

# State Public Health Employee Worker Shortage Report:

## A Civil Service Recruitment and Retention Crisis





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# I

## Executive Summary

The most difficult challenge state and local public health agencies face in developing the capacity to respond to terrorist events, emerging infectious diseases, and other public health threats and emergencies is assuring a qualified workforce is available to carry out these functions. If current workforce demographic trends are left unchecked, they will have an adverse effect on the capacity of state health agencies to carry out their mission; including responsibilities that have continued to expand since the events of September 11, 2001, and the ensuing anthrax attacks.

In October 2002 the Council of State Governments (CSG) and the National Association of State Personnel Executives (NASPE) conducted a workforce survey of all state agencies. The resulting report, "State Employee Worker Shortages: The Impending Crisis," noted that state governments could lose more than 30 percent of their workforce to retirement, private-sector employers, and alternative careers by 2006, and that health agencies would be the hardest hit.

The findings from the CSG/NASPE workforce survey appeared to confirm the anecdotal evidence and other information that was emerging about the pending crisis in the state public health workforce. The combination of that evidence and the CSG/NASPE findings were so compelling that ASTHO concluded a broader inquiry and analysis of state public health workforce trends were warranted. Consequently, in November and December of 2003, ASTHO surveyed its members, the senior health officials of the 57 states and territories (and the District of Columbia), on a wide spectrum of workforce trends and indicators. ASTHO received responses from 37 states. This report contains the results of the survey.

The following are key findings from the ASTHO/CSG survey:

- A rapidly aging workforce whose average age is 46.6 years
- Public health retirement rates as high as 45 percent over the next five years
- Current vacancy rates of up to 20 percent in some states
- Public health employment turnover rates of 14 percent in some parts of the country.

These findings illustrate a growing public health employee shortage in a majority of the states that has been further exacerbated by severe state budget cuts during 2002 and 2003—the deepest cuts in 60 years<sup>(1)</sup>—which have had profound effects on the ability of public health agencies to fill vacant positions.

More than 50 percent of the states cite the lack of qualified job applicants or individuals willing to relocate as major barriers to preparedness.<sup>(2)</sup> Approximately 42 percent of the current epidemiologists in state health agencies lack formal academic training in epidemiology.<sup>(3)</sup> Only public health nurses, an occupational group that averages more than 30 years of service,<sup>(4)</sup> are more affected by workforce shortages than epidemiologists.

State health agencies are supporting and, in some cases, implementing a variety of strategies to head off the workforce crisis. States reported that increased access to advanced education, competitive pay and benefits, and flexible work schedules and telecommuting opportunities are the three most important incentives in attracting and retaining an adequate public health workforce.

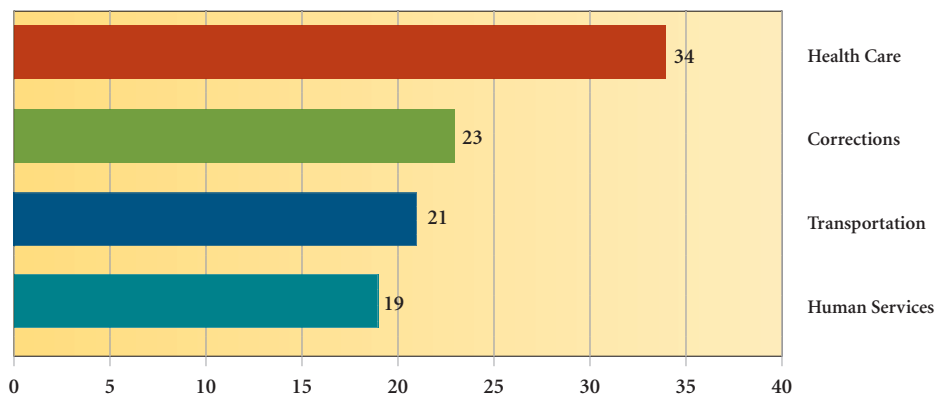
# Introduction

The Council of State Governments (CSG) and the National Association of State Personnel Executives (NASPE) conducted a survey in October 2002 that predicted state public health departments would be the state agencies most likely to experience the government workforce shortage. The survey data captured in the report, "State Employee Worker Shortages: The Impending Crisis," indicated that 85 percent of the state agencies responding named the health field as the most affected by personnel shortages.<sup>(5)</sup> (Figure 1)

The Association of State and Territorial Health Officials (ASTHO), in conjunction with CSG and NASPE, conducted the National Survey on State Public Health Employee Worker Shortage in December 2003. This report reflects the survey findings provided by the State Health Officials and serves as a companion to the NASPE/CSG report. The new survey findings provide a better understanding of current public health workforce challenges and state health agencies' strategies for addressing the workforce crisis.

The last major review of the national public health workforce was conducted in 2000 by the Bureau of Health Professions in the Department of Health and Human Services Health Resources and Services Administration.<sup>(6)</sup> The Bureau's report, "Public Health Work Force Enumeration 2000," illustrated the differences in responsibilities among state public health agencies, the variation in ways agencies enumerate their employees, the large variety of professional disciplines employed, and the complexity of making cross-agency comparisons. This report stated that the ratio of state public health workers to population had dropped from 219 per 100,000 in 1980 to 158 per 100,000 in 2000. This landmark report did not examine the issues of recruitment and retention.

In the five years since the enumeration study state public health has entered a new era with new responsibilities. Public health has been subject to significant new pressures and challenges. The events of 9/11 and the anthrax attacks brought the role and responsibility of the public health workforce in emergency response efforts to the fore in public understanding and to the attention of colleagues in emergency management and other first response agencies. This was followed by severe state budget cuts during 2002 and 2003-the deepest in 60 years. Public health agencies did not escape the cuts.



## Figure 1

### Agencies Affected by Worker Shortage

Chart represents the number of states that listed each agency as one "most likely to be most affected by a worker shortage."

Source: CSG/NASPE Survey

# Public Health Workforce Shortages

## Trends Impacting the Public Health Workforce

Four trends emerged from the survey of ASTHO members which confirm the findings in the earlier report, "State Employee Worker Shortages: The Impending Crisis:"

- 1 A rapidly aging public health workforce and shrinking labor pool.
- 2 A high percentage of the public health workforce is eligible for retirement eligibility.
- 3 Chronic shortages in professional areas such as public health nursing, epidemiology, laboratory science and environmental health.
- 4 High turnover rates in states.

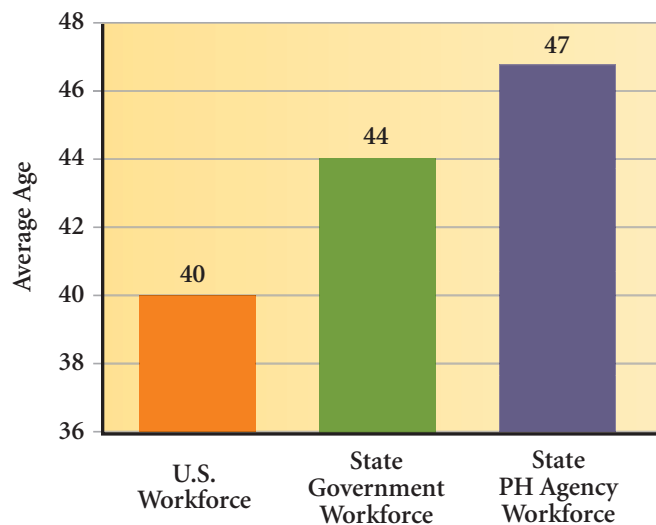
### One: A Rapidly Aging Workforce

The average age of state public health employees is 46.6, according to the ASTHO/CSG survey. Since the largest portion of the U.S. working population is starting to move into retirement age, this trend toward an aging workforce creates new challenges for filling vacant positions in public health. By comparison, the "State Employee Worker Shortages: The Impending Crisis" report revealed the average age of all state agency employees to be 44 years, the center of the baby boom generation's age range and the age of the U.S. workforce.<sup>(7)</sup> According to the Social Security Administration, the average age of the American workforce is 40, or 15 percent younger than the state public health workforce.<sup>(8)</sup>

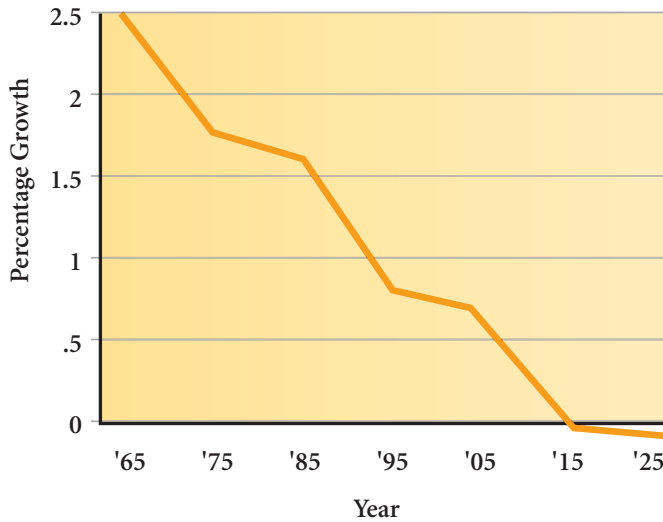
## Figure 2

### Average Age of Public Health Workers, by Region

Source: ASTHO/CSG Survey, CSG/NASPE Survey, Social Security Administration



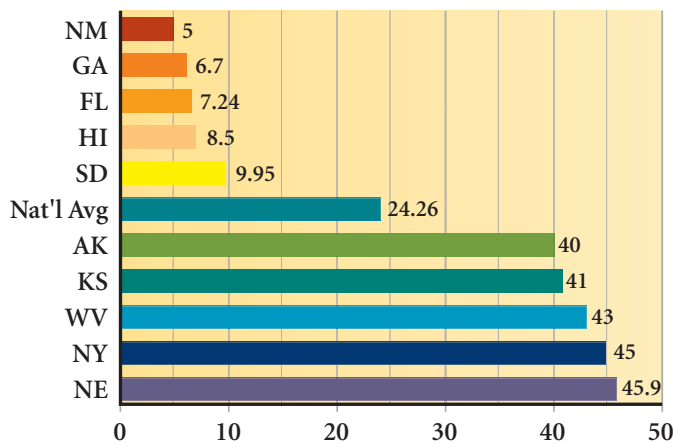
The population of the United States is undergoing significant change. The nation is experiencing a significant bulge in the eligibility for retirement. The older population (65 and over) numbered 35.6 million in 2002, an increase of 3.3 million or 10.2 percent since 1992. However, the number of Americans aged 45-64, increased by 38 percent during this period.<sup>(9)</sup> Figure 3 shows the falling growth rate of the U.S. workforce. The baby boomer generation is aging and the succeeding generation of workers is significantly smaller.<sup>(10)</sup>



**Figure 3**

**Annual Growth Rate of the U.S. Labor Force**

Source: Social Security Administration



**Figure 4**

**Percent of State Public Health Employees Eligible for Retirement**

Source: ASTHO/CSG Survey

Note: The five states with the highest and lowest percentages each are shown.

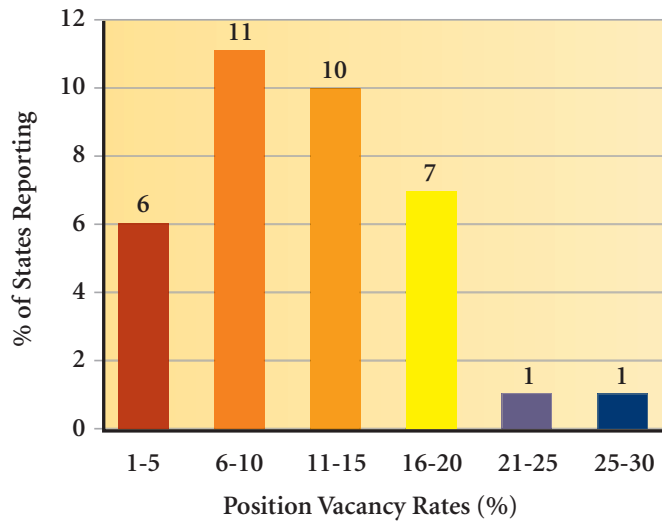
**Two: High Percentage of Workers Eligible for Retirement**

The “State Employee Worker Shortages: The Impending Crisis” reported that state governments could lose more than 30 percent of their workforce to retirement, private-sector employers, and alternative careers by 2006. The rates for state public health agencies according to the ASTHO/CSG survey are as high as 45 percent (Figure 4). On average, about 24 percent of the public health workforce is eligible for retirement compared to 21 percent reported for all state employees in October 2002.<sup>(11)</sup>

## Figure 5

### Position Vacancy Rates in the State Public Health Agencies

Source: ASTHO/CSG Survey



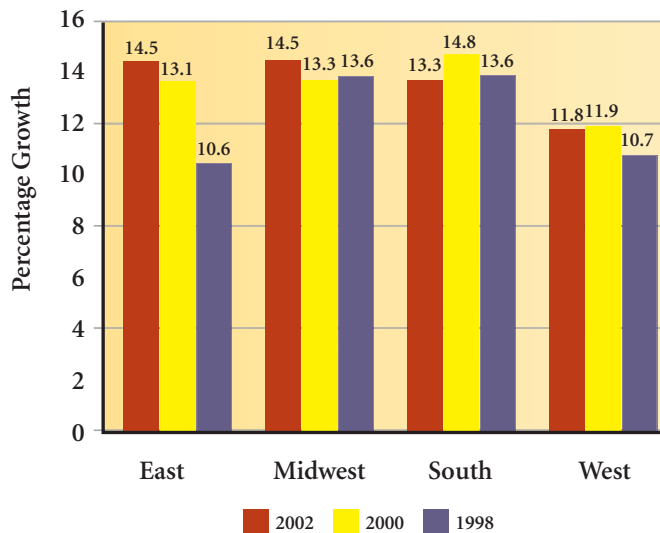
### Three: Chronic Shortages in Professional Areas

Two states from the survey show vacancy rates for public health positions of 20 percent or higher. Seventeen out of the 36 states which answered this question reported vacancy rates in the 11-20 percent range. Remaining states reported that the percentage of state health agency vacancies did not change or had declined in the last five years. The CSG/NASPE report showed that around 11 percent of the state jobs across all state agencies are vacant.<sup>(12)</sup>

## Figure 6

### Turnover Rates for State Public Health Personnel, by Region and Year

Source: ASTHO/CSG Survey



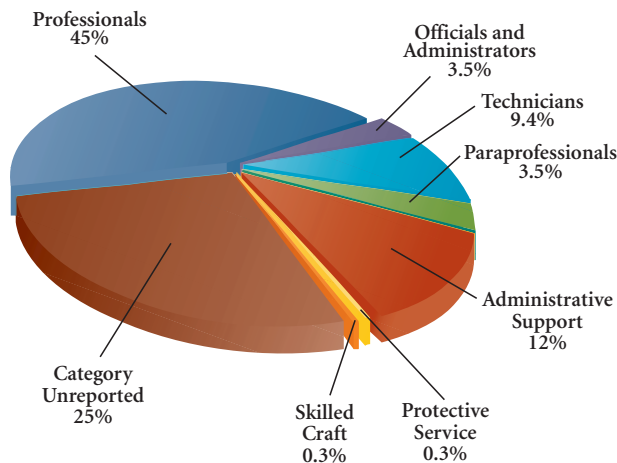
### Four: High Turnover Rates

In addition, states must contend with an annual employee turnover rate that averaged 14 percent for the 28 states responding to this question. The high turnover represents a potentially huge loss of institutional knowledge, leadership, and experience for state health agencies. Although in most states the turnover rate for public health is comparable to the turnover rate for all state government agency employees, hiring freezes and shortages will make it hard for state public health agencies to fill vacant positions.<sup>(13)</sup> The earlier CSG survey documented that 27 states had enforced some type of mandatory hiring freeze.<sup>(14)</sup>

## Public Health Shortage Profiles by Profession

As highlighted in Figure 7, public health professionals such as nurses, laboratory scientists, environmental workers, physicians, nutritionists, educators, and social workers comprise 45 percent of the current public health workforce. The rest of the workforce consists of health officials and administrators (3.5 percent), technicians (9.4 percent), administrative support personnel (12 percent), paraprofessionals (3.5 percent), and other technical and administrative categories.<sup>(15)</sup>

State and local health agencies are reporting the most significant worker shortages in the areas of nursing, environmental health, epidemiology, and laboratory science.<sup>(16)</sup> Figure 8 of the ASTHO/CSG survey reflects that the state health agency workforce shortage issue is most noticeable among public health nurses. Thirty out of 37 reporting states identified public health nursing as the field that is and will continue to be the most affected by the personnel shortage. Furthermore, the survey documented considerable shortages for three other public health disciplines including epidemiologists (15 states), laboratory workers (11 states) and environmental health specialists (11 states).



## Figure 7

### Composition of Total Public Health Workforce

Source: U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, National Center for Health Workforce Information and Analysis, The Public Health Work Force: Enumeration 2000

### Public Health Nursing

Thirty out of 37 reporting states indicated that nursing is the occupational class most affected by the workforce shortage; shortages are twice that of the next leading class, epidemiologists (Figure 8).

The leaders of state public health nursing average more than 30 years service and are very close to retirement. In one state nearly 40 percent of the public health nursing workforce is eligible for retirement today.<sup>(17)</sup>

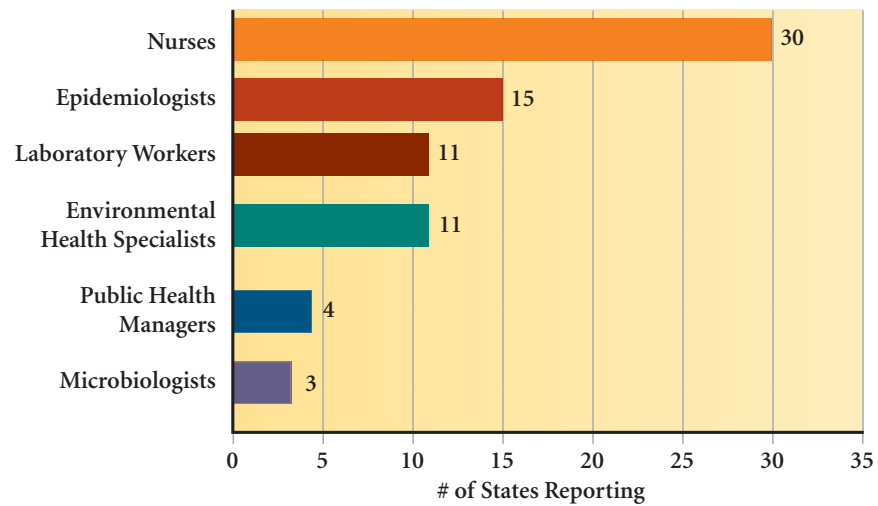
Public health nurses comprise 11 percent of the total public health workforce and 25 percent of all public health professionals.<sup>(18)</sup> The ASTHO/CSG survey shows the 37 reporting states have a total of 14,733 nurses working for public health agencies. The number of public health nurses varies by state; one state reported six nurses on staff, while another reported having 2,591.

The roles and responsibilities of the public health nurse can also vary by state. They might include, for example, instructing individuals on preventive care, nutrition, and childcare and arranging for immunizations, blood pressure screening; and/or working with community leaders to promote health education.<sup>(19)</sup>

## Figure 8

### State Public Health Occupational Classes Most Affected by Worker Shortage

Source: ASTHO/CSG Survey



Health providers across the nation, public and private, are reporting serious deficiencies in the supply of nurses in all health care settings. According to national projections, by the year 2010 there will be a need for one million additional registered nurses in all health fields.<sup>(20)</sup> The nursing shortage in the private sector adds to the challenge for the public health sector, which must compete for a limited pool of applicants.

Part of the public health nurse recruitment challenge is that young people are increasingly reluctant to enter public health nursing, primarily because of low salaries in the field.<sup>(21)</sup> Unfortunately, fiscal conditions in many states do not permit the salary increases necessary to allow state health agencies to effectively compete for limited talent.

Women in the past have traditionally filled the vast amount of nursing positions due to limited career paths. However, today's women have greatly expanded career opportunities to choose from when selecting a career leaving behind significant recruiting gaps.

### Epidemiology

Epidemiology provides the fundamental public health functions of monitoring health status, diagnosing and investigating health hazards and events, and evaluating the effectiveness of health services.

According to the ASTHO/CSG survey, at least 15 of the 37 reporting states have a shortage of epidemiologists (Figure 8). The U.S. General Accounting Office reports that barriers to recruiting and retaining epidemiologists in the public health field include noncompetitive salaries and a general shortage of professionals.<sup>(22)</sup> Approximately 42 percent of the current epidemiology workforce in state health departments lacks formal academic training in epidemiology.

The shortage of epidemiologists may be partly explained by the high level of education required for this profession in relation to public salaries: 28.6 percent of epidemiologists have doctoral level training, 40 percent have master's level training, 18.4 percent have bachelor level training and 13 percent have various other types of educational qualifications.<sup>(23)</sup>



## Laboratory Scientists and Technicians

Public health laboratories are often the first line of defense in protecting the American people against diseases and other health threats. Public health laboratories provide diagnostic testing, disease surveillance, applied research, and training. The laboratory workers in state public health constitute 3.1 percent of the total public health workforce.<sup>(24)</sup>

While several states participating in the ASTHO/CSG survey noted the shortage of laboratory workers, other surveys have also found shortages of laboratory personnel. A report by the Association of Public Health Laboratories that includes data as of December 2002, reveals a severe shortage of qualified laboratory personnel in the states.<sup>(25)</sup> Thirteen states reported no doctoral-level molecular scientist on staff, and 23 states reported only one. Most states agreed that at least two doctoral-level molecular scientists were needed on staff to ensure emergency readiness.

A shortage of information technology specialists can seriously imperil the ability of states to meet the national goal of timely and effective communication of laboratory results during an emergency.<sup>(26)</sup> Sixteen states reported no dedicated, full-time information technology specialist to manage laboratory information systems and 18 states reported only one person serving in this capacity.

The primary barrier to hiring adequate laboratory staff is the lack of trained personnel willing to serve in the public sector. In recognition of this, Congress took steps in 2003 to help meet the need of more public health laboratory staff by appropriating \$146 million to improve laboratory capacities. However, even though the supplemental funding provides for hiring of a skilled laboratory workforce, the needed workforce simply does not exist. Of 22 states that have not met the August 2003 deadline for preparedness benchmarks from the grant money, 17 cited the difficulty in recruiting new staff as a major problem.<sup>(27)</sup>

The Association of Public Health Laboratories cautions that policy-makers might erroneously assume that because all of the funds have not been spent, states don't need the money. In fact, intractable vacancy rates and the physical unavailability of professionals willing to work in the public sector are the core of the problem.<sup>(28)</sup>

## Environmental Health Professionals

The term environmental health professional covers a broad array of services in the public health field. For the past 150 years environmental health services have focused on food, water and sanitation. The emergence of new threats – such as cryptosporidium, hantavirus, West Nile virus, SARS, and bio/agro-terrorism – shows the need for a strong environmental public health system and workforce.

Eleven of the 37 reporting states in the ASTHO/CSG survey identified a shortage of environmental health professions. There are slightly more than 20,000 environmental health professionals and technicians in the United States.<sup>(29)</sup> They comprise about 4.5 percent of the total public health workforce.<sup>(30)</sup>

Current challenges for recruiting and retaining existing environmental health workers include low pay scales at the state level, minimal advancement opportunities, and competition with the private sector. State environmental programs often serve as a training ground for people to learn needed skills and then move into the private sector at higher salaries.

# I

## Keys to Success: State Plans to Address Public Health Workforce Issues

Measuring the extent of the current workforce deficit, projecting future staffing needs, and developing effective strategies to meet these needs present new challenges to State Health Officials. Given current budget constraints at the state level, states are experimenting with new approaches in recruitment and retention. Some of these strategies have been implemented, while others are still in the planning stage.

### Workforce Recruitment and Retention

States are considering various strategies to ensure adequate staffing of public health agencies, including:

- Increasing pay and benefits
- Offering flexible work schedules and telecommuting opportunities
- Providing professional training
- Training future public health leaders
- Marketing public health careers at high schools and on college campuses
- Partnering with educational institutions
- Using information technology and the Internet for recruitment.

The ASTHO/CSG survey identified six trends that are developing in the approaches to workforce recruitment and retention among the states. These are shown in Figure 9. The survey reported that 34 states are establishing new recruitment and retention strategies and 75 percent of states have developed long-term plans to address the personnel crisis.

### Outreach Campaigns

Seven of the 37 reporting states are implementing recruiting strategies that promote public health careers at high schools and higher education institutions, for example, outreach campaigns aimed at universities and colleges; schools of public health and health services; and historically minority colleges. State health agencies are also redefining public service by developing public health career promotion campaigns that showcase state public health agency positions as interesting careers where giving back to the community, detecting new and emerging threats, and keeping America healthy are just part of the job.

All 37 states that participated in the survey have proposed various approaches to alleviating public health worker shortages. For example, some states are developing mid-life career change programs to attract professionals leaving other career paths. Other states are developing reports on the current conditions affecting the workforce to aid policymakers in determining future planning.

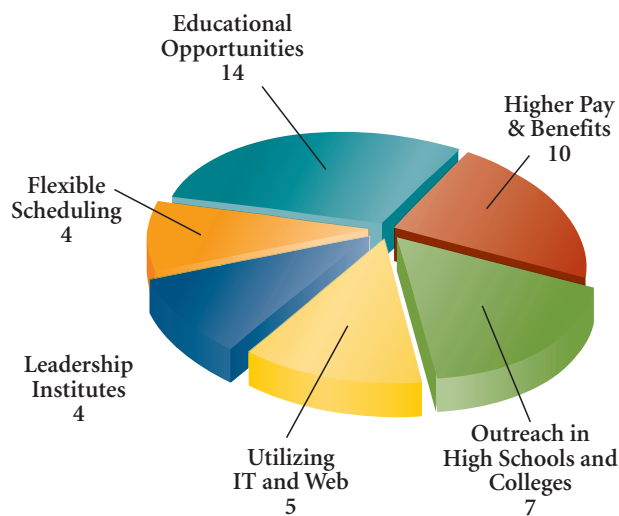
### Information Technology

Five states reported using information technology and the Internet to expand their outreach and optimize their outreach campaigns. Some states are using the Internet to advertise public health vacancies, taking advantage of commercial partnerships offered by web-based job search engines for augmenting recruitment capabilities and shortening the hiring process. States are also developing clearinghouses for current in-depth information on health careers.

## Professional Training

Recognizing the value of institutional knowledge, state health agencies are devising innovative strategies to retain current employees. Fourteen of the 37 reporting states are considering incentives designed to advance the competencies of their public workforce, such as scholarship and loan repayment programs, work-study arrangements, professional training, and distance learning opportunities. (Figure 9) Emphasis on the value and attainment of proper qualifications through higher education and continuing education is essential if the public health workforce is to keep up with the escalating demands of new scientific technologies and methodologies.<sup>(31)</sup>

Eleven of the 37 reporting state public health agencies are considering partnering with various professional educational institutions to design public health programs and curricula. By educating all health professionals about public health skills, states can develop basic public health curriculum units that can be adopted into any baccalaureate or graduate health professional program. This increases the pool of partners for public health organizations that reach out for collaboration in future retention, training, and mentorship.



## Higher Pay and Benefits and Flexibility

States are concerned that considerably lower salaries in governmental public health positions make it difficult to compete with the private sector for employees. Sixteen states are considering offering pay and benefits that are in line with the private sector as a potential solution to public health worker shortages (Figure 10). The CSG/NASPE report documents that 45 states have faced serious budget difficulties during the past two years that will make it difficult for them to address the state workforce shortage.<sup>(32)</sup> Despite funding cuts, the ASTHO/CSG survey demonstrates some states are finding vehicles to increase pay to retain employees when the market shrinks for particular high-need occupational categories.

Four of the 37 reporting states are offering telecommuting and other flexible scheduling opportunities to their public health employees. States found flexible schedules improve organizational resilience, promote skills retention for those who might want to move out of state but continue to work on a full-time or part-time basis, lower absenteeism, and reduce the desire to “job hop”.

## Figure 9

### State Public Health Personnel Recruitment and Retention Plans

Source: ASTHO/CSG Survey

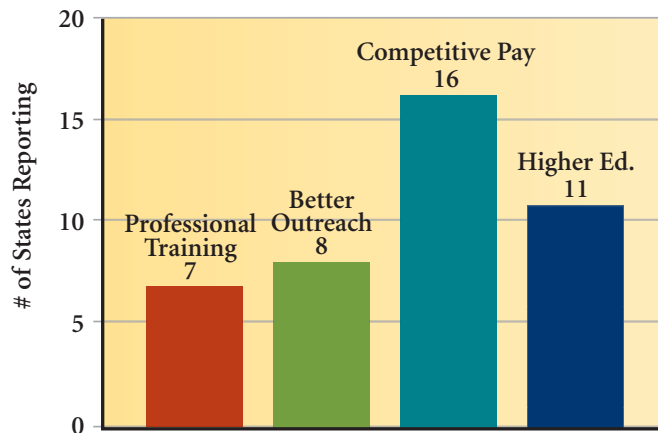
One way to retain the expertise and experience of the aging workforce is to rehire retired employees. Of 36 states that responded to this question in the survey, all but four states reported that they actively seek to rehire retired employees. Of the 33 states responding that are permitted to rehire, 16 provide retirement benefits to the rehired employees. Some states are offering part-time employment to attract public health system retirees.

Tapping the retired worker talent pool offers a significant opportunity to avoid the loss of institutional knowledge and retain highly-skilled employees. It also allows more time for succession planning activities. Currently, Americans age 50 and older make up 28 percent of the population, with 50.6 million people between ages 50 and 70. As the baby-boomers mature, it's predicted that there will be as many Americans of retirement age as there are 20-25 year olds.<sup>(33)</sup>

## Figure 10

### Keys to Solving Public Health Workforce Challenges

Source: ASTHO/CSG Survey



### Enhancing Leadership Capacity

Four of the 37 reporting states are focused on enhancing the leadership capacity of their public health managers through leadership training institutes. Public health agencies partner with state educational institutions to help future health leaders acquire and develop necessary leadership skills.



# Conclusion

An adequate supply of competent public health professionals is a vital component of the governmental public health infrastructure. A number of factors are having an adverse effect on the ability of state public health to ensure that there are sufficient numbers of these individuals to fill current and rapidly growing vacancies. Chief among these are that the current workforce is rapidly aging and nearing retirement while there are few students and young professionals who are interested in careers at public health agencies. The combination has resulted in a critical narrowing of the public health workforce pipeline in a majority of the states. If left unchecked, time will exacerbate the crisis.

The ASTHO/CSG survey shows that the greatest worker shortages are in the areas of public health nursing, epidemiology, laboratory science, and environmental health, all of which require advanced specialized training and education. These professionals detect emerging diseases, educate the public about actions to take to prevent exposure, protect the food supply, and help develop public health policy to prevent the spread of disease. A long-term aggressive plan must be implemented to educate, recruit, and retain competent public health professionals.

States are implementing various strategies to improve worker recruitment and retention, such as reaching out to school-aged children to spark interest in the public health profession, using information technology to recruit new public health workers, providing incentives to improve skills, increasing the pay and benefits of the existing public health workforce, and rehiring retired public health employees. The underlying current of tight state budgets, however, affects all of these efforts.

Aside from offering competitive salaries, long-term solutions will require innovative programs for on-the-job training and expensive advanced degree education. Many states said outreach campaigns to new partners, institutes of higher learning, school-aged children, and legislatures are critical to building the public health workforce pool. Many states also indicated that scholarship and loan repayment programs could help public health to recruit the best and the brightest America has to offer.

There are a variety of reasons for the public health workforce shortage. The survey provides examples of the practices states are implementing to alleviate the shortages and how the entire public health system must plan for long-term solutions. Both the problems and the solutions are multi-dimensional and will require a well-coordinated effort on the part of the public health agencies, legislatures, institutes of higher learning, and the federal government to help improve the outlook for the future workforce and guarantee the security and health of the American people.



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