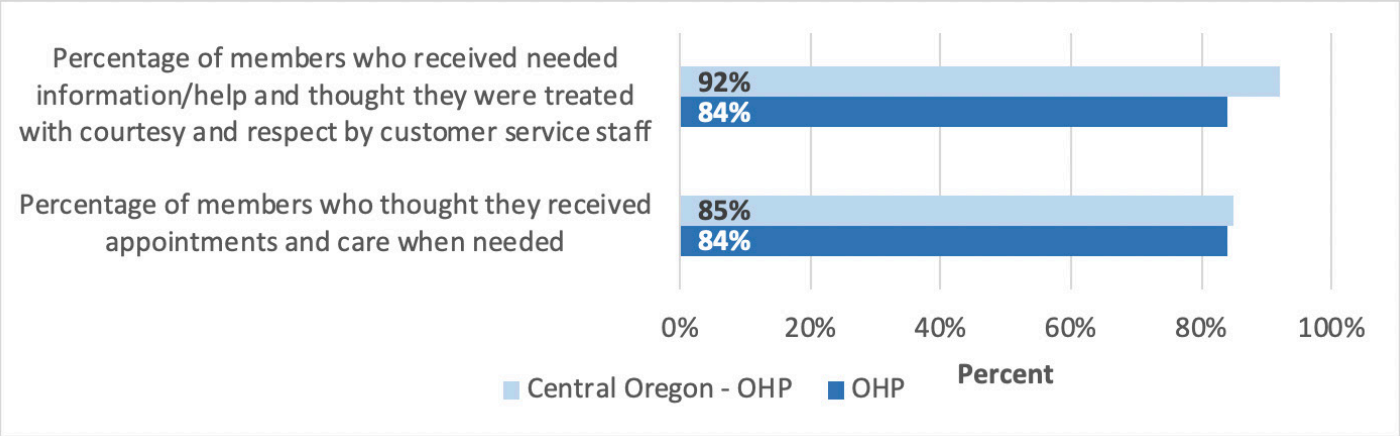
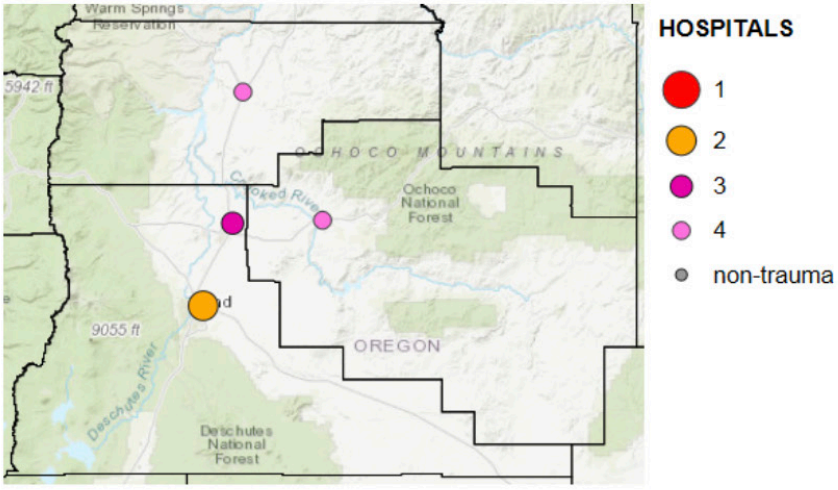


Figure 242. Emergency medical services locations in Central Oregon, Oregon Health Authority, Oregon Emergency Medical Services, and Trauma Systems Program, 2018



EMERGENCY MEDICAL SERVICES

There are four trauma-designated hospitals in Central Oregon. There is one level-2 (orange circle) hospital in Bend, one level-3 (dark pink circle) hospital in Redmond and two level-4 (light pink circle) hospitals, one in Madras and one in Prineville (Figure 242).

AREAS OF UNMET HEALTH CARE NEED AND HEALTH CARE PROVIDER WORKFORCE/SHORTAGES

Health Care Provider Workforce/ Shortages

When a community has ample people to provide health care services, the level of care, access, patient satisfaction, and outcomes improve. The availability of providers is essential for an efficient and effective health care system and professional shortages can limit access to care and delay timely care. Understanding the projected needs of Central Oregon can help communities understand the number and type of providers that are needed. When a population changes, so do the needs of the health care workforce.

Areas with limited health care workforce are often classified into Health Care Provider Shortage Areas (HPSA) and Medically Underserved Areas or Populations (MUA/P). Areas qualify as an HPSA because of a high population to low provider ratio. This includes having specialized care that is either not available or is at or over capacity in the surrounding areas. Additionally, certain types of facilities and population groups within a geographic area are eligible for designation. HPSAs may be designated as having a shortage of primary medical care, dental care, or mental health providers. MUA/Ps are identified by measuring population to provider ratios, infant mortality rates, and other key data. There are federally defined rules that identify which data to use to define an HPSA and MUA/P (HRSA). Five distinct types of designations are available:

- Geographic: The entire population in the designated area is identified as underserved and resources are considered over-utilized.
- Population: An underserved population is identified within a specific area. Eligible populations include:
  - Low-income: There must be at least 30% of the population at or below 200% of the Federal Poverty Level.

  - Migrant farmworkers: Migrant farmworkers and their non-farm working family members.
  - American Indians: American Indians or Alaska Natives that are not part of a group that is already automatically designated.
  - Other populations that face access barriers due to language, cultural, or disability barriers.
- Facility: A facility that may or may not be in a designated area, but that serves residents located from a shortage area.
- Federal and state correctional facilities that are considered either a maximum- or medium- security facility.
- Federally recognized tribes.

UNMET HEALTH CARE NEED

Unmet health care needs can be defined as, "the difference between the services judged necessary and the services actually received, and stem from barriers related to accessibility, availability, and acceptability" (Pappa et al., 2013, p. 2017). Rural areas often experience higher rates of unmet health care needs due to things like a lower number of providers, medical and health service options, socioeconomic status, and lack of transportation choices. In response to a mandate from the Oregon Legislature, the Oregon Office of Rural Health produces a report to measure the unmet health care needs and services in the rural areas of the state. This entity defines rural as any geographic area in Oregon that is 10 or more miles from the center of a community with 40,000 or more individuals (Oregon Health & Sciences University, 2017).

In Central Oregon, Warm Springs had the lowest score (33), indicating the highest level of unmet needs and Sisters had the highest score (67), indicating the lowest level of unmet needs (Table 43). La Pine, Madras, Prineville, and Warm Springs all had lower scores (indicating higher levels of unmet needs) compared to Oregon as a whole (mean 46.2) (Table 43). Bend, Sisters, and Redmond have higher scores than Oregon as a whole. The La Pine service area, which includes portions of northern Klamath County, had a score of 42 (Table 43).

PRIMARY CARE CAPACITY

Primary care capacity compares the estimated visits that providers in the area should be able to supply with the estimated primary care visits needed by the local population. Primary care providers include general and family physicians, pediatricians, obstetrician-gynecologists, internists, primary care physician assistants, and primary care nurse practitioners. A ratio of one or higher means that the demand for primary care visits is met by the current number of primary care providers in that geographic area.

The estimated primary care capacity ratio across the state of Oregon is 0.93. Bend (1.14) and Warm Springs (1.33) have a higher primary care capacity ratio than the state average. Sisters, Madras, Redmond, and Prineville have a lower ratio of primary care capacity ratio than the state average. The La Pine service area, which includes portions of northern Klamath County, was similar to Prineville and Sisters with a primary care capacity ratio of 0.5 (Figure 244).

Table 43. Unmet health care need by service area, areas of unmet health care need in Oregon report, Oregon Office of Rural Health, 2018.

	Oregon	Bend	La Pine*	Madras	Prineville	Redmond	Sisters	Warm Springs
Total/summary score	**46.2**	**65**	**42**	**42**	**38**	**56**	**67**	**33**
Primary care capacity ratio	0.93	1.14	0.49	0.83	0.45	0.57	0.53	1.33
Mental Health providers per 1,000 population	1.68	2.38	0.37	0.66	0.32	0.51	0.82	0.51
Dentists per 1,000 population	0.45	0.51	0.19	0.21	0.27	0.40	0.46	0.44
Preventable hospitalizations per 1,000 population	8.6	6.0	12.0	9.7	13.2	7.9	6.0	18.4
Inadequate prenatal care	56.5	30.9	66.1	84.1	46.3	38.1	9.9	154.5
Non-traumatic dental ED visits per 1,000 population	4.7	2.8	4.3	10.8	0.6	4.8	1.1	17.6
Mental Health/Substance Abuse ED visits per 1,000 population	16.3	13.2	11.4	17.2	20.1	14.4	8.4	47.0
*La Pine service area includes portions of northern Klamath County								

Figure 243. Central Oregon "overall unmet need" scores, Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018

Note: 9 variables are used to calculate "overall unmet need" scores for each of Oregon's 130 primary care service areas. Possible scores range from 0-90 with lower scores indicating a higher unmet need.

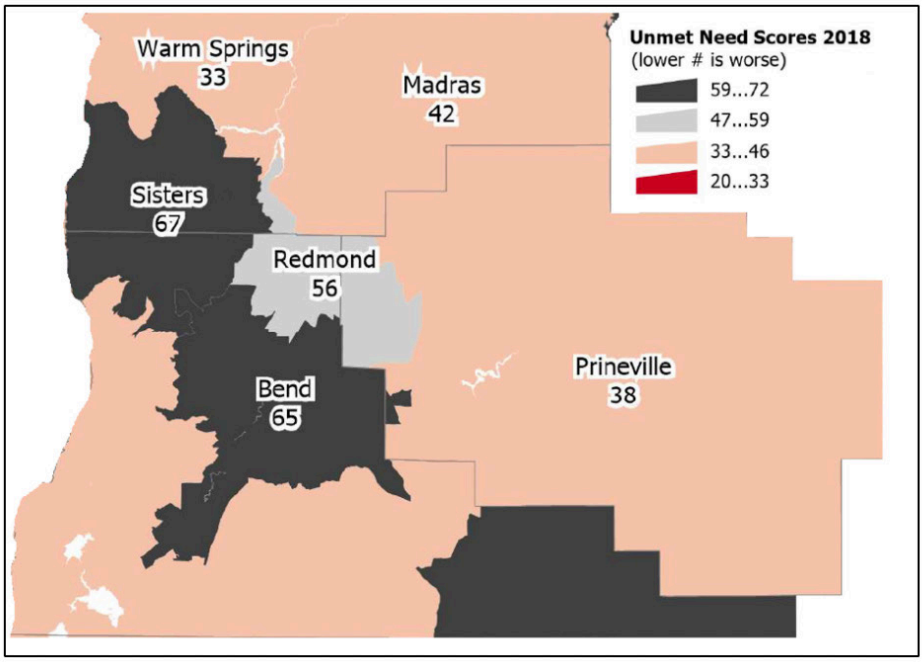
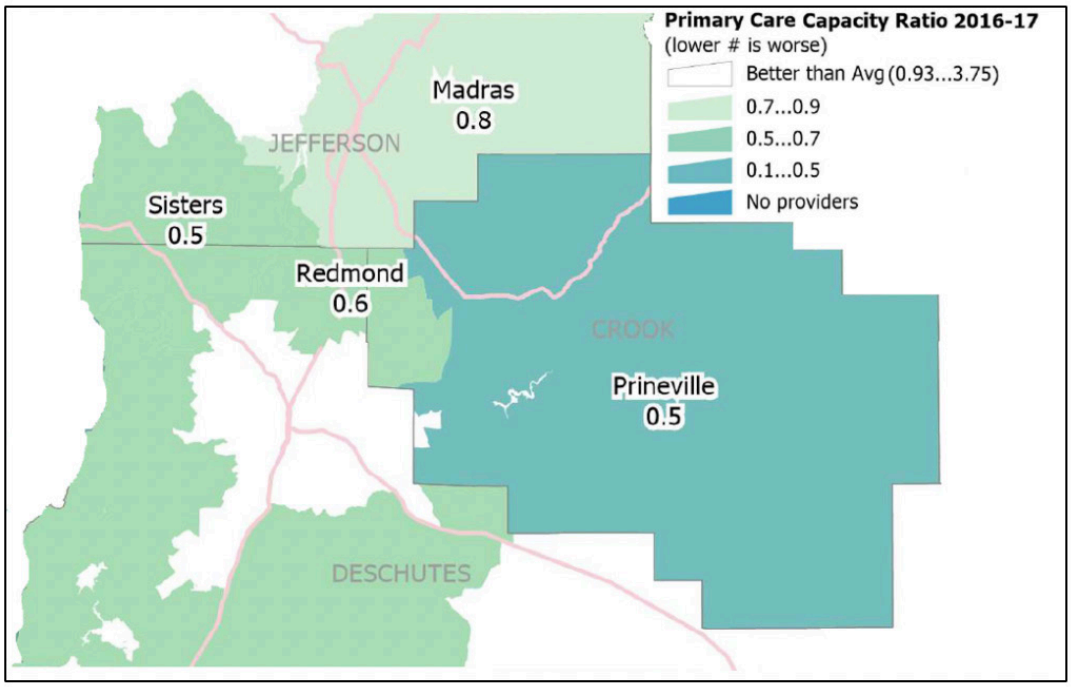


Figure 244. Primary care capacity (Percent of primary care visits that are able to be met), Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018



PREVENTABLE HOSPITALIZATIONS

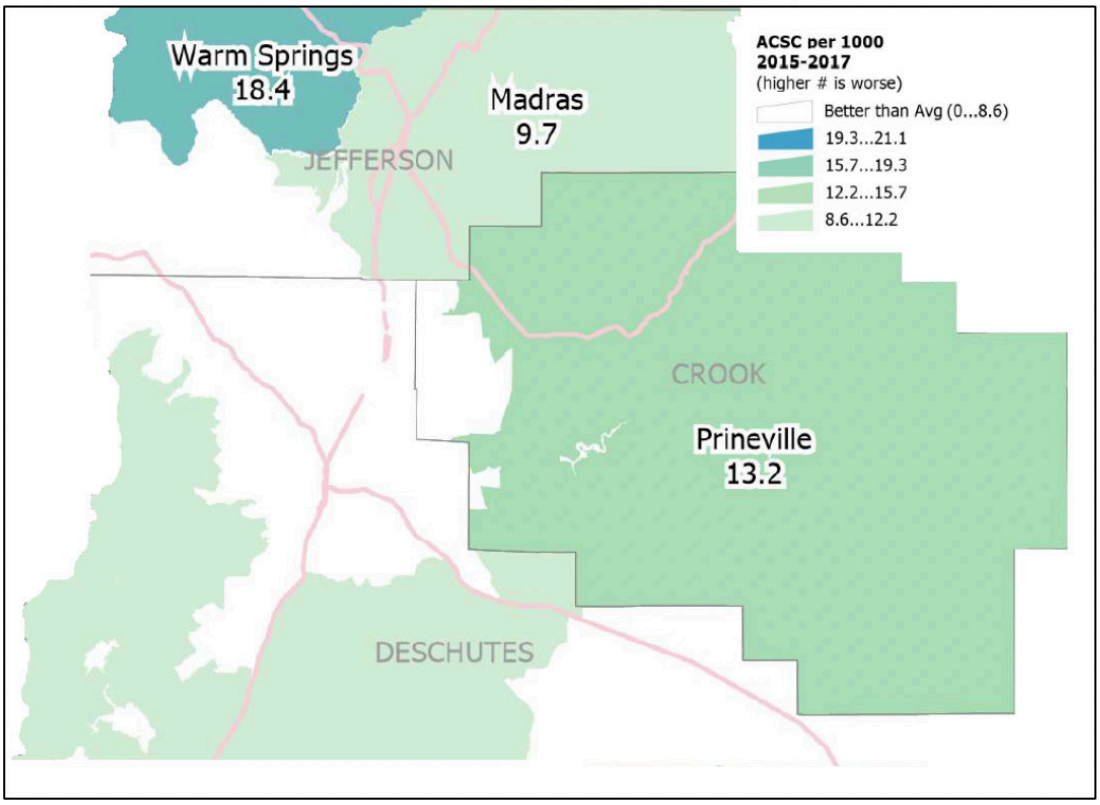
For the purpose of this report, ambulatory care sensitive conditions (also known as preventable hospitalizations) include any discharges from inpatient facilities that might have been preventable if they had been treated with timely/effective primary care. These conditions include asthma, diabetes, hypertension, and pneumonia.

Areas with high rates of preventable hospitalizations may indicate issues with primary care capacity or access. Oregon's rate of preventable hospitalizations is 8.6 per 1,000 population. Redmond (7.9 per 1,000), Bend (6.0 per 1,000), and Sisters (6.0 per 1,000) all have lower rates of preventable hospitalizations than the state while Warm Springs (18.4 per 1,000 population) has the fourth highest rate of preventable hospitalizations in the state (Figure 245).

MENTAL HEALTH PROVIDER AVAILABILITY

Mental health and substance use treatments are ways of providing specialty behavioral health care. Treatments can include counseling services, specialized psychotherapy services, as well as psychiatric medication management services. Medications for substance use and/or mental illness disorders can provide relief for many individuals, however, for most individuals, effective treatment and service approaches involve a combination of counseling and medication. Additionally, research has shown that earlier treatment is better for individuals living with mental health or substance use disorder. Trained professionals provide assessments, evaluations, treatment planning, and counseling services. Yet, no single treatment is standardized and works across all populations. This is why care is individualized (SAMHSA, 2019). Identifying the quantity of mental health and substance abuse

Figure 245. Ambulatory care sensitive conditions (preventable hospitalizations) per 1,000 population, Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018



service organizations as well as their availability for accepting new clients helps identify the gaps in care for the community.

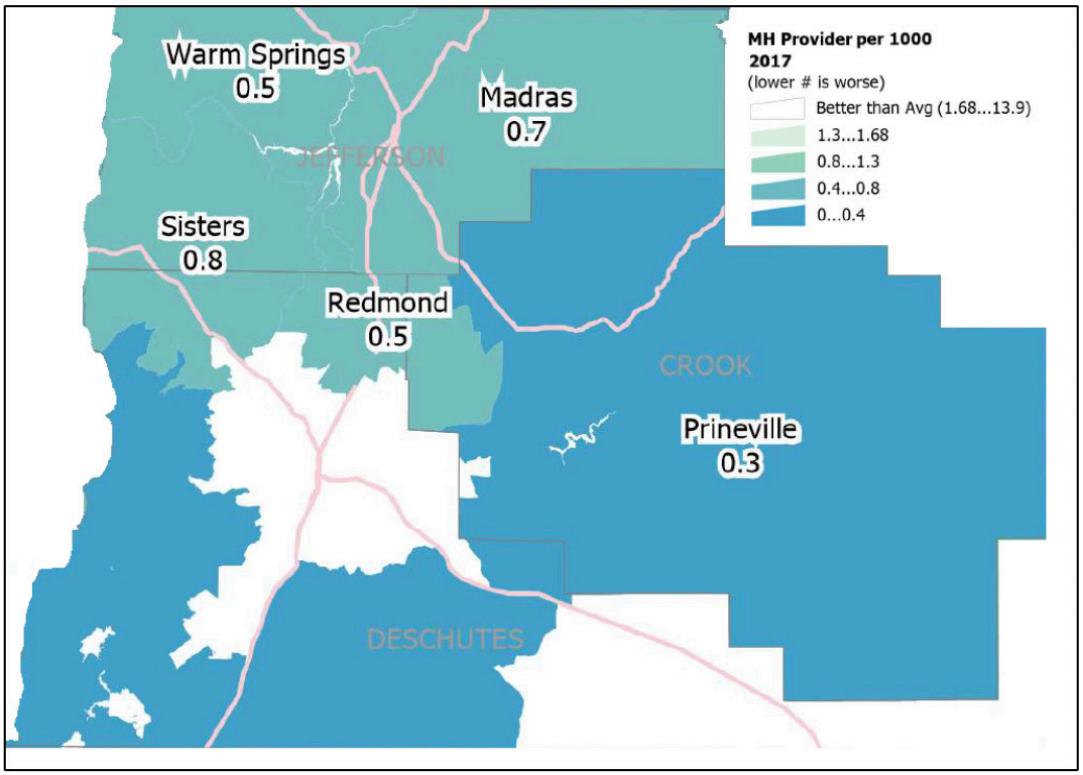
The need for additional access to behavioral health services was frequently mentioned during focus groups across all demographic and geographic areas in Central Oregon.

Figure 246 shows the rate of mental health providers per 1,000 population. For this report, mental health providers include total FTE of psychiatrists, psychiatric nurse practitioners, marriage and family therapists, psychologists, and clinical social workers. Across the state of Oregon, there are 1.7 mental health providers per 1,000 people. In Central Oregon, Bend (2.38 per 1,000 population) was the only service area with a mental health provider rate higher than the state average. Prineville had the lowest number of mental health providers per 1,000 population in Central Oregon (0.3), followed closely by the La Pine s ervice area, which includes portions of northern Klamath County (0.4).

"Behavioral health access is not just a workforce shortage problem."

- Behavioral Health Advancing Integrative Care Project Consultant

Figure 246. Mental health providers per 1,000 population, Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018



Advancing Integrated Care (AIC) in Central Oregon has 5 key components:

1. **Identification:** Universal behavioral health screening in primary care clinics
2. **Integration:** Population-based and outcome-oriented behavioral health interventions in primary care clinics
3. **Referrals:** Timely and completed referrals to specialty behavioral health for people with needs beyond what can be served in primary care (or by patient choice)
4. **Coordination:** Effective communication between primary care and specialty behavioral health
5. **Expanding the Care Team:** Identify opportunities to increase use of traditional health workers, advocates, Peer Support Specialists, and Recovery Mentors

ADVANCING INTEGRATED CARE IN CENTRAL OREGON REGIONAL NEEDS ASSESSMENT RESULTS:

http://cohealthcouncil.org/aic-results-for-2019-rha/

Community Themes and Strengths Focus Group Results: Improve Behavioral Health Access and Supports

The need for additional access to behavioral health services was frequently mentioned across all demographic and geographic areas.

- There is an **insufficient number** of **affordable** behavioral health services. This is particularly true for veterans, people on OHP (Medicaid) and Medicare, those in rural areas, and those who need specialty care (i.e. child psychologists, psychiatrists, and school counselors). Even after being engaged in services, appointment frequency is often insufficient. This is especially worrisome since anxiety, depression, isolation, and drug use were frequently mentioned as community health concerns.
- To help increase access, Central Oregon should consider and address how **stigmas** can affect willingness for some populations to seek behavioral health care and work to normalize access to behavioral health services across demographics.
- The region should focus on **prevention and youth** to decrease the need for as many services; this includes identifying and implementing strategies around more robust behavioral health services in **schools.**

EMERGENCY DEPARTMENT VISITS

In Central Oregon, roughly 50,000 individuals utilize the St Charles Hospital Emergency Department (ED) annually (Figure 247). Of these, 20% are children, and approximately a quarter of children visited the ED more than once during the calendar year. This compares to approximately 30% of adults who visited the ED more than once during the calendar year (Figure 248). In addition, 7% percent of adults and almost 4% of children visited the ED more than four times during the calendar year (Figure 249). Seasonally, ED utilization doesn't change dramatically (approximately 25% of visits occur each season (Figure 250)., although visits do increase slightly during summer months.

Top diagnoses for visits to the ED for adults include abdominal pain (16%), nonspecific chest pains (13%), and sprains and strains (12%) (Figure 251). For children, top diagnoses include other upper respiratory infections (19%), superficial injury, contusion (12%), and abdominal pain (10%) (Figure 251).

Figure 247. Number of unique patients to Central Oregon St. Charles Hospital System Emergency Departments (non-admitted), all payers, 2016-2018

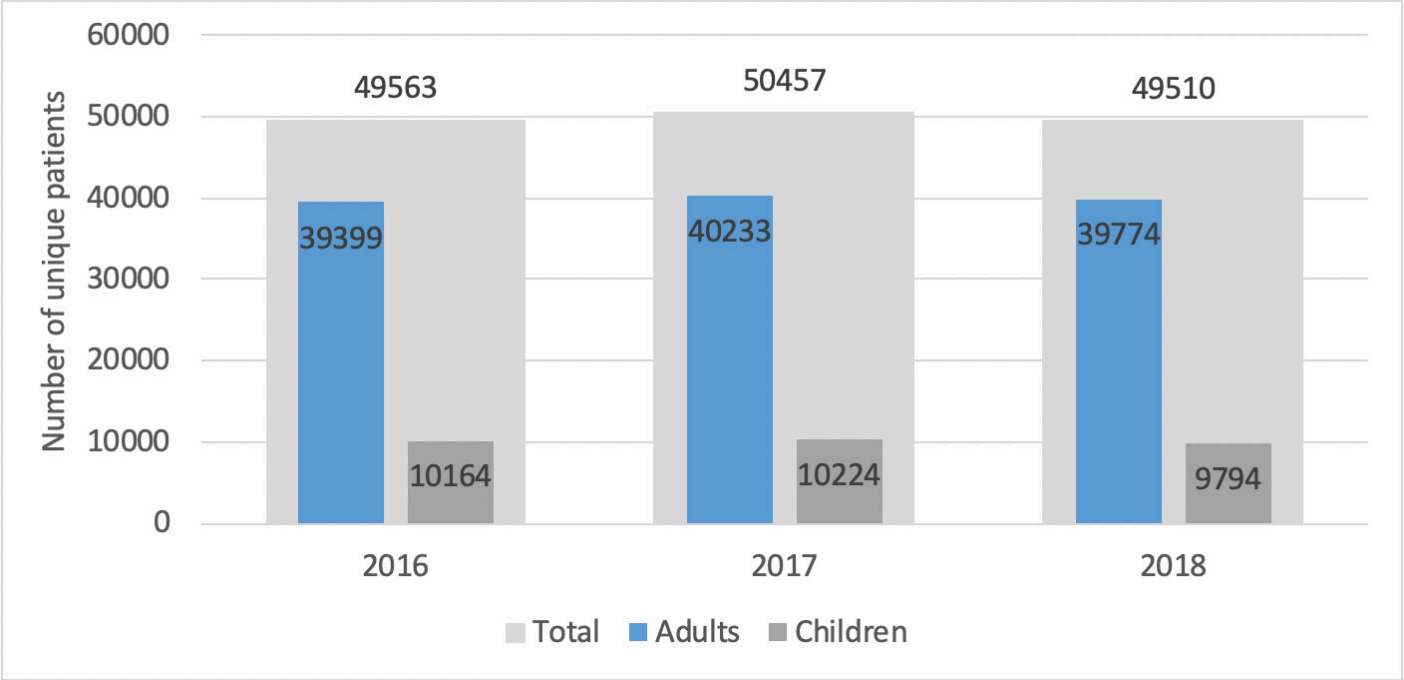


Figure 248. Percent of patients with more than 1 ED visit during the calendar year, 2016-2018

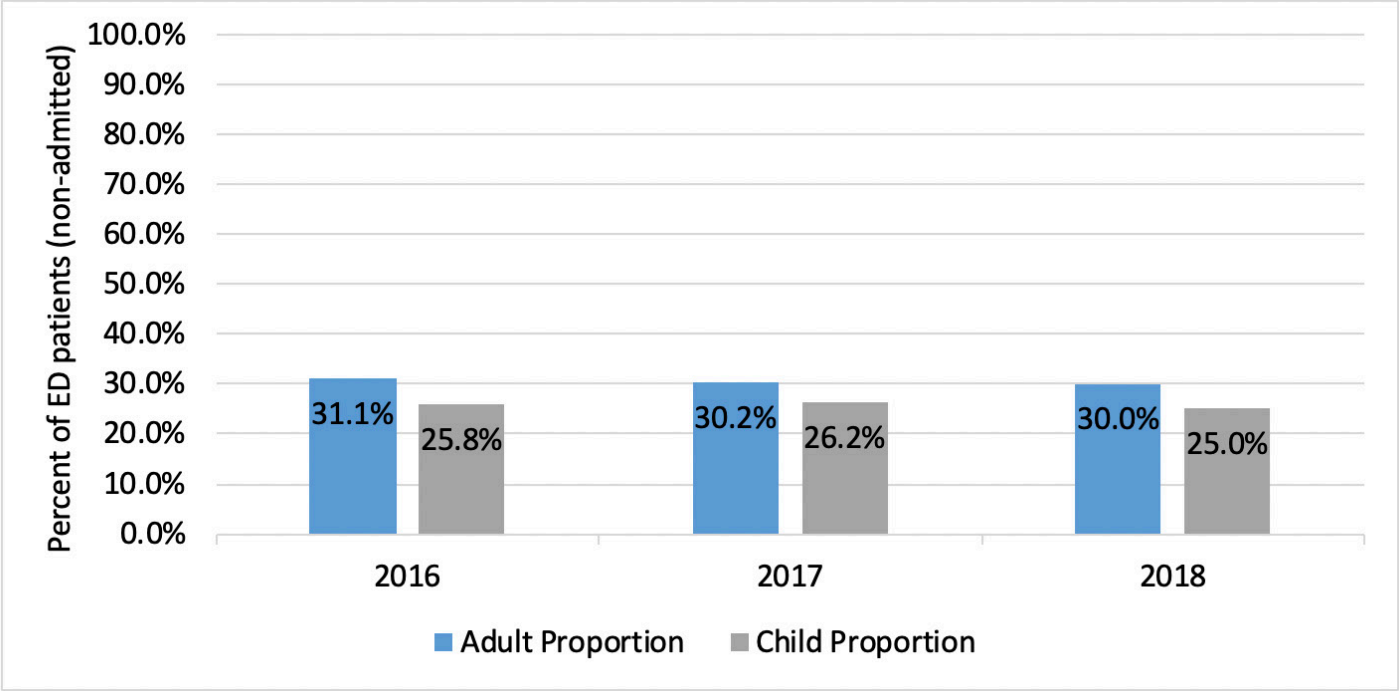


Figure 249. Percent of patients with more than 4 ED visits during the calendar year, 2016-2018

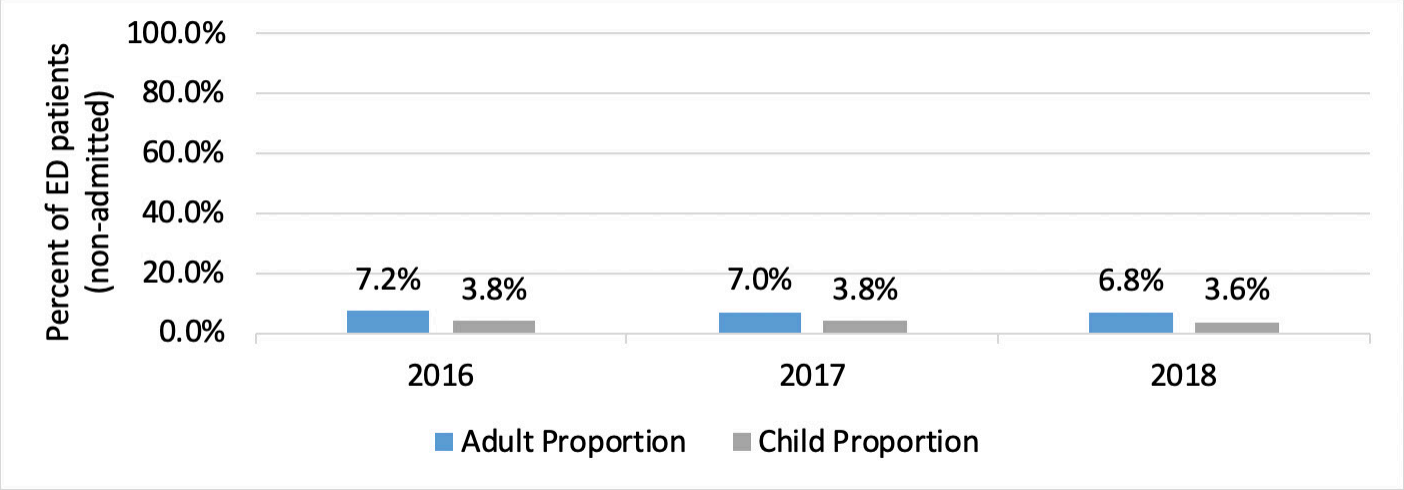
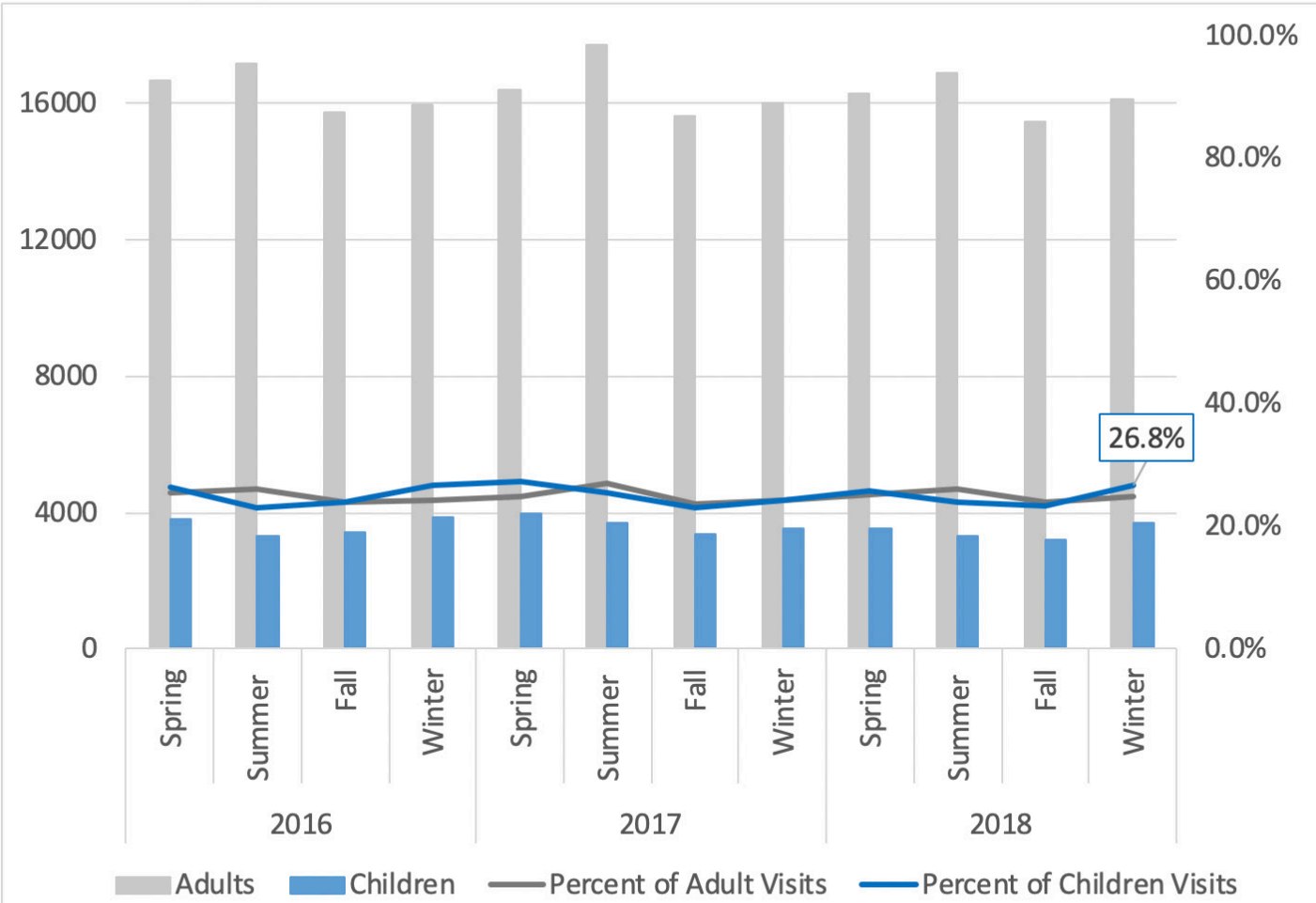
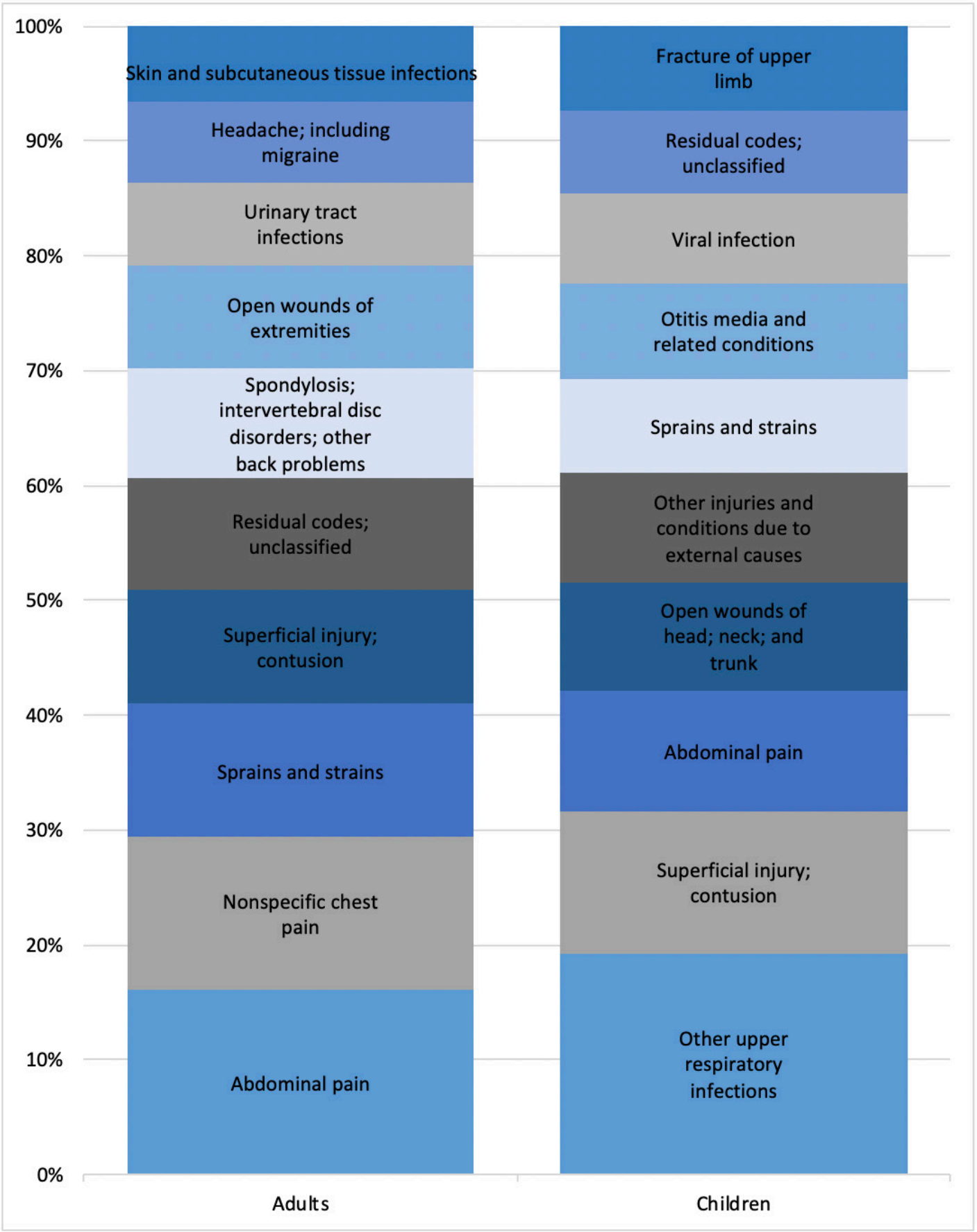


Figure 250. Number and percent of all ED visits (non-admitted) among adults and children, by season, St. Charles Hospitals, 2016-2018



Note. Spring is March-May, summer is June-August, fall is September-November, winter is December (same calendar year), January and February

Figure 251. St Charles ED Visits by Top 10 diagnoses (using CCS Grouper), adults and children, 2016-2018



EMERGENCY DEPARTMENT UTILIZATION FOR MENTAL HEALTH OR SUBSTANCE USE

In 2014 in the United States, 43.6 million adults (18 or older) lived with a mental, behavioral, or emotional disorder. Roughly one in eight visits to emergency departments (ED) was related to a mental and/or substance use disorder. Between 2007 and 2011, these visits increased by over 15%. Such visits are avoidable through adequate management and treatment (AHRQ, 2016). Visits to the ED for mental health or substance abuse may indicate limited capacity or access to mental health services and/or substance use services.

Figure 252 shows the number of annual visits to the ED for a primary diagnosis of mood disorders, anxiety, alcohol or drug use, schizophrenia and other psychoses, and suicidal ideation or attempt per 1,000 population. Oregon as a whole has a mental health/substance use ED visit rate of 16.3 per 1,000 population. In Central Oregon, Warm Springs (47.0 per 1,000) has the second-highest ED visit rate for mental health/substance use in the state of Oregon. Prineville (20.1 per 1,000) and Madras (17.2 per 1,000) also have higher rates than the state as a whole.

DENTIST AVAILABILITY

On average, Oregon has 0.45 dentists per 1,000 people. In Central Oregon, only Bend (0.51) has a higher rate of dentists per 1,000 population than the state. The La Pine service area, which includes portions of northern Klamath County, has the lowest number of dentists per 1,000 population (0.19) in Central Oregon, followed by Madras (0.21 per 1,000) (Figure 253).

Figure 252. Emergency department mental health/substance abuse visits per 1,000 population, Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018

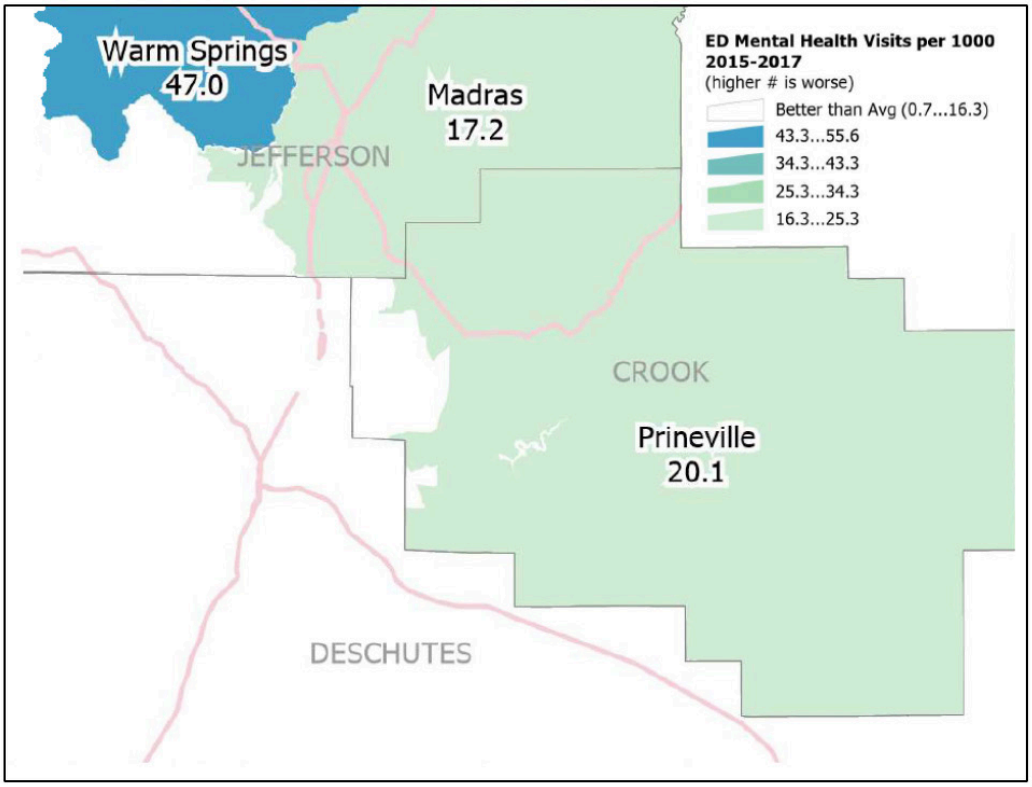
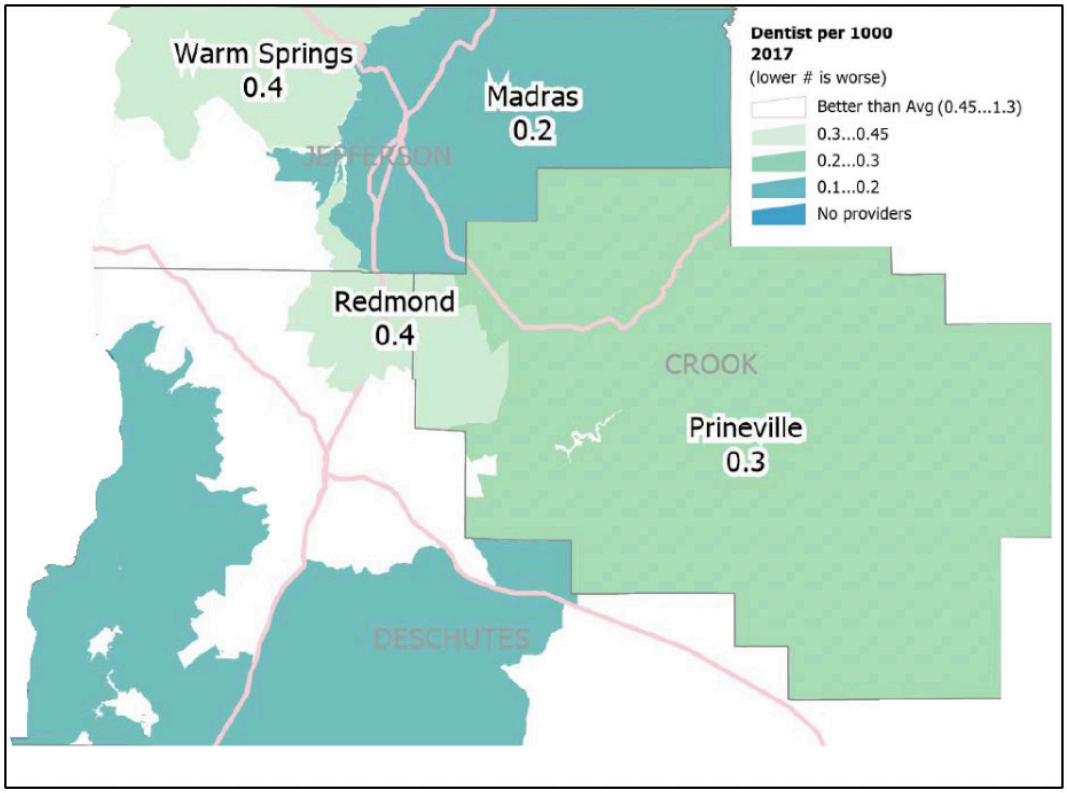


Figure 253. Dentists per 1,000 population, Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018



EMERGENCY DEPARTMENT UTILIZATION FOR NON-TRAUMATIC DENTAL VISITS

Roughly two million annual ED visits in the United States are for non-traumatic dental problems and most EDs are not equipped to provide dental care (Sun et al., 2015). Dental based ED visits are viewed as primarily avoidable through preventable and managed care in an outpatient dental clinic setting.

Visits to the ED for non-traumatic dental purposes may also indicate limited capacity or access to dental care. Across Oregon, the rate of ED visits for non-traumatic dental purposes is 4.7 per 1,000 population per year. Warm Springs (17.6 per 1,000) has the highest rate of non-traumatic dental ED visits in the state. Madras (10.8 per 1,000) is ranked fourth-highest in the state, followed closely by Prineville (10.6 per 1,000). Bend (2.8 per 1,000), Sisters (1.1 per 1,000) and La Pine, which includes portions of northern Klamath County (4.3), all have non-traumatic dental ED visit rates lower than Oregon (Figure 254).

INADEQUATE PRENATAL CARE

For this report, inadequate prenatal care is defined as care that began in the third trimester or consisted of less than five total prenatal visits. Areas with high rates of inadequate prenatal care may indicate issues with prenatal care capacity or access. Oregon, on average, has a rate of inadequate prenatal care of 56.5 per 1,000 births. In Central Oregon, the Warm Springs service area has a rate of inadequate prenatal care nearly three times the state average (154.5 per 1,000). Madras (84.1 per 1,000) and the La Pine service area (66.1), which includes portions of northern Klamath County, also have rates of inadequate prenatal care higher than the state as a whole (Figure 255).

Figure 254. Emergency department non-traumatic dental visits per 1,000 population, Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018

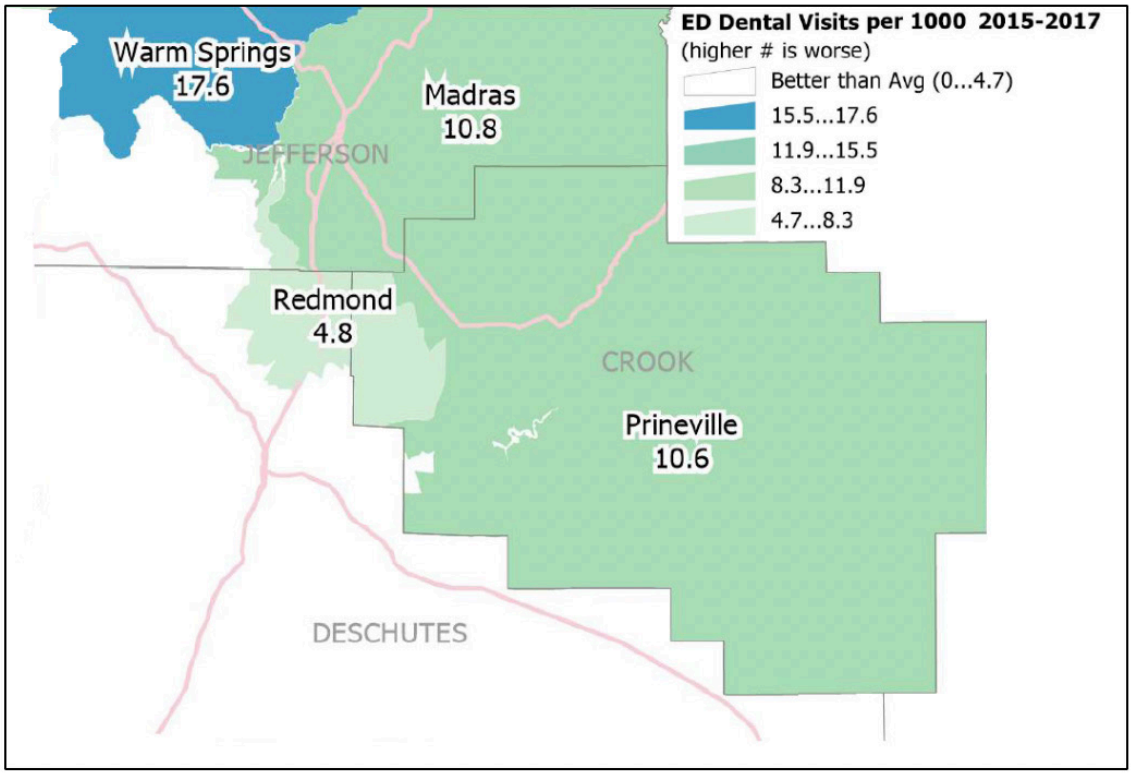
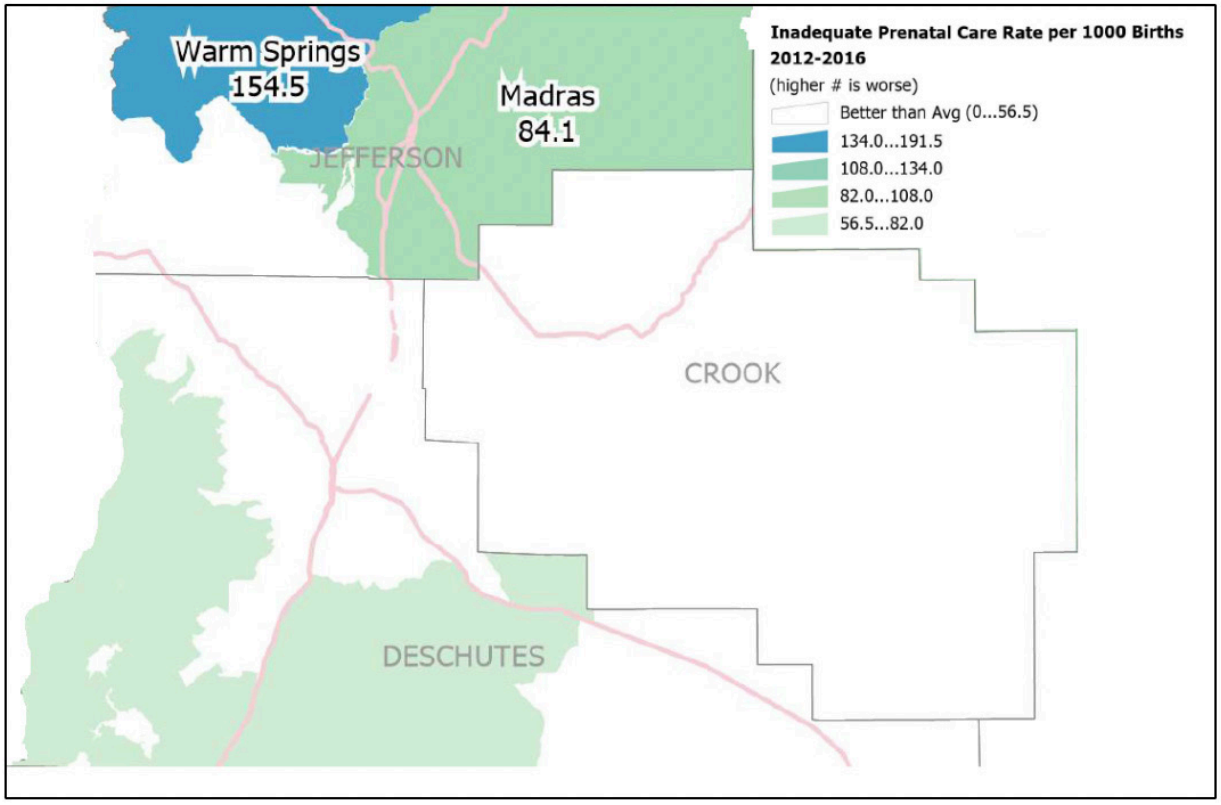


Figure 255. Inadequate prenatal care per 1,000 population, Areas of Unmet Health Care Need in Oregon Report, Oregon Office of Rural Health, 2018



LICENSED FULL TIME EQUIVALENT HEALTH PROVIDERS

Table 44 represents the total number of licensed full-time equivalents (FTE) in each county. For example, there are 35.5 FTE Certified Nursing Assistants in Crook County. Across all listed health professions, Deschutes County had the highest number of FTE among the three Central Oregon counties. Table 45 represents the population-to-provider ratio for each county. For example, there is one Certified Nursing Assistant for every 609 residents of Crook County. "N/A" indicates that there are no providers of that type in the geographic area.

DISTANCE AND AVAILABILITY/ NUMBER OF MENTAL HEALTH AND SUBSTANCE USE DISORDER SERVICES

Having to drive farther than 30 minutes to access mental health care can negatively impact a person's well-being. They are likely to access care less frequently, and in rural areas, there may be fewer providers and limited transportation options.

In Deschutes County, most heavily populated areas are within a 30-minute drive to a mental health service location. Most mental health services are located near Redmond, Bend, and La Pine (Figure 256 and 257). Areas around Prineville are within a 30-minute drive to a mental health service location. All available mental health Services in Crook County are centered in the Prineville area (Figure 258 and 259). Most areas along state highways in Jefferson County are within a 30-minute drive time to mental health service locations. Most mental health services in Jefferson County are centered around Madras and Warm Springs (Figure 260 and 261).

Table 44. Licensed health professional FTE by profession, Oregon Health Care Workforce Reporting Program, Oregon Health Authority Office of Health Analytics, 2015-2016.

	Crook	Deschutes	Jefferson	Oregon
Certified Nursing Assistants	35.5	330.3	29.9	11,863
Certified Registered Nurse Anesthetist	1.9	10.2	2.4	450
Dental Hygienists	3.7	102.8	4.9	1,856
Dentists	5.2	101.4	7.7	2,140
Dietitians	0	18.5	0.7	311
Licensed Practical Nurses	6.2	64.0	3.3	2,633
Occupational Therapists	0	46.7	1.4	808
Pharmacists	7.8	109.4	7.1	2,861
Physical Therapists	5.1	147.2	6.4	2,206
Physicians, total	15.1	478.3	17.9	9,522
Podiatrists	0	7.0	0	135
Primary Care Nurse Practitioners	2.7	38.1	4.1	915
Primary Care Physicians	10.7	165.6	13.1	3,436
Primary Care Physician Assistants	2.1	28.8	2.6	463
Registered Nurses	58.9	1,233.7	74.9	24,661

Table 45. Licensed health professional population-to-provider ratios by profession, Oregon Health Care Workforce Reporting Program, Oregon Health Authority Office of Health Analytics, 2015-2016.

	Crook	Deschutes	Jefferson	Oregon
Certified Nursing Assistants	609:1	535:1	762:1	344:1
Certified Registered Nurse Anesthetists	11,298:1	17,351:1	9,417:1	9,065:1
Dental Hygienists	5,912:1	1,718:1	4,670:1	2,196:1
Dentists	4,142:1	1,742:1	2,979:1	1,905:1
Dietitians	N/A	9,569:1	30,797:1	13,119:1
Licensed Practical Nurses	3,469:1	2,760	6,906:1	1,548:1
Occupational Therapists	N/A	3,786	16,757:1	5,045:1
Pharmacists	2,770:1	1,614	3,210:1	1,425:1
Physical Therapists	4,248:1	1,200	3,583:1	1,848:1
Physicians, total	1,429:1	369	1,272:1	428:1
Podiatrists	N/A	25,306	N/A	30,097:1
Primary Care Nurse Practitioners	8,134:1	4,630	5,536:1	4,456:1
Primary Care Physicians	2,026:1	1,067	1,745:1	1,186:1
Primary Care Physician Assistants	10,136:1	6,135	8,638:1	8,807:1
Registered Nurses	366:1	143	304:1	165:1

Table 46. Estimated number of selected behavioral/mental health occupations by provider type, Oregon's Licensed Behavioral/Mental Health Care Workforce: A profile of selected behavioral/mental health occupations, 2015.

	Crook	Deschutes	Jefferson	Oregon
Physician Assistants[b]	0	1	0	9
Psychiatrists[a]	0	23	1	619
Nurse Practitioners[b]	0	12	2	336
Registered Nurses[b]	0	62	5	1,914

Table notes: data for LCSW, counselors, therapists, and psychologists are unavailable at the county level. County counts indicate county of practice, not the county of provider's residence.

[a] Psychiatrist counts include actively licensed physicians who identified practice specialties in addiction psychiatry, child/adolescent psychiatry, forensic psychiatry, geriatric psychiatry, neuropsychiatry, psychiatry, or psychoanalysis.

[b] Physician Assistant, Nurse Practitioner, and Registered Nurse counts include licensed providers who identified a practice area in psychiatry or mental health. Counts are likely under-estimates because specialty area is not always identified.

Figure 256. Mental health service locations and geographic areas (in blue) with less than a 30 minute drive time to a mental health service location, Deschutes County. Oregon Behavioral Health Mapping Tool, Oregon Health Authority, 2018.

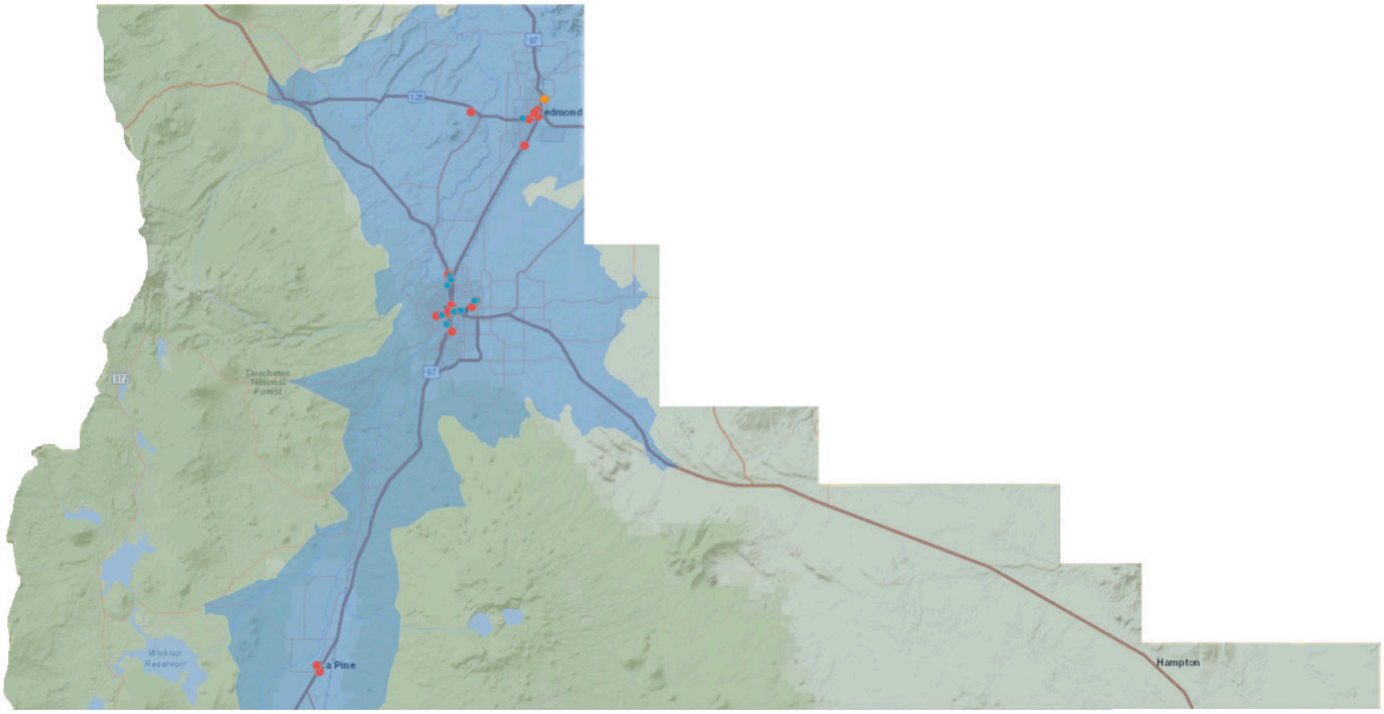


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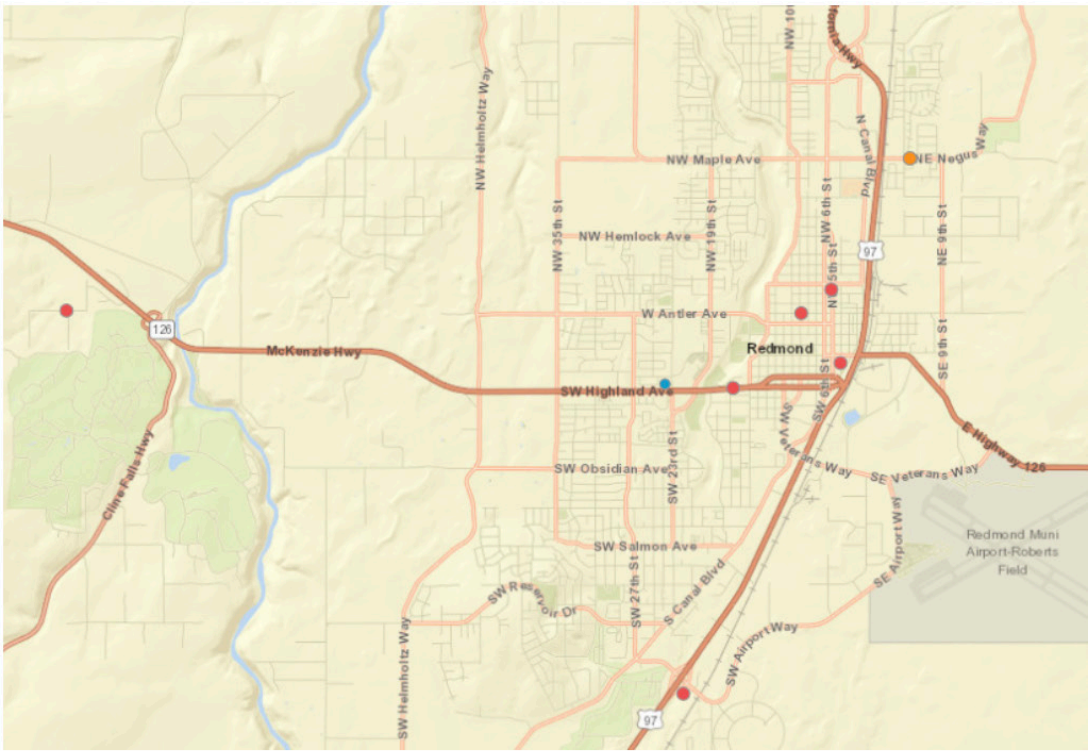
Figure 257. Mental health service locations, Deschutes County. Oregon Behavioral Health Mapping Tool, Oregon Health Authority, 2018.

- Outpatient Mental Health
- Adult Mental Health Residential
- Outpatient Alcohol & Drug
- Alcohol & Drug Residential
- Alcohol & Drug Correctional Residential
- Children's Intensive Treatment Services
- Mental Health Adult Foster Home



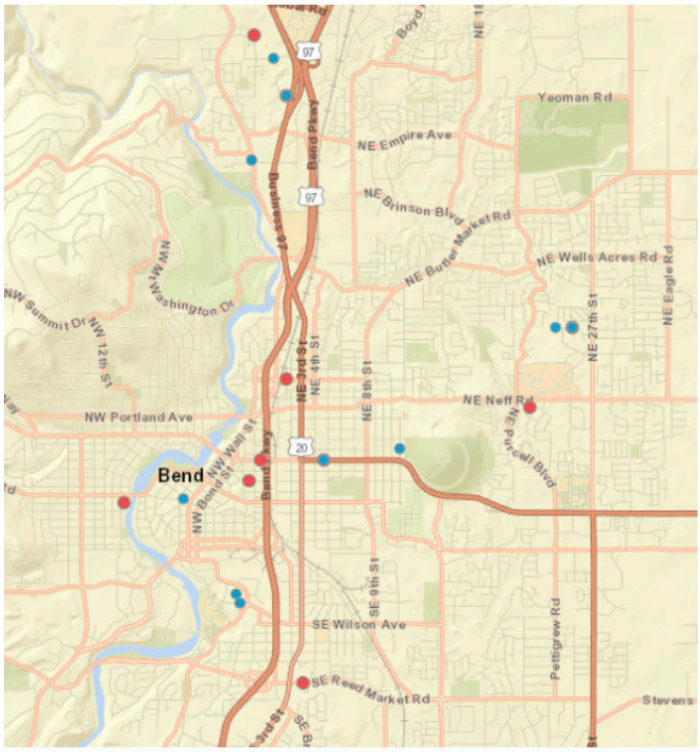


Figure 258. Mental health service locations and geographic areas (in blue) with less than a 30 minute drive time to a mental health service location, Crook County. Oregon Behavioral Health Mapping Tool, Oregon Health Authority, 2018.

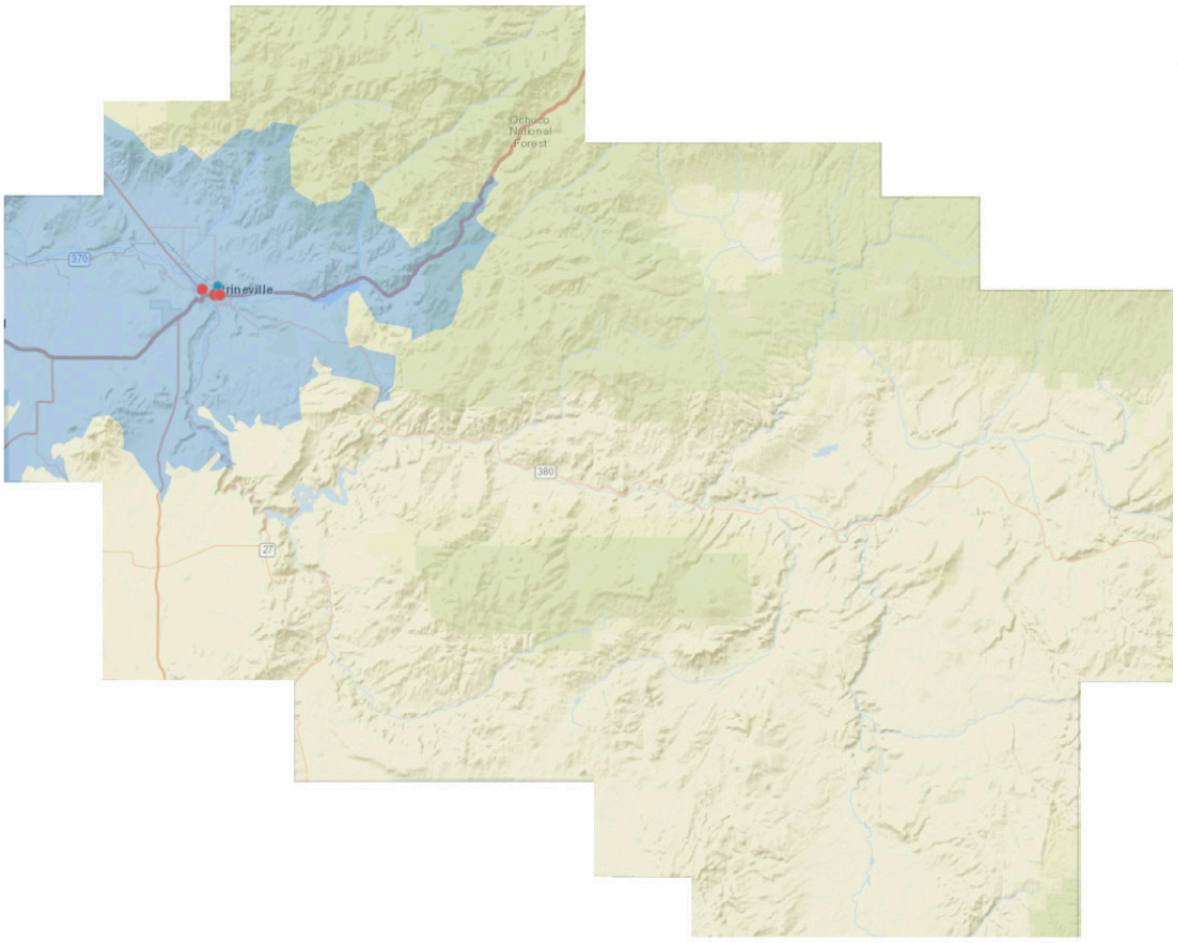


Figure 259. Mental health service locations, Crook County. Oregon Behavioral Health Mapping Tool, Oregon Health Authority, 2018.

Figure 260. Mental health service locations and geographic areas (in blue) with less than a 30 minute drive time to a mental health service location, Jefferson County. Oregon Behavioral Health Mapping Tool, Oregon Health Authority, 2018

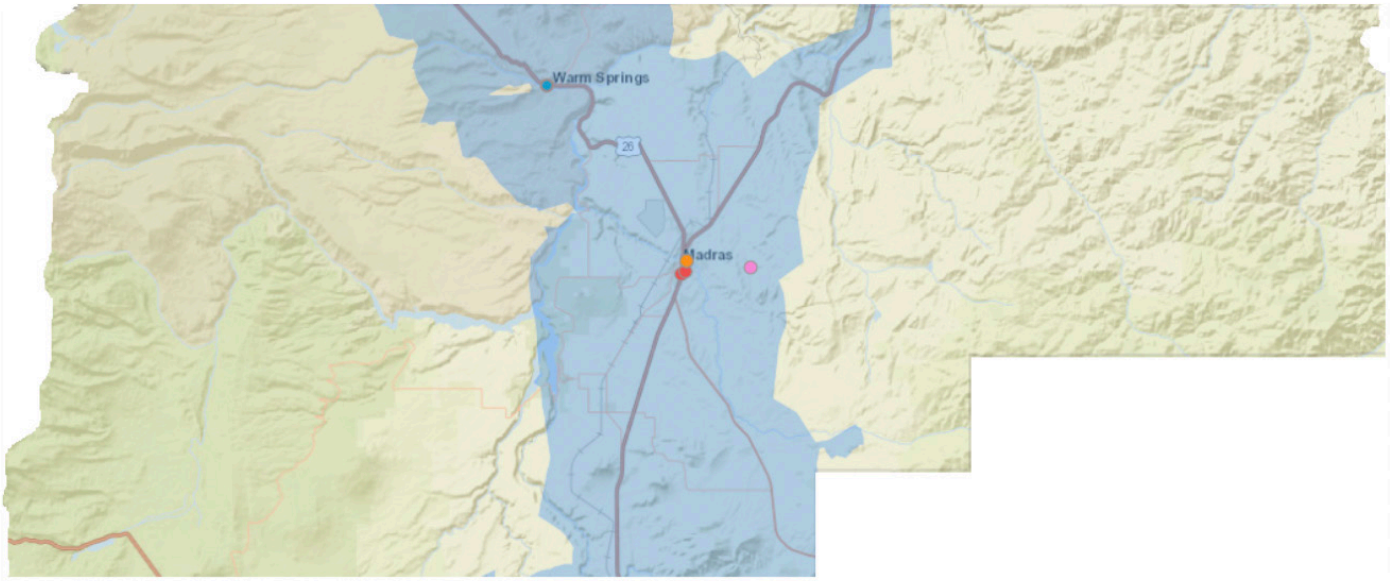
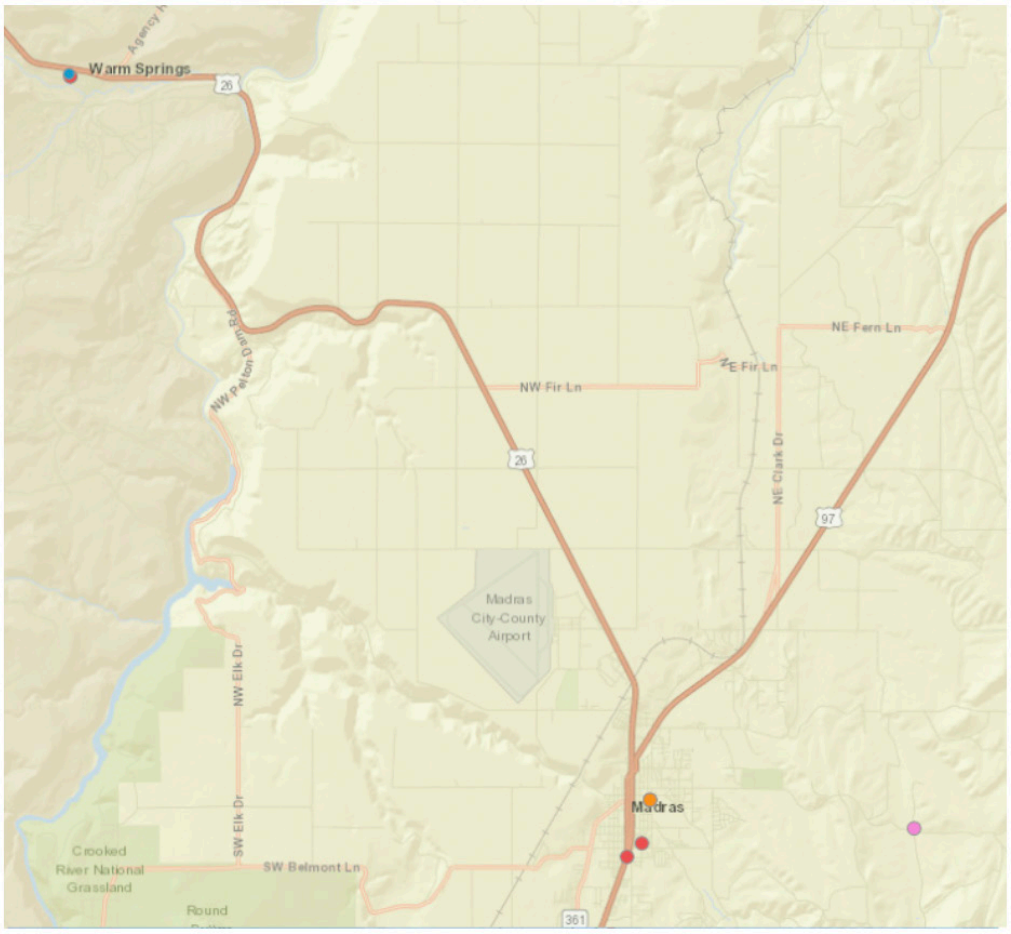


Figure 261. Mental health service locations, Crook County. Oregon Behavioral Health Mapping Tool, Oregon Health Authority, 2018.



SYSTEM ASSESSMENT

Central Oregon uses the Public Health Modernization Assessment for Crook, Deschutes, and Jefferson Counties. In 2015, the Oregon legislature passed House Bill 3100, which included guidance for a new model for public health in Oregon in an effort to modernize the public health system. In 2017, the legislature passed House Bill 2310, which provided a general description of how to implement modernization and put in place new requirements for demonstrating progress toward meeting population health goals in Oregon. These bills created the Public Health Modernization Assessment (see graphic to the right).

Within the public health modernization framework, there are seven foundational capabilities and four foundational programs. "Foundational capabilities are the knowledge, skills, and abilities needed to run effective public health programs like communicable disease control, prevention and health promotion, environmental health and access to clinical preventive services. Foundational programs, in turn, lead to better health outcomes." (State Health Assessment, Oregon)

In 2016, all state and local public health authorities assessed the current capacity to provide foundational programs and services. The assessment in Crook, Deschutes, and Jefferson counties found that:

- There are gaps in every foundational capability and program
- Overall, Central Oregon's highest scores in 2016 were in emergency preparedness and response and access to clinical preventive services
- Overall, Central Oregon's lowest scores were in prevention and health promotion and assessment and epidemiology

2016 Capacity Scores for Foundational Capabilities			
Modernization Program/ Capability	**Crook**	**Deschutes**	**Jefferson**
Emergency Preparedness and Response	80%	70%	40%
Access to Clinical Preventive Services	60%	60%	40%
Communicable Disease	50%	60%	30%
Environmental Health	50%	50%	40%
Health Equity and Cultural Responsiveness	50%	50%	30%
Prevention and Health Promotion	40%	40%	30%
Assessment and Epidemiology	40%	50%	20%

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GLOSSARY AND ACRONYMS

Acquired Immune Deficiency Syndrome (AIDS): *AIDS is the most severe phase of HIV infection. People with AIDS have such badly damaged immune systems that they get an increasing number of severe illnesses, called opportunistic infections.*

Adverse Childhood Experiences (ACEs): *Stressful or traumatic events, including abuse and neglect that occur during childhood. They may also include household dysfunction such as witnessing domestic violence or growing up with family members who have substance use disorders.*

Affordable Care Act (ACA): *The comprehensive national health care reform law enacted in March 2010.*

Age-adjusted: *A method for standardizing and comparing rates when the populations differ significantly by age. In this report, populations were weighted using the 2000 census.*

ALERT: *An electronic immunization information system in Oregon.*

American Community Survey (ACS): *A survey conducted annually between census years by the US Census Bureau.*

American Public Health Association (APHA): *A Washington, D.C.-based professional organization for public health professionals in the United States.*

Asset-Limited, Income-Constrained, Employed (ALICE): *ALICE households are defined as those households that earn more than the Federal Poverty Level, but less than the basic cost of living for the county.*

Asthma Call-Back Survey (ACBS): *A follow-up survey conducted after the Behavioral Risk Factor Surveillance System Survey with people who indicated they had or currently have asthma.*

Behavioral Risk Factor Surveillance System (BRFSS): *A phone survey conducted among randomly selected, non-institutionalized adults that ask about a variety of health risks and behaviors.*

Body Mass Index (BMI): *Uses both weight and height to determine the size of an individual and can be used as a screening tool for obesity. It can be calculated by entering a person's metric weight and height into the following formula - kg/m2. BMI is divided into four categories: underweight (<18.5), normal (18.5-24.9), overweight (25.0-29.9), and obese (30.0 or greater).*

Built Environment: *The built environment includes all of the physical parts of where we live and work (e.g., homes, buildings, streets, open paces, and infrastructure).*

Cardiopulmonary Resuscitation (CPR): *A lifesaving medical procedure which is given to someone who is in cardiac arrest (heart attack).*

Centers for Disease Control and Prevention (CDC): *The federal organization that protects the health of the nation's residents and helps local communities do the same.*

Central Line-Associated Bloodstream Infection (CLABSI): *Infection of the blood related to an intravascular catheter.*

Central Oregon: *Central Oregon refers to Crook, Deschutes, and Jefferson Counties, and the Confederated Tribes of Warm Springs.*

Central Oregon Health Council (COHC): *The COHC is a nonprofit organization dedicated to improving the overall health of all residents of Central Oregon, as well as providing oversight of the Medicaid population and the Coordinated Care Organization (CCO).*

Cerebrovascular disease: *A variety of medical conditions that affect the blood vessels of the brain and the cerebral circulation.*

Chronically homeless: *A person who is 18 years or older, may have a disability, and has been homeless for the past 12 or more months - or - has had 4 episodes of homelessness in the past 3 years.*

Community Advisory Council (CAC): *A committee of the COHC, the overarching purpose of the CAC is to ensure the COHC remains responsive to Medicaid consumer and community health needs. The CAC includes health care consumer members of the CCO as well as representatives of public and private agencies that serve CCO members. Consumer representatives constitute the majority of the CAC membership.*

Confidence Interval (CI): *A range of numbers in which the true estimate would be found 95% of the time if the sample were taken an infinite number of times.*

Congenital malformations: *Congenital anomalies are also known as birth defects, congenital disorders or congenital malformations. Congenital anomalies can be defined as structural or functional anomalies that occur during intrauterine life and can be identified prenatally, at birth or later in life.*

Consumer Assessment of Health care Providers and Systems (CAHPS): *A survey that asks consumers and patients to report on and evaluate their experiences with health care.*

Coordinated Care Organization (CCO): *A network of health care providers who work together in their local communities to serve people who receive health care coverage under the Oregon Health Plan (Medicaid).*

Coronary Artery Bypass Graft (CABG): *Procedure used to treat coronary artery disease.*

Crude Rate: *A method for reporting disease counts. They are calculated by dividing the number of people (cases) by the number of people at risk (or in the population). Rates are often standardized to per 100,000 people.*

Diabetes mellitus: *Commonly referred to as diabetes, it is a condition that occurs when the body can't use glucose (a type of sugar) normally.*

Emergency Department (ED): *Part of a hospital that serves people in need of emergency care (often referred to as the ER or Emergency Room).*

Environmental Public Health Tracking (EPHT): *Public health surveillance, data analysis, and reporting on environmental exposures that can affect health. Twenty-six sites are funded from the CDC to perform EPHT.*

Ethyl Alcohol (EtOH): *Alcohol is the general name and is the intoxicating ingredient of many alcoholic beverages such as beer, wine, and distilled spirits.*

Fecal Occult Blood Test (FOBT): *A screening test for colorectal cancer.*

Federal Poverty Line (FPL): *A measure of income issued every year by the Department of Health and Human Services (HHS). Federal poverty levels are used to determine your eligibility for certain programs and benefits, including savings on Marketplace health insurance, and Medicaid coverage.*

Full-Time Equivalency (FTE): *FTE is the units or equivalent employees working full-time. One FTE is equivalent to one employee working full-time.*

Gastroenteritis: *inflammation of the stomach and intestines, typically resulting from bacterial toxins or viral infection and causing vomiting and diarrhea.*

Health Resource and Services Administration (HRSA): *An agency of the US Department of Health and Human Services that focuses on improving access to health care.*

Health Care Associated Infection (HAI): *An infection associated with the use of a medical device like a catheter or ventilator or infections at a surgical site.*

Health care Cost and Utilization Project (HCUP): *A collection of longitudinal hospital care data for the United States.*

Health Care Provider (HCP): *A licensed individual that delivers health services.*

Health care Providers Shortage Area (HPSA): *Geographic areas with limited health care professional workforce.*

Healthy People 2020 (HP 2020): *An initiative outlining the nation's goals and objectives for health promotion and disease prevention by the year 2020.*

Hemoglobin A1C: *A component of hemoglobin (a protein in red blood cells) to which glucose is bound.*

Human Immunodeficiency Virus (HIV): *A retrovirus that causes HIV infection and over time acquired immunodeficiency syndrome (AIDS).*

Incidence: *The number of new cases that occurred in a population. Often used for communicable disease reporting.*

LGBTQ+: *LGBTQ is an acronym for lesbian, gay, bisexual, transgender, queer or questioning, and other identifies. These terms are used to describe a person's sexual orientation or gender identity.*

Long-acting Reversible Contraception (LARC): *Birth control methods that provide effective, reversible contraception for extended periods of time without requiring user action.*

Malignant neoplasms: *A tumor that is malignant and tends to spread to other parts of the body.*

Medicaid Behavioral Risk Factor Surveillance Survey (MBRFSS): *The BRFSS conducted among adults enrolled in Medicaid (OHP).*

Medically Underserved Area or Population (MUA/P): *A geographic areas with a high population to provider ratios, infant mortality rates, and poverty rates.*

Mobilizing for Action through Planning and Partnership (MAPP): *An evidence-based process that guides the creation of the RHA (Regional Health Assessment) and RHIP (Regional Health Improvement Plan).*

Motor Vehicle Crashes (MVC): *Any injury occurring in traffic.*

National Alliance on Mental Illness (NAMI): *A nationwide grassroots advocacy group, representing people affected by mental illness in the United States.*

National Association of County and City Health Officials (NACCHO): *A Washington, DC-based organization representing 2,800 local public health departments in the U.S.*

National Institute on Drug Abuse (NIDA): *A United States federal-government research institute whose mission is to "lead the Nation in bringing the power of science to bear on drug abuse and addiction."*

Oregon Health Plan (OHP): *A health care coverage program for low-income Oregonians.*

Oregon Healthy Teens Survey (OHT): *A school-based, anonymous and voluntary survey conducted among 8th and 11th graders that inform schools, communities, and the state about strengths or areas for improvement related to student health and health behaviors.*

Oregon Public Health Analysis Tool (OPHAT): *A data warehouse containing datasets with vital records and reportable condition counts. This is a tool for authorized personnel to use when performing analysis.*

Oregon School Wellness Survey (OSWS): *A survey conducted in even-numbered years to assess mental health and substance use of 6th, 8th, and 11th graders.*

ORPHEUS: *An integrated electronic disease surveillance system intended for local and state public health epidemiologists and disease investigators to efficiently manage communicable disease reports.*

Pregnancy Risk and Monitoring Survey (PRAMS): *A survey of mothers who recently gave birth that addresses prenatal care, health behaviors and risks, and post-partum topics.*

Perinatal: *the time, usually a number of weeks, immediately before and after birth.*

Prevalence: *The number of cases that exist in a population. Often used for chronic disease reporting.*

Prevention Quality Indicator (PQI): *Quality measures used to identify areas for performance improvement. Measures are focused on c onditions where good outpatient care could prevent the need for hospitalization.*

Provider Engagement Panel (PEP): *The PEP provides a highly valued clinical perspective to the work of the COHC. Providers on the PEP represent a variety of health care organizations that serve the OHP population.*

Regional Health Assessment (RHA): *A report on community health in Central Oregon (Crook, Deschutes, Jefferson Counties, and the Confederated Tribes of Warm Springs) that is created ever four years.*

Regional Health Improvement Plan (RHIP): *A collaborative report outlining priority health strategies for Central Oregon that is created every four years.*

Screening, Brief Intervention, and Referral to Treatment (SBIRT): *An evidence-based practice used to identify, reduce, and prevent problematic use, abuse, and dependence on alcohol and illicit drugs.*

Severe and Mental Illness (SMI): *Mental illnesses that lead to significant disability, including the need for medications, rehabilitation, and other support.*

Sexually Transmitted Infections (STIs): *Infections or diseases that are passed on during unprotected sex with an infected partner. This includes vaginal, anal or oral sex. Some STIs can be passed on by just skin-to-skin contact.*

Standard Infection Ratio (SIR): *A summary measure that is adjusted for various risk factors and is used to track the prevention of health care acquired infections. A lower number is better.*

Substance Abuse and Mental Health Services Administration (SAMHSA): *A branch of the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation.*

Supplemental Nutritional Assistance Program (SNAP): *A nutrition assistance program for low-income families.*

Temporary Assistance for Needy Families (TANF): *A program to help families reach self-sufficiency. The four goals of the program are 1) support families so that children can be cared for in their own homes, 2) promote job preparation, work, and marriage, 3) promote planned pregnancies, and 4) encourage two-parent families.*

Wide-ranging Online Data for Epidemiologic Research (CDC WONDER): *Menu-driven web-based system that makes public health data available to the public.*

Women, Infants, and Children (WIC): *A Federal program for low income and nutritionally at-risk women, infants and children. Participants receive education, screening, and support in purchasing nutritious foods.*

World Health Organization (WHO): *A global organization that directs international health programs and services within the United Nations' system and leads partners in global health responses.*

Years of Potential Life Lost (YPLL): *A measure of premature mortality. Calculated by subtracting the age at death from a predetermined life expectancy age, usually 75 years.*

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