



# Public Health Workforce Assessment Report



## North Carolina Public Health State Accreditation

November 2006 - January 2007





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# Introduction

An almost universal priority for workforce development is ensuring that all public health practitioners have mastery over a basic set of competencies involving generalizable knowledge, skills, and abilities that allow them to effectively and efficiently function as part of their public health organizations or systems (CDC-ASTDR, DHHS, CDC).<sup>1</sup>

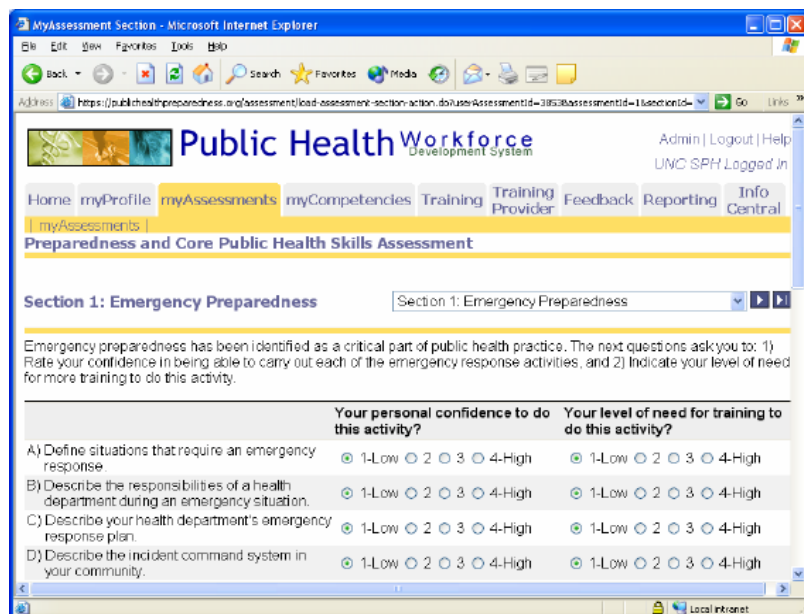
In 2002, the North Carolina Center for Public Health Preparedness, at the North Carolina Institute for Public Health in the University of North Carolina School of Public Health, collaborated with the North Carolina Division of Public Health Office of Public Health Preparedness and Response to create the Public Health Workforce Development System, available at PublicHealthPreparedness.org (see Figure 1).

By 2004, the North Carolina public health workforce was using this online tool to identify training needs in core public health and emergency preparedness and response competencies.

To meet the requirements for state accreditation, this assessment was administered online between November 1, 2006, and January 15, 2007, to public health workers employed by the Division of Public Health within the NC Department of Health and Human Services and the Division of Environmental Health within the NC Department of Environment and Natural Resources.

This report provides demographic information about the composition of the North Carolina state public health workforce and prioritizes the top self-identified training needs for all state public health employees and each of 12 major occupational classifications. Information on training needs is also available for the Division of Public Health and the Division of Environmental Health to assist the development of training plans within these offices.

**Figure 1. Screenshot of PublicHealthPreparedness.org**



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<sup>1</sup> Institute of Medicine, National Academy of Sciences. *The Future of the Public's Health in the 21<sup>st</sup> Century*. Washington, DC: National Academy Press; 2003.

# Background

In recent years, a significant number of national entities have raised concerns about public health workforce training and development. The 2003 Institute of Medicine report, *The Future of the Public's Health in the 21<sup>st</sup> Century*, highlighted the need to assess the public health workforce to determine gaps in knowledge and need for training. The report emphasized that training, education, and competency of the public health workforce are critical components of the public health infrastructure.

In 2004, the Council on Linkages between Public Health Practice and Academia also noted the importance of competency-based training for all public health workers and building an effective pipeline of new public health leaders. The Council also highlighted a growing crisis with regard to retirement trends in our public health workforce over the next decade.<sup>2</sup>

To address the need to improve public health capacity in bioterrorism and other public health emergencies, the Center for Health Policy at the Columbia School of Nursing developed a set of emergency preparedness competencies,<sup>3</sup> and national agencies, including the US Centers for Disease Control and Prevention, have recently heightened the importance of providing training for the public health workforce in the essential services and core public health competencies.<sup>4</sup> These emergency preparedness and core public health competencies guide public health responsibilities and present a framework for developing and enhancing knowledge, skills, and abilities through training.

The issue of workforce training and competency is central to the success of any public health system. Governmental public health agencies have a responsibility to identify the public health workforce needs within their jurisdictions and to implement policies and programs to fill those needs. In addition, an assessment of current competency levels and needs is essential to develop and deliver the appropriate competency-based training, as well as to evaluate the impact of that training in practice settings.<sup>5</sup>

These competencies, arranged in 11 sections, form the basis for the Public Health Workforce Development System training needs assessment. Section 1 lists 10 specific competencies associated with emergency preparedness and response (see Figure 2, page 3). Sections 2-11 organize competency activities using the 10 essential services of public health (see Figure 3, pages 4-5).

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<sup>2</sup> Council on Linkages Between Academia and Public Health Practice. *Developing Strategies to Assure a Pipeline of Skilled and Competent Public Health Workers for the Future*.

<sup>3</sup> Center for Health Policy, Columbia School of Nursing. *Local Public Health Competency for Emergency Response*. April 2001.

<sup>4</sup> Council on Linkages Between Academia and Public Health Practice Web site. <http://www.trainingfinder.org/competencies/list.htm>. Accessed October 7, 2004.

<sup>5</sup> Institute of Medicine, National Academy of Sciences. *The Future of the Public's Health in the 21<sup>st</sup> Century*. Washington, DC: National Academy Press; 2003.

## Figure 2. Emergency Preparedness and Response Competencies

### Preparedness Competencies for all Public Health Workers

- Define situations that require an emergency response
- Describe the responsibilities of a health department during an emergency situation
- Describe your health department's emergency response plan
- Describe the incident command system in your community
- Carry out your role and responsibilities in an emergency response
- Use emergency communication equipment
- Perform your communication role in an emergency (communication within the health department, with media, or with the community)
- Find resources that will help you carry out your responsibilities during an emergency
- Describe the signs and symptoms of biological agents that may be used in a bioterrorist attack (e.g., plague, anthrax, smallpox) and respond appropriately when you suspect someone in your community has been exposed to one of these agents
- Describe the signs and symptoms of exposure to chemicals that might be used in a terrorist attack (e.g., sarin, ricin), and respond appropriately when you suspect someone in your community has been exposed to one of these agents

Adapted from: Center for Health Policy, Columbia School of Nursing.

**Figure 3. The Ten Essential Public Health Services and Corresponding Competencies**

**1) Monitor health status to identify community problems**

- Be aware of amount of each important health problem in your community
- Use reports from disease surveillance or vital registry systems to identify important health issues
- Determine appropriate uses and limitations or gaps of existing health data for your community
- Conduct community assessments including identifying needs, assets, and priorities
- Communicate with other agencies to identify new disease cases in your community
- Recognize a disease outbreak in your community or nearby communities
- Use statistics to analyze health data and make relevant inferences from the data
- Present information or data on health issues to other health professionals or to the general public
- Solicit input from individuals and organizations about important health issues in the community
- Use public health software like EPI-INFO
- Maintain the security and confidentiality of personal and public health information

**2) Diagnose and investigate health problems and health hazards in the community**

- Design research studies to identify risk factor for a health problem
- Read scientific literature to keep up-to-date with knowledge of new diseases and risk factors
- Understand strengths and weaknesses of published research
- Collect biological or environmental samples to better understand a health problem
- Perform environmental health risk assessments
- Explain your technical/computer needs to the appropriate people

**3) Inform, educate and empower people about health issues**

- Communicate effectively both in writing and speaking
- Meet with professionals and community members to gather opinions about how to promote the health of the population to address a priority health problem
- Identify cultural, social, and behavioral factors that affect health problems in your community
- Provide health promotion and disease prevention information to groups or individual
- Use media (newspapers, radio, TV) to communicate health information
- Use a computer-based catalog like Medline to identify articles or books related to a health topic

**4) Mobilize community partnerships and action to solve health problems**

- Interact effectively with people from diverse cultural, socioeconomic, educational backgrounds
- Help conduct health promotion campaigns and programs
- Use health promotion models to design or evaluate a health intervention program
- Use the internet to make health information available to the community
- Advocate for public health programs and resources
- Apply principles of group dynamics to develop effective partnerships
- Establish and maintain community partnerships to maximize use of community assets

**5) Develop policies and plans that support individual and community health efforts**

- Collect, summarize, and interpret information relevant to a health issue
- Formulate policy options
- Understand the feasibility and expected outcome of each policy option
- Use current techniques in decision analysis and health planning
- Develop long-range plans for health programs
- Plan and implement effective emergency response services

(continued on next page).



**Figure 3. The Ten Essential Public Health Services and Corresponding Competencies****6) Enforce laws and regulations that protect health and ensure safety**

- Stay informed of public health laws and regulations
- Monitor enforcement of public health laws and regulations
- Work with law enforcement agencies to enforce regulations that protect health and ensure safety
- Use regulations to promote health in your community
- Explain public health regulations to community

**7) Link people to needed personal health services and assure the provision of healthcare when otherwise unavailable**

- Identify healthcare service needs in your community
- Work with interpreters to provide public health services to non-English speaking members
- Coordinate with other groups and agencies to ensure appropriate health care services are provided
- Refer clients to other agencies where appropriate to receive personal health services
- Develop a clinical health or social service plan for clients
- Negotiate contracts
- Write proposals to obtain funding
- Develop a budget
- Adapt healthcare service programs to take into account cultural differences in the population

**8) Assure an expert public health workforce**

- Create appropriate staff development and training plans for employees
- Recruit and interview applicants for positions in your agency
- Use organizational theory to improve professional practice in your agency
- Ensure that staff have and maintain appropriate licenses and credentials
- Translate state or local policy into organizational structure and programs

**9) Evaluate effectiveness, accessibility, and quality of health services**

- Develop surveys and studies to measure cost effectiveness, accessibility, or quality of health care services in your community
- Understand factors that influence use of health services
- Follow-up with clients to ensure that they have received health or social services
- Evaluate programs to ensure that objectives and performance goals are met
- Monitor day-to-day operations of programs that provide health services

**10) Research for new insights and innovative solutions to health problems**

- Conduct research or interventions to develop unique approaches to solving health problems
- Educate legislature on new policy options
- Create partnerships between public and private organizations to deliver public health services

Source: Public Health Functions Steering Committee, Council on Linkages Between Academia and Practice.

# About North Carolina

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## Public Health in North Carolina

There are 100 counties across the 52,669 square miles of North Carolina.<sup>6</sup> North Carolina has a decentralized public health structure, with 85 local health agencies that include large and small county health departments, public health authorities, a community health alliance, and 6 district health departments representing multiple counties. Local health directors have much independence and authority within their jurisdictions, and there is a positive working relationship between local and state government and a strong commitment to provide seamless public health services for the citizens of North Carolina.

The Division of Public Health (DPH) within the NC Department of Health and Human Services works with local public health agencies and provides approximately 19% of the local health agency funding, with some variance across agencies. DPH sections focus on services in administrative, local, and community support (including local technical assistance and training); chronic disease and injury prevention; epidemiology; oral health; and women's and children's health. DPH is home to the State Center for Health Statistics, State Laboratory of Public Health, Office of the Chief Medical Examiner, and State Vital Records Unit, and works closely with the Office of Minority Health and Health Disparities and the Office of Research, Demonstrations, and Rural Health Development.

The Division of Environmental Health (DEH) is located within the NC Department of Environment and Natural Resources. Its sections work to protect the public in the areas of environmental health (including food and dairy sanitation, child care and institutional sanitation, and childhood lead poisoning prevention), public water supply, on-site water protection (including wastewater and drinking water), public health pest management (mosquito and other vector control), radiation protection, shellfish sanitation, and recreational water quality. The Division's Office of Education and Training provides centralized training for environmental health professionals statewide and maintains a database for training and authorization of all agents enforcing health-related rules in North Carolina.

## About Our State

The Appalachian Mountains in the western part of the state feature the Great Smoky Mountains National Park and 250 miles of the Blue Ridge Parkway. The central Piedmont contains the state capital, Raleigh, and the state's largest city, Charlotte, as well as renowned research universities, major financial institutions, textile and furniture factories, tobacco farms, and golf courses. Eastern North Carolina's coastal plain is home to 130 miles of barrier islands known as the Outer Banks and a major seaport at Wilmington.<sup>7</sup>

It is difficult to separate people from place, or disease and health from the environment.

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<sup>6</sup> North Carolina Department of Commerce. "About NC: Quick Facts." 2007. Available at: [http://www.visitnc.com/about\\_quick\\_facts.asp](http://www.visitnc.com/about_quick_facts.asp). Accessed January 25, 2007.

North Carolina has four seasons and mild temperatures, with a 295-day growing season and average temperatures of 42 degrees in the winter and 77 degrees in the summer.<sup>7</sup> The state has over 78,000 miles of paved road (the most of any state), 37,000 miles of freshwater streams, 1.2 million acres of national forest land, and 120 species of trees.<sup>6</sup> North Carolina is home to the highest waterfall (Whitewater Falls, 411 feet),<sup>6</sup> highest sand dune (Jockey's Ridge),<sup>7</sup> and tallest mountain (Mount Mitchell, 6,684 feet)<sup>7</sup> in the eastern United States. The oldest mountains in the United States (the Uwharrie Mountains, 500 million years old) and the oldest river in North America (ironically named the New River) both run through North Carolina.<sup>6</sup>

As of 2006, an estimated 8.5 million people live in North Carolina, making it the 10th most populous state.<sup>8</sup> In 2005, about 70% of North Carolina residents were non-Hispanic White, 20% were Black, and 6% had Hispanic or Latino origins. Five percent of North Carolinians were foreign born in 2000.<sup>9</sup> More than 700,000 residents speak a language other than English at home; 360,000 of these speak English less than “very well.”<sup>10</sup>

Approximately 25% of North Carolina residents are children under age 18, while 12% are 65 years and older.<sup>9</sup> More than 2 million children ages 3 years and over were enrolled in school in North Carolina in 2005.<sup>10</sup> Nearly 80% of North Carolina's adults graduated from high school, and 23% have earned a bachelor's or advanced degree.<sup>9</sup> The median household income in North Carolina in 2005 was \$40,729.<sup>10</sup> Ten percent of North Carolina's residents earn less than \$5,000 a year, and almost 5% earn more than \$100,000 a year.<sup>8</sup> North Carolina's gross state product in 2004 was \$335,398 million, or 3% of the national gross domestic product, ranking 11th among all states.<sup>12</sup>

North Carolina is home to more than 700,000 veterans<sup>10</sup> and more than 1.5 million persons with a disability.<sup>9</sup> More than 1 million North Carolinians, including 400,000 children and 123,000 senior citizens, live below the poverty level.<sup>8</sup> More than 84% of North Carolina residents had health insurance in 2004, but 1.3 million residents remain uninsured.<sup>11</sup> In 2005, a reported 12,000 housing units in North Carolina lacked complete plumbing facilities, 14,000 lacked complete kitchen facilities, and 200,000 had no telephone service available.<sup>10</sup>

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<sup>6</sup> North Carolina Department of Commerce. “About NC: Quick Facts.” 2007. Available at: [http://www.visitnc.com/about\\_quick\\_facts.asp](http://www.visitnc.com/about_quick_facts.asp). Accessed January 25, 2007.

<sup>7</sup> North Carolina Department of Commerce. “About NC: Our Regions.” 2007. Available at: [http://www.visitnc.com/about\\_our\\_regions.asp](http://www.visitnc.com/about_our_regions.asp). Accessed January 25, 2007.

<sup>8</sup> North Carolina State Data Center. “North Carolina Estimates from the Current Population Survey.” Available at: <http://census.state.nc.us/>. Accessed January 25, 2007.

<sup>9</sup> US Census Bureau. “State and County QuickFacts.” Last Revised: January 12, 2007. Available at: <http://quickfacts.census.gov/qfd/states/37000.html>. Accessed January 25, 2007.

<sup>10</sup> US Census Bureau. “2005 American Community Survey.” Available at: <http://census.state.nc.us/>. Accessed January 25, 2007.

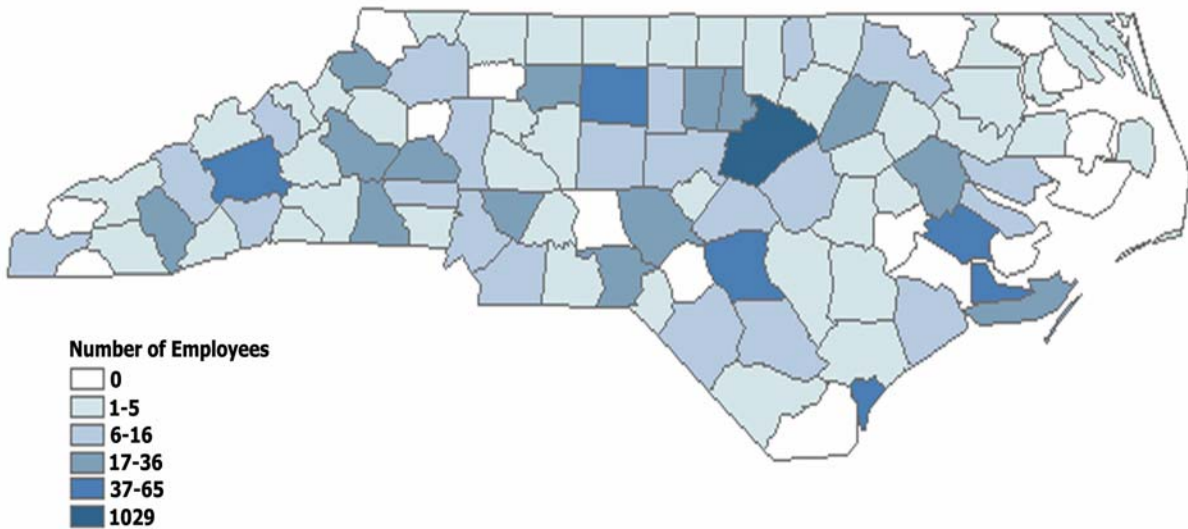
<sup>11</sup> North Carolina State Data Center, Office of State Budget and Management. “Health Insurance Coverage in North Carolina, Survey.” Processed from US Bureau of the Census national files. Available at: <http://census.state.nc.us/>. Accessed January 25, 2007.

<sup>12</sup> US Department of Commerce, Bureau of Economic Analysis, Regional Economic Analysis Division. “Gross State Product by Industry 1977-2004.” Available at: <http://census.state.nc.us/>. Accessed January 25, 2007.

# Demographic Data

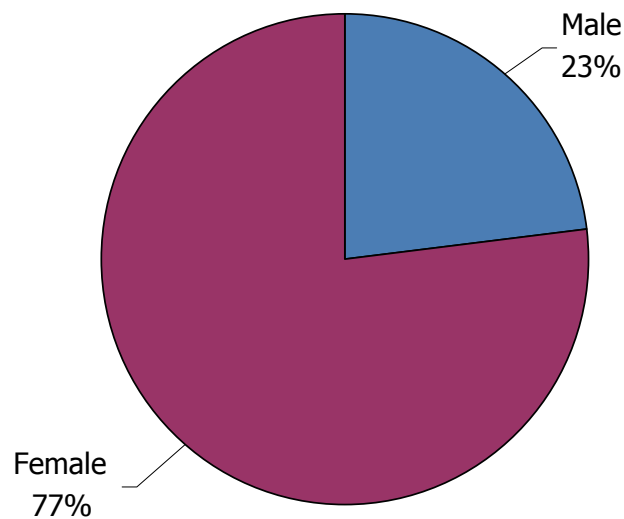
## Geographic Distribution

**Figure 4. Geographic Distribution of State Public Health Employees (n=1959)**



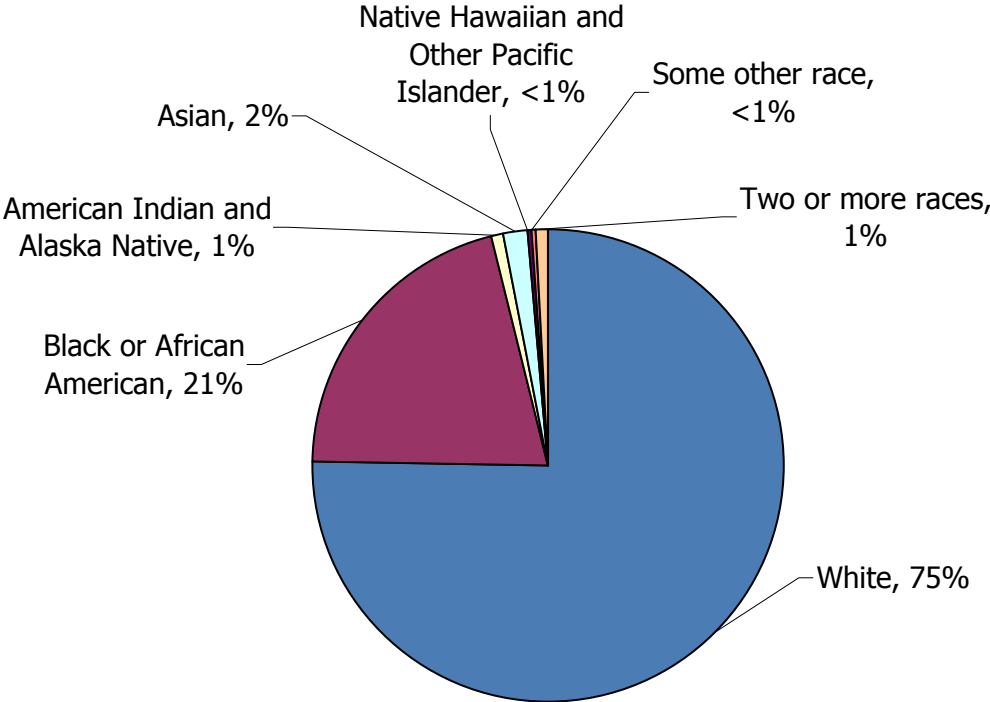
## Gender

**Figure 5. Gender of State Public Health Employees (n=1943)**

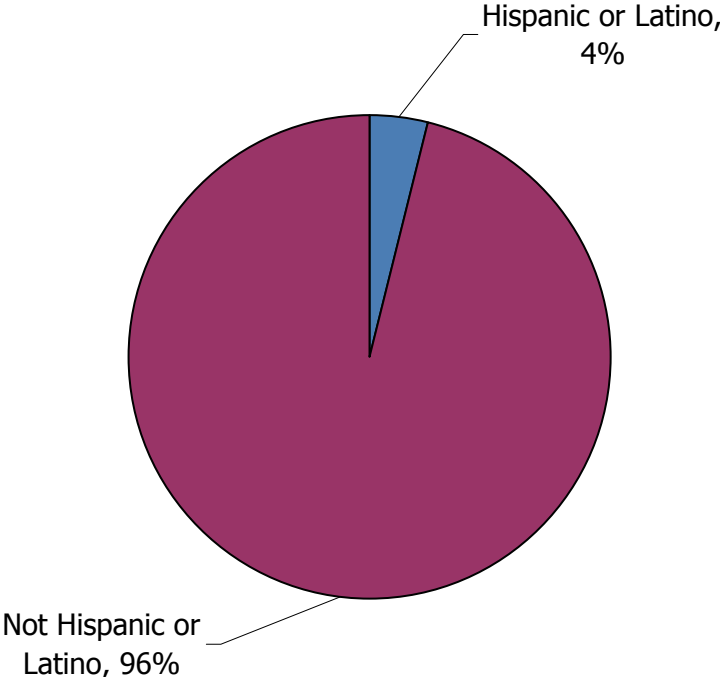


# Race and Ethnicity

**Figure 6. Race of State Public Health Employees (n=1909)**

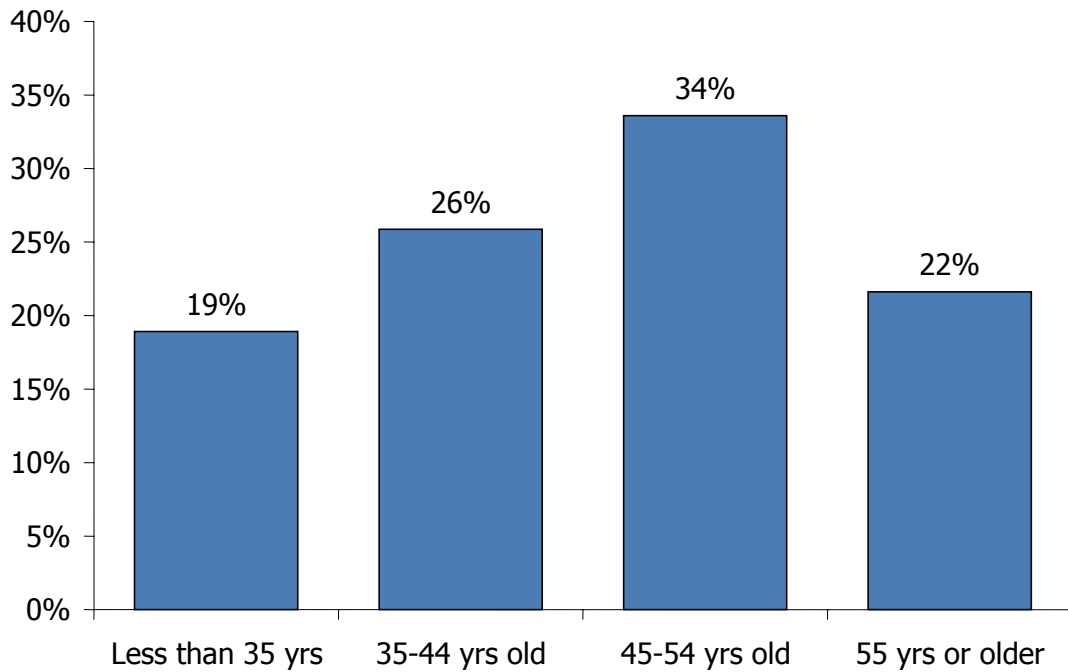


**Figure 7. Ethnicity of State Public Health Employees (n=1837)**



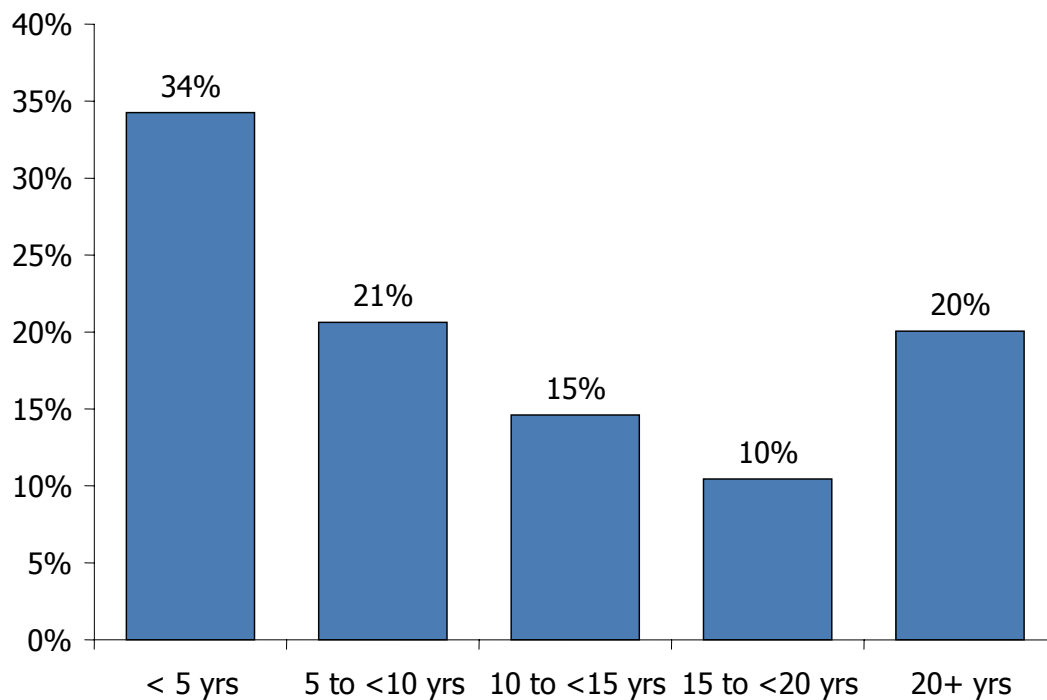
## Age

**Figure 8. Age of State Public Health Employees (n=1929)**

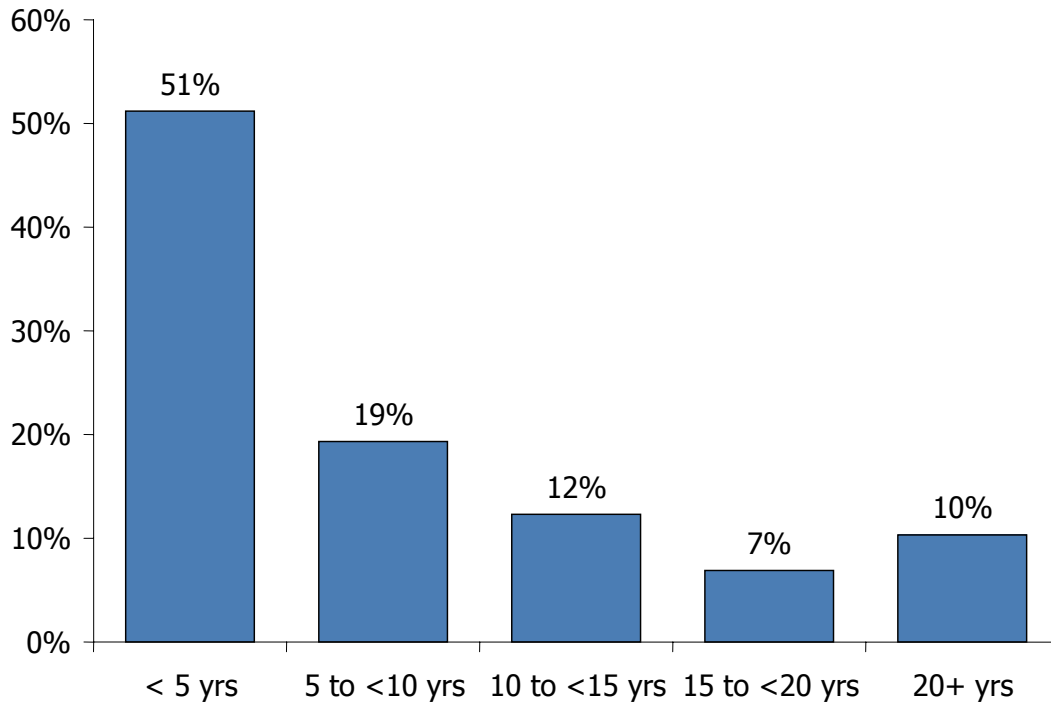


## Work Experience

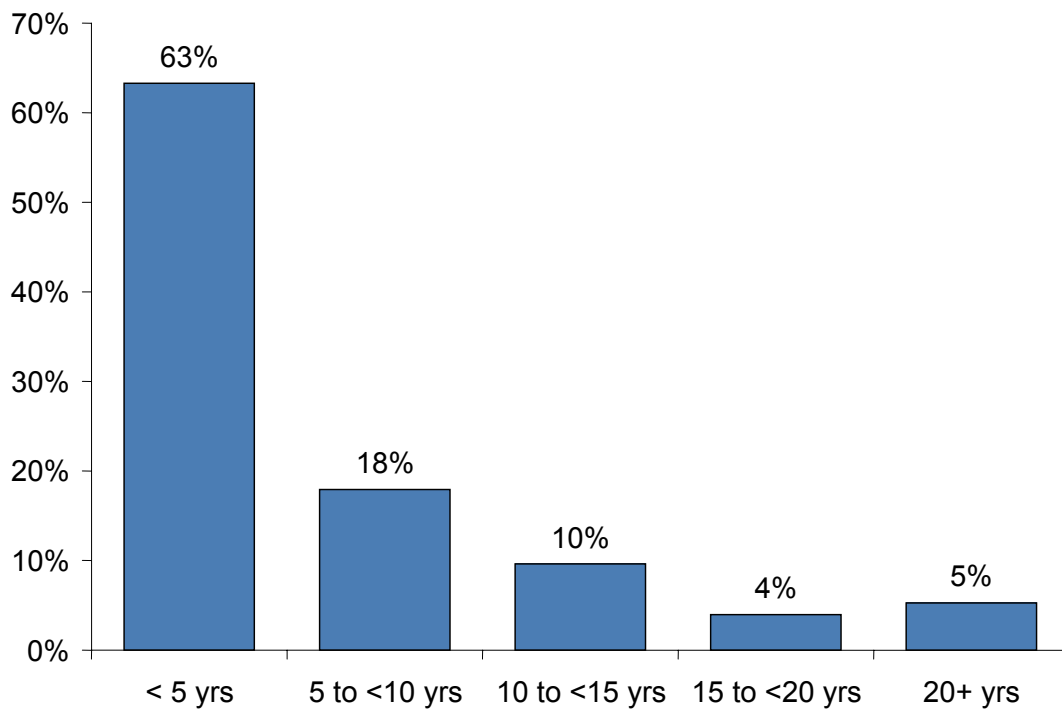
**Figure 9. Years in Public Health Reported by State Public Health Employees (n=1944)**



**Figure 10. Years at Current Agency Reported by State Public Health Employees (n=1919)**

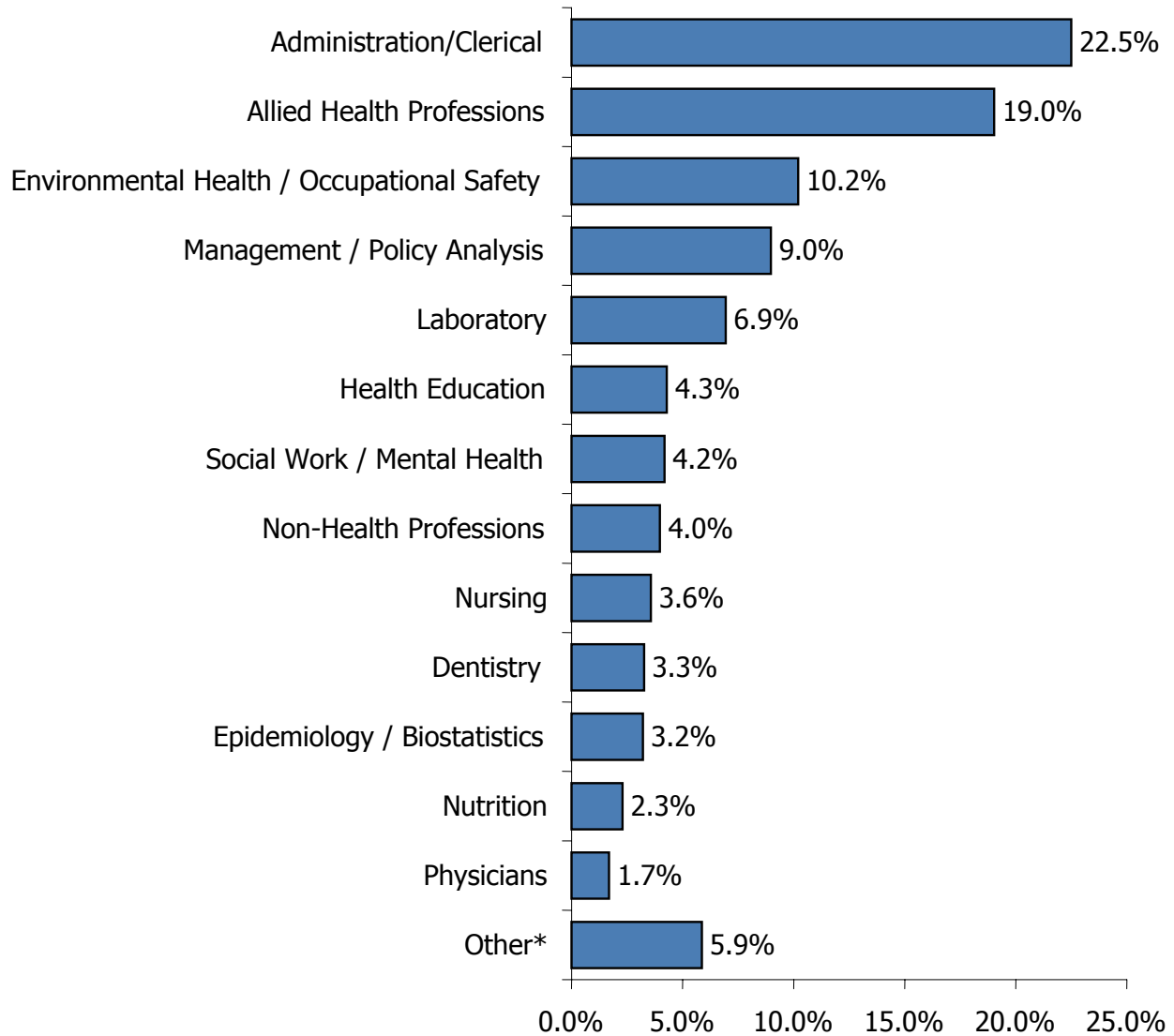


**Figure 11. Years in Current Job Reported by State Public Health Employees (n=1925)**



## Occupational Classification

**Figure 12. Occupational Classification Reported by State Public Health Employees (n=1960)**

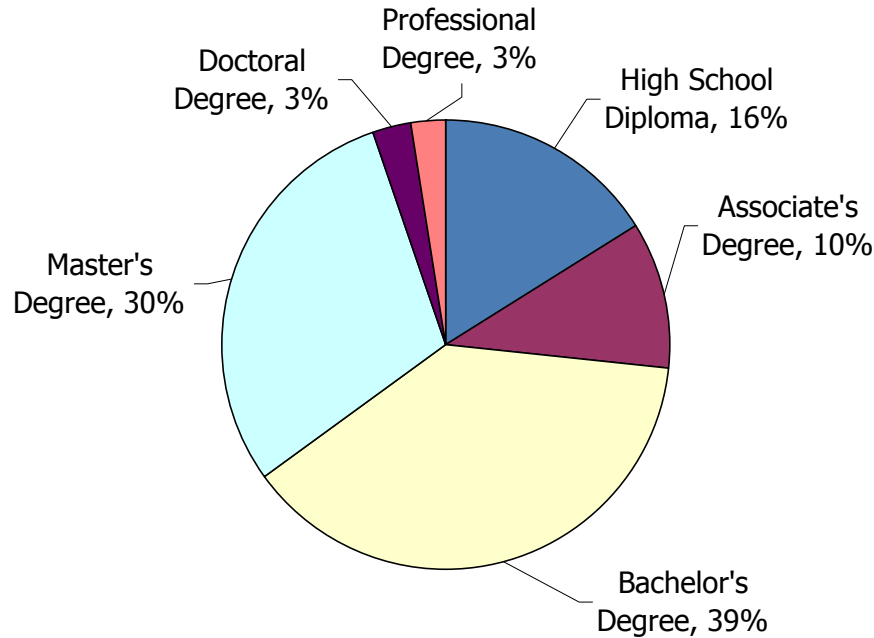


(Participants selected their occupation from categories established by the United States Office of Management and Budget.)



## Education

**Figure 13. Highest Educational Degree Completed by State Public Health Employees (n=1945)**



**Figure 14. Licenses and Credentials Held by State Public Health Employees**

(Only includes credentials with at least 5 responses)

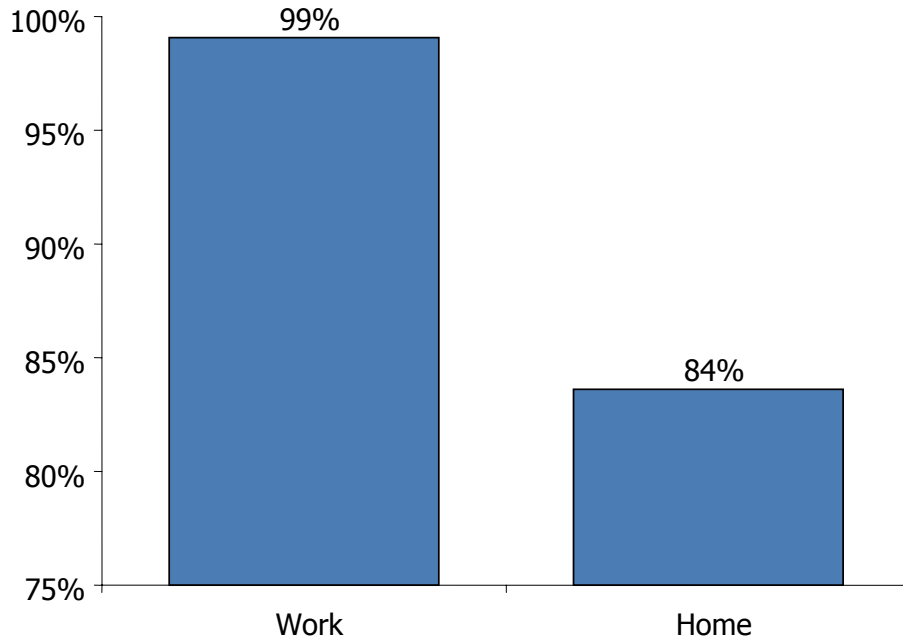
	<i>Number</i>
<b>Licensed Professions</b>	
Registered nurse	<b>84</b>
Social worker	<b>70</b>
Dental hygienist	<b>52</b>
Physician	<b>37</b>
Physical therapist	<b>27</b>
Nurse practitioner	<b>11</b>
Dentist	<b>10</b>
<b>Certified Professions</b>	
Medical technologist	<b>57</b>
Dietitian	<b>45</b>
Nursing assistant	<b>7</b>
<b>Other Credentials</b>	
Registered sanitarian	<b>57</b>
Certified health education specialist	<b>23</b>

**Figure 15. Board Certification and Specialization for State Public Health Physicians (n=37)**

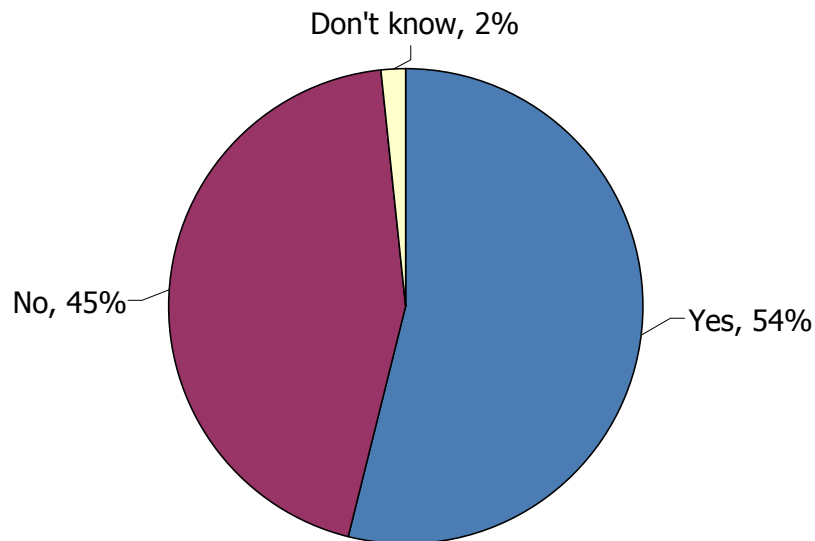
	<i>Number</i>
<b>Board Certified</b>	
<b>Specialization</b>	
Pediatrics	<b>14</b>
Forensic pathology	<b>6</b>
Preventive medicine	<b>6</b>
Internal medicine	<b>5</b>
Family/general practice	<b>2</b>
Infectious diseases	<b>2</b>
Emergency medicine	<b>1</b>
Obstetrics/gynecology	<b>1</b>
Occupational medicine	<b>1</b>
Pulmonary/critical care	<b>1</b>

## Internet Access & Online Courses

**Figure 16. State Public Health Employees With Access to Internet at Home and at Work (n=1932)**



**Figure 17. State Public Health Employees Who Have Taken a Course Via the Internet (n=1945)**



# Training Needs

## Interpreting Training Needs

A color code was used to identify the percent of the workforce who indicated each competency as a training need.

**Purple** = identified as training need by 60% or more of workforce

**Red** = identified as training need by 45% to 59% of the workforce

**Orange** = identified as training need by 30% to 44% of the workforce

**Green** = identified as training need by 15% to 29% of the workforce

**Gray** = identified as training need by less than 15% of the workforce

For emergency preparedness and response competencies, individuals were asked to respond to the following questions using the scale shown.

My personal confidence to do this activity: 1=Low, 2, 3, 4=High

My level of need for training: 1=Low, 2, 3, 4=High

The level of need for training in emergency preparedness and response competencies was identified by ranking the percent of participants who indicated a low confidence to perform the activity (1 or 2) and a high need for training (3 or 4).

Emergency preparedness competencies were ranked according to the number of employees who indicated each competency as a training need. The 5 competencies with the highest percentages were identified as top emergency preparedness training needs.

For public health core competencies, individuals were asked to respond to the following questions using the scale shown.

This skill is important to my job: 1=Low, 2, 3, 4=High

My level of need for training: 1=Low, 2, 3, 4=High

The level of need for training in core public health competencies was identified by ranking the percent of participants who indicated high importance to their job (3 or 4) and a high need for training (3 or 4).

Public health core competencies were also ranked according to percent; the 8 competencies with the highest percentages were identified as top core competency training needs.

## Overall State Employee Training Needs

### Number of Responses

Of the 2041 state public health employees in North Carolina, 1960 (96%) submitted an assessment by January 15, 2007.

### Emergency Preparedness and Response Competencies

Percent of state public health employees in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 33%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 32%** Identify and locate the agency all hazards emergency response plan
- 31%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 24%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise
- 24%** Describe your communication role(s) in emergency response with the media

### Public Health Core Competencies

Percent of state public health employees in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 24%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 20%** Use current techniques in decision analysis and health planning
- 18%** Develop long-range plans for health programs
- 17%** Negotiate contracts
- 16%** Understand the feasibility and expected outcome of each policy option
- 16%** Understand factors that influence use of health services
- 16%** Provide health promotion and disease prevention information to groups or individuals
- 16%** Develop a clinical health or social service plan for clients

## Occupational Class Training Needs: Administration/Clerical

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 441 (23%) identified themselves as administrators or clerical workers.

### Emergency Preparedness and Response Competencies

Percent of state public health administrators and clerical workers in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 26%** Identify and locate the agency all hazards emergency response plan
- 25%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 23%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 22%** Describe your communication role(s) in emergency response with the media
- 21%** Describe your communication role(s) in emergency response with the general public

### Public Health Core Competencies

Percent of state public health administrators and clerical workers in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 18%** Provide health promotion and disease prevention information to groups or individuals
- 18%** Develop long-range plans for health programs
- 17%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 15%** Use current techniques in decision analysis and health planning
- 14%** Negotiate contracts
- 14%** Understand the feasibility and expected outcome of each policy option
- 11%** Be aware of amount of each important health problem in your community
- 11%** Develop a clinical health or social service plan for clients

## Occupational Class Training Needs: Allied Health Professions

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 373 (19%) identified themselves as allied health professionals, including early intervention service coordinators, rehabilitation therapists, and occupational therapists.

### Emergency Preparedness and Response Competencies

Percent of state allied health professionals in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 
- 
- 39%** Identify and locate the agency all hazards emergency response plan
  - 39%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
  - 37%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
  - 35%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise
  - 30%** Describe your communication role(s) in emergency response with the media
- 
- 

### Public Health Core Competencies

Percent of state allied health professionals in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 
- 
- 23%** Identify cultural, social, and behavioral factors that affect health problems in your community
  - 22%** Be aware of amount of each important health problem in your community
  - 19%** Negotiate contracts
  - 19%** Evaluate programs to ensure that objectives and performance goals are met
  - 18%** Maintain the security and confidentiality of personal and public health information
  - 18%** Develop a clinical health or social service plan for clients
  - 16%** Use current techniques in decision analysis and health planning
  - 16%** Work with law enforcement agencies to enforce regulations that protect health and ensure safety
- 
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## Occupational Class Training Needs: Dentistry

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 64 (3%) identified themselves as dentistry workers.

### Emergency Preparedness and Response Competencies

Percent of state public health dentistry workers in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 41%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 33%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 31%** Demonstrate correct use of general computer-related equipment used for emergency communication
- 28%** Identify and locate the agency all hazards emergency response plan
- 25%** Describe your communication role(s) in emergency response within your agency

### Public Health Core Competencies

Percent of state public health dentistry workers in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 40%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 27%** Interact effectively with people from diverse cultural, socioeconomic, and educational backgrounds
- 27%** Create appropriate staff development and training plans for employees
- 25%** Use current techniques in decision analysis and health planning
- 25%** Work with law enforcement agencies to enforce regulations that protect health and ensure safety
- 25%** Use regulations to promote health in your community
- 25%** Follow-up with clients to ensure that they have received health or social services
- 25%** Evaluate programs to ensure that objectives and performance goals are met
- 25%** Monitor day-to-day operations of programs that provide health services

## Occupational Class Training Needs: Environmental Health and Occupational Safety

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 200 (10%) identified themselves as environmental health or occupational safety workers.

### Emergency Preparedness and Response Competencies

Percent of state public health environmental health or occupational safety workers in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 
- 36%** Identify and locate the agency all hazards emergency response plan
  - 29%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
  - 24%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
  - 21%** Describe the chain of command in emergency response (incident command system, ICS)
  - 20%** Describe your communication role(s) in emergency response with the media
- 

### Public Health Core Competencies

Percent of state public health environmental health or occupational safety workers in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 
- 27%** Use current techniques in decision analysis and health planning
  - 25%** Develop long-range plans for health programs
  - 23%** Apply principles of group dynamics to develop effective partnerships
  - 23%** Understand the feasibility and expected outcome of each policy option
  - 22%** Maintain the security and confidentiality of personal and public health information
  - 22%** Formulate policy options
  - 20%** Conduct research or interventions to develop unique approaches to solving health problems
  - 19%** Provide health promotion and disease prevention information to groups or individuals
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## Occupational Class Training Needs: Epidemiology and Biostatistics

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 63 (3%) identified themselves as epidemiologists or biostatisticians.

### Emergency Preparedness and Response Competencies

Percent of state public health as epidemiologists and biostatisticians in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 35%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 27%** Identify and locate the agency all hazards emergency response plan
- 22%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 19%** Describe your communication role(s) in emergency response within your agency
- 17%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise
- 17%** Describe your communication role(s) in emergency response with the media

### Public Health Core Competencies

Percent of state public health epidemiologists and biostatisticians in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 24%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 21%** Read scientific literature to keep up-to-date with knowledge of new diseases and disease risk factors
- 21%** Understand strengths and weaknesses of published research
- 21%** Use a computer-based catalog like Medline to identify articles or books related to a health topic
- 19%** Meet with professionals and community members to gather opinions about how to promote the health of the population to address a priority health problem
- 17%** Interact effectively with people from diverse cultural, socioeconomic, and educational backgrounds
- 17%** Develop long-range plans for health programs
- 17%** Recruit and interview applicants for positions in your agency
- 17%** Understand factors that influence use of health services

## Occupational Class Training Needs: Health Education

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 84 (4%) identified themselves as health educators (CHES and non-CHES).

### Emergency Preparedness and Response Competencies

Percent of state public health educators in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 37%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 37%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 35%** Identify and locate the agency all hazards emergency response plan
- 25%** Describe the chain of command in emergency response (incident command system, ICS)
- 25%** Describe your communication role(s) in emergency response with the media

### Public Health Core Competencies

Percent of state public health educators in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 37%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 33%** Use current techniques in decision analysis and health planning
- 31%** Develop surveys and studies to measure cost effectiveness, accessibility or quality of health care services in your community
- 31%** Understand factors that influence use of health services
- 31%** Evaluate programs to ensure that objectives and performance goals are met
- 30%** Negotiate contracts
- 30%** Follow-up with clients to ensure that they have received health or social services
- 29%** Understand strengths and weaknesses of published research
- 29%** Understand the feasibility and expected outcome of each policy option

## Occupational Class Training Needs: Laboratorians

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 136 (7%) identified themselves as laboratorians.

### Emergency Preparedness and Response Competencies

Percent of state public health laboratorians in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 29%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 24%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 20%** Identify and locate the agency all hazards emergency response plan
- 20%** Describe your communication role(s) in emergency response with the media
- 18%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise

### Public Health Core Competencies

Percent of state public health laboratorians in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 24%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 18%** Use current techniques in decision analysis and health planning
- 16%** Understand the feasibility and expected outcome of each policy option
- 15%** Develop long-range plans for health programs
- 13%** Understand strengths and weaknesses of published research
- 13%** Develop a clinical health or social service plan for clients
- 11%** Understand factors that influence use of health services

## Occupational Class Training Needs: Management and Policy Analysis

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 176 (9%) identified themselves as managers or policy analysts.

### Emergency Preparedness and Response Competencies

Percent of state public health managers and policy analysts in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

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- 40%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
  - 35%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
  - 31%** Identify and locate the agency all hazards emergency response plan
  - 30%** Demonstrate correct use of general computer-related equipment used for emergency communication
  - 26%** Describe your communication role(s) in emergency response with the media
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### Public Health Core Competencies

Percent of state public health managers and policy analysts in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 
- 
- 27%** Use current techniques in decision analysis and health planning
  - 26%** Identify cultural, social, and behavioral factors that affect health problems in your community
  - 23%** Understand factors that influence use of health services
  - 21%** Follow-up with clients to ensure that they have received health or social services
  - 20%** Understand the feasibility and expected outcome of each policy option
  - 20%** Evaluate programs to ensure that objectives and performance goals are met
  - 19%** Be aware of amount of each important health problem in your community
  - 16%** Translate state or local policy into organizational structure and programs
  - 16%** Develop surveys and studies to measure cost effectiveness, accessibility or quality of health care services in your community
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## Occupational Class Training Needs: Non-Health Professions

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 78 (4%) identified themselves as non-health professionals.

### Emergency Preparedness and Response Competencies

Percent of state public health non-health professionals in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 31%** Identify and locate the agency all hazards emergency response plan
- 31%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 31%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 27%** Describe your communication role(s) in emergency response within your agency
- 26%** Describe your communication role(s) in emergency response with the media
- 26%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise

### Public Health Core Competencies

Percent of state public health non-health professionals in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 19%** Provide health promotion and disease prevention information to groups or individuals
- 19%** Develop long-range plans for health programs
- 17%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 17%** Negotiate contracts
- 17%** Use organizational theory to improve professional practice in your agency
- 16%** Use current techniques in decision analysis and health planning
- 16%** Understand factors that influence use of health services
- 14%** Understand the feasibility and expected outcome of each policy option

## Occupational Class Training Needs: Nursing

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 70 (4%) identified themselves as nurses.

### Emergency Preparedness and Response Competencies

Percent of state public health nurses in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 56%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 39%** Identify and locate the agency all hazards emergency response plan
- 37%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 29%** Demonstrate correct use of general computer-related equipment used for emergency communication
- 27%** Describe your communication role(s) in emergency response with the media

### Public Health Core Competencies

Percent of state public health nurses in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 47%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 29%** Use current techniques in decision analysis and health planning
- 25%** Develop a clinical health or social service plan for clients
- 23%** Understand the feasibility and expected outcome of each policy option
- 21%** Create partnerships between public and private organizations to deliver public health services
- 20%** Follow-up with clients to ensure that they have received health or social services

## Occupational Class Training Needs: Nutrition

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 45 (2%) identified themselves as nutritionists.

### Emergency Preparedness and Response Competencies

Percent of state public health nutritionists in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 42%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 40%** Identify and locate the agency all hazards emergency response plan
- 29%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 29%** Describe your communication role(s) in emergency response within your agency
- 20%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise

### Public Health Core Competencies

Percent of state public health nutritionists in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 40%** Understand factors that influence use of health services
- 31%** Translate state or local policy into organizational structure and programs
- 31%** Develop surveys and studies to measure cost effectiveness, accessibility or quality of health care services in your community
- 31%** Follow-up with clients to ensure that they have received health or social services
- 29%** Develop long-range plans for health programs
- 27%** Understand strengths and weaknesses of published research
- 27%** Stay informed of public health laws and regulations
- 27%** Create partnerships between public and private organizations to deliver public health services

## Occupational Class Training Needs: Physicians

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 33 (2%) identified themselves as physicians.

### Emergency Preparedness and Response Competencies

Percent of state public health physicians in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

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- 
- 36%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
  - 27%** Identify and locate the agency all hazards emergency response plan
  - 24%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
  - 24%** Demonstrate correct use of general computer-related equipment used for emergency communication
  - 18%** Demonstrate correct use of phone/fax equipment used for emergency communication
  - 18%** Describe your communication role(s) in emergency response within your agency
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### Public Health Core Competencies

Percent of state public health physicians in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

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- 
- 30%** Identify cultural, social, and behavioral factors that affect health problems in your community
  - 21%** Meet with professionals and community members to gather opinions about how to promote the health of the population to address a priority health problem
  - 21%** Work with law enforcement agencies to enforce regulations that protect health and ensure safety
  - 21%** Use regulations to promote health in your community
  - 21%** Develop a clinical health or social service plan for clients
  - 21%** Negotiate contracts
  - 21%** Translate state or local policy into organizational structure and programs
- 
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## Occupational Class Training Needs: Social Work and Mental Health

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 82 (4%) identified themselves as social workers or mental health professionals.

### Emergency Preparedness and Response Competencies

Percent of state public health social workers and mental health professionals in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 48%** Identify and locate the agency all hazards emergency response plan
- 48%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
- 41%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
- 40%** Demonstrate correct use of general computer-related equipment used for emergency communication
- 38%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise
- 38%** Describe your communication role(s) in emergency response with the general public

### Public Health Core Competencies

Percent of state public health social workers and mental health professionals in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 27%** Identify cultural, social, and behavioral factors that affect health problems in your community
- 20%** Evaluate programs to ensure that objectives and performance goals are met
- 19%** Understand factors that influence use of health services
- 19%** Follow-up with clients to ensure that they have received health or social services
- 16%** Use current techniques in decision analysis and health planning
- 15%** Negotiate contracts
- 15%** Be aware of amount of each important health problem in your community
- 15%** Communicate with other agencies to identify new disease cases in your community
- 15%** Recognize a disease outbreak in your community or nearby communities
- 15%** Work with law enforcement agencies to enforce regulations that protect health and ensure safety

## Occupational Class Training Needs: Other Occupations

### Number of Responses

Of the 1960 state public health employees in North Carolina who submitted an assessment, 115 (6%) identified themselves as employees in an occupation not listed above.

### Emergency Preparedness and Response Competencies

Percent of other state public health employees in North Carolina who indicated low personal confidence to do this activity (1 or 2) and high need for training (3 or 4) for the following competencies:

- 
- 
- 35%** Identify and locate the agency all hazards emergency response plan
  - 32%** Describe functional role(s) in all hazards emergency response and demonstrate role(s) in regular drills
  - 30%** Demonstrate correct use of radio (e.g., UHF/VHF handheld or a pack radio) equipment used for emergency communication
  - 27%** Describe the public health role in emergency response for a range of all hazards emergencies that might arise
  - 22%** Demonstrate correct use of general computer-related equipment used for emergency communication
  - 22%** Describe your communication role(s) in emergency response with the media
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### Public Health Core Competencies

Percent of other state public health employees in North Carolina who indicated high importance to job (3 or 4) and high need for training (3 or 4) for the following competencies:

- 
- 
- 25%** Identify cultural, social, and behavioral factors that affect health problems in your community
  - 24%** Work with law enforcement agencies to enforce regulations that protect health and ensure safety
  - 23%** Understand strengths and weaknesses of published research
  - 23%** Follow-up with clients to ensure that they have received health or social services
  - 22%** Read scientific literature to keep up-to-date with knowledge of new diseases and disease risk factors
  - 22%** Develop a clinical health or social service plan for clients
  - 22%** Evaluate programs to ensure that objectives and performance goals are met
  - 21%** Use current techniques in decision analysis and health planning
  - 21%** Conduct research or interventions to develop unique approaches to solving health problems
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## About This Report

This report of training needs is based on data collected via the Public Health Workforce Development System from November 1, 2006, through January 15, 2007, for North Carolina Public Health. Data analysis and report writing were provided by the North Carolina Center for Public Health Preparedness.

The Public Health Workforce Development System was developed by the Instructional and Information Systems unit of UNC SPH and is sponsored in part by the Office of Public Health Preparedness and Response in the North Carolina Division of Public Health's Epidemiology Section.

This report lists those competencies identified as having the highest need for training, and can be used to help determine the focus of future training activities. Information on all competencies is available upon request. For more information about the assessment instrument and analysis methods, contact the North Carolina Center for Public Health Preparedness at 919-843-5561.

To obtain more copies of this report, please send an e-mail request to:

**Lisa Harrison, MPH**

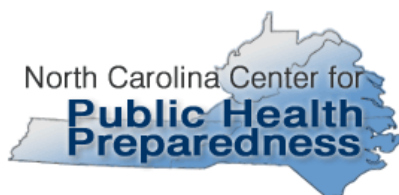
**Research Associate for Workforce Development**

**The North Carolina Center for Public Health Preparedness**

**[lisa\\_harrison@unc.edu](mailto:lisa_harrison@unc.edu)**

## About NCCPHP

The North Carolina Center for Public Health Preparedness (NCCPHP) is located within the North Carolina Institute for Public Health at the University of North Carolina at Chapel Hill's School of Public Health. NCCPHP is part of a national network of Centers for Public Health Preparedness funded by the Centers for Disease Control and Prevention through grant/cooperative agreement number U90/CCU424255. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.



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*To improve the capacity of the public health workforce to prepare for and respond to terrorism and other emerging public health threats.*