

Next Steps and Conclusion

Next Steps

To develop the 2018 SHA, OHA-PHD used the Mobilizing Action through Planning and Partnership (MAPP) framework, as noted in the Introduction. The SHA was completed over the first three phases of this MAPP framework.

Next, the SHA will be used to develop the 2020 – 2024 State Health Improvement Plan (SHIP) (healthoregon.org/2020ship). The SHIP, in turn, will be developed and implemented over the second three phases of the MAPP framework. Using the data-driven portrait of health in Oregon that is captured in the SHA, a steering committee will work with communities to identify which strategic priorities the SHIP should address. As the advisory body for Oregon's governmental public health system, the Public Health Advisory Board (PHAB) (https://bit.ly/2J8q46R) will contribute to and oversee the SHIP.

Conclusion

When it comes to population health, Oregon has many strengths but also faces significant challenges to achieving lifelong health for everyone. The 2018 SHA represents an important step in developing a comprehensive understanding of the health of our state. While many reports on specific diseases and risk behaviors exist, the SHA is unique as a compilation of the most important indicators of health in a single report. The SHA lays the groundwork for prioritizing efforts to improve the health of people in Oregon in the next SHIP.

Improving the overall health of Oregon is not a task for the public health or health care systems alone; rather, it will require state and local public health authorities to work with social service, transportation, planning, education, and economic development agencies; private business leaders, not-for-profit organizations, academic institutions, policymakers, tribal officials, and the public to address Oregon's health challenges.

The Oregon Health Policy Board's Action Plan for Health (https://bit.ly/2zovVVU), which reflects the SHIP goals for population health in Oregon, calls for a public-health approach that uses evidence-based approaches to work across these sectors to address the social determinants of health and health equity. Health, after all, is everybody's business.

With this 2018 SHA, and the Oregon Legislature's support for public health modernization, the stage is now set for the 2020 – 2024 SHIP to effectively address the health needs of people in Oregon. Through collective effort and sustained engagement with communities across the state, Oregon can become a place where everyone achieves optimal health across the lifespan, regardless of race, ethnicity, ability, gender, sexual orientation, socioeconomic status, nationality, or geography.

Primary Data Sources

Abortion Records (https://bit.ly/2KZnipa): The Center for Health Statistics collects data on all induced abortions performed in Oregon. These data are used primarily to calculate teen pregnancy rates as the sum of births and abortions.

Limitations: The data constitute events associated with the place of occurrence rather than the "residence data" used in estimating births because many abortions obtained out of state by Oregon residents are not reported to Oregon's Center for Health Statistics.

Air Quality System (AQS) Monitoring Data (https://www.epa.gov/aqs): contains ambient air pollution data collected by the Environmental Protection Agency (EPA) and state, local, and tribal air-pollution-control agencies from thousands of monitors. AQS also contains meteorological data, descriptive information about each monitoring station (including its geographic location and its operator), and data quality assurance/quality control information.

Limitations: There are gaps in Oregon's monitoring network, particularly in large populated areas where there are not enough fine particulate (PM2.5) monitors.

ALERT Immunization Registry (https://bit.ly/2J7h7KW): ALERT is a statewide immunization information system, developed to achieve complete and timely immunization of all children ages 0 to 18 years. ALERT collects data from public and private health care providers who administer the immunizations.

Limitations: ALERT is based on mandatory reporting from pharmacists and for state-supplied vaccines; otherwise, reporting is voluntary. Data completeness is high but may vary by subpopulation, age, or region. High data capture for 0-18 and increasing capture among adult population. SES, race, and ethnicity are not commonly reported by immunization providers.

American Community Survey (ACS) (https://www.census.gov/programs-surveys/ acs/): The ACS is an ongoing survey of the Census Bureau that provides data every year from a percentage of the population.

Limitations: People without legal immigration status are likely under-represented.

Behavioral Risk Factor Surveillance System (BRFSS) (https://bit.ly/2m2354a): The BRFSS is a random digit-dialed telephone survey that has been conducted continuously among non-institutionalized Oregon adults since 1988. The objective of the BRFSS is to collect uniform, state-specific data on preventive health practices and risk

behaviors that are linked to chronic diseases, injuries, and preventable infectious diseases in the adult population. Factors assessed by the BRFSS include tobacco use, physical activity, dietary practices, safety-belt use, and use of cancer screening services, among others.

In order to increase the sample size of adults from American Indian and Alaska Native, African American, Asian and Pacific Islander subpopulations in Oregon, periodic oversample surveys have been conducted in the BRFSS survey administration. The oversample data are combined with annual data and weighted to better reflect these populations. The most recent oversample was conducted between 2015 and 2017. Preliminary estimates 2015 – 2016 from that project are included in the SHA, but those estimates may change when 2017 data are included. When age-adjusted rates are calculated, the 2000 U.S. population is used as the standard.

Limitations: BRFSS is limited to non-institutionalized adult Oregon residents with a land line and/or cell phone service. Declining response rates for both landline and cell phones are an ongoing concern. BRFSS is not as representative of adults who are homeless, who do not speak English or Spanish, who are institutionalized or incarcerated, or who have limited access to phone service.

Bureau of Labor Statistics (https://www.bls.gov/home.htm): Federal source for employment and labor statistics.

Cardiac Arrest Registry to Enhance Survival (CARES) (https://mycares.net/sitepages/aboutcares.jsp): CARES was developed to help communities determine standard outcome measures for out-of-hospital cardiac arrest that occurs locally, allowing for quality improvement efforts to improve care and increase survival. CARES is a secure, Web-based data management system into which participating communities enter local data and generate their own reports. Communities can compare their EMS system performance to de-identified aggregate statistics at the local, state, or national level and discover promising practices that could improve emergency cardiac care.

CDC Wonder (https://wonder.cdc.gov/): A database that provides data collected by the National Center for Health Statistics (NCHS) for statistical reporting and analysis of deaths from specific diseases.

Department of Corrections (https://bit.ly/2N2xhYq): Data on the incarcerated population in Oregon are available from the Oregon Department of Corrections, Research and Evaluation Unit. The Research and Evaluation Unit provides information about offender populations, program performance, and policy impact.

Drinking Water Data Online (https://yourwater.oregon.gov/): Drinking Water Data Online provides information about public water systems in Oregon, including coliform testing, chemical testing, contacts, violations, enforcements, public notices, and basic system information.

Limitations: Approximately 23% of Oregonians rely on domestic wells, or private wells, as their primary source of potable water. Private well owners are not obligated to

report results.

Environmental Public Health Tracking (EPHT) (https://epht.oregon.gov/Index.aspx): EPHT maintains a public data portal where users can query health outcomes, environmental quality, and environmental justice indicators by geography.

Limitations: EPHT depends on other programs or agencies making data available to publish on its data portal. A major limitation of keeping this surveillance system up to date is the availability of OIS resources. The current system uses out-of-date technology, and the platform is unstable and prone to bugs. OIS resources are costly and time-consuming.

Health Care Workforce Reporting Program (https://bit.ly/2NDhi3T): The Health Care Workforce Reporting Program was created to collaborate with health-profession licensing boards to collect health care workforce data via the boards' licensing renewal process.

Map the Meal Gap, Feeding America (http://map.feedingamerica.org/): Map the Meal Gap generates two types of community-level data: 1) county-level food insecurity and estimates of food insecurity among children, by income categories and 2) an estimate of the food-budget shortfalls that food-insecure people experience.

Lead-poisoning database (https://bit.ly/2J7niyu): The lead-poisoning database provides a listing of blood-lead test results.

Limitations: Reporting of all blood-lead test results is mandatory. However, labs and providers may lack of awareness of reporting requirements. Non-compliance with reporting rules also occurs. Race and ethnicity are frequently missed; blood-lead test results are required but not always shared.

National Healthcare Safety Network (NHSN) (https://www.cdc.gov/nhsn/index.html): The CDC's National Healthcare Safety Network is the nation's most widely-used system for tracking health care-associated infections. NHSN provides facilities, states, regions, and the nation with data needed to identify problem areas, measure the progress of prevention efforts, and ultimately eliminate health-care-associated infections.

National Survey of Children's Health (NSCH) (http://www.childhealthdata.org/learn/NSCH): The National Survey of Children's Health provides rich data on multiple, intersecting aspects of children's lives — including physical and mental health, access to quality health care, and the child's family, neighborhood, school, and social context.

Oregon Violent Death Reporting System (ORVDRS) (https://bit.ly/2zo95O7): The Oregon Violent Death Reporting System (ORVDRS) is a statewide, active public-health-surveillance system that collects detailed information on all homicides, suicides, deaths of undetermined intent, deaths resulting from legal intervention, and deaths related to unintentional firearm injuries. The goals of this system are to generate public health information on violent deaths and to work with partners to develop prevention strategies.

Limitations: It is a challenge to capture all of the details and circumstances surrounding a violent death because of the lack of standardized questionnaires and investigation protocols, limited witnesses, and witnesses who might not recognize some mental-health problems among people who died by suicide. Data are collected and abstracted from multiple agencies, making it difficult to collect all data and requiring a lot of time to abstract data.

Oregon Department of Education (ODE) (https://bit.ly/2KLCtTO): The Oregon Department of Education provides data on a variety of topics including assessments, career and technical education, annual performance progress reports, and report cards by school and district.

Oregon Emerging Infections Program (https://bit.ly/2ueafWs): The Oregon Emerging Infections Program provides population-based surveillance for infections important to public health. These surveillance data are used to generate reliable estimates of the incidence of these infections and provide the starting point for further exploration of risk factors, spectrum of disease, and better strategies for prevention and control.

Oregon Health Insurance Survey (OHIS) (https://bit.ly/2NDqLbK): The Oregon Health Insurance Survey is an important source of information about health care coverage in the state. The survey provides detailed information about the effects of health-system reform on health care coverage, access to care, and use of coverage.

Limitations: Survey data provides contextual information around health care in the state. It is not as reliable for program enrollment counts as administrative data. It is not an annual source of data, but it is conducted every two years. Another limitation is bias in the survey from the look-back period and response bias due to respondents answering for other members of their household.

Oregon Healthy Teens Survey (OHT) (https://bit.ly/2KX0R3V): OHT is Oregon's key source for monitoring the health and well-being of adolescents. An anonymous and voluntary research-based survey, OHT is conducted among 8th and 11th graders statewide. The OHT survey incorporates two youth surveys that preceded it, the YRBS and the Student Drug Use Survey. The survey assessed behavioral risk factors among Oregon high school students (grades 9 through 12) and includes questions about safe driving and bicycling, weapon carrying and violence, tobacco and alcohol use, other drug use, sexual activity and pregnancy, eating behaviors, nutrition, physical activity, and access to health care, including use of school-based health centers.

Limitations: The survey samples 8th and 11th graders in public schools. Sampling frame excludes virtual/online schools, charter schools outside of a public school district, those without a brick-and-mortar presence, alternative/non-traditional schools with non-standard hours (evenings, weekends), rehabilitation services, etc. Some districts (Beaverton, Salem-Keizer, and those in Josephine County) historically do not participate in the OHT Survey. Responses are missing from adolescents who are not in school.

Hospital Discharge Index (http://www.oregon.gov/oha/hpa/analytics/pages/index.aspx): The hospital inpatient-discharge dataset, available from OHA's Office of Health Analytics, includes patient demographics, admission and discharge information, characteristics of the treatment provided, and the nature of each discharge from Oregon hospitals.

Oregon Reportable Disease Database (ORPHEUS) (https://bit.ly/2mlsoTQ): Orpheus is an integrated electronic disease-surveillance system intended for local and state public health epidemiologists and disease investigators to efficiently manage communicable disease reports.

Limitations: The Oregon Reportable Disease database includes cases of diagnosed disease. This requires that the patient develop symptoms, seek medical care, acquire a laboratory test, which then gets electronically reported. The various reportable diseases may be under-counted if the patient doesn't seek care, or no laboratory test was obtained.

Oregon SMILE Survey (https://bit.ly/2m33ByE): This survey is an assessment that presents the findings of oral screenings of students in first, second and third grades attending Oregon public schools. The survey is conducted every five years; the first survey was conducted in 2002. Using national Basic Screening Survey (BSS) criteria recommended by the CDC and Prevention and the Association of State and Territorial Dental Directors, specially-trained dental hygienists performed a brief and simple visual screening of each child's mouth. In addition, parents were invited to complete a questionnaire that included questions about the child's age, race and ethnicity, participation in the federal Free or Reduced Price Lunch (FRPL) Program, language spoken at home, gender, medical insurance, dental insurance, and time since last dental visit.

Limitations: Lowest level of analysis is regional. Frequency is limited by budget constraints to every five years. Age ranges are limited to six- to nine-year-olds. Grade, age, sex, and language spoken at home largely obtained by children directly. Race and ethnicity are identified by screeners.

Oregon State Cancer Registry (OSCaR) (https://bit.ly/2KTjXIf): The Oregon State Cancer Registry (OSCaR) is a population-based reporting system that collects and analyzes information about cancer cases occurring in Oregon. Reportable cases include all cancers except specific forms of common, curable skin cancer and in situ cervical cancers.

Limitations: It requires approximately two years to compile cancer data for a given year of diagnosis, which results in a two-year delay in data reporting. OSCaR does not conduct follow-up of reported patients, which results in incomplete information for some cases. Only includes data on those seeking care; lacks data on cancer prevalence.

Oregon Youth Authority (https://bit.ly/2NBVFRC): The Oregon Youth Authority provides statewide and county-specific data describing admissions to and releases from juvenile detention facilities.

Point-in-Time Count (https://bit.ly/2NDhSi5): The Point-in-Time Count attempts to count sheltered and unsheltered homeless people to provide a snapshot of homelessness. The count occurs every two years during the last ten days of January. Along with the total number of sheltered and unsheltered homeless people, information is gathered on a wide range of characteristics of the homeless population such as age, gender, race, ethnicity, veteran status, and disability status. Estimates are available at the county and state level.

Safe Drinking Water Information System (SDWIS) (https://bit.ly/2txhFpA): SDWIS is an EPA-provided database for managing public drinking-water-quality data.

Limitations: Concentration data is available for 91 currently regulated drinking water contaminants, reported by about 3,400 public water suppliers.

Approximately 23% of Oregonians rely on domestic wells, or private wells, as their primary source of potable water. Private well owners are not obligated to report results.

Vital Statistics (https://bit.ly/2KZnipa): Oregon law requires birth certificates for all live births. The Center for Health Statistics registers only those vital events occurring in Oregon. However, information on births that occur out of state to Oregon residents is also reported through an interstate exchange agreement. Data may be tabulated by residence (where the person lived) or by occurrence (where the event occurred). When age-adjusted rates are calculated, the 2000 U.S. population is used as the standard.

The SHA also uses information collected from death certificates. These data are used to examine trends in mortality and causes of death. Variables in the death certificate database include cause of death; decedent's identifying information; date and place of death; occupation of the decedent; whether the death was related to tobacco use; education of decedent; marital status of decedent; and county, place, and date of injury (if applicable).

Limitations: Limited to information on U.S. standard Certificate of Birth and that is Oregon-specific required by law.

Pregnancy Risk Assessment Monitoring System (PRAMS)

(https://bit.ly/2KMss93): PRAMS is a population-based surveillance system that collects data on maternal attitudes and experiences prior to, during, and immediately after pregnancy for a sample of Oregon women. The sample data are analyzed in a way that allows findings to be applied to all Oregon women who have recently had a baby. PRAMS-2 is conducted when the child reaches two years old.

Limitations: To be PRAMS-eligible, the mother has to be Oregon resident who gave birth in Oregon. In cases of multiple births, the mother is only included in the sampling frame once. Mothers who have multiple births more than triplets are not included. If a baby will be adopted, then the mother is excluded from the sampling frame. Over sample by race and ethnicity; response rates 45% to 70%.

Uniform Crime Reporting Statistics (UCR) (https://www.ucrdatatool.gov/): The UCR Program collects statistics on violent crime (murder and manslaughter, rape, robbery, and aggravated assault) and property crime (burglary, larceny-theft, and motor vehicle theft).

Water Fluoridation Reporting System (WFRS) (https://www.cdc.gov/fluoridation/data-tools/reporting-system.html): Online tool that helps states manage the quality of their water fluoridation programs. WFRS information is also the basis for national surveillance reports that describe the percentage of the U.S. population on community water systems who receive optimally-fluoridated drinking water. The system was developed by CDC in partnership with the Association of State and Territorial Dental Directors (ASTDD).

Appendix A: Community Health Assessment Themes

Community health assessments conducted by CCOs, local public health authorities, and hospitals were also reviewed. By and large, themes identified in community assessments were also identified within statewide assessment efforts. Links to local assessments and health improvement plans are available at https://bit.ly/2u7yWVp and may be useful for other agencies working to address key health issues in Oregon.

Region	Date and Source	Themes
Eastern Oregon (Baker, Gilliam, Grant, Harney, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wheeler)	2015 (Healthy Klamath) 2016 (Eastern Oregon CCO)	 Maternal and child health Social determinants of health Built environment Mental health Oral health Social determinants of health Access to services Obesity Tobacco use Alcohol and drug use
NW Coastal (Clatsop, Columbia, Tillamook)	2014 (Columbia Pacific CCO)	 Alcohol and drug addiction Obesity High cost of care/lack of insurance
Portland Metro (Washington, Multnomah, Clackamas)	2016 (Health Share CCO) 2016 (FamilyCare CCO) 2016 (Health Share/ FamilyCare CCO)	 Social determinants of health (housing, unemployment, etc.) Alcohol and drug use Healthy eating Access to care Health equity
Central Willamette (Linn, Benton, Lincoln)	2015 (Intercommunity Health Network CCO)	 Access to health care (includes housing and culturally-appropriate services) Behavioral health Child health (includes injuries, breastfeeding) Chronic disease (includes asthma, physical activity/healthy eating, and tobacco use and exposure) Maternal health (includes unplanned pregnancies, pre-conception/pre-natal care, postpartum care/support)

Region	Date and Source	Themes
Southern Oregon (Curry, Josephine, Jackson, Coos, Douglas)	2013 (Western Oregon Advanced Health/All Care CCOs) 2013 (PrimaryHealth/AllCare CCO) 2013 (Jackson Care CCO/ AllCare CCO/PrimaryHealth 2013 (Umpqua Health Alliance) 2013 (Western Oregon Advanced Health)	 Access to quality health services Mental health and addictions Obesity, healthy eating, active living Aging issues Oral health Vision health Management of chronic illnesses Falls prevention Maternal and child health Tobacco use Social determinants of health (housing, education, transportation, poverty) Health literacy
Lane	2015 (Trillium CCO)	 Alcohol and drug abuse Housing Access to health care Vulnerable populations Access to healthy food Mental health Poverty and homelessness
Polk, Marion	2013 (Willamette Valley Community Health CCO)	 Access to care Prevention/screening/treatment for people with history of trauma Children with special needs Homelessness Transportation
Yamhill	2014 (Yamhill CCO)	 Chronic conditions Oral health Increasing capacity and innovation Behavioral health
Central Oregon (Crook, Deschutes, Jefferson)	2016 (Central Oregon Health Council)	 Behavioral health (identification and awareness, substance use, and chronic pain) Cardiovascular disease Diabetes Oral health Reproductive and maternal child health Social determinants of health (education and health, housing)

Region	Date and Source	Themes
Columbia River Gorge (Hood River, Wasco)	2016 (Pacific Source Columbia Gorge CCO)	 Food and housing security Lack of insurance Oral health Transportation Poverty Impact of trauma Child health needs

Appendix B: State Population Health Indicators

Social Determinants of Health

Topic	Indicator	Data Source
Economics	Income inequality	American Community Survey
	Unemployment rates	Bureau of Labor Statistics
	Poverty	American Community Survey
Education	Chronic school absenteeism	Oregon Department of Education, Oregon Healthy Teens Survey
	Educational attainment	Oregon Department of Education, American Community Survey
Food Insecurity	Food insecurity	Map the Meal Gap
Housing	Rent burden	American Community Survey
	Homelessness	Oregon Housing and Community Services Point-in-Time Count and Oregon Department of Education
Safety/Crime	Violent crime	Uniform Crime Reporting Statistics
	Intimate partner violence	Oregon Violent Death Reporting System
Trauma and resiliency	ACEs among children and adults	Behavioral Risk Factor Surveillance System and National Survey of Children's Health
Incarceration	Incarceration	Oregon Department of Corrections and Oregon Youth Authority
Language	Linguistic isolation	American Community Survey
Social cohesion	Residential segregation	American Community Survey
Caregivers	Caregiver health	Behavioral Risk Factor Surveillance System

Environmental Health

Topic	Indicator	Data Source
Natural Environment	Air quality	Air Quality System Monitoring Data
Built Environment	Drinking water	Safe Drinking Water Information System
	Childhood lead exposure	Oregon Lead Poisoning Prevention Program
	Water fluoridation	CDC Water Fluoridation Reporting System
	Active transportation	American Community Survey
	Secondhand smoke	Behavioral Risk Factor Surveillance System and Oregon Healthy Teens Survey
Occupational Health	Work-related injury and illness	Bureau of Labor Statistics
	Work-related deaths	Bureau of Labor Statistics
	Adult lead exposure	Oregon Lead Poisoning Prevention Program

Prevention and Health Promotion

Topic	Indicator	Data Source
Overall Health	Overall health	Behavioral Risk Factor Surveillance System
Maternal and Child health	Infant breastfeeding	Pregnancy Risk Assessment Monitoring System
	Infant mortality	Linked Birth and Death Certificates
	Flourishing	National Survey of Children's Health
	Teen pregnancy and birth	Birth Certificates and Abortion Records
Diet and Physical Activity	Physical inactivity	Behavioral Risk Factor Surveillance System and Oregon Healthy Teens Survey
	Soda consumption	Behavioral Risk Factor Surveillance System and Oregon Healthy Teens Survey
	Obesity prevalence	Behavioral Risk Factor Surveillance System, Oregon Healthy Teens Survey, and National Survey of Children's Health
Tobacco, Alcohol and Drugs	Binge drinking	Behavioral Risk Factor Surveillance System and Oregon Healthy Teen Survey
	Marijuana use	Behavioral Risk Factor Surveillance System and Oregon Healthy Teens Survey
	Tobacco use	Behavioral Risk Factor Surveillance System and Oregon Healthy Teens Survey
	Alcohol-related deaths	Death Certificates
	All drug-related overdose deaths	Death Certificates
	Opioid overdose deaths	Death Certificates

Topic	Indicator	Data Source
Mental Health	Suicide	Death Certificates
	Mental health	Behavioral Risk Factor Surveillance System and Oregon Healthy Teens Survey
Chronic Disease	Lung cancer	Oregon State Cancer Registry
	Heart disease	Hospital Discharge Data
	Asthma	Hospital Discharge Data
	Diabetes	Behavioral Risk Factor Surveillance System
Older adults	Falls among adults	Death Certificates and Hospital Discharge Data
Other causes of death	Firearm-related death	Death Certificates
	Motor vehicle occupant death	Death Certificates
	Premature death	Death Certificates
	Leading causes of death	Death Certificates

Access to Clinical Preventive Services

Topic	Indicator	Data Source
Health care providers per capita	Health care providers per capita	Office of Health Analytics Health Care Workforce Reporting Program
Health Insurance	Insurance status	Oregon Health Insurance Survey
Preventive Services	Colorectal screening	Behavioral Risk Factor Surveillance System and Oregon State Cancer Registry
	Dental visits	National Survey of Children's Health
	Prenatal care	Birth Certificates
	Childhood developmental screening	National Survey of Children's Health
	Effective contraceptive use	Behavioral Risk Factor Surveillance System
	Immunizations	ALERT Immunization Information System
Emergency Medical Services	Out-of-hospital cardiac arrest	Cardiac Arrest Registry to Enhance Survival (CARES)

Communicable Disease

Topic	Indicator	Data Source
Food-borne	E. coli	ORPHEUS
Health care-acquired	Clostridium difficile	National Healthcare Safety Network
Hepatitis	Hepatitis C deaths	Death Certificates
HIV/AIDS	HIV incidence	ORPHEUS
Sexually Transmitted Infections	Syphilis	ORPHEUS
	Gonorrhea	ORPHEUS
Respiratory	Influenza	Emerging Infections Program
Tuberculosis	Tuberculosis	ORPHEUS
Vaccine-preventable	Pertussis	ORPHEUS



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