

## INTRODUCTION

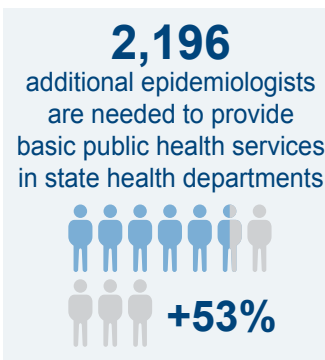
Since 2001, the Council of State and Territorial Epidemiologists (CSTE) has conducted seven **Epidemiology Capacity Assessments (ECAs)** to monitor numerical strength and functional applied epidemiology capacity in state and territorial health departments. The 2021 ECA was completed by the State and Territorial Epidemiologists from all 50 states, District of Columbia, and four territories, between January-April 2021. The 2021 ECA did not include Big Cities, local or tribal health departments, however, the state and territory approach is utilized to estimate full capacity needs across all departments.<sup>1</sup>

The ECA serves many purposes:

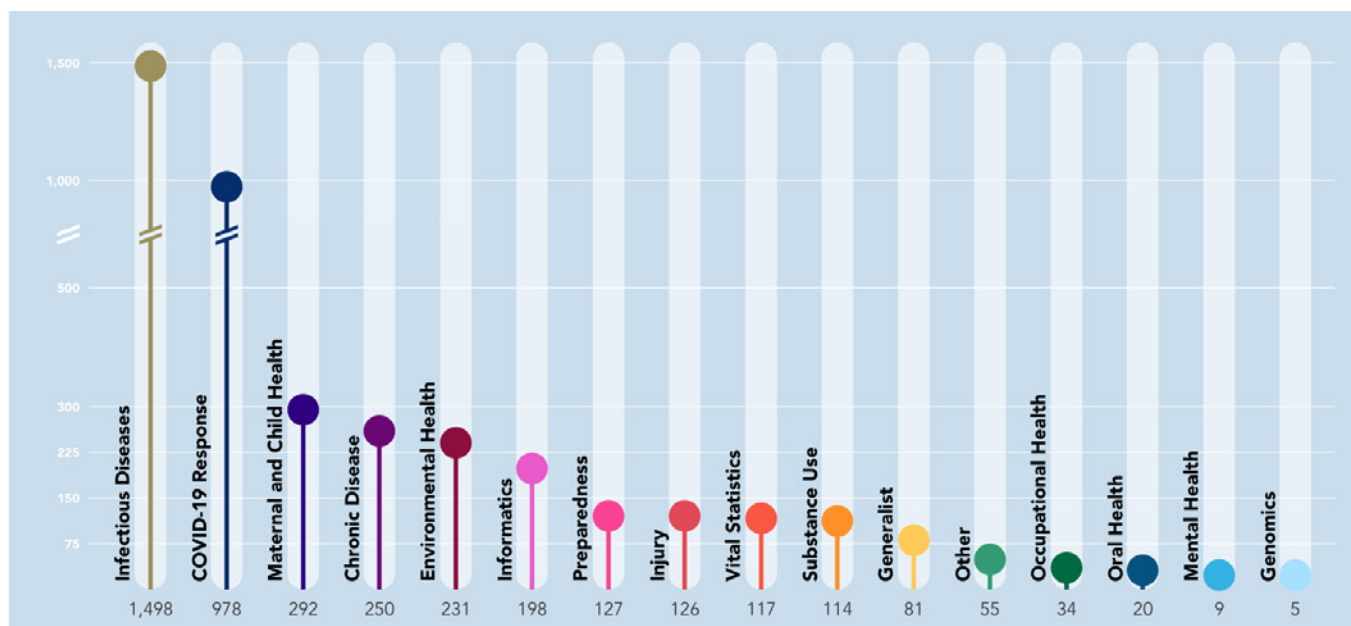
- Monitor changes in the quantity and quality of the applied epidemiology workforce
- Identify policy, system and environmental influences affecting epidemiology services and staffing
- Provide data to health departments for evidence-based decision making and assessment of epidemiology capacity compared to other jurisdictions
- Describe the needed skills and expertise among the applied epidemiology workforce

## RESULTS

From 2017-2021, the number of epidemiologists **increased 23%** to a total of 4,135. Two thirds of epidemiologists work in infectious disease and COVID-19 response, while **less than 5% work in emerging areas**, such as genomics, mental health, oral health, and occupational health. Infectious disease, chronic disease and maternal and child health all saw a decrease in epidemiologists between 2017 and 2021. There are **1.26 epidemiologists per 100,000** population, a 21% increase from 1.04 in 2017. There are 851 vacant positions across all program areas, with 81% (n = 687) of them intended to be filled. An additional 2,196 epidemiologists are needed to deliver public health services in state health departments based on current operations, which would be a 53% increase in staffing. Up to **8,000** additional epidemiologists are needed to achieve **public health transformation** in state, local, territorial and tribal health departments.



Number of Epidemiologists by Program Area, 2021



<sup>1</sup> Big City jurisdictions were assessed separately and this report illustrates capacity at the state level unless otherwise noted.

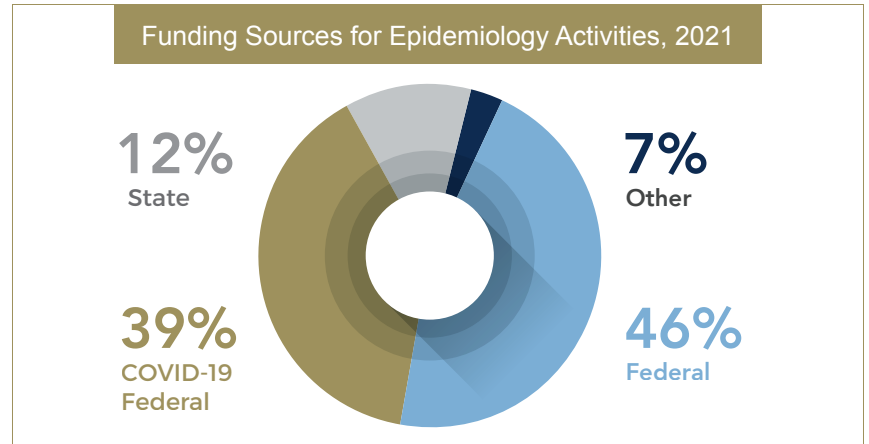
## CAPACITY

Capacity to monitor and investigate health problems remains high, but evaluation and research capacity lag behind. Overall, capacity is low in emerging program areas such as informatics, substance, abuse, and mental health. In 2021, the percentages of the states and DC that reported substantial to full capacity to monitor health status and investigate health problems and hazards were high (76% and 88%, respectively). Yet **only 43%** reported **substantial to full capacity in research and evaluation**.

- The percentage of states reporting substantial to full capacity overall was **greatest** for the program areas of infectious disease (88%), COVID-19 response (88%), chronic disease (66%), and MCH (70%), and **lowest** for genomics (7%) and mental health (13%).
- The greatest training priority remains data analytics, defined as informatics and the application and translation of public health data.

## FUNDING AND RETENTION

In 2021, **85%** of health department epidemiology funds were provided by the federal government, with **39%** from short-term COVID-19 Supplemental Federal Funds. Continued heavy reliance on federal funds reduces flexibility, adds insecurity to the workplace, and may affect the ability to respond to emerging health threats. States emphasized the inability to retain the dedicated workforce without competitive compensation or opportunities for advancement.



## RECOMMENDATIONS



Reform civil service epidemiology job classifications to include set salary ranges that are competitive.



Prioritize the recruitment and placement of epidemiologists to provide adequate staffing capacity and support the delivery of the Essential Public Health Services. Additional staff are needed in genomics, mental health, oral health and occupational health.



Prioritize recruitment that values diversity, as a variety of skills, experiences and training are needed to support epidemiology activities and should be valued in the hiring process. Standardized position descriptions, updated competencies and career ladders are needed to aid in recruitment.



Improve organizational culture and provide resources to personnel that focus on managing and minimizing burnout and enhance staffing capacity.



Provide on-the-job training that will upskill the existing workforce to meet emerging needs, including data analytics, software skills and leadership development. Support cross-training between epidemiologists, preparedness personnel and laboratory staff to improve future response efforts.



Provide flexible, diverse funding to allow agencies to prioritize jurisdictional needs and enhance job security. Explore opportunities for states to invest in public health.



Leverage the general public's recent exposure to the profession and create a sustainable pipeline of future epidemiologists. Epidemiology training can be integrated into middle and high school curricula and additional post-graduate training experiences to attract professionals to work in public health and serve their communities.

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