



COUNCIL ON LINKAGES BETWEEN ACADEMIA AND PUBLIC HEALTH PRACTICE

Overall Public Health Workforce

Year	Federal Health FTEs	State Health FTEs	Local Health FTEs	State plus Local FTEs	Total FTEs
2000	120,362	172,678	236,496	409,174	529,536
2001	122,999	172,414	251,399	423,813	546,812
2002	124,979	176,345	252,326	428,671	553,650
2003	124,828	176,868	253,888	430,756	555,584
2004	127,933	174,301	249,857	424,158	552,091
2005	125,163	178,465	246,300	424,765	549,928
2006	126,775	182,694	250,163	432,857	559,632

Note on sources: 448,254 was the number cited in *The Public Health Workforce: Enumeration 2000* for total FTEs in 2000. This enumeration was based on five months of surveys and compiled data from all 57 states and territories, as well as federal and local agencies. Difficulties were acknowledged within the report, including both over counting and undercounting, as well as major differences between jurisdictions in the available data. However, data from the *Enumeration* may be more accurate than the data above as the *Enumeration* focused only on public health practitioners and attempted to survey the *entire* workforce, rather than the samples on which the above numbers are based. The above numbers were used for this purpose since they are significantly more recent and show trends over times.

According to the *Public Health Enumeration 2000*, the breakdown of the overall workforce was:

- Official/administrative - 3.6%
- Professional – 44.6%
- Technical - 13.9%
- Clerical/support – 12.9%
- Could not be assigned – 25%

These workers had the following jobs:

- Environmental professional (includes environmental engineers and environmental scientists & specialists) – 10%
- Public health physician – 3%
- Public health nurse – 25%
- Medical/public health social worker – 1%
- Public health nutritionist – 3%
- Public health dental worker (includes dentists, dental hygienists, and other dental workers) – 1%
- Epidemiologist - .5%
- Public health lab professional – 7%

- Public health educator – 1%
- All other professionals (includes professionals in other titles and professionals unidentified by title) – 49%

According to the 2003 IOM study, *Who Will Keep the Public Healthy*, the CDC estimated that 80% of the public health workforce lacks specific public health training.

Local Health Departments (LHDs)

- 160,000 FTEs
 - Nurses – 24%
 - EH specialist/scientist – 10%
 - Health educator – 3%
 - Nutritionist – 3%
 - Manager/Director – 6%
 - Clerical staff – 27%
 - Other Profile categories – 4%
 - Not categorized – 23%
- NACCHO estimated that 20% of LHD employees would be eligible for retirement within the next five years. The mean age of LHD top executives is 52 and nearly 50% are in their 50s.
- Only 58% of LHD top executives hold a graduate-level degree. The mean tenure of LHD top executives is 8.2 years.
- Respondents to the survey cited uncompetitive pay and benefits, lack of ability to hire due to budgetary restrictions, geographical location, and candidates with insufficient experience and/or education as the top barriers to hiring.
- The report includes a number of other interesting statistics, such as sources of training for LHD staff (state health agency, LHD in-house training, and professional organizations were the top sources).

State Health Departments

- Average age of the state public health workforce is 46.6 years
- Retirement rates could reach as high as 45% by 2009
- Average turnover rate of 14%
- Nurses were most affected by the workforce shortage

The Association of State and Territorial Health Officials' report includes more detailed information on the level of training and education for individual professions, as well as greater details about the worker shortage.

Data Submitted by Individual Organizations:

Centers for Disease Control and Prevention (CDC) – *provided by Denise Koo, CDC Director of Career Development Division, Office of Workforce and Career Development, email, 11/13/2007, (unless otherwise noted)*

- Roughly 8,000 FTEs
- Roughly 6,800 contractual employees – *provided by Sandy Chapman, CDC Director of Management Information Systems, email 1/18/2008*
- Fellowship data
 - Council of State and Territorial Epidemiologists/CDC Applied Epidemiology Fellowship – 10 fellows/year
 - American Public Health Laboratories Emerging Infectious Disease Lab Fellowship – 5-10 PhD fellows for a two year program and 35 bachelor's or master's level fellows for a one year program
 - Office of Workforce and Career Development (OWCD) – most fellows are not in the public health workforce when they enter OWCD programs. About half graduate in a given year, with 80-85% staying in public health
 - Epidemic Intelligence Service – 75-80 physicians and health professionals in a 2 year program. More than 70% stay in public health after graduating
 - Preventive Medicine Residency/Fellowship – 6-10 residents/fellows per year with 94% staying in public health after graduating
 - Prevention Effectiveness Fellowship
 - Public Health Informatics Fellowship
 - Public Health Prevention Service – 25 prevention specialists/year in a three year program, most have an MPH
 - Emerging Leaders Program – about 40 people/year in a two year program
 - Presidential Management Fellowship – about 15 people/year, most with a master's degree
- Student program data
 - Epidemiology Elective for Students – 6-8 weeks, 40-50 students/year
 - Medical Student Fellowship – 8 medical school student fellows/year, 10-12 month fellowship

Health Resources and Services Administration

- In 2004, there were roughly 360,000 registered nurses working in public/community health (including schools and occupational health).⁷ This is down from 402,000 in 2000.

Association of State and Territorial Health Officials (ASTHO) – Comments *provided by Susan Allan, email, 11/12/2007*

- No real data are available on the flow of workers, only anecdotes
 - a disproportionate number of staff are in their 50s and there is a generation gap with staff in their 30s, but almost none in their 40s
 - recruiting routinely takes 6-9 months before finding an acceptable candidate
 - often, very junior level staff are hired, get some experience, and leave a year or two later

- *ASTHO 2007 State Public Health Workforce Survey Findings, PHTC Annual Meeting presentation by Melissa Lewis, 11/7/07*
 - Average age of a public health worker in state government is 47 and the average age of new hires is 40.
 - 20% of the average State Health Agency's workforce will be eligible to retire within three years

- *ASTHO survey data provided by Melissa Lewis, email, 12/18/07*
 - roughly 120,134 state health employees
 - more detailed information is available in the data summary, including numbers of FTEs in individual profession, average age of state public health employees, etc.

Association of Schools of Public Health (ASPH)

- As of 2006, ASPH reported that 10 schools of public health offered undergraduate majors and 9 schools offered minors.
 - A total of 1430 students were enrolled in the major in 2006.
 - A total of 169 students were enrolled in the minor in 2006.
- There were 6,792 graduates during the 2005-2006 school year from schools of public health, a 2% increase from the year before.
- 64.7% of the total degrees awarded in 2005-2006 were MPHs.

Association of University Programs in Health Administration (AUPHA) – *provided by Christopher Atchison, email, 11/12/07*

- AUPHA schools reported 842 undergraduate and 1926 graduate degrees issued in 2005. Of these graduates, 2.1% of undergraduates (18 students) and 1.9% of graduates (36 students) designated a government placement immediately after graduation.
- “Public health” placements, a more general term, reflected an additional 5.8% of undergraduates (49 students) and 1.6% of graduates (31 students)

Council of State and Territorial Epidemiologists (CSTE)

- In 2006, 2,502 epidemiologists were currently employed at the state level
- Nearly half of all public health epidemiologists have less than five years of experience in the field
- The four greatest barriers to retaining qualified and trained state epidemiologists are: salary scale, promotion opportunity, restricted merit raises, loss to private industry or federal sector
- 54% of epidemiologists have degrees in epidemiology (up from 51% in 2004), most often a master’s degree
- 90% of states reported funding training, with almost 80% supporting extramural training or education and 81% providing on-site training

Association of Prevention Teaching and Research – *provided by Alison Stock, email, 12/12/07*

- 21 of 85 member organizations (24.7%) responded to a survey and reported that in 2005-2006 there were 565 graduates, of which 231 work in governmental public health
- Estimating based on extrapolations, there would be 2287 total graduates across the 85 member organizations, 936 of which would work in governmental public health

National Library of Medicine Literature Search

The National Library of Medicine conducted a literature search to help these efforts.

Other Organizations Contacted

American Public Health Laboratories - Kris Peters, Senior Program Assistant for Workforce Development, contacted via email 12/17/2007. Workforce related literature is being updated and is not yet available to be shared.

American College of Preventive Medicine

American Public Health Association

Community Campus Partnerships for Health

Council of Accredited Master of Public Health Programs

National Association of Local Boards of Health

National Network of Public Health Institutes

QUAD Council of Public Health Nursing Organizations

Society for Public Health Education

Sources:

1. U.S. Bureau of the Census, "Federal, State, and Local Governments, Public Employment and Payroll Data," <http://www.census.gov/govs/www/apes.html> (accessed 12 December 2007).
2. *Public Health Enumeration 2000*, <ftp://ftp.hrsa.gov/bhpr/nationalcenter/phworkforce2000.pdf>
3. *Public Health Enumeration 2000*, <ftp://ftp.hrsa.gov/bhpr/nationalcenter/phworkforce2000.pdf>
4. *Who Will Keep the Public Healthy*, Institute of Medicine, 2003, page 51
5. *NACCHO 2005 National Profile of Local Health Departments*, http://www.naccho.org/topics/infrastructure/documents/NACCHO_report_final_000.pdf
6. *State Public Health Employee Worker Shortage*, 2004, ASTHO, <http://www.astho.org/pubs/Workforce-Survey-Report-2.pdf>.
7. *The Registered Nurse Population: Findings from the March 2004 National Sample Survey of Registered Nurses*, Health Resources and Services Administration, page 19.
8. *2007 State Public Health Workforce Survey Findings*, presentation at PHTC Annual Meeting by Melissa Lewis, ASTHO, November 7, 2007.
9. *Undergraduate Public Health Education at ASPH-Member Schools, 2006*, Association of Schools of Public Health, <http://www.pathwaystopublichealth.org/documents/UgradPH2006.pdf>.
10. *2006 Annual Data Report*, ASPH, page 11, <http://www.asph.org/UserFiles/Data%20Report.2006.pdf>.
11. *Academic Program Survey*, AUPHA, pages 11-14.
12. *Public Health Epidemiology: Capacity at a Crossroads*, CSTE, page 2, <http://www.cste.org/pdffiles/2007/ECABriefFINAL.pdf>
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14. *Public Health Epidemiology: Capacity at a Crossroads*, CSTE, page 3, <http://www.cste.org/pdffiles/2007/ECABriefFINAL.pdf>

15. *2006 National Assessment of Epidemiologic Capacity: Findings and Recommendations* , CSTE, page 4 , <http://www.cste.org/pdffiles/2007/2006CSTEECAFINALFullDocument.pdf>
16. *2006 National Assessment of Epidemiologic Capacity: Findings and Recommendations* , CSTE, page 4, <http://www.cste.org/pdffiles/2007/2006CSTEECAFINALFullDocument.pdf>