



Public Health Data Science Workforce



Public health positions specializing in data science and informatics are becoming more integral as technology advances. Data scientists and informaticists must be equipped with the knowledge and skills that allow them to implement and utilize these technologies to their fullest potential, with access to ongoing support through training, education, and fellowships. Relevant training within academic programs and career pathways, along with innovative recruitment and retention strategies, is essential for cultivating this new workforce of skilled professionals who can effectively lead advanced data exchange and utilization in health departments.

NATIONAL PICTURE

The public health workforce experienced exponential expansion and strain as part of the COVID-19 response. As response-specific funding allocated for additional personnel and diverse skillsets expired, contract positions were eliminated. Public health worker burnout led to an exodus from the field; Harvard T.H. Chan School of Public Health found [nearly half of state and local public health employees left their positions](#) between 2017 and 2021. [Public Health Workforce Interests and Needs Survey](#) results found that despite a 79% job satisfaction rate, only 49% were content with their pay, which trails behind private sector wages. As such, public health faces a challenging scenario where recent advancements in infrastructure, technology, and workforce are jeopardized by waning financial support. The Council of State and Territorial Epidemiologists' [Epidemiology Capacity Assessment](#) monitors the strength and capacity of the workforce and the [Data Science Team Training](#) and [Applied Public Health Informatics Fellowship](#) programs are bridging the workforce gap, however, broader resources are essential to support this expanding sector. The Centers for Disease Control and Prevention (CDC) supports [developing a state-of-the-art workforce](#) as part of Data Modernization Initiative priorities.

WORKFORCE IN ACTION



Oregon Builds a Use Case for Informatics Workforce

Oregon's Acute and Communicable Disease Prevention (ACDP) Section, housed in the Center for Public Health Practice, has historically lacked sufficient governmental support despite pioneering work in informatics. Oregon began using electronic laboratory reporting (ELR) in 2004, supports a home-grown flexible and dynamic integrated disease surveillance system, has **100% voluntary participation by emergency departments for syndromic surveillance**, was an early adopter of CDC's National Electronic Disease Surveillance System Modernization, and was an early adopter of electronic case reporting (eCR). Recently, with expanded federal funding, they established a dedicated 12-member Informatics Program within ACDP responsible for each of these activities as well as conducting informatics assessments and strategic planning efforts. This team has transformed the section's ability to work, focus on data quality, and modernize their visualization and reporting efforts. Looking forward, Oregon plans to finish building a data repository and improve accessibility and reporting tools with local public health partners – including a data advisory group to prioritize reports for identifying and addressing health disparities.

SUBMITTED BY: *Michelle Barber, Informatics Manager, Acute and Communicable Disease Prevention, Public Health Division, Oregon Health Authority*



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APRIL 2024



Alabama uses Epidemiology and Laboratory Capacity funds to Help Strengthen Epidemiology Workforce in Infectious Diseases and Outbreaks Division

The Alabama Department of Public Health (ADPH) Infectious Diseases and Outbreaks (ID&O) division conducts surveillance for over 85 nationally notifiable conditions and investigates outbreaks, healthcare associated infections, and other emerging infectious diseases of public health concern. ADPH receives limited state funding to support the epidemiology staff responsible for this work and heavily rely on federal funds, particularly from the Epidemiology and Laboratory Capacity (ELC) cooperative agreement.

Despite three vacancies, the ID&O's nine dedicated epidemiologists have played a crucial role in achieving goals for early case identification through eCR methods, optimizing resource allocation, and disseminating timely control measures during the COVID-19 pandemic. In addition, their work identified a potential risk factor for Legionellosis stemming from 400 hot tubs at an Alabama resort, resulting in their replacement.

ID&O epidemiologists also provide expertise to internal and external stakeholders, fostering collaborations with academic institutions. Through ELC funds, the division

Goals Achieved by Epidemiologists in Alabama's ID&O Division:

- ✓ Early case identification using eCR methods
- ✓ Public health resources optimization
- ✓ Timely dissemination of disease prevention and control measures

invested in advanced data analysis tools to benefit the entire department. The expertise and innovation of these epidemiologists contribute significantly to ADPH's public health efforts, demonstrating the importance of continued support and investment in epidemiological workforce capacity.

SUBMITTED BY: *L. Amanda Ingram, Epidemiologist Supervisor, Alabama Department of Public Health*