

Public Health Investment in Communicable Disease Control and Environmental Health

One hundred years ago, the biggest public health threats were tuberculosis, pneumonia, and unsanitary drinking water. Diseases such as polio and measles were common, with modern vaccines not yet available.

Today, Oregon families and communities face new and growing public health threats. Toxic algae blooms have contaminated drinking water. Once-controlled diseases have re-emerged, spurred by misinformation on social media. Deadly fentanyl has infiltrated our communities. Virulent diseases from distant continents are now literally one airplane ride away from Oregon. Other diseases may travel with mosquitos that can survive further north as their habitat expands. Wildfire smoke has made the air dangerous to breathe for weeks across entire regions of the state.

Even some “traditional” health threats still pose strong – and in some cases, returning and increasing – challenges to our public health system. Furthermore, we have come to realize that advances in public health often have helped some people while leaving other people behind.

Sample of Public Health Concerns in Oregon

Communicable Disease	In the past five years, in Deschutes, Crook and Jefferson Counties, over 90% of flu outbreaks occurred in long term care facilities, which tend to house large groups of people with relatively weak immune systems. These outbreaks led to 44 emergency room visits, 38 overnight hospitalizations, and six deaths. In Oregon, the average cost of a hospital stay for influenza is \$3,368 per day.
Emergency Preparedness	Cascadia Rising was a four-day, multi-state exercise to prepare for a 9.0 earthquake along the west coast Cascadia Subduction Zone, which would cause a large tsunami, landslides, and aftershocks. The exercise showed that the public health system in Oregon is unprepared for such a catastrophic event. Our eleven coastal hospitals would be severely damaged or inoperable, and the thousands of injuries and deaths would create a massive strain on the remaining health infrastructure.
Sexually Transmitted Infection	Untreated gonorrhea can result in serious health problems including pelvic inflammatory disease, ectopic pregnancy, and infertility. Gonorrhea also increases the likelihood of both acquiring and transmitting HIV. Reported cases of gonorrhea in Oregon have steadily increased over the past seven years, reaching levels not seen since the 1990s. In 2017, local public health authorities reported 5,022 gonorrhea cases in Oregon, as well as 18,633 chlamydia cases and 557 syphilis cases.

To keep up, our public health system must learn and adapt.

The State of the Public Health System: Traditional versus Modern

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.

Investing in modernizing Oregon's public health system will buy a prevention infrastructure that:

- ▶ Prevents more communicable disease and environmental health threats
- ▶ Responds faster and better when such threats do emerge, to keep people healthier and save money
- ▶ Better addresses and resolves health disparities

Traditional Public Health System	Modern Public Health System
Separate funding and staff for each disease or other health topic	Funding and staff can adapt and respond as critical health needs emerge
Responds to health problems	Strives to prevent and prepare for health problems, then responds as needed
Works independently	Emphasizes partnerships
Health disparities unaddressed	Identifies and addresses health disparities and emphasizes cultural responsiveness
Data systems are static, isolated from each other, and/or difficult to use	Data systems are complete, dynamic and integrated, and generate useful information for decision makers
Patchwork quilt of programs and capabilities from county to county	All foundational programs and capabilities available in every county across the state

Traditional

In accordance with HB 3100, passed in 2015, the state Public Health Advisory Board, Oregon Health Authority's Public Health Division, and all 34 Local Public Health Authorities completed a detailed assessment of how the current public health system matches up to an ideal modern system. This assessment concluded that there are meaningful gaps across the system. These gaps are not uniform and no clear patterns were identified.

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.

One part of the problem is that most federal grants for public health are categorical. This means 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. Imagine having the best possible staff, funding, and expertise to tackle one certain disease, but not being able to transfer it to treat an unknown or unidentified disease.

Also, total funding for public health is inadequate to the need. County governments, which provide much of the funding, face increasing budget difficulties. Oregon state investment in public health consistently ranks below the national median for per capita funding. Oregon's governmental public health system currently costs about \$209 million (in 2016 dollars). The 2016 assessment estimated the actual need to have a modern system at about 50% more.

Furthermore, for many years, public health systems did not have data to understand – nor funding to respond to – health disparities associated with race, ethnicity, gender, income, geography, and other demographic factors. Categorical funding perpetuates this by underfunding strategies to address health disparities. We tended to treat the “average” mainstream population, which meant some other populations paid the price in poorer health.

Modern

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 be available to serve residents of every community.¹

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 authorities can access rather than each having their own. 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. Also, some functions may be provided on a regional basis, with counties sharing staff instead of each having their own. 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.

Foundational Programs	Foundational Capabilities
<i>Services that are necessary to assess, protect, or improve public health</i>	<i>Knowledge, skills, or abilities necessary to carry out a public health activity or program</i>
<ul style="list-style-type: none">• Communicable Disease Control• Environmental Public Health• Prevention and Health Promotion• Access to Clinical Preventive Services	<ul style="list-style-type: none">• Assessment and Epidemiology• Emergency Preparedness and Response• Communications• Policy and Planning• Leadership and Organizational Competencies• Health Equity and Cultural Responsiveness• Community Partnership Development

Building on the assessment of the gaps in the current public health system, Oregon Health Authority prepared a Statewide Public Health Modernization Plan, which calls for a phased implementation over three to five biennia.²

In the first phase, the initial modernization priorities are:

- ▶ Responding to emerging and ongoing communicable disease and environmental health threats
- ▶ Increasing capacity to address health equity and cultural responsiveness
- ▶ Addressing systemic barriers identified in the public health modernization assessment, including lack of access to population health data to inform program and financial decision-making, and insufficient capacity to engage local communities and partners

¹ Institute of Medicine. For the public's health: Investing in a healthier future. Washington, DC: The National Academies Press; 2012.

² Statewide Public Health Modernization Plan, December 2016.

<https://www.oregon.gov/oha/PH/ABOUT/TASKFORCE/Documents/statewidemodernizationplan.pdf>

Accountability Metrics

As part of public health modernization efforts, the Public Health Advisory Board adopted measures to track progress toward achieving population health goals. The collection of health outcome and local public health process measures are collectively referred to as public health accountability metrics.

Each accountability metric includes *health outcome measures* that reflect population health priorities as well as *local public health process measures* that reflect the daily work of a local public health authority to make improvements in each health outcome measure.

Foundational Public Health Programs	Health Outcome Accountability Measures
Communicable Disease Control	<ul style="list-style-type: none">• Percent of two-year olds who received recommended vaccines• Gonorrhea incidence rate per 100,000 population
Prevention and Health Promotion	<ul style="list-style-type: none">• Percent of adults who smoke cigarettes• Prescription opioid mortality rate per 100,000 population
Environmental Health	<ul style="list-style-type: none">• Percent of commuters who walk, bike, or use public transportation to get to work• Percent of community water systems meeting health-based standards
Access to Clinical Preventive Services	<ul style="list-style-type: none">• Percent of women at risk of unintended pregnancy who use effective methods of contraception• Percent of children age 0-5 with any dental visit

Public Health Investment: Current and Future

Current Funding

In 2017, OHA received an initial \$5 million legislative investment to begin to modernize the government public health system. Eight regions of LPHAs, covering 33 counties, 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:

- ▶ Instead of numerous separate efforts, 30 local public health authorities, four Regional Health Equity Coalitions, three CCOs, one tribe, and one school of public health are working collaboratively to develop policies that meet the needs of their local communities
- ▶ In Lane County, over 600 pneumococcal vaccines have been administered to hospitalized at-risk adults
 - *Hospitalization for pneumonia costs approximately \$10,000 in direct hospital costs*
 - *Lane County estimates its efforts will prevent a minimum of 50 pneumonia-related hospitalizations, saving at least \$500,000, mostly for people with public health coverage*
- ▶ Increased communicable disease investigation capacity covering a 13-county area
- ▶ Infection prevention trainings covering 81% 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
- ▶ Local doctors recruited as “medical champions” to advocate for strategies to reduce sexually transmitted infections, Hepatitis C, and HPV health disparities.

Sample of Public Health Modernization Activities in 2017-2019

Deschutes, Crook & Jefferson Counties	Trained staff at 25 long-term care facilities (81% of such facilities in the region) and 22 childcare facilities on how to prevent and control infection outbreaks, and trained local public health staff and tribal representatives on how to track and investigate communicable diseases.
Eastern Oregon Modernization Collaborative (13 counties)	Trained local public health staff and tribal representatives on disease intervention, including how to interview cases, elicit sexual health and drug-use histories, notify partners of exposure, and connect cases to services. 77% of local and Tribal communicable disease staff received gonorrhea case management training.
Washington, Clackamas & Multnomah Counties	Modernized their data systems, allowing them to better track data, analyze it, and make it more accessible and understandable, to better inform decisions by local clinics, elected officials, and community organizations. Also, funded full-time position to ensure health equity expertise and meaningful community engagement.
Marion & Polk Counties	Presented to community groups about high rates of sexually transmitted infections, to increase awareness and recruit partners for a local coalition, and educated providers about proper treatment of gonorrhea and chlamydia. After one year of provider education efforts, 97% of gonorrhea cases in Marion County are properly treated, and 87% in Polk County.

A key goal for future funding is to extend the successes and lessons learned in each of these local projects to every community across the state.

Future Funding

An investment of \$35 million in 2019-21 would build a safer, more resilient, and better prepared Oregon. It will continue to focus on the phase 1 priorities of responding to communicable disease and environmental health threats, addressing health equity and cultural responsiveness, and addressing systemic barriers such as lack of access to population health data.

The tables on the next few pages show how investments in local, state, and tribal public health can build a modern public health system capable of protecting Oregonians from the most critical public health threats.

LOCAL INVESTMENTS	Reduce communicable disease outbreaks and disparities	Improve immunization rates	Decrease spread of sexually transmitted infections	Prevent, respond to, and recover from public health threats and emergencies	Ensure public health services for every tribal community
Outcomes from \$25,000,000 investment in local public health					
Training and subject matter expertise offered to long term care facilities, hospitals and other community partners on prevention and treatment of communicable diseases					
All health care providers, private and public, are informed of vaccine preventable communicable disease outbreaks within 48 hours					
More outbreak investigations initiated within one day compliance, as well as better compliance with other requirements for disease and outbreak investigation, particularly in counties currently lacking basic capacity					
Communities that experience health disparities are mobilized for executing health-related interventions					
Oregonians have the information they need to know about communicable disease outbreaks, especially for vaccine preventable disease, in their own community and about how to prevent disease through immunization					
Ability to draw quickly on resources from neighboring jurisdictions to respond quickly to local events across Oregon					
Aligned efforts with health care providers, child care providers, and long-term care facilities to increase immunization rates					
Local agencies have practiced responding to a public health emergency, with a broad range of business and health care system partners					
Real time communication with businesses that are affected by an emerging event					
Develop sustainable relationships with tribes to address environmental health threats that affect the shared community					

STATE INVESTMENTS	Reduce communicable disease outbreaks and disparities	Improve immunization rates	Decrease spread of sexually transmitted infections	Prevent, respond to, and recover from public health threats and emergencies	Ensure public health services for every tribal community
Outcomes from \$7,150,000 investment in state public health					
Annual and real-time reporting on communicable disease and immunization rates, including gaps in rates by race/ethnicity and county that identifies vulnerable communities					
Culturally responsive communications within 24 hours for priority populations					
Increased capacity to provide epidemiological analysis to local and tribal jurisdictions to identify communicable disease outbreaks, clusters and trends					
Coordinated statewide plans for and responses to disease outbreaks and environmental health threats					
Access to 24/7 laboratory resources necessary for the timely identification and response to reportable diseases, including emerging diseases and threats					
Statewide communicable disease and environmental health data to understand statewide and local trends that is easily available to public and private partners					
State agencies have practiced responding to a public health emergency, with a broad range of business and health care system partners					
Fund the Oregon Tribal Preparedness Coalition to develop, practice, and implement emergency preparedness and recovery plans in tribal areas and communities					
Fund Tribes to ensure drinking water is safe					

TRIBAL INVESTMENTS	Reduce communicable disease outbreaks and disparities	Improve immunization rates	Decrease spread of sexually transmitted infections	Prevent, respond to, and recover from public health threats and emergencies	Ensure public health services for every tribal community
Outcomes from \$3,200,000 investments in tribal public health					
Opportunity for Tribal public health authorities to update how they deliver public health services in line with their own tribal need assessments					
Real time communication with tribal health care providers, business and community members who are affected by an emerging event					
Faster response times to communicable disease and environmental health threats investigation					
Develop sustainable relationships with state and local public health authorities to address environmental health threats that affect the shared community					

For more information

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