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| PUBLIC HEALTH DIVISION | oregon_health_authority_final |
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# Public Health Modernization:

# Investing in Communicable Disease Control and Environmental Health in 2019-2021

Oregon’s public health system is critical for all 4 million Oregonians to be healthy, independent, and productive members of society. When people are healthy, they live longer and happier lives, can better earn a living, and provide employers with a dependable work force. When kids are healthy, they are ready to go to school to learn.

The goals of a modern public health system are to:

* Produce sustainable and measurable improvements in population health
* Promote heath and prevent injury, and
* Prepare for, respond to, and recover from any public health threats that may occur.

Oregon is a leader in health system transformation, which aims to provide better health and better care at a lower cost. Achieving that triple aim requires a strong system of prevention and protection for the health of the public. Oregon needs a health system that integrates public health with medical care and community-level health efforts to achieve overall health for all Oregonians, regardless of income, race, ethnicity, or geographic location.

## Public Health is a Solid Return on Investment

There is a small, but growing, literature describing how differences in public health spending improve the public’s health. A nationwide study found a 10% increase in local public health spending correlated with a:

* 6.9% decrease in rates of infant mortality
* 1.4% decrease in diabetes death rates
* 3.2% decrease in heart disease death rates, and
* 1.1% decrease in cancer death rates.[[1]](#footnote-1)

Another study estimated a return on investment for public health spending in California county health departments of $67 to $88 for every $1 spent.[[2]](#footnote-2) A third study found an increase of $10 per capita in public health spending reduced all-cause mortality by 9.1 per 100,000 in California.[[3]](#footnote-3)

## Our Public Health Challenges are Changing

One hundred years ago, the biggest public health threats were tuberculosis, pneumonia, and diseases spread by unsanitary drinking water. Diseases such as polio and measles were common, with modern vaccines not yet available. Committed public health efforts have drastically reduced those threats, or in some cases eliminated them entirely.

Today, Oregon families and communities face a growing and diverse array of new public health threats. Toxic algae blooms have contaminated drinking water. Wildfire smoke has made the air dangerous to breathe for weeks across entire regions of the state. Once-controlled diseases have re-emerged, spurred by misinformation on social media. Deadly fentanyl has infiltrated our communities from sources overseas. Virulent diseases from distant continents are now a direct flight away from Oregon. Changes in Oregon’s climate make the state more susceptible to certain communicable diseases and environmental health threats.

In 2017, a six-year-old Oregonian who had received no vaccinations cut his forehead while playing outdoors. Six days later, after worsening symptoms including difficulty breathing, his parents called 911 and the boy was air-transported to the hospital. He was diagnosed with tetanus and required eight weeks of inpatient care, followed by rehabilitation care. The price tag of $811,929 for inpatient costs alone was 72 times more than the average pediatric hospital stay, and vastly more expensive than tetanus vaccinations commonly given by local health departments.

Case study:

tetanus

## The State of the Public Health System: Ideal versus Current

Ideal

Recognizing the value of investing in public health, the U.S. Institute of Medicine recommends a minimum package of public health services with sufficient and sustainable funding, known as public health modernization. These include foundational programs and capabilities that should exist in every health department.[[4]](#footnote-4)

*Foundational programs* are those services that are necessary to assess, protect, or improve public health: Communicable Disease Control, Environmental Public Health, Prevention and Health Promotion, and Access to Clinical Preventive Services.

*Foundational capabilities* are the knowledge, skills, or abilities necessary to carry out a public health activity or program: Assessment and Epidemiology, Emergency Preparedness and Response, Communications, Policy and Planning, Leadership and Organizational Competencies, Health Equity and Cultural Responsiveness, and Community Partnership Development.

Different pieces of these programs and capabilities may be located at the state or local level; for example, it may be more efficient for the state to have laboratory facilities that local public health departments can access rather than each having their own. Also, different localities may have different specific programs; for example, emergency preparedness on the coast may involve tsunami warnings, while upland areas may focus more on wildfires. Regardless of these variations, the critical point is that every community has the foundational capabilities to carry out the foundational programs to meet its public health needs.

Current

In accordance with HB 3100, passed in 2015, the state Public Health Advisory Board, Oregon Health Authority’s (OHA) Public Health Division, and all 34 Local Public Health Authorities (LPHAs) completed a detailed assessment of how the current public health system matches up to the ideal of public health modernization.[[5]](#footnote-5) This assessment concluded that there are meaningful gaps across the system. These gaps are not uniform and no clear patterns were identified.

Oregon’s public health system monitors and responds to foodborne pathogens associated with severe illness and other public health risks, with responsibilities shared between local and state authorities. In 2017, OHA received reports of 5,280 illnesses from foodborne pathogens. The actual burden is likely much higher, as most cases of foodborne illness are not reported. The economic burden of these illnesses – including medical costs, productivity loss, and death – was estimated in 2014 at $229 million.

Case study:

food borne illness

It identified that, in more than one third of Oregon communities — home for more than 1.3 million people — foundational public health programs are limited or minimal. The public health system in these areas may not be adequately able to respond to an emerging communicable disease or environmental health threat, run programs to reduce the impact of chronic diseases and injuries, or ensure every person in the community receives high quality health care.

Building on this assessment, OHA prepared a Statewide Public Health Modernization Plan, which calls for a phased implementation over three to five biennia.[[6]](#footnote-6) In the first phase, the initial priorities are:

* Aligning work to respond to emerging and ongoing communicable disease and environmental health threats. This work falls under the foundational programs of Communicable Disease Control, Environmental Health, and Emergency Preparedness and Response.
* Increasing capacity to meet core public health functions for the foundational capability of Health Equity and Cultural Responsiveness.
* Addressing systemic barriers identified in the public health modernization assessment. These include lack of access to population health data to inform program and financial decision-making, and insufficient capacity to engage local communities and partners in modernizing the public health system. These fall under the foundational capabilities of Assessment and Epidemiology, and Leadership and Organizational Competencies.

## Public Health System Funding: Current and Future

Base Funding

Oregon’s current governmental public health system currently spends about $209 million (in 2016 dollars) on the foundational capabilities and programs. This is primarily funded through county general funds and federal grants. Most of the federal grants are categorical, meaning they can be used only on one specific disease or activity, which limits flexibility and the ability to respond to local need or to focus strategically. The current state investment in public health consistently ranks below the national median for per capita funding.

Recent Funding

In 2017, OHA received an initial $5 million legislative investment to begin to modernize the government public health system. Eight regions of LPHAs are using $3.9 million for regional communicable disease control interventions, and OHA is using the remaining $1.1 million to improve the collection and reporting of population health data. Early successes include:

In 2017, local public health authorities reported 18,633 chlamydia cases, 5,022 gonorrhea cases and 557 syphilis cases in Oregon. With an investment of an additional $5 million in STI prevention, Oregon would reduce the number of syphilis infections by approximately 100, gonorrhea infections by approximately 1900, and chlamydia infections by approximately 6000.

Case study:

sexually transmitted diseases

* 30 local public health authorities, four Regional Health Equity Coalitions, three CCOs, one tribe, and one school of public health are represented in regional policies for co-ordination and resource sharing.
* Increased communicable disease investigation capacity covering a 13-county area.
* Infection prevention trainings covering 78% of long-term care facilities in Central Oregon.
* Modest improvements in two-year-old immunization rates between 2016 and 2017; the rate increased from 66% to 68%, with similar gains for most racial and ethnic groups.
* Over 250 pneumococcal vaccines have been administered to Lane County hospitalized older and at-risk adults.
* Local doctors recruited as “medical champions” to advocate for strategies to reduce sexually transmitted infections, Hepatitis C, and HPV health disparities.

Future Funding

The 2017 assessment estimated the additional spending needed for full implementation of public health modernization at approximately $105 million annually (in 2016 dollars), or about a 50% increase over base funding.

An investment of $35 million in 2019-21 would build a safer, more resilient, and better prepared Oregon in many ways, focused on the initial priorities described above.

*Improving health outcomes:*

* Identify communicable disease disparities and reduce currently known disparities for illnesses, including hepatitis A, B, and C in houseless, American Indian/Alaska Natives, and African American populations through testing and linkage to vaccination and treatment.
* Close regional immunization rate gaps between LPHAs and immunize 1,854 children (based on 2-year old immunization series) by increasing private provider participation in statewide Assessment Feedback Incentives Exchange.
* Decreased spread of sexually transmitted infections through contact tracing and notification, accomplished by increasing epidemiologic capacity throughout the state.
* Increased capacity to provide epidemiological technical assistance to local jurisdictions to identify communicable disease outbreaks, clusters and trends.[[7]](#footnote-7) This will bring Oregon up to the standard recommended by the Centers for Disease Control and Prevention of one epidemiologist per 100,000 people.

*Guaranteeing that:*

* Oregon has updated and operational plans to prevent, monitor, respond to, and recover from and public health threats and emergencies.

The current measles outbreak in Washington state, with cases in Oregon, continues to stretch the public health system. In a February 21, 2019, article, the Seattle Times estimated that Washington’s response to the measles outbreak will cost more than $1 million and is diverting resources away from other pressing public health issues.

Case study:

measles

* Oregon has practiced responding to a public health emergency, with a broad range of business and health care system partners such as took place recently with eleven coastal hospitals to build coastal resiliency in preparation for a largescale earthquake.
* Oregon has the information they need to know and understand emerging communicable disease and environmental health threats in their own community.
* All health care providers, private and public, are informed of vaccine preventable communicable disease outbreaks within 48 hours.

*Funding for local public health authorities will result in:*

* Increased initiation of outbreak investigation within one day compliance, as well as other requirements for disease and outbreak investigation, particularly in counties currently lacking basic capacity.[[8]](#footnote-8)
* Real time communication with businesses that are affected by an emerging event.
* Training and subject matter expertise to long term care facilities, hospitals and other community actors to prevent and to response to communicable disease and environmental health events.
* Ability to draw quickly on resources from neighboring jurisdictions to respond quickly to local events across Oregon.

*Funding to federally-recognized Tribes and funds for technical assistance will result in:*

* Supporting Oregon Tribal Preparedness Coalition to develop, practice, and implement emergency preparedness and recovery plans in tribal areas and communities.
* Supporting Tribes to ensure drinking water is safe.
* Opportunity for Tribal public health authorities to update how they deliver public health services in line with their own tribal need assessments.
* Faster response times to communicable disease and environmental health threats.
* Real time communication with tribal health care providers, business and community members who are affected by an emerging event.

*Funding for statewide coordination, expertise, and leadership of communicable disease prevention and control and environmental health programs will result in:*

* Better data and interventions to increase immunization rates and plan for and respond to disease outbreaks and environmental health threats.[[9]](#footnote-9)
* Stronger preparation for and recovery from communicable disease and environmental health threats.
* Culturally responsive communications within 24 hours for priority populations.
* Accountable and responsible use of public dollars, review of accountability-based payment models, and evaluation of the system changes and health outcomes driven by an investment in public health modernization.

## For more information

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| **Oregon Health Authority**  **Public Health Division**  [www.oregon.gov/oha/PH/](http://www.oregon.gov/oha/PH/) | **Program contact**  Lillian Shirley, State Public Health Director  971-673-1229  lillian.shirley@dhsoha.state.or.us |

**Appendix: OHA staff reference sheet for OHA Positions and Contracts**

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| **Statewide coordination, expertise and leadership of communicable disease control and environmental health efforts** | **$1,900,000** |
| Health Equity Coordinator – Operations and Policy Analyst 3 |  |
| *Coordinates PHD-wide health equity initiatives; provides training and technical assistance to LPHAs.* |  |
| Senior Toxicologist - Natural Resource Specialist 4 (0.45 funding only) |  |
| *Lead toxicologist for all toxics risk assessments; risk communication to the public, agencies, legislators; oversight of other toxicologists.* |  |
| Healthy Homes, Schools, and Waters Lead - Natural Resource Specialist 4 (funding only) |  |
| *0.5 lead for recreational waters technical and policy analysis and stakeholder engagement for health advisories and 0.5 policy analysis and program development related to support statewide and LPHA interventions to reduce toxic exposures in homes and schools.* |  |
| Environmental Public Health Section Manager – Principal Executive Manager F (0.50 funding only) |  |
| *Oversees OHA Environmental Public Health Section responsible for statewide environmental health assessment, surveillance, and regulatory programs.* |  |
| Environmental Public Health Assessment Program Manager – Principal Executive Manager D (0.75 funding only) |  |
| *Oversees healthy air and water, climate and health, and land use and health programs.* |  |
| Acute & Communicable Exposure Prevention Lead – Operations and Policy Analyst 3 |  |
| *Conducts policy analysis, program development and evaluation, and develops partnerships to support statewide and LPHA interventions to reduce acute and communicable disease outbreaks. These include interventions related to vector borne diseases, foodborne outbreaks, biotoxins and risks intensified by climate change. Focus will be on populations at disproportionate risk (low income, communities of color).* |  |
| Disease surveillance and intervention epidemiologist – Epidemiologist 3 |  |
| *Leads investigation and control of reportable disease outbreaks and provides surge response in emerging PH issues.* |  |
| Staff development and training |  |
| *Supports training and workforce development opportunities for staff and LPHAs to take on new PH  modernization functions, including assessment and epidemiology and health equity.* |  |
| Translation and interpretation services |  |
| *Translation of public health advisories and public communications into languages needed based on the audience per OHA language access policy; provide interpretation services for public meetings.* |  |
| **Special Payments to Federally Recognized Tribes** | **$3,200,000** |
| *Provides resources to Oregon tribes to: engage community members to improve health equity; collect and analyze population health data; prepare for PH emergencies; respond to disease outbreaks; and develop resilience strategies.* |  |
| **Special Payments to Local Public Health Authorities** | **$25,000,000** |
| *Provides resources to LPHAs to: engage community members to improve health equity; respond to disease outbreaks and environmental health hazards; prepare for PH emergencies; and build an equitable and efficient PH system.* |  |
| **Public Health System Quality Assurance** | **$750,000** |
| Contract Monitoring Coordinator – Operations and Policy Analyst 3 |  |
| *Develops and implements contract monitoring and review protocols for the Public Health Division to ensure compliance with state and federal guidelines.* |  |
| LPHA Payment Analyst – Fiscal Analyst 2 (cost allocation) |  |
| *Develops and implements contract requirements.* |  |
| Public health measurement |  |
| *Annual collection and public report of PH accountability measure data.* |  |
| Program evaluation |  |
| *Evaluation of the effectiveness of public health modernization and public health interventions* |  |
| Accountability-based payment |  |
| *Develops system for applying changes to payment structure for LPHAs, including implementation of incentive payments and matching funds for county investment per ORS 431.380.* |  |
| **Data reporting systems and accountability metrics** | **$4,500,000** |
| PHD Business Systems Analyst - Information Systems Specialist 7 (OIS 0.30 funding and position authority) |  |
| *Liaises with PH to coordinate design, development and implementation of information technology solutions.* |  |
| PHD Sr. Tech Analyst - Information Systems Specialist 8 (OIS 0.55 funding only) |  |
| *Provides technical expertise and leadership to develop, integrate and implement PH information systems.* | |
| Business Engagement Analyst – Operations and Policy Analyst 3 |  |
| *Business Engagement Services for PH IT initiatives, system modifications, cloud workbook development, and IT contracts and procurement.* |  |
| Contract for new School Module for Electronic Reporting |  |
| *Facilitates interoperability between schools, LPHA sand OHA to provide efficient and timely data for the collection and assessment of student immunization records.* |  |
| Alternate survey collection methods |  |
| *Supports implementation of alternative methods for collecting surveillance data so that greater response rates can be achieved.* |  |
| Core surveillance & surveys |  |
| *Supports implementation of statewide surveys (e.g. Behavioral Risk Factor Surveillance System Survey and race oversample, Oregon Healthy Teens survey and the Pregnancy Risk Assessment Monitoring System).* |  |
| Office of Information Services charges |  |
| *Supports maintenance and upgrade of the Oregon Public Health Assessment Tool (OPHAT); communicable disease data collection compliance with REAL+D policy; purchase of enterprise software for data visualization; Oregon State Public Health Laboratory hardware and software upgrades.* |  |

1. Mays GP, Smith SA. Evidence links increases in public health spending to declines in preventable deaths. Health Aff (Millwood). 2011 Aug; 30(8):1585–1593. [↑](#footnote-ref-1)
2. Brown TT. Returns on investment in California county health departments of public health. Aj J Public Health 2016; 106(8):1477-82. [↑](#footnote-ref-2)
3. Brown TT. How effective are public health departments at preventing mortality? Econ Hum Biol. 2014 Mar; 13:34-45. [↑](#footnote-ref-3)
4. Institute of Medicine. For the public’s health: Investing in a healthier future. Washington, DC: The National Academies Press; 2012. [↑](#footnote-ref-4)
5. State of Oregon Public Health Modernization Assessment Report, June 2016. <https://www.oregon.gov/oha/PH/ABOUT/TASKFORCE/Documents/PHModernizationFullDetailedReport.pdf> [↑](#footnote-ref-5)
6. Statewide Public Health Modernization Plan, December 2016. <https://www.oregon.gov/oha/PH/ABOUT/TASKFORCE/Documents/statewidemodernizationplan.pdf> [↑](#footnote-ref-6)
7. Including initiation of outbreak investigation within 1 day, particularly in counties currently lacking basic capacity; <https://www.oregon.gov/oha/PH/PROVIDERPARTNERRESOURCES/LOCALHEALTHDEPARTMENTRESOURCES/Pages/lhd-trt.aspx> [↑](#footnote-ref-7)
8. <https://www.oregon.gov/oha/PH/PROVIDERPARTNERRESOURCES/LOCALHEALTHDEPARTMENTRESOURCES/Pages/lhd-trt.aspx> [↑](#footnote-ref-8)
9. Increase immunization rates by 2% per year immunize 1,854 children by increasing private provider participation in statewide (AFIX) Assessment Feedback Incentives Exchange (AFIX). [↑](#footnote-ref-9)