



# Health Status Assessment Quantitative Data Analysis Methods and Findings

July 2013

## **REPORTS IN THIS SERIES**

Community Themes and Strengths Assessment: Important Health Issues Identified by Community Members. July 2013

Health Status Assessment: Quantitative Data Analysis Methods and Findings. July 2013

Local Community Health System and Forces of Change Assessment: Stakeholders' Priority Health Issues and Capacity to Address Them. July 2013

Community Listening Sessions: Important Health Issues and Ideas for Solutions. July 2013

Healthy Columbia Willamette: Assessing Community Needs and Improving Health in Clackamas, Multnomah, and Washington Counties in Oregon and Clark County, Washington. July 2013

*Photo: Clark County, Washington*

## ACKNOWLEDGEMENTS

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# I. INTRODUCTION

## Origination of Collaborative

In 2010, local health care and public health leaders in Clackamas, Multnomah, and Washington counties in Oregon and Clark County in Washington began to discuss the upcoming need for several community health assessments and health improvement plans within the region in response to the Affordable Care Act and Public Health Accreditation<sup>1</sup>. They recognized these requirements as an opportunity to align the efforts of hospitals, public health and the residents of the communities they serve in an effort to develop an accessible, real-time assessment of community health across the four-county region. By working together, they would eliminate duplicative efforts, facilitate the prioritization of community health needs, enable joint efforts for implementing and tracking improvement activities, and improve the health of the community. A description of the four-county region can be found in the final report from this series, *Healthy Columbia Willamette: Assessing Community Needs and Improving Health in Clackamas, Multnomah, and Washington counties in Oregon and Clark County, Washington*. July 2013. General demographic information can be found in Appendix I of this report.

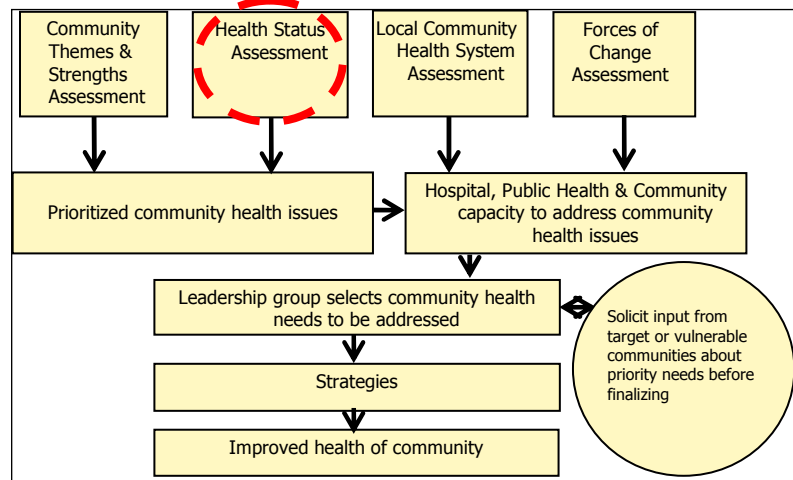
## Members

With start-up assistance from the Oregon Association of Hospitals and Health Systems, the Healthy Columbia Willamette Collaborative (Collaborative) was developed. It is a large public-private collaborative comprised of fourteen hospitals and four local public health departments in the four-county region. Members include: Adventist Medical Center, Clackamas County Public Health Division, Clark County Public Health Department, Kaiser Sunnyside Hospital, Legacy Emanuel Medical Center, Legacy Good Samaritan Medical Center, Legacy Meridian Park Medical Center, Legacy Mount Hood Medical Center, Legacy Salmon Creek, Multnomah County Health Department, Oregon Health & Science University, PeaceHealth Southwest Medical Center, Providence Milwaukie, Providence Portland, Providence St. Vincent, Providence Willamette Falls, Tuality Healthcare/Tuality Community Hospital and Washington County Public Health Division.

## Healthy Columbia Willamette Collaborative Assessment Model

The Collaborative used a modified version of the Mobilizing for Action through Planning and Partnerships (MAPP) assessment model<sup>2</sup>. See Figure 1. The MAPP model uses health data and community input to identify the most important community health issues. This assessment will be an on-going, real-time assessment with formal community-wide findings every three years. Community input on strategies and evaluation throughout the three year cycle will be crucial to the effort's effectiveness. This report describes the second assessment component: The health status assessment.

**Figure 1.**  
**Schematic of the Modified MAPP Model**



<sup>1</sup> The federal Affordable Care Act, Section 501(r)(3) requires tax exempt hospital facilities to conduct a Community Health Needs Assessment (CHNA) at minimum once every three years, effective for tax years beginning after March 2012. Through the Public Health Accreditation Board, public health departments now have the opportunity to achieve accreditation by meeting a set of standards. As part of the standards, they must complete a Community Health Assessment (CHA) and a Community Health Improvement Plan (CHIP).

<sup>2</sup> MAPP is a model developed by the National Association of County and City Health Officials (NACCHO).

## II. HEALTH STATUS ASSESSMENT

### Epidemiology Workgroup

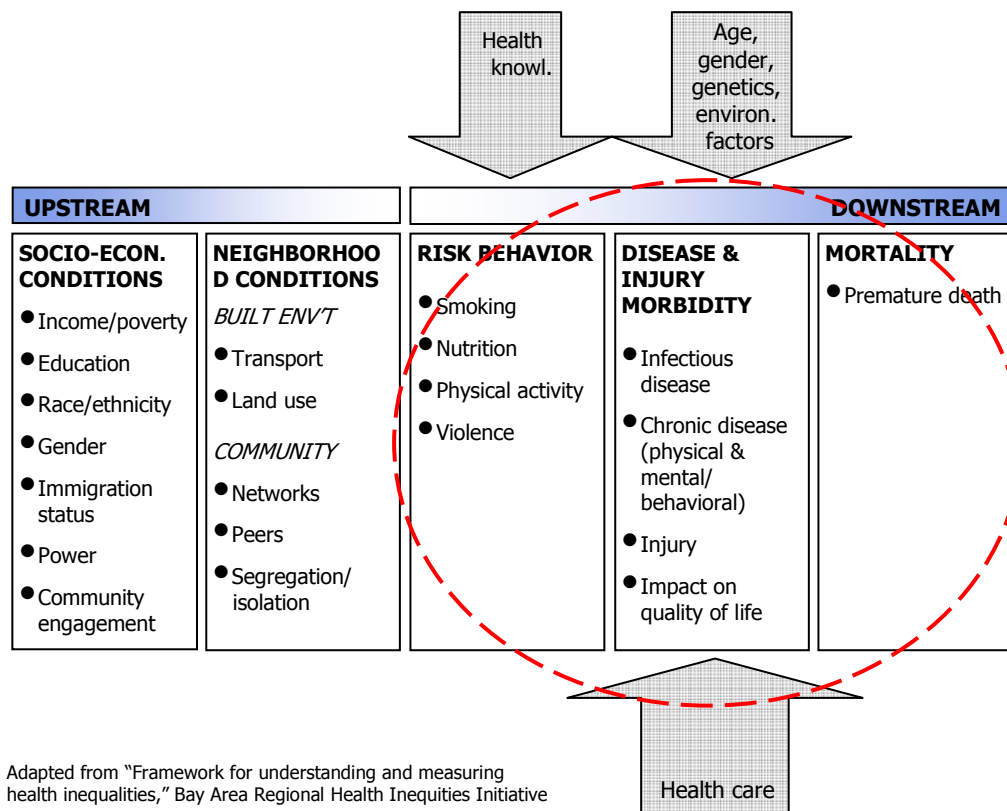
The Collaborative’s Epidemiology Workgroup (Workgroup) was established to develop and implement a systematic approach to screening and prioritizing quantitative population health data to satisfy the community health status assessment component of MAPP.

The Workgroup consists of epidemiologists from the four county health departments with representatives from two hospital systems acting in an advisory capacity. The broad goal of the health status assessment was to systematically analyze quantitative population health-related behavior and outcome data to identify important health issues affecting each of the four counties as well as the four-county region. Health status assessment findings combined with the findings of the other three MAPP assessment components would provide the Collaborative’s Leadership Group with information necessary to select health priorities and improvement strategies within the communities they serve.

### Methodology

The health status assessment, one of four major components of MAPP, requires a systematic examination of population health data to identify health issues faced in the community. Figure 2 shows a conceptual framework connecting upstream determinants of health with downstream health effects. The health status assessment focused on health outcomes and behaviors contained in the red circle. While recognizing the importance of socioeconomic and other societal conditions as determinants of population health outcomes, the Workgroup focused its initial analytic efforts on health behaviors and health outcomes. After identifying broad community health issues, the Workgroup will assist the Leadership Group in examining contributing social determinants of health as it identifies strategies to address the health issues.

**Figure 2. Continuum of Health Determinants and Health Outcomes**



The Workgroup created a list of health indicators that were analyzed and prioritized systematically based on a predetermined set of criteria. Health indicators were placed on the list if they were 1) assigned a "red" or "yellow" status (indicating a health concern) on the Healthy Communities Institute (HCI) web site<sup>3</sup> for the four counties, 2) identified as important indicators by public health and other local experts, or 3) a top ten leading cause of death in one of the counties. Data for all health indicators were available at the county level through state government agencies and include vital statistics, disease and injury morbidity data, or survey data (adult or student).

Workgroup members conducted literature reviews and examined other nationally recognized prioritization schemes to identify examples of robust methods for screening and prioritizing quantitative population health measures. The Workgroup adapted a health indicator ranking prioritization worksheet developed for use with maternal/child health data in Multnomah County Health Department<sup>4</sup>. This worksheet met the needs of the regional community health status assessment by establishing prioritization criteria against which health indicator data were evaluated objectively and consistently. All criteria were weighted equally. The highest score meant a health indicator had a disparity by race/ethnicity, a disparity by gender, a worsening trend, a worse rate at the county level compared to the state, a high proportion of the population affected, and a severe health consequence. County-level scores were averaged for the region to generate regional scores per indicator. Once scored, the health indicators were ranked relative to one another for each county as well as for the four-county region as a whole.

To make the results of this analysis more meaningful to the Leadership Group and easier to incorporate into the other MAPP assessment components, the Workgroup clustered health indicators where there were natural relationships between them. This allowed health indicators to be understood as broader health issues within the community. For example, indicators of nutrition and physical exercise were grouped with indicators of heart disease and diabetes-related deaths into a health issue focused on nutrition and physical activity-related chronic diseases. The resulting health issues will be used by the Leadership Group, in combination with findings from the other MAPP assessments, to develop health improvement strategies.

## Findings

Using the criteria scoring, each county's top ten ranked health-related behavior and health outcome indicators were identified (Table 1 and Table 2). Indicators that are "starred" are those that were on the regional list of top health indicators. Overall population rates can be found in Appendix II. Indicators with the same score tied in rank which created a list of more than ten indicators in some cases.

The regional score for each indicator was the average of the four individual county scores. In most cases, scores were fairly close to one another across counties. The top ten ranked health-related behavior and health outcome indicators for the four-county region were identified (Table 3). Again, indicators with the same score tied in rank which created a list of more than ten indicators in some cases. Due to lack of available data, many fewer health-related behaviors were available for regional scoring.

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<sup>3</sup> The Collaborative contracted with Healthy Communities Institute, a private vendor, to purchase a web-based interface with a dashboard displaying the status of each of the four counties data in terms of local health indicators. The Collaborative regional HCI web site can be accessed at [www.healthycolombiawillamette.org](http://www.healthycolombiawillamette.org).

<sup>4</sup> The Multnomah County Health Department referenced the Pickett Hanlon method of prioritizing public health issues.

**Table 1. Top Ranked Health Outcomes by County**

<b>Clackamas (OR)</b>	<b>Clark (WA)</b>	<b>Multnomah (OR)</b>	<b>Washington (OR)</b>
<ul style="list-style-type: none"> <li>• Non-transport accident deaths ★</li> <li>• Chlamydia incidence rate ★</li> <li>• Suicide</li> <li>• Breast cancer deaths ★</li> <li>• Adults who are obese ★</li> <li>• Ovarian cancer deaths</li> <li>• Chronic liver disease deaths</li> <li>• Heart disease deaths ★</li> <li>• Drug-related deaths ★</li> <li>• Adults who are overweight</li> <li>• Prostate cancer deaths ★</li> </ul>	<ul style="list-style-type: none"> <li>• Non-transport accident deaths ★</li> <li>• Drug-related deaths ★</li> <li>• Colorectal cancer deaths</li> <li>• Lung cancer deaths</li> <li>• Lymphoid cancer deaths</li> <li>• Diabetes-related deaths ★</li> <li>• Alzheimer’s disease deaths ★</li> <li>• Unintentional injury deaths ★</li> <li>• Alcohol-related deaths</li> <li>• Transport accident deaths</li> <li>• Motor vehicle collision deaths</li> </ul>	<ul style="list-style-type: none"> <li>• Non-transport accident deaths ★</li> <li>• Chlamydia incidence rate ★</li> <li>• Diabetes-related deaths ★</li> <li>• Alcohol-related deaths</li> <li>• Drug-related deaths ★</li> <li>• Early syphilis incidence rate</li> <li>• Chronic liver disease deaths</li> <li>• Breast cancer deaths ★</li> <li>• Breast cancer incidence rate</li> <li>• All cancer deaths ★</li> <li>• All cancer incidence rate</li> <li>• Heart disease deaths ★</li> <li>• HIV incidence rate</li> <li>• Suicide ★</li> <li>• Unintentional injury deaths ★</li> <li>• Tobacco-linked deaths</li> </ul>	<ul style="list-style-type: none"> <li>• Suicide ★</li> <li>• Breast cancer incidence rate</li> <li>• Parkinson’s disease deaths</li> <li>• All cancer incidence rate</li> <li>• Heart disease deaths ★</li> <li>• Chlamydia incidence rate ★</li> <li>• Unintentional injury deaths ★</li> <li>• Non-transport accident deaths ★</li> <li>• Ovarian cancer deaths</li> <li>• Adults who are obese ★</li> <li>• Chronic liver disease deaths</li> </ul>

**Table 2. Top Ranked Health-Related Behaviors by County**

<b>Clackamas (OR)</b>	<b>Clark (WA)</b>	<b>Multnomah (OR)</b>	<b>Washington (OR)</b>
<ul style="list-style-type: none"> <li>• Adults doing regular physical activity ★</li> <li>• Adults who binge drink: males ★</li> <li>• Adult fruit &amp; vegetable consumption ★</li> <li>• Children with health insurance ★</li> </ul>	<ul style="list-style-type: none"> <li>• Adults with a usual source of health care ★</li> <li>• Adults with health insurance ★</li> <li>• Influenza vaccination rate</li> <li>• Adult fruit &amp; vegetable consumption ★</li> <li>• Teens who smoke</li> <li>• Pap test history</li> <li>• Influenza vaccination rate for adults aged 65+</li> <li>• Mothers receiving early prenatal care ★</li> <li>• Adults doing regular physical activity ★</li> <li>• Adults who smoke ★</li> </ul>	<ul style="list-style-type: none"> <li>• Adults with a usual source of health care ★</li> <li>• Adults with health insurance ★</li> <li>• Mothers receiving early prenatal care ★</li> <li>• Adults who binge drink: female</li> <li>• Adults who binge drink: males ★</li> <li>• Adult fruit &amp; vegetable consumption ★</li> <li>• Adults doing regular physical activity ★</li> <li>• Adults who smoke ★</li> </ul>	<ul style="list-style-type: none"> <li>• Adult fruit &amp; vegetable consumption ★</li> <li>• Adults doing regular physical activity ★</li> <li>• Adults with health insurance ★</li> <li>• Children with health insurance ★</li> </ul>

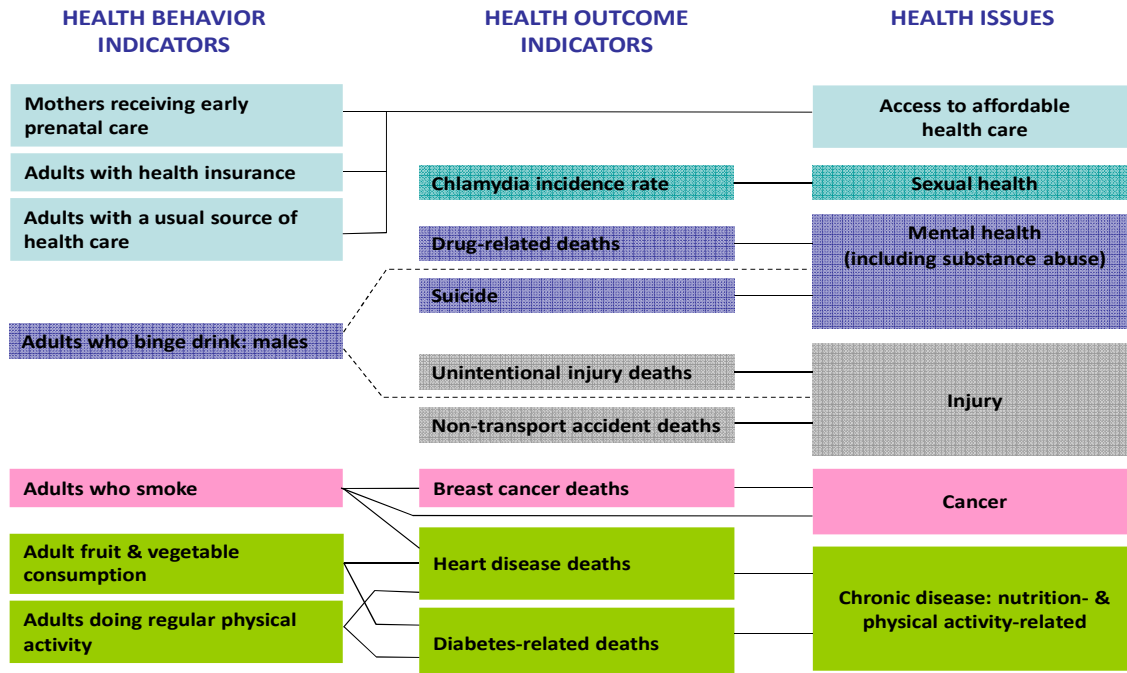
★ Health outcomes and health-related behavior indicators that were top-ranked for the region (see Table 3).

**Table 3. ★Top Ranked Health-Related Behavior and Health Outcome Indicators in the Region**

<p><b>Health Behaviors</b></p> <ul style="list-style-type: none"> <li>• Adult fruit &amp; vegetable consumption</li> <li>• Adults doing regular physical activity</li> <li>• Adults with health insurance</li> <li>• Adults with a usual source of health care</li> <li>• Adults who binge drink: males</li> <li>• Mothers receiving early prenatal care</li> <li>• Adults who smoke</li> </ul>	<p><b>Health Outcomes</b></p> <ul style="list-style-type: none"> <li>• Non-transport accident deaths</li> <li>• Suicide</li> <li>• Chlamydia incidence rate</li> <li>• Breast cancer deaths</li> <li>• Heart disease deaths</li> <li>• Unintentional injury deaths</li> <li>• Drug-related deaths</li> <li>• Diabetes-related deaths</li> </ul>
<p><b>The following indicators ranked lower and were not considered for regional action:</b></p> <ul style="list-style-type: none"> <li>• Children with health insurance</li> <li>• Prostate cancer deaths</li> <li>• Alzheimer’s disease deaths</li> <li>• Adults who are obese</li> <li>• All cancer deaths</li> </ul>	

The strongest consideration for regional action was given to the highest scoring health behavior and health outcome indicators listed in Table 3 (above the shaded section). These indicators showed significant disparities, a worsening trend, poor performance compared to state values, impact many people, and/or had severe consequences. These indicators were combined into six broader health issues for community discussion (Figure 3). Although other indicators were in the top scoring for the region, those with lower scores were not considered as strong for regional action. These indicators are listed in the shaded section of Table 3.

**Figure 3. Top Ranked Health Behaviors, Health Outcomes, and Health Issues in the Region**



Note: Solid lines represent a strong evidence base for the relationship and dotted lines represent a suggested relationship. The identified health issues were substantiated by a parallel assessment of community themes and strengths, a separate MAPP component that explored existing evidence of community input around health issues. (For more information, see *Community Themes and Strengths Assessment: Important Health Issues Identified by Community Members, March 2013.*)



## **Quantitative Data Limitations**

There are limitations to keep in mind when using quantitative data. The following lists describes limitations specific to this analysis.

### ***Data collection***

Each source of data—whether a national survey, vital records or any other source—has its own limitations. For example, health behavior data included in this assessment were based on answers from self-reported national surveys, and therefore may be affected by recall or response bias. There were over ten data sources from two states analyzed in this community health needs assessment. We strongly recommend reviewing known limitations from each data source (see Data Sources section) before interpreting the data for your county.

### ***Granularity***

The data available for this assessment were largely unavailable at the zip code level, and thus were analyzed at the county level. Analyzing indicators at the county level allowed application of the prioritization criteria in a consistent manner.

### ***Data availability***

The initial list of health outcome and behavior indicators reflected data that was available to each of the four counties. Consequently, it was evident that this selection was not able to assess certain important health areas. Thus, these areas with data gaps are not represented by the quantitative analysis findings. Health behavior data was limited because few counties had these data available. Youth, mental health and oral health data were very limited or not available at all.

### ***Statistical analysis***

Results based on certain criteria were suppressed when statistical analysis was unstable due to low counts. In order to ensure a reliable analysis, indicators were removed from consideration if fewer than four of the criteria were available. Health behavior indicators were only considered for regional analysis if they were evaluated by two or more counties.

### ***Rate Comparison***

For purposes of comparison across geographic areas in the Appendix tables, age-adjusted rates should be used. Age-adjusted rates were calculated using the US 2000 Standard Population. Although age-adjusted rates may not reflect the actual burden of disease or risk factor in a population, they are necessary for comparisons between rates. When age-adjusted rates are not available, crude rates (number of events/population) are available and describe the burden in the given area though do not account for demographic differences between the areas. Rates that are not age-adjusted (e.g., crude rates) should not be compared to age-adjusted rates.

## Data Sources

### Oregon

- American Community Survey, U.S. Census Bureau. Available from: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>
- Centers for Disease Control and Prevention. National Center for Health Statistics. Available from: <http://wonder.cdc.gov/>
- Oregon Health Authority, Public Health Division. Center for Health Statistics. Oregon Behavioral Risk Factor Surveillance System. Available from: <https://public.health.oregon.gov/BirthDeathCertificates/VitalStatistics/Pages/index.aspx>
- Oregon Health Authority, Public Health Division. Center for Health Statistics. Oregon Vital Statistics. Available from: <https://public.health.oregon.gov/BirthDeathCertificates/VitalStatistics/Pages/index.aspx>
- Oregon Health Authority, Public Health Division. Oregon State Cancer Registry (OSCaR). Available from: <http://public.health.oregon.gov/DiseasesConditions/ChronicDisease/Cancer/oscar/Pages/index.aspx>
- Oregon Health Authority, Public Health Division. HIV/STD/TB Program. Available from: <http://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/DiseaseSurveillanceData/Pages/index.aspx>
- Oregon Student Wellness Survey. Available from: <http://www.oregon.gov/oha/amh/pages/student-wellness/index.aspx>
- VistaPHw: Software for Public Health Assessment in Oregon.

### Washington

- American Community Survey, U.S. Census Bureau. Available from: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>
- Washington State Department of Health. Center for Health Statistics. Washington Behavioral Risk Factor Surveillance System. Available from: <http://www.doh.wa.gov/DataandStatisticalReports/HealthBehaviors/BehavioralRiskFactorSurveillanceSystemBRFSS.aspx>
- Washington State Department of Health. Center for Health Statistics. Washington State Vital Statistics. Available from: <http://www.doh.wa.gov/DataandStatisticalReports/VitalStatisticsData/Publications.aspx>
- Washington State Department of Health. Washington State Cancer Registry. Available from: <https://fortress.wa.gov/doh/wscr/WSCR/>
- Washington State Department of Health. Communicable Disease Epidemiology. Communicable Disease Surveillance Data. Available from: <http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/CommunicableDiseaseSurveillanceData.aspx>
- Washington State Healthy Youth Survey. Available from: <http://www.askhys.net/>
- Community Health Assessment Tool (CHAT) [Computer software for public health assessment], Washington State Department of Health.

## Resources

The following resources are referenced above and may be useful for background information:

- New Requirements for Charitable 501(c) (3) Hospitals under the Affordable Care. Internal Revenue Service. Available from: [http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/New-Requirements-for-501\(c\)\(3\)-Hospitals-Under-the-Affordable-Care-Act](http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/New-Requirements-for-501(c)(3)-Hospitals-Under-the-Affordable-Care-Act)
- Public Health Accreditation. Public Health Accreditation Board. Available from: <http://www.phaboard.org/>
- Mobilizing for Action through Planning and Partnerships (MAPP). National Association of County and City Health Officials. Available from: <http://www.naccho.org/topics/infrastructure/mapp/>
- Healthy Columbia Willamette regional website. Healthy Columbia Willamette Collaborative. Available from: [www.healthycolumbiawillamette.org](http://www.healthycolumbiawillamette.org).
- Pickett Hanlon method of prioritizing public health issues. University of Chicago School of Public Health. Available from: <http://www.uic.edu/sph/prepare/courses/ph440/mods/bpr.htm>.

## APPENDIX I: General Demographics by County and State

	Year	Washington State	Clark County	Oregon	Clackamas County	Multnomah County	Washington County
<b>Total population<sup>1</sup></b>	2010	6,652,845	421,154	3801991	375,992	735,334	529,710
<b>Gender<sup>2</sup></b>	2011						
% Female		50.1%	50.6%	50.5%	50.8%	50.5%	50.8%
% Male		49.9%	49.4%	49.4%	49.2%	49.5%	49.2%
<b>Age<sup>2</sup></b>	2007-11						
Median (years)		37.1	36.5	38.2	40.3	35.8	35.1
Under 5 years		6.5%	7.0%	6.2%	5.7%	6.3%	7.3%
5 to 19 years		19.9%	22.3%	19.3%	20.7%	16.7%	20.7%
20 to 44 years		34.6%	26.0%	33.5%	30.2%	41.0%	37.3%
45 to 64 years		26.9%	26.7%	27.3%	30.2%	25.6%	24.9%
65 years & older		12.1%	11.1%	11.8%	13.2%	24.9%	9.7%
<b>Race/Ethnicity<sup>2</sup></b>	2007-11						
White, non-Hispanic		73.1%	82.2%	78.8%	84.8%	72.5%	70.4%
African American		3.4%	1.9%	1.7%	0.8%	5.5%	1.6%
Native American		1.2%	0.5%	1.0%	0.3%	0.7%	0.5%
Asian/Pacific Islander		7.6%	4.5%	4.0%	3.6%	7.1%	9.1%
Hispanic		10.9%	7.4%	11.5%	7.5%	10.7%	15.4%
<b>Education<sup>3</sup></b>	2010-11						
High school graduation		77%	80%	68%	72%	63%	78%
Some college		67%	65%	65%	69%	72%	73%
<b>Employment<sup>4</sup></b>	2011						
Unemployment rate		9.2%	12.4%	9.5%	8.7%	8.5%	7.7%
<b>Income<sup>2</sup></b>	2007-11						
Median household income		\$ 58,890	\$ 59,051	\$ 49,850	\$ 63,790	\$ 50,726	\$ 63,814
% living in poverty		12.50%	11.7%	14.8%	9.5%	16.5%	10.4%
% of children in poverty (<18)		16.5%	15.9%	23.0%	12.9%	22.4%	13.6%

<sup>1</sup>American Community Survey, 2010.

<sup>2</sup>American Community Survey, 2007-2011.

<sup>3</sup>County Health Rankings (Oregon Department of Education, WA Office of Superintendent of Public Instruction), 2010-2011.

<sup>4</sup>County Health Rankings (Bureau of Labor Statistics), 2011.

## APPENDIX II:

**Table 1. Overall Population Rates for Top Ranked Health-Related Behavior and Health Outcome Indicators, Clark County and Washington State**

	Washington State	Clark County	Year
<b>ACCESS TO HEALTH SERVICES</b>			
★ Adults with a usual source of health care (%)	78.5%	77.3%	2010
★ Adults with health insurance (%)	85.0%	85.2%	2010
Children with health insurance (%)	93.6%	93.5%	2010
<b>CANCER</b>			
All cancer incidence (per 100,000)	534.3	451.8	2009
★ All cancer deaths (per 100,000)	170.0	181.4	2010
★ Breast cancer incidence (per 100,000 females)	179.9	164.8	2009
★ Breast cancer deaths (per 100,000 females)	21.2	24.1	2010
Colorectal cancer deaths (per 100,000)	14.1	13.3	2010
Lung cancer deaths (per 100,000)	46.8	50.4	2010
★ Prostate cancer deaths (per 100,000)	23.2	29.3	2010
Ovarian cancer deaths (per 100,000)	8.4	5.2	2010
Lymphoid hematopoietic cancer deaths (per 100,000)	17.0	18.3	2010
Pap test history (%)	80.7%	80.9%	2010
<b>DIABETES</b>			
★ Diabetes-related deaths (per 100,000)	75.2	83.0	2010
<b>EXERCISE, NUTRITION &amp; WEIGHT</b>			
★ Adult fruit and vegetable consumption (%)	26.0%	21.7%	2009
★ Adults engaging in regular physical activity (%)	53.6%	55.2%	2009
★ Adults who are obese (%)	25.8%	27.7%	2010
Adults who are overweight (%)	35.5%	34.1%	2010
<b>HEART DISEASE &amp; STROKE</b>			
★ Heart disease deaths (per 100,000)	150.5	144.9	2010
<b>IMMUNIZATIONS &amp; INFECTIOUS DISEASES</b>			
Adults aged 65+ years with influenza vaccination (%)	69.8%	69.1%	2010
Influenza and pneumonia deaths (per 100,000)	8.3	10.2	2010

	Washington State	Clark County	Year
★ Chlamydia incidence (per 100,000)	318.3	316.7	2010
Early syphilis incidence (per 100,000)	3.9	1.4	2010
HIV/AIDS incidence <sup>†</sup> (per 100,000)	8.3	7.5	2010
<b>MATERNAL, FETAL &amp; INFANT HEALTH</b>			
★ Mothers who received early prenatal care (%)	80.1%	76.2%	2010
<b>MENTAL HEALTH &amp; MENTAL DISORDERS</b>			
★ Suicide deaths (per 100,000)	13.8	17.7	2010
Teen self-reported emotional and mental health (%)	29.8%	29.2%	2010
<b>OTHER ADULTS &amp; AGING</b>			
★ Alzheimer's disease deaths (per 100,000)	43.6	42.7	2010
Parkinson's disease deaths (per 100,000)	7.8	9.3	2010
<b>PREVENTION &amp; SAFETY</b>			
★ Unintentional injury deaths (per 100,000)	37.3	41.5	2010
★ Nontransport accidents deaths (per 100,000)	28.4	32.7	2010
<b>SUBSTANCE ABUSE</b>			
Adults who binge drink: females (%)	11.7%	7.6%	2010
★ Adults who binge drink: males (%)	19.7%	20.1%	2010
Alcohol-related deaths <sup>‡</sup> (per 100,000)	11.2	8.1	2010
Chronic liver disease and cirrhosis deaths (per 100,000)	10.4	5.9	2010
★ Adults who smoke (%)	14.9%	17.1%	2010
Teens who smoke (%)	12.7%	13.7%	2010
Tobacco-related deaths (per 100,000)	not avail	not avail	--
★ Drug-related deaths <sup>‡</sup> (per 100,000)	13.7	12.6	2010
<b>TRANSPORTATION SAFETY</b>			
Motor vehicle collision deaths (per 100,000)	7.8	8.2	2010
Transport accident deaths (per 100,000)	8.9	8.8	2010

Notes: ★ indicates top ranking regional indicators. Death rates and cancer incidence rates are per 100,000 age-adjusted to US 2000 Standard Population. Other incidence rates are per 100,000 of the population at risk. Adult behavior data are a percent of the population at risk (and are not age-adjusted). Youth behavior data are a percent of student enrollment per grade (note Washington State uses 10<sup>th</sup> grade data). For comparisons, age-adjusted rates should be used.

<sup>†</sup>HIV incidence rate includes unduplicated counts of newly diagnosed cases regardless of diagnostic status (HIV or AIDS). <sup>‡</sup>Alcohol-related deaths and Drug-related deaths in Oregon include additional death categories that are not included in the Washington State indicators.

**Table 2. Overall Population Rates for Top Ranked Health-Related Behavior and Health Outcome Indicators, Clackamas, Multnomah, and Washington Counties, and Oregon**

	Oregon	Clackamas County	Multnomah County	Washington County	Year
<b>ACCESS TO HEALTH SERVICES</b>					
★ Adults with a usual source of health care (%)	79.1%	81.5%	77.1%	80.6%	2006-09
★ Adults with health insurance (%)	83.6%	86.8%	85.0%	87.2%	2006-09
Children with health insurance (%)	91.2%	92.0%	92.5%	94.3%	2010
<b>CANCER</b>					
All cancer incidence (per 100,000)	464.6	457.1	477.3	435.1	2005-09
★ All cancer deaths (per 100,000)	172.8	163.3	182.4	149.6	2010
★ Breast cancer incidence (per 100,000 females)	130.7	134.8	140.5	138.1	2005-09
★ Breast cancer deaths (per 100,000 females)	23.0	24.9	23.7	25.9	2010
Colorectal cancer deaths (per 100,000)	14.8	14.7	16.9	15.5	2010
Lung cancer deaths (per 100,000)	46.9	46.0	51.9	35.2	2010
★ Prostate cancer deaths (per 100,000)	21.8	21.7	24.3	18.1	2010
Ovarian cancer deaths (per 100,000)	9.2	9.3	9.3	7.5	2010
Lymphoid hematopoietic cancer deaths (per 100,000)	17.3	16.2	17.0	16.9	2010
Pap test history (%)	85.8%	88.3%	86.6%	91.5%	2006-09
<b>DIABETES</b>					
★ Diabetes-related deaths (per 100,000)	82.3	75.6	79.5	62.1	2010
<b>EXERCISE, NUTRITION &amp; WEIGHT</b>					
★ Adult fruit and vegetable consumption (%)	27.0%	24.7%	30.0%	24.9%	2006-09
★ Adults engaging in regular physical activity (%)	55.8%	55.6%	55.1%	53.8%	2006-09
★ Adults who are obese (%)	24.5%	23.6%	21.8%	23.2%	2006-09
Adults who are overweight (%)	36.1%	35.7%	33.8%	36.9%	2006-09
<b>HEART DISEASE &amp; STROKE</b>					
★ Heart disease deaths (per 100,000)	134.2	126.8	135.0	124.4	2010
<b>IMMUNIZATIONS &amp; INFECTIOUS DISEASES</b>					
Adults aged 65+ years with influenza vaccination* (%)	69.2%	70.0%	72.0%	70.9%	2006-09
Influenza and pneumonia deaths (per 100,000)	9.2	6.7	9.4	7.6	2010

	Oregon	Clackamas County	Multnomah County	Washington County	Year
★ Chlamydia incidence (per 100,000)	334.6	287.4	438.3	320.2	2010
Early syphilis incidence (per 100,000)	2.9	3.7	8.1	4.4	2010
HIV/AIDS incidence <sup>†</sup> (per 100,000)	6.4	7.6	14.1	6.1	2010
<b>MATERNAL, FETAL &amp; INFANT HEALTH</b>					
★ Mothers who received early prenatal care (%)	73.1%	73.2%	70.1%	79.1%	2010
<b>MENTAL HEALTH &amp; MENTAL DISORDERS</b>					
★ Suicide deaths (per 100,000)	17.1	15.8	14.1	13.8	2010
Teen self-reported emotional and mental health (%)	14.4%	17.5%	13.8%	13.8%	2010
<b>OTHER ADULTS &amp; AGING</b>					
★ Alzheimer's disease deaths (per 100,000)	28.2	31.9	29.1	23.7	2010
Parkinson's disease deaths (per 100,000)	8.3	9.2	10.4	9.0	2010
<b>PREVENTION &amp; SAFETY</b>					
★ Unintentional injury deaths (per 100,000)	37.5	35.4	38.0	27.2	2010
★ Nontransport accidents deaths (per 100,000)	28.5	27.1	36.9	21.5	2010
<b>SUBSTANCE ABUSE</b>					
Adults who binge drink: females (%)	10.8%	9.3%	14.0%	9.0%	2006-09
★ Adults who binge drink: males (%)	18.7%	18.9%	21.8%	15.3%	2006-09
Alcohol-related deaths <sup>‡</sup> (per 100,000)	12.9	8.7	13.7	6.7	2010
Chronic liver disease and cirrhosis deaths (per 100,000)	11.2	7.1	11.3	6.4	2010
★ Adults who smoke (%)	17.1%	15.4%	15.3%	12.9%	2006-09
Teens who smoke (%)	14.3%	15.6%	8.2%	11.4%	2010
Tobacco-related deaths (per 100,000)	160.1	143.8	165.3	113.3	2010
★ Drug-related deaths <sup>‡</sup> (per 100,000)	14.5	13.3	18.1	8.0	2010
<b>TRANSPORTATION SAFETY</b>					
Motor vehicle collision deaths (per 100,000)	8.1	7.6	6.3	4.9	2010
Transport accident deaths (per 100,000)	8.9	8.4	6.9	5.7	2010

Notes: ★ indicates top ranking regional indicators. Death rates, sexually transmitted disease, and cancer incidence rates are per 100,000 age-adjusted to US 2000 Standard Population. Adult behavior data are a percent of the population at risk and are age-adjusted to the US 2000 Standard Population unless otherwise noted. Youth behavior data are a percent of student enrollment per grade (note Oregon uses 11<sup>th</sup> grade data). For comparisons, age-adjusted rates should be used.

\* Not age-adjusted. <sup>†</sup>HIV incidence rate includes unduplicated counts of newly diagnosed cases regardless of diagnostic status (HIV or AIDS). <sup>‡</sup>Alcohol-related deaths and Drug-related deaths in Oregon include additional death categories that are not included in the Washington State indicator.

