

# Workforce and Data System Strategies to Improve Public Health Policy Decisions

BY SHANNON KOLMAN AND CLAUDIA MEYER

The COVID-19 pandemic illuminated the need for timely data to help guide policy decisions regarding public health. Data was often slow in getting to public health departments and to policymakers. In some cases, health departments still [receive some information via fax or phone](#), such as from hospitals or laboratories, which delays analyses and response times.

In response, states are taking steps to modernize their public health data systems and improve their capacity to provide data analytics. These efforts include aligning the public health workforce with emerging technologies. Workers who possess technological skills to collect and transform data into actionable information are needed to inform public health policymaking.

## Modernizing Data Systems and Public Health Workforce Shortages

Data-driven systems are used for responding swiftly to events that affect public health, including disease outbreaks. Timely data allows public health officials to [identify and monitor outbreaks, provide timely recommendations and forecast future public health conditions](#). Data used to inform public health decisions comes from a variety of sources, including hospitals, laboratories, doctors' offices, schools, restaurants, wastewater facilities and other locations. Analyzing data from several sources can facilitate the identification of populations disproportionately impacted by disease and can inform strategies regarding the allocation of resources.

The ability of the public health workforce to effectively use data resources and provide information is complicated by historical and



pandemic-related declines. A [new study](#) shows that almost half of all employees in state and local public health agencies in the U.S. left their jobs between 2017 and 2021. The COVID-19 pandemic multiplied public health worker burnout and resignations, but the workforce was experiencing significant declines even before the pandemic. By some estimates, the U.S. public health workforce will [need to grow by 80%](#) to provide an [essential set of public health services](#) across the country.

States are experiencing shortages of experts who are well-equipped to receive, manage and analyze data for state public health agencies. A large survey of public health employees found unmet informatics needs at both state and local health departments. Informatics is the



practice of collecting, analyzing and leveraging data more effectively, influencing how resources are managed and the way teams operate every day. Public health informatics specialists comprise approximately [1.1% of state public health](#) employees and 0.3% of local public health employees. One contributing factor to long-term public health workforce decline may be that data professionals are [drawn to better-resourced private sector positions](#).

## State Policy Options

States have options for building the skills of the current workforce and developing the technological know-how of the future workforce, including:

- Creating [workforce exchanges](#) between public health agencies and private sector tech companies focusing on data science. Public-private partnerships or cooperative agreements with data technology companies may assist in expanding the public health sector's exposure to techniques private companies use to analyze extensive amounts of data.
- Performing assessments of staff capabilities and capacities and identifying competencies to help create the public health workforce needed now and in the future. Such plans may include ways to attract new employees with technological skills.
- Creating [training and certification programs](#) to help current public health employees become experts with skills necessary to use new and emerging technology to design data-based public health solutions.
- Developing [curricula](#) that integrates technology and public health training at the postsecondary level as well as on-site or in-house public health learning opportunities.

Some states are modernizing public health resources through targeted investments. For example, Indiana's Legislature recently budgeted an additional \$225 million, from \$7 million, to expand the state's public health programs over the next two years. The [legislation](#) also defines the core public health services local health departments will need to provide with the acceptance of more state funding. The legislation was based on a [commission report](#) that focused on six public health workstreams, including infrastructure, workforce, data and information integration.

In [Oregon](#), lawmakers invested \$60.6 million to enhance local public health through data collection and analysis as well as workforce development.

Strategies for addressing shortages in the health care workforce may also offer insight into solutions for the declining public health workforce. For example, [Oklahoma](#) used ARPA funds to boost its health care workforce by establishing scholarships, cost-sharing programs, and loan repayment programs. [Arizona](#) invested in its health care workforce by providing grants to educational institutions and funding clinical programs with the goal of increasing the number of nursing and behavioral health program graduates. If these strategies show promise for health care workforce, they might incentivize recruitment and retention of public health workers and increase postsecondary study of public health informatics and technology.

## Federal Activities

Federal efforts to bolster public health workforce capacity include the CDC's new [Data Modernization Initiative](#), which seeks to improve responses by public health departments to health challenges through modernizing data collection, analysis and sharing. The initiative will provide funding to 64 public health departments over five years and includes public health workforce training with an [informatics and data science focus](#).

The Office of the National Coordinator for Health Information Technology introduced the Public Health Informatics and Technology Development Program (PHIT Workforce Program) in 2022. The program will assist 10 colleges and universities in training students in public health technology and developing accredited curricula and experiential learning opportunities at the certificate, undergraduate and graduate levels. The program provides an example of efforts to develop the future public health workforce through a technology-oriented lens.

For more information on how states use public health data to inform policy decisions, see the NCSL resources below.

- [Lawmakers Turn to Data Systems to Guide Vaccine Decision Making](#)
- [The Critical Role of Public Health Data](#)
- [Using Data Exchange to Improve Public Health](#)



7700 East First Place, Denver, Colorado 80230, 303-364-7700 | 444 North Capitol Street, N.W., Suite 515, Washington, D.C. 20001, 202-624-5400

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