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March 10, 2014

Mr. Jan Kaplan
Office of Community Liaison
800 NE Oregon St., Suite 930
Portland, OR 97323

Dear Mr. Kaplan:

Enclosed you will find the 2014-15 Local Public Health Authority Plan. Attached are the following documents:

- Signed minimum standard checklist
- Lincoln County Public Health Department Budget (hyperlink included)
- Lincoln County Community Health Assessment
- Lincoln County Community Health Improvement Plan (will submit when completed in August 2014)
- Lincoln County organization chart

I hope you will find these materials meet the requirements. Feel free to contact me if you have any questions.

Sincerely,

Rebecca Austen
Public Health Division Director

Community Health Assessment 2013

Lincoln County Health and Human Services
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Lincoln County
2013 Community Health Assessment

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Chapter 1
Introduction and Overview

Over the past decade Lincoln County has participated in community health assessment processes in partnership with various lead organizations, including the Oregon Office of Rural Health, Oregon Pacific Area Health Education Center, and most recently with Lincoln County Health and Human Services. Each assessment has helped to tell the ever-evolving story of Lincoln County's health while identifying needs and determining priority areas for this rural, coastal region.

Lincoln County's 2013 Community Health Assessment (CHA) is the result of many dedicated hours of collaboration among community partners and agencies, leaders, and local residents. Lincoln County Health and Human Services has been the driving force behind this 10-month endeavor to provide an accurate and current overview of Lincoln County's health.

The World Health Organization defines health as a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[1] Health is not just about individuals, but includes families, communities, and systems, and is a result of the interaction of complex networks of conditions and factors. Health starts long before illness occurs and is impacted by where and how we live, learn, work, play, worship and age.

The CHA incorporates this definition of health by describing a wide array of information about the conditions and factors affecting people's health in Lincoln County as well as indicators of health status.

Assessment Goals and Objectives

Lincoln County's Community Health Assessment (CHA):

- Determines the current health status of the community
- Defines areas for health improvement, while building upon ongoing community knowledge and efforts
- Identifies organizational and community assets that can be mobilized to improve health for the entire community.
- Is a collaborative process that incorporates a broad range of community voices.

CHA data informs:

- Community, organizational, and local coordinated care organization decision-making
- Prioritization of health problems
- Development, implementation, and evaluation of a Community Health Improvement Plan.

This process has included:

- Engaging county stakeholders and partners in the process of issue identification, data collection, interpretation of data, editing, and dissemination of results
- Synthesizing existing data reports; identifying areas in which more information is needed; and conducting additional and local targeted assessments to address gaps
- Identifying health needs and assets that will inform additional planned processes, including the Community Health Improvement Plan, Public Health Division's strategic planning, public health accreditation, and health care transformation initiatives, among others.

Report Organization

The CHA is presented in six chapters:

Chapter 1: Introduction and Overview

Chapter 2: Lincoln County: People and Place, who we are and our natural environment; the people of the county; and the air, water and land that surrounds us

Chapter 3: Opportunities for Health in Lincoln County, the social, economic, and community factors that influence health

Chapter 4: Healthy Living in Lincoln County, the ways in which individuals and communities act to protect and improve health

Chapter 5: Chronic Disease and Health Outcomes related to disease and injury

Chapter 6: Conclusion: Meeting Challenges with Strengths

Collaboration and Partnerships

In 2002 Lincoln County began a community health improvement partnership process that brought together county stakeholders and community members to identify and prioritize health needs of local residents. This initial process gave rise to many ongoing collaboration and health improvement initiatives. One such initiative, the Pacific Communities Health District's proposed Center for Health Education, is expected to break ground in 2013. The Center for Health Education, which will be located on the campus of the Samaritan Pacific Communities Hospital, will strengthen Lincoln County by providing a hub for health-related information, classes and support groups.

Lincoln County's current Community Health Assessment (CHA) could not have happened without the relationships that developed through collaboration over time. The CHA engaged a wide representation of key individuals in the community who shared their personal and professional knowledge while committing to help develop health improvement strategies suitable for Lincoln County. In addition, over 19 individuals contributed feedback and edits to the chapters in this report.

Limitations

While the CHA identifies many critical issues pertaining to community health, it is not inclusive of all health-related issues. As a result, it should not be considered a formal study or research document investigating the causes of each issue raised or providing a detailed analysis of the data. In many cases, data are not available at the county level, nor are data stratified by race/ethnicity, income, education level, zip code, etc.

When race/ethnicity data are gathered, analysis may be further limited due to a lack of data stratification by more specific racial categories, such as U.S-born vs. Foreign-born for the Latino population, or the many ethnicities and cultures represented in the category of Asian-Pacific Islander. In other cases, especially when it comes to understanding the interactions of the many factors that contribute to health, data are lacking in part because their respective theoretical models are still being developed.

Throughout the document Oregon state-wide data are provided to illustrate trends, especially among vulnerable populations when county level data are not available. The need for more detailed local data is one outcome of this assessment. As local partners continue to gather information to inform their practices and services, it is important to collect demographic data (i.e. zip codes, level of education, etc.) so that more accurate information can be used to inform future community health improvement planning and other public health initiatives.

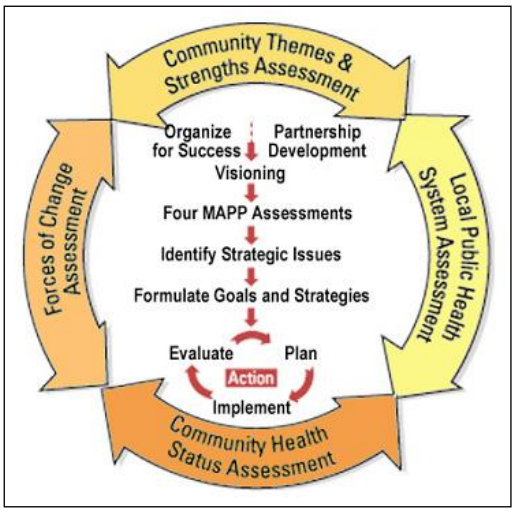
Frameworks for Assessing and Improving Health

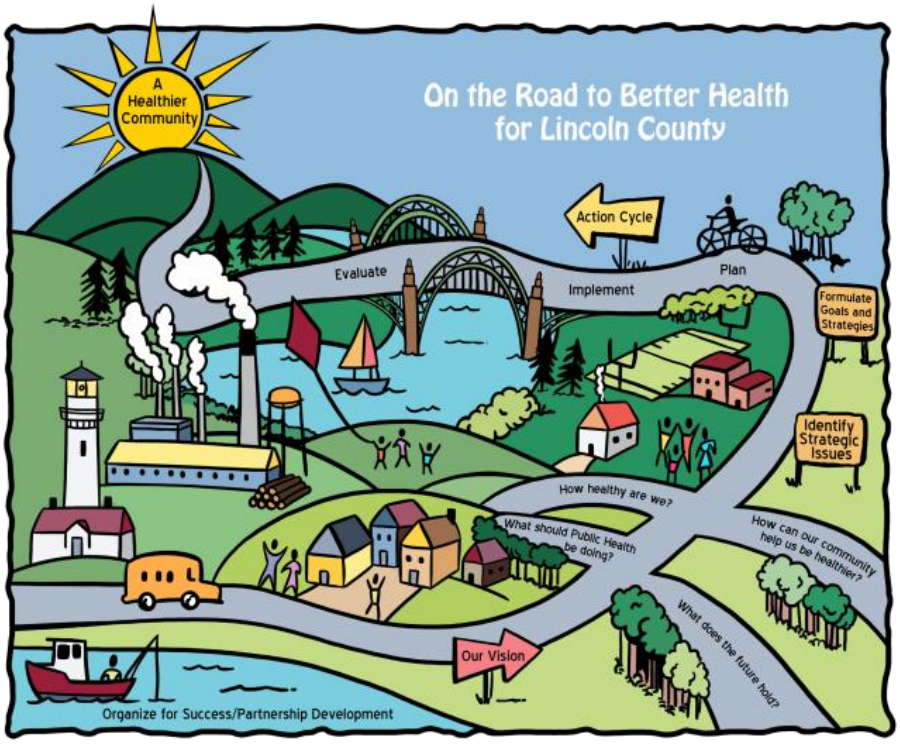
Mobilizing for Action through Planning & Partnerships (MAPP)

MAPP is a community driven strategic planning process often used by local public health leaders to improve community health.[2] This framework is used to help communities prioritize public health issues through strategic thinking, identify resources to address these issues, and plan for action. There are six phases within the MAPP framework which also include four distinct assessments that are important to this planning process.

MAPP Framework

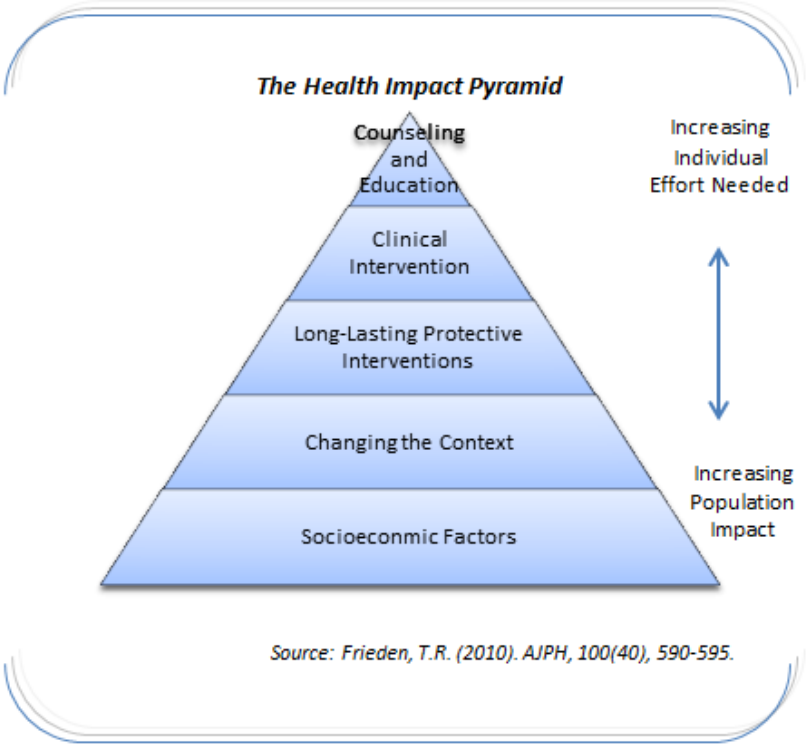
The initial stage of Lincoln County's Community Health Assessment in 2012 utilized the first three phases of the MAPP framework and includes three of the four assessments (Community Themes and Strengths Assessment, Local Public Health Assessment, and Community Health Status Assessment). This process was used as a way to engage a broad range of community partners, develop shared community vision and values, and identify community themes and strengths. Prioritizing community health and quality of life issues will assist in building a road to better health for Lincoln County.





A Framework for Public Health Action: The Health Impact Pyramid

Health is made up of many conditions and factors. Wordwide, a growing body of research reveals how conditions and social and economic opportunities determine health outcomes.[3]



To ensure that Lincoln County's CHA took a broad look at health, The Health Impact Pyramid[4] framework was incorporated into the second stage of the assessment process. This model provides guidance for a comprehensive public health approach to community assessment and program development across multiple domains of behavioral influence. In this 5-tier pyramid, efforts to address socioeconomic factors are at the base, followed by public health interventions that change the context for health (e.g., smoke-free laws, safe parks, bike lanes), protective interventions with long-term benefits (e.g., immunization, smoking cessation) come next, followed by direct clinical care, and at the top, counseling and education. In general, public action and interventions represented by the base of the pyramid require less individual effort and have the greatest population impact overall.[5] A similar model, called the Ecological or Social Ecology model, is used in a variety of disciplines in order to better understand the larger forces that impact individuals.[6]

The movement from an understanding of health focusing on the individual to one focused on communities and systems is also evident in the development of *Healthy People*,[7] the national 10-year agenda for improving health of all Americans developed by the U.S. Department of Health and Human Services.

The Health Impact Pyramid aligns with the factors that the U.S. Department of Health and Human Services cite as influencing the development of healthy communities:

"A healthy community is one that continuously creates and improves both its physical and social environments, helping people to support one another in aspects of daily life and to develop to their fullest potential. Healthy places are those designed and built to improve the quality of life

for all people who live, work, worship, and play within their borders- where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options." [8]

The factors described above informed the selection of indicators Lincoln County used to describe the health of county residents, the neighborhoods in which they live, and the issues that most impact their well-being. Finally, Lincoln County consulted the following state and national resources for guidance in the development of this community health assessment, including: Oregon Health Authority technical reports (e.g. health equity,[9] asthma,[10] chronic disease prevention[11]); the Centers for Disease Control and Prevention's data set directory of social determinants of health at the local level;[12] King County's Equity and Social Justice Annual Report;[13] and the Statewide Health Assessment of Minnesota. [14]

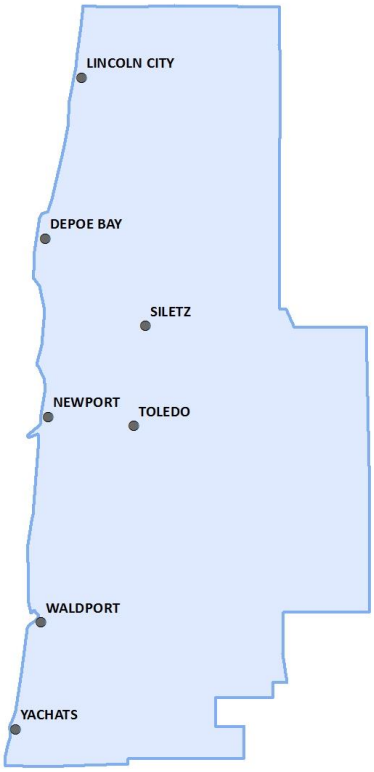
Healthy People 2020 Overarching Goals

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death
- Achieve health equity, eliminate disparities, and improve the health of all groups
- Create social and physical environments that promote good health for all
- Promote quality of life, healthy development, and healthy behaviors across all life stages

Source: U.S. Department of Health and Human Services, Healthy People 2020 Framework

Chapter 2
Lincoln County: People and Place

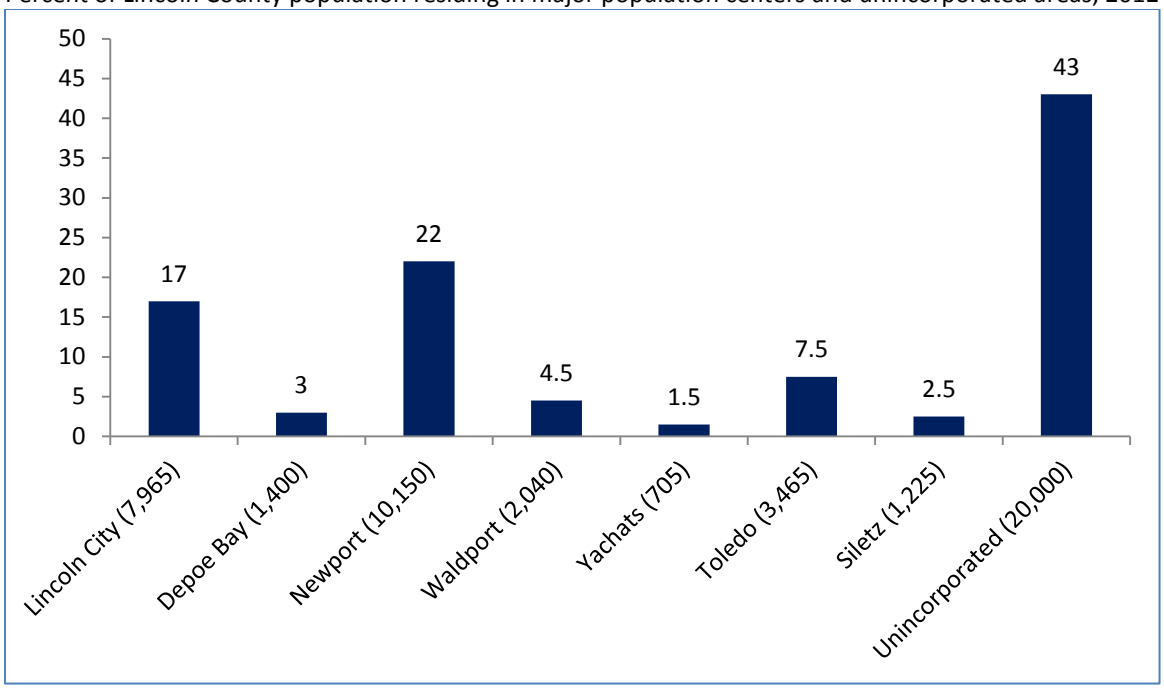
Lincoln County is located on the central Oregon Coast between the Pacific Ocean to the west and the Coast Range mountains to the east. The majority of the county's residents live in communities along the coastline. Natural resources are highly valued in Lincoln County; many residents depend on commercial fisheries, logging, tourism, and recent coastal agriculture. Newport is home to one of the most important fishing ports in the United States and is utilized by many local agencies including the U.S. Coast Guard, the National Oceanic and Atmospheric Administration, Oregon Department of Fish and Wildlife, and Oregon State University, among others. Lincoln County offers a beautiful landscape, mild climate, and high air and water quality, all which make it easy to call this area home for many residents.



Population Overview

Lincoln County is home to 46,295 residents.[15] Approximately 26,950 residents live in the coastal communities of Lincoln City (population 7,965), Depoe Bay (pop. 1,400), Newport (pop. 10,150), Waldport (pop. 2,040), and Yachats (pop. 705), and the inland communities of Toledo (pop. 3,465), and Siletz (pop. 1,225). Nearly 43 percent of Lincoln County residents (pop. 20,000) live in unincorporated communities, farms and rural residences throughout the county.[16] This rural geography often isolates families; isolation is compounded by limited transportation options as well as increasing costs of gasoline.

Percent of Lincoln County population residing in major population centers and unincorporated areas, 2012



Source: U.S. Census Bureau, American Community Survey, 2012

There are 20,769 households in Lincoln County, Oregon. The average household size is 2.18 people. Families make up 60.3 percent of the households. This figure includes both married couple families (48.5 percent) and other families (11.8 percent). Among other families, 5.1 percent are female-headed with children under 18 years of age and no husband present.

Nonfamily households make up 39.7 percent of all homes in Lincoln County. Most nonfamily households are composed of people living alone, but some are people living in households in which no one is related to the head of household.

In Lincoln County, 22 percent of all households have one or more people under the age of 18; 35 percent of all households have one or more people 65 years and over.

Among persons 15 years of age and older, 58 percent of males and 50 percent of females are currently married.

Marriage status in Lincoln County, 2011

Population 15 years and over	Percent of Males	Percent of Females
Never married	25.8	18.9
Married	58.1	50.2
Separated	1.5	3.9
Widowed	2.4	11.4
Divorced	12.2	15.6

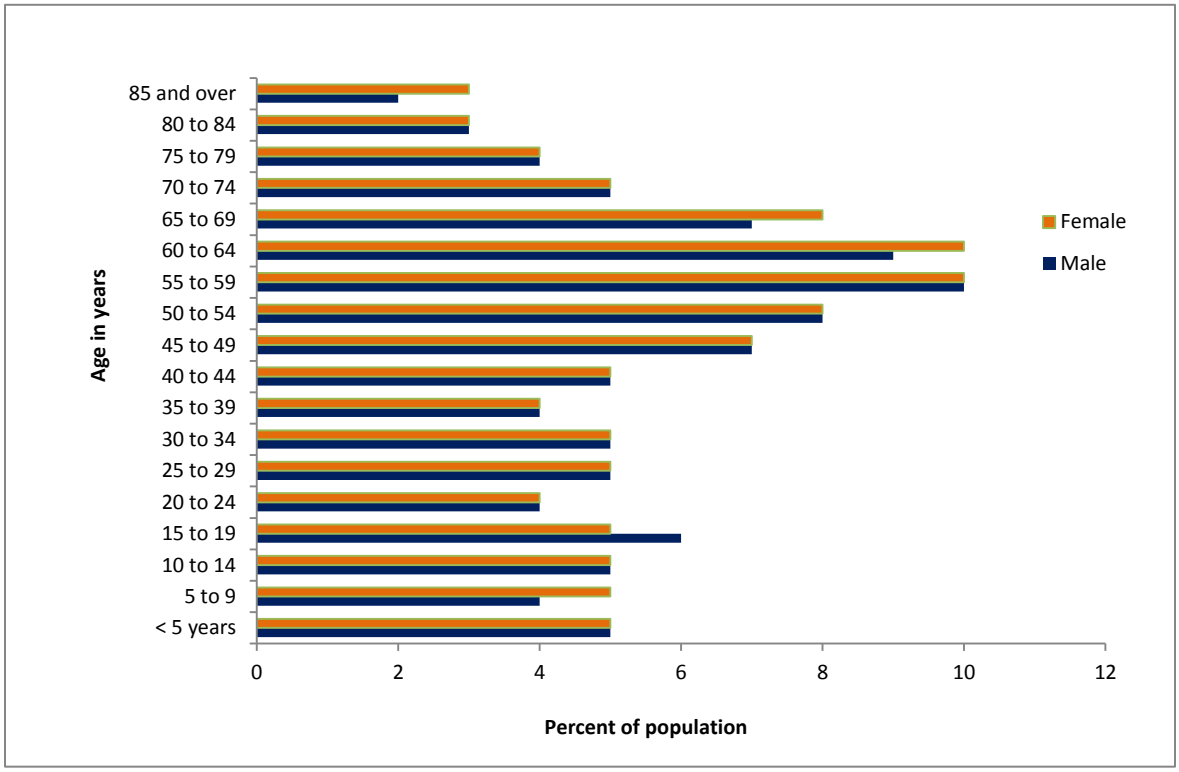
Source: U.S. Census Bureau, American Community Survey, 2011

According to U.S. Department of Veteran Affairs data for 2012, there are 5,233 veterans living in Lincoln County and 328,138 in Oregon overall.[17] Veterans are defined as men and women who had previously served on active duty in the U.S. Army, Navy, Air Force, Marine Corps, Coast Guard, or who served in the U.S. Merchant Marine during World War II.[18]

Demographics: Population by Age and Sex

Based on U.S. 2010 Census data, the percentage of males and females is about the same in most age groups. The 55-59 and 60-64 year age groups are among the largest. This may be due to older adults choosing to live in Lincoln County upon retirement. Overall, from 2000 to 2010, the Lincoln County population has grown 3.5 percent from 44,479 to 46,034. [19]

Lincoln County age composition, 2009-2011



Source: U.S. Census Bureau, American Community Survey, 2009-2011

Immigration and Growing Diversity

Native and Foreign Born

In 2011, 95 percent of the people living in Lincoln County were native residents of the United States. Forty-six percent of these residents were living in the state in which they were born.

Also in 2011, five percent of the people living in Lincoln County were foreign born. Of the foreign born population, 18 percent were naturalized U.S. citizens, and 71 percent entered the

country before the year 2000. Twenty–eight percent of the foreign born entered the country in 2000 or later. [20]

The largest racial minority group in Lincoln County is American Indian and Alaska Native (2.4 percent). The largest ethnic population in Lincoln County is Latino (8.0 percent). Of the cities with available data on ethnicity, 15 percent of those living in Newport and 13 percent of those living in Lincoln City are Latino persons. In 2010, the Latino population increased 72 percent from 2000. [21] In general, Lincoln County's population is less diverse than that of the state of Oregon.

Population by race/ethnicity, 2009-2011

Race/Ethnicity	Lincoln County		Oregon	
	Total Population	**Percent**	**Total Population**	**Percent**
White	40,463	88.0%	3,204,614	83.6%
Asian and Pacific Islander	898	2.0%	186,281	4.0%
Two or more Races	1799	3.9%	144,759	3.8%
Other	1,985	2.7%	204,625	5.3%
African American	70	0.2%	69,206	1.8%
American Indian and Alaska Native	1120	2.4%	53,203	1.4%
Latino	3,660	8.0%	450,062	11.7%

Source: U.S. Census Bureau, American Community Survey, 2009-2011

Confederated Tribes of Siletz Indians

Lincoln County is home to the Confederated Tribes of Siletz Indians, which makes up an important part of Lincoln County's Native American or American Indian population. This diverse confederation makes up 27 Western Oregon, Northern California, and Southern Washington bands.[22] As of April 2010, 4,660 members were enrolled in this tribe and 21% of tribal members live in Lincoln County. Although there is only a small amount of reservation land currently in the northern part of Lincoln County, there is a prominent presence of tribal members in the city of Siletz. The current reservation totals 3,666 acres and includes a gaming casino and resort. In 2012 there were approximately 3.9 percent of Lincoln County residents who identify as Native American or American Indian.[23]

K-12 Population

The Lincoln County School District (LCSD) spans all of Lincoln County, from Cascade Head to Cape Perpetua. LCSD serves approximately 5,200 students from kindergarten through 12th grade in ten regular schools and four public charter schools. From 2000 to 2007 there was a 30 percent increase in Latino students and a 52 percent increase in English language learners.

Lincoln County School District student population by race/ethnicity, 2012-2013

School	White	African American	Latino	Asian Pacific Islander	American Indian/Alaskan Native	Multi Ethnic	Total Minority
Crestview Heights	81.9%	1.0%	9.4%	0.7%	1.7%	5.2%	18.0%
Eddyville Charter	86.9%	0.0%	6.8%	0.0%	3.6%	2.7%	13.1%
Isaac Newton Magnet	72.7%	2.2%	15.8%	2.2%	2.9%	4.3%	27.4%
Career Tech High	83.3%	0.0%	10.0%	1.7%	1.7%	3.3%	16.7%
Newport High	63.9%	1.2%	22.7%	1.2%	3.4%	7.6%	36.1%
Newport Intermediate	64.4%	0.9%	24.5%	1.2%	2.4%	6.7%	35.7%
Newport Preparatory	58.1%	1.0%	28.8%	1.0%	3.4%	7.8%	42.1%
Oceanlake Elementary	71.2%	0.2%	17.4%	1.6%	4.8%	4.8%	28.8%
Sam Case Elementary	58.0%	0.8%	31.3%	2.5%	1.2%	6.3%	42.1%
Siletz Valley	35.3%	0.5%	7.5%	0.0%	44.3%	12.4%	64.7%
Taft Elementary	62.2%	0.7%	26.1%	0.0%	5.3%	5.8%	37.9%
Taft High	71.4%	0.6%	16.0%	0.7%	5.5%	5.7%	28.5%
Toledo Elementary	73.5%	0.8%	5.6%	0.0%	13.0%	7.2%	26.6%
Toledo Junior/Senior High	77.2%	0.3%	5.4%	0.0%	13.6%	3.5%	22.8%
Waldport High	82.3%	1.4%	5.6%	0.5%	7.0%	3.3%	17.8%

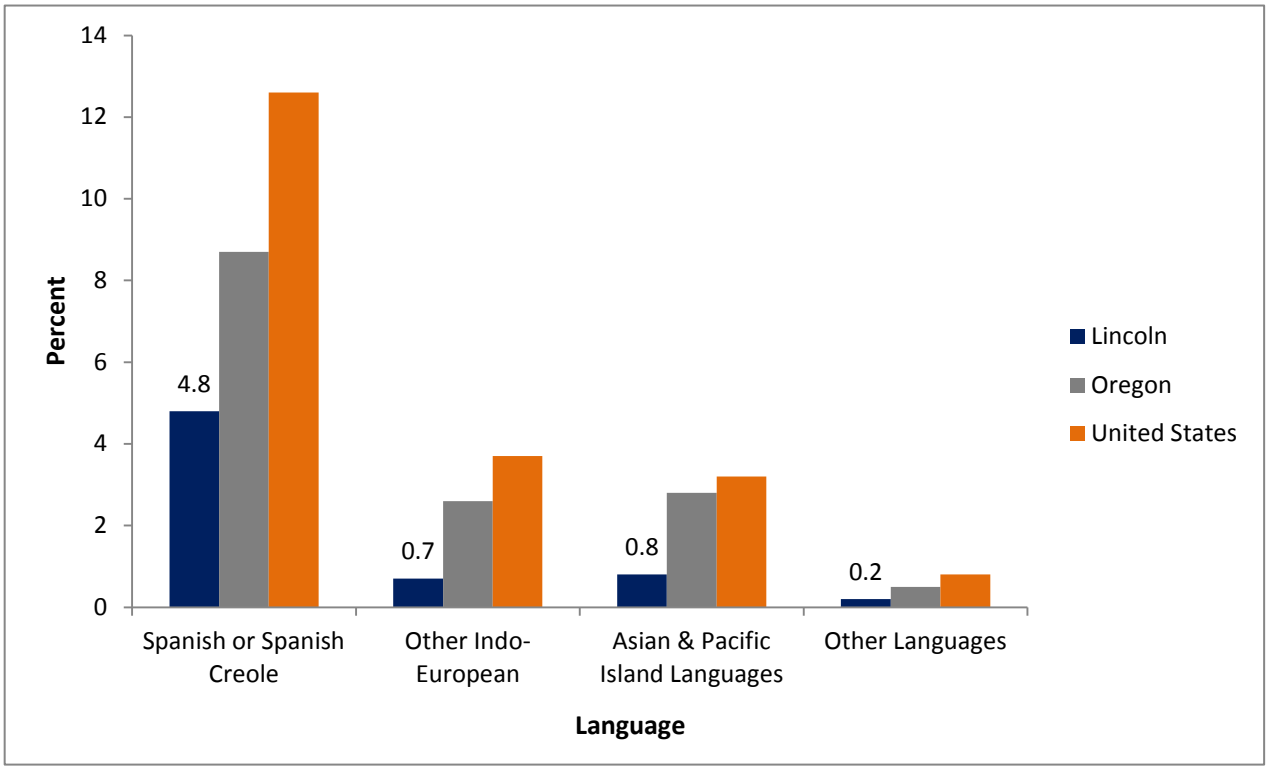
Source: Oregon Department of Education, 2013

Lincoln County has five private schools: Newport Montessori, a K-2 school with 26 students; Nye Beach Montessori School, serving 44 kindergarteners; Abundant Life Academy, a pre-K through 12 with 32 students; Lincoln City Seventh-Day Adventist School, with 86 students enrolled in grades 1-12; and Mid-Coast Christian School, with 27 students enrolled in grades 1-12. [24] As of January 2013, there were approximately 213 school aged kids enrolled with the Linn Benton Lincoln (LBL) Education Service District (ESD) as home school students in Lincoln County.[25]

Language Spoken at Home

Among people at least 5 years old living in Lincoln County, from 2007-2011, 6.6 percent spoke a language other than English at home. Of those speaking a language other than English at home, 73 percent spoke Spanish or Spanish Creole and 27 percent spoke some other language; 47 percent reported that they did not speak English “very well”. In comparison, 15 percent of Oregon and 20 percent of U.S. residents at least 5 years old speak a language other than English in the home.

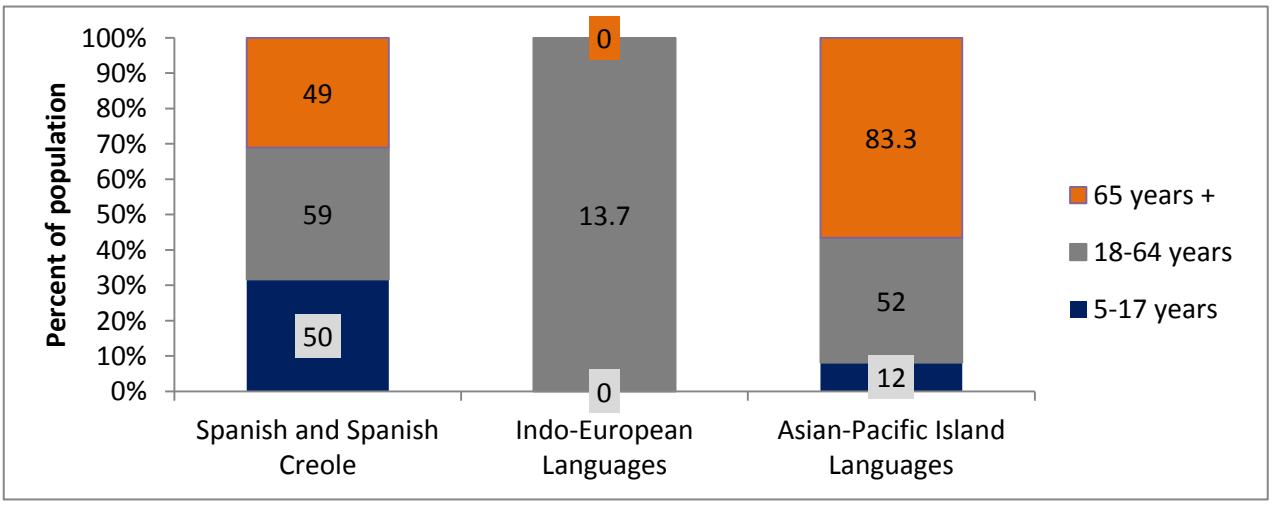
Percentage of the population 5 years and over who speak a language other than English, 2007-2011



Source: U.S. Census Bureau, American Community Survey, 2007-2011

Within Lincoln County, approximately 10 percent of households speaking Spanish and 22 percent of households speaking an Asian Pacific Island language do not have anyone age 14 and over who speaks English only or speaks English "very well".

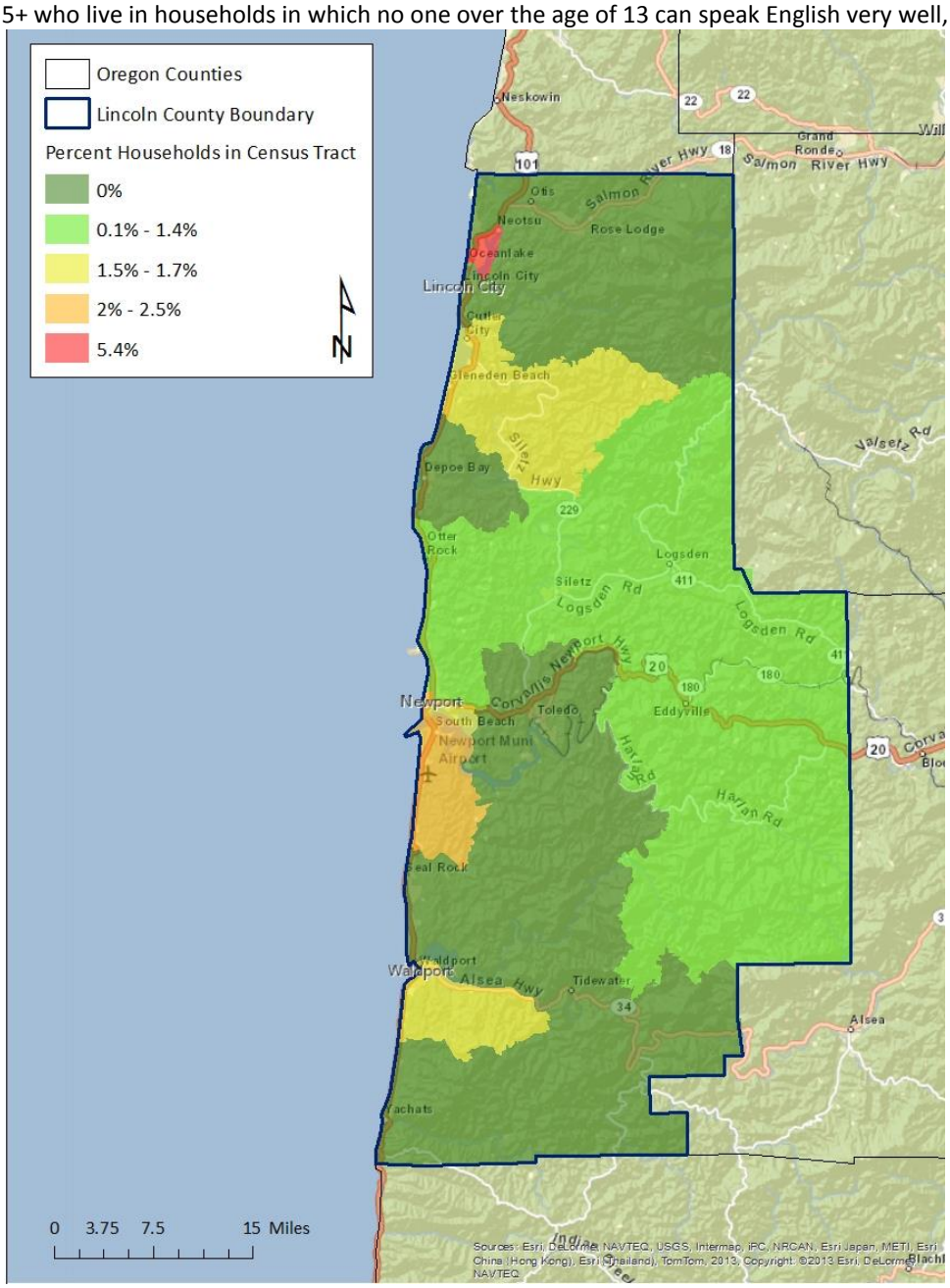
Percentage of Lincoln County residents who speak another language and speak English less than "very well", 2007-2011



Source: U.S. Census Bureau, American Community Survey, 2007-2011

As shown on the map below, many of the families with limited English ability are primarily clustered in and around Lincoln City and Newport.

People age 5+ who live in households in which no one over the age of 13 can speak English very well, 2007-2012



Source: US Census Bureau, American Community Survey, 2007-2012

Disabilities

From 2009-2011, among the civilian non-institutionalized population, approximately 20.3 percent reported a disability in Lincoln County,[26] defined as a person's risk of participation limitation when he or she has a functional limitation or impairment.[27] The likelihood of having a disability varied by age; from 5.7 percent of people under 18 years of age to 18.4 percent 18 to 64 years of age, and 38.8 percent of those 65 and over.

The percentage of Lincoln County population with a disability by ethnicity or race is: White 21.1 percent; Asian 16.2 percent; and Latino 12.6 percent.

Lincoln County disability characteristics of population 5+, 2009 -2011

Total Civilian Non-Institutionalized Population	20.3%
With a Hearing Difficulty	6.7%
With a Vision Difficulty	3.8%
With a Cognitive Difficulty	7.1%
With an Ambulatory Difficulty	12.2%
With a Self-care Difficulty	4.3%
With an Independent Living Difficulty*	6.6%

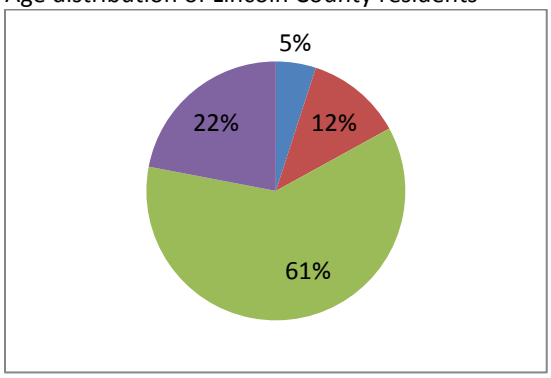
Source: U.S. Census Bureau, 2009-2011 American Community Survey
** Includes only population 18+*

In addition, 285 persons (192 adults; 93 children) with Developmental Disabilities are enrolled in case management with Lincoln County Developmental Disabilities Services.

Aging Population

Twenty-two percent of those living in Lincoln County are 65 and over, compared with fourteen percent in Oregon overall. [28] A number of health issues, needs and concerns are associated with an aging population.

Age distribution of Lincoln County residents



5% = Under 5 years
12% = 5-18 years
61% = 19-64 years
22% = 65+ years

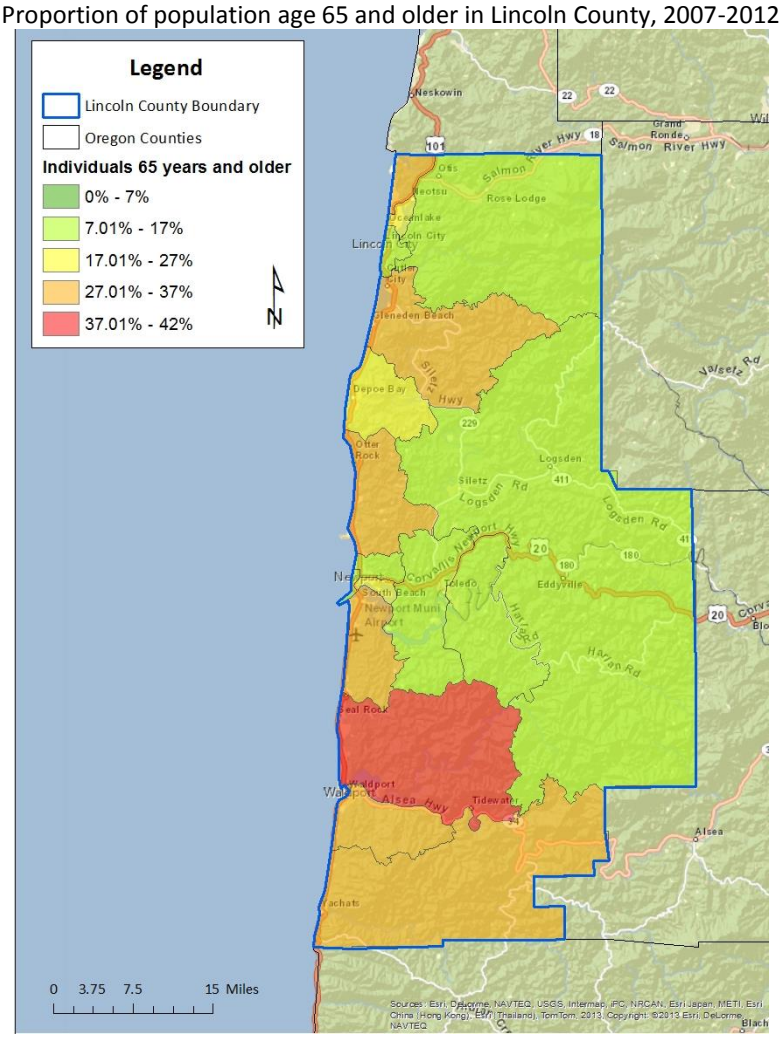
Source: U.S. Census Bureau, Quick Facts, 2010

Characteristics of Lincoln County adults over 65 years of age:[29]

- 88.5 percent are White, non-Latino
- 24.4 percent have a bachelor's degree or higher
- 38.8 percent have a disability
- 33.6 percent pay rent for their home
- 29.6 percent live alone
- 16.3 percent receive Food Stamp/SNAP benefits
- 16.2 percent live below poverty level
- 14.8 percent are civilian veterans

There are six assisted living (ALF) and residential care facilities (RCF)[30] and one rehabilitation facility[31] licensed in Lincoln County. These facilities are certified by the Seniors and People with Disabilities Division of the Department of Human Services, providing a total resident capacity of 403. A higher proportion of older adults 65 years and older live in south Lincoln County near Seal Rock and Waldport

Proportion of population age 65 and older in Lincoln County, 2007-2012



Source: US Census Bureau, American Community Survey, 2007-2012

Physical Environment

The total land area of Lincoln County is 1,194 square miles. Of this, 980 square miles are land and 214 square miles are water. Adjacent counties include Tillamook County to the north, Polk and Benton Counties to the east, and Lane County to the south and southeast. Lincoln County has nearly 60 miles of coastline. Ninety percent of the county's land is forested, and is among the most productive tree growing land in the world.[32] Lincoln County ranked 7th out of 33 Oregon counties for physical environment in the 2013 County Health Rankings.[33]

Water Quality

Water quality in Lincoln County is considered to be good overall and any problems that exist are relatively minor and are regulated by existing state and federal pollution control programs.[34] Such problems may include issues around sedimentation due to soil erosion in watersheds, non-compliance with temperature standards occurring as a result of low summer flows, and over appropriation. Potential sources of contamination in watersheds, however, can be mitigated by proper and effective management practices.

There are two primary sub-basins in Lincoln County that provide drinking water to residents: the Siletz-Yaquina sub-basin and the Alsea sub-basin.[35] Numerous streams and rivers flow directly into the various watersheds that make up the two sub-basins. Each watershed falls under a specific Public Water System depending on its location in the county.

The Siletz-Yaquina sub-basin is currently one of twelve priority sites in Oregon for pollution monitoring. The watershed contains high levels of dissolved oxygen and bacteria and increased temperature.[36]

Public drinking water sources in Lincoln County

Source Water Assessment		
Public Water System Location	**Water Sources**	**Citizens Served**
Depoe Bay	North Depoe Bay Creek, South Depoe Bay Creek, Rocky Creek	1,060
Kernville, Gleneden Beach, Lincoln Beach Water District	Drift Creek	4,000
Lincoln City Water District	Schooner Creek	13,527
Bay Hills Water Association	Unnamed creek, tributary to Yaquina River	50
City of Newport	Siletz River, Big Creek	10,200
Beverly Beach Water District	Wade Creek	210
Panther Creek Water District	Panther Creek	550
City of Siletz	Siletz River, Tangerman Creek	1,100
Toledo Water Utilities	Siletz River, Mill Creek	3,230
Johnson Creek Water Service Company	Johnson Creek	60
SW Lincoln County Water District	Dicks Fork, Big Creek, Starr Creek, Vingie Creek	3,000
City of Waldport	North Fork Weist Creek, South Fork Weist Creek, Eckman Creek	3,000
City of Yachats	Salmon Creek, Reedy Creek	685
	Total	**40,672**

Source: Oregon Department of Environmental Quality, Water Quality, Oregon Drinking Water Protection Program, 2013

Harmful algae blooms are a public health concern in Lincoln County for both humans and animals. Not all blooms are harmful, but some species of algae such as cyanobacteria or blue-green algae can produce toxins or poisons that can cause serious illness or death in pets, livestock, wildlife and humans. The statewide Harmful Algae Bloom Surveillance (HABS) Program tracks toxic blue-green algae and advises the public about where and when to avoid contact with the water. From 2002 to 2012, three advisories were issued in Lincoln County. In 2008 and 2009 advisories were issued for Devils Lake (81 days and 29 days, respectively), and in 2012 an advisory was issued for Big Creek Reservoir (87 days).[37]

Devils Lake is also monitored from Memorial Day to Labor Day each year for *E. coli* by the Devils Lake Water Improvement District. While *E. coli* bacteria are generally harmless, they are associated with fecal inputs to the lake which may cause illness. Sources of *E. coli* include humans, birds, cats, dogs, horses, and other warm blooded animals in the watershed.[38]

Environmental Hazards

Domestic Sewage Systems

The majority of waterborne disease outbreaks are caused by bacteria and viruses present in domestic sewage. Septic tanks are the largest contributor to bacterial and viral groundwater contamination. Health risks are higher in areas where older, failing septic systems discharge untreated or partially treated sewage above or below ground, potentially contaminating nearby streams and wells.

Sewer system hook-ups are maintained at the city level rather than at the county level. Currently in Lincoln City, there are 4033 residential sewer service and 707 commercial sewer service units. In Newport, the combined number of residential and commercial units with sewer service is 4640.

The number of wastewater overflow events recorded by the City of Newport's Public Works Department since 2007 is 41, many of which were caused by excess precipitation.[39] Other causes of overflow events included power outages, mechanical or electrical equipment failure, or plugged outfall. Potential human health impacts could include gastrointestinal illness, beach closures, or restrictions on harvest of certain aquatic animals. Other areas of Lincoln County have also had overflow events in recent years, although data are not included here.

The Oregon Department of Environmental Quality (DEQ) currently has 86 active permits for wastewater disposal in Lincoln County.[40] These permits are designed to limit storm water run-off, industrial wastewater, sewage, and other sources of water pollution.

Leaking Underground Storage Tanks and Environmental Clean-up Sites

The Oregon Department of Environmental (DEQ) Cleanup Program protects human health and the environment by identifying, investigating, and remediating sites contaminated with hazardous substances. The program's objective is to improve sites to the point where no further cleanup action is necessary.

Oregon's Leaking Underground Storage Tank Program is part of the DEQ's Land Quality Division. An underground storage tank system is a tank or any underground piping that is attached to the tank and has about ten percent of its combined volume underground.[41] These underground storage tanks may store petroleum or other hazardous substances that can pose a risk to groundwater quality if leakage occurs. Oregon's program handles issues related to clean up of soil and groundwater contamination from spills or releases and enforces state and federal rules. Since 1987, Lincoln County has had 218 documented leaking underground storage tanks; only 5 since 2012.[42]

The DEQ is also tracking and monitoring fifty environmental clean-up sites in Lincoln County.[43] Of these, 18 have been remediated and require no further action. Remaining sites contain different levels and types of contamination from hazardous substances including petroleum from residential heating oil tanks, regulated tanks at gas stations and other commercial facilities. Some sites may have one contaminant in a small area of shallow soil, while others may have high concentrations of many substances in soil, surface water, sediments or groundwater.

The Oregon Community Right to Know and Protection Act (ORS 453.307-453.414) is a law that makes information about hazardous materials in Oregon available to emergency service personnel, emergency planners, health officials, and the public. Facilities throughout Oregon that are storing a reportable quantity of hazardous substances are required to annually report this information to the State Fire Marshal.[44] Incidents that release hazardous materials into the environment may occur in facilities that manufacture, use, or store these substances. Incidents may also occur during transport of these materials or by equipment malfunction.[45]

Currently, there are 14 facilities in Lincoln County that report having a combined total of 224 Extremely Hazardous Substances stored at their sites.

Air Quality

Overall, outdoor air quality in Lincoln County is considered to exceed minimum standards set by the EPA.[46] Air toxics are pollutants that are known to cause cancer or serious health conditions such as birth defects, organ damage or respiratory problems.[47] People both young and old with asthma, lung or heart conditions can be extremely sensitive to air toxics. The U.S. Environmental Protection Agency (EPA) conducts a National Air Toxics Assessment that evaluates 178 high priority toxic air pollutants to help provide a better understanding of the air quality in Oregon.[48] The DEQ then prioritizes areas of Oregon to determine air toxics reduction strategies, if needed. Lincoln County is not a priority area in Oregon presumably due to its low levels of air toxics.

In April 2011, the U.S. EPA released an air toxics monitoring report conducted on Toledo Elementary School.[49] Monitoring results from samples taken between August and December 2009 showed that concentrations of the majority of air toxics measured near the elementary school were below the EPA's levels of concern for health effects with both short and long-term exposures. The air toxics measured were acetaldehyde, benzene, 1,3-butadiene, manganese and nickel.

Indoor environmental quality, as defined by the Centers for Disease Control and Prevention, is the quality of a building's environment in relation to the health and well-being of those who occupy the space within it. Key factors that influence a structure's indoor environmental quality include dampness and mold in buildings, building ventilation, construction and renovation, chemicals and odors, indoor temperatures, and relative humidity.[50] Buildings in Lincoln County are often exposed to winter storms with winds in excess of 30 mph and heavy rainfall with 24 hour accumulations of greater than three inches. This combination often results in moisture

entering buildings creating conditions for the growth of mold. Examining the health effects of specific contaminants in buildings is very complex, but research has shown that some respiratory symptoms and illnesses can be associated with damp buildings.[51]

Such an example of heavy mold growth in Lincoln County occurred at Crestview Heights Elementary School in Waldport in spring 2013. As a result, this elementary school was closed for several weeks to allow for mold remediation.

Waste Management

The Lincoln County Solid Waste District is a county-wide program within the County Public Works Department that emphasizes solid waste management planning, waste reduction, reduce, reuse, and recycling promotion, backyard composting, and control of illegal dumping.[52]

The District recycles up to 80 percent of the latex paint collected at county transfer stations; paint is blended, filtered and distributed to the community in five-gallon buckets at a reduced price. The District is part of a cooperative service project with Georgia-Pacific and the Oregon Department of Forestry to provide free disposal of wood and yard debris, including lumber, brush, pruned branches, stumps, shipping pallets, and other clean woody debris. The District works in partnership with Dahl Disposal Services to provide free wood and yard waste disposal services in Toledo.

Within the District, several privately-owned businesses provide garbage and recycling services. North Lincoln Sanitary Service provides garbage and recycling service from North Lincoln to Beverly Beach and Rose Lodge. Thompson's Sanitary Services provides hauling, garbage and recycling services in Newport. Agate Beach Recycling Center and Agate Transfer Station also serve the Newport area. Transfer stations are located at multiple locations throughout the county that temporarily house solid waste awaiting transfer outside the county to Coffin Butte landfill in Corvallis.

Chapter 3
Opportunities for Health

Opportunities for health among Lincoln County residents begin within their homes, neighborhoods, places of worship, workplaces, and schools. A growing body of scientific research shows that all people benefit when communities invest in health.

Health Disparities

Race or ethnicity, sex, sexual identity, age, disability, socioeconomic status, and geographic location all contribute to an individual's ability to achieve good health. It is important to recognize the impact that social determinants have on health outcomes of specific populations.

In Lincoln County, 38 percent of the population lives in a rural area. Twenty-two percent of the population is aging (versus 14 percent for Oregon). Lincoln County has also seen a 72 percent increase in its Latino population since 2000. Fifteen percent of people living in Newport and 13 percent of people living in Lincoln City are Latino, compared with eight percent in the county overall.

Mental health consumers, homeless, and lesbian, gay, bisexual, transgender, or queer (LGBTQ) persons experience worse health outcomes than the general population. In Oregon, people with mental health conditions and/or substance abuse issues die 34.5 years earlier than the general population. Also in Oregon, the high school dropout rate for minority youth is 30 percent, compared with 7 percent for all youth, and low birth weight and infant mortality rates are 50 percent higher for African American babies than White. A typical Latino boy born in Oregon today is twice as likely to develop preventable diabetes as a White boy.

Across the United States, rates of illness for adults in their 30s and 40s with lower incomes and education levels are comparable to affluent adults in their 60s and 70s. College graduates can expect to live at least five years longer than those who have not finished high school, and almost two years longer than those who didn't finish college. Understanding health disparities in the context of Lincoln County is critical to improving health across the county.

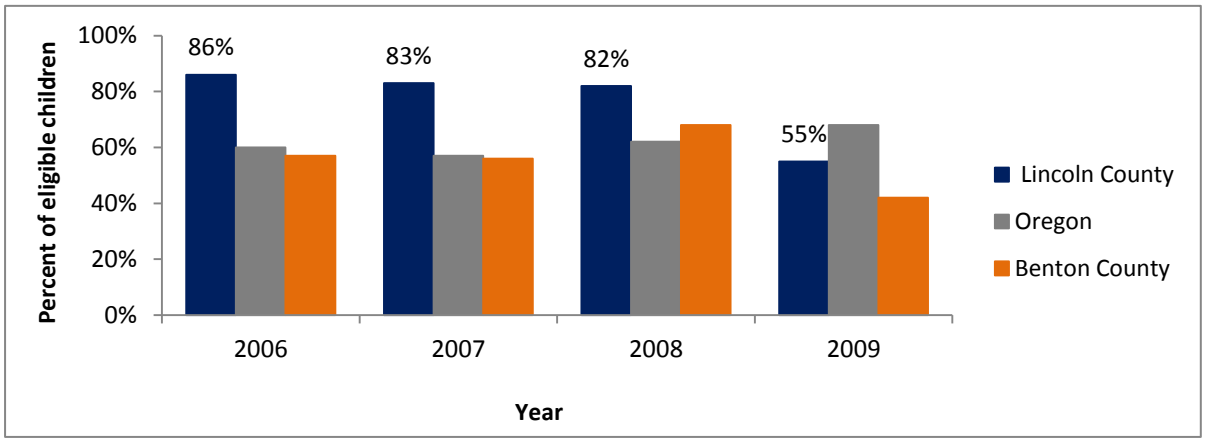
Education and Employment

Education

Health and learning are closely connected. Education is a very important predictor of health because it both shapes and reflects multiple factors that affect people's life options and opportunities.

Early childhood development supports nurturing relationships and learning opportunities that foster children's readiness for school. The early years are crucial for influencing health and social well-being across a child's lifetime.[53] Research evidence accumulated over the past 40 years supports the conclusion that children who participate in high-quality early childhood development (ECD) programs benefit from a broad range of immediate and long-term health benefits.[54]

Percent of eligible children served by Head Start or the Oregon Pre-kindergarten Program, 2006-2009



Source: Oregon Department of Education (2012). The Annie E. Casey Foundation- Children First for Oregon.

Despite strong research showing the positive impact of high-quality early education, many families in Lincoln County who need child care, may not be served. In 2010, there were 18 available child care slots per 100 children, while the goal for the state is 25 slots per 100 children. In addition to availability, price may be a barrier for many families.

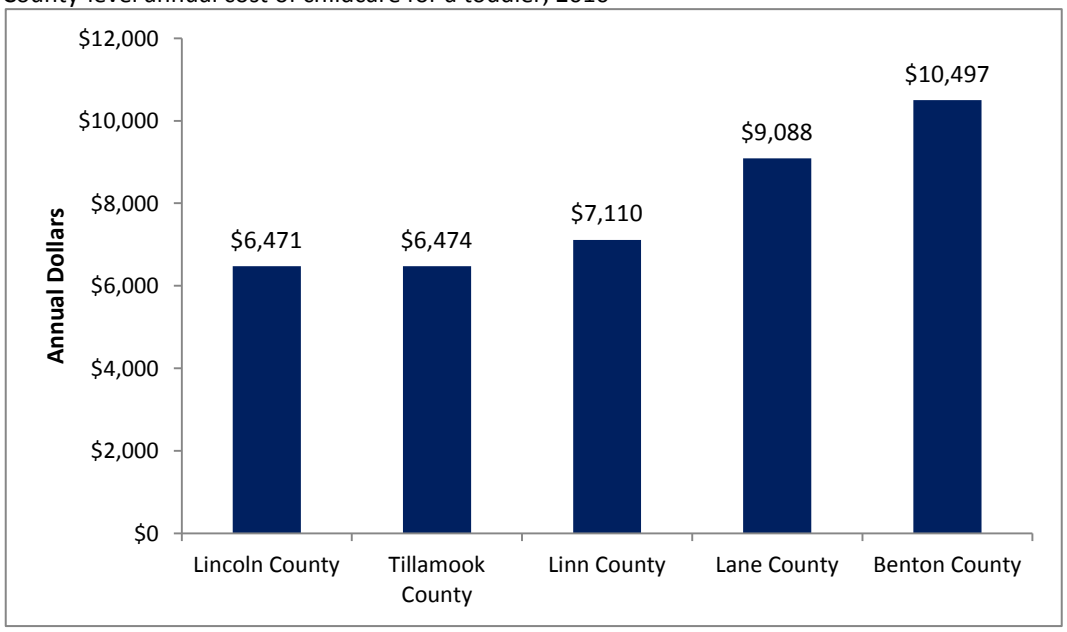
In 2009, only 55 percent of Head Start eligible children were enrolled in a Head Start program in Lincoln County. Other childcare programs may offer scholarships for lower income families, however, the cost of childcare can still be prohibitive for families earning minimum wage.

> *"It is hard to find quality child care for people in Lincoln County. They don't have much money to pay for childcare with all of their other bills. They have to pay certain money and have to work consistent schedules."*
> *- Lincoln County Resident*

The average annual cost of toddler care in childcare centers in Lincoln County is $6,471. This amount is lower than the average cost of toddler care

in Oregon, but may be out of reach for many Lincoln County families. For a family with a minimum wage worker, the cost of toddler care may represent 37 percent of a family's income.

County-level annual cost of childcare for a toddler, 2010



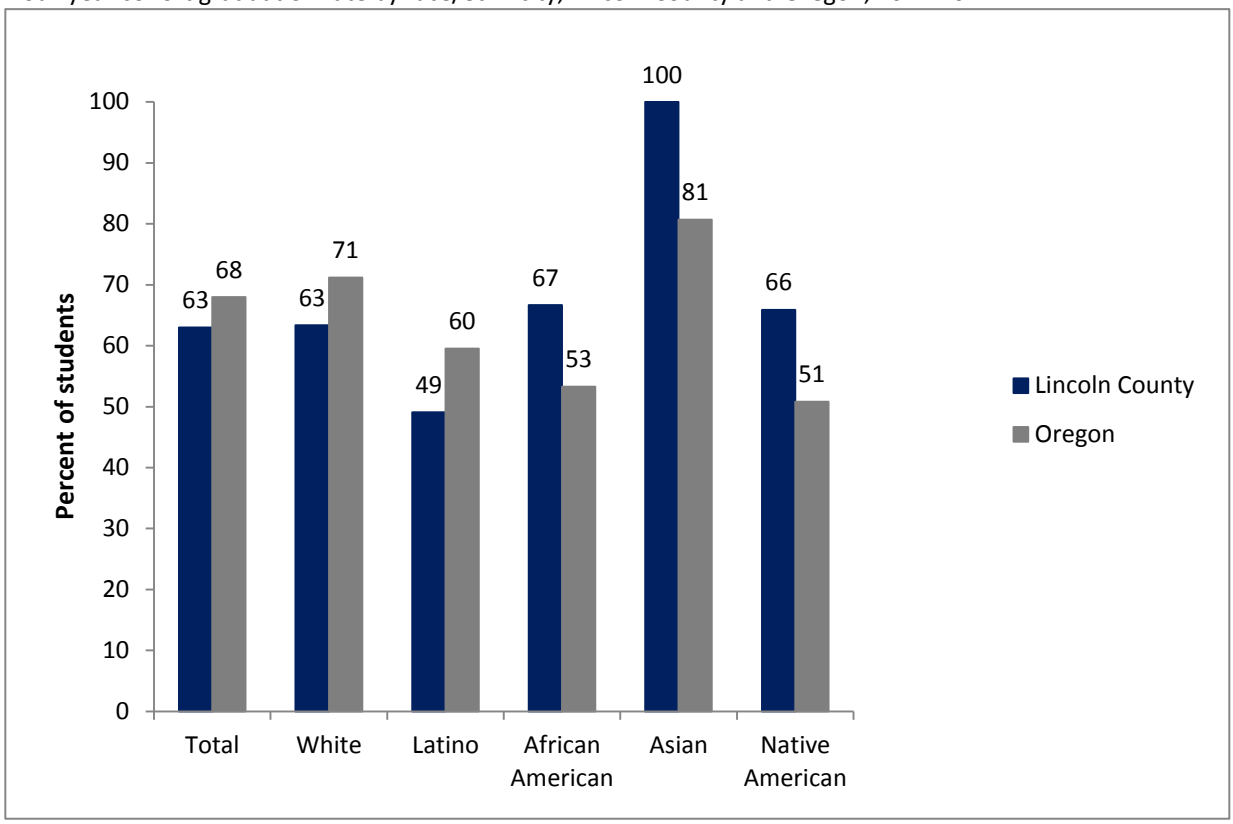
Source: Child Care Resource & Referral Network, 2010

High School Education

High school graduation is a strong predictor of future employment and earnings. Conversely, dropping out of school is associated with lower income, multiple social and health problems,[55] and health risks.[56] For example, 32 percent of Oregonians who do not have a high school degree smoke, compared with 24 percent of high school graduates, 18 percent with some post-secondary education, and seven percent of college graduates.[57]

In Lincoln County, only 63 percent of high school students graduate within four years (compared with 68 percent for the state) and only 56 percent of the population has some college education (versus 64 percent for the state). Four-year cohort graduation rates differ between racial and ethnic groups in Lincoln County.

Four-year cohort graduation rate by race/ethnicity, Lincoln County and Oregon, 2011-2012



Source: Oregon Department of Education, 2013

In 2011-2012, four-year high school graduation rates in Lincoln County and in Oregon were highest for Asian populations. Graduation rates for African American, Native American, and White populations were all between 63 and 67 percent in Lincoln County. The lowest graduation rates in the county were among Latino students.

Employment

Economic Opportunities

Stable and secure employment influences health, not only by being a source of income, but by providing access to health insurance. From 2009-2011, 58.7 percent of Lincoln County residents, or 22,885 individuals, 16 years and older were in the labor force, of which 7.2 percent, or 1,648, were unemployed.[58]

The unemployment rate in Lincoln County was 9.5 percent in June 2012, compared with 8.8 percent statewide. Traditionally, Lincoln County residents have relied on a resource-based economy involving commercial fisheries and logging. These natural resources have seen measurable declines over time, causing economic challenges for wage-earners whose skill sets without retraining and further education are not a good fit for other employment. Emerging to replace resource-based employment has been an increasing dependence on the tourism

industry. However, jobs in this industry are generally low-paying and subject to seasonal fluctuations.[59]

Percentage of civilian employed population 16 + by business sector, 2007-2011

Business Sector	Lincoln County	Oregon
Educational Services, Health Care, Social Services	17.3%	21.6%
Retail Trade	18.1%	12.3%
Manufacturing	5.2%	11.5%
Professional, Scientific, and Technical Services	7.8%	10.0%
Arts, Entertainment, Accommodation and Food Services	15.6%	9.4%
Construction	8.9%	6.5%
Agriculture, Forestry, Fishing and Hunting	4.0%	3.5%

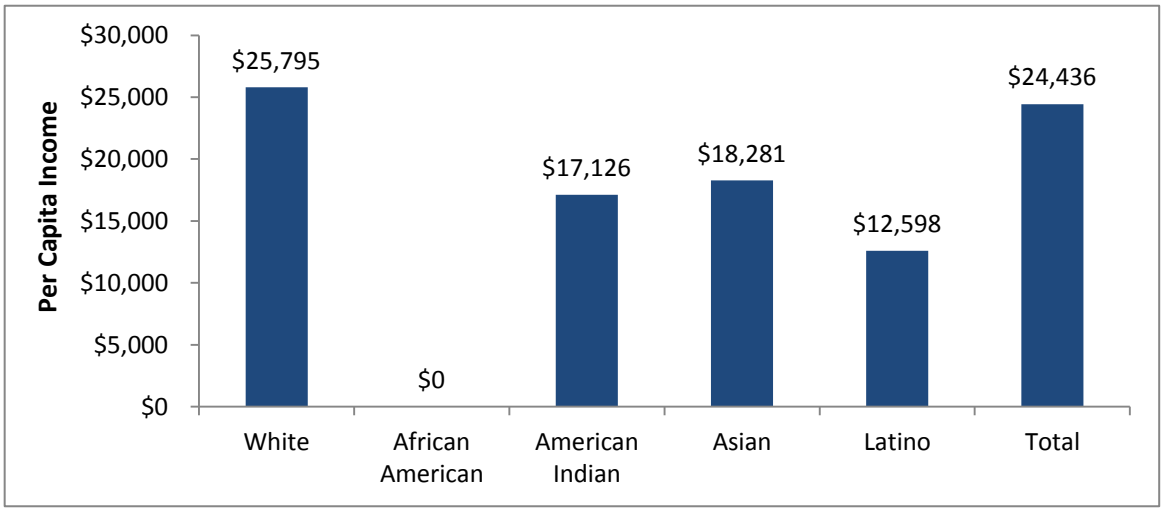
Source: U.S. Census Bureau, American Community Survey, 2007-2011

Income, Poverty, and Economic Challenges

Income and Poverty

Income involves more than money earned from a job. It also includes assets like a bank account or equity in a home, and access to other economic resources. Income influences people's ability to choose where to live, what food to eat, participation in physical activities (especially those that require fees or special equipment), and availability of leisure time. In Lincoln County, American Indian, Asian and Latino residents earn incomes that are almost half that of the White population.

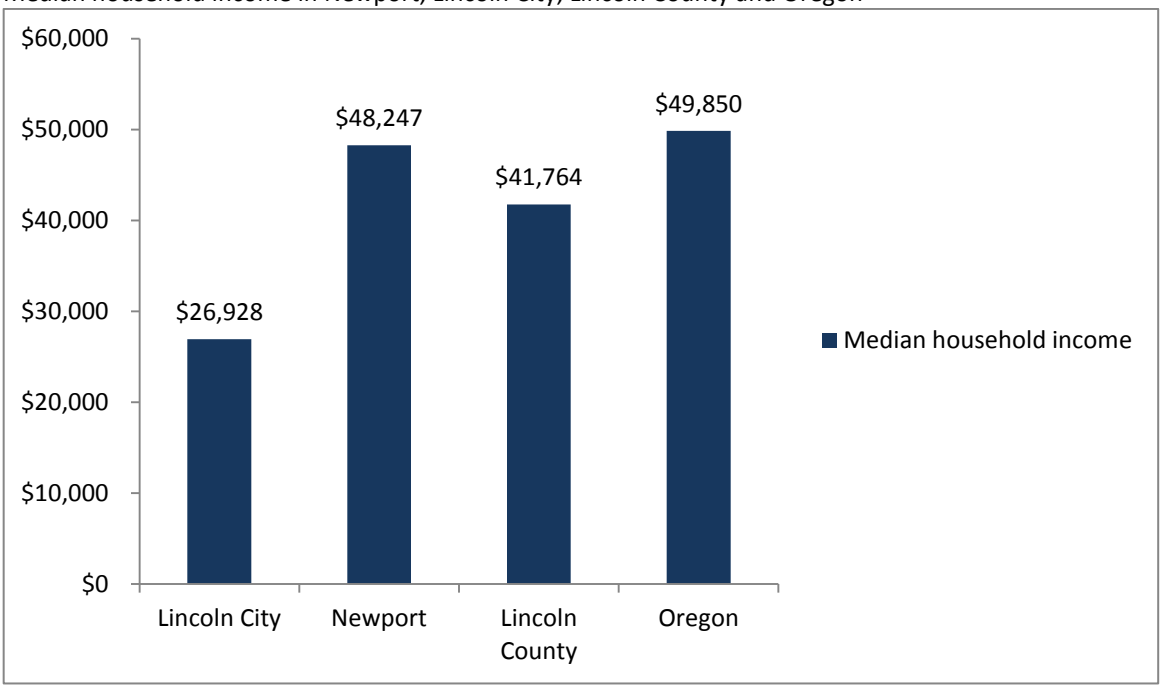
Per capita income in Lincoln County by race/ethnicity, 2009-2011



Source: U.S. Census Bureau, American Community Survey, 2013
**Data for African American wage earners cannot be displayed because the number of sample cases is too small.*

The median household income for people living in Lincoln County ($41,764) is lower than for Oregon as a whole ($49,850). In addition, income varies within the county: the median household income in Newport is $48,247 compared with $26,928 in Lincoln City.

Median household income in Newport, Lincoln City, Lincoln County and Oregon



Source: American Community Survey, 2007-2011

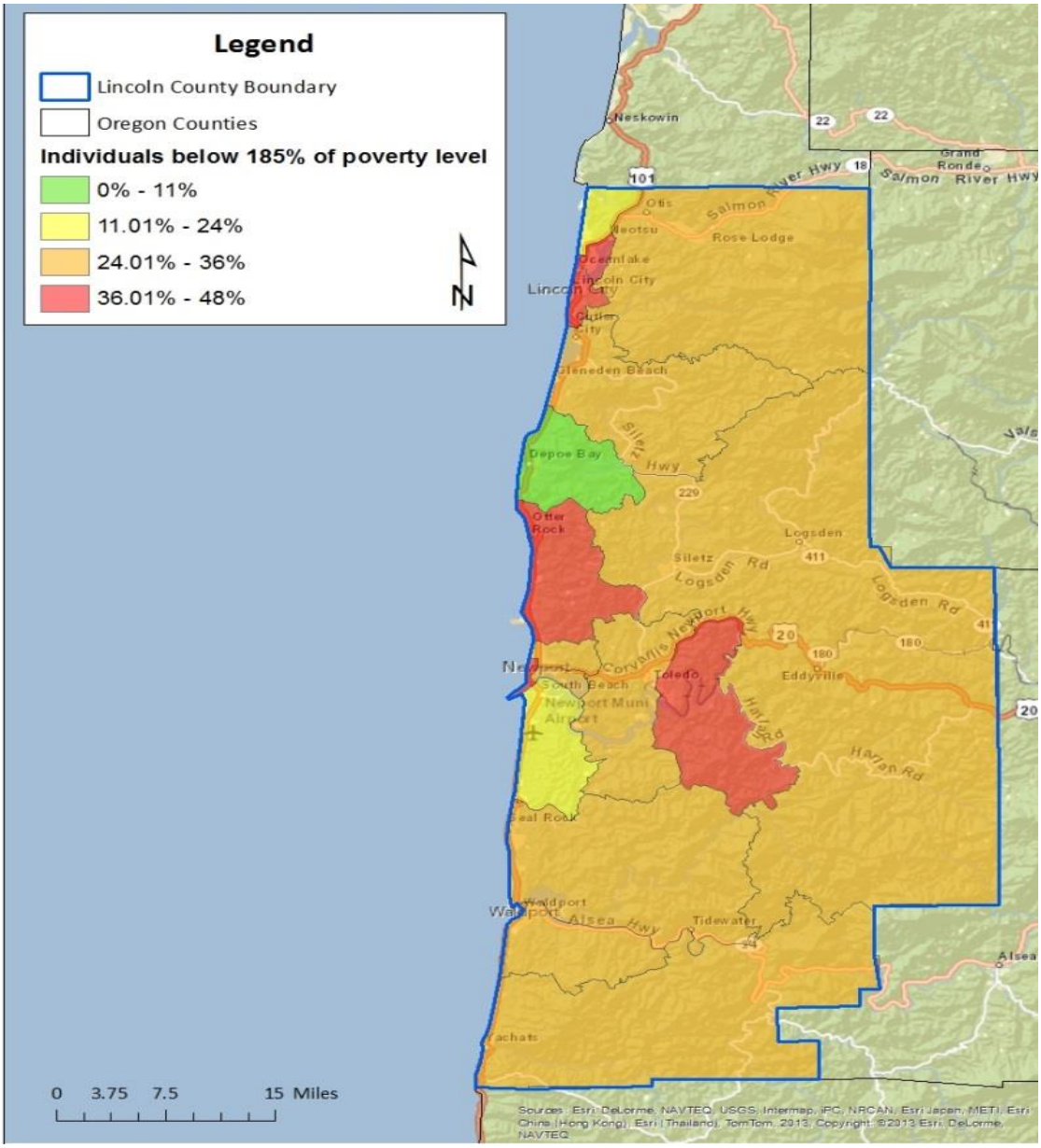
Poverty

Poverty is directly related to worse health outcomes. Poverty related to both limited income and lack of income limits choices in education, employment, and living conditions, and reduces access to safe places to live, work, and play. It also frequently hinders choices and access to healthy food. Poverty can contribute to obesity by increasing families' reliance on cheap sources of food, which tend to be higher in calories and lower in nutritional value.

> *"The basic underlying issue for most of our problems is poverty: hunger, homelessness, poor health outcomes. Our county is dependent upon seasonal, low wage jobs- makes our population more transient. A population that is more susceptible to these challenges."*
> *- Lincoln County Resident*

The map below illustrates the geographic distribution of households earning less than 185 percent of the federal poverty line in Lincoln County. In 2013, this is an annual income of up to $43,567.50 for a family of four ($3,630.63 a month).

Percent of population with income <185% of federal poverty level, Lincoln County, 2007-2011



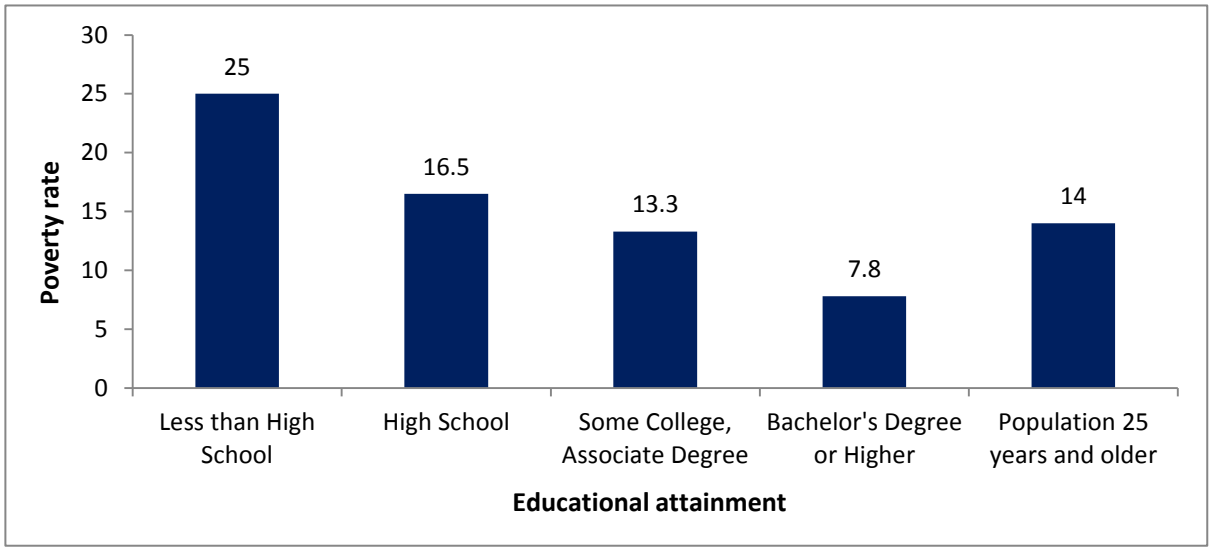
Source: U.S. Census Bureau, American Community Survey, 2007-2011

Approximately 15 percent of the population in Lincoln County is living below the federal poverty line[l], which is less than an annual income of $23,550 for a family of four. The poverty level is a conservative estimate of the threshold below which families or individuals are considered to be lacking the resources to meet the basic needs for healthy living. This includes having insufficient income to provide food, shelter, and clothing needed to maintain health.

[l]The poverty thresholds vary by family size and composition, use money income before taxes and do not include capital gains or noncash benefits. The official poverty thresholds do not vary geographically, but they are updated for inflation using Consumer Price Index (CPI-U).

Earning less than a high school education increases the chances of experiencing poverty. In Lincoln County, 24 percent of individuals who have not completed high school or a GED are earning wages below the poverty level compared to only 16 percent of those who have a high school degree.[60]

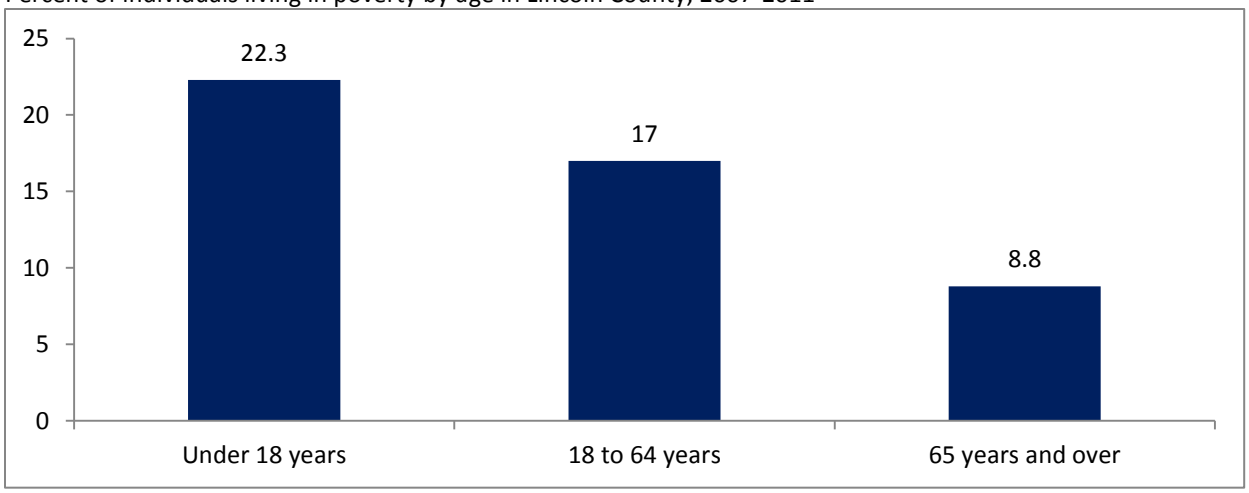
Poverty rate for the population 25 years and over by educational attainment, Lincoln County, 2007-2011



Source: U.S. Census Bureau, American Community Survey, 2013

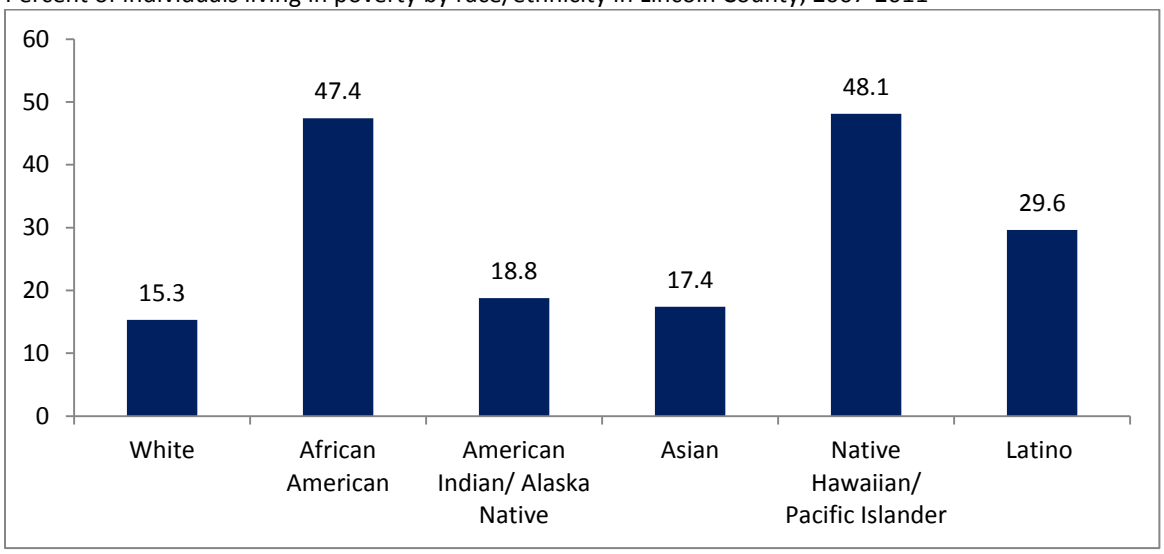
Across Lincoln County, one in every five children is living in poverty (22 percent)[61]. Variation also exists between race/ethnic groups. Individuals who identify as African American (47 percent), Native Hawaiian or Pacific Islander (48 percent), American Indian (19 percent), Asian (17 percent) or Latino (30 percent) are more likely to be experiencing poverty than those who are White (15 percent).

Percent of individuals living in poverty by age in Lincoln County, 2007-2011



Source: U.S. Census Bureau, American Community Population, 2013

Percent of individuals living in poverty by race/ethnicity in Lincoln County, 2007-2011

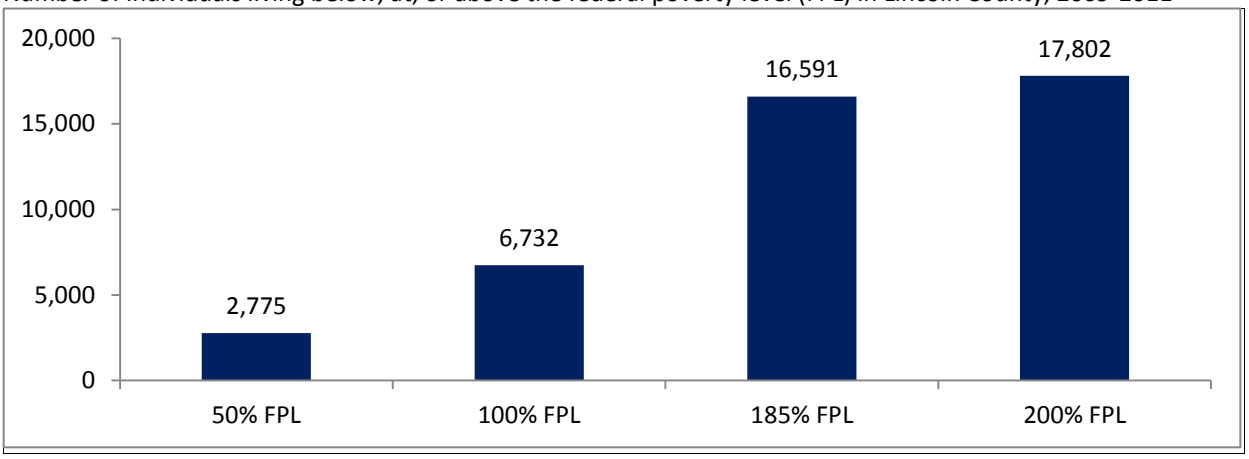


Source: U.S. Census Bureau, American Community Population, 2013

Low Income

Many Lincoln County residents earn incomes higher than the federal poverty level but still struggle economically to meet their everyday needs. Thirty-seven percent earn less than 185 percent of the federal poverty level ($43,567.50 for a family of four). This is the threshold that many assistance programs such as the Supplemental Nutrition Assistance Program (SNAP) use for income eligibility. Thirty-nine percent earn less than 200 percent of the federal poverty level ($47,100) which research suggests is the minimum income needed to meet basic needs (i.e. not including saving for college or emergencies).

Number of individuals living below, at, or above the federal poverty level (FPL) in Lincoln County, 2009-2011



Source: U.S. Census Bureau, American Community Survey, 2013

Children Living in Poverty

A growing body of research shows that children who are raised in families experiencing long-term poverty are at greater risk of significant and long-term deficits in health.[62] From 2007-2011, 22 percent (7,976) of children under 18 years of age were living in households earning less than 100 percent of the federal poverty level ($23,550 for a family of four). In comparison, Oregon (20 percent) and U.S. (20 percent) are slightly lower than Lincoln County rates of childhood poverty.

Based on Oregon Department of Education data, 66 percent of students were eligible for free/reduced lunch during the 2012-2013 school year. The percentage of students eligible for free/reduced lunch by school varies significantly from school-to-school in Lincoln County.

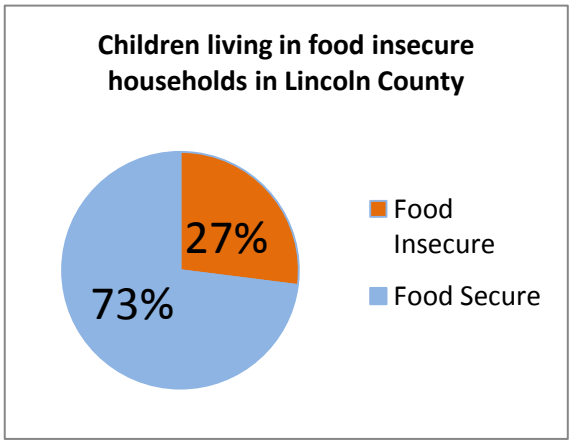
Percentage of children eligible for free and reduced-price lunch, Lincoln County, 2012-2013

School/District	Eligible for Free Lunch	Eligible for Reduced-price Lunch	Percent
Lincoln County School District	3013	428	66.0%
Crestview Heights School	276	34	76.7%
Eddyville Charter School	106	19	56.6%
Isaac Newton Magnet School	34	-	28.8%
Lincoln City Career Technical High School	-	-	n/a
Newport High School	233	40	48.3%
Newport Intermediate School	182	21	61.3%
Newport Preparatory Academy	124	22	71.2%
Oceanlake Elementary School	280	44	74.0%
Olalla Center for Children & Families	-	-	n/a
Sam Case Elementary School	317	30	66.2%
Siletz Valley Early College Academy	52	-	83.8%
Taft Elementary School	327	31	79.2%
Taft High School	396	70	67.9%
Toledo Elementary School	248	32	74.3%
Toledo Junior/Senior High School	166	26	60.8%
Waldport High School	130	20	69.8%

Source: Oregon Department of Education, Report: Students Eligible for Free/Reduced Lunch, 2012-2013

Food Security

Food security is defined here as having enough to eat, and being able to purchase or obtain healthy food in socially acceptable ways.[63] Adequate nutrition is particularly important for children, as it affects their cognitive and behavioral development. Children from food insecure, low-income households are more likely to experience irritability, fatigue, and difficulty concentrating on tasks, especially in school, compared to other children.[64]



In 2010, 15.6 percent of the Lincoln County population, or over 7,000 individuals, were residing in households that were food insecure.[65] Among those who were food insecure, 21 percent earned incomes above 185 percent of the federal poverty level, making them ineligible to receive government assistance programs.

Recent targeted assessments suggest that food insecurity is higher among certain populations, such as Latinos, and households in rural areas.[66,67]

The food insecurity rate is higher among children in Lincoln County. From 2009-2011, 2190 children, or 27 percent of the Lincoln County population under 18 years of age were living in food insecure homes, 28 percent of whom were ineligible to receive federal nutrition programs.[68]

Supplemental Nutrition Assistance Program Participation

The Federal Supplemental Nutrition Assistance Program (SNAP) is the largest domestic food and nutrition assistance program for low-income Americans. U.S. households must meet certain eligibility criteria, such as income, to receive benefits. In Lincoln County, 80 percent of individuals meeting eligibility guidelines participate in the program. This averages 10,384 participants each month. Lincoln County's participation rate is slightly higher than the statewide participation rate. On average, 71 percent of eligible Oregonians participate in the program.[69]

Women, Infants and Children (WIC)

WIC is a public health nutrition program that is vital to the health of women, infants and children across Oregon. The WIC program provides health and nutrition services to pregnant and breastfeeding women and children ages 0 to 5 that meet income eligibility guidelines. In Lincoln County, 62 percent of pregnant women and 68 percent of working families are served by WIC. In 2012, $930,560 WIC dollars were spent on healthy foods at local retailers.[70]

Emergency Food Support

Food Share of Lincoln County, the regional food bank system, distributes emergency food boxes through six affiliated pantries located in Lincoln City, Depoe Bay, Newport, Waldport, Siletz and Toledo. In addition to the pantries, Food Share of Lincoln County provides assistance in the form of food and other donated items to nine local agencies.

In recent years Food Share of Lincoln County has noted an increase in clients, especially first time clients. The agency served an average of 1,039 families and 2,778 individuals per month in 2007. These numbers increased to an average of 1,167 families and 2,882 individuals per month in 2010.

Food Share of Lincoln County reports that the majority of clients that use their emergency food assistance are employed but not making enough money to cover all of their basic living expenses. The majority of jobs in Lincoln County are in the service industry, primarily focused on tourism, with positions in retail, hospitality, and food service, and therefore vulnerable to seasonal fluctuations and the economic climate.

Housing and Home Ownership

Housing is an important part of the built environment and another key factor contributing to good health. Older housing in particular can present multiple threats to health, including presence of lead-based paint, lead solder in plumbing and in the soil, mold, and asbestos.

Poor quality and inadequate housing contribute to health problems such as infectious and chronic diseases, injuries, and poor childhood development. Indoor allergens and damp housing conditions play an important role in respiratory conditions including asthma, which currently affects over 20 million Americans, and is the most common chronic disease among children. Approximately 40 percent of diagnosed asthma among children is believed to be attributable to residential exposures.

Residential exposure to environmental tobacco smoke, pollutants from heating and cooking with gas, volatile organic compounds and asbestos have been linked with respiratory illness and some types of cancer. Low-income people with difficulty paying rent, mortgage or utility bills have been found to be less likely to have an established source of medical care, more likely to postpone treatment, and more likely to use the emergency room for treatment. Families who lack affordable housing are more likely to move frequently. Residential instability is associated with emotional, behavioral and academic problems among children, and with increased risk of teen pregnancy, early drug use, and depression during adolescence.

Housing Characteristics

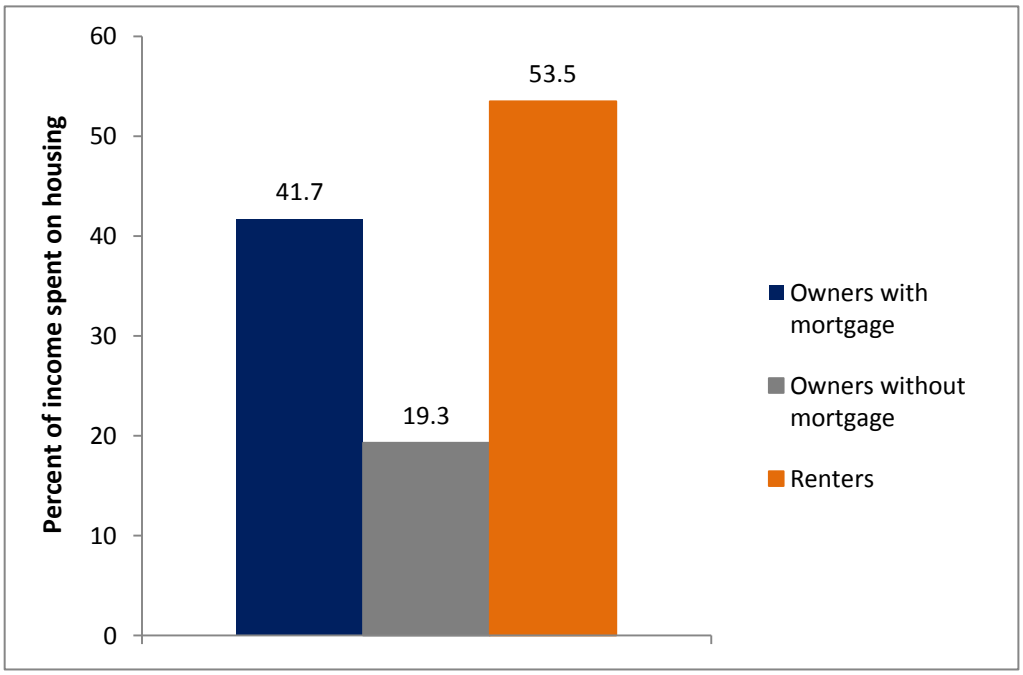
In Lincoln County, 66.4 percent of housing units are owner occupied (compared to 63.1 percent in Oregon). The average household size among owner-occupied housing is 2.16 (compared to 2.54 in Oregon). Over twenty percent of Lincoln County housing was built in the 1970s, and an additional 35 percent was built between 1980 and 1999. Sixty-two percent of houses are heated with electricity, 21 percent with gas, and 12 percent with wood.

Housing Affordability

Affordable, quality housing provides shelter that is safe and healthy for all people. Housing that costs more than 30 percent of household income is considered to be "unaffordable." In Lincoln County, 54 percent of renters spend 30 percent or more of household income on housing. Of home owners with mortgages, 41.7 percent spend 30 percent or more of household income on housing. Of home owners without mortgages, 19.3 percent spend 30 percent or more of household income on housing.

> *"…being able to afford a place (to live) is a big deal…when you have that baseline covered you have time and energy to move to the next level, but if you don't have the base level covered, you struggle."*
>
> *- Lincoln County Resident*

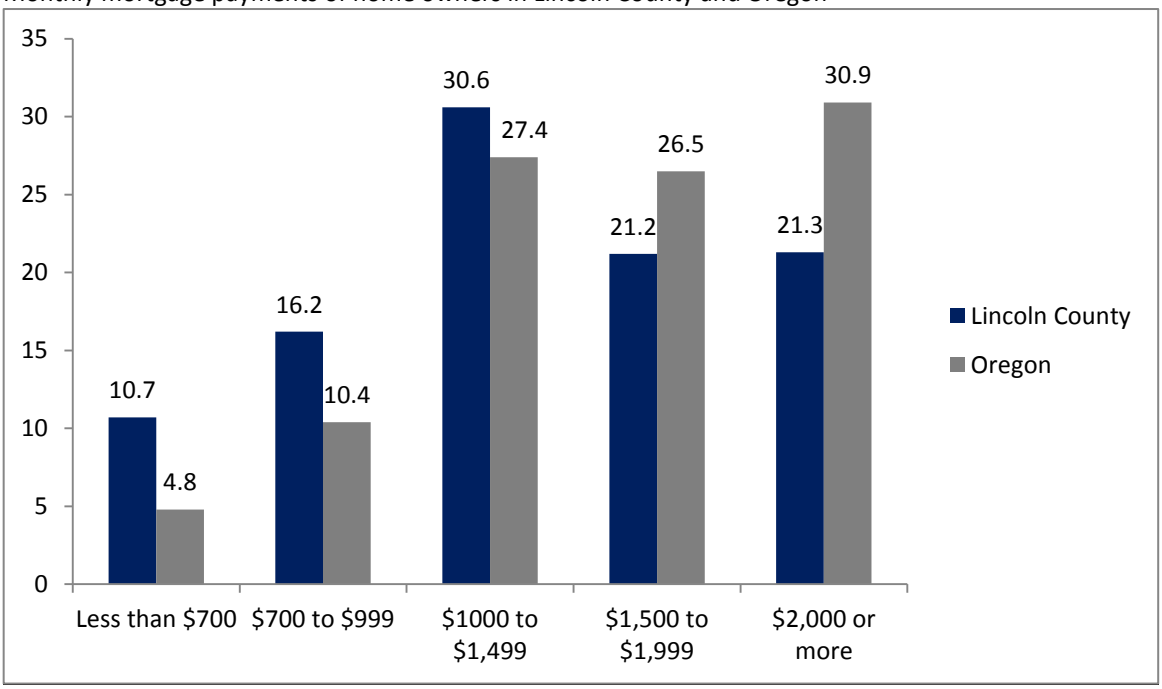
Occupants with housing cost burden (>30 Percent of Income) in Lincoln County, 2007-2011



Source: U.S. Census Bureau, 2007-2011 American Community Survey

Approximately 30 percent of home owners with mortgages in Lincoln County pay between $1,000 and $1,499 monthly. Over 40 percent pay upwards of $1,500 per month.

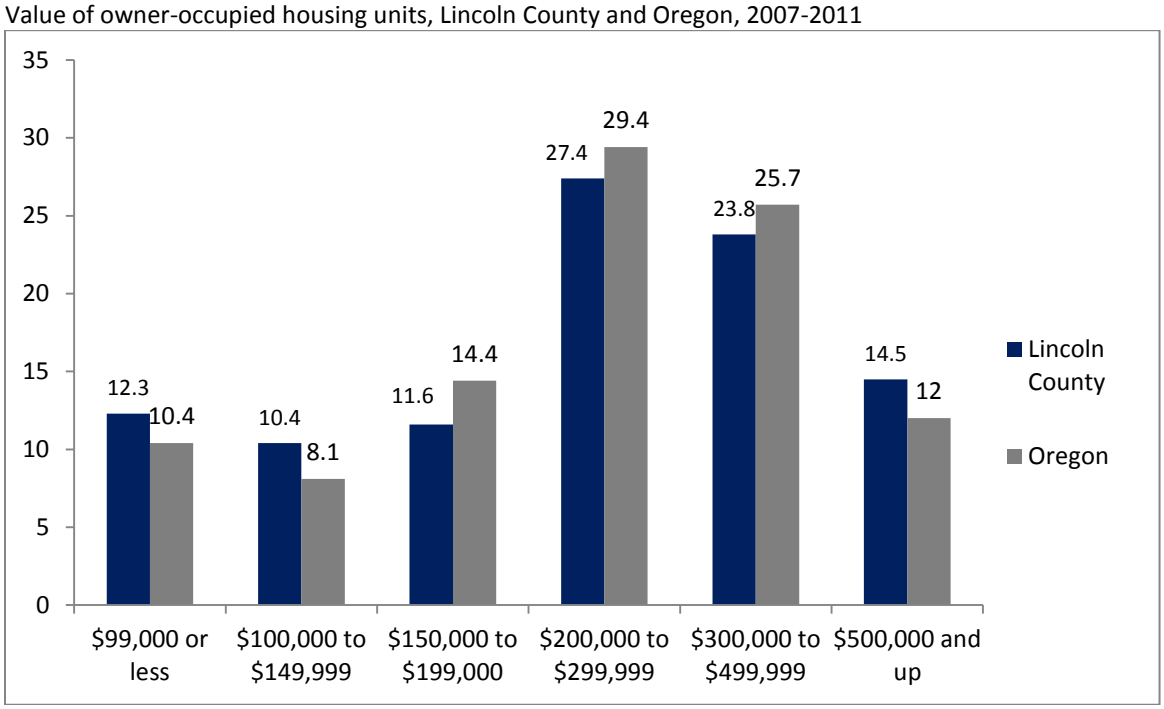
Monthly mortgage payments of home owners in Lincoln County and Oregon



Source: U.S. Census, American Community Survey, 2007-2011

Over half of Lincoln County homes are valued at $200,000 and $499,999. Fifteen percent are valued at over $500,000.

Value of owner-occupied housing units, Lincoln County and Oregon, 2007-2011



Source: U.S. Census, American Community Survey, 2007-2011

Homelessness

> *"Poverty, lack of family wage jobs [are situations causing homelessness]. Health issues are a huge contributor- physical health, mental health, domestic violence are the biggest drivers."*
> *- Lincoln County Resident*

The Oregon's Ending Homelessness Advisory Council defines homelessness as being without a decent, safe, stable, and permanent place to live that is fit for human habitation.[71] According to the Oregon Housing and Community Services' 2011 Report on Poverty, there were approximately 41 total homeless individuals living in Lincoln County during 2011.[72] This number did not include individuals who were living with families and friends or sleeping in vehicles, campgrounds or the woods. It also likely did not include those who exhausted their opportunities for services or who never attempted to access them.

Across the State, an increasing number of Oregon's K-12 public school students are homeless at some point during the school year. Homelessness among students has more than doubled since the 2003-2004 academic school year. Since the 2009–2010 academic year an additional 1,500 students became homeless. Statewide, 3.7 percent of Oregon K-12 students were homeless at some point during the 2010-11 school year.[73] In Lincoln County, 8.6 percent of the total district enrollment was homeless during the same period, among the highest in the State.[74]

Homeless students grades K-12 in Lincoln County, 2010-2011

School District	Number of Homeless Students Grades K-12	Total District Enrollment	Percent of Homeless to Total Enrollment
Lincoln County School District	448	5181	8.6

Source: Oregon Department of Education, 2011

Outdoor and Indoor Environments

Natural and man-made (or built) environments[75] contribute to health in a variety of ways. Everyone needs clean water to drink and air that is safe to breathe. People also need schools, workplaces, and homes that do not expose them to physical or chemical hazards and places to walk and recreate outdoors that are clean and free of debris.

Fluoridated Water

Water fluoridation is the controlled addition of a fluoride compound to a public water supply to achieve a concentration optimal for tooth decay prevention. Community water fluoridation is an evidence-based practice recommended by the Community Preventive Services Task Force based on strong evidence of effectiveness in reducing dental cavities across populations.[76] It is an effective, affordable, and safe way to protect children from tooth decay and is recognized as one of the 10 greatest public health achievements of the 20th century.[77] Water fluoridation complements but does not replace other efforts to improve oral health. Water fluoridation is a valuable tool in addressing oral health disparities, since everyone benefits from it regardless of age, income level or race or ethnicity. Currently, about 69 percent of the U.S. population served by community water systems received fluoridated water compared to about 27.4 percent of Oregon's public water supplies that are fluoridated.

In Lincoln County, none of the 28 public water systems provide fluoridated water for residence.[78]

Transportation

> *"We have major issues in terms of workforce housing- people employed in Newport, not making a lot of money, commuting from Siletz, Toledo, Waldport- they have to drive."*
> *- Lincoln County Resident*

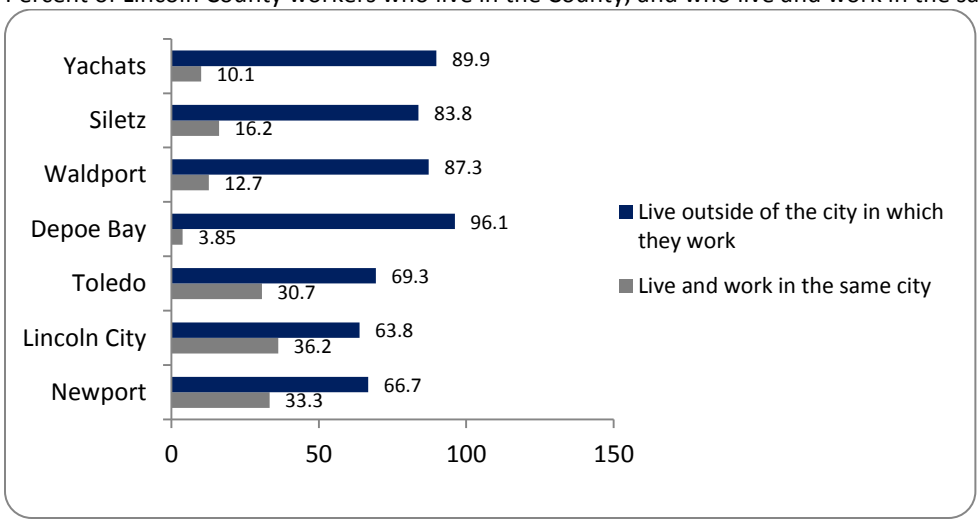
Transportation links people and places, making it possible to get to work, to school, to recreational opportunities, and to the grocery store. Transportation includes more than roads, walkways, or bridges. It also encompasses public transit systems, policies that dictate the location and construction of roads, and guidelines for accommodating different kinds of users. These are important for providing avenues for physical activity, and for reducing the potential of driver, bicyclist, and pedestrian injury.

Commuting Patterns

Commuting to jobs outside of their home cities is common for many members of the Lincoln County workforce. This is evident from the data below that shows the percentage of workers who live and work in the same place, or in the county in 2009.

One-third or more of the jobs were filled by workers living in Newport and Lincoln City. Toledo appeared to have the highest number of commuters to other cities in Lincoln County. This city was the home of workers that filled at least 782 Lincoln County jobs outside of Toledo. Following Toledo, Newport was the home city to workers that filled 388 Lincoln County jobs that were outside of Newport.

Percent of Lincoln County workers who live in the County, and who live and work in the same city, 2009



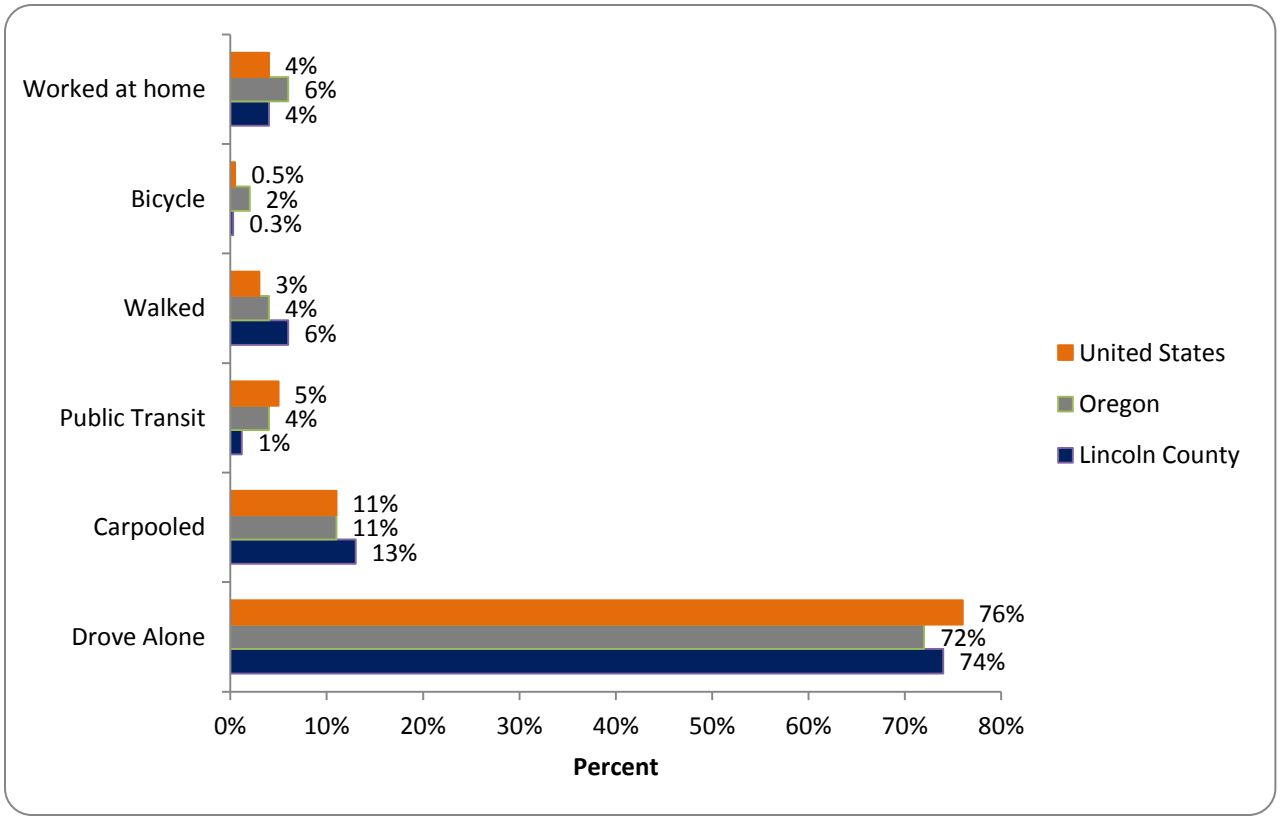
Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2009

People in Lincoln County, on average, have a 19 minutes mean travel time to work, compared with 22 minutes statewide. Longer commutes have been associated with greater levels of stress. Car commuting has also been linked with physical ailments such as lower back pain, increased likelihood of obesity, and less time for leisure and social activities.

People of color, people experiencing poverty, people with disabilities, and people who experience language barriers are more likely to depend on public transit. However, they often live in areas with poor transit service, fewer destinations, and poor connectivity. These unfair burdens increase transportation costs and stress, and limit access to economic and educational opportunities, housing, healthy foods, and physical activity—all of which have direct impacts on health. Vulnerable populations often have unsafe transportation conditions, including few safe crossings, too much high-speed traffic, and poor sidewalk and bicycle infrastructure.

In Lincoln County, the majority of workers 16 years and older, drive alone during their daily commute. Lincoln County workers are less likely to carpool or take public transit.

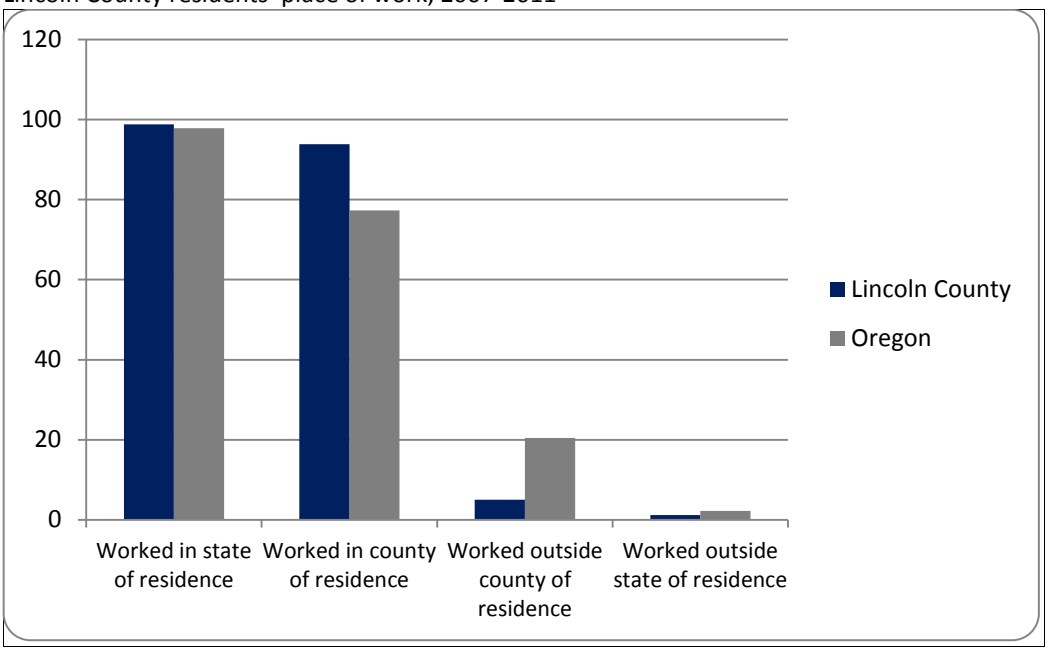
Means of Transportation to Work, 2007-2011



Source: U.S. Census Bureau, American Community Survey, 2007-2011

The location where residents work compared to where they live influences transportation choices. Workers who must travel outside of the county may find alternative transportation is not an option due to distance, time and availability. The majority of residents 16 years and older in Lincoln County live and work in the county, similar to state percentages.

Lincoln County residents' place of work, 2007-2011



Source: U.S. Census Bureau, American Community Survey, 2007-2011

Recreational Assets

Research demonstrates a strong relationship between access to recreational facilities and physical activity among adults and children. In addition, studies have demonstrated that proximity to places with recreational opportunities is associated with higher physical activity and lower obesity levels.[79]

Lincoln County's rate of recreational and fitness facilities per 100,000 people is nine, compared with the Oregon's overall rate of 12, based on a measure used by the United States Department of Agriculture (USDA) Food Environment Atlas.[80]

Aside from recreational and fitness facilities, Lincoln County has many other opportunities for residents to enjoy, including several miles of biking and hiking trails, nearly 60 miles of beaches along its coastline, State, County, and City parks, scenic areas, outstanding natural areas, and more.

Recreational opportunities that include walking and bicycling are efficient, low-cost, and available to most anyone. By walking and bicycling, residents can help develop and maintain livable communities, make neighborhoods safer and friendlier, save on motorized transportation costs, and reduce transportation-related environmental impacts, auto emissions, and noise. They can also create transportation system flexibility by providing alternative mobility options, particularly in combination with transit systems, to people of all ages and abilities. Furthermore, creating walkable and bikeable communities can lead to healthier lifestyles.[81]

Changing Issues and Needs

Several changes have been identified throughout Oregon which is influencing use of outdoor recreation areas and facilities.[82]

- A rapidly aging population with implications for increasing recreational participation (older people are increasingly more active)
- Declining youth participation in traditional outdoor recreational activities
- A growing minority population with traditionally lower participation in recreational activities
- Increasing rates of obesity and decreasing physical activity.

Limited Access to Healthy Foods

As a rural area, Lincoln County faces unique challenges with regard to nutritious food access. Geographically, access to Lincoln County from the Willamette Valley is limited to three major highways (Hwy 101, 20, and 34), and within the county the majority of services, stores and food access are concentrated in communities along the coastline.

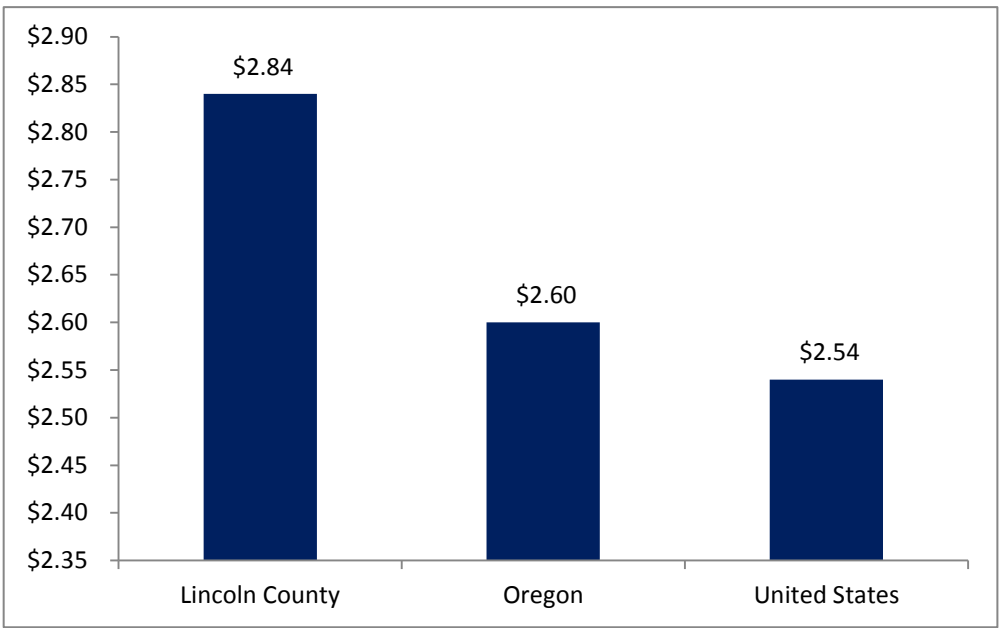
A rural community is considered to have low access to food when it is ten or more miles from a supermarket or large grocery store. In these situations, residents are often required to travel for food.

For rural residents of Lincoln County (e.g., Otis, Rose Lodge, Logsden, Siletz, Eddyville, Harlan, Tidewater, unincorporated areas) this could mean traveling as much as 20 miles to the nearest full service grocery store. Residents with unreliable transportation or tight budgets face difficulty shopping for food on consistent basis.

Transportation issues do not just affect access to food, but also to services. Newport and Lincoln City are where social services, like SNAP enrollment, and emergency assistance are primarily located.

As part of the Lincoln County Community Food Assessment of 2012, Consumer Surveys, it was asked, “What factors, if any, affect your ability to get the food you need?”. The most common answer was the cost of food. The average cost of a meal in Lincoln County is $2.84 (compared to the Oregon average of $2.60, and nationwide average of $2.54).[83]

Average Cost of a Meal in Lincoln County, Oregon, and the United States, 2011



Source: Feeding America, Map the Meal Gap: Food Insecurity in Your Own Community, 2011

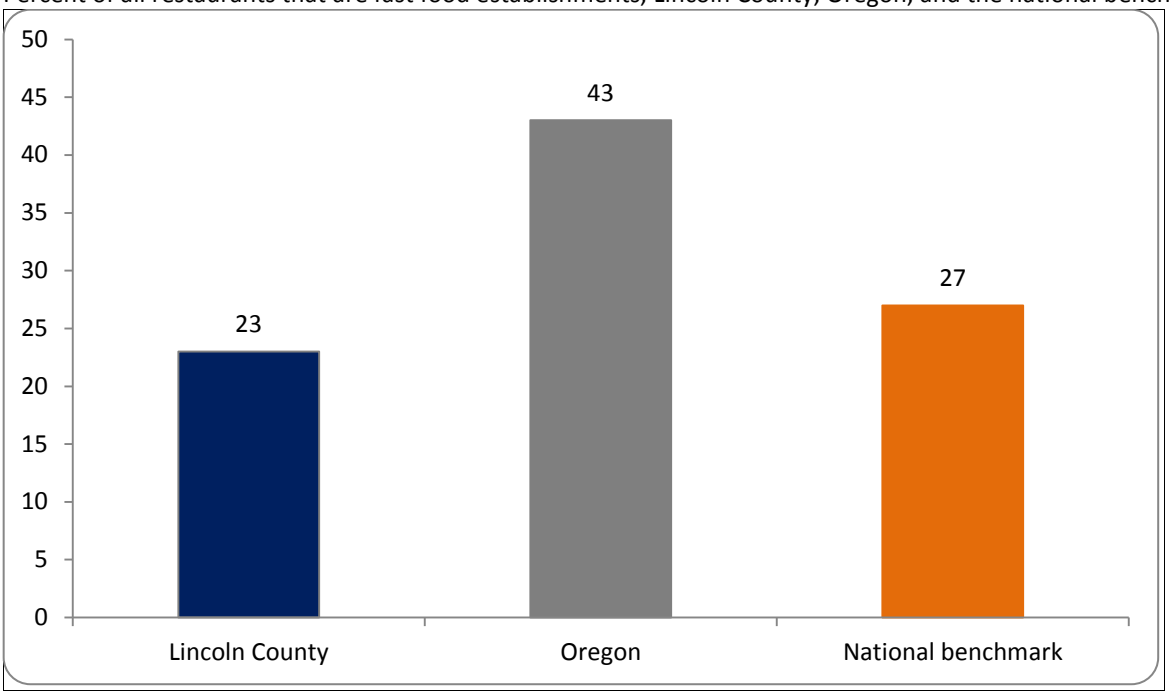
In Lincoln County, 15.24 percent of the low-income population lives more than a mile from the nearest grocery store, a distance which is considered limited access to healthy food by the USDA.[84] In combination to distance from a grocery store, price and type of food sold locally may also present challenges to low-income minority residents.

Rural grocery stores throughout the county report barriers that may limit rural low-income families' access to healthy food. These include: administrative barriers to becoming an authorized vender for SNAP and WIC programs, economic barriers to offering fresh fruits and vegetables, meat, dairy and other refrigerated foods.[85]

Fast Food Restaurants

Studies show an increase in the prevalence of obesity and diabetes with increased access to fast food outlets in a community. Lincoln County has one of the lowest proportions of fast food restaurants in Oregon (23 percent versus 43 percent across the state).[86]

Percent of all restaurants that are fast food establishments, Lincoln County, Oregon, and the national benchmark



Source: County Health Rankings, 2013

Healthy Homes

Lead Screening

Lead poisoning is a significant health concern. Laws and regulations are in place to help protect people, however, lead poisoning still threatens many Oregonians, especially children.

> *"Housing is an issue. Most of the housing is not very good…not good conditions, lots of mold. The environment is not very healthy."*
> *- Lincoln County Resident*

Although leaded paint and gasoline may no longer be legally sold in the United States, many children are still exposed to dangerous amounts of lead. Lead paint dust is the most common way children are exposed, and it is common inside and outside homes built before 1978. Ordinary household repair and maintenance activities can stir up lead-contaminated dust. People can also get lead in their bodies by eating foods contaminated with lead from the soil or paint chips.

Oregon has a relatively low overall prevalence of lead poisoning compared to other states, and prevalence rates have declined through the years. This decline is consistent with national trends. In Oregon an estimated 1,000-2,000 children have blood lead levels equal to or greater than 10 µg/dl. Of the 101,797 children screened in the last 12 years in Oregon, 12.3 percent had blood lead levels in the 5-9 µg/dl range. There have 5 cases of elevated blood lead levels in Lincoln County between 2010 to 2012.

Radon

Radon (Rn) is a gaseous radioactive element that occurs from the natural breakdown of uranium in the soil and rocks. It is colorless, odorless, and tasteless. In indoor settings, radon poses a risk by emitting atomic particles that can enter the lungs and alter the DNA, increasing a person's lung cancer risk. Radon is the second leading cause of lung cancer in the nation and is classified as a Class A carcinogen according to the Environmental Protection Agency. Radon is found in varying concentrations throughout the United States with moderate levels found in Oregon (generally under 40 picocuries of radon per liter of indoor air). Four to ten percent of Oregon homes are estimated to have radon gas leaks.

The average indoor radon level in Lincoln County, as determined by radon test results, is 1.4 picocurie per liter.[87] The average national indoor radon level is 1.3 picocurie per liter.

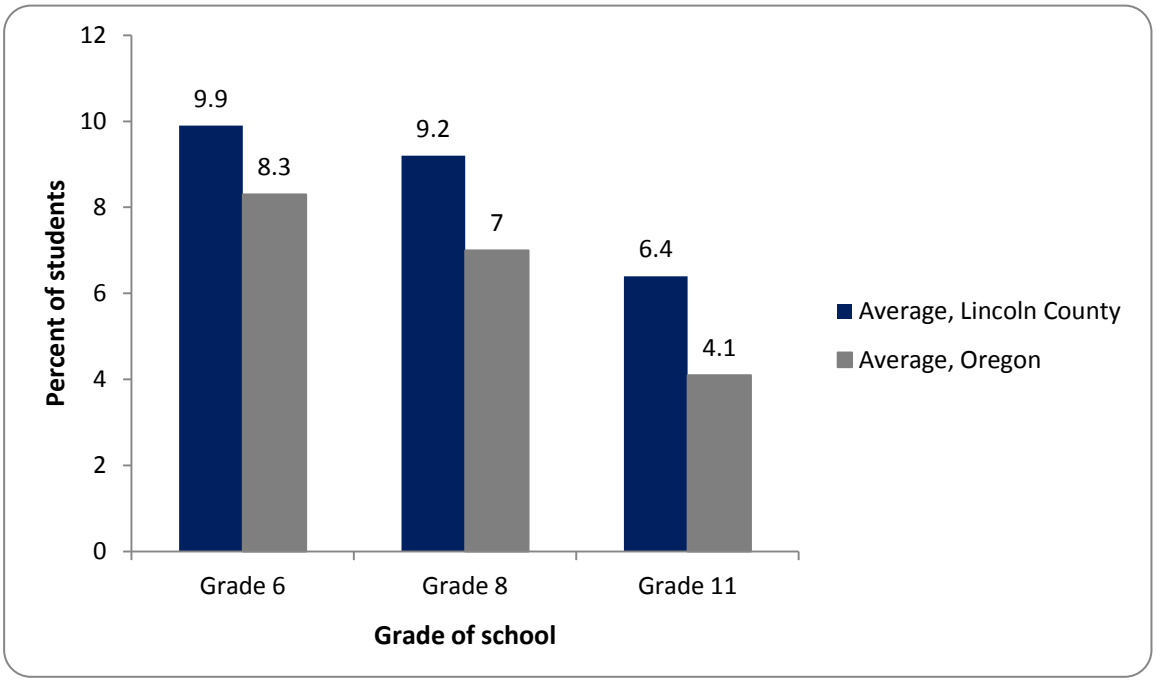
Community and Personal Safety

The same factors that influence where people live and the opportunity they have to be healthy (income, employment, education) are also linked to the occurrence of violence.

Violence in schools can affect the learning environment and contribute to absenteeism. Students, who are bullied, harassed, feel unsafe or otherwise victimized, are more likely to miss classes, skip school, feel depressed or exhibit problem behaviors. Research shows that comprehensive discipline, positive behavioral support and anti-bullying programs in schools can reduce the incidence of harassment among primary and secondary school students.

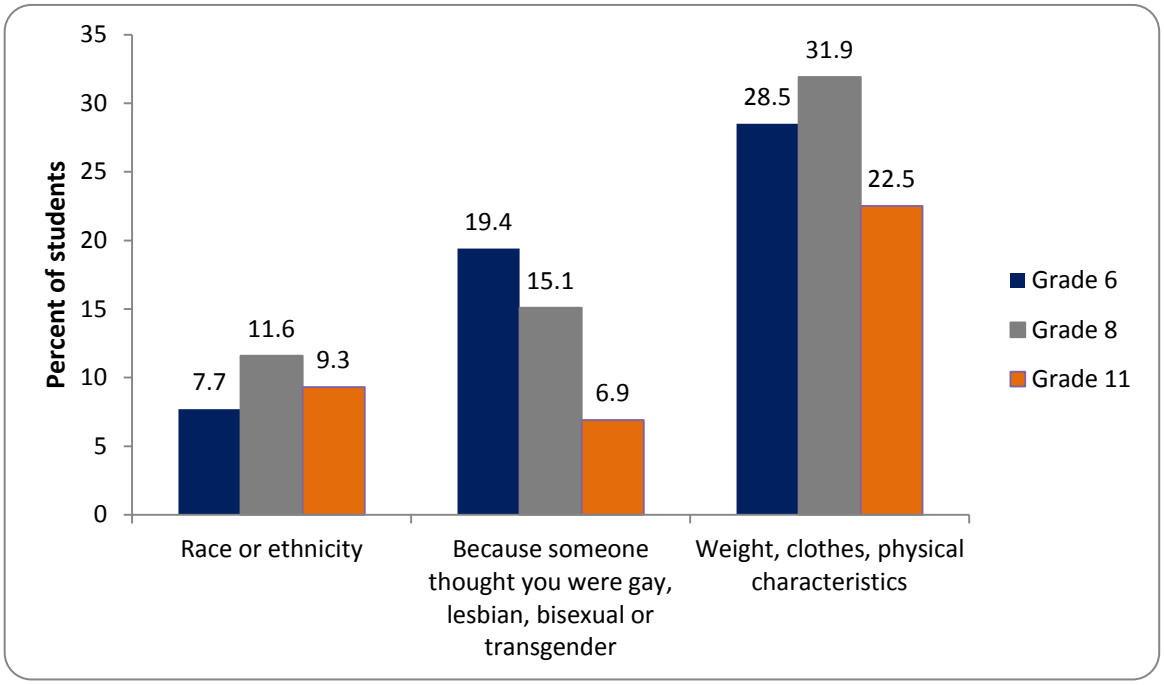
Middle and high school students in Lincoln County report feeling unsafe at school. Reasons for harassment differ among age groups.

Percent of students missing school due to feeling unsafe, 2012



Source: Oregon Student Wellness Survey, 2012

Percent of Lincoln County students experiencing harassment by reason, 2012



Source: Oregon Student Wellness Survey, Lincoln County, 2012

Community Safety and Violent Crime

Lincoln County has the seventh highest violent crime rate in the state, with 286 incidents per 100,000 people. Violent crimes are defined as offenses that involve face-to-face confrontation

between the victim and the perpetrator, including homicide, forcible rape, robbery and aggravated assault. High levels of violent crime compromise physical safety and psychological well-being. Crime rates can also deter residents from pursuing healthy behaviors such as exercising out-of-doors.[88]

Access to Medical Care

A number of factors that shape the opportunity for health in Lincoln County, education, employment, and transportation, for instance, also affect access to health care. In addition, the ability to acquire health insurance often affects a person's access to medical care.

Lincoln County ranked 23 of 33 counties in Oregon for clinical care in the 2012 County Health Rankings. Many factors contribute to an individual's ability to get necessary care when sick or when well.

Access to care includes:

- having coverage for care (insurance or a public payer option)
- a provider who is willing to accept the specific coverage
- close proximity of a care provider to home/work/school setting
- availability of services and
- the availability of an appointment in a reasonable time frame with that care provider.

Barriers to access to care include:

- coverage issues
- lack of transportation to or distance from a primary care provider office setting
- low levels of health literacy to make decisions about seeking care or
- complying with care recommendations or long waits for appointments.

Clinical care measures in Lincoln County and Oregon

Measure	Lincoln County	Oregon
Could Not See a Doctor Due to Cost	20%	14%
Health Care Costs (Medicare spending per enrollee)	$6,506	$7,157
Primary Care Physicians (population to provider ratio)	1,770:1	1,134:1
Mental Health Providers (population to provider ratio)	5,754:1	2,193:1
Dentists (population to provider ratio)	1,950:1	1,479:1
Diabetic Screening (% of Medicare enrollees that receive)	87%	86%
Mammography Screening (% of female Medicare enrollees that receive)	63%	66%

Source: County Health Rankings, 2013

Dental Care

In 2012 the Lincoln County Dental Task Force Coalition conducted a community assessment of dental care needs throughout the county. Findings from the assessment suggest that there are many barriers that limit the number of dental resources for certain populations. Nearly half of Lincoln County's population does not have dental insurance. Medicare does not cover dentures or dental care for seniors. The Oregon Health Plan and its divisions determine eligibility based on income. These requirements are challenging for those who do not qualify but also cannot afford the cost of dental care out of pocket.[89]

For many adults, the Emergency Department (ED) is the only affordable option. Although hospitals are not meant to provide dental services, the ED will not turn away patients if they are unable to pay. However, they often only treat the pain or infection and not the source of the problem.

Barriers to access identified in the assessment include:

- education and literacy
- cost
- transportation
- language
- insurance coverage
- citizenship and documentation

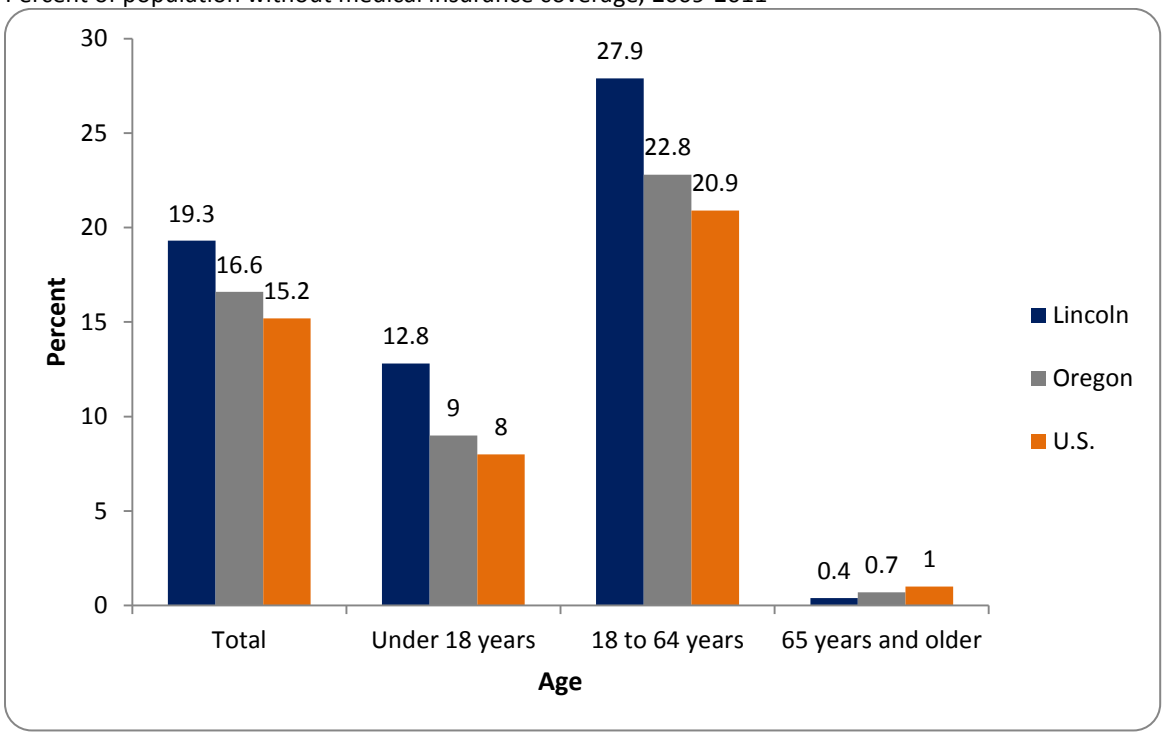
Insurance Coverage

> *"90 percent of Latino adults don't have any type of medical insurance- it is a huge problem…it is a huge burden for families if adults don't have coverage."*
> - *Lincoln County Resident*

People who are uninsured or under-insured (that is, their insurance does not cover all necessary care) receive less medical care than their insured counterparts. Even when they do receive care, it is often significantly delayed (often due to concerns about cost), and their final outcome is frequently worse than if they had received care right away.[90] Lack of health insurance creates a financial risk and a burden when care is received.

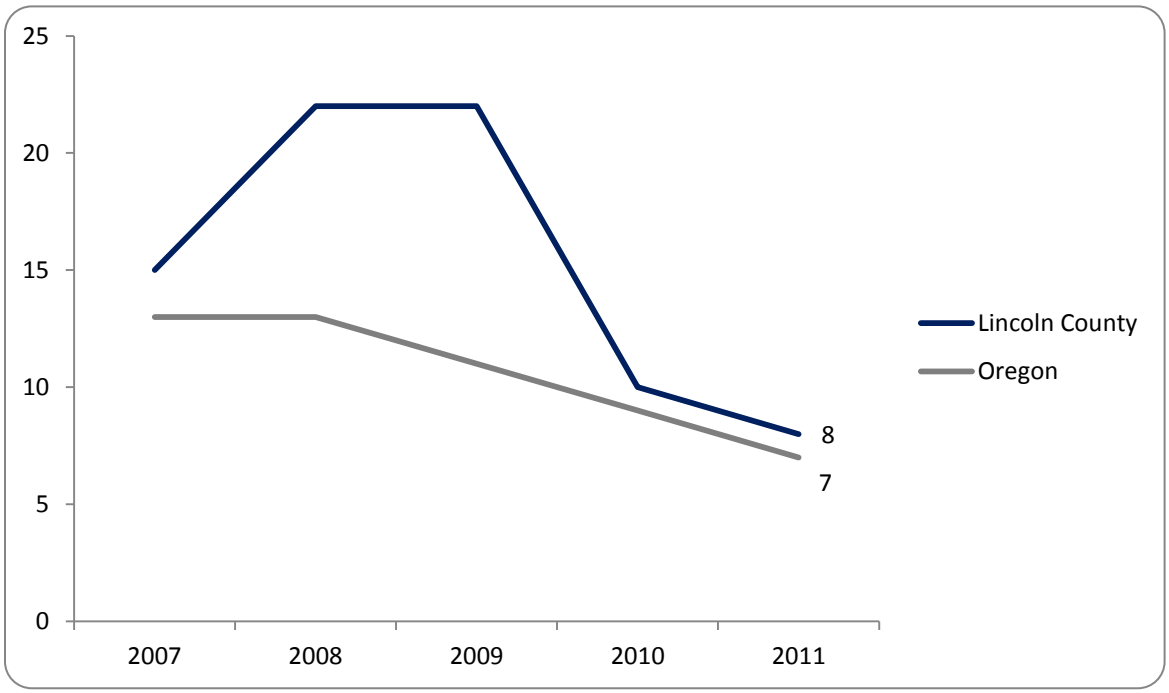
Over 19 percent of the population in Lincoln County is uninsured, most significantly among individuals 18-64 years of age (27.9 percent of all people 18-64 years). Among youth under the age of 18, almost eight percent were uninsured in 2011, a significant decrease from 2009 when 22 percent of children were uninsured.[91] Differences in the rate of insurance persist both by race/ethnicity, employment status and income.

Percent of population without medical insurance coverage, 2009-2011



Source: Census Bureau, American Community Survey, 2009-2011

Percent children ages 0-17 estimated to be without health insurance, 2007-2011

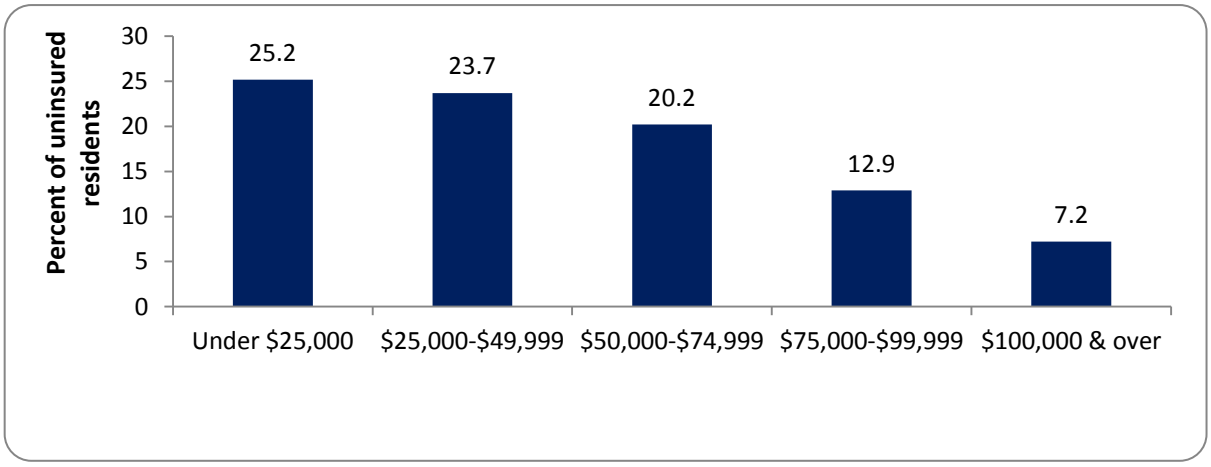


Source: Annie E. Casey Foundation, Kids Count Data Center, 2013

In Lincoln County, forty percent of Latino individuals and 32 percent of American Indian and Alaska Native are uninsured, compared to 29 percent of Asians and 17 percent of the White population. Fifty percent of the unemployed are uninsured compared to 24 percent of those currently employed.

Among the employed, those working less than full time, year-round, are more likely to be uninsured compared to those working full time, year-round (34 percent vs. 19 percent). Residents earning less than 200 percent of the federal poverty level are more likely to be without insurance coverage than those with higher incomes (66 percent vs. 11.2 percent).

Percent uninsured Lincoln County residents, by income level, 2009-2011



Source: Census Bureau, American Community Survey, 2009-2011

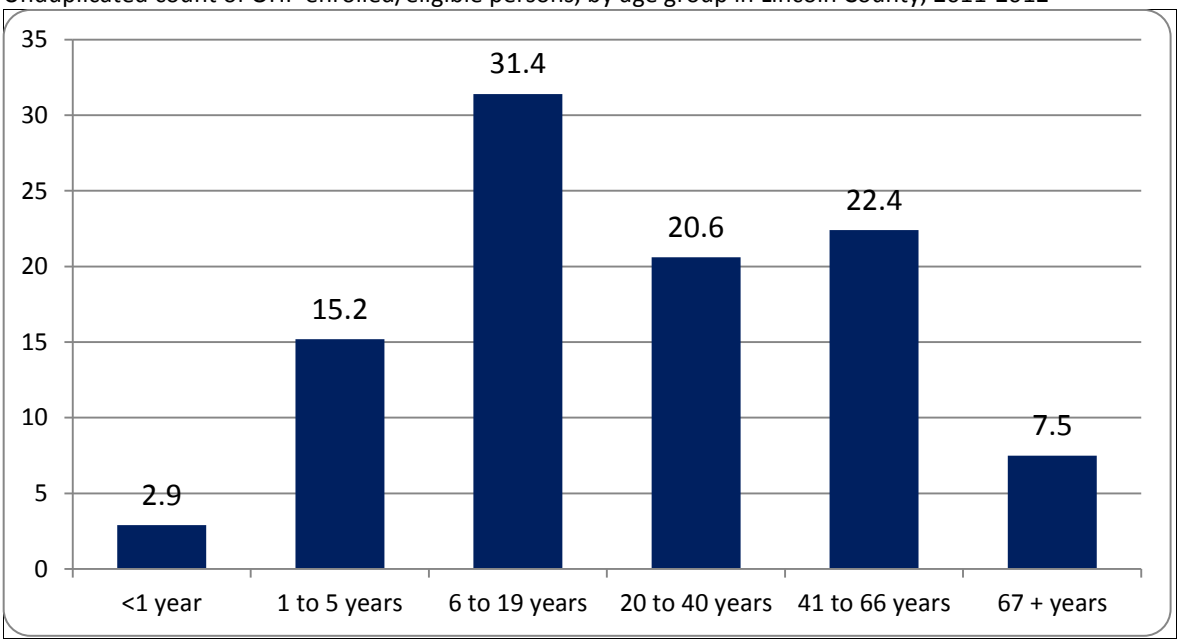
Oregon Health Plan

The Oregon Health Plan (OHP) provides health care coverage to low-income Oregonians through programs administered by the Division of Medial Assistance Programs (DMAP).

In 2011 and 2012, over 24,000 Lincoln County residents were enrolled and/or eligible for health insurance coverage through the Oregon Health Plan. Approximately, one out of every two OHP members were youth ages 19 and younger (49.5 percent). Older adults, ages 67 and older comprise only 7.5 percent of OHP members.

As of April 15, 2013, there are a total of 9,458 Lincoln County residents currently enrolled and/or eligible for OHP Plus (7,612), OHP Standard (1,105), and Medical Assistance Other (741).[92] OHP Plus includes Temporary Assistance for Needy Families (TANF), Poverty Level Medical-Children (PLMC), Aid to Blind/Aid to Disabled (AB/AD), General Assistance (GA), Old Age Assistance (OAA), Children's Health Insurance Plan (CHIP), Child Protective Services, and Poverty Level Medical-Women (PLMW). Coverage for OHP Standard includes adults, couples and families. Medical Assistance Other covers Citizen-Alien Waived Emergency Medicare (CAWEM), Qualified Medicare Beneficiary (QMB), and Breast and Cervical Cancer Project (BCCP).

Unduplicated count of OHP enrolled/eligible persons, by age group in Lincoln County, 2011-2012



Source: Oregon Health Authority, Office of Health Analytics, DSSURS, 5/10/2013

The population forecast for Oregon by the Oregon Department of Human Services and Oregon Health Authority shows significant increase in Medicaid eligibility due to the expansion of coverage through the Affordable Care Act (ACA) of 2010.[93] As a result of this expansion, it is estimated that 241,000 new clients in Oregon will be eligible for Medicaid by 2016. In Lincoln County, there will be 1,644 new clients eligible in 2014 and 3,113 in 2016.

Chapter 4
Healthy Living Indicators

This section addresses individual health behaviors such as engaging in physical activity, maintaining healthy eating habits, being tobacco-free, and using alcohol and prescription drugs appropriately. Ways that people protect and promote health for others are also discussed, including assuring a healthy start for children; preventing and managing chronic conditions; preventing disease and injury; and promoting good mental health.

Making informed decisions about health at the individual and community level requires access to information and opportunity. As a result, healthy living is highly dependent on the contextual factors described in Chapter 3: Opportunities for Health.

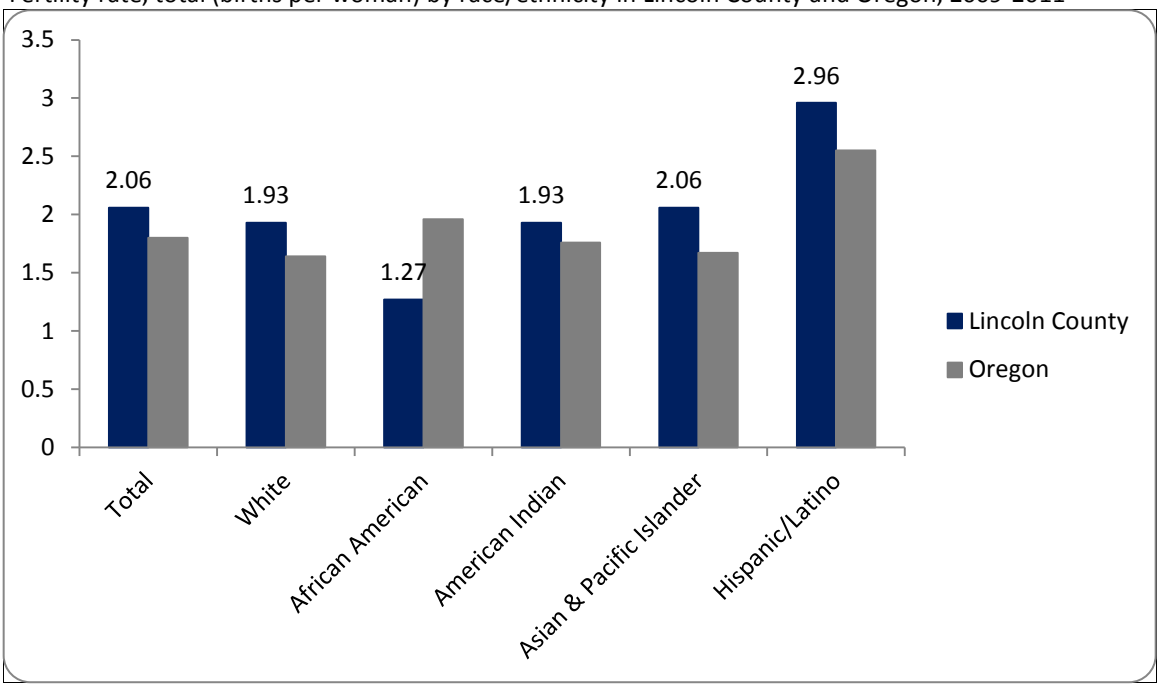
Maternal and Infant Health

One way that Public Health professionals assess the health of a community is to examine the health of mothers and infants during and immediately after pregnancy. This section takes a closer look at the various factors that impact maternal and infant health outcomes.

Fertility Rate (Total Fertility Rate, TFR)

The total fertility rate of a population is the average number of children born to a woman during her lifetime if she were to 1) experience the exact current age-specific fertility rate through her lifetime, and 2) survive from birth through the end of her reproductive life. The Total Fertility Rate (TFR) is based on the age-specific fertility rates of women in their “child-bearing years”, which is 15-44.

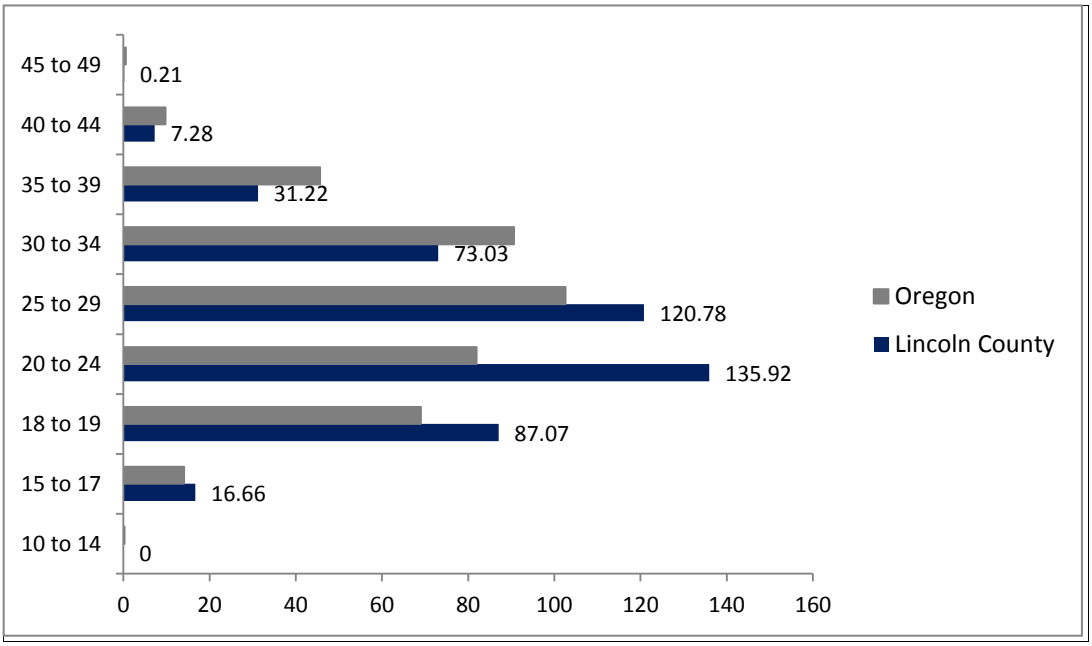
Fertility rate, total (births per woman) by race/ethnicity in Lincoln County and Oregon, 2009-2011



Source: Oregon Healthy Authority, Center for Health Statistics, Birth Certificate Data, 2009-2011

In general, women tend to enter motherhood at a younger age in Lincoln County than they do across the state. Fertility rates among 15 to 29 year-olds are higher in Lincoln County than they are in Oregon, whereas fertility rates among women aged 30 and older are lower in Lincoln County than they are across the state.

Fertility rate (births per 1,000 women) by maternal age in Lincoln County and Oregon, 2009-2011



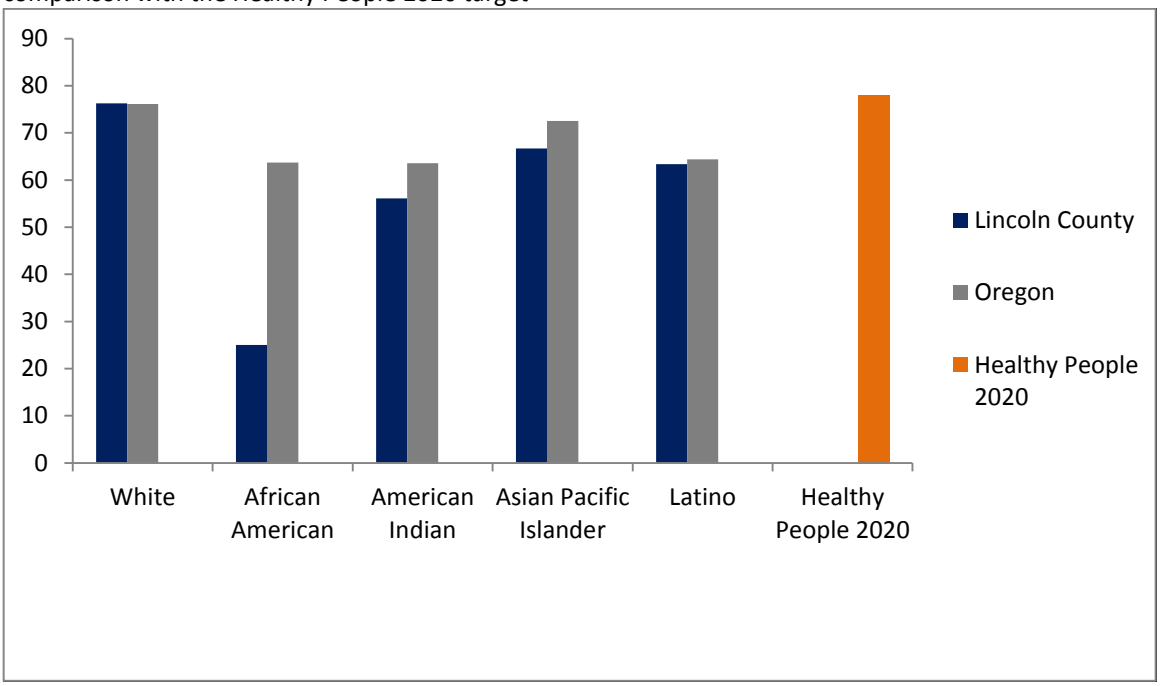
Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data, 2009-2011.

Prenatal Care and Healthy Pregnancy

Women who access prenatal care are more likely to have healthy pregnancies and prevent prematurity or low birth weight, both of which are significant contributors to infant mortality and high costs of care. Prenatal care includes discussing a mother's healthy choices and body changes; prenatal testing and counseling; identifying and treating medical complications like gestational hypertension, diabetes, and anemia; promoting optimal weight gain; testing for and treating sexually transmitted infections; oral health assessment and treatment; and maternal mental health, tobacco and substance abuse screening.

In Lincoln County, White mothers and older mothers (24 years and older) are more likely to receive prenatal care during the 1st trimester. Younger mothers (24 years and younger) and non-White mothers are less likely to receive care during the 1st trimester.

Percent of mothers accessing prenatal care in the first trimester in Lincoln County and Oregon, 2009-2011, in comparison with the Healthy People 2020 target



Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data, 2009-2011.

Number of Infant Deaths

In Lincoln County, infant mortality occurrence has been less than 5 each year since 2005. Infant mortality rates are lower in Lincoln County (3.4 per 1,000) than in Oregon (4.57 per 1,000 births). Lincoln County has surpassed the Healthy People target of 6.0 per 1,000 births.

Prematurity and Growth Retardation

Prematurity and growth retardation are commonly used measures of maternal and infant health. Infants that are born too early and/or with a low birth weight are at higher risk of dying in the first year of life and of having developmental problems throughout life.[94] Both conditions are preventable to varying degrees and have been found to be influenced by environmental hazards.

Many factors can influence prematurity and fetal growth. Numerically, most of the infants born with low birth weight are ones that are delivered preterm. Established factors related to prematurity and growth retardation include:

- Maternal smoking
- Nutritional status
- Medical care
- Level of stress and/or social support

Prematurity

Prematurity is when an infant is born early. Preterm birth rate is a measure of prematurity. Infants are considered preterm when they are born before completing 37 weeks (about 8.5 months) of pregnancy.

In Oregon, eight percent of all live births are less than 37 weeks gestation (2006-2010).[95] In Lincoln County the percentage is 6.4 percent, however there are differences among populations.

Premature birth rate per 100 births in Lincoln County and Oregon, 2006-2010

	Lincoln County	Oregon
White	6.6	8.0
African American	**	10.2
Native American	6.2	11.6
Asian & Pacific Islander	**	9.6
Latino	5.2	7.6
Total	6.4	8.0

Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data, 2006-2010
*** Data is unavailable due to too few cases (<5)*

Low Birth Weight, less than 2,500 grams (Singleton Births)

Low birth weight is a marker that an infant has failed to grow sufficiently during pregnancy. Infants are considered to have low birth weight if they weigh less than 2,500 grams (about 5.5 pounds at birth).

In 2006-2011, approximately 4.4 percent of all infants born in Lincoln County weighed less than 2,500 grams, which is lower than the Healthy People 2020 target of 7.8 percent.

Rate of Low Birth Weight (<2500 grams) per 100 births by race/ethnicity, Lincoln County and Oregon, 2006-2011

	Lincoln County	Oregon
White	4.3	4.3
African American	**	8.0
Native American	3.9	5.4
Asian & Pacific Islander	**	5.7
Latino	4.5	5.0
Total	4.4	4.6

Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data, 2006-2011
*** Data is unavailable due to too few cases (<5)*

Pregnancy

Smoking during Pregnancy

Smoking during pregnancy is the single most preventable cause of illness and death among mothers and infants.[96] Smoking during pregnancy increases the risk of stillbirth, low birth weight, sudden infant death syndrome (SIDS), preterm birth, cognitive and behavioral problems, and respiratory problems in both mother and child.[97]

Children exposed to tobacco in utero are more than twice as likely to become regular smokers themselves later in life, compared with children not exposed to tobacco in utero. Women who quit smoking before pregnancy or early in pregnancy also significantly reduce their risks for delays in conception (and infertility), premature membrane rupture, placental abruption, and placenta previa.[98]

The proportion of Lincoln County mothers that smoke during pregnancy remained consistent from 2009-2011. On average, 23 percent of mothers smoke during pregnancy. This percentage is higher than the State average of 12.8 percent, and exceeds the Healthy People 2020 target of 1.4 percent.

Smoking Rate Disparities among Pregnant Women in Lincoln County, 2009-2011

Population	Percent who Smoke during Pregnancy
White, non-Latino	26.7%
American Indian/Alaska Native	38.8%
Between 18-19 years old	28.2%
Between 20 and 24 years old	32.8%
Total Lincoln County	23.2%

Source: Oregon Health Authority, Center for Vital Statistics, 2009-2011

Smoking among pregnant women may be attributable to tobacco marketing directed at young women or acceptance within their social networks. Further research is needed to explore the disparities of smoking rates among different populations of pregnant smokers.

Smoking cessation counseling and programs offered during prenatal care can provide effective assistance to encourage pregnant women to quit smoking. However, the number of pregnant smokers who are offered such interventions in Lincoln County is unknown.

All Oregonians, regardless of insurance level or income, have access to the Oregon Tobacco Quit Line which offers free telephone based support to quit tobacco and specialized materials for pregnant women (1-800-QUIT-NOW or Spanish: 1-800-2NO-FUME). For women enrolled in Medicaid/Oregon Health Plan, a comprehensive coverage of tobacco-dependence treatment is available for all smokers who want to quit. The Oregon Medicaid program covers all forms of tobacco-dependence medications and at least one form of counseling. In addition, Oregon State law requires that all health insurance companies provide at least $500 in tobacco cessation benefits. These resources can be promoted to all smokers through provider referral systems.

Alcohol Use during Pregnancy

Drinking alcohol during pregnancy can cause miscarriage, stillbirth, and a range of lifelong disorders, known as fetal alcohol spectrum disorders (FASDs). Children with FASDs can have a host of problems, including poor coordination, hyperactivity behavior, difficulty paying attention, poor memory, difficulty in school, learning disabilities, speech and language delays, poor reasoning and judgment skills, vision or hearing problems, and complications with the heart, kidney, or bones.[99] There is no known safe amount of alcohol to drink during pregnancy, and no known safe time to drink alcohol during pregnancy.

The Pregnancy Risk Assessment Monitoring System, a national surveillance system, provides information about women who have had a recent live birth. Lincoln County data on the proportion of mothers consuming alcohol prior to or during pregnancy is not available. The most recently available State data stratified by race/ethnicity and age is from 2004.[100] Due to demographic changes over the past eight years, more recent local data is needed on alcohol consumption prior to and during pregnancy.

Breastfeeding

Breastfeeding is associated with numerous health benefits for infants, such as boosting immune system response, reducing the risk of Type 2 diabetes, and preventing obesity. Breastfeeding also promotes maternal-child bonding. The American Academy of Pediatrics recommends breastfeeding for a year or more after birth.[101]

In 2012, 88 percent of the mothers participating in the Nutrition & Health Screening Program for Women, Infants and Children (WIC) in Lincoln County start out breastfeeding.[102]

Percent of women breastfeeding in Lincoln County, Oregon and the United States, 2010, in comparison with the Healthy People 2020

	Lincoln County	Oregon	United States	Healthy People 2020
Ever	93.1%	91.5%	61.7%	81.9%
At 6 months	43.9%	42.3%	27.0%	60.6%
At 1 year	28.6%	27.6%	18.5%	34.1%
Exclusively at 3 months	54.7%	45.3%	9.9%	46.2%
Exclusively at 6 months	38.2%	37.0%	5.3%	25.5%

Source: Pediatric Nutrition Surveillance, Oregon, 2010

Maternal Depression

Maternal depression is a depressive disorder characterized by feelings of sadness or hopelessness, reduced interest or pleasure in activities, changes in weight/appetite, sleeping disruption or too much sleep, restlessness or irritability, or diminished ability to think or concentrate. Mothers with maternal depression are less likely to engage in healthy parenting behaviors. As a result, mother-infant bonding and attachment are compromised. In extreme cases, mothers with maternal depression have harmed themselves or their babies.[103]

In Oregon, 24 percent of new mothers report that they were depressed during and/or after pregnancy. Forty-eight percent of these women were still experiencing depression at their child's second birthday.[104]

While Lincoln County data regarding maternal depression is limited at this time, it is anticipated that State level data may provide some insight to the experiences of mothers in Lincoln County.

Maternal depression rate disparities among women in Oregon, 2004-2008:

- Low income women are twice as likely to report depressive symptoms as high income women (36.2 percent vs. 16.7 percent)
- Current smokers are 50 percent more likely to report depressive symptoms than non-smokers (33.5 percent vs. 21.7 percent)
- Women who experienced partner stress are twice as likely to report depressive symptoms (42 percent vs. 16.2 percent)
- Racial/ethnic minority mothers are more likely to report depressive symptoms than White mothers (Latino 31.1 percent vs. White 20.8 percent)
- Teen mothers are more likely to report depressive symptoms than older mothers (36.3 percent vs. 16.9 percent).

Childhood and Youth Experience

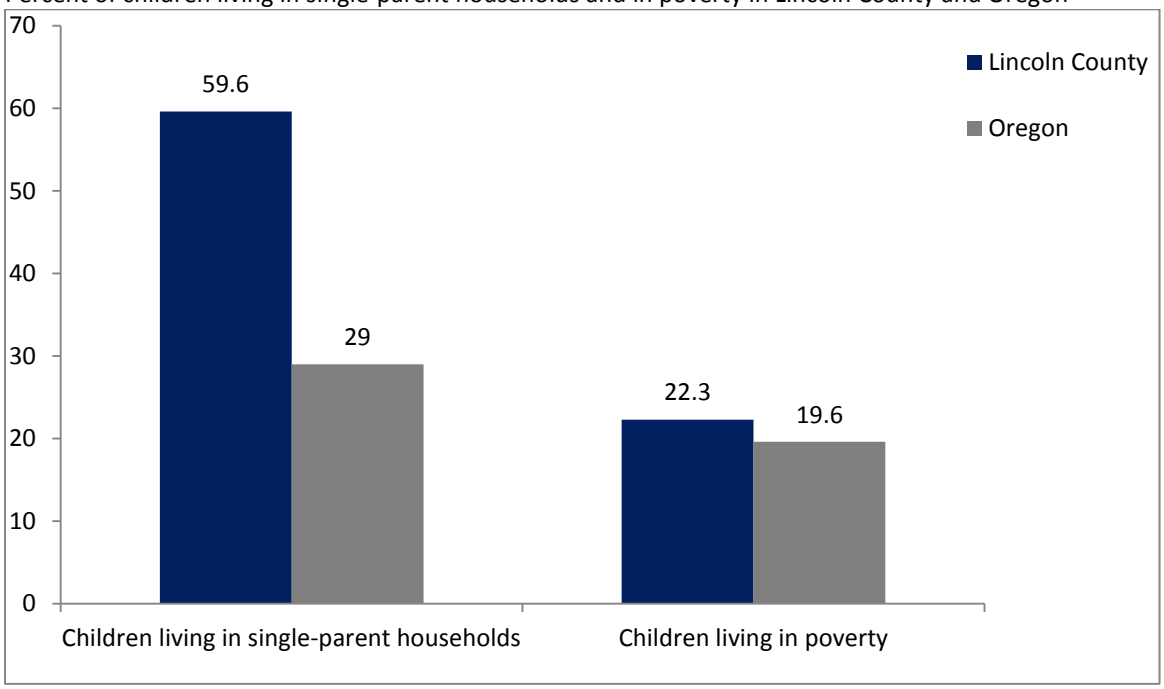
The number and severity of adverse experiences during childhood affects an individuals' risk for alcoholism, depression, heart disease, liver disease, intimate partner violence, sexually transmitted infection, smoking, and suicide. Adverse events include emotional, physical, and sexual abuse and neglect, and various types of household dysfunctions such as violence against mothers, substance abuse, mental illness, parental separation or divorce, or an incarcerated household member.[105]

Children's Well-being

> *"[There is] stress at home, bullying issues, parental issues, fractured families- a lot of stress on kids and parents. Stress is a really big thing."*
> *- Lincoln County Resident*

Aproximately 60 percent of Lincoln County children live in single parent households, compared to 29 percent for the state of Oregon. Twenty-two percent of children in Lincoln County live in poverty, compared to 20 percent statewide. The child victim rate in Lincoln County is 19.9 per 1000 children, compared with 12.7 per 1000 for the State.[106] These numbers suggest that child abuse and neglect are areas of concern in Lincoln County. For older children, crime arrests and high school drop-out rates are important issues to address.

Percent of children living in single-parent households and in poverty in Lincoln County and Oregon



Source: U.S. Census Bureau, American Community Survey, 2007-2011

In the US, children living in poverty are about seven times more likely to be in poor or fair health than children living in high-income households. Middle class children are twice as likely to be in poor or fair health as those at the top income levels.

Violence Experienced by Children and Teens

Domestic Violence

Domestic violence includes all forms of physical injury/abuse, sexual abuse or assault, intimidation, verbal abuse and emotional abuse or threats of such harm. Domestic violence can include abuse from a household member (including roommates or caregivers), intimate partners (including dating partners) or a family member (whether or not they live with the victim).[107]

My Sister's Place (MSP) is a private non-profit organization located in Lincoln County that provides supportive services to victims of domestic violence, sexual assault, and dating abuse. Services include crisis intervention, emergency shelter, 24-hour crisis line, safety planning, advocacy, court information and support, agency referral, education and outreach activities. In 2012, there were 1,647 calls regarding domestic violence and 220 calls for sexual assault reported by MSP. During this time there were 110 people who stayed in an emergency shelter for a total of 2,655 bed nights.[108]

Child Abuse

In 2011, there were approximately 119 founded reports of child abuse/neglect in Lincoln County, down from 156 founded reports during 2008-2010. However, there were an additional 291 cases that were reported and were either unfounded (185), unable to determine (108) or closed with no finding (64).[109] The types of abuse/neglect included mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation or threat of harm. Rates for child abuse/neglect in Lincoln County were almost twice as high as the Oregon rate in 2011 (22 per 1,000 versus 13.4 per 1,000, respectively). Most often, the perpetrators of child abuse and neglect are family members (93.8 percent of reports). Parents account for 82.2 percent of reports.[110]

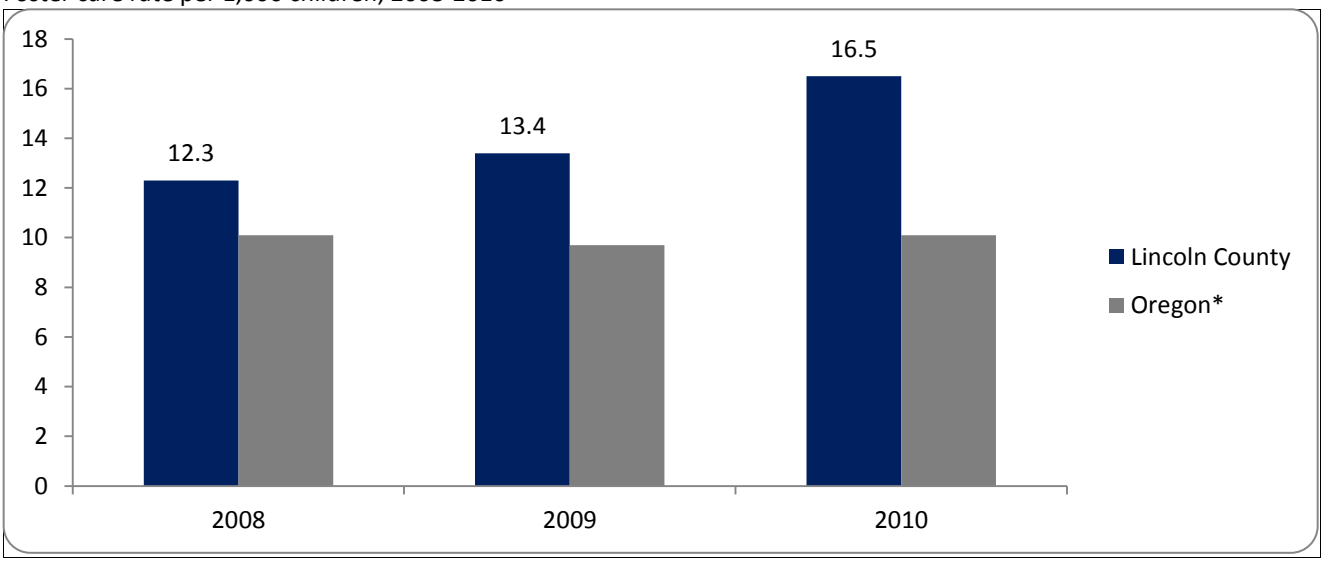
Child abuse/neglect rate per 1,000, 2009-2011

Year	Lincoln County	Oregon	Healthy People 2020
2009	23.2	12.5	8.5
2010	19.9	12.7	8.5
2011	22.0	13.4	8.5

Source: Oregon Department of Human Services, Child Welfare Data Book 2011; Healthy People 2020, Injury and Violence Prevention Objectives

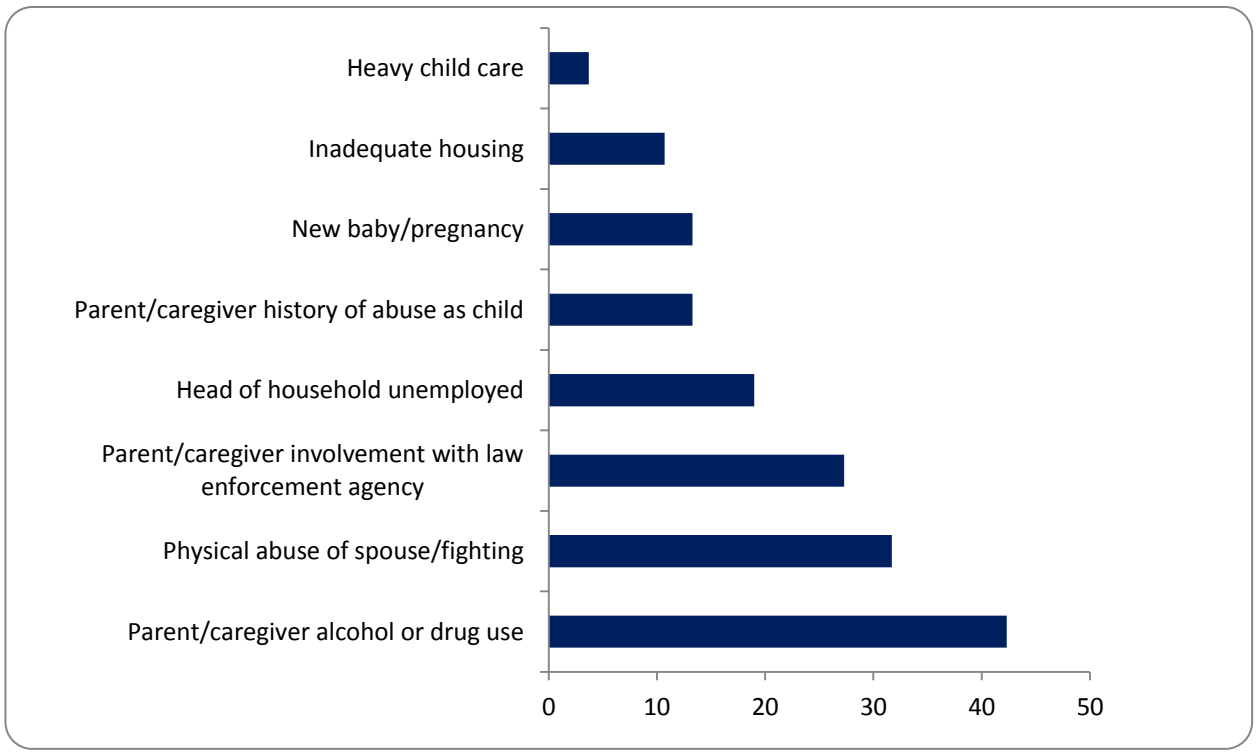
Family stress is a major underlying factor associated with families of abused and neglected children. Major sources of family stress often include drug and/or alcohol abuse, domestic violence, and parental involvement with law enforcement agencies (LEA). Many families also have significant child care responsibilities. Some parents have a history of abuse as children. Often, families experience multiple sources of stress.

Foster care rate per 1,000 children, 2008-2010



*Source: Oregon Department of Human Services: Children, Adults and Families Division (2012). Child Welfare Data Book *State total does not include Title IV-E eligible children served by tribes.*

Sources of family stress as a percent of founded abuse, Oregon, 2008-2010



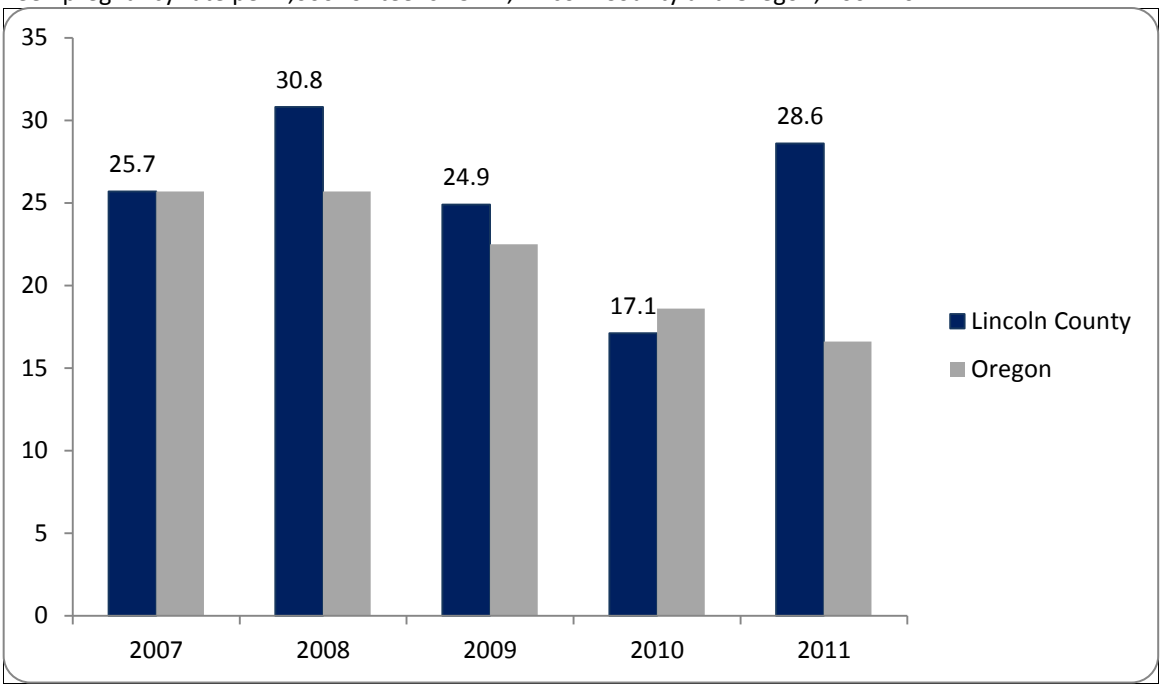
Source: Oregon Department of Human Services: Children, Adults and Families Division 2010 Child Welfare Data Book, March 2011

Teen Parenting

Teen mothers are less likely to receive early prenatal care, and are more likely to experience blood-pressure complications and premature birth. Children of teenage mothers are also more likely to become teen parents themselves, be incarcerated during adolescence, drop out of school, experience more health problems, and are two times as likely to experience abuse and neglect. On average in the United States, 50 percent of teen mothers receive a high school diploma by age 22, compared to 90 percent of women who had not given birth as a teenager.

Most recent information available suggests that Lincoln County teen (ages 15-17) pregnancy rates decreased between 2008 and 2010. Lincoln County teen pregnancy rates surpassed Oregon in 2011. In Oregon there are striking differences in teen birth rates for Latino and non-Latino populations. Latino teens have a pregnancy rate that is over 2.5 times higher than non-Latino teens.

Teen pregnancy rate per 1,000 for teens 15-17, Lincoln County and Oregon, 2007-2011



Source: Oregon Health Authority Data and Statistics, 2007-2011

Mental and Emotional Health

Psychological Distress

Depression and Suicide Ideation

Depression is the most common underlying cause of suicide. Many individuals who take their own lives have a diagnosable mental or substance abuse disorder, and most have more than one disorder.[111] Factors associated with an increased risk of suicide among youth include prior attempts, depression, family discord, substance abuse, relationship problems, discipline or legal problems, and access to firearms.

Protective factors include availability of effective care for mental, physical and substance abuse disorders; access to mental health care; school, social and family support for seeking help; reduced access to lethal means; discussing problems with friends or family; emotional health; strong connections to family and community; and life skills such as problem solving, conflict resolution and anger management.

The following table highlights the percentage of 6th, 8th and 11th grade students in Lincoln County that exhibited signs of depression, thoughts about suicide, or actually attempted suicide during the last 12 months in 2012.

Percent of 6th, 8th, and 11th grade students that exhibited signs of depression, thoughts about suicide, or actually attempted suicide during the last 12 months, 2012

	6th Grade		8th Grade		11th Grade	
	Lincoln	OR	Lincoln	OR	Lincoln	OR
Did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?	20.5%	19.3%	30.0%	22.7%	31.2%	27.9%
Did you ever seriously consider attempting suicide?	9.4%	9.0%	17.3%	15.8%	18.0%	15.1%
Actually attempted suicide?	5.2%	5.2%	8.8%	8.0%	7.8%	6.0%

Source: Oregon Student Wellness Survey, 2012

Gender Identity and Sexual Orientation

Adolescence is a time of developing sexual awareness and gender expression, although many children are aware of their developing gender identity from a very early age. Because most state and national surveys do not ask questions related to sexual orientation or gender identity, it is difficult to estimate the health needs of lesbian, gay, bisexual, transgender, or queer (LGBTQ) children, youth and adults in Lincoln County and Oregon.

Many Lincoln County 6th and 8th graders reported that they experienced harassment more frequently than their peers across Oregon because someone thought they were gay, lesbian, bisexual or transgender. However, 11th graders in Lincoln County reported harassment because someone thought they were gay, lesbian, bisexual or transgender at a lower rate than 11th graders in the rest of Oregon.

Mental and Addictions Community Survey in Lincoln County

In 2013 Lincoln County Behavioral Health (Mental Health, Addictions, and Problem Gambling) conducted an anonymous survey among Lincoln County residents to better understand residents' perceptions of strengths and weaknesses of the current treatment system. Over 600 surveys were completed throughout the county. Results from this survey will be useful in improving service delivery to individuals and families in the area.

Physical Activity and Nutrition

Physical Activity

Regular physical activity helps improve overall health and wellness, reduces risk for obesity, and lessens the likelihood of developing many chronic diseases including diabetes, cancer and heart disease. National physical activity guidelines recommend that children engage in at least 60

minutes of physical activity each day, including aerobic, muscle strengthening, and bone strengthening activity. Adults need at least two hours of moderate to vigorous-level activity every week, and muscle-strengthening activities on two or more days a week.[112]

On average in Lincoln County, self-reports by middle school and high school youth suggest that they are surpassing the Healthy People 2020 target of 20.2 percent of youth engaging in physical activity 60 minutes a week. Data for Lincoln County do not include breakdown by race/ethnicity or income level.

Percent of Lincoln County youth meeting CDC recommendations for physical activity, 2007-2008*

	8th Grade		11th Grade		
Year	**Lincoln**	**OR**	**Lincoln**	**OR**	**Healthy People 2020**
2007-2008*	33.1%	31.4%	28.1%	23.4%	20.2%

*Source: Oregon Healthy Teens Survey, 2007-2008 * Lincoln County data available for 2007-2008 only.*

Reducing the amount of time youth spend in front of a screen, such as viewing television, videos or playing video games is a key strategy to promote physical activity. The Academy of Pediatrics recommends limiting television and video time to a maximum of 2 hours per day for children over the age of 2 and no exposure to television and or videos (i.e. 0 hours) for children younger than 2 years of age.[113]

In Lincoln County, approximately one in three middle school youth and one in four high school youth spend more than two hours per school day in front of screens.

Percent of Lincoln County youth who view television, videos or play video games for no more than two hours per school day, 2007-2008*

Year	8th Grade	Healthy People 2020	11th Grade	Healthy People 2020
2007-2008*	66.7%	86.8%	77.8%	73.9%

*Source: Oregon Healthy Teens *Lincoln County data available for 2007-2008 only.*

Overall, 56 percent of adults in Lincoln County meet the CDC guidelines for physical fitness. As with children and youth, county-level data that describe physical activity levels among adults by race/ethnicity or level of household income are not available.

In Oregon, participation in physical activity does vary by race/ethnicity, household income, and by level of education. Adults with less than a high school education, those earning less than $24,999, and Latinos are less likely to meet CDC physical activity recommendations than their peers.

Percent of adults who meet CDC recommendations for physical activity, 2002-2009

Year	Lincoln County	Oregon	Healthy People 2020
2002-2005	50.1%	54.7%	47.9%
2004-2007	56.3%	57.9%	47.9%
2006-2009	55.7%	55.8%	47.9%

Source: Oregon Health Authority, Selected Topics by County

Limited data is available at the county level for older adults ages 45 years and older and physical activity. Overall, 53% of adults 45 years and older in Lincoln county are meeting the CDC guidelines for physical fitness.[114]

Percentage of adults 45 years and older reporting 30 minutes or more of moderate activity 5 days per week or 20 minutes or more of vigorous activity 2 days per week, 2004-2007

Older Adults	Lincoln County	Oregon	Healthy People 2020
45-59 years	57%	57%	47.9%
60-74 years	55%	55%	47.9%
75 years +	38%	46%	47.9%

Source: Oregon Health Authority, BRFSS, Healthy Aging in Oregon Counties, 2009

Eating Habits

Eating a balanced diet has a direct effect on a person's health, growth, and feeling of well-being. Eating a variety of foods, particularly fruits and vegetables, provides essential nutrients, including dietary fiber and potassium.[115]

In Lincoln County, a higher percentage of 8th graders than 11th graders self-report that they consume at least 5 servings of fruits and vegetables a day.

Additional data is needed to identify patterns of consumption by age, race/ethnicity and household income level. More information is also needed to identify strategies for increasing daily consumption of fruit, fruit juice, or vegetables by youth.

Percent of Lincoln County youth consuming at least 5 servings of fruits and vegetables per day, 2007-2008

	8th Grade		11th Grade	
Year	**Lincoln**	**OR**	**Lincoln**	**OR**
2007-2008*	22.4%	20.6%	19.2%	17.4%

*Source: Oregon Healthy Teens Survey, 2007-2008 *County-level data available for 2007-2008 only.*

Approximately one in four adults in Lincoln County consumes at least 5 servings of fruits and vegetables per day.[116] Additional assessment of fruit and vegetable intake by race/ethnicity,

age group and income levels is needed for future planning and outreach among adults in Lincoln County.

Percent of Adults who consumed at least 5 servings of fruits and vegetables per day, 2002-2009

Year	Lincoln County	Oregon
2002-2005	23.5%	25.8%
2004-2007	30.0%	26.6%
2006-2009	25.6%	27.0%

Source: Oregon BRFSS, Selected Topics by County

Limited data is available at the county level for older adults ages 45 years and older and consumption of fruits and vegetables. Overall, 29 percent of adults 45 years and older in Lincoln County are reporting consumption of 5 or more servings of fruits and vegetables per day.[117]

Percentage of adults 45 years and older reporting consumption of 5 or more servings of fruits and vegetables per day, Lincoln County & Oregon, 2004-2007

Older Adults	Lincoln County	Oregon
45-59 years	37%	27%
60-74 years	17%	27%
75 years +	33%	37%

Source: Oregon BRFSS, Healthy Aging in Oregon Counties, 2009

Alcohol, Tobacco, and Prescription and Illicit Drug Abuse

Alcohol and prescription medications are consumed appropriately and responsibly by most of the population. However problems frequently occur when these substances are over-consumed, used inappropriately, combined with other substances, or consumed while engaging in risky activities like driving or unsafe sexual activity. Smoking cigarettes and using other tobacco products is directly correlated with nicotine addiction and multiple health risks including cancer.

Alcohol Use and Binge Drinking

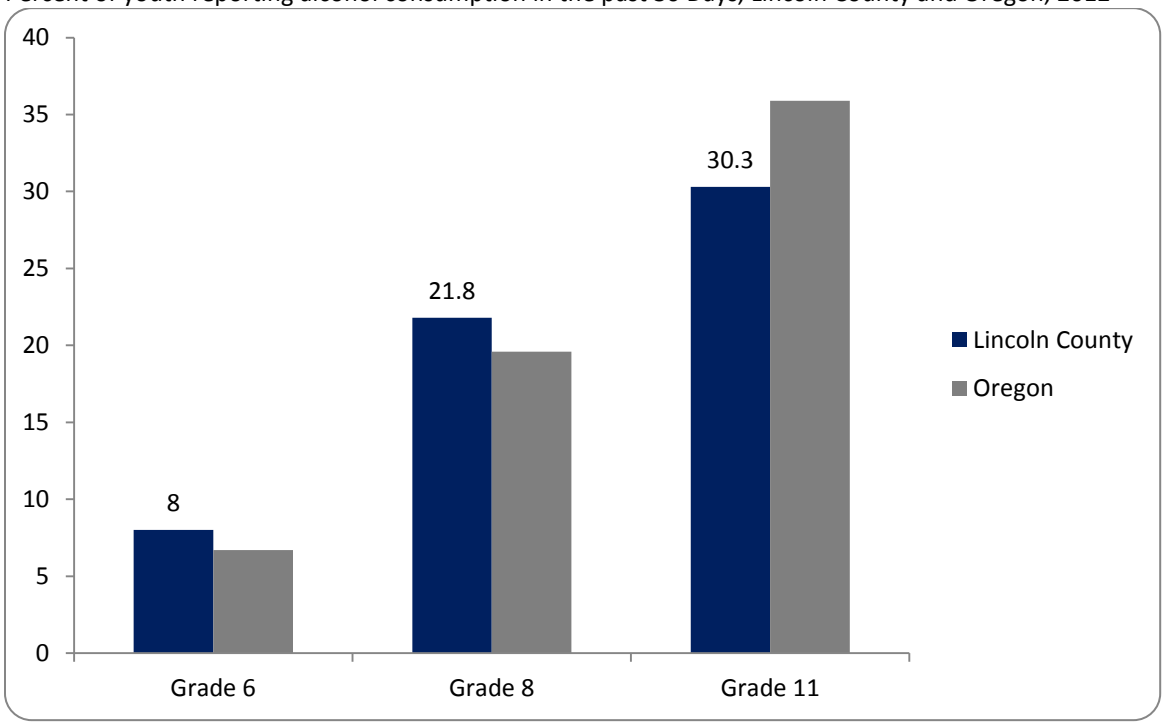
Excessive alcohol consumption, especially at a young age, can contribute to a number of health issues including heart disease and stroke, high blood pressure, cirrhosis, coma, and death.[118] The younger a person begins drinking regularly, the greater the chance that person will develop a clinically defined alcohol disorder. Youth who start drinking before the age 15, compared to those who start at 21, are far more likely to be injured while under the influence of alcohol, to be in a motor vehicle crash after drinking, or to become involved in a physical fight after drinking.[119] In Oregon, people with substance abuse issues and/or mental health conditions die 34.5 years earlier than the general population.

Alcohol use is a health concern in Lincoln County, which has the 3rd highest rate in the State of excessive drinking for adults (20 percent in Lincoln County versus 16 percent across Oregon). Excessive drinking is a risk factor for many adverse health outcomes, such as hypertension, alcohol poisoning, unintended pregnancy, fetal alcohol syndrome, inter-personal violence, and motor vehicle crashes.

Nearly half of 8th graders and one quarter of 11th graders in the county report having had an alcoholic drink in the last 30 days. Early initiation of substance abuse, including alcohol, is strongly correlated with young adult and adult dependency and addiction issues. Some teens reported in the Oregon Health Teen Survey that their first use of alcohol was at age 8 or younger.

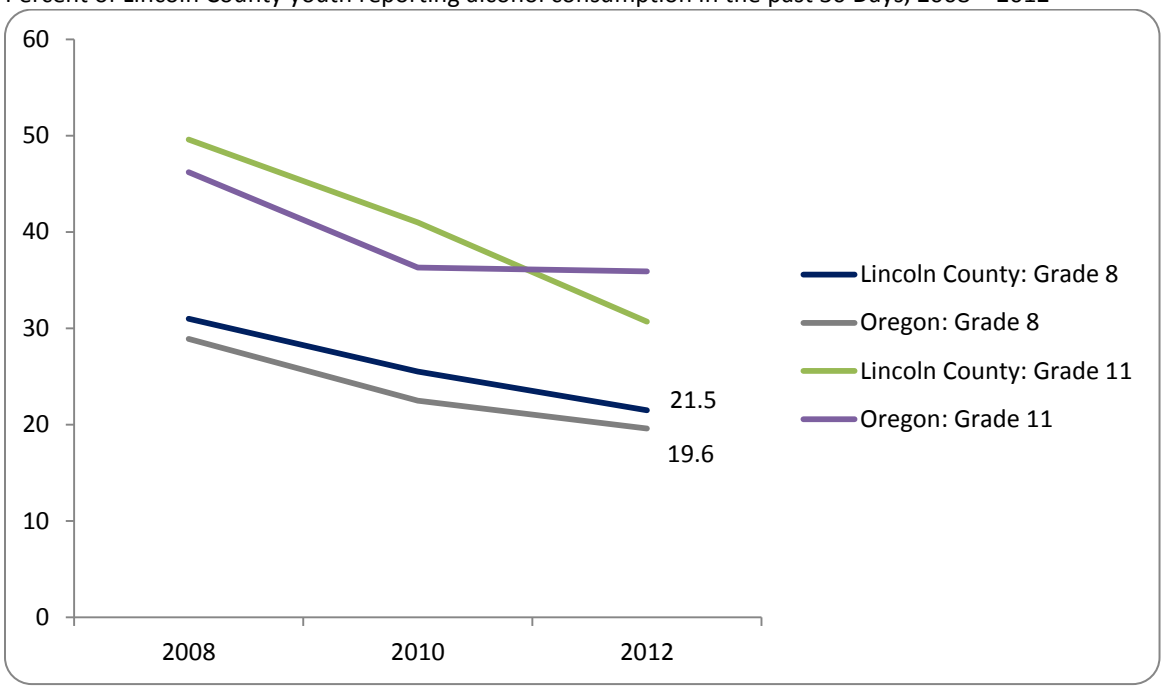
In Lincoln County and Oregon, alcohol consumption tends to increase steadily throughout adolescence. Among middle school children alcohol consumption in Lincoln County exceeds statewide levels. However, by 11th grade, consumption levels are lower in Lincoln County than in Oregon as a whole. In Lincoln County, alcohol consumption among 8th and 11th graders has declined steadily in recent years.

Percent of youth reporting alcohol consumption in the past 30 Days, Lincoln County and Oregon, 2012



Source: Oregon Student Wellness Survey and Oregon Healthy Teens Survey

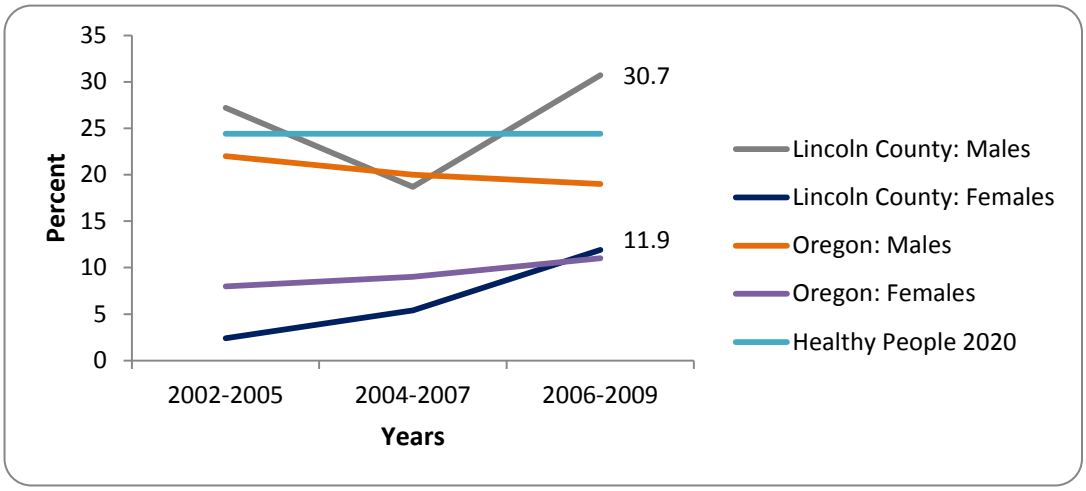
Percent of Lincoln County youth reporting alcohol consumption in the past 30 Days, 2008 – 2012



Source: Oregon Healthy Teens Survey and Oregon Student Wellness Survey

Binge drinking, in which a person consumes a significant amount of alcohol in a short period of time, is associated with the same serious health problems as other forms of alcohol abuse. Binge drinking is defined as consuming five or more drinks at one time for men and four or more drinks at one time for women. Men report a higher level of binge drinking than women.

Percent of adults reporting binge drinking by sex in Lincoln County, 2002-2009

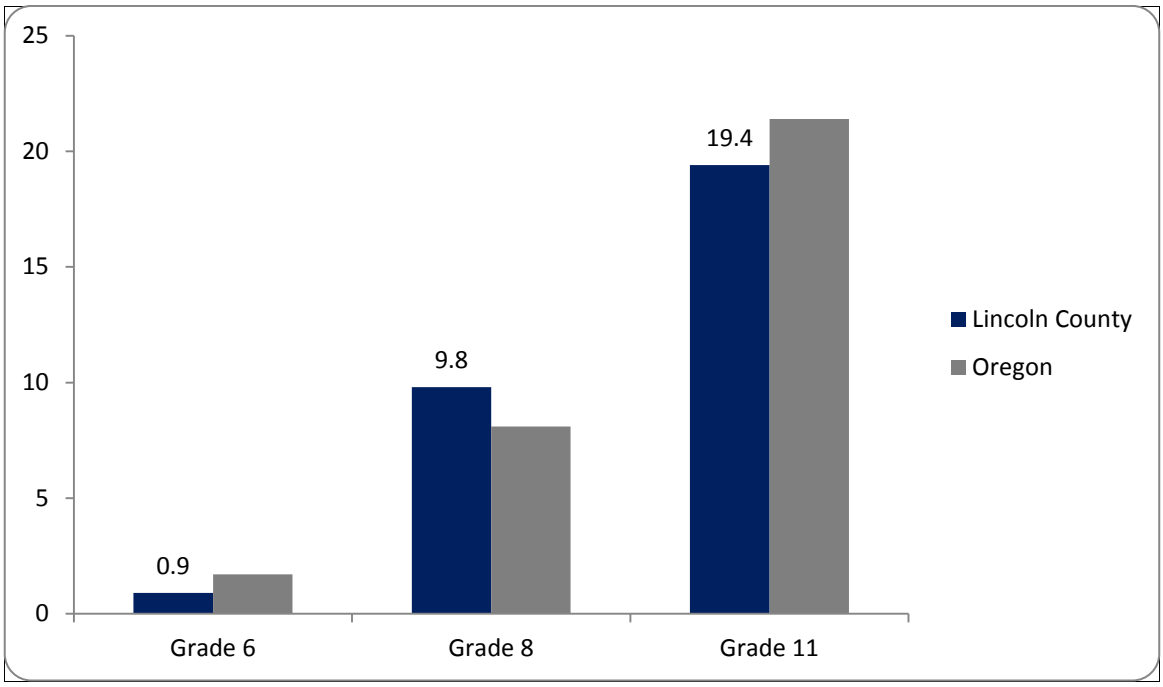


Source: Oregon Health Authority, Selected Topics by County

Middle and high school youth in Lincoln County and Oregon report binge drinking. Rates increase from middle to high school, with almost 20 percent of Lincoln County 11th graders

reporting binge drinking at least once in the past month, compared with 21.4 percent across the State.

Lincoln County youth who reported having five or more drinks of alcohol in a row at least once in the past 30 days, 2011-2012



Source: Oregon Student Wellness Survey, 2011-2012

Tobacco Use and Exposure to Secondhand Smoke

Tobacco use is the single most preventable cause of disease, disability, and death in the United States. Tobacco use in any form can cause serious diseases and health problems, including cancers of the lung, bladder, kidney, pancreas, mouth, and throat, heart disease and stroke, lung diseases (i.e., emphysema, bronchitis, and chronic obstructive pulmonary disease), pregnancy complications, gum disease and vision problems.

Poor health behaviors have serious consequences. In particular, smoking patterns are predictive of increased rates of future disease and early death. Smokers die, on average, 14 years earlier than nonsmokers. Health impacts are more severe among those with lower socio-economic status, as well. In the United States, low-income smokers are more likely to become ill and die sooner from tobacco-related diseases than smokers who have a higher income.

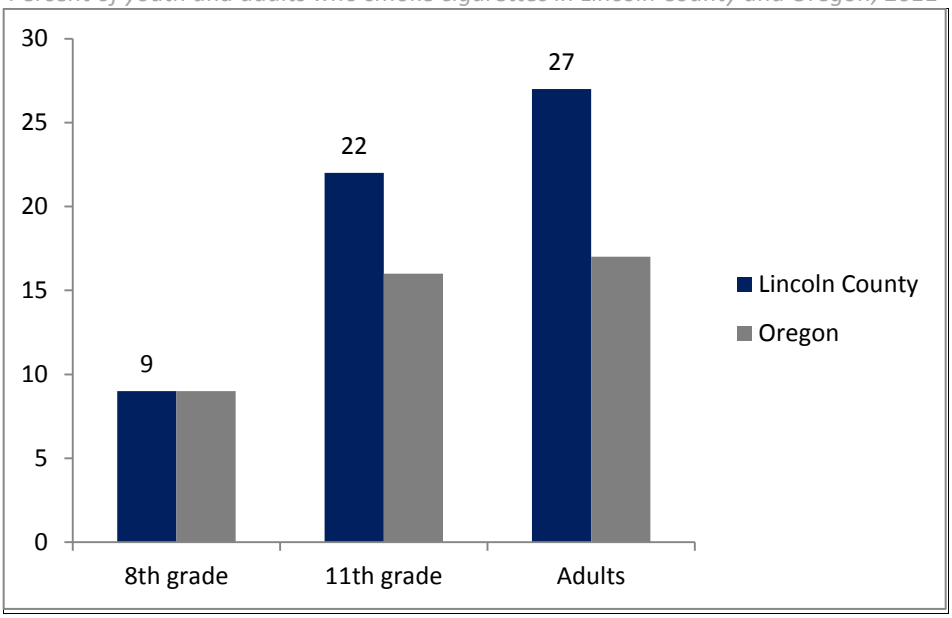
Tobacco Use among Adults and Youth

Statewide, the rate of smoking among adults has decreased 26 percent since 1996. Smoking has declined 54 percent among Oregon's 8th graders, and 46 percent among 11th graders. Use of smokeless tobacco has dropped as well.

Lincoln County has a significantly higher percent of adult cigarette smokers than Oregon (25 percent versus 17 percent). Lincoln County needs to reduce smoking by more than half in order to meet the Healthy People 2020 goal for percent of adults who currently smoke (12.0 percent).

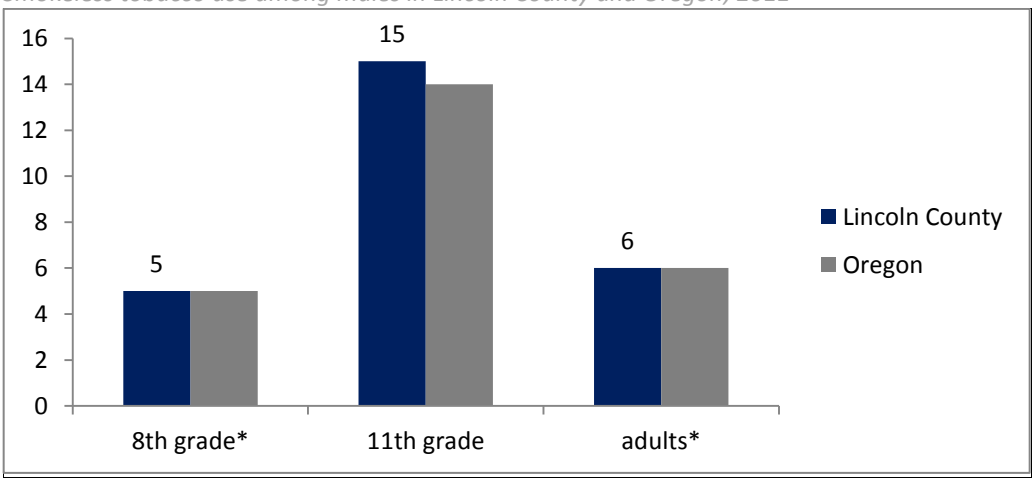
Tobacco use is a problem among Lincoln County youth as well. Nearly one in ten 8th graders and one in five 11th graders reported smoking in the previous 30 days, and nearly one in five 8th graders reported having smoked at some time. Exposure to tobacco begins even earlier: 23 percent of pregnant women in Lincoln County report smoking while pregnant. Smoking during pregnancy is positively correlated with the delivery of smaller birth weight infants. Smokeless tobacco is also prevalent among youth (15 percent of 11th graders).

Percent of youth and adults who smoke cigarettes in Lincoln County and Oregon, 2011



Source: Oregon Health Authority, Oregon Tobacco Facts and Laws, 2011

Smokeless tobacco use among males in Lincoln County and Oregon, 2011

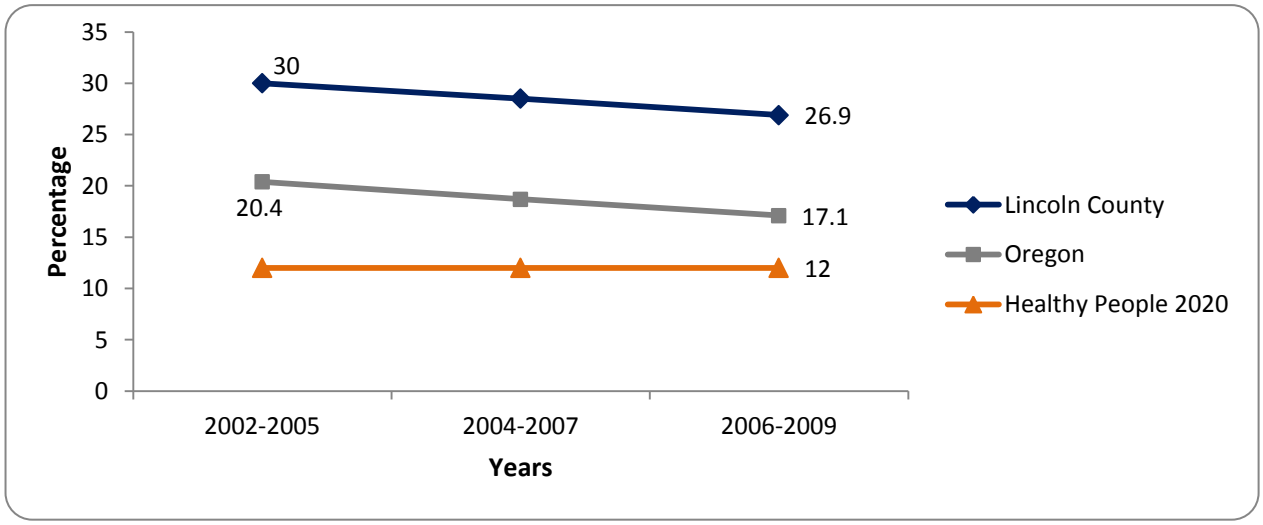


Source: Oregon Health Authority, Oregon Tobacco Facts and Laws, 2011
**May be statistically unreliable; interpret with caution.*

Tobacco's toll on the health and economy of Lincoln County each year is significant. Consider, for example:

- 8,700 adults regularly smoke cigarettes
- 3,320 people suffer from a serious illness caused by tobacco use
- 170 people die from tobacco use
- $32.1 million is spent on medical care for tobacco-related illnesses
- $28.1 million in productivity is lost due to tobacco-related deaths[120]

Percent of adults who currently smoke cigarettes, Lincoln County & Oregon, 2002-2009



Source: Oregon BRFSS, Table II: Prevalence of Modifiable Risk Factors among Adults

Data suggest that the proportion of adults who currently smoke cigarettes does vary by age group. County level data available illustrate that a greater percentage of older adults ages 45-59 years currently smoke compared to adults 60 years and older.

Percentage of adults 45 years and older reporting that they are a current cigarette smoker, Lincoln County & Oregon, 2004-2007

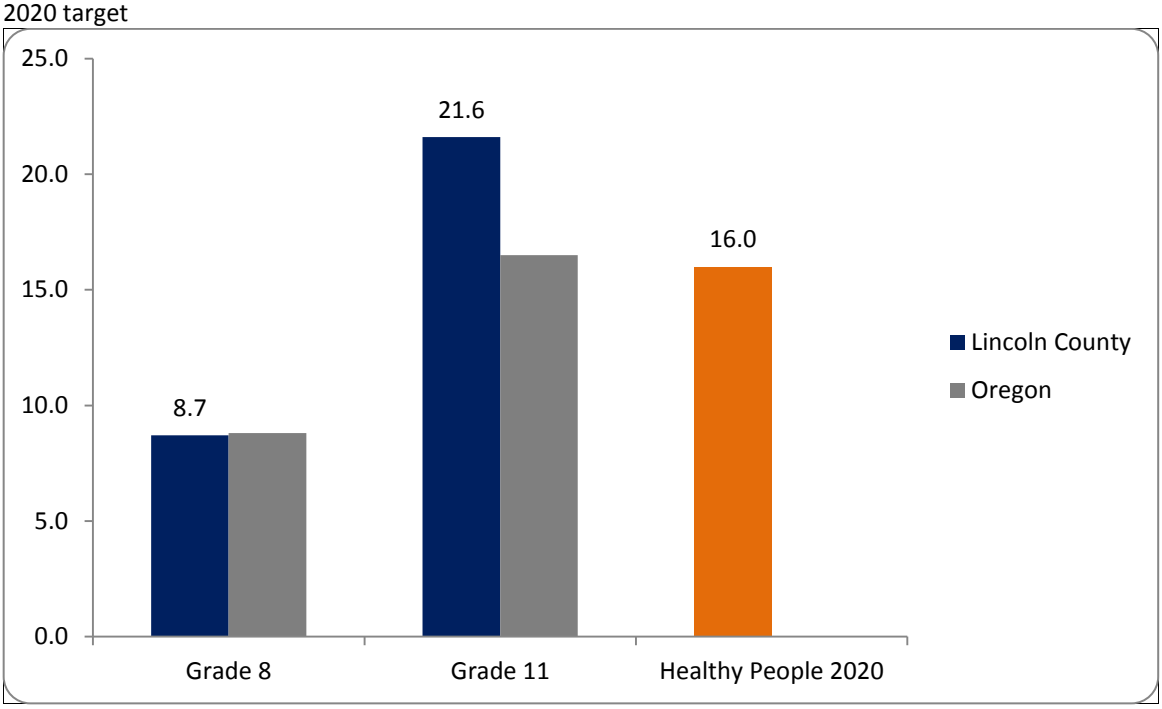
Older Adults	Lincoln County	Oregon
45-59 years	29%	19%
60-74 years	18%	13%
75 years+	7%	5%

Source: Oregon Health Authority, BRFSS, Healthy Aging in Oregon Counties, 2009

Tobacco products are designed to deliver nicotine, an addictive drug that changes the way the brain works, causing tobacco users to crave repeated doses. Youth are especially sensitive to nicotine and can become dependent more quickly than adults. Because of their dependency, close to three out of four teen smokers continue using tobacco products into adulthood.

Lincoln County has a higher percentage of high school youth who report smoking a cigarette in the past 30 days than Oregon youth overall. Looking at data from 11th graders, Lincoln County does not meet the Healthy People 2020 goal for percent of youth reporting smoking a cigarette in the past 30 days.

Percent of smokers among youth in Lincoln County and Oregon, 2007-2008, as compared to the Healthy People 2020 target



Source: Oregon Healthy Teens Survey, 2007-2008

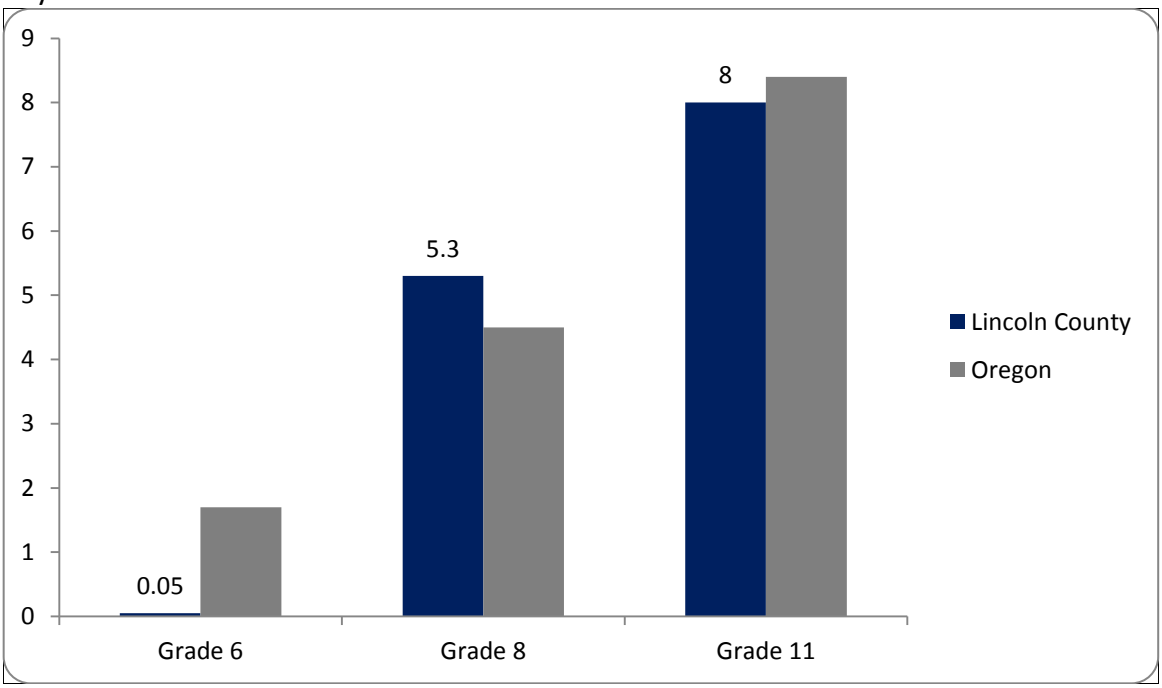
Secondhand smoke is a mixture of the smoke exhaled by a person smoking, and the smoke from burning tobacco in a cigarette, pipe, or cigar. Secondhand smoke contains the same toxic chemicals and carcinogens as inhaled tobacco smoke, and even brief exposure has been found to put a nonsmoker's health at risk. In adults, secondhand smoke exposure has been found to cause lung cancer and heart disease. Children exposed to secondhand smoke are more at risk for ear infections, asthma attacks, respiratory symptoms and infections, and a greater risk for sudden infant death syndrome (SIDS).[121]

Lincoln County residents report no-smoking rules for their cars at a lower rate than the rest of Oregon (72.5 percent vs. 82.7 percent),[122] and fewer households in Lincoln County have no-smoking rules in their homes than across the state (88.6 percent of homes vs. 90).[123]

Prescription Drug Use

When prescription drugs are misused or taken without a doctor's prescription they can be just as harmful as illegal street drugs. Rates of improper prescription drug use among youth across the United States are rising. Lincoln County is no exception.

Percent of youth reporting use of prescription drug use without a doctor's orders in the past 30 days



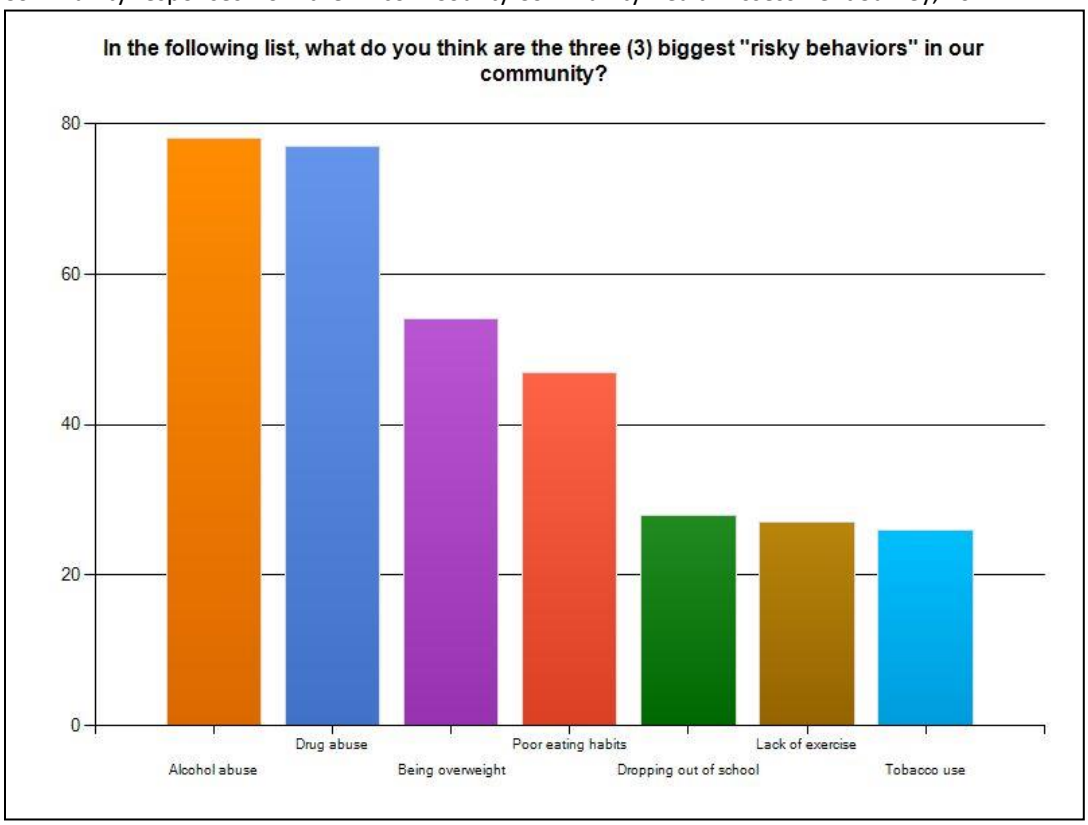
Source: Oregon Student Wellness Survey, 2012

Illicit Drug Use

Illicit drug use (illegal and/or misuse of prescription drugs or household substances) impacts families, schools, workplaces and the community. It causes long-term health problems, leads to premature death, contributes to injuries, violence and abuse, and can lead to addiction that erodes an individual's ability to function normally.

Data compiled from the 2012 Lincoln County Community Health Assessment survey show that residents perceive drug and alcohol abuse to be the behavioral risk factor that has the greatest impact on the overall health of people in Lincoln County.

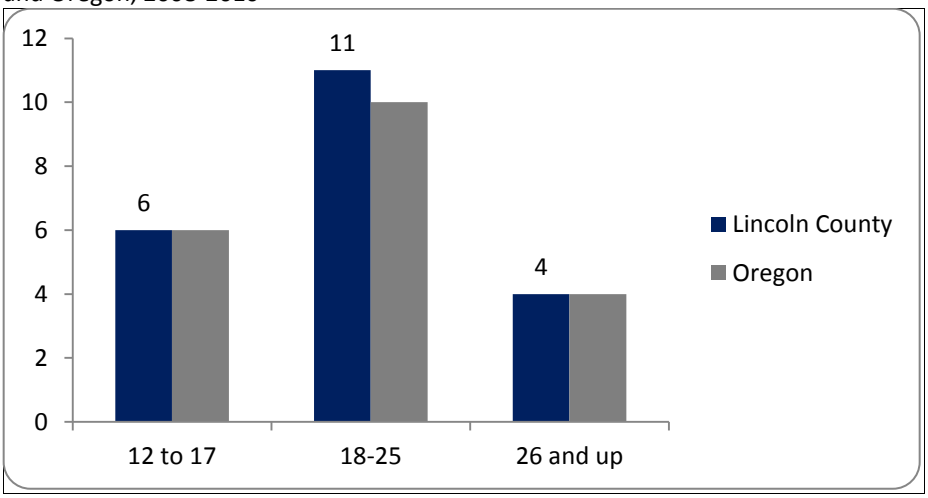
Community responses from the Lincoln County Community Health Assessment Survey, 2012



Source: Lincoln County Community Quality of Life Survey, 2012

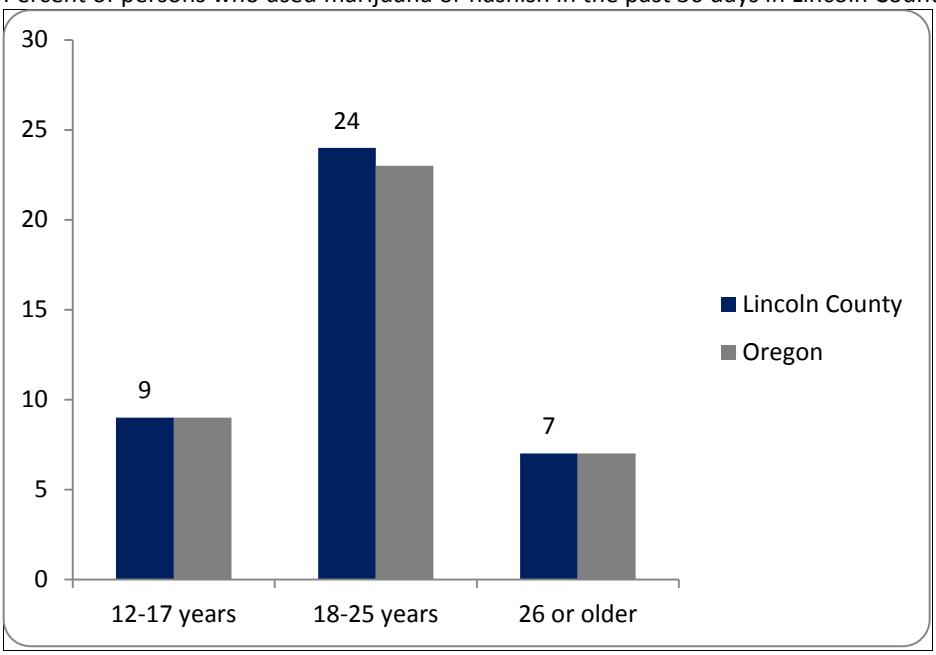
The most recent data available at the county level suggest that use of illicit drugs occurs among 4.0 to 11.0 percent of the population based on age. A slightly higher proportion of residents, 7.0 to 24.0 percent depending on age, report the use of marijuana. More data on substance use in Lincoln County are needed to adequately understand current use.

Percent of individuals reporting illicit drug use (excluding marijuana) in the past 30 days by age in Lincoln County and Oregon, 2008-2010



Source: National Survey on Drug Use and Health 2008-2010

Percent of persons who used marijuana or hashish in the past 30 days in Lincoln County and Oregon



Source: National Survey on Drug Use and Health, 2008-2010

Preventing and Managing Chronic Disease

Cancer Screening

Research shows that screening for cancer is effective in reducing serious consequences of the disease, which is generally more treatable when detected early. Breast and colorectal cancer screening rates in Lincoln County are lower than State average, while cervical cancer screening rates are nearly equal. Additional data are needed to identify rates of screening among race/ethnic populations, age group and income level.

Cancer screening in Lincoln County and Oregon, 2006-2009

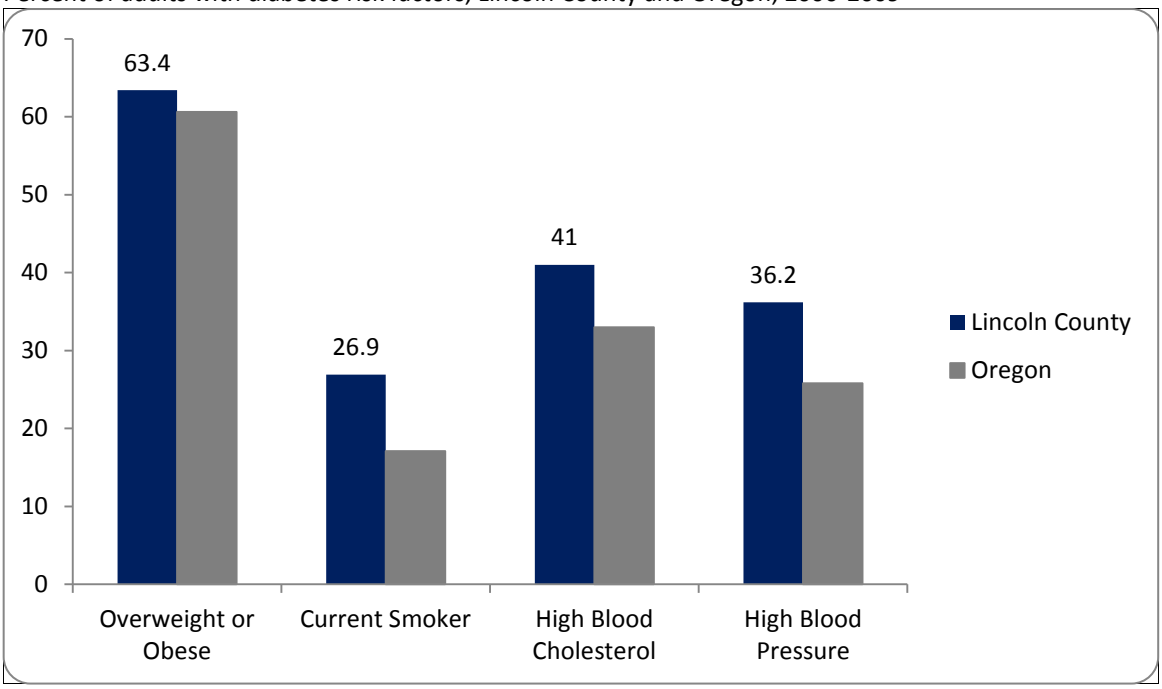
Cancer Screening Practice	Lincoln County	Oregon	Healthy People 2020
Mammography Use among Women ≥ 40 years	63.8%	82.0%	81.1%
Pap Smear Use among Women ≥ 18 years	85.1%	85.8%	93.0%
Fecal Occult Blood Test or Sigmoidoscopy /Colonoscopy among Adults aged ≥ 50 years	46.8%	56.8%	*

Source: Oregon Health Authority BRFSS, 2006-2009

Preventing Diabetes

The percentage of Lincoln County residents who are overweight and obese, smoke, have high blood cholesterol and high blood pressure, and all risk factors for diabetes, exceeds statewide percentages in every category.

Percent of adults with diabetes risk factors, Lincoln County and Oregon, 2006-2009



Source: Oregon Health Authority BRFSS 2006-2009

Oral Health

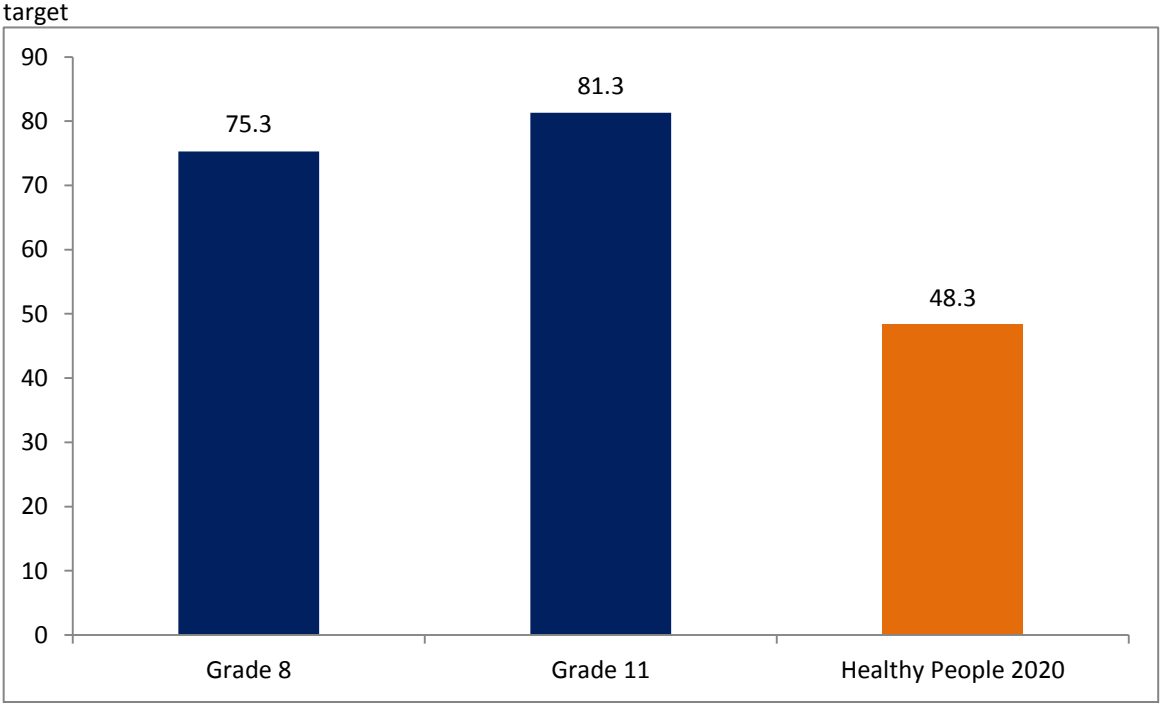
Good oral health is essential to overall physical and mental health, and encompasses more than just dental check-ups. Oral disease can lead to cavities (or caries) and gum ailments, which can in turn contribute to other diseases or conditions. Conversely, certain chronic mental and physical health conditions can also contribute to declines in oral health.

Gum disease is associated with endocarditis (an infection of the inner lining of the heart), cardiovascular disease, premature birth, and low birth weight. Osteoporosis can lead to tooth loss, and individuals with diabetes and immune system disorders are more susceptible to gum and bone infections. Poor oral health can also affect self-esteem, reduce employment opportunities, and increase absenteeism.

Among children worldwide, dental caries are the most common childhood disease. Caries are almost completely preventable through optimal water fluoridation, application of dental sealants to children's teeth, effective oral hygiene, and regular preventive visits to the

dentist.[124] In Lincoln County, the proportion of 8th grade and 11th grade youth who have ever had a cavity is higher than the Healthy People 2020 target of 48.3 percent.

Percent of youth who have ever had a cavity in Lincoln County, 2007-2008, compared to Healthy People 2020 target



Source: Oregon Healthy Teens Survey, 2007-2008

Achieving and maintaining good oral health is a significant challenge for many people in Lincoln County, particularly those with lower incomes. This is especially difficult as there are no cities, districts, or water supplies in Lincoln County that are fluoridated.

One of the objectives of Healthy People 2020 is to increase the proportion of U.S. communities with fluoridated water to 75%.[125]

Key factors influencing the lack of dental care among residents in Lincoln County are barriers to access (education and literacy, cost, transportation, language, insurance coverage, citizenship and documentation) and gaps in services (limited public transportation, clinic hours, public awareness of options, and low reimbursement for dental offices).[126]

Disease Prevention

Foodborne Illness Prevention

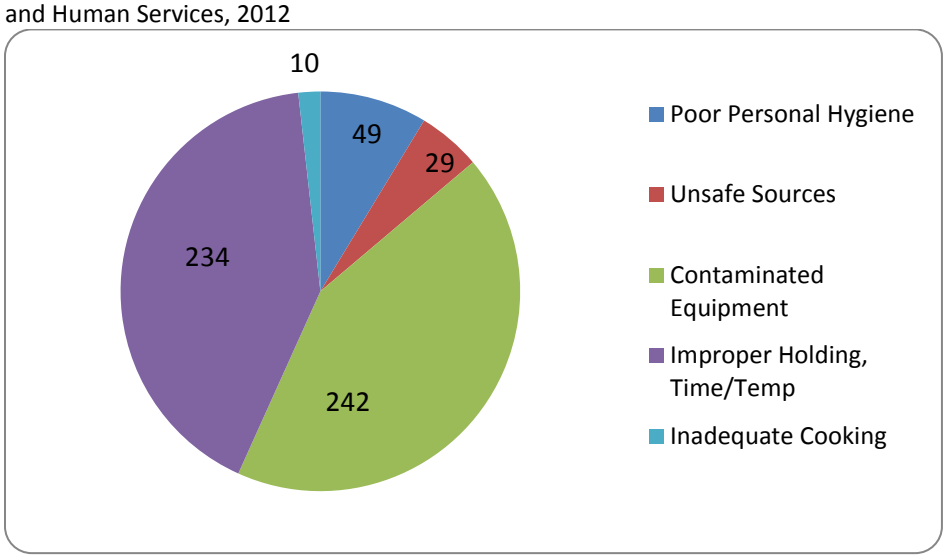
The United States has nearly one million food establishments that serve an expected 250 meals annually to each U.S. resident, totaling more than 77 billion meals served each year.[127] It is estimated by the Centers for Disease Control and Prevention (CDC) and the National Restaurant

Association that close to half of consumers' food dollars are spent at restaurants.[128] The CDC reports that the majority (52%) of foodborne illnesses are attributed to traditional sit-down or fast food restaurant meals or "other" restaurant meals (e.g., deli meals).[129]

Lincoln County had 238 food service establishments licensed and inspected (two times per year) by Lincoln County Health and Human Services, and 178 retail food establishments licensed and inspected by Oregon Department of Agriculture in 2012. The purpose of these inspections is to ensure that each segment of the food production chain, ultimately to include consumers, employ the best available science and information regarding food safety to minimize or eliminate, among others, contamination, recontamination, or temperature abuse of foods.[130] Both inspection programs utilize the Food Code developed by the U.S. Public Health Service with an emphasis on five major risk factors. These risk factors include improper holding temperatures, inadequate cooking, contaminated equipment, food from unsafe sources, and poor personal hygiene.

Through research, it has been shown that there is a correlation between specific violations recorded at food service establishments during routine inspections and foodborne illness outbreaks.[131] During 2012, there were a total of 564 violations attributable to risk factors cited during food service establishment inspections conducted by Lincoln County Health and Human Services.

Attributable risk factors cited during food service establishment inspections conducted by Lincoln County Health and Human Services, 2012



Source: Lincoln County Enviromental Health, 2012

Vaccine-Preventable Illnesses

During the 20th century, vaccines served as public health's primary tool for reducing infectious disease. Many diseases that annually sickened and killed thousands of American infants, children and adults are now largely preventable. However, the viruses and bacteria that cause

these diseases still exist in our environment, and these illnesses still occur in populations that that are not fully immunized.

Modes of transmission and infection vary depending upon the causative organism. Some, such as Hepatitis B, are transmitted through direct contact with an infected person's blood or body fluids. Others such as influenza, pertussis (whooping cough) and measles can be transmitted by airborne droplets via coughs and sneezes. Although each disease has its own ecology and patterns of infection, newborn infants, the elderly, and people with serious pre-existing medical conditions are typically most susceptible to the worst effects of these illnesses.

Vaccine-preventable diseases can result in expensive doctor visits, hospitalizations, and even death. Sick children miss school and cause parents to lose time from work. It is estimated that every $1 spent on childhood vaccines saves $16.50 in future medical costs.

Community Immunity

Vaccinations are given to slow and to prevent the spread of infectious diseases through a population. When enough of a population is immunized, most people will be protected because few are susceptible to catching and spreading an illness. Even those who cannot receive certain vaccines (i.e., infants, pregnant women and people undergoing chemotherapy) will have some protection because germs cannot spread as easily. This is known as community (or herd) immunity. Most Public Health experts estimate that between 80 and 90 percent of the population must be protected to maintain community immunity.

In 2010, 72.9 percent of all of Oregon children were fully vaccinated at age 2. In Lincoln County that rate was slightly lower at 72.5 percent.

Throughout the U.S., increasing numbers of people are concerned about vaccines. This is leading to the increased use of alternative schedules that delay protection of children. A growing number of parents are refusing some or all vaccinations for their children. In Oregon, parents can opt-out of mandatory child school vaccinations by signing a religious/philosophical exemption form. There is currently no requirement for children to have medical or public health confirmation; it is strictly a personal choice.

Sexually Transmitted Illnesses

Despite their burdens, costs, and complications, and the fact that they are largely preventable, sexually transmitted illnesses (STIs), remain a significant public health problem in the United States. The spread of STIs is directly affected by social, economic, and behavioral factors such as poverty, limited access to health care, fewer attempts to get medical treatment, and living in communities with high rates of STIs. Among certain vulnerable populations, historical experience with segregation and discrimination exacerbates the influence of these factors. Many studies document the association of substance abuse with STIs, altering sexual behavior

drastically in high-risk sexual networks. Perhaps the most important social factors contributing to the spread of STIs are the stigma associated with these illnesses and the general discomfort of discussing intimate aspects of life, especially those related to sex.[132]

Percentage of youth reporting sexual intercourse, Lincoln County and Oregon, 2007-2008

	8th Grade		11th Grade	
Youth Who Have Had Sexual Intercourse One or More Times in Their Lifetimes	**Lincoln**	**OR**	**Lincoln**	**OR**
2007-2008*	20%	17.4%	48.4%	48.1%

*Source: Oregon Healthy Teen Survey *County-level data available for 2007-2008 only.*

Research shows that one of the most effective ways to prevent the transmission of STIs among youth is to delay the onset of sexual activity. In addition, appropriate and effective use of condoms is also highly correlated to a reduction in STIs among youth.

Condom Use among Teens, Lincoln County and Oregon, 2007-2008

	8th Grade		11th Grade	
Among Those Who Have Ever Had Sex: Use of condom the last time youth had sexual intercourse	**Lincoln**	**OR**	**Lincoln**	**OR**
2007-2008*	66.5%	69.4%	67.7%	61.7%

*Source: Oregon Healthy Teen Survey *County-level data available for 2007-2008 only.*

Approximately 12,000 women get cervical cancer in the U.S. annually. Almost all of these cancers are associated with the genital human papillomavirus (also called HPV), the most common STI. HPV is so common that at least 50 percent of sexually active men and women are identified with HPV at some point in their lives.

In Oregon, 74.3 percent of teen girls (ages 13-17) have completed the HPV vaccination series. This is higher than the national average of 69.6 percent, but fails to meet the Healthy People target of 80 percent of teen girls receiving the HPV vaccine.

Chapter 5
Disease and Injury

Leading Causes of Death in Lincoln County

Cause-Specific Mortality

The leading causes of death (for all ages combined) in Lincoln County are cancer, heart disease, chronic lower respiratory disease, cerebrovascular disease (stroke), and unintentional injuries.[133] Compared with Oregon, Lincoln County's death rates are higher for ten of the top eleven causes of death.

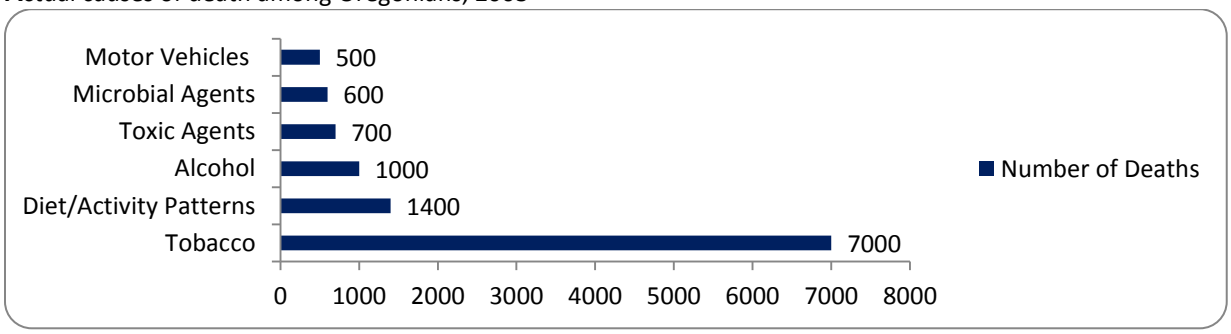
Lincoln County top 11 causes of death per 100,000, 2009-2011

Cause of Death	Lincoln County	Oregon
Cancer	230.9*	171.8
Heart Disease	158.5	134.5
Chronic Lower Respiratory Disease	54.5	45.3
Cerebrovascular Disease	47.7	41.4
Alzheimer's Disease	37.4	28.3
Unintentional Injuries	46.7	40.1
Diabetes-related Disease	26.5	24.7
Alcohol-induced Deaths	18.5	12.2
Suicide	13.0	16.2
Parkinson's Disease	11.0	8.0

*Source: Oregon Vital Statistics County Data 2011 * significantly higher than State average*

Factors such as tobacco, diet, activity and alcohol use contribute substantially to these deaths. Approximately 30,000 Oregonians die each year. An estimated 22 percent of these deaths are linked to tobacco.[134]

Actual causes of death among Oregonians, 2003



Source: Oregon Tobacco Facts and Laws, 2010

Chronic Disease and Conditions

Chronic diseases, such as heart disease, stroke, cancer and diabetes are among the most prevalent, costly, and preventable of all health problems. Healthy lifestyles (avoiding tobacco, being physically active, and eating well) greatly reduce a person's risk for developing chronic illnesses. Research shows that access to resources that support healthy lifestyles, such as nutritious food, recreational opportunities, and high quality and affordable prevention measures (including screening and appropriate follow-up) saves lives, reduces disability and lowers medical costs.[135]

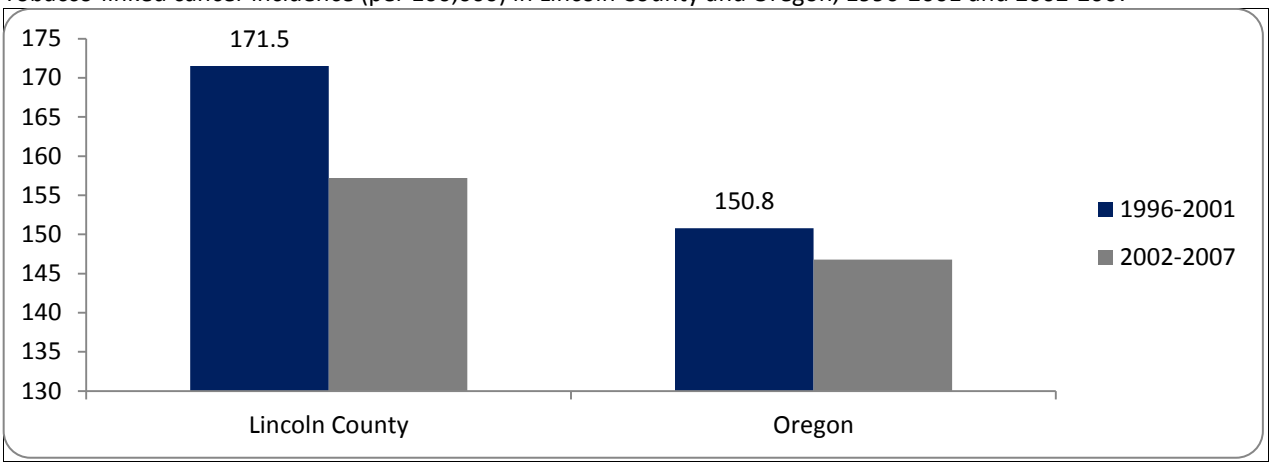
Cancer

Cancer is the leading cause of death in Lincoln County and in Oregon. Lung cancer is the most common cause of cancer death for Oregonians.[136] Colorectal cancer is the second most common cause of cancer death.

From 2005-2009, Lincoln County had the 16th highest cancer incidence rate of the 36 counties in Oregon (474.7 per 100,000 persons each year).[137] Lincoln County's annual incidence rate is not significantly different from incidence rates in Oregon and the United States (464.6 and 465.0, respectively). The occurrence of cancer, however, varies by sex, age and race/ethnicity.

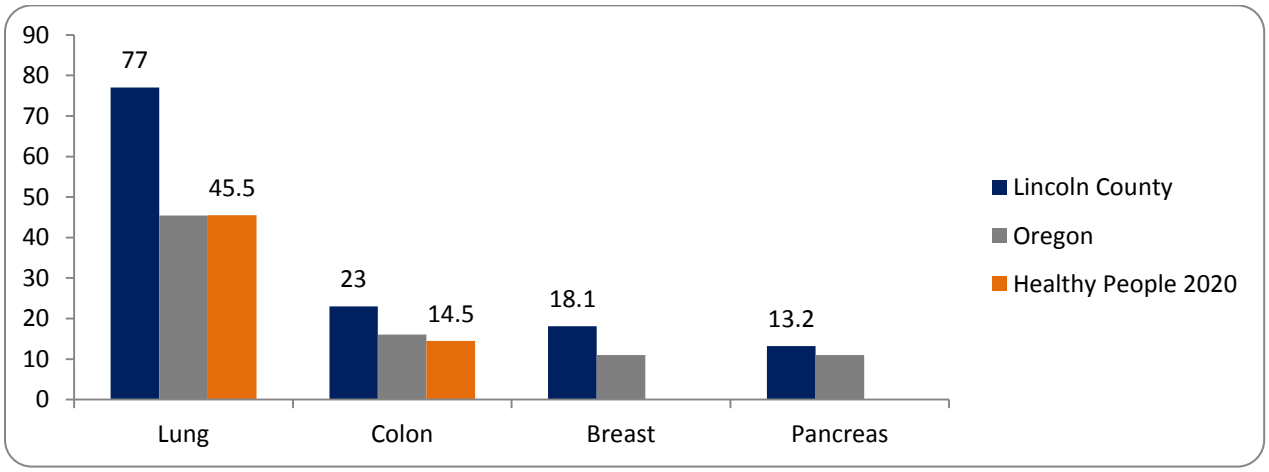
However, incidence of tobacco-related cancer in Lincoln County is significantly different from State incidence rates (171.5 per 100,000 compared with 150.8 per 100,000).[138]

Tobacco-linked cancer incidence (per 100,000) in Lincoln County and Oregon, 1996-2001 and 2002-2007



Source: Oregon Tobacco Facts and Laws, 2011

Leading types of cancer mortality (rate per 100,000) in Lincoln County, 2009-2011, compared with Oregon and the Healthy People 2020 target



Source: Death Certificate Data: Oregon Health Authority, Center for Health Statistics, 2009-2011

Breast Cancer

Oregon has the 6th highest incidence rate for breast cancer in the United States.[139] Although significant improvements have occurred in early detection and treatment, breast cancer is still the leading cause of death for women in Oregon. Only a small fraction of breast cancer cases can be linked to genetics.[140]

Female breast cancer incidence in Oregon is slightly higher than the national rate. The rates for Oregon and the United States from 2005-2009 were 130.7 and 122.0 per 100,000 persons, respectively.[141] In 2009-2011, the female breast cancer mortality rate in Lincoln County was 30.4 compared to 20.3 per 100,000 in Oregon.[142]

State trends in breast cancer can be summarized as follows:

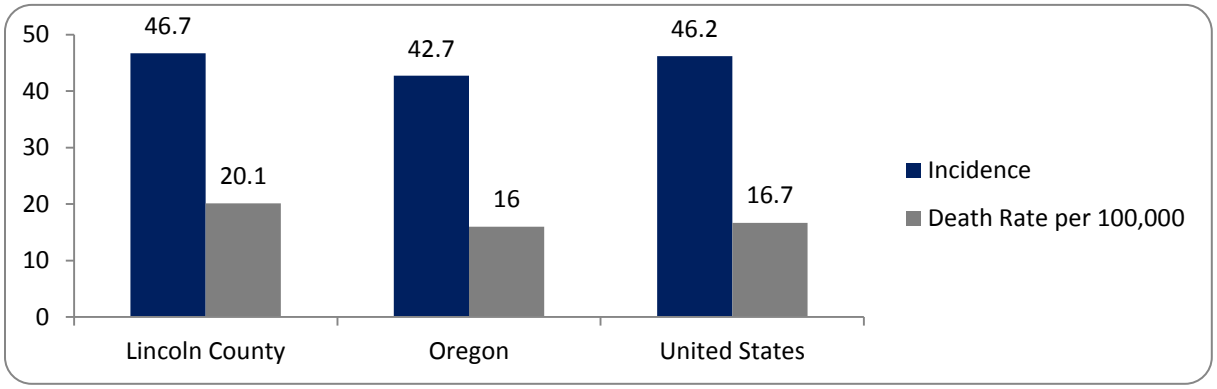
- Females are at highest risk for breast cancer
- Women age 40 and older are at greatest risk for being diagnosed with breast cancer
- A small percentage of women under the age of 40 develop breast cancer
- About 85 percent of all women diagnosed with breast cancer do not have a family history of breast cancer
- Only about 10-15 percent of breast cancers occur as a result of inherited genetic traits
- Breast cancer in men is rare, but it does occur, and should be recognized as an important area for screening and treatment
- Race is not considered a factor for increased risk of breast cancer. However, rates of death from the disease differ among ethnic groups. In Oregon, breast cancer is the leading cause of cancer associated deaths among Latino and Asian Pacific Islander women[143]

- Some women may be at risk for a later stage diagnosis, due to lack of access or referral to cancer screening services. Women with disabilities and African American women are more likely to be diagnosed at later stages for breast, cervical, and colorectal cancer.[144]

Colorectal Cancer

Like many Oregon counties, Lincoln County has not yet met the Healthy People 2020 objective of reducing the colorectal death rate. Lincoln County's annual death rate from colorectal cancer is 20.1 per 100,000 persons as compared to 16.0 in Oregon. However, Lincoln County's death rate fell by 1.0 percent from 2005-2009, suggesting positive progress toward reducing colorectal cancer deaths.[145]

Incidence and death rate of colorectal cancer per 100,000 persons in Lincoln County, Oregon, and the United States, 2005-2009



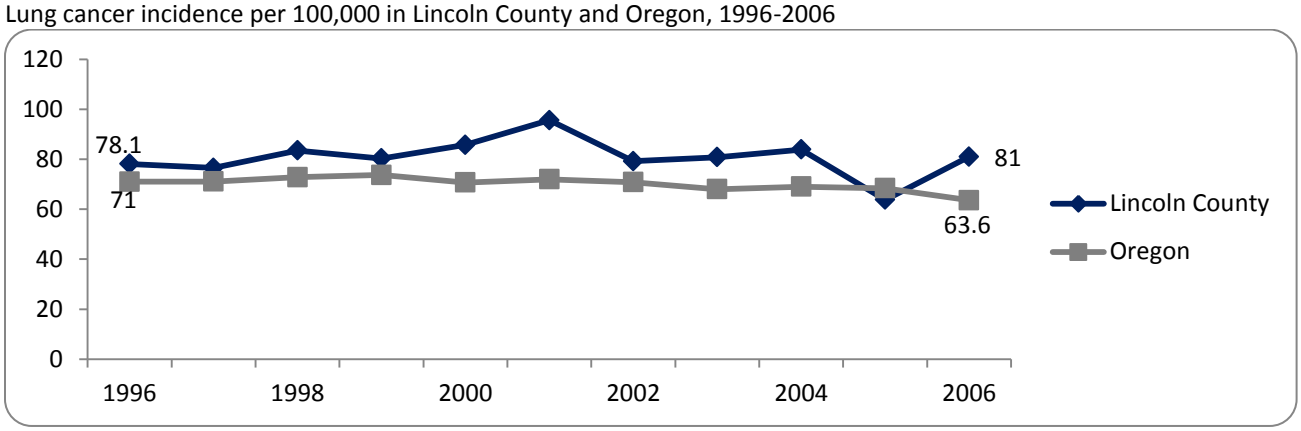
Source: National Cancer Institute: State Cancer Profiles, 2013

Lung and Bronchial Cancer

Lung cancer incidence in men is steadily declining as a result of decreasing smoking rates, but the incidence in women remains relatively flat.[146] Lung cancer is the deadliest cancer in Oregon, accounting for 27 percent of cancer deaths in the state in 2009.[147] The rate of lung cancer has remained fairly constant in Oregon and the United States.

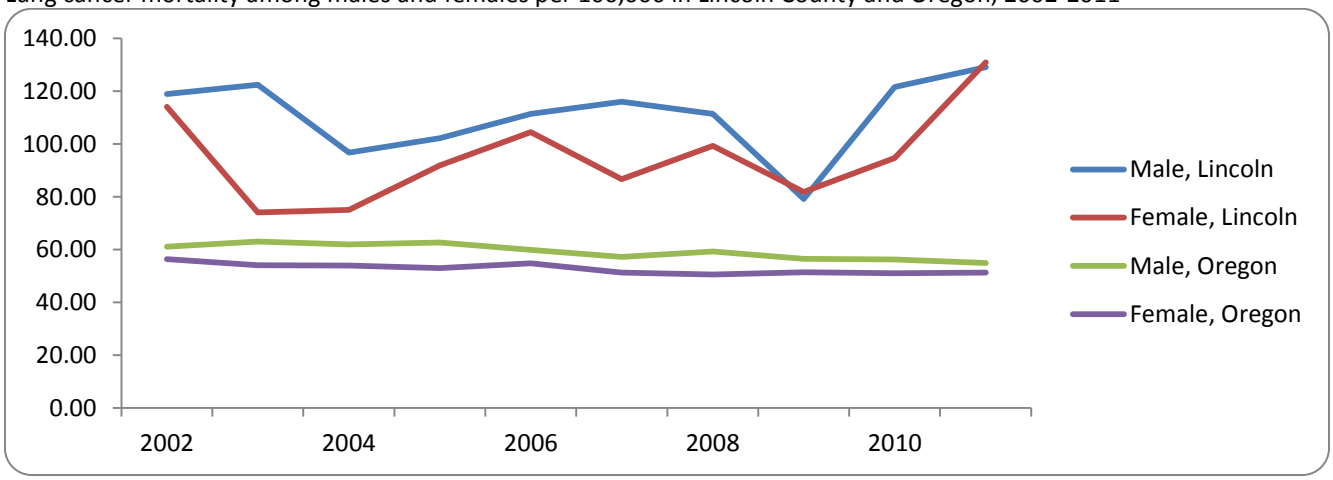
In Lincoln County, smoking declined from approximately 30 percent to 26.9 percent from 1996 to 2009.[148] The lung and bronchial cancer incidence rate in Lincoln County was 73.9 per 100,000 persons from 2005-2009 while the state incidence rate was 65.6 per 100,000.[149] The annual percent change in lung and bronchial cancer was -0.1 for Lincoln County and -0.9 percent for the State.[150]

Lung cancer incidence per 100,000 in Lincoln County and Oregon, 1996-2006



Source: Cancer Registry Data: Oregon Health Authority, Oregon State Cancer Registry

Lung cancer mortality among males and females per 100,000 in Lincoln County and Oregon, 2002-2011



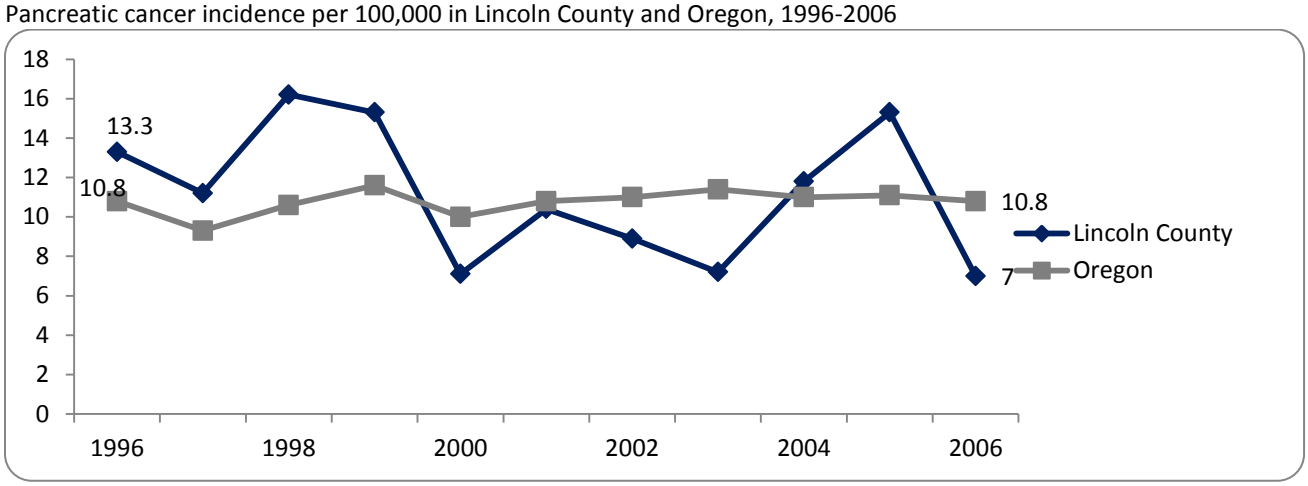
Source: Oregon Health Authority, Center for Health Statistics, 2002-2011

Pancreatic Cancer

Pancreatic cancer is a disease in which cancer cells form in the tissue of the pancreas. Risk factors for pancreatic cancer include smoking, long-standing diabetes, chronic pancreatitis and certain conditions such as heredity pancreatitis.[151] In the United States, the incidence rate of pancreatic cancer is 12.2 per 100,000 persons.[152]

In 2006-2010, the annual incidence rate for pancreatic cancer in Lincoln County was 11.1 per 100,000 persons, slightly below the Oregon average of 11.6.[153]

Pancreatic cancer incidence per 100,000 in Lincoln County and Oregon, 1996-2006



Source: Oregon Health Authority, Oregon State Cancer Registry

Prostate Cancer

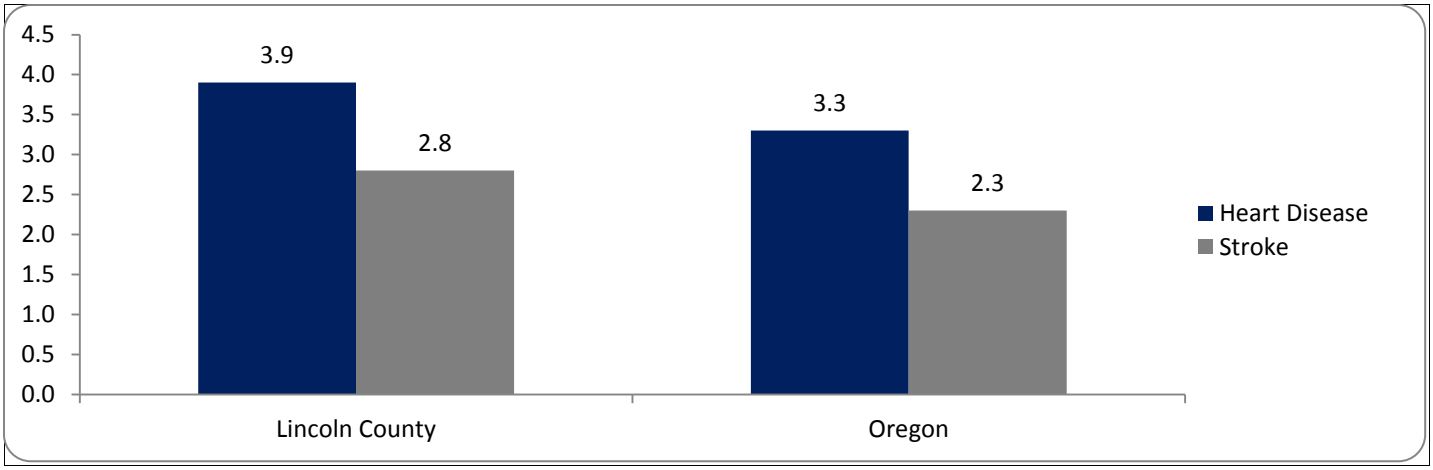
The incidence of prostate cancer among Oregon men from 2005-2009 was slightly lower (145.1 per 100,000 persons) than the national rate (151.4 per 100,000).[154] The incidence of prostate cancer in Lincoln County was similar to that of Oregon (161 per 100,000 and 158 per 100,000, respectively). The mortality rate for Lincoln County was 31 per 100,000, which was also similar to the mortality rate for the state (29 per 100,000).[155]

Heart Disease and Stroke

Cardiovascular Disease

After cancer, cardiovascular disease is the second leading cause of death in Lincoln County. Lincoln County residents have higher rates of heart attack and stroke than the Oregon average.[156]

Prevalence of heart disease and stroke per 100,000 persons, Lincoln County, Oregon, and the United States, 2006-2009

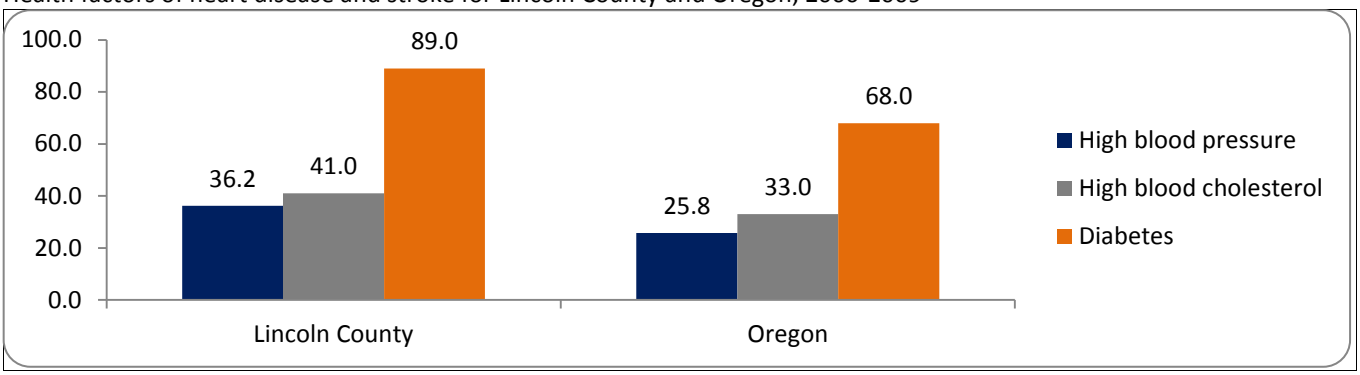


Source: Oregon Health Authority: Heart Disease and Stroke in Oregon – Update 2010

This may be due in part to the relatively high presence of risk factors and lifestyle behavior factors in Lincoln County, for example:

- 36.2 percent of Lincoln County residents have high blood pressure, compared with 25.8 percent statewide.
- 41 percent of Lincoln County residents have high blood cholesterol compared with 33 percent statewide.
- 91 percent of adults in Lincoln County have at least one of the following risk factors for chronic disease, including cardiovascular disease: currently smoke, overweight or obesity, physical inactivity, low fruit and vegetable consumption.[157]

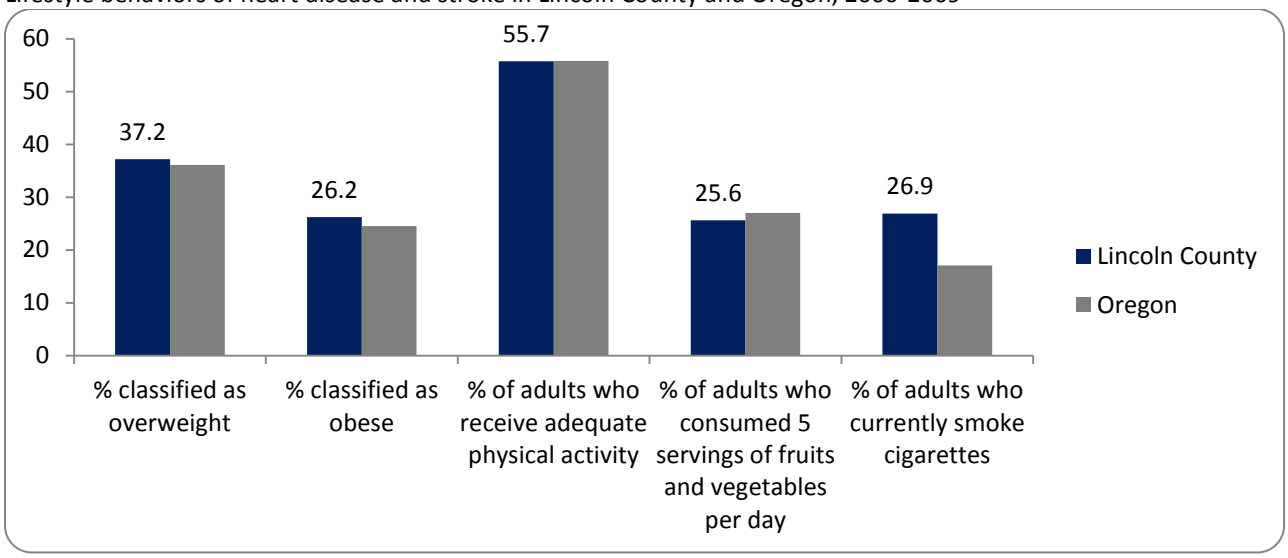
Health factors of heart disease and stroke for Lincoln County and Oregon, 2006-2009



Source: Oregon Health Authority: Heart Disease and Stroke in Oregon – Update 2010

Many of the effects of heart disease can be reversed with healthy eating, exercise, avoidance of tobacco, and stress reduction. Social and economic factors are also key. In the U.S., low-income adults are 50 percent more likely to suffer heart disease than top wage earners. Those second from the top are almost 20 percent more likely than those at the top to suffer heart disease. High blood pressure, high cholesterol and diabetes are also critical health factors of heart disease and stroke.

Lifestyle behaviors of heart disease and stroke in Lincoln County and Oregon, 2006-2009



Source: Oregon Health Authority, Heart Disease and Stroke in Oregon: Update 2010

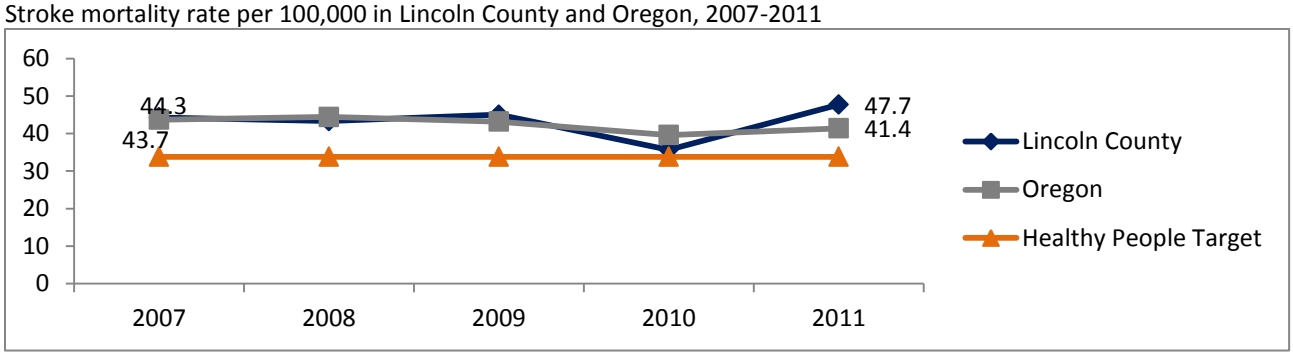
Heart Disease Mortality

The heart disease death rate is lower in Oregon than in the United States. In Oregon, the death rate for heart disease is higher in rural areas than urban areas.[158] Lincoln County has a higher cardiovascular disease mortality rate (158.5 per 100,000) than Oregon (134.5 per 100,000) but lower than the United States (179.1 per 100,000).

Stroke Mortality

Overall in Lincoln County, the rates of stroke disease mortality have been slightly higher than that of the Oregon. However, the stroke death rate is higher in Oregon than in the U.S. In general, rates in Lincoln County (and Oregon) have remained above the Healthy People 2020 target of 33.8.[159]

Stroke mortality rate per 100,000 in Lincoln County and Oregon, 2007-2011



Source: Oregon Health Authority: Heart Disease and Stroke in Oregon – Update 2010

Diabetes

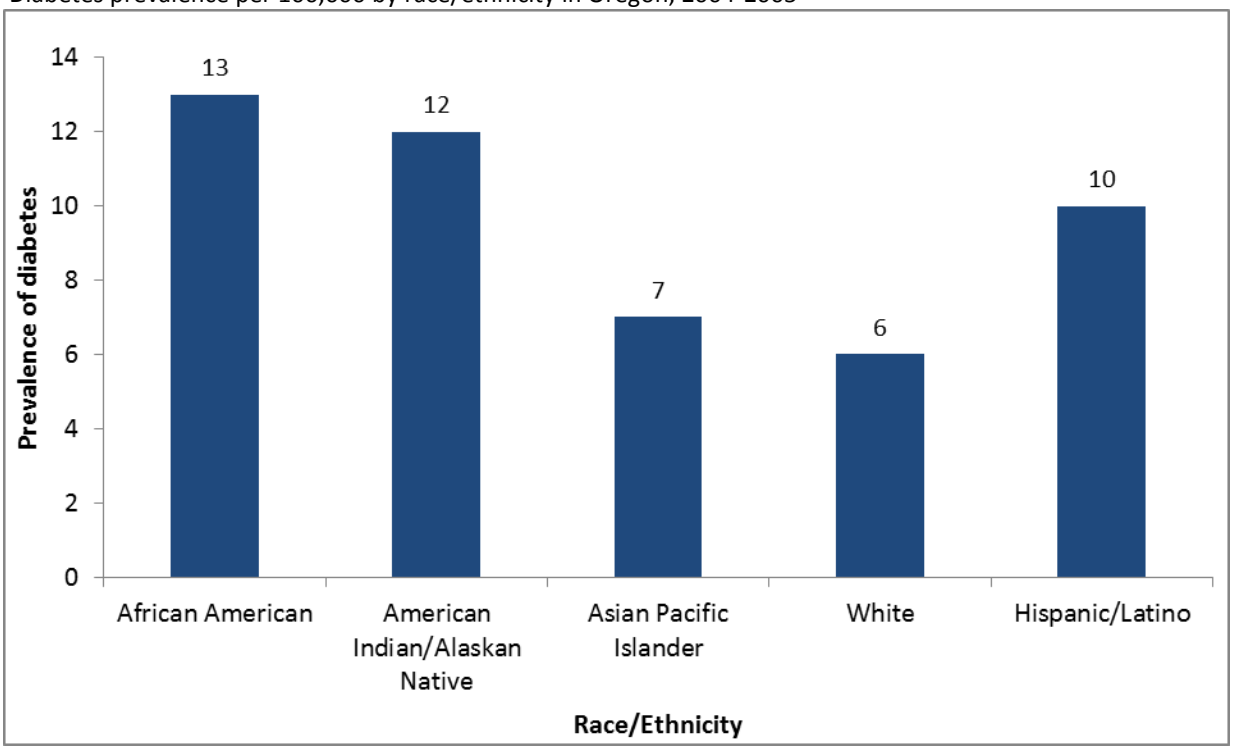
Newly Diagnosed Diabetes in Adults

Prevalence of diabetes among adults in Lincoln County was 8.9 percent from 2006-2009.[160] This estimate may be conservative, however, as many people are unaware of their status since diabetes often develops gradually, and symptoms and complications can take years to manifest.

The growing burden of diabetes affects everyone in Oregon, but rates vary by age, race/ethnicity, and household income:

- Diabetes prevalence increases with age; adults under 45 have the lowest rates of diabetes (2 percent), while 16 percent of adults aged 65 years and older have been diagnosed with disease
- Oregon's Latino, African American, and American Indian/Alaska Native communities have significantly higher rates of diabetes than do non-Latino Whites
- Economically disadvantaged Oregonians, those with household incomes at or below the federal poverty level, have a significantly higher rate of diabetes (9.7 percent) than those with higher household incomes (5.7 percent).

Diabetes prevalence per 100,000 by race/ethnicity in Oregon, 2004-2005



Source: Oregon Public Health Division, BRFSS Race Oversample 2004-2005

Obesity & Overweight

An estimated 26.2 percent of adults in Lincoln County are obese; an additional 37.2 percent are overweight.[161] Factors that contribute to high prevalence of obesity include physical inactivity and poor access to healthy foods. In Lincoln County, just over half of adults met the Center for Disease Control and Prevention's recommendations for physical activity (55.7 percent). Only one quarter of adults consumed at least five servings of fruits and vegetables per day (25.5 percent).[162] Limited access to recreational facilities and rainy weather may present barriers to physical activity for some residents. For low-income residents, the cost of fruits and vegetables may pose barriers; local efforts to expand farmers' markets and SNAP (Supplemental Nutrition Assistance Program, or food stamps) access are important ways of addressing these issues.

Obesity contributes to the death of about 1,400 Oregonians each year, making it second only to tobacco as a preventable cause of death. Overweight and obesity are also major risk factors for development of chronic diseases including diabetes, cancer, high blood pressure, high cholesterol, arthritis, heart disease and stroke.

Today, about 60 percent of Oregon adults are overweight or obese, as well as more than a quarter of all eighth graders. Since 1990, Oregon's adult obesity rate has increased 121 percent. If Oregon continues on this trajectory, children born today will not live as long as their parents or grandparents.[163]

Overweight and obesity prevalence in Lincoln County and Oregon, 2007-2008

	Lincoln County	Oregon
Adults Overweight	37.2%	36.1%
Adults Obese	26.2%	24.5%
8th Grade Overweight	12.7%	15.2%
8th Grade Obese	15.2%	10.7%
11th Grade Overweight	17.1%	14.9%
11th Grade Obese	11.8%	11.9%

Source: Adults: OHA: Heart Disease and Stroke in Oregon: Update – 2010; children: Oregon Healthy Teens Survey 2007-2008

Alzheimer's Disease

Alzheimer's disease is the most common form of dementia, which is a general term for loss of memory and other intellectual abilities serious enough to interfere with daily life. Alzheimer's disease accounts for 60 to 80 percent of all cases of dementia.

In 2010, the Lincoln County cause-specific mortality rate per 100,000 for Alzheimer's was 40.4 compared to Oregon at 28.2.

It is anticipated that the number of Oregonians with Alzheimer's disease and related dementia will increase significantly in the next two decades. Currently, about 76,000 Oregonians live with Alzheimer's disease and this number is expected to increase to 110,000 by 2025.[164]

Arthritis

Arthritis continues to be the most common cause of disability, affecting one in five Americans. Arthritis consists of over 100 different diseases and conditions that affect the joints, surrounding tissues and other connective tissues. The two most common types are osteoarthritis and rheumatoid arthritis.

The percentage of adults in Lincoln County diagnosed with arthritis is 27.9 percent compared to Oregon at 25.8 percent.[165]
Older adults in Oregon are disproportionately affected by arthritis. Prevalence of arthritis is expected to increase dramatically as the population ages. Women are more likely to be affected than men because they live longer than men. The growth of the aging population in Lincoln County will add to the high prevalence of arthritis in the coming decades. Other risk factors include sedentary lifestyle, obesity/overweight, joint injury and work-related joint trauma.[166]

Asthma

During the past 20 years, asthma has become one of the most common chronic diseases in the United States. Oregon has one of the highest asthma rates in the nation.[167] Asthma results in direct costs (e.g., hospitalizations and emergency department visits) and indirect costs (e.g., missed school and work days and days of restricted activity) and affects the quality of life for people with asthma and their families.

Common Asthma Triggers[168]

- Tobacco smoke and other smoke
- Animals with fur or feathers
- Dust mites and cockroaches
- Mold or mildew
- Pollen from trees, flowers, and plants
- Being physically active
- Air pollution
- Breathing cold air
- Strong smells and sprays
- Illnesses, such as influenza and colds.

Asthma Prevalence in Adults

For the past 10 years, the percent of Oregonians with current asthma has been slowly rising and from 2003-2010, Oregon ranked among the top 10 states with the highest percentage of adults with asthma in the nation.[169]

Two important risk factors, tobacco use and obesity, place Lincoln County at a disadvantage with regard to asthma. Oregon counties with asthma levels higher than the State average tend to also be counties with high smoking rates.[170] Likewise, counties with high levels of obesity also tend to have increased prevalence and incidence of asthma.

An estimated 11.2 percent of adults in Lincoln County have asthma, which is higher than the percentage of adults with asthma in Oregon (9.7 percent).[171] Among adults, Lincoln County residents on the Oregon Health Plan had poor asthma medication ratios compared to the statewide medication ratio.[172] This suggests a need for greater monitoring and care of low-income adults with persistent asthma.

Prevalence of Asthma in Teens

Approximately 17.9 percent of 8th graders and 25.1 percent of 11th graders in Lincoln County reported an asthma diagnosis between 2007 and 2008.[173] During the same timeframe, the state average was reported as 18.1 and 21.6 percent, respectively.

Detailed information on the prevalence of asthma among sub-populations in Lincoln County is not currently available. However results from statewide surveillance suggest that prevalence varies by race/ethnicity, level of education, sexual orientation and household income.

Prevalence by race/ethnicity, level of education, sexual orientation and household income for adults with asthma in Oregon

Population Characteristic	Prevalence
African American	15.5%
American Indian/Alaska Native	15.2%
No High School	17.0%
Homosexual/Bisexual*	24.0%
Household Income < $15,000"	19.0%
Household Income $15,000 to $25,000"	14.0%

Source: Oregon BRFSS Race/Ethnicity oversample, 2004-2005

[ll] Oregon BRFSS, 2009 Oregon Behavioral Risk Factor Surveillance System (Based on a small sample size)*

Mental Health Conditions

Mental health disorders are experienced by people of all ages, from early childhood through old age. Research suggests that only about 17 percent of U.S. adults are considered to be in a state of optimal mental health. An estimated 26 percent of Americans age 18 years and older are living with a mental health disorder in any given year, and 46 percent will have a mental health disorder during their lifetime.[174]

Residents of Lincoln County reported an average of 4.1 poor mental health days over the previous month.[175] Oregonians across the state reported an average of 3.2 poor mental health days; the national benchmark is 2.3, placing Lincoln County in the 90th percentile for this measure, with clear room for improvement.

Only 66.6 percent of Lincoln County residents reported good mental health, suggesting they experienced no poor mental health in the past 30 days. Across the state, 66.4 percent of Oregonians reported good mental health.[176]

Eleven percent of Lincoln County adults identified serious psychological distress or having a mental disorder in the past year compared to 12 percent of Oregonians. In the same year, eight percent of adults reported having a major depressive episode in Lincoln County and seven percent of adults in Oregon.[177]

National research indicates that, on average, people with serious mental illness die 25 years earlier than the general population. Sixty percent of those deaths are due to medical conditions such as cardiovascular disease, diabetes, respiratory diseases, and infectious illnesses; 40 percent are due to suicide and injury.[178]

There is a strong link between chronic disease, injury and mental illness. Tobacco use among people diagnosed with mental health conditions is twice that of the general population. Other associations between mental illness and chronic disease include cardiovascular disease, diabetes, obesity, asthma, arthritis, epilepsy, and cancer. Injury rates for both intentional and unintentional injuries are 26 times higher among people with a history of mental health conditions than for the general population.[179]

Approximately 3,400 adults with mental illnesses are incarcerated in prisons in Oregon.[180] Oregon's Mental Health Services delivery system is inadequate to meet the needs of this population, providing mental health services to only 46 percent of adults who live with a severe mental illness.

Demand versus ability to serve persons with mental illness and substance use disorder in Oregon, 2010

Age	Prevalence	# Served in Oregon's Mental Health System	Percent of Need Met
Addictions			
17 and under	26,765	6,635	25%
Over 17	235,516	56,138	24%
Mental Health			
17 and under	105,306	34,617	33%
Over 17	154,867	71,204	46%

Source: Oregon: Integrating Health Services for People with Mental Illness or Substance Use Disorders, Oregon DHS, Oregon Health Authority, Jeanene Smith, MD, MPH, June 2010

Many mental health disorders can be treated effectively, and prevention of mental health disorders is a growing area of research and practice. Early diagnosis and treatment can decrease the disease burden of mental health disorders as well as associated chronic diseases. Assessing and addressing mental health remains important to ensure that all Americans lead longer, healthier lives.[181]

In Oregon, the provision of effective mental health service has been shown to lead to positive outcomes, including a dramatic drop in arrests; reduction in the likelihood and duration of incarceration; and fostering of self-sufficiency and well-being as a result of improved social, emotional and vocational functioning.[182]

Infectious Diseases

Prevention and control of infectious illnesses rank among the greatest health advances of the 20th century. Infectious diseases are those that can be passed from person to person. Some are transmitted via ingesting contaminated food or water. Many are spread by germs in

coughs or sneezes, while others result from exposures in the environment or insect bites. Those spread through contact with or bites from animals are called zoonotic infections.

Lincoln County Health Department's communicable disease nurses investigated 267 reports of infectious illnesses during 2012.[183] While these illnesses are not uncommon in Lincoln County, they are not represented among the most significant causes of disability and death. This is primarily due to effective prevention (mostly via vaccination) and modern medical treatments, averting the massive death rates that occurred before the discovery of antibiotics in the mid-20th century.

Respiratory Illnesses

Illnesses like the flu spread from person to person when droplets from a cough or sneeze of an infected person move through the air and enter the mouth or nose of people nearby. Some of the germs in these droplets can also live on surfaces for hours such as desks or doorknobs, and can spread when people touch these surfaces and then touch their eyes, mouth, and nose.

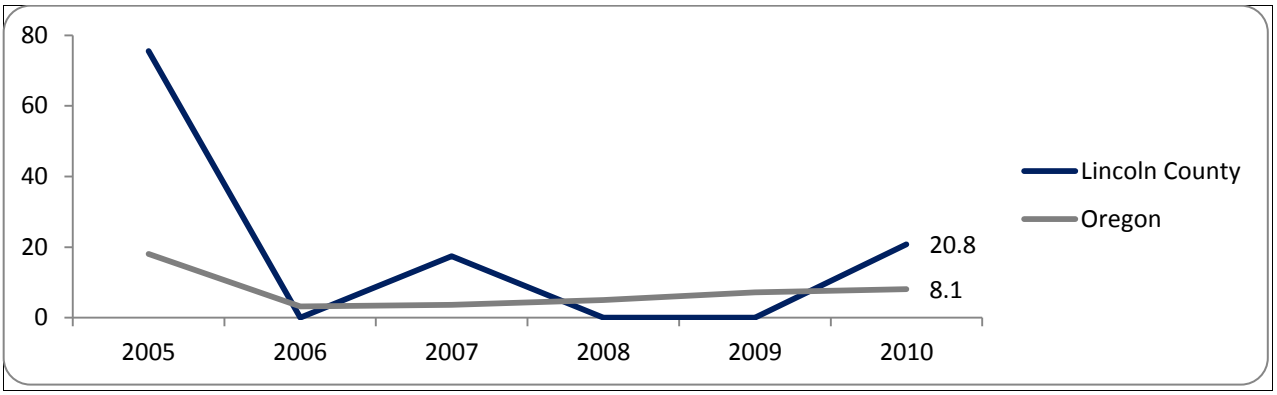
The common cold and influenza are the most common respiratory illnesses. However, local, state and national statistics for these diseases are difficult to ascertain because doctors and laboratories are not required to report them to public health authorities. This is because most people experience only mild, short-term illness and do not seek medical attention, the illnesses are difficult to differentiate, and most are treated symptomatically rather than curatively.

Less common but more serious respiratory illnesses include pneumonia, pertussis (whooping cough) and tuberculosis. In general, infectious tuberculosis is extremely rare in Lincoln County. There were fewer than five cases from 2005.[184] These are actively managed and curative therapy is overseen by Public Health Nurses.

Pertussis is a very contagious bacterial infection that causes a coughing illness which may last 6-10 weeks or longer. It is an endemic disease with epidemic peaks occurring every 2–7 years and has proven painfully persistent despite widespread childhood immunization.

There has been a sharp rise of pertussis in the United States during 2012. Washington State has been particularly hard-hit and declared a pertussis epidemic in April 2012, reporting almost 10 times more cases of pertussis than 2011. Oregon has seen as many cases, but there were twice as many pertussis cases in 2012 as there were in 2011. The number of cases of pertussis in Lincoln County fluctuates annually but generally remains fairly low.

Rate of pertussis infection per 100,000 persons in Lincoln County and Oregon, 2005-2010



Source: Acute & Communicable Disease Prevention Program, Center for Public Health Practice, Public Health Division, Oregon Health Authority (2005-2010)

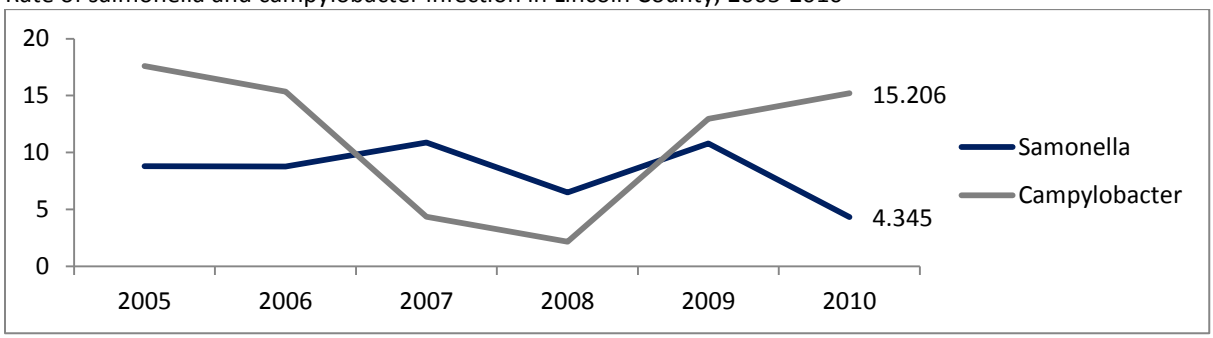
Foodborne Illnesses

The Centers for Disease Control and Prevention (CDC) estimate that each year 1 in 6 Americans (48 million people) get sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases.[185]

The leading causes of foodborne illness in the United States are Norovirus, Salmonella, Campylobacter, and Clostridium perfringens. Norovirus, Salmonella, and Campylobacter are also among the leading causes of death due to foodborne illness.

Eleven Lincoln County cases were laboratory confirmed with a foodborne illness in 2012 with five confirmed (2.2 per 100,000) foodborne outbreaks (two or more cases from unrelated households with similar etiology).[186] Oregon had three per 100,000 confirmed foodborne outbreaks during this same time.

Rate of salmonella and campylobacter infection in Lincoln County, 2005-2010



Source: Acute & Communicable Disease Prevention Program, Center for Public Health Practice, Public Health Division, Oregon Health Authority (2005-2010)

Norovirus is an outbreak source in Lincoln County and common throughout Oregon. Lincoln County reported three laboratory confirmed cases of Norovirus in 2012.[187] What makes the

Norovirus so contagious (and common in close quarters like shared homes, apartments and long-term care facilities) is that it is easily transmitted from infected people via the fecal oral route through contaminated food or water or by touching contaminated surfaces. This mode of transmission occurs through direct contact with human feces (stool). Contact is generally accidental and occurs when an infected person does not properly wash hands after using the bathroom and then touches ready to eat food that others will consume.

E. coli infections, most commonly 0157:H7, is another significant causative organism and around 5 to 10 percent of those who are diagnosed with the infection develop potentially life-threatening complications. Oregon's rate (1.8 per 1000,000 in 2011) has been consistently higher than that the United States as a whole (0.9 per 100,000 in 2011). Lincoln County had no reported cases in 2012 and only one so far in 2013.[188]

Reportable Infectious Diseases

All physicians, health care providers and laboratories in Oregon are required by law to report confirmed or suspect diagnoses of over 50 infectious diseases and conditions to their local health departments. These reports are directed through counties to the Oregon Public Health Division which collects and distributes data to inform health departments, physicians and the public. Reporting enables appropriate public health follow-up for patients, helps identify outbreaks, and provides a better understanding of disease transmission patterns. Some diseases are subject to restrictions on school attendance, day care attendance, patient care, and food handling.

County health departments are required to initiate investigations of each report in a timely manner and all follow standardized investigative guidelines that assure standardized, evidence-based methodologies and interoperability between jurisdictions. Investigations are conducted in adherence with rigorous confidentiality guidelines. However, to facilitate protection of the entire population, federal law exempts public health disease investigations from much of the standard medical confidentiality law (Health Insurance Portability and Accountability Act (HIPAA)).

Sexually Transmitted Infection

Chlamydia is the most common sexually transmitted infection (STI) in Oregon with infection rates increasing 11 percent from 2010 to 2012 and accounting for 59 percent of all reportable diseases in Oregon.

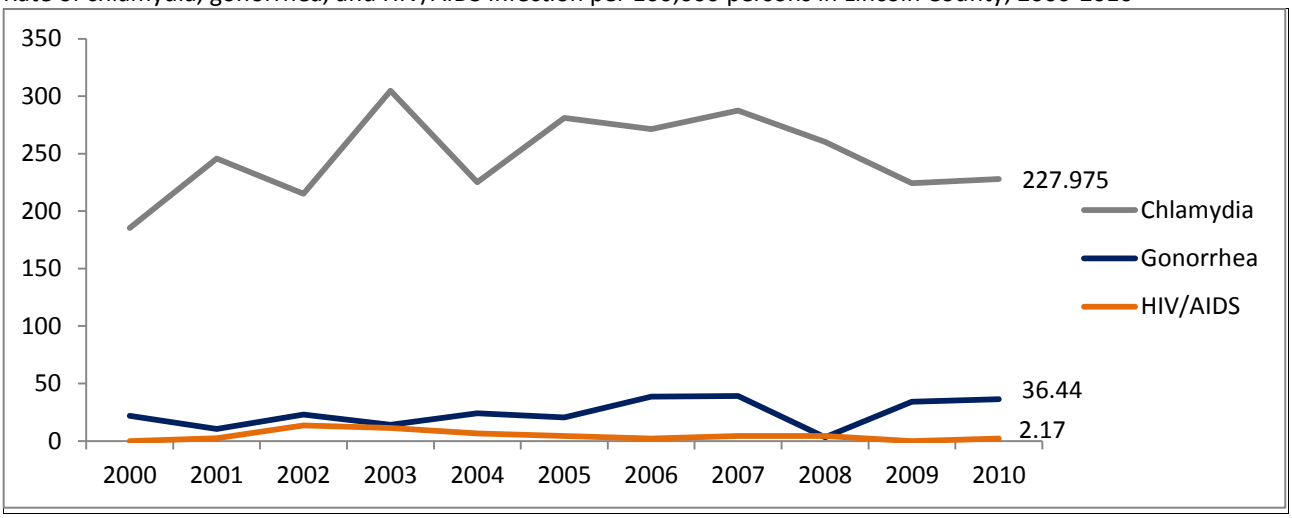
From 2000 to 2010, there were, on average, 86 cases of chlamydia per year in Lincoln County[189]. This represents a similar rate of infection to the state of Oregon.

Gonorrhea in Lincoln County infected an average of eight people per year from 2000 to 2010. This is slightly lower than statewide infection rates.[190]

Transmission of STIs is made more serious given that chlamydia and gonorrhea infections in women can be asymptomatic and therefore may go undiagnosed. If left untreated, these infections may lead to pelvic inflammatory disease, which can cause tubal infertility, ectopic pregnancy and chronic pelvic pain.

HIV/AIDS remains an important public health problem in Oregon. From 1981 through 2010, 8,753 Oregonians were diagnosed with HIV infection. Of those, 40 percent (3,540) have died. Fortunately, death rates have decreased dramatically since the advent of effective antiretroviral therapies, and HIV/AIDS is now managed as a serious but chronic disease. As a result, the number of Oregonians living with HIV infections has increased from 2,720 in 1997 to 5,213 in 2010. New HIV diagnoses in Oregon are most common among 35–39 year old males.[191]

Rate of chlamydia, gonorrhea, and HIV/AIDS infection per 100,000 persons in Lincoln County, 2000-2010



Source: HIV/AIDS, Sexually Transmitted Disease & Tuberculosis case reports: HIV/STD/TB Prevention Program, Center for Public Health Practice, Public Health Division, Oregon Health Authority, 2000-2010

Viral Hepatitis

Viral Hepatitis, especially Hepatitis A, B, and C, are other infectious diseases affecting residents of Lincoln County.

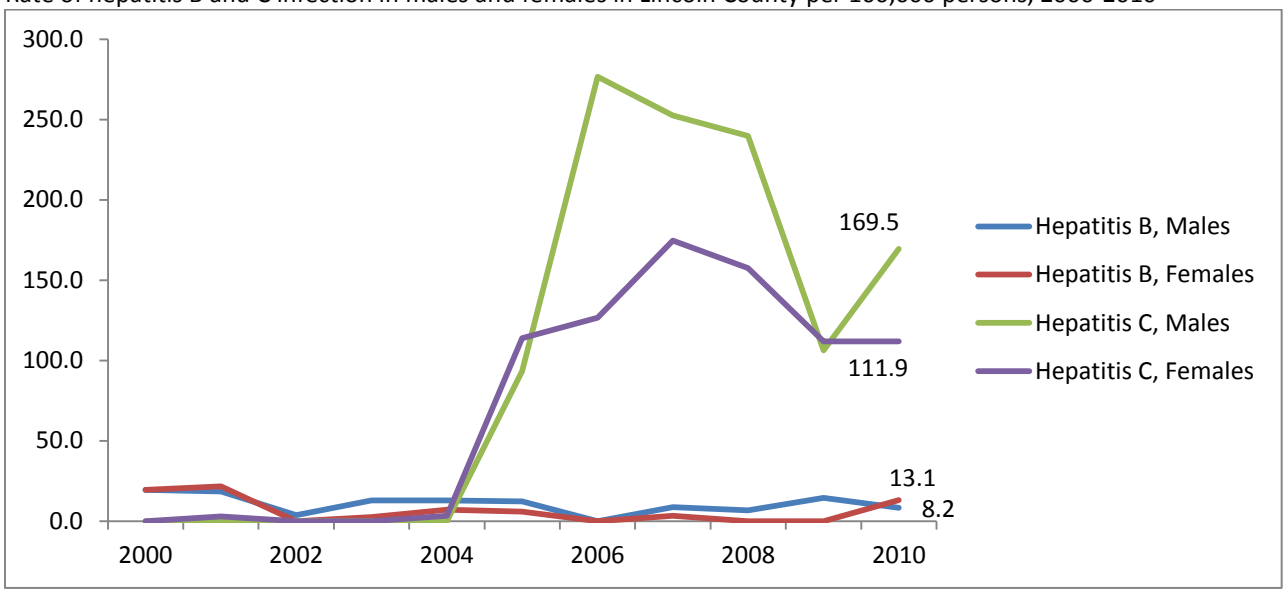
Hepatitis A and B have low prevalence in Lincoln County with a rise in Hepatitis C. Transmission of Hepatitis A can occur through direct person-to-person contact; through exposure to contaminated water, ice, or shellfish harvested from sewage-contaminated water; or from fruits, vegetables, or other foods that are eaten uncooked and that were contaminated during harvesting or subsequent handling.

Lincoln County had an average of one Hepatitis A case per year from 2000-2010. There were 10 new cases of Hepatitis B and 258 new cases of Hepatitis C in Lincoln County in 2010-

2012.[192] Current estimates suggest that 65% of people infected with Hepatitis B and 75% of people infected with Hepatitis C are unaware of their infections.[193]

Overall, males experience higher rates of Hepatitis B and C infection than females, and are transmitted by activities that involve contact with blood, blood products, and other body fluids such as unprotected sexual contact, injection drug use, and transfusions with blood that has not been screened for viral hepatitis.[194]

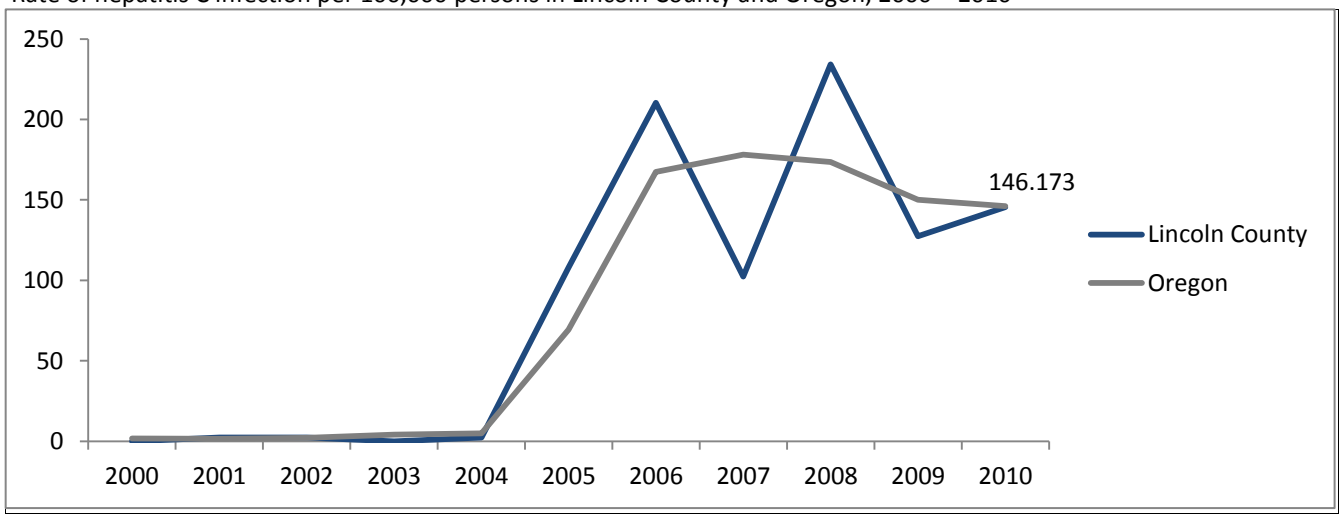
Rate of hepatitis B and C infection in males and females in Lincoln County per 100,000 persons, 2000-2010



Source: Acute & Communicable Disease Prevention Program, Center for Public Health Practice, Public Health Division, Oregon Health Authority (2000-2010)

The rise in Hepatitis C in Lincoln County parallels trends across the state.

Rate of hepatitis C infection per 100,000 persons in Lincoln County and Oregon, 2000 – 2010



Source: Acute & Communicable Disease Prevention Program, Center for Public Health Practice, Public Health Division, Oregon Health Authority (2000-2010)

Zoonotic Illnesses

Zoonotic illnesses are infectious diseases that can be spread from animals to humans. There are many zoonotic diseases, and their threat to human health is growing. This is due to increasing global movement of people and animals and the effects of human populations expanding into previously undeveloped wildlife habitats.

Some zoonotic diseases are transmitted directly from animals to people, some result from contamination of the environment by animals, and others require a vector such as a tick or mosquito. Examples of zoonotic diseases include:

- Bacterial - *Salmonella*, *E. coli*, leptospirosis
- Viral - Rabies, avian influenza
- Fungal - Ringworm, sporotrichosis
- Parasitic - Toxoplasmosis, larval migrans due to roundworms
- Vector-borne - West Nile virus, spread by mosquitoes, and Lyme disease, spread by ticks.

Climate change may also lead to greater zoonotic disease threats. Zoonotic diseases can cause symptoms such as diarrhea, muscle aches, and fever. Some diseases cause only mild illness while others can be life threatening. One such disease is rabies, and is virtually always fatal if left untreated. Rabies is endemic in the Oregon bat population.

Injury and Violence

Community and Personal Safety

Personal safety is dependent upon crime rates and other non-traffic related hazards that exist in communities.[195] Some evidence indicates that improving community safety may positively influence levels of physical activity in adults and children.[196] Results from the Lincoln County Health and Quality of Life Survey (2012) suggest that 77 percent of respondents identified safe neighborhoods and public safety as one of Lincoln County's most important community resources.

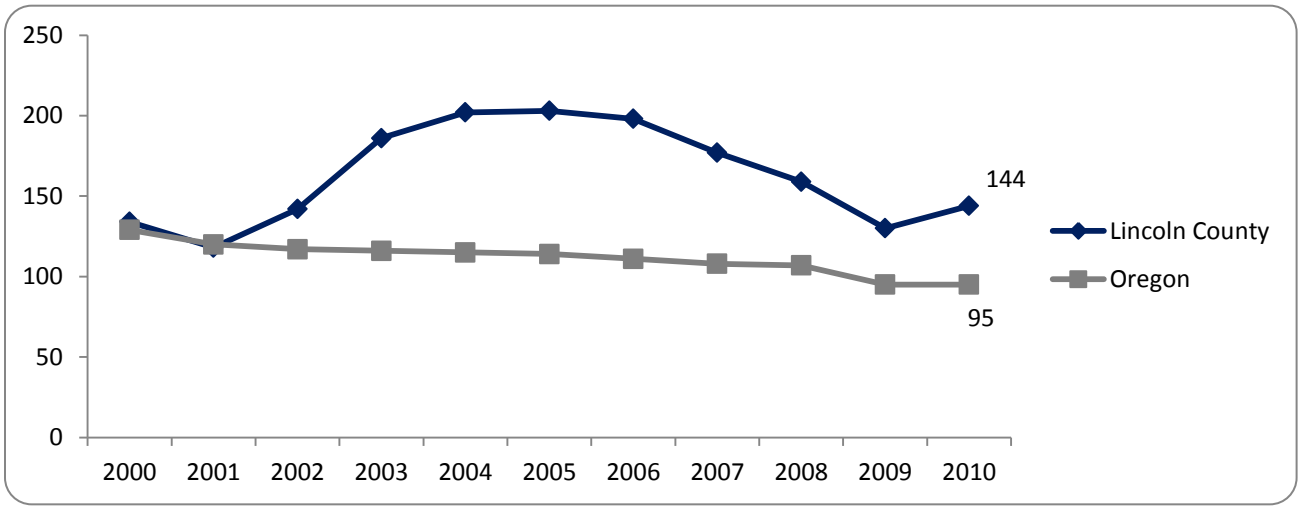
Violent Crime

Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and the perpetrator, including homicide, forcible rape, robbery, and aggravated assault. High levels of violent crime compromise physical safety and psychological well-being. High crime rates can also deter residents from pursuing healthy behaviors such as exercising outdoors. Additionally, exposure to crime and violence has been shown to increase stress, which may exacerbate hypertension and other stress-related disorders and contribute to

obesity prevalence.[197] Exposure to chronic stress also contributes to the increased prevalence of certain illnesses such as upper respiratory illness and asthma in neighborhoods with high levels of violence.[198]

In 2008-2010, the average rate of crimes against persons in Lincoln County was 287 per 100,000 persons.[199] The County Health Rankings and Roadmaps report that Lincoln County has among the highest rate of violent crime among Oregon Counties (5th out of 33 counties).

Rate of crimes against persons (homicide, rape, kidnapping, and assault) reported to police per 10,000 persons in Lincoln County and Oregon, 2000-2010.



Source: Uniform Crime Reports, Oregon Health Authority, Office of Health Analytics and Addictions and Mental Health Division

Injury

Injuries are the number one cause of death among people under the age of 44, and are the number one cause of disability at all ages. However, most of the events resulting in injury, disability or death are preventable. In Lincoln County, the mortality rate due to accidents among men is 62.7 per 100,000 persons. In women, it is 26.1 per 100,000. Overall in Lincoln County, the rate of unintentional injury deaths is 44.0 per 100,000 compared to 40.0 in the state.[200]

According to Healthy People 2020, injuries and violence have an impact on the well-being of people by contributing to premature death, disability, poor mental health, high medical costs, and high unproductivity. Nationally, the leading causes of death from injury are a result of motor vehicle traffic accidents, unintentional poisoning, and firearms.

Unintentional Injury Mortality

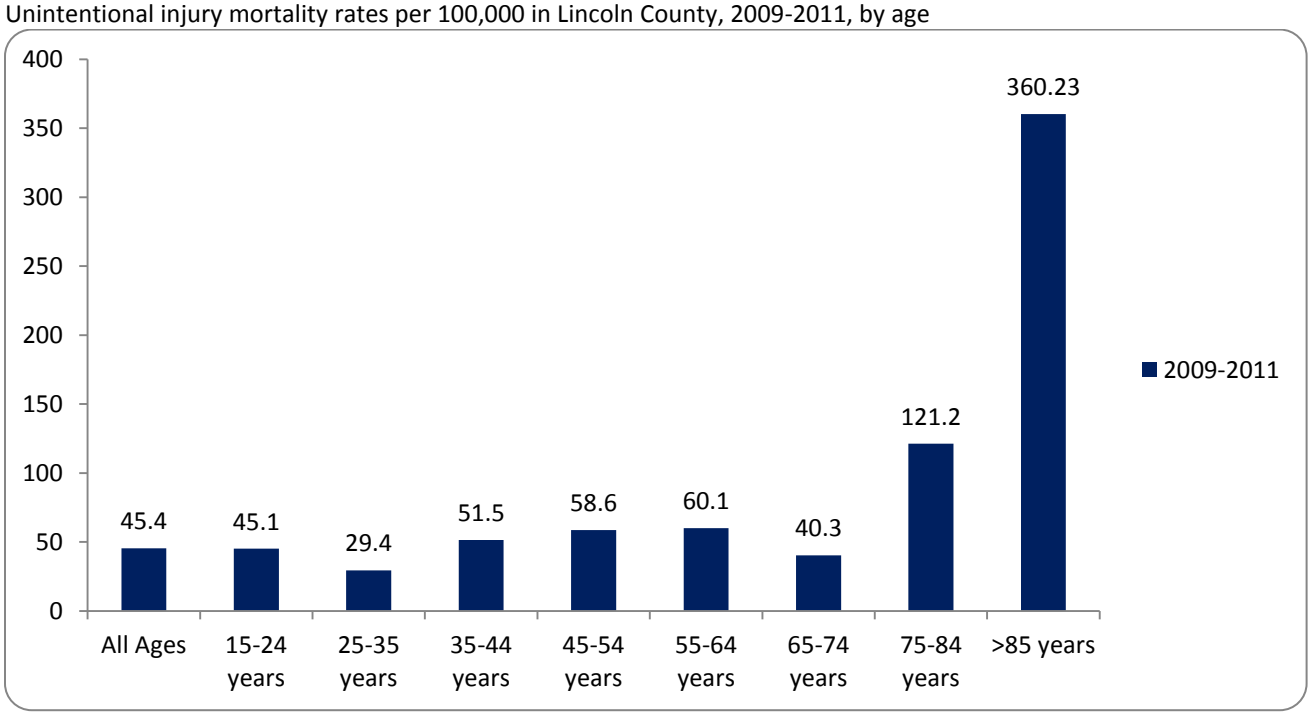
In Oregon, injury is the fifth leading cause of death. It is also among the leading causes of hospitalization. For persons under 44 years of age, injury is the leading cause of death.[201]

Overall, the leading causes of death resulting from unintentional injury in Oregon include motor-vehicle traffic accidents, unintentional falls, and unintentional poisonings. Out of 32,731 Oregon deaths in 2011, approximately 1,725 are due to unintentional injuries, of which 25 were in Lincoln County.[202]

In Lincoln County, top causes of unintentional injury deaths in 2011 included motor vehicle accidents, drowning, poisoning (including unintentional overdoses of drugs and medications), and falls; these deaths account for county of residence. The Healthy People 2020 target for unintentional injury deaths is 36 per 100,000 persons.[203]

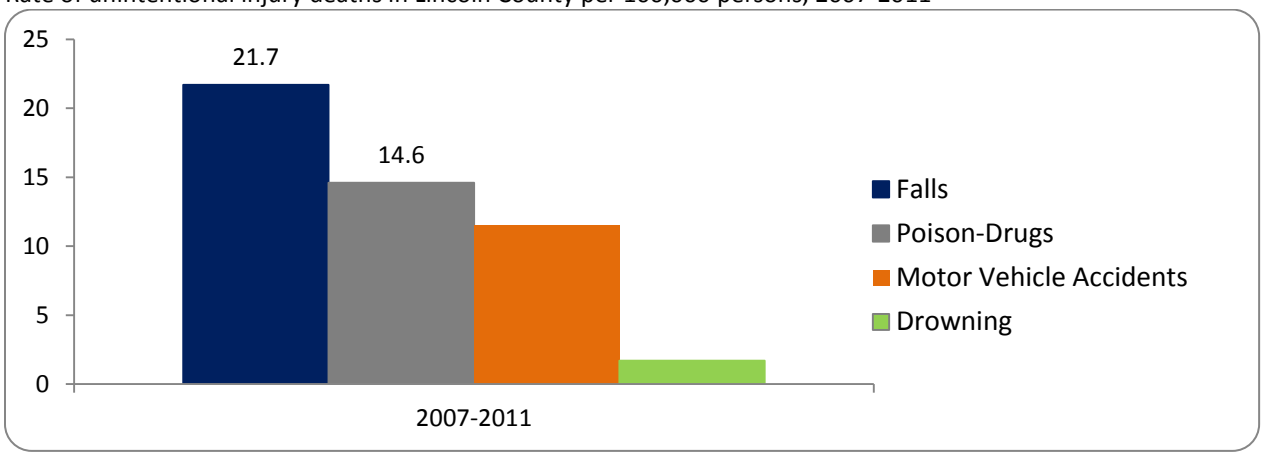
Motor vehicle crashes pose the greatest risk for fatal injuries among Oregon residents. About three percent of Oregon adults report driving after having too much to drink on at least one occasion in the past month; and about 15 percent of Oregon youth rode with a parent or other adult who had been drinking on at least one occasion in the past month. Prevention programs that target driving after drinking alcohol may help to decrease motor vehicle fatalities.

Unintentional injury mortality rates per 100,000 in Lincoln County, 2009-2011, by age



*Source: Oregon Health Authority, Center for Health Statistics, Death Certificate Data, 2009-2011*Data for Lincoln County youth ages 0-14 includes only 1 case, therefore unreliable due to too few cases. Data for 25-34 in Lincoln County should be interpreted with caution due to less than 5 cases.*

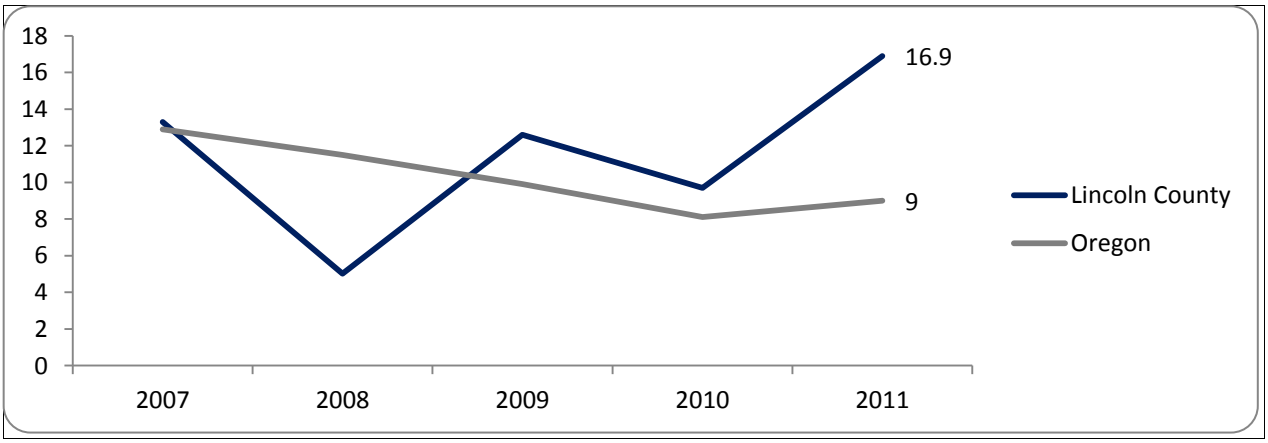
Rate of unintentional injury deaths in Lincoln County per 100,000 persons, 2007-2011



Source: Source: Oregon Health Authority, Oregon Vital Statistics, PSU, 2007-2011

Lincoln County has a higher rate of motor vehicle deaths than Oregon. This may be due to the prominence of major highways and heavy traffic volumes from commercial transport and tourism in Lincoln County. Bicycle and pedestrian fatalities and injuries are also a hazard in Lincoln County. For example, from 2007-2011, Lincoln County experienced three pedestrian fatalities and 25 incidents of pedestrians who suffered from major and minor injuries.[204] Over the same time period there was one bicycle fatality and 22 incidents of bicyclists with major and minor injuries.

Rate of unintentional injury deaths from motor vehicle accidents per 100,000 persons, Lincoln County and Oregon, 2007-2011



Source: Oregon Health Authority, Center for Health Statistics, Death Certificate Data, 2007-2011

Unintentional injury mortality is higher among males in most age groups. Females show higher mortality rates compared to males in the following age groups: 5-14; 45–54; and 75–84 years. The highest rate is among females, ages 75–84 years. Males in this age group have a rate equal to only two-thirds of the female rate. Some of these rates are based on very small counts and should be interpreted with caution.

Work-Related Injury and Illness

Oregon's private sector workers suffer work-related injuries and illnesses at a rate of 3.9 for every 100 full-time employees. Recent incidence has been declining from a rate of 11.1 cases per 100 workers in 2008. In 2011, 18,691 disabling claims were made by Oregon workers.

Suicide

Suicide is a death resulting from the intentional use of force against oneself. Suicide is an important public health problem in Oregon. It is also the leading cause of injury-related death in the State and is the 9th leading cause of death for Oregonians. There are more deaths due to suicide in Oregon than due to car crashes. The suicide rate among Oregonians is 15.2 per 100,000. This is 35 percent higher than the national average.[205] However, suicide rates vary from 7.4 to 35.2 per 100,000 among the 36 counties in Oregon. Lincoln County has a higher than State average suicide rate (20.3)[206].

Over 70 percent of persons who commit suicide have a diagnosed mental health disorder, alcohol and/or substance use problems, or are depressed at time of death. Despite the high prevalence of mental health problems, less than one third of male victims and just about half of female victims were receiving treatment for mental health problems at the time of death. Alcohol is known to decrease inhibitions and investigators believe that 30 percent of suicide victims use alcohol in the hours preceding their death.

Age

In general, suicide rates increase with age. Suicide among children under 10 is rare. In Oregon, the age-specific rate of suicide among men rises sharply after age 15 and reaches the first peak between the ages of 20 and 24. The rate decreases slightly between the ages of 25 and 29, then rises gradually and reaches a second peak around age 50. Rates decrease slowly between the ages of 50 and 69. After age 70, rates rise dramatically. The highest suicide rates are seen among those aged 85 and over.[207]

Suicide deaths rate per 100,000 by age group, Lincoln County and Oregon, 2007-2011

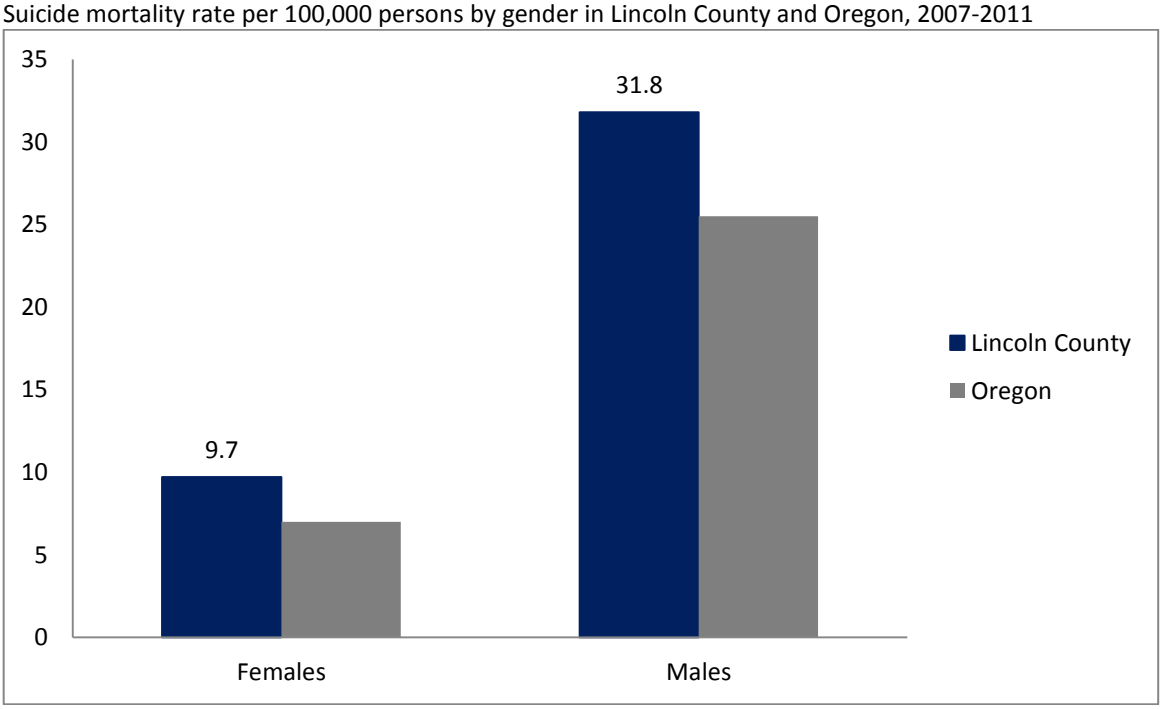
Age	Lincoln County	Oregon
All Ages	20.3	15.9
15-24 years*	17.1	11.5
25-34 years	31.5	16.7
35-44 years	21.0	23.1
45-54 years	30.8	26.5
55-64 years	30.0	21.9
65-74 years	17.8	19.3
75-84 years*	22.0	22.9
85+ years*	87.5	26.0

*Source: Oregon Violent Death Reporting System, Injury and Violence Prevention Program, Office of Disease Prevention and Epidemiology, 2007-2011. * data should be interpreted with caution, less than 5 case.*

Sex, Race/Ethnicity

In Oregon, men have a greater risk of dying by suicide than women. In each age group, suicide rates are higher among males than among women. Overall, men are 3.7 times more likely to die by suicide than women. A similar trend is observed in Lincoln County as illustrated in the figure below, the mortality rate among males is higher than that among females.

Suicide mortality rate per 100,000 persons by gender in Lincoln County and Oregon, 2007-2011



Source: Oregon Health Authority, Center for Health Statistics.

Throughout Oregon, 97 percent of suicides occur in Whites. The age-adjusted suicide rate among Whites is 15.8 per 100,000, which is almost double the rates observed among populations of other races. Overall White men have the highest suicide rate. This is mainly due to extremely high suicide rates among elderly White men aged 60 and over. There are no significant differences in rates between White women and women of other races.[208]

Veterans

Veterans are twice as likely as nonveterans to die by suicide. Approximately 26 percent of suicides that occurred were among veterans in Oregon. Of those, 96 percent of veteran suicides were male. Overall, male veterans had a much higher suicide rate than non-veteran males (44.6 vs. 31.5 per 100,000).[209]

Mechanism of Death

Firearms, poisoning, and suffocation (hanging) are the most frequently observed mechanisms of injury in suicide deaths in Oregon[210]. The mortality rate due to intentional self-harm (suicide) by use of firearm was 10.7 per 100,000 in Lincoln County from 2007-2011[211]. However, among those ages 55-64, the mortality rate was 15.4 per 100,000[212].

Mortality rate due to intentional self-harm (suicide) by all other methods combined was 9.9 per 100,000[213]. This includes mechanisms such as poisoning, hanging/suffocation, substance use, fall, drowning, and motor vehicle.

Preventing Falls

Falls are a major cause of injury and hospitalization, and the 10th leading cause of death among older Oregonians.[214] Nearly one in three older adults fall each year, and 20-30 percent of those who fall suffer injuries. As common as they occur, injuries and deaths due to falls are not an inevitable consequence of aging; they can be prevented. Muscle weakness is a significant contributing factor in falls, so physical activity is widely viewed as among the most important interventions for preventing injuries related to falls among older adults.

Hospitalization rates for falls increase drastically as adults age; the rate of fall hospitalizations for adults 75 years and older is more than six times the rate for adults 60-74 years. Older adults hospitalized for falls are nearly six times more likely to be discharged into long term care compared to older adults hospitalized for other conditions. Between 2002 and 2006, the average cost for fall injury hospitalization among adults 65 years and older in Oregon was $101 million per year.

Abuse among Vulnerable Adults

Vulnerable adults include the elderly and adults of all ages with physical or mental disabilities, whether living at home or being cared for in a health facility. Abuse and maltreatment of vulnerable adults can include physical, emotional, or sexual abuse, caregiver neglect, and financial exploitation. The Oregon Cascades West Council of Governments (OCWCOG), Senior and Disability Services Unit manage an Adult Protective Services helpline for Linn, Benton and Lincoln counties. OCWCOG encourages the reporting of any suspected cases of abuse or neglect. Once contact with the Adult Protective Services Helpline is initiated, trained staff provide assessment, intervention, and referral services.

In 2010, the Oregon Department of Human Services Adult Protective Services received more than 27,000 reports of potential abuse.[215] Of those:

- 2,608 Oregon seniors and adults with physical disabilities experience abuse or self-neglect
- Fewer than two percent of residents in licensed care facilities are found to have been abused
- Neglect is the most common type of abuse experienced by seniors in facilities
- 85 percent of founded abuse occurs among seniors and adults with physical disabilities in their own homes and 15 percent occurs in licensed care settings

Conclusion
Meeting Challenges with Strengths

As highlighted throughout this document, there are many factors that influence and affect health outcomes both positively and negatively, some being more obvious than others. This Community Health Assessment has given Lincoln County an opportunity to identify the many health concerns, disparities and impacts that residents face in their daily lives.

The next step in this process is to further identify and address these health needs alongside community partners through a Community Health Improvement Plan (CHIP). Through strategic planning efforts, the health areas of most concern and impact to the community will rise to the top allowing an opportunity to work collaboratively to improve the health of all residents. Successful collaboration requires strong leadership, good communication, and relationship and trust building,[216] something that Lincoln County Health and Human Services is committed to fostering through this process.

A community health assessment is truly important to help identify need and opportunity for improvement, however, it is also important to highlight the various strengths and assets that are alive and well in Lincoln County. These strengths and assets refer to the many types of human, social and economic resources that our community can offer to address problems. Lincoln County organizations, agencies and partners can collaborate to improve the health and quality of life for residents, and help build a road to better health for the county.

General Health Status

In 2013, Lincoln County was ranked 24 out of 33 counties for health outcomes and 23 out of 33 counties for health factors.[217] It is clear that Lincoln County has a lot of opportunity ahead to work on improving the overall health status for the residents who live here. The Rankings look at the different factors and conditions that affect the health and well-being of county residents and are made up of four categories: health behavior, clinical care, social and economic factors, and physical environment.

According to the 2013 County Health Rankings and Roadmaps, Lincoln County's strengths include:

- Percent of live births with low birth weight (< 2500 grams) (5.2%)
- The average daily measure of fine particulate matter in micrograms per cubic meter in the air (PM2.5) (Rank: 7 out of 33)
- Percentage of population exposed to water exceeding a violation limit during the past year (Rank: 7 out of 33)
- Rate of recreational facilities per 100,000 population (Rank: 7 out of 33)

- Percent of population who are low-income and do not live close to a grocery store (Rank: 7 out of 33)
- Percent of all restaurants that are fast-food establishments (Rank: 7 out of 33)

Lincoln County has several community resources that can help meet the identified challenges and needs in the community. A few highlights of the many resources are summarized here.

Knowledge and Skills in Caring for and Promoting Health

- Lincoln County has a long history of collaboration and partnership among various organizations and agencies to improve and promote health.
- Lincoln County has strong smokefree and tobacco-free ordinances (i.e., Housing Authority of Lincoln County, Lincoln County properties, Oregon Coast Community College, Samaritan Health Services, etc.) and other population-based prevention programs that reduce the onset and incidence of many chronic conditions.
- There are a variety of medical care, dental care, vision care, elder care, medical clinics, doctors, nurse practitioners, and alternative medicine which can be expanded upon to meet the needs of all residents.

Social Support Networks in Lincoln County

- Lincoln County has a comprehensive network of social support and opportunity for the aging population (i.e., Senior and Disability Services, Senior Centers, Senior Companions, Retired and Senior Volunteer Program, etc.).
- Lincoln County offers specialized support for people with mental illness, addictions, disabilities, and children with behavioral or emotional problems (i.e., PAADA, CEDARR, Reconnections, Bright Horizons Therapeutic Riding Center, Olalla Center for Families and Children, etc.).
- Newport has a model framework to assist non-English speakers in receiving social support services (i.e., Centro de Ayuda, etc.) which could be expanded throughout the county.

Resources Available in Lincoln County

- Lincoln County has a growing community infrastructure to assist homeless persons through their updated 10 Year Housing Plan focusing on chronic homelessness (i.e., emergency response and prevention of homelessness, coordinated outreach, and development of housing opportunities).
- Lincoln County has strong supportive services for child abuse and victims of domestic violence, sexual assault, stalking, and dating violence throughout the county and within the Confederated Tribes of Siletz Indians.
- Lincoln County has excellent educational and afterschool opportunities focusing on literacy, nutrition and physical activity for school age children and families throughout

the area (i.e., Yachats Youth and Family Activities Program, Seashore Family Literacy, Neighbors for Kids, Samaritan Early Learning Center, Head Start, etc.).

- Lincoln County has ever expansive transportation and built environment programs to meet the needs of residents' mobility (i.e., Lincoln County transit, Valley Van Pool, North by Northwest Connector, Pedestrian and Bike Committee, etc.).

Appendices

Appendix A: Lincoln County Health and Quality of Life Survey

Appendix B: Lincoln County GIS Maps

Appendix A: Lincoln County Health and Quality of Life Survey Results

The Health and Quality of Life Survey was conducted in Lincoln County during the summer of 2012. It was a web-based survey that was open for ten days. Respondents were recruited through email, Facebook, and face-to-face contact.

In total, 493 people completed some part of the survey:

- 328 filled out a web-based survey
- 95 filled out a Facebook format
- 70 filled out a paper survey

Ninety percent to respondents (444 people) completed the entire survey.

Participant Characteristics: Sex, Marital Status, Age, and Ethnicity

Participants were predominantly married (72%), female (72%), highly educated (61% with a college degree), and with incomes above $50,000 (52%). Future efforts should target those not reached by this survey.

Sex

- 73% women
- 27% men

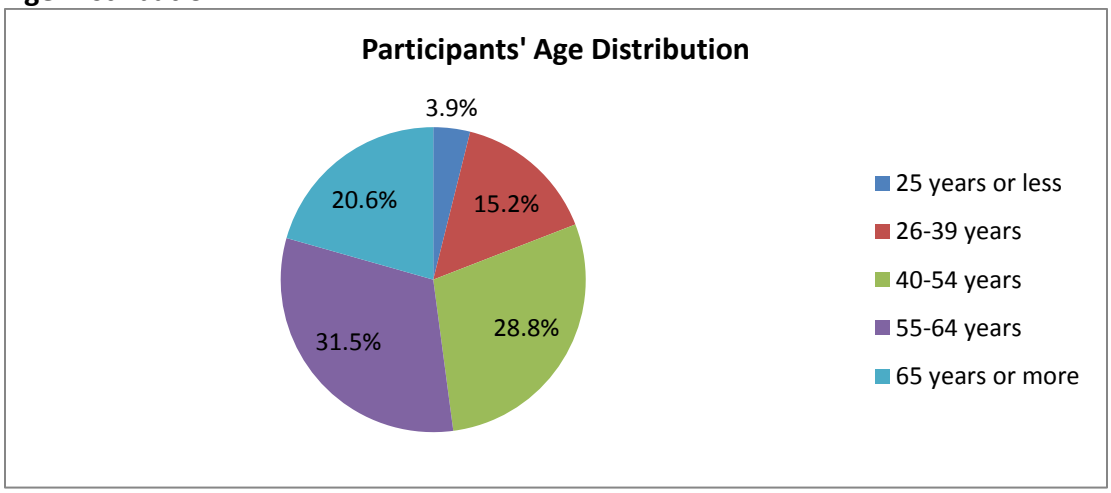
Marital Status

- 72% married
- 28% not married

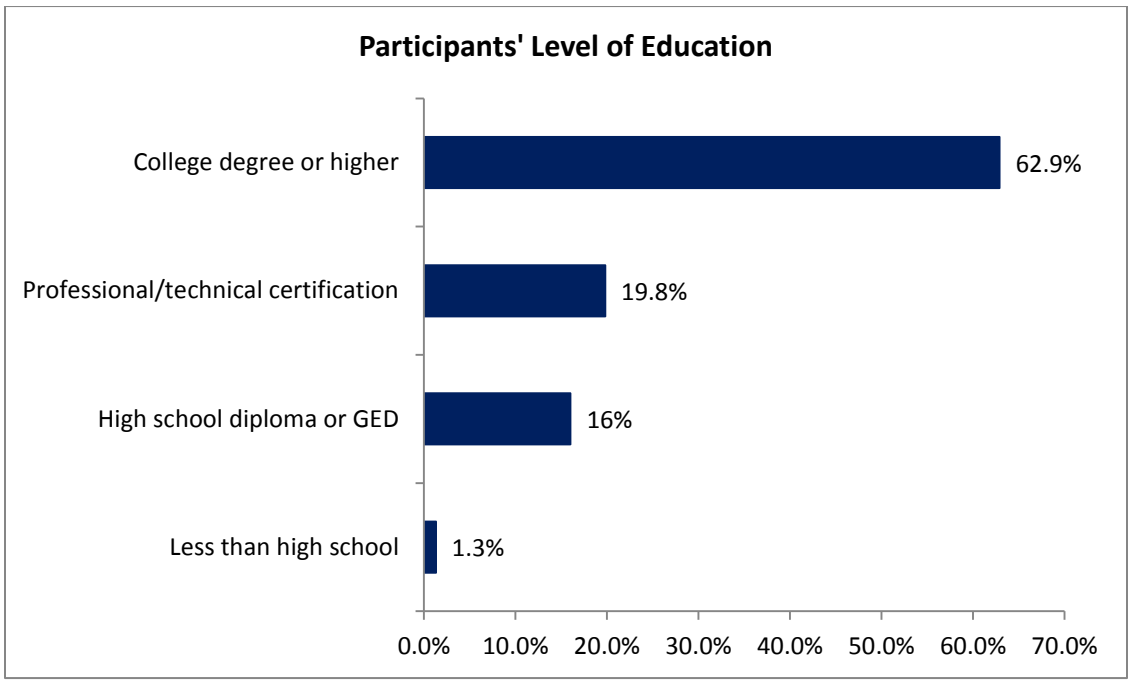
Ethnicity

- 88% White
- 4% Native American
- 3% Latino

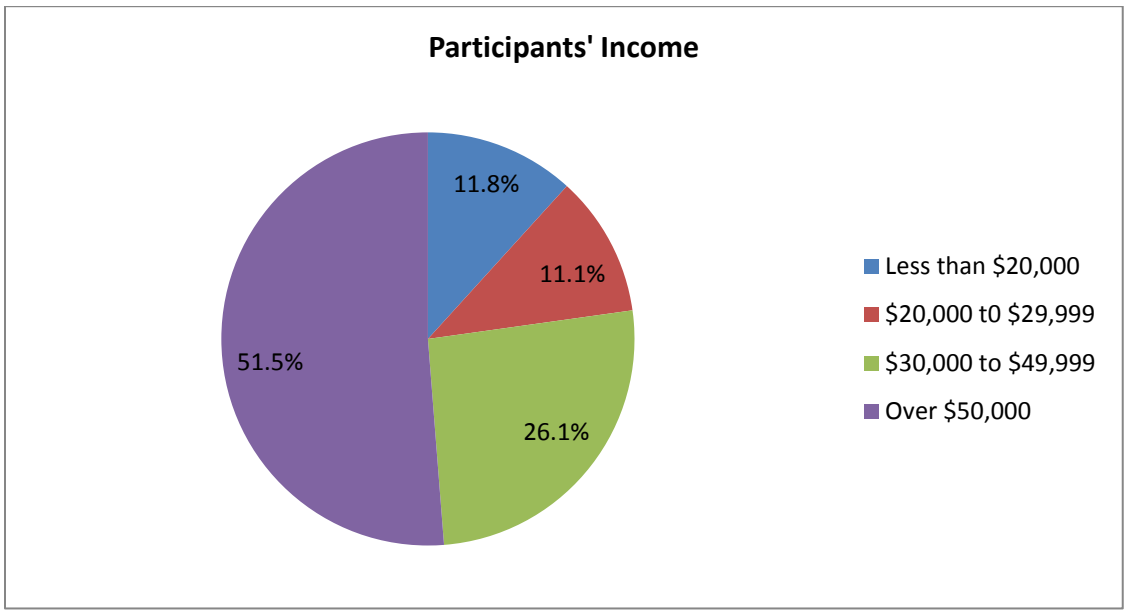
Age Distribution



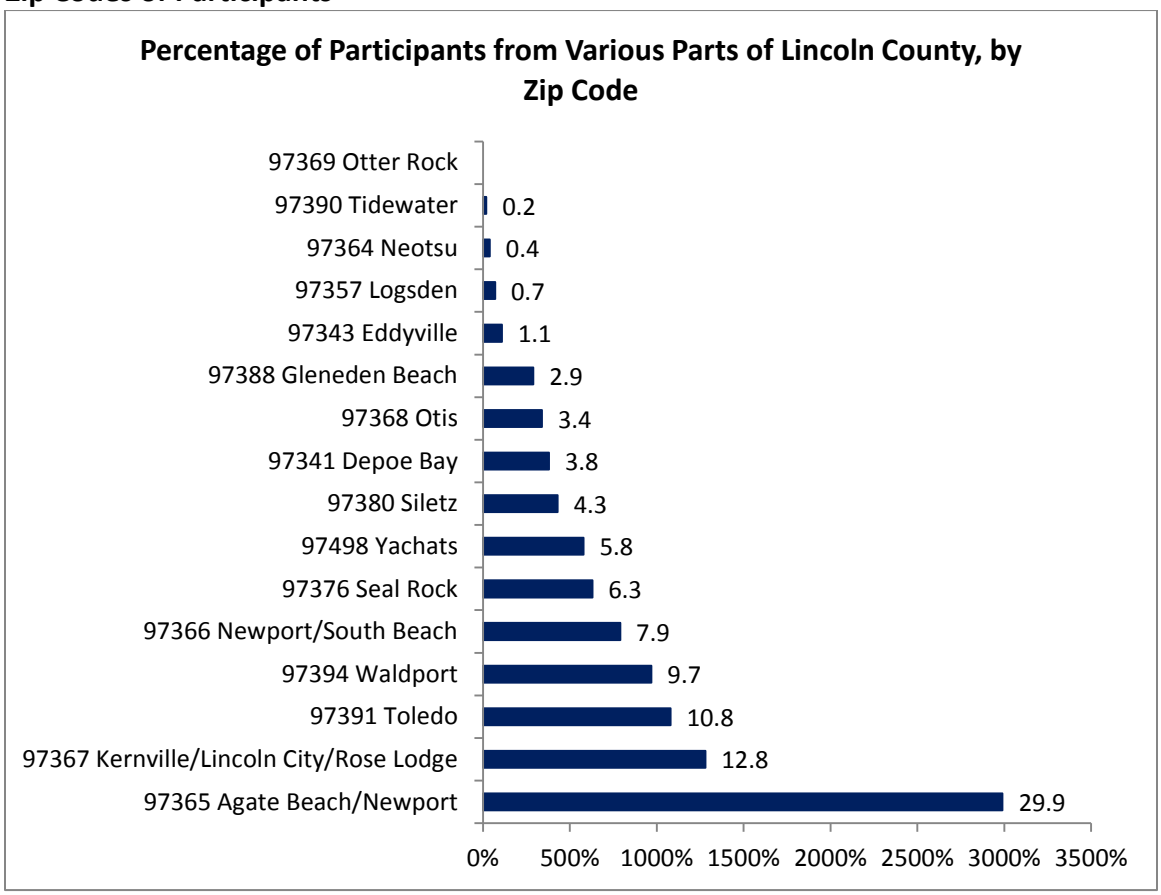
Education



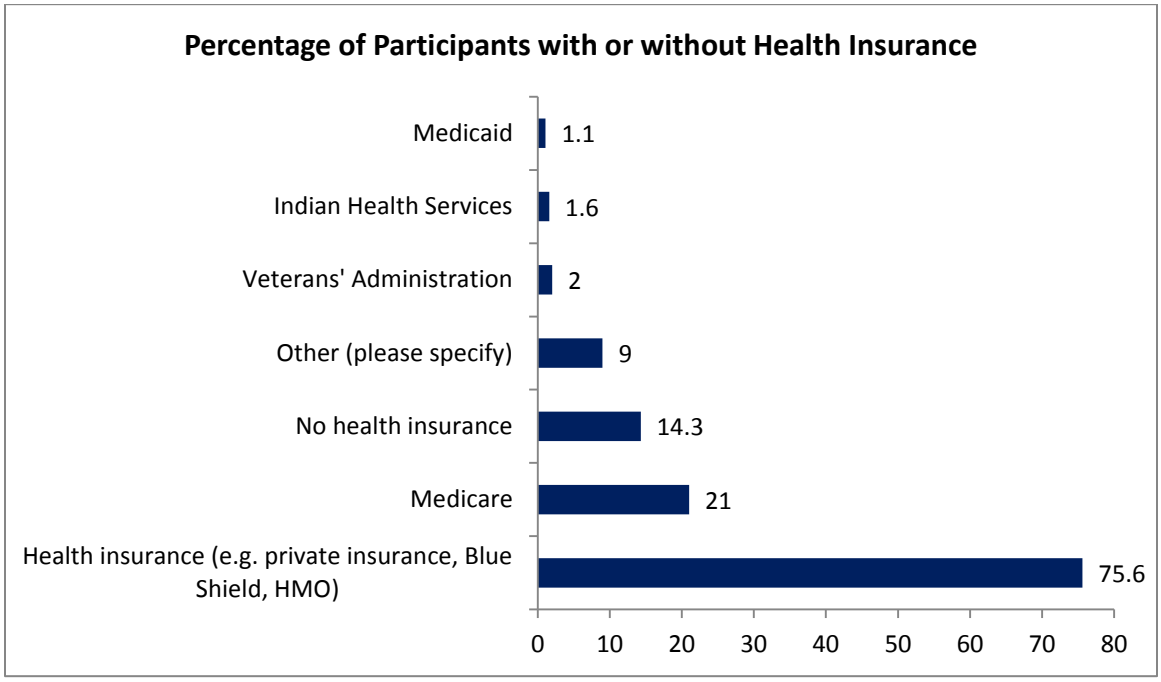
Income



Zip Codes of Participants

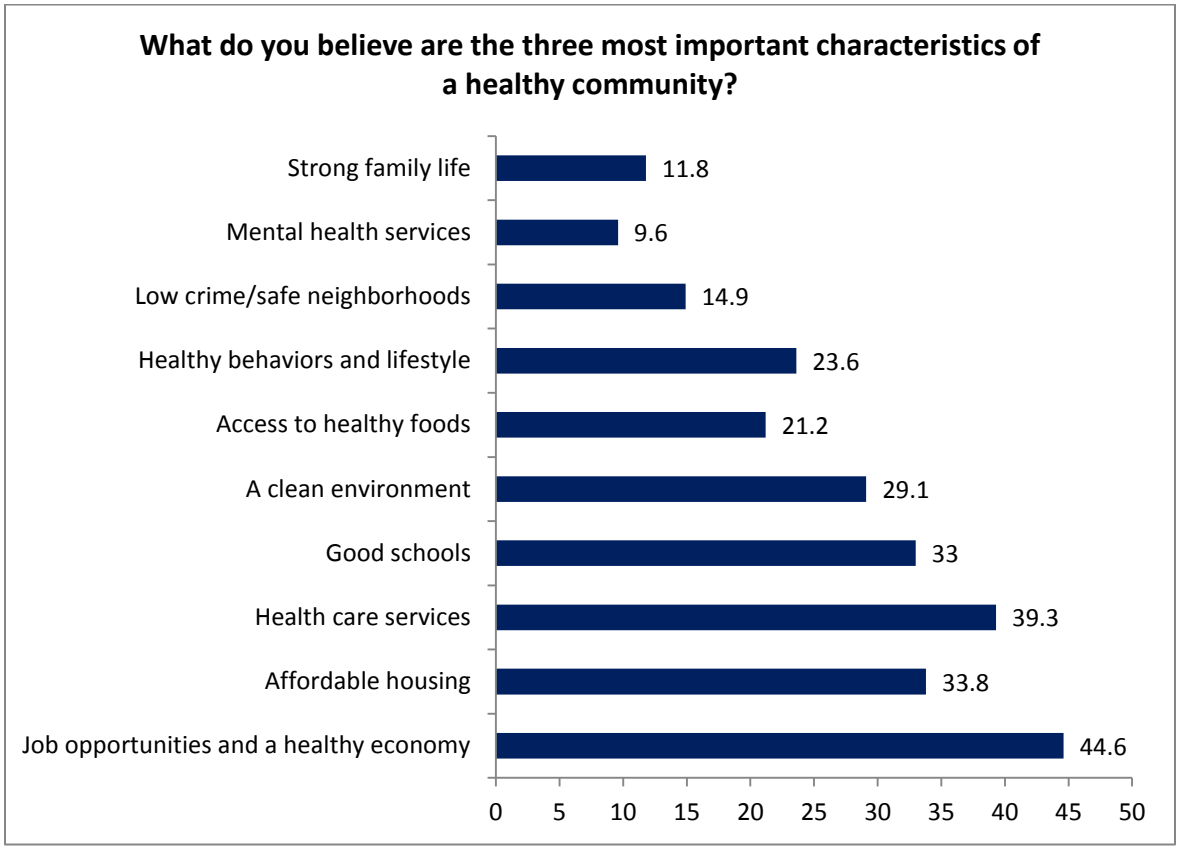


Health Insurance



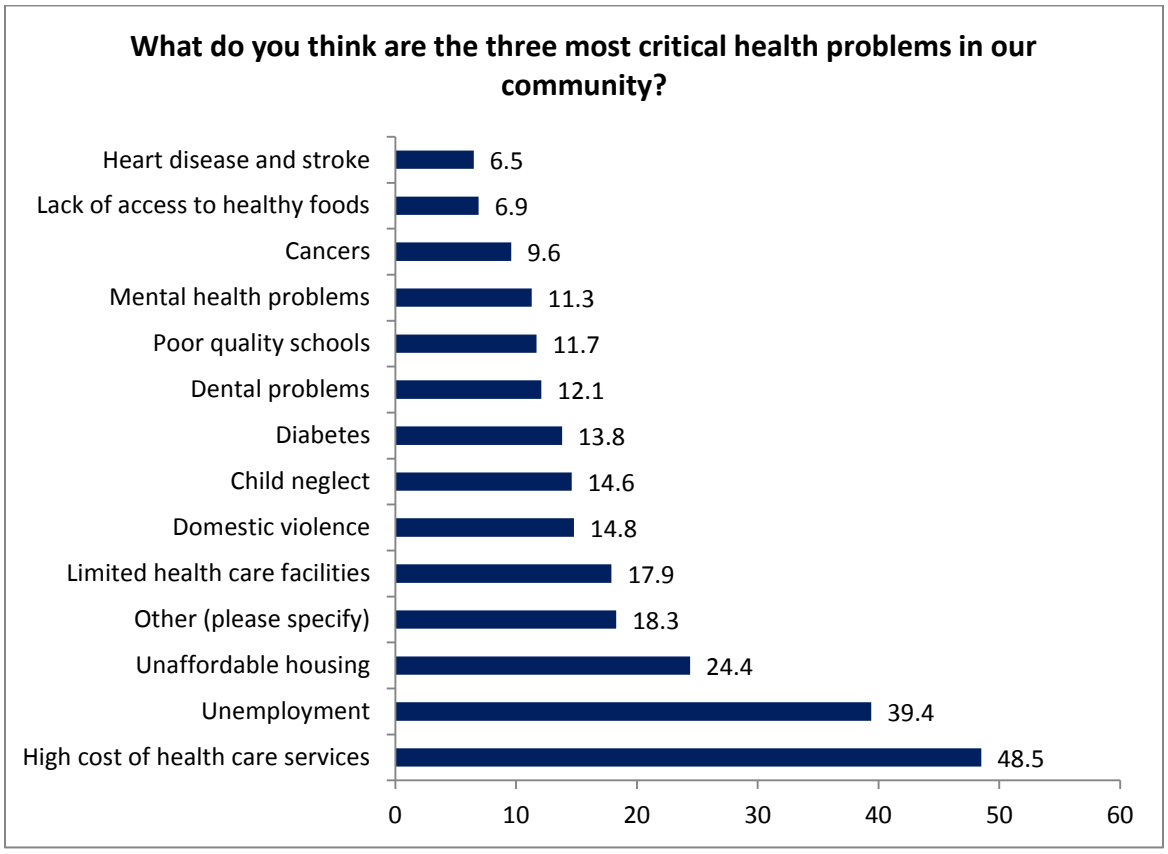
Characteristics of a Healthy Community

According to survey respondents, the top ten important characteristics of a healthy community were defined as follows (respondents could pick up to three choices): job opportunities and a healthy economy, affordable housing, health care services, good schools, a clean environment, access to healthy foods, healthy behaviors and lifestyle, low crime/safe neighborhoods, mental health services, and strong family life.

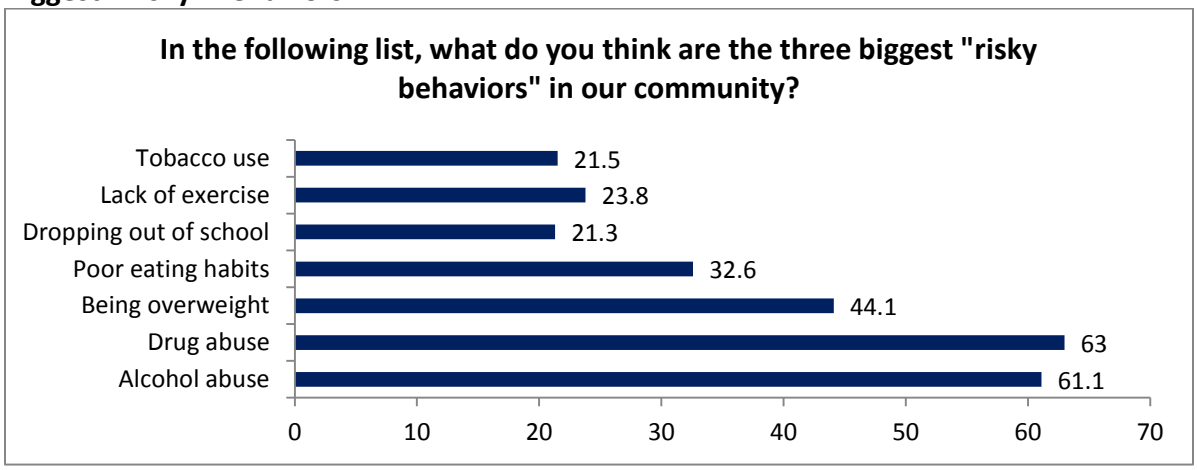


Most Critical Health Problems

Respondents were asked to identify the three most critical health problems in the community (those problems which have the greatest impact on overall community health). Lincoln County residents listed high cost of health care services, unemployment and unaffordable housing as the top three responses.



Biggest "Risky" Behaviors



Lincoln County's Most Important Community Resources

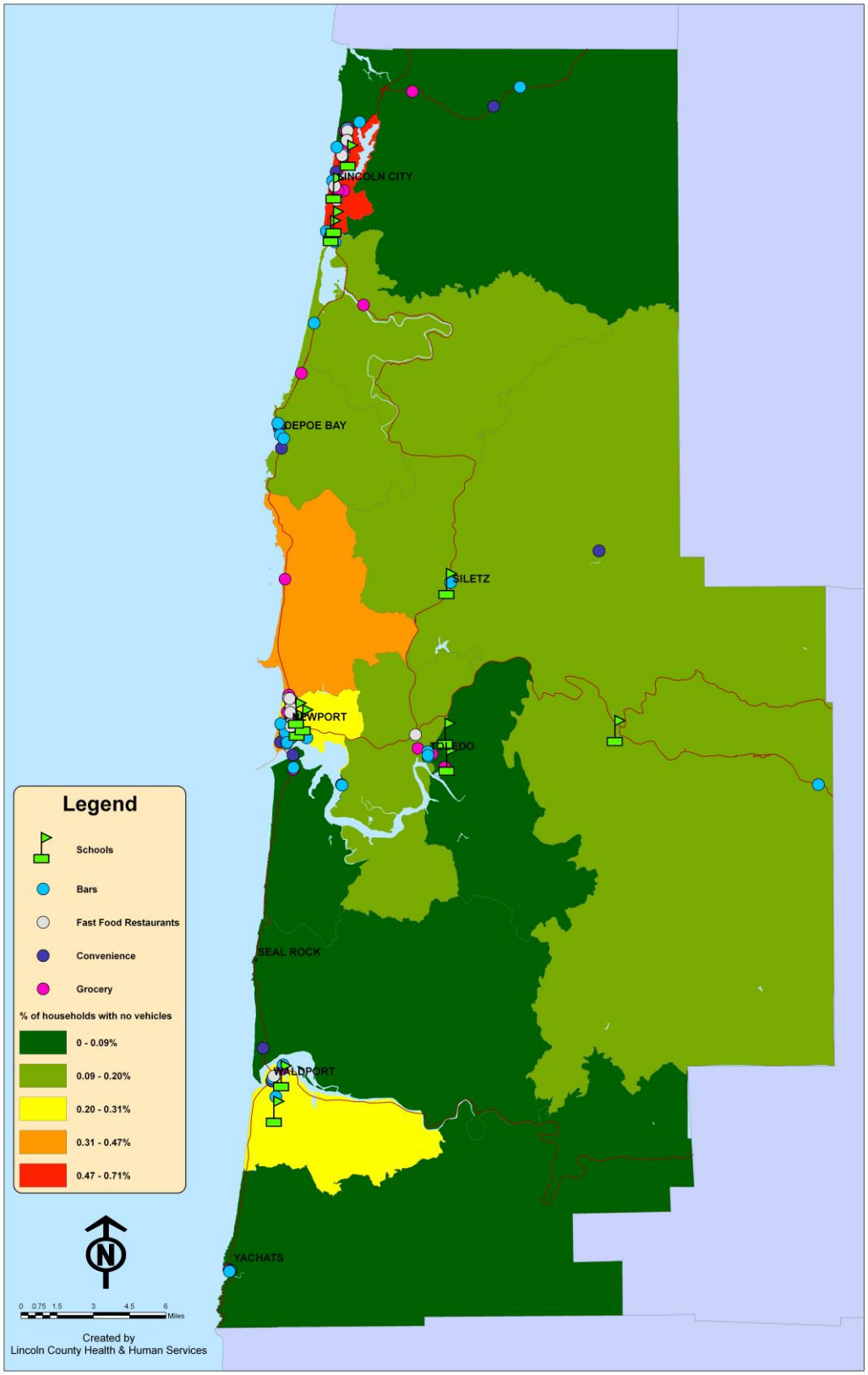
When asked to rate the most important community resources in the county, rural residents' priorities were good schools, the physical environment, Oregon Coast Community College, safe neighborhoods/public safety, public health services, clinics (physical and mental health), farmers markets, hospitals, tourism, and public transportation.

Additional Questions

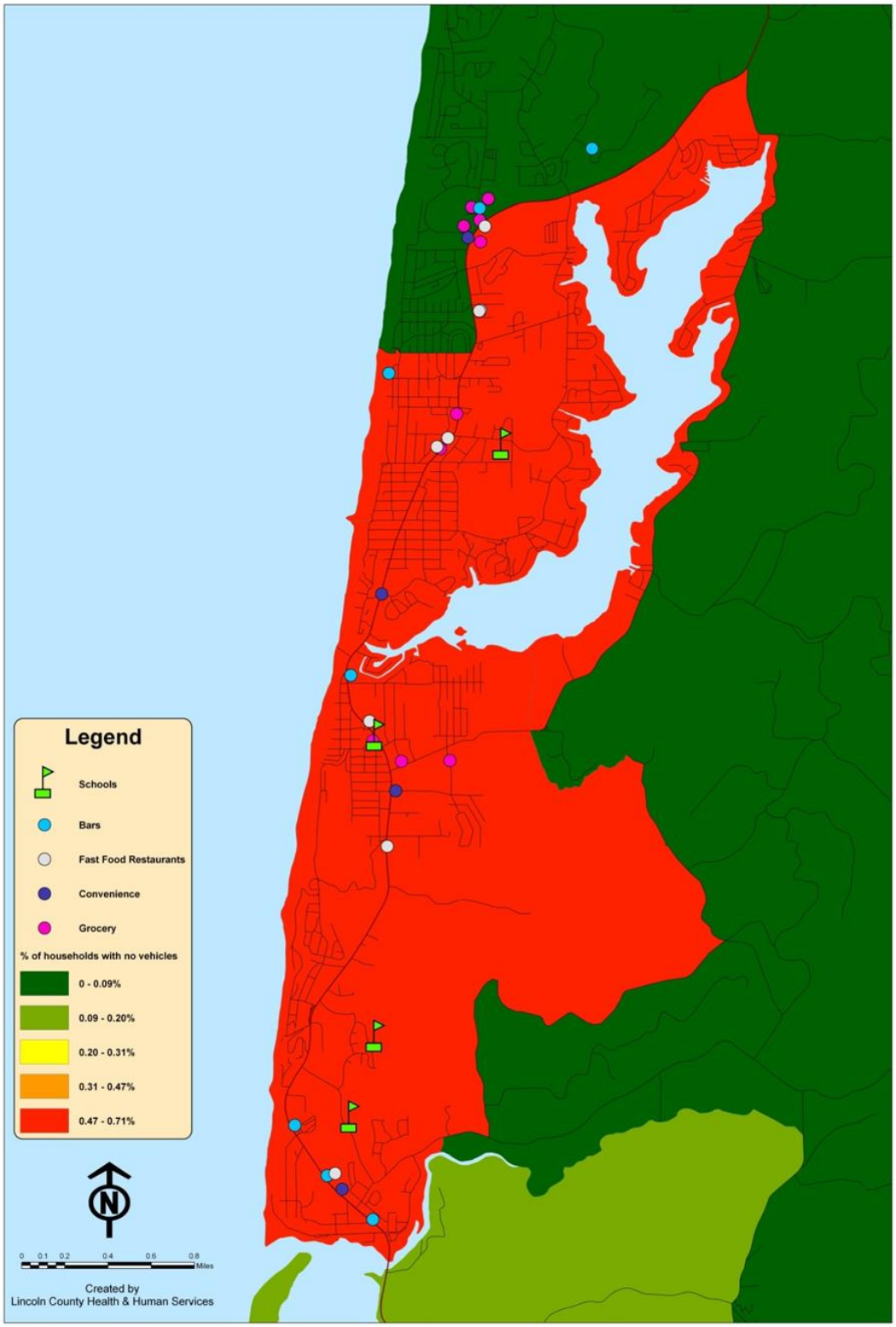
Participants were also asked to comment on community pride, their own quality of life, and their physical health.

- 53.9 percent of respondents agreed with the statement, "I am proud of our community."
- 56 percent of respondents agreed with the statement, "I am happy with the quality of life in my community."
- 74.8 percent of respondents replied "good" or "very good" to the question, "How would you rate your own physical health?"

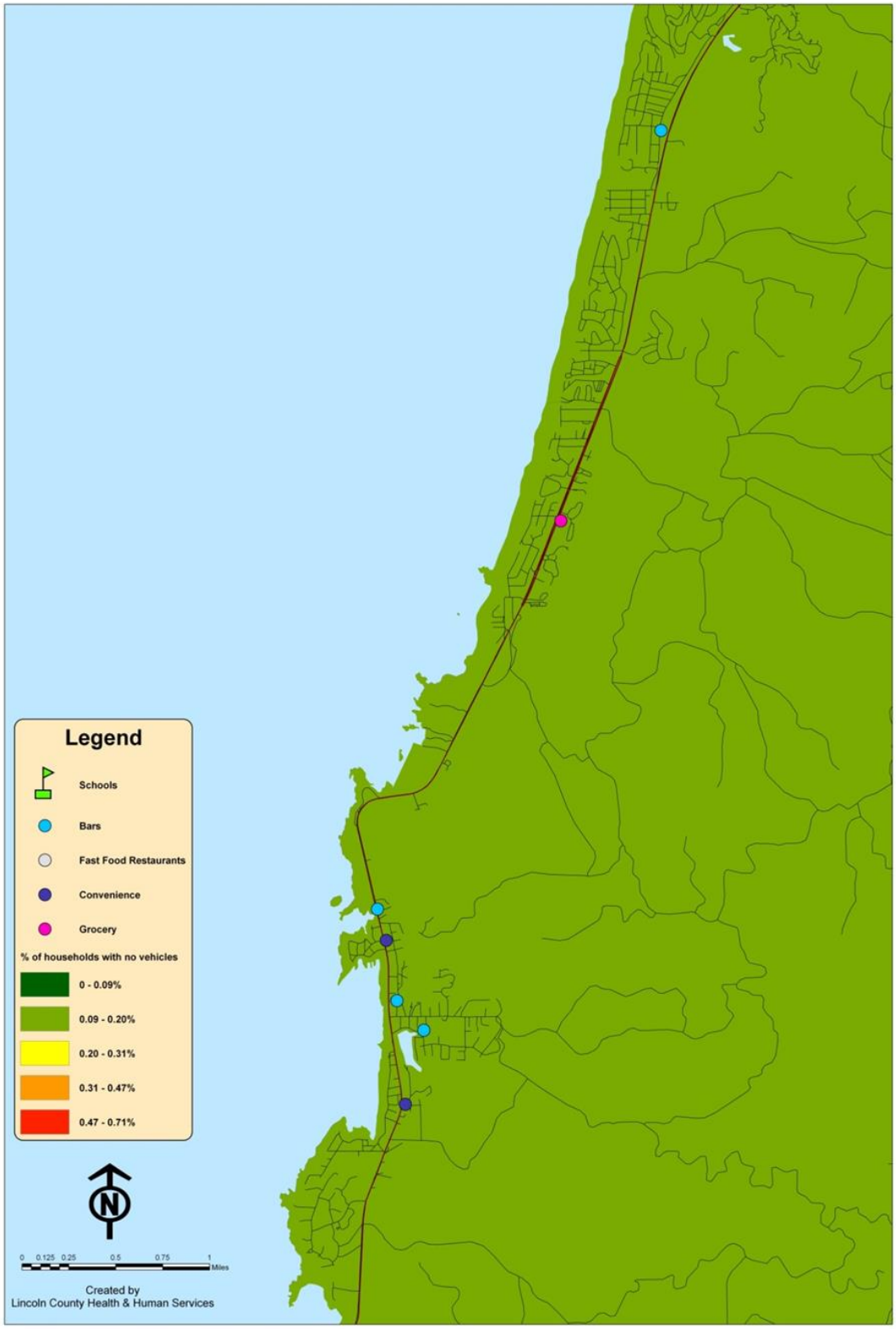
Appendix B: Mapping of Characteristics in Select Lincoln County Municipalities: Schools, Bars, Fast Food Restaurants, Convenience and Grocery Stores, and Households with No Vehicles.


LINCOLN CITY
DEPOE BAY
SILETZ
NEWPORT
TOLEDO
SEAL ROCK
WALDPORT
YACHATS
Legend
Schools
Bars
Fast Food Restaurants
Convenience
Grocery
% of households with no vehicles
0 - 0.09%
0.09 - 0.20%
0.20 - 0.31%
0.31 - 0.47%
0.47 - 0.71%
N
0 0.75 1.5 3 4.5 6
Miles
Created by
Lincoln County Health & Human Services

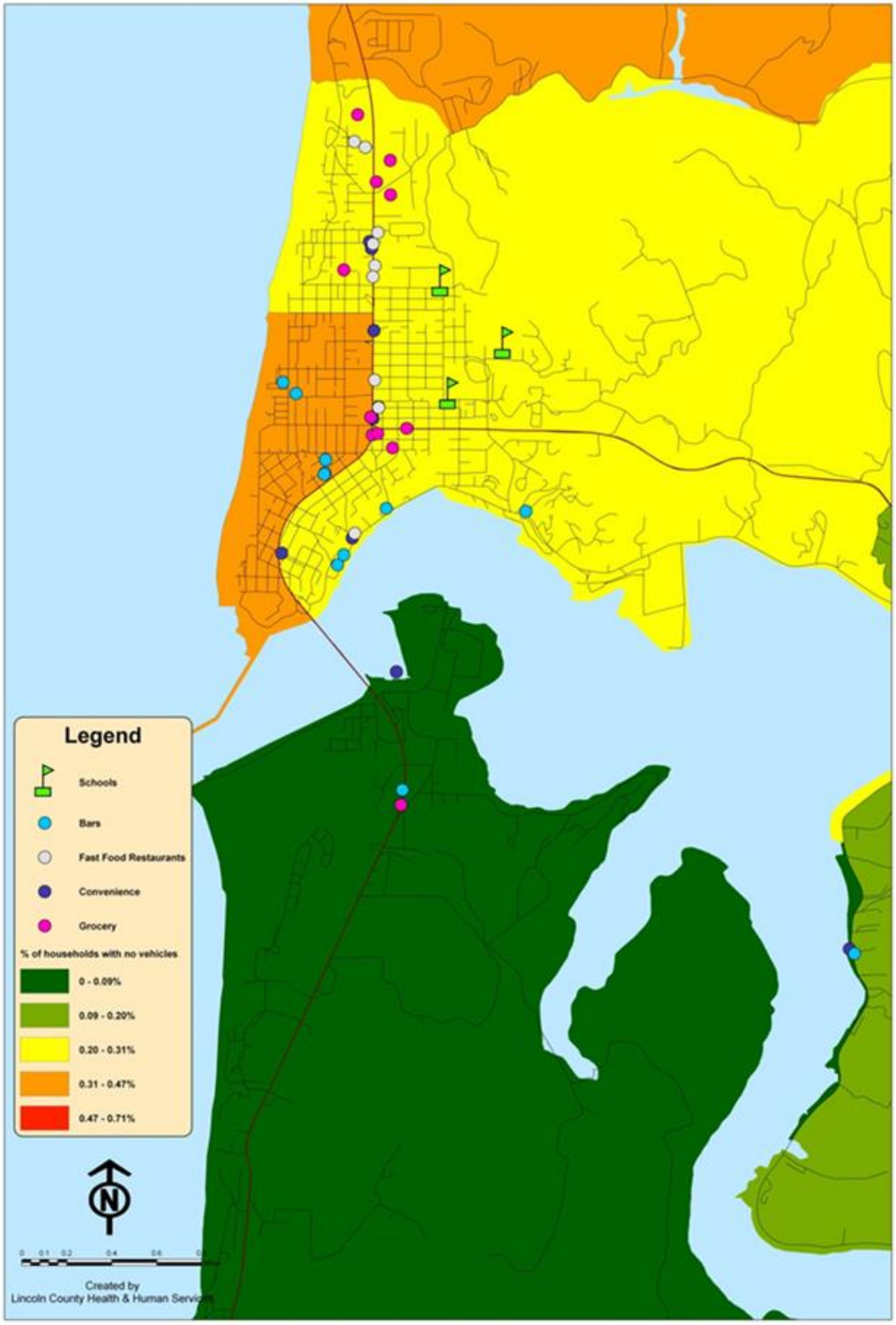
Lincoln City, OR



Depoe Bay, OR


Legend
Schools
Bars
Fast Food Restaurants
Convenience
Grocery
% of households with no vehicles
0 - 0.09%
0.09 - 0.20%
0.20 - 0.31%
0.31 - 0.47%
0.47 - 0.71%
N
0 0.125 0.25 0.5 0.75 1
Miles
Created by
Lincoln County Health & Human Services

Newport, OR


Legend
Schools
Bars
Fast Food Restaurants
Convenience
Grocery
% of households with no vehicles
0 - 0.09%
0.09 - 0.20%
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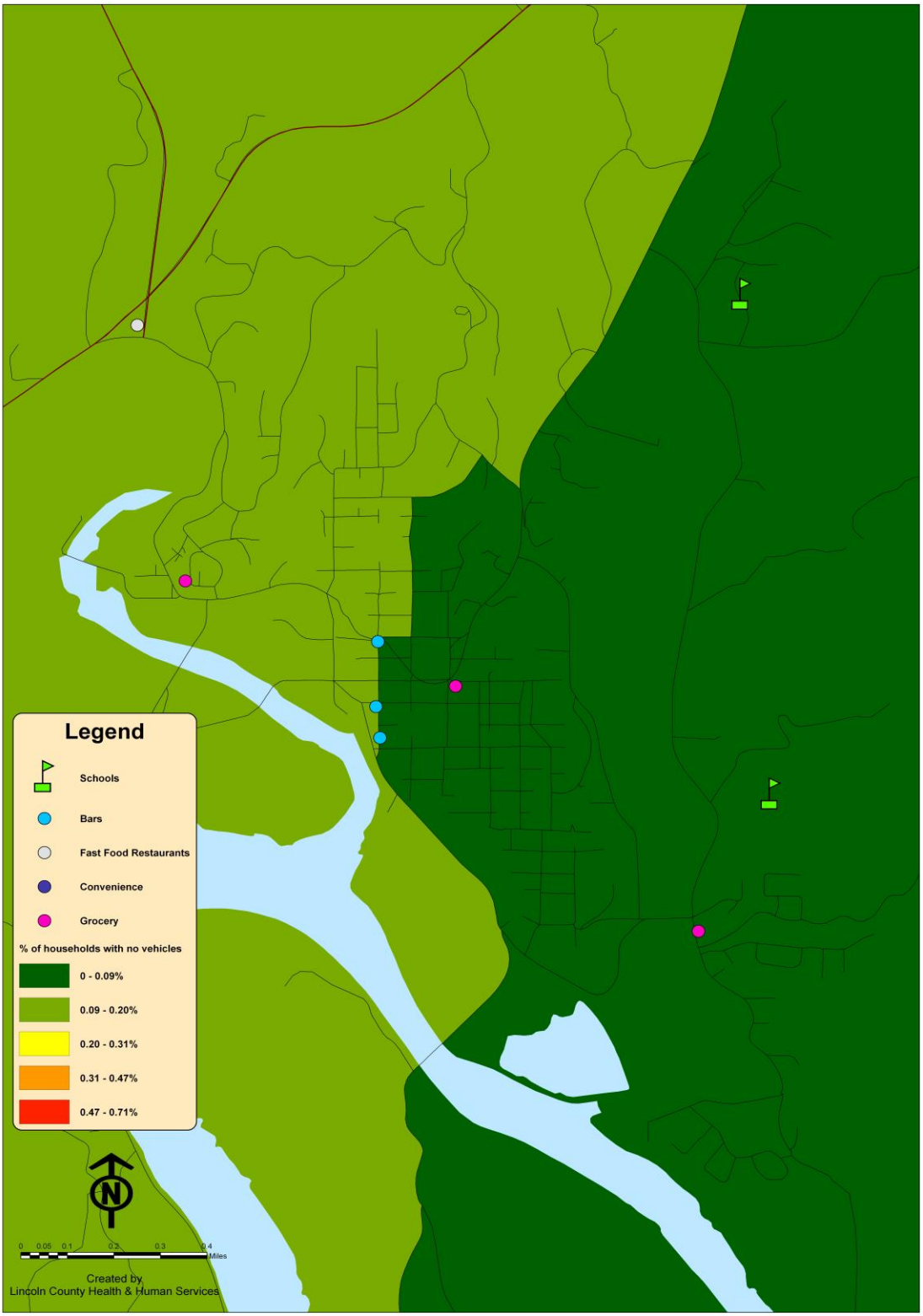
0.31 - 0.47%
0.47 - 0.71%
N
Created by
Lincoln County Health & Human Services

Toledo, OR


Legend
Schools
Bars
Fast Food Restaurants
Convenience
Grocery
% of households with no vehicles
0 - 0.09%
0.09 - 0.20%
0.20 - 0.31%
0.31 - 0.47%
0.47 - 0.71%
N
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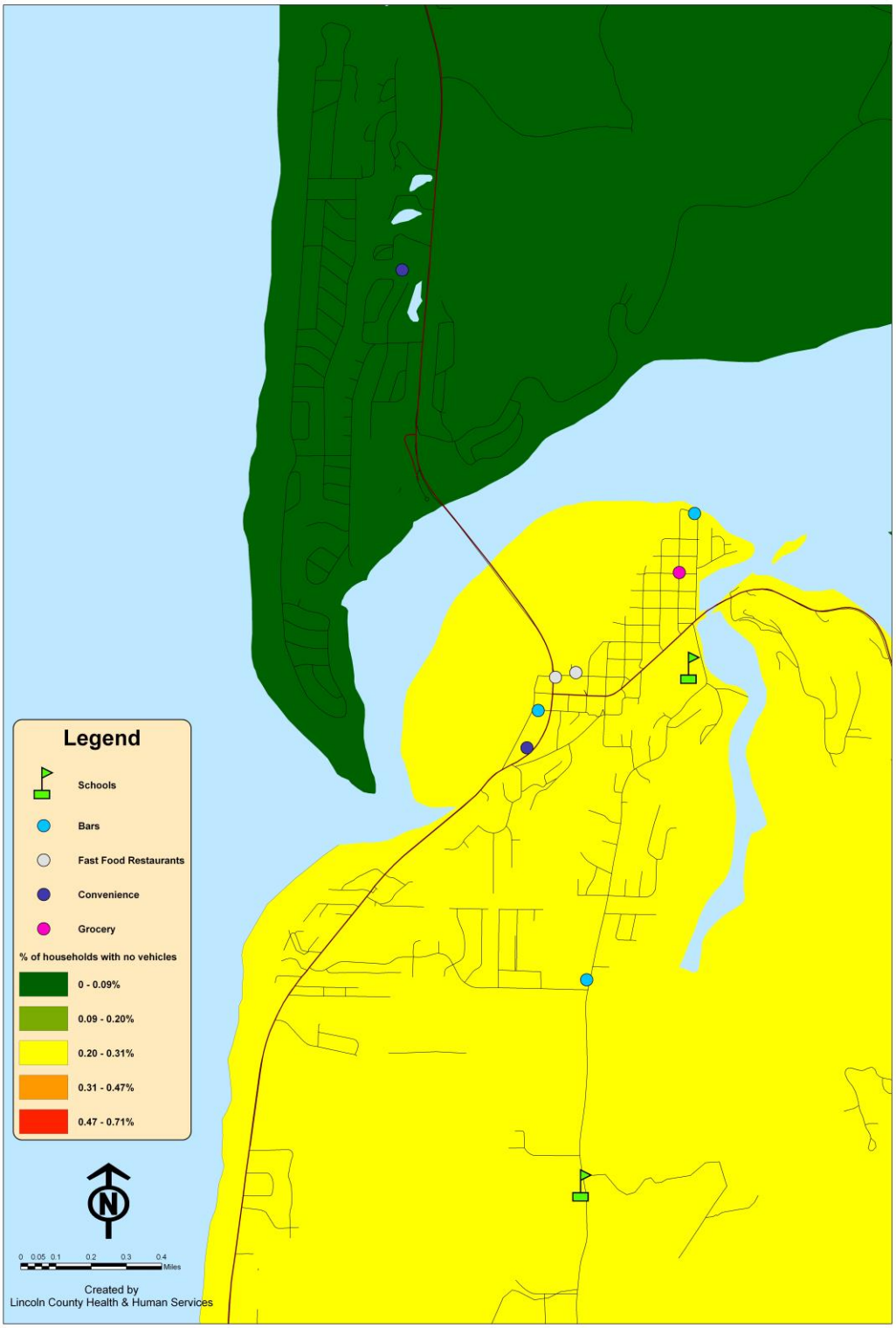
Miles
Created by
Lincoln County Health & Human Services

Waldport, OR


Legend
Schools
Bars
Fast Food Restaurants
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Grocery
% of households with no vehicles
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0.47 - 0.71%
N
0 0.05 0.1 0.2 0.3 0.4
Miles
Created by
Lincoln County Health & Human Services

Lincoln County Community Health Assessment Partners and Acknowledgments

Community Volunteers

Benton County Health Services

Centro de Ayuda

City of Newport

City of Toledo

Confederated Tribes of Siletz Indians

Lincoln County Health and Human Services

Food Share of Lincoln County

Housing Authority of Lincoln County

Jonah's Whale Thrift Store

Lincoln County Commission on Children and Families

Lincoln County Community Health Assessment Steering Committee

Lincoln County Coordinated Healthcare Advisory Group

Lincoln County School District

Lincoln County Transit

Mental Health Advisory Committee

Oregon Coast Community College

Oregon State University Extension, Lincoln County

Partnership Against Alcohol and Drug Abuse

Samaritan Health Services

Seashore Family Literacy

St. Peter the Fisherman Lutheran Church

Ten Rivers Food Web

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Local Public Health Authority: Lincoln County
Date: March 1, 2014

Minimum Standards

To the best of your knowledge, are you in compliance with these program indicators from the Minimum Standards for Local Health Departments?

I. Organization

1. Yes _X__ No ___ A Local Health Authority exists which has accepted the legal responsibilities for public health as defined by Oregon Law.

2. Yes _X__ No ___ The Local Health Authority meets at least annually to address public health concerns.

3. Yes _X__ No ___ A current organizational chart exists that defines the authority, structure and function of the local health department; and is reviewed at least annually.

4. Yes _X__ No ___ Current local health department policies and procedures exist which are reviewed at least annually.

5. Yes _X__ No ___ Ongoing community assessment is performed to analyze and evaluate community data.

6. Yes _X__ No ___ Written plans are developed with problem statements, objectives, activities, projected services, and evaluation criteria.

7. Yes _X__ No ___ Local health officials develop and manage an annual operating budget.

8. Yes _X__ No ___ Generally accepted public accounting practices are used for managing funds.

9. Yes _X__ No ___ All revenues generated from public health services are allocated to public health programs.

10. Yes _X__ No ___ Written personnel policies and procedures are in compliance with federal and state laws and regulations.

11. Yes _X__ No ___ Personnel policies and procedures are available for all employees.

12. Yes _X__ No ___ All positions have written job descriptions, including minimum qualifications.

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13. Yes _X__ No ___ Written performance evaluations are done annually.

14. Yes _X__ No ___ Evidence of staff development activities exists.

15. Yes _X__ No ___ Personnel records for all terminated employees are retained consistently with State Archives rules.

16. Yes _X__ No ___ Records include minimum information required by each program.

17. Yes _X__ No ___ A records manual of all forms used is reviewed annually.

18. Yes _X__ No ___ There is a written policy for maintaining confidentiality of all client records which includes guidelines for release of client information.

19. Yes _X__ No ___ Filing and retrieval of health records follow written procedures.

20. Yes _X__ No ___ Retention and destruction of records follow written procedures and are consistent with State Archives rules.

21. Yes _X__ No ___ Local health department telephone numbers and facilities' addresses are publicized.

22. Yes _X__ No ___ Health information and referral services are available during regular business hours.

23. Yes __X_ No ___ Written resource information about local health and human services is available, which includes eligibility, enrollment procedures, scope and hours of service. Information is updated as needed.

24. Yes _X__ No ___ 100% of birth and death certificates submitted by local health departments are reviewed by the local Registrar for accuracy and completeness per Vital Records office procedures.

25. Yes _X__ No ___ To preserve the confidentiality and security of non-public abstracts, all vital records and all accompanying documents are maintained.

26. Yes _X__ No ___ Certified copies of registered birth and death certificates are issued within one working day of request.

27. Yes _X__ No ___ Vital statistics data, as reported by the Center for Health Statistics, are reviewed annually by local health departments to review accuracy and support ongoing community assessment activities.

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28. Yes _X_ No ___ A system to obtain reports of deaths of public health significance is in place.

29. Yes _X__ No ___ Deaths of public health significance are reported to the local health department by the medical examiner and are investigated by the health department.

30. Yes __ No _X__ Health department administration and county medical examiner review collaborative efforts at least annually.

31. Yes _X__ No ___ Staff is knowledgeable of and has participated in the development of the county's emergency plan.

32. Yes _X__ No ___ Written policies and procedures exist to guide staff in responding to an emergency.

33. Yes _X__ No ___ Staff participate periodically in emergency preparedness exercises and upgrade response plans accordingly.

34. Yes _X__ No ___ Written policies and procedures exist to guide staff and volunteers in maintaining appropriate confidentiality standards.

35. Yes _X__ No ___ Confidentiality training is included in new employee orientation. Staff includes: employees, both permanent and temporary, volunteers, translators, and any other party in contact with clients, services or information. Staff sign confidentiality statements when hired and at least annually thereafter.

36. Yes __X_ No ___ A Client Grievance Procedure is in place with resultant staff training and input to assure that there is a mechanism to address client and staff concerns.

Control of Communicable Diseases

37. Yes _X__ No ___ There is a mechanism for reporting communicable disease cases to the health department.

38. Yes _X__ No ___ Investigations of reportable conditions and communicable disease cases are conducted, control measures are carried out, investigation report forms are completed and submitted in the manner and time frame specified for the particular disease in the Oregon Communicable Disease Guidelines.

39. Yes _X__ No ___ Feedback regarding the outcome of the investigation is provided to the reporting health care provider for each reportable condition or communicable disease case received.

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40. Yes _X__ No ___ Access to prevention, diagnosis, and treatment services for reportable communicable diseases is assured when relevant to protecting the health of the public.

41. Yes _X__ No ___ There is an ongoing/demonstrated effort by the local health department to maintain and/or increase timely reporting of reportable communicable diseases and conditions.

42. Yes _X__ No ___ There is a mechanism for reporting and following up on zoonotic diseases to the local health department.

43. Yes _X__ No ___ A system exists for the surveillance and analysis of the incidence and prevalence of communicable diseases.

44. Yes _X__ No ___ Annual reviews and analysis are conducted of five year averages of incidence rates reported in the Communicable Disease Statistical Summary, and evaluation of data are used for future program planning.

45. Yes _X__ No ___ Immunizations for human target populations are available within the local health department jurisdiction.

46. Yes _X__ No ___ Rabies immunizations for animal target populations are available within the local health department jurisdiction.

Environmental Health

47. Yes _X_ No ___ Food service facilities are licensed and inspected as required by Chapter 333 Division 12.

48. Yes _X__ No ___ Training is available for food service managers and personnel in the proper methods of storing, preparing, and serving food.

49. Yes ___ No _X__ Training in first aid for choking is available for food service workers.

50. Yes _X__ No ___ Public education regarding food borne illness and the importance of reporting suspected food borne illness is provided.

51. Yes _X__ No ___ Each drinking water system conducts water quality monitoring and maintains testing frequencies based on the size and classification of system.

52. Yes _X__ No ___ Each drinking water system is monitored for compliance with applicable standards based on system size, type, and epidemiological risk.

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53. Yes _X__ No ___ Compliance assistance is provided to public water systems that violate requirements.

54. Yes __X_ No ___ All drinking water systems that violate maximum contaminant levels are investigated and appropriate actions taken.

55. Yes _X__ No ___ A written plan exists for responding to emergencies involving public water systems.

56. Yes __X_ No ___ Information for developing a safe water supply is available to people using on-site individual wells and springs.

57. Yes _X__ No ___ A program exists to monitor, issue permits, and inspect on-site sewage disposal systems. (Through the County Planning Dept.)

58. Yes _X__ No ___ Tourist facilities are licensed and inspected for health and safety risks as required by Chapter 333 Division 12.

59. Yes _X__ No ___ School and public facilities food service operations are inspected for health and safety risks.

60. Yes _X__ No ___ Public spas and swimming pools are constructed, licensed, and inspected for health and safety risks as required by Chapter 333 Division 12.

61. Yes _X_ No ___ A program exists to assure protection of health and the environment for storing, collecting, transporting, and disposing solid waste.

62. Yes X___ No ___ Indoor clean air complaints in licensed facilities are investigated.

63. Yes _X__ No ___ Environmental contamination potentially impacting public health or the environment is investigated.

64. Yes _X__ No ___ The health and safety of the public is being protected through hazardous incidence investigation and response.

65. Yes _X__ No ___ Emergency environmental health and sanitation are provided to include safe drinking water, sewage disposal, food preparation, solid waste disposal, sanitation at shelters, and vector control.

66. Yes _X__ No ___ All license fees collected by the Local Public Health Authority under ORS 624, 446, and 448 are set and used by the LPHA as required by ORS 624, 446, and 448.

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Health Education and Health Promotion

67. Yes __X_ No ___ Culturally and linguistically appropriate health education components with appropriate materials and methods will be integrated within programs.

68. Yes _X__ No ___ The health department provides and/or refers to community resources for health education/health promotion.

69. Yes _X__ No ___ The health department provides leadership in developing community partnerships to provide health education and health promotion resources for the community.

70. Yes _X__ No ___ Local health department supports healthy behaviors among employees.

71. Yes _X__ No ___ Local health department supports continued education and training of staff to provide effective health education.

72. Yes _X__ No ___ All health department facilities are smoke free.

Nutrition

73. Yes _X__ No ___ Local health department reviews population data to promote appropriate nutritional services.

74. The following health department programs include an assessment of nutritional status:
a. Yes _X__ No ___ WIC
b. Yes _X__ No ___ Family Planning
c. Yes _X__ No ___ Parent and Child Health
d. Yes _NA__ No ___ Older Adult Health
e. Yes _NA__ No ___ Corrections Health

75. Yes _X__ No ___ Clients identified at nutritional risk are provided with or referred for appropriate interventions.

76. Yes _X__ No ___ Culturally and linguistically appropriate nutritional education and promotion materials and methods are integrated within programs.

77. Yes _X__ No ___ Local health department supports continuing education and training of staff to provide effective nutritional education.

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Older Adult Health

78. Yes _NA__ No ___ Health department provides or refers to services that promote detecting chronic diseases and preventing their complications. This is done in our FQHC not public health.

79. Yes _X__ No ___ A mechanism exists for intervening where there is reported elder abuse or neglect.

80. Yes __X_ No ___ Health department maintains a current list of resources and refers for medical care, mental health, transportation, nutritional services, financial services, rehabilitation services, social services, and substance abuse services.

81. Yes _X__ No ___ Prevention-oriented services exist for self health care, stress management, nutrition, exercise, medication use, maintaining activities of daily living, injury prevention and safety education. This is a community resource.

Parent and Child Health

82. Yes _X__ No ___ Perinatal care is provided directly or by referral.

83. Yes __X_ No ___ Immunizations are provided for infants, children, adolescents and adults either directly or by referral.

84. Yes X___ No ___ Comprehensive family planning services are provided directly or by referral.

85. Yes _X__ No ___ Services for the early detection and follow up of abnormal growth, development and other health problems of infants and children are provided directly or by referral.

86. Yes __X_ No ___ Child abuse prevention and treatment services are provided directly or by referral.

87. Yes _X__ No ___ There is a system or mechanism in place to assure participation in multi-disciplinary teams addressing abuse and domestic violence.

88. Yes _X__ No ___ There is a system in place for identifying and following up on high risk infants.

89. Yes _X__ No ___ There is a system in place to follow up on all reported SIDS deaths.

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90. Yes _X__ No ___ Preventive oral health services are provided directly or by referral.

91. Yes _X__ No ___ Use of fluoride is promoted, either through water fluoridation or use of fluoride mouth rinse or tablets.

92. Yes __X_ No ___ Injury prevention services are provided within the community.

Primary Health Care

93. Yes _X__ No ___ The local health department identifies barriers to primary health care services.

94. Yes _X__ No ___ The local health department participates and provides leadership in community efforts to secure or establish and maintain adequate primary health care.

95. Yes _X__ No ___ The local health department advocates for individuals who are prevented from receiving timely and adequate primary health care.

96. Yes _X__ No ___ Primary health care services are provided directly or by referral.

97. Yes _X__ No ___ The local health department promotes primary health care that is culturally and linguistically appropriate for community members.

98. Yes _X__ No ___ The local health department advocates for data collection and analysis for development of population based prevention strategies.

Cultural Competency

99. Yes _X__ No ___ The local health department develops and maintains a current demographic and cultural profile of the community to identify needs and interventions.

100. Yes ___ No _X__ The local health department develops, implements and promotes a written plan that outlines clear goals, policies and operational plans for provision of culturally and linguistically appropriate services.

101. Yes _X__ No ___ The local health department assures that advisory groups reflect the population to be served.

102. Yes __X_ No ___ The local health department assures that program activities reflect operation plans for provision of culturally and linguistically appropriate services.

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Health Department Personnel Qualifications

Local health department Health Administrator minimum qualifications:
The Administrator must have a Bachelor degree plus graduate courses (or equivalents) that align with those recommended by the Council on Education for Public Health. These are: Biostatistics, Epidemiology, Environmental health sciences, Health services administration, and Social and behavioral sciences relevant to public health problems. The Administrator must demonstrate at least 3 years of increasing responsibility and experience in public health or a related field.

Answer the following questions:
Administrator name: _Cheryl Connell_____
Does the Administrator have a Bachelor degree? Yes X___ No ___
Does the Administrator have at least 3 years experience in Yes _X__ No ___
public health or a related field?
Has the Administrator taken a graduate level course in Yes ___ No _X__
biostatistics?
Has the Administrator taken a graduate level course in Yes ___ No _X__
epidemiology?
Has the Administrator taken a graduate level course Yes ___ No _X__
in environmental health?
Has the Administrator taken a graduate level course Yes ___ No _X__
in health services administration?
Has the Administrator taken a graduate level course in Yes ___ No _X__
social and behavioral sciences relevant to public health problems?

a. Yes ___ No _X__ The local health department Health Administrator meets minimum qualifications:
If the answer is "No", submit an attachment that describes your plan to meet the minimum qualifications.
The local health department Health Administrator plans to take the graduate level courses in 2018.

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b. Yes _X__ No ___ The local health department Supervising Public Health Nurse meets minimum qualifications:

Licensure as a registered nurse in the State of Oregon, progressively responsible experience in a public health agency;
AND
Baccalaureate degree in nursing, with preference for a Master's degree in nursing, public health or public administration or related field, with progressively responsible experience in a public health agency.

If the answer is "No", submit an attachment that describes your plan to meet the minimum qualifications.

c. Yes X___ No ___ The local health department Environmental Health Supervisor meets minimum qualifications:

Registration as an environmental health specialist in the State of Oregon, pursuant to ORS 700.030, with progressively responsible experience in a public health agency
OR
a Master's degree in an environmental science, public health, public administration or related field with two years progressively responsible experience in a public health agency.

If the answer is "No", submit an attachment that describes your plan to meet the minimum qualifications.

d. Yes _X__ No____ The local health department Health Officer meets minimum qualifications:

Licensed in the State of Oregon as M.D. or D.O. Two years of practice as licensed physician (two years after internship and/or residency). Training and/or experience in epidemiology and public health.

If the answer is "No", submit an attachment that describes your plan to meet the minimum qualifications.

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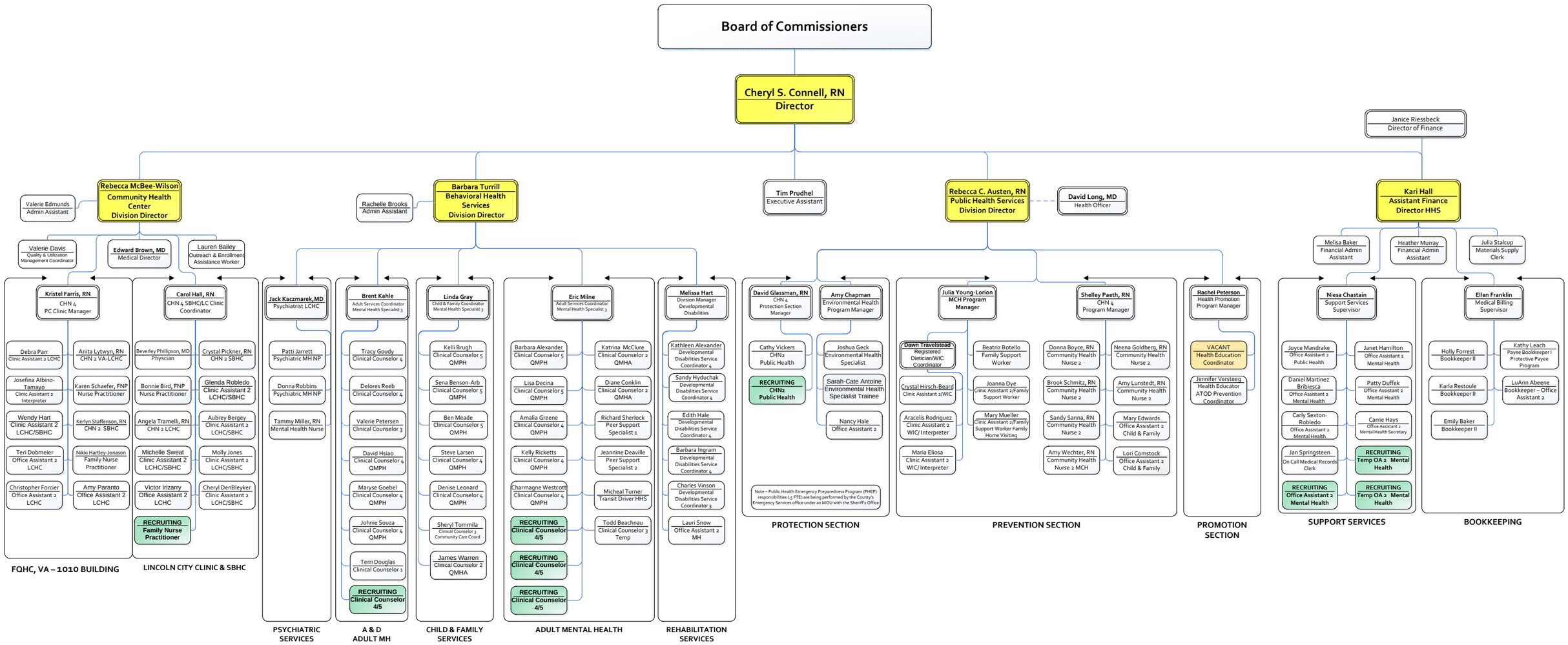
Agencies are **required** to include with the submitted Annual Plan:

The local public health authority is submitting the Annual Plan pursuant to ORS 431.385, and assures that the activities defined in ORS 431.375–431.385 and ORS 431.416, are performed.

Gary L S Lomm	LINCOLN	3/19/2014
Local Public Health Authority	County	Date

2013-14 Budget Link: http://www.co.lincoln.or.us/finance/budget/20132014AdoptedBudget.pdf

Lincoln County Health and Human Services Department



Primary Care Division

Behavioral Health Division

Public Health Division

Administrative Services Group

J:\hhs\hhs_forms\Executive Team Forms\Organization Charts

03/10/2014