



Wisconsin Public Health Workforce Report
2011



Wisconsin Public Health Workforce Report, 2011

July 2011

*Population Health Information Section
Office of Health Informatics
Division of Public Health
Wisconsin Department of Health Services*

Foreword

This report presents a range of currently available data on the public health workforce in Wisconsin. The statutorily mandated state health plan, *Healthiest Wisconsin 2020*, identifies developing a diverse, sufficient and competent public health workforce as a statewide infrastructure priority.

This report focuses on the governmental public health workforce, and includes some data about the workforce of other selected public-sector organizations. The report brings together information that will enable educational institutions, state and local emergency readiness and public health preparedness experts, community agencies, local health department administrators, boards of health, legislators and others to plan for a trained and qualified public health workforce. Workforce planning helps to assure a diverse, sufficient and competent public health workforce, prepared to promote and protect the health of the public.

Sources of data for this report include:

- 2010 Division of Public Health employee data from the Wisconsin Department of Health Services;
- 2008 Wisconsin Local Health Department Survey;
- 2010 Emergency Medical Services Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services;
- 2010 Wisconsin Emergency Assistance Volunteer Registry (WEAVR) and data from the Medical Reserve Corps (MRC);
- 2010 Wisconsin Clinical Laboratory Science Workforce Survey;
- 2010 Wisconsin Nursing Workforce Survey;
- Ten-year (2008-2018) employment projections for selected Wisconsin health occupations in the public sector from the Wisconsin Department of Workforce Development;
- 2008 demographic data for the Wisconsin health care workforce in public sectors from the American Community Survey, U.S. Census Bureau;
- 2010 licensing data for Wisconsin health care professionals from the Wisconsin Department of Regulation and Licensing.

The Population Health Information Section, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services, prepared this publication. It was developed with funds from the University of Wisconsin School of Medicine and Public Health through the Wisconsin Partnership Program.

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Suggested Citation:

Wisconsin Department of Health Services, Division of Public Health, Office of Health Informatics, Population Health Information Section. **Wisconsin Public Health Workforce Report, 2011** (P-45719-11). July 2011.

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Introduction

The role of public health and the public health workforce in Wisconsin and throughout the nation has expanded over the past decade in both scope and complexity. Bioterrorism events (e.g., the anthrax scares following September 11, 2001); natural disasters (e.g., Hurricane Katrina and the 2009 Wisconsin floods); and emerging infectious diseases and outbreaks (e.g., HIV/AIDS and the H1N1 influenza pandemic) highlight the importance of the public health workforce and its link to national security, individual and community health.

However, the public health workforce is engaged in more than emergency preparedness, response, and recovery activities. Through partnerships between government, public, private, civic, and nonprofit sectors, the public health workforce focuses daily on preventing disease and promoting and protecting the health of all individuals and communities.

The public health workforce helps all people in Wisconsin to live, work, learn, and play in community environments with clean air, safe water, sanitary restaurants, and clean swimming pools. Public health workers help provide access to safe, affordable health care, nursing homes and hospitals, vaccines, and other measures to prevent diseases. These are just some examples of activities that the public health workforce engages in that support everyone living better and longer.

Who constitutes the public health workforce?

The definition of the public health workforce includes all those who provide essential public health services, regardless of the nature of the employing agency (U.S. Department of Health and Human Services, *The Public Health Workforce: An Agenda for the 21st Century* (1997)). By Wisconsin Statute, the Essential Public Health Services include:

- Monitoring the health status of populations to identify and solve community health problems.
- Investigating and diagnosing community health problems and health hazards.
- Informing and educating individuals about health issues.
- Mobilizing public and private sector collaborations and actions to identify and solve health problems.
- Developing policies, plans, and programs that support individual and community health efforts.
- Enforcing statutes and rules that protect health and ensure safety.
- Linking individuals to needed personal health services.
- Assuring a competent public health workforce.
- Evaluating effectiveness, accessibility, and quality of personal and population-based health services.
- Providing research to develop insights into and innovative solutions for health problems.

This definition recognizes that a wide range of professional disciplines, in various employment settings (governmental and non-governmental), is needed to sustain a public health system for maximum societal benefit.

The public health workforce includes disciplines from the broader health care workforce and is reliant upon those disciplines to maintain a diverse, sufficient, and competent workforce. In addition to discipline-specific expertise (competencies), the public health workforce uses core public health competencies to guide its work. Public health competency may be acquired through formal educational processes.

What are the core competencies for public health professionals?

Each discipline that provides essential public health services has discipline-specific competencies to guide educational development and practice (example: nursing). Core public health competencies guide formal public health education and continuing education curriculum development and public health practice.

The *Core Competencies for Public Health Professionals* are a set of skills, knowledge, and attitudes necessary for the broad practice of public health. The competency set was adopted by the Council on Linkages between Academia and Public Health Practice in 2001, after a lengthy review process that involved more than 1,000 public health professionals from across the United States. Between 2008 and 2010 the Council adopted a revised competency set which now includes specific competencies for Tier 1 (front-line professionals), Tier 2 (program managers and supervisors) and Tier 3 (senior management and leaders). Wisconsin was instrumental in revising this national competency set for the nation's public health professionals.

The Core Competencies for Public Health Professionals are within eight domains:

1) Analytic/Assessment Skills, 2) Policy Development/Program Planning Skills, 3) Communication Skills, 4) Cultural Competency Skills, 5) Community Dimensions of Practice Skills, 6) Basic Public Health Sciences Skills, 7) Financial Planning and Management Skills, and 8) Leadership and Systems Thinking Skills. Each domain has specific competencies.

To learn more about the Council on Linkages Core Public Health Competencies, visit the Public Health Foundation site at: http://www.phf.org/resourcestools/Pages/Core_Public_Health_Competencies.aspx

What are the public health workforce challenges?

Despite the importance of public health to society, critical workforce challenges exist. These challenges include addressing a shortage of competent workers, economic constraints, and succession planning to replace an aging workforce; enhancing technical skills; and developing a workforce that reflects the diversity of Wisconsin communities.

Wisconsin's population is projected to grow by 15.3 percent from 2010 to 2035 (Wisconsin Department of Administration, 2008). The population increases, together with demographic shifts related to the aging of the baby boom generation, pose tremendous public health workforce planning challenges. As the needs for a sufficient, diverse, and competent public health workforce grow for both Wisconsin and the nation, workforce projections show that these needs will not be met due to large-scale retirement of the existing public health system workforce.

Across the United States, more than 100,000 state workers and 165,000 local workers protect and promote the health of the public. It is projected that the nation will need 250,000 more public health workers by 2020 (Association of State and Territorial Health Officials, 2009).

To illustrate, nearly one in three workers in the Wisconsin Division of Public Health (DPH) is currently eligible for retirement. In 2010, 41 percent of employees in the Division of Public Health were eligible for retirement within one year; 49 percent would be eligible by 2013 and 55 percent by 2015.

Wisconsin continues to have many rural and urban communities with documented shortages of primary care, dental care, and mental health care providers. This means people are more likely to postpone seeking care, have to travel greater distances to get care, or have long waiting times for medical appointments. (See Appendix E of this report for Health Professional Shortage Area maps. More information about health

professional shortage areas and resources for provider recruitment and retention may be found at <http://www.dhs.wisconsin.gov/health/primarycare/index.htm> on the Department of Health Services website.)

At this time sufficient data do not exist to describe the entire public health workforce in Wisconsin. Continuous data collection is required for systematic analysis, projections and planning. Existing data from available sources, however, can help us understand the outlook for the public health workforce in Wisconsin. Despite challenges, progress is being made to assure a diverse, sufficient and competent public health workforce that is prepared to protect and promote the health of the public.

What progress is being made to address these public health workforce challenges?

In 2010 the Wisconsin Department of Health Services, Division of Public Health, launched *Healthiest Wisconsin 2020: Everyone Living Better, Longer*. This fulfills Wisconsin Statutes section 250.07(1)(a), which requires the Department to produce a public health agenda for the people of Wisconsin at least every 10 years. More than 1,500 people from all walks of life were engaged in the development of the plan.

Developing a diverse, sufficient, and competent health workforce was identified as integral to accomplishing the plan's mission, which is to assure conditions in which people can be healthy, and members of healthy, safe, and resilient families and communities. Two workforce focus area objectives are guiding public and private partner collaborative initiatives throughout the decade:

- Objective 1: By 2020, assure a sufficient and diverse health workforce competent to practice in current and evolving delivery systems to improve and protect the health and well-being of all people and populations in Wisconsin.
- Objective 2: By 2020, establish a sustainable system to collect and analyze public health system workforce data including data on sufficiency, competency, and diversity reflecting Wisconsin's communities.

More information about *Healthiest Wisconsin 2020: Everyone Living Better, Longer* may be found at the Department of Health Services site at: <http://www.dhs.wisconsin.gov/hw2020/focusareas/profiles.htm>.

Wisconsin colleges and universities provide many public health educational opportunities. Currently four Wisconsin institutions offer master's degrees in public health: the University of Wisconsin – La Crosse, the Medical College of Wisconsin, the University of Wisconsin – Milwaukee, and the University of Wisconsin – Madison. The latter three campuses also offer public health Ph.D. programs. In 2010, Wisconsin's schools and departments of public health partnered to successfully compete for and receive a five-year federal grant to fund the Wisconsin Center for Public Health Education and Training, which will help assure a diverse, sufficient and competent public health workforce in the state.

The Healthy Wisconsin Leadership Institute is a collaborative effort of the University of Wisconsin School of Medicine and Public Health and the Medical College of Wisconsin. Through its Community Teams Program, the Leadership Institute has provided training and support to more than 900 public health practitioners statewide. Information about the Healthy Wisconsin Leadership Institute can be accessed at <http://hwli.org/>.

To assist public health professionals with continuing education, the Wisconsin Division of Public Health hosts the Wisconsin TrainingFinder Real-time Affiliate Integrated Network (TRAIN). Wisconsin TRAIN serves as a learning management system for more than 17,780 active users statewide. The Division of Public Health, in partnership with the University of Wisconsin Office of Continuing Professional Development, is developing core public health competency assessments (Scenario Based Assessments) linked to TRAIN. This will provide individual public health professionals with access to targeted courses and other learning experiences to help them carry out public health services more effectively. Wisconsin TRAIN can be accessed at: <http://wi.train.org>.

Nationally, TRAIN is considered to be the premier online learning resource for professionals who protect the public's health. Wisconsin is one of 23 states and affiliates (including the National Medical Reserve Corps and the Centers for Disease Control and Prevention) that subscribe to the system, a service of the Public Health Foundation (<http://www.phf.org>).

In 2010, on behalf of the Wisconsin Council on Workforce Investment Health Care Sector Subcommittee, the Wisconsin Area Health Education Center (AHEC Program) at the University of Wisconsin School of Medicine and Public Health applied for and received a Health Resources Services Administration (HRSA) Workforce Planning grant titled *Wisconsin State Health Care Workforce Development Planning Grant*. Outcomes of this grant include a long-term plan for consistent health care workforce data collection, analysis and labor market forecasting.

The Wisconsin Health Workforce Data Collaborative (WHWDC), a workgroup of the Wisconsin Council on Workforce Investment, is funded from July 1, 2009 through June 30, 2012 by the Healthier Wisconsin Partnership Program at the Medical College of Wisconsin. As of March 2011, WHWDC partners had prepared the following baseline reports:

- *RN Survey Summary* http://worknet.wisconsin.gov/worknet/worknetinfo.aspx?htm=nurse_summary
- *At a Glance: Wisconsin Clinical Laboratory Science Workforce Survey, 2010* <http://www.dhs.wisconsin.gov/hw2020/infrastructure/workforce/clinicallabs.pdf>
- *Wisconsin Clinical Laboratory Science Workforce Survey, 2010* (full report) <http://www.dhs.wisconsin.gov/health/workforce/docs/2010labreportfinal11-18.pdf>
- *Dentist FTEs Needed for Low-Income Populations and Location of Safety Net Clinics* <http://www.dhs.wisconsin.gov/health/primarycare/docs/DentFTE610.pdf>
- *Dentist Shortages for Low-Income Populations in Wisconsin* http://www.dhs.wisconsin.gov/health/primarycare/docs/DentistFTE_LIPopRatio_w_defs1209.pdf

More information on Wisconsin's public health workforce can be found on the Department of Health Services site at: <http://www.dhs.wisconsin.gov/health/workforce/index.htm>.

There are many efforts focused on developing other sectors of the health workforce (e.g., primary care, hospital, dental, mental health) that are beyond the scope of this report.

What will I find in this report?

The *Wisconsin Public Health Workforce Report, 2011* presents the most recent data from state employment statistics, the Wisconsin Local Health Department Survey, the Wisconsin Emergency Assistance Volunteer Registry, the Wisconsin Emergency Medical Services Survey, the Wisconsin Nursing Workforce Survey, and selected national sources. Tables and figures in this publication summarize the most recent available data from each source, ranging between calendar year 2008 and 2010. When possible, tables include data by age, race/ethnicity, and occupation. When applicable, bullets include some comparison between the most recent data and earlier data from a previous report: *Wisconsin Public Health Workforce Report, 2008*.

Although this report focuses largely on the governmental public health workforce, it also presents data about selected non-governmental health care disciplines that are represented in the public health workforce.

- The report begins with a Foreword, Introduction, and Selected Findings.

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- The body of the report is organized by data source, with each section presenting the most recent available findings from that source.
 - Appendices provide more detailed information from some of these data sources as well as related resource material, such as maps.

Data limitations and caveats. The accuracy of the data presented in this report is affected by a number of factors. Information collected is not directly comparable between data sets due to differences in the data collected, analysis, and reporting methodology. Age, race, and ethnicity information was not collected for some data sets or may be incomplete because reporting these variables was optional. At this time there is no single data source that encompasses the entire public health workforce.

Selected Findings

Wisconsin Division of Public Health Workforce (Pages 9-12)

- The percent of DPH employees that were full-time declined from 84% in 2006 to 75% in 2010. The percent of limited term DPH employees increased from 4% to 15% during the same period. (Full time is defined as working at least 2,080 hours a year; limited term employees are those in temporary/short term positions, working up to 1,043 hours a year.)
- As of September 2010, the average age of a DPH employee was 49, compared to age 50 in 2006.
- The turnover rate for DPH staff in 2010 was 10%; that is, 10% of all DPH employees in 2010 were hired that year. By comparison, the turnover rate for DPH staff in 2006 was 25%.
- The average age of a DPH *new hire* in 2010 was 38 (vs. 47 in 2006).
- Thirty-two percent of DPH employees (151 employees) were eligible to retire in 2010, assuming that retirement eligibility begins at age 55.
- Among DPH staff in 2010, 41% will be eligible to retire within one year; 49% by 2013; and 55% by 2015.

Wisconsin Local Health Department Workforce (Pages 13-15)

- In 2008, there were 2,369 local health department (LHD) staff (2,042 permanent health department staff and 327 contract personnel) and an estimated 5,675,156 people in Wisconsin, for a ratio of 4.2 local health department staff per 10,000 people. The ratio in 2007 was 4.6.
- There were 1,767 local health department full-time equivalent employees (FTEs) in Wisconsin in 2008, for a ratio of 3.1 LHD FTEs per 10,000 people, compared to 3.3 in 2007.
- According to the National Association of County and City Health Officials (NACCHO), in 2008, for all LHDs, the median number of workers was 4.8 full-time equivalent (FTEs) per 10,000 people in the community. In the same year, Wisconsin's median number of workers was 3.1 FTEs per 10,000. That is, among the 92 LHDs in Wisconsin, 46 LHDs have 3.1 or lower FTEs per 10,000 population, and 46 LHDs have 3.1 or higher FTEs per 10,000 population.
- Between 2007 and 2008, the number of permanent local health department staff in Wisconsin decreased 7% (from 2,198 to 2,042), while the number of contracted personnel decreased 17% (from 396 to 327). The total number of LHD staff declined by 9%.

Wisconsin Emergency Medical Services Workforce (Pages 16-20)

- As of 2010, there were 16,917 EMS providers and 5,679,639 people in Wisconsin, for a ratio of 30 EMS providers per 10,000 people, compared with 32 EMS providers per 10,000 people in 2008.
- The average age of Wisconsin EMS providers was 39, two years younger than in 2008.
- Twenty-one percent of EMS workers were 50 years of age or older, and an additional 28% of them were between ages 40 and 49.
- Seventy percent of EMS workers in Wisconsin were male, and 30% were female.
- Eighteen percent of EMS providers had a technical college diploma, 48% had an associate degree or some college education, and 19% had a bachelor's or master's degree.
- As of 2010, 52% of Wisconsin EMS providers had worked in the profession for 11 years or longer.
- Sixty-five percent of Wisconsin EMS providers were working in other fields, such as EMS education or another medical or non-medical field.
- Thirty-eight percent of EMS providers were full-time employees, and 46% were volunteers.

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- Forty-five percent of Wisconsin EMS providers worked less than 20 hours a week, 18% worked between 21 and 40 hours a week, 32% worked between 41 hours and 60 hours a week, and 5% worked 61 hours or more a week.
 - Twenty-two percent (3,317) of EMS providers in Wisconsin reported a work-related injury in 2010.
 - Twenty-five percent (4,282) of EMS providers in Wisconsin have received emergency preparedness training.
 - As of 2010, 18% of EMS workers in Wisconsin were considering leaving the profession.

Wisconsin Emergency Preparedness Volunteer Workforce (Pages 21-22)

- As of September 1, 2010, WEAVR had 2,577 unduplicated volunteers registered on the system.
- As of September 1, 2010, Medical Reserve Corps units in Wisconsin had 405 recorded volunteers, an increase of 19% from 2007.

Wisconsin Clinical Laboratory Science Workforce (Pages 23-27)

- In 2010, clinical laboratories in Wisconsin had an estimated 51,337 total employees.
- Statewide, 24% of laboratory employees were under age 30, 19% were between 30 and 39, 21% were between 40 and 49, 26% were between 50 and 59, and 10% were 60 years of age and older.
- Statewide, 49% of laboratory workers had a job title reflecting clinical laboratory professional education and training. The proportion with this training was 15% among employees of Certificate of Waiver and Provider Performed Microscopy laboratories, and 79% among employees of Certificate of Compliance and Certificate of Accreditation certified laboratories.
- An estimated 64% of laboratories statewide had an established emergency preparedness and response plan.
- An estimated 29% of laboratories reported that all their employees were trained in emergency preparedness and response. Another 29% reported that none of their employees were trained in emergency preparedness and response.

Wisconsin Nursing Workforce (Page 28)

- About 5% (or 2,900) of all registered nurses in Wisconsin work in settings related to public and/or community health.

Wisconsin Public-Sector Employment Projections (Page 29)

- Between 2008 and 2018, Wisconsin health care jobs in the public sector (excluding state and local education and hospitals) are projected to increase by 3.6%, or 690 positions.

Demographic Profile of Wisconsin Health Care Workers in the Public Sector (Pages 30-31)

- In 2008, an estimated 32% of Wisconsin's public-sector health care workforce was age 51 and older. An additional 27% was ages 41 to 50.
- An estimated 79% of Wisconsin's public-sector health care workforce was non-Hispanic white.
- By 2013, an estimated 34% of the public-sector health care workforce in Wisconsin will be eligible to retire (age 55 and older).

Wisconsin Division of Public Health Workforce

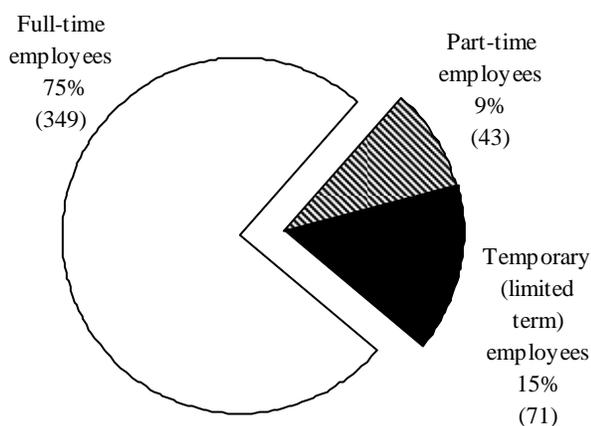
The Wisconsin Division of Public Health (DPH) is part of a cabinet-level agency, the Wisconsin Department of Health Services. The Division had 469 employees as of September 2010, including 398 permanent employees and 71 limited-term employees. DPH administers the following principal programs: Communicable Disease Prevention, Community Health Promotion, Environmental and Occupational Health, Health Informatics, Policy and Practice Alignment, and Emergency Response. Local public health services in Wisconsin are subject to the shared authority of both DPH (the state agency) and local government.

The following data was provided by the Bureau of Human Resources, Wisconsin Department of Health Services.

Key Findings - 2010

- The percent of DPH employees that were full-time declined from 84% in 2006 to 75% in 2010. The percent of limited term DPH employees increased from 4% to 15% during the same period. (Full time is defined as working at least 2,080 hours a year; limited term employees are those in temporary/short term positions, working up to 1,043 hours a year.)
- As of September 2010, the average age of a DPH employee was 49 (vs. age 50 in 2006).
- The average number of years of service at DPH was 15 (vs. 16 years in 2006).
- The turnover rate for DPH staff in 2010 was 10%; that is, 10% of all DPH employees in 2010 were hired that year. By comparison, the turnover rate for DPH staff in 2006 was 25%.¹
- The percent of DPH positions currently vacant in 2010 was 9% (39 positions), vs. 13.3% in 2006.
- The average age of a DPH *new hire* in 2010 was 38 (vs. 47 in 2006).
- Thirty-two percent of DPH staff (151 employees) were eligible to retire in 2010, assuming that retirement eligibility begins at age 55.
- Among DPH staff in 2010, 41% will be eligible to retire within one year; 49% by 2013; and 55% by 2015.

Figure 1. Type of Employee, Wisconsin Division of Public Health, 2010



Source: Bureau of Human Resources, Wisconsin Department of Health Services, September, 2010.

Notes: This chart was based on 463 DPH employees.

The total number of DPH employees in 2010 may differ slightly among individual charts and tables because the data were acquired at different times during the year.

¹ Staff turnover tends to decrease during economic downturns.

Table 1. Employee Occupational Classifications, Wisconsin Division of Public Health, 2010

Occupational Classification	Number	Percent
Administrative and clerical personnel	155	33%
Environmental health workers	68	14
Epidemiologists	30	6
Health educators	61	13
Public health information system specialists	75	16
Nutritionists	18	4
Public health managers	32	7
Public health nurses	22	5
Public health physicians	7	1
Dentists	1	<1
Total	469	100%

Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

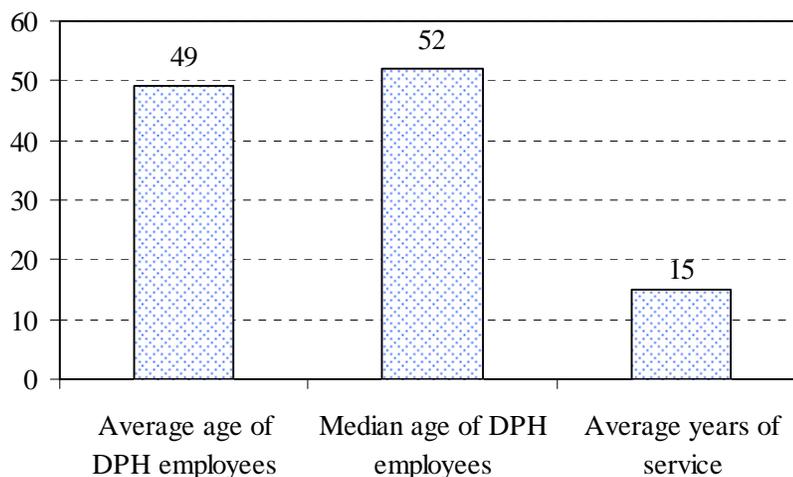
Table 2. Employees by Age, Wisconsin Division of Public Health, 2010

Age	Number	Percent
Under 30	19	5%
30-39	54	14
40-49	84	21
50-54	74	19
55-59	89	23
60+	75	19
Total	395	100%

Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

Note: This table includes only permanent and project positions.

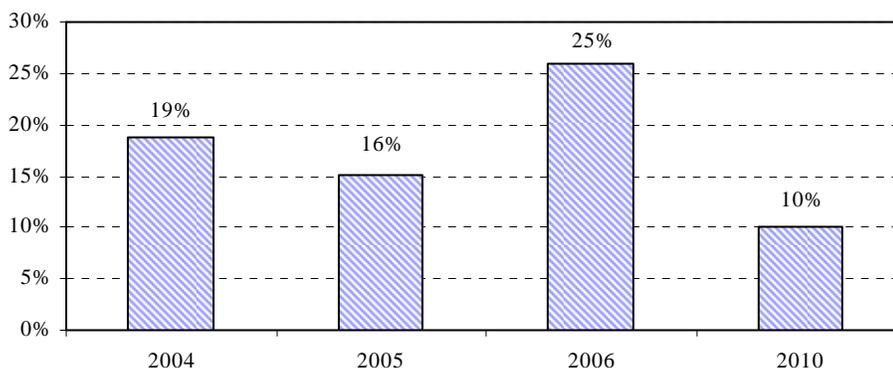
Figure 2. Average Age, Median Age, and Average Years of Service for Current Employees, Wisconsin Division of Public Health, 2010



Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

Note: The median age represents the midpoint of all persons in the group (half are older and half are younger than the median age).

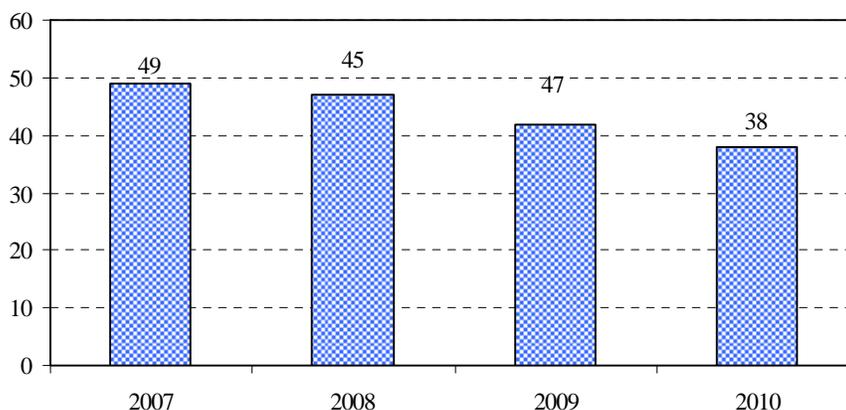
Figure 3. Turnover Rate (New Employees as a Percent of Total Employees), Wisconsin Division of Public Health, 2004-2006 and 2010



Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

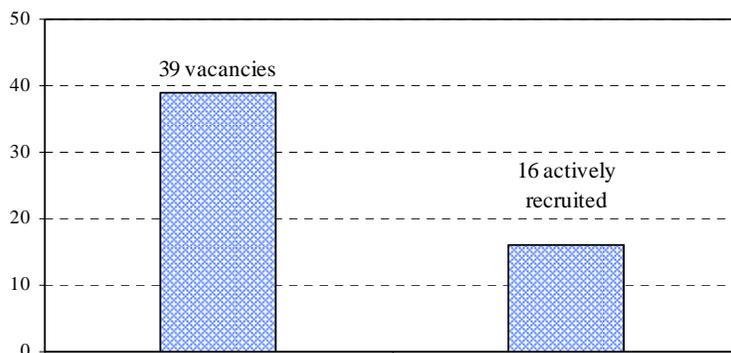
Note: Turnover rate is defined as the number of employees in a given category hired during the year, calculated as a percentage of all employees in that category. The smaller the percentage of turnover, the lower the turnover rate and the greater the continuity of employment.

Figure 4. Average Age of New Employees, Wisconsin Division of Public Health, 2007-2010



Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

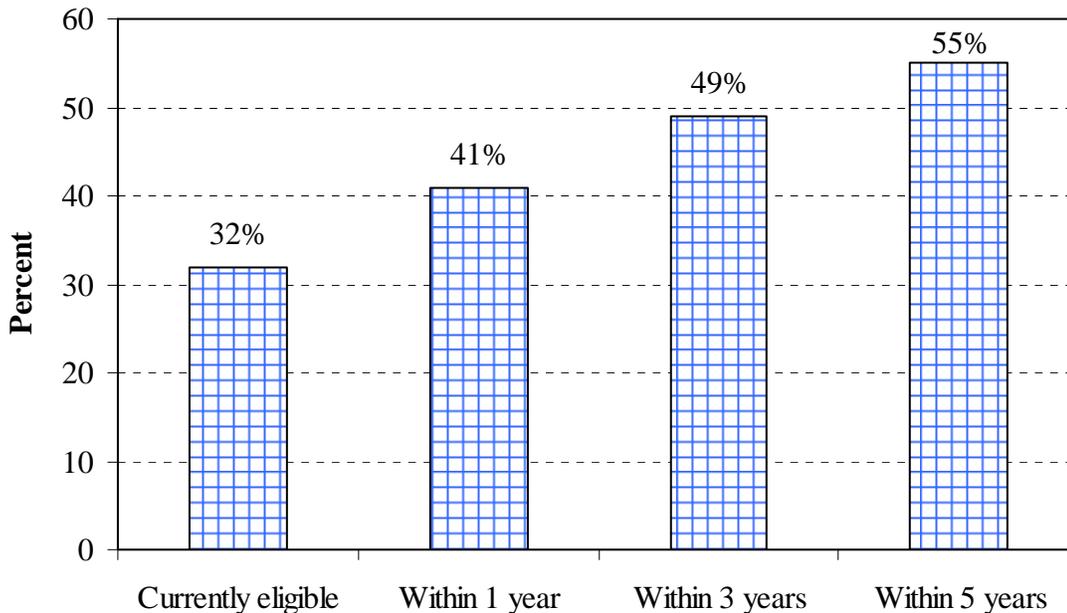
Figure 5. Number of Vacant Positions and Actively Recruited Positions, Wisconsin Division of Public Health, 2010



Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

Note: The total number of DPH positions was 469 as of September 2010. Of the 16 actively recruited vacant positions, 6 are permanent and 10 are limited-term employee positions.

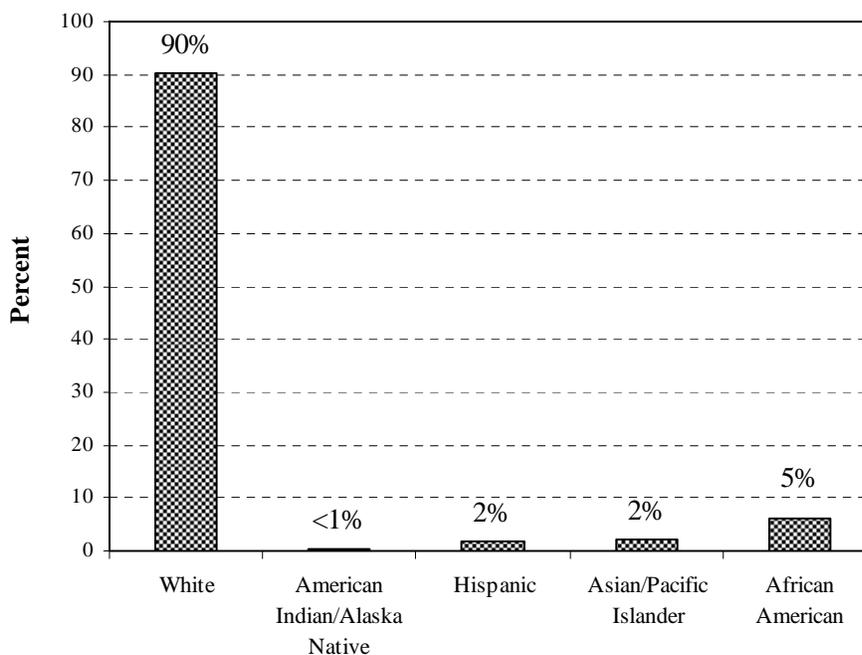
Figure 6. Percent of Current Classified Employees Eligible for Retirement, Wisconsin Division of Public Health, 2010



Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

Note: The percentage eligible to retire was based on the assumption that retirement eligibility begins at age 55.

Figure 7. Race and Ethnicity of Full-time Employees, Wisconsin Division of Public Health, 2010



Source: Bureau of Human Resources, Wisconsin Department of Health Services, September 2010.

Note: This figure includes only 399 permanent and project positions.

Wisconsin Local Health Department Workforce

The Wisconsin Department of Health Services (DHS) is mandated by section 251.05, Wisconsin Statutes, to collect information annually from local health departments for use in a local public health data system.

The 2008 Local Health Department (LHD) Survey was conducted within DHS by the Office of Policy and Practice Alignment via the online Health Alert Network (HAN). The survey was available on the HAN beginning January 26, 2010 and the final survey was completed on March 22, 2010. LHD staffing information presented in this report is based on local health department responses to the 2008 annual survey. All 92 local health departments in Wisconsin responded to the staffing part of the survey in 2008. This survey does not include information about Tribal Health Centers.

Key Findings - 2008

- There were 2,369 local health department (LHD) staff (2,042 permanent staff and 327 contract personnel) and an estimated 5,675,156 people in Wisconsin in 2008, for a ratio of 4.2 local health department staff per 10,000 people. (See Appendix C for the staff-to-population ratios for individual local health departments in Wisconsin, as well as a copy of the Local Health Department Survey instrument.) The ratio in 2007 was 4.6.
- There were 1,767 local health department full-time equivalent employees (FTEs) in Wisconsin in 2008, for a ratio of 3.1 LHD FTEs per 10,000 people, compared to 3.3 in 2007.
- According to the National Association of County and City Health Officials (NACCHO), in 2008, for all LHDs, the median number of workers was 4.8 full-time equivalent (FTEs) per 10,000 people* in the community. In the same year, Wisconsin's median number of workers was 3.1 FTEs per 10,000. That is to say among the 92 LHDs in Wisconsin, 46 LHDs have 3.1 or lower FTEs per 10,000 population, and 46 LHDs have 3.1 or higher FTEs per 10,000 population.
- In 2008, Wisconsin averaged 3.2 local health department FTEs per 10,000 population in rural counties, and 2.9 local health department FTEs per 10,000 population in urban counties. (Rural/urban counties are categorized based on a six-level urban-rural scheme developed by the National Center for Health Statistics.**)
- There were 152 new hires in all Wisconsin local health departments in 2008.
- Thirty people retired from Wisconsin LHDs in 2008.
- In 2008, 123 local health department employees were reported to be "eligible to retire" out of 2,042 total employees (6%).
- Between 2007 and 2008, the number of permanent health department staff in Wisconsin decreased 7% (from 2,198 to 2,042), while the number of contracted personnel decreased 17% (from 396 to 327). The total number of LHD staff declined by 9%.

The average age, years of service, turnover rate, and percentage of vacant positions of local health department employees are unknown because the survey did not request this information.

* NACCHO, 2008 National Profile of Local Health Departments, Page 9, Retrieved October 2010 from http://www.naccho.org/topics/infrastructure/profile/upload/NACCHO_WorkforceReport_FINAL.pdf

**2006 NCHS Urban-Rural Classification Scheme for Counties. http://www.cdc.gov/nchs/data_access/urban_rural.htm

Wisconsin Local Health Department Workforce

Table 3. LHD Employees by Age, Wisconsin 2008

Age	LHD Employees	Percent
Under 40	517	25%
40-49	533	26
50-59	760	37
60 and older	234	11
Total	2,044	100%

Source: Wisconsin Local Health Department Survey, 2008; Division of Public Health, Department of Health Services.
 Note: Age information was not reported for 325 LHD employees.

Table 4. LHD Employees by Race and Ethnicity, Wisconsin 2008

Race/Ethnicity	LHD Employees	Percent
White	1,832	90%
Black/African American	89	4
Hispanic/Latino	65	3
Asian	46	2
Native Hawaiian/Pacific Islander	1	<1
American Indian/Alaskan Native	3	<1
Other	1	<1
Total	2,037	100%

Source: Wisconsin Local Health Department Survey, 2008; Division of Public Health, Department of Health Services.
 Note: Information on race and ethnicity was not reported for 332 LHD employees.

Table 5. LHD Employees by Race and Ethnicity by Region, Wisconsin 2008

DHS Region	White	Black/ African American	Hispanic/ Latino	Asian	Native Hawaiian/ Pacific Islander	American Indian/ Alaskan Native	Other	Total
Southeastern	474	80	34	15	0	2	0	605
Northeastern	386	0	11	10	0	0	1	408
Northern	240	0	2	4	0	1	0	247
Western	379	0	2	7	1	0	0	389
Total	1,832	89	65	46	1	3	1	2,037

Source: Wisconsin Local Health Department Survey, 2008; Division of Public Health, Department of Health Services.
 Note: Information on race and ethnicity was not reported for 332 LHD employees.

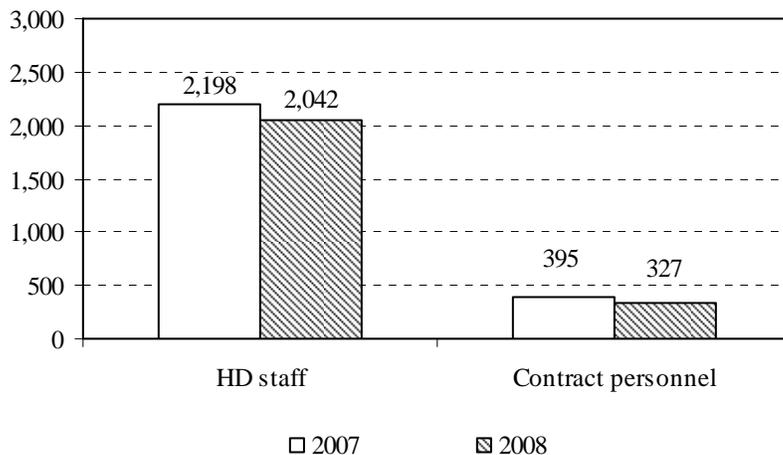
Table 6. Local Health Department Workforce by Occupational Classification, Wisconsin 2008

Occupational Classification	Total LHD Workforce	Number		Percent	
		LHD Staff	Contract Staff	LHD Staff	Contract Staff
Public health nurse	655	638	17	97%	3%
Administrative/clerical	575	548	27	95	5
Bilingual health aide Interpreter/translator	148	47	101	32	68
Nutritionist/dietitian	147	121	26	82	18
Registered sanitarian	134	124	10	93	7
Health educator	79	61	18	77	23
Other registered nurse	73	70	3	96	4
Environmental health worker	66	64	2	97	3
Laboratory worker	44	42	2	95	5
Dentist	39	1	38	3	97
Epidemiologist	23	16	7	70	30
Dental hygienist	20	8	12	40	60
Nurse practitioner	19	14	5	74	26
Public health physician	18	2	16	11	89
Licensed practical nurse	13	13	0	100	0
Public health computer specialist	12	8	4	67	33
Other public health professional	193	170	23	88	12
Other public health paraprofessional	111	95	16	86	14
Total	2,369	2,042	327	86%	14%

Source: Wisconsin Local Health Department Survey, 2008; Division of Public Health, Department of Health Services.

Note: In this table, counts indicate the number of people in the occupational classification, not positions or full-time equivalents.

Figure 8. Number of Health Department and Contract Personnel in the Local Health Department Workforce, Wisconsin 2007 and 2008



Source: Wisconsin Local Health Department Survey, 2008; Division of Public Health, Department of Health Services.

Wisconsin Emergency Medical Services Workforce

A high-quality Emergency Medical Services (EMS) system reduces both the human suffering and economic loss to society from the premature death and disability resulting from accidents or sudden illness. Wisconsin EMS is dedicated to developing and maintaining the EMS delivery system, ensuring that a uniform quality and standard of pre-hospital emergency medical care is available to everyone in Wisconsin.

The following information was obtained from the 2010 Wisconsin EMS Workforce Survey, provided by the Wisconsin Department of Health Services, Division of Public Health, Bureau of Communicable Diseases and Emergency Response.

Key Findings - 2010

- As of 2010, there were 16,917 EMS providers and 5,679,639 people in Wisconsin, for a ratio of 30 EMS providers per 10,000 people, compared with 32 EMS providers per 10,000 people in 2008.
- The average age of Wisconsin EMS providers was 39, two years younger than in 2008.
- Twenty-one percent of EMS workers were 50 years of age or older, and an additional 28% of them were between ages 40 and 49.
- Seventy percent of EMS workers in Wisconsin were male, and 30% were female.
- Eighteen percent of EMS providers had a technical college diploma, 48% had an associate degree or some college education, and 19% had a bachelor's or master's degree.
- As of 2010, 52% of Wisconsin EMS providers had worked in the profession for 11 years or longer.
- Sixty-five percent of Wisconsin EMS providers were working in other fields, such as EMS education or another medical or non-medical field.
- Thirty-eight percent of EMS providers were full-time employees, and 46% were volunteers.
- Forty-five percent of Wisconsin EMS providers worked less than 20 hours a week, 18% worked between 21 and 40 hours a week, 32% worked between 41 hours and 60 hours a week, and 5% worked 61 hours or more a week.
- Twenty-two percent (3,317) of EMS providers in Wisconsin reported a work-related injury in 2010.
- Twenty-five percent (4,282) of EMS providers in Wisconsin have received emergency preparedness training.
- As of 2010, 18 percent of EMS workers in Wisconsin were considering leaving the profession.

Race, ethnicity, turnover rate, percentage of vacant positions, retirement eligibility, and retirement eligibility projections for the EMS workforce are unknown because the registry system does not collect this information.

Table 7. Emergency Medical Services Workforce by Occupational Classification, Wisconsin 2010

Occupational Classification	Number	Percent
First Responder	3,047	18%
Emergency Medical Technician (EMT) Basic	7,654	45
EMT Intermediate Technician	2,568	15
EMT Intermediate	323	2
EMT Paramedic	3,323	20
Total	16,915	100%

Source: 2010 EMS Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Table 8. Emergency Medical Services Workforce by Age, Wisconsin 2010

Age	Number	Percent
Under 25	2,002	12%
25-29	2,205	13
30-39	4,591	26
40-49	4,872	28
50-54	1,951	11
55-59	1,006	6
60 and older	730	4
Total	17,357	100%

Source: 2010 EMS Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Note: This table includes ALL licensed EMS providers, not just those who completed the license renewal and the workforce survey.

Table 9. Emergency Medical Services Workforce by Gender, Wisconsin 2010

Gender	Number	Percent
Female	5,048	30%
Male	11,722	70%
Total	16,770	100%

Source: 2010 EMS Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Table 10. Emergency Medical Services Workforce by Education Level, Wisconsin 2010

Education	Number	Percent
No high school diploma or equivalent	88	1%
High school diploma or equivalent	1,908	12
Technical college diploma	2,894	18
Associate degree	3,543	22
Some college	4,143	26
Bachelor's degree	2,600	16
Master's degree	516	3
Doctorate	71	<1
Total	15,763	100%

Source: 2010 EMS Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Notes: No education level was reported for 1,152 EMS providers.

Percentages may not total to 100 due to rounding.

Table 11. Emergency Medical Services Workforce by Length of Service, Wisconsin 2010

Length of Service	Number	Percent
Less than 1 year	586	4%
1 - 5 years	4,601	27
6 - 10 years	2,745	16
11 - 15 years	2,087	12
16 - 20 years	3,109	18
More than 20 years	3,787	22
Total	16,915	100%

Source: 2010 EMS Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Note: Percentages may not total to 100 due to rounding.

Table 12. Emergency Medical Services Workforce by Work in Other Fields, Wisconsin 2010

Other Work	Number	Percent
No work in other fields	5,798	36%
Yes, EMS education	612	4
Yes, another medical field	2,426	15
Yes, another non-medical field	6,734	41
Combination of these	749	5
Total	16,319	100%

Source: 2010 EMS Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Notes: No information on "other work" was reported for 596 EMS providers.

Percentages may not total to 100 due to rounding.

Table 14. Emergency Medical Services Workforce by Employment Type, Wisconsin 2010

Employment Type	Number	Percent
Full-time employee	6,402	38%
Part-time employee	1,741	10
Not active as EMS provider	909	5
Volunteer	7,865	46
Total	16,917	100%

Source: 2010 EMS Workforce Survey, Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Notes: Percentage may not equal to 100 due to rounding.

Table 15. Emergency Medical Services Workforce and Hours Worked per Week, Wisconsin 2010

Hours worked per week	Number	Percent
1-20 hrs. per week	7,205	45%
21-40 hrs. per week	2,930	18
41-60 hrs. per week	5,162	32
61-80 hrs. per week	399	3
81+ hrs. per week	267	2
Total	15,963	100%

Source: 2010 EMS Workforce Survey, Bureau Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Note: 954 EMS providers did not report hours worked per week.

Wisconsin Emergency Preparedness Volunteer Workforce

The Wisconsin Emergency Assistance Volunteer Registry (WEAVR) is an online resource that collects and stores contact information on volunteers interested in filling critical response and recovery roles following a major public health emergency. Based on the information collected from each volunteer, public health officials can use WEAVR to identify people willing to fill the specific volunteer roles needed in a particular emergency. If an emergency occurs in which volunteers are needed, public health officials will use the WEAVR registry to generate a list of volunteers who will be contacted based on the information the volunteers provided.

In addition, the Medical Reserve Corps, sponsored by the Office of the U.S. Surgeon General, is dedicated to establishing teams of local volunteer medical and public health professionals to contribute their skills and expertise throughout the year as well as during times of community need (local response during emergencies and non-emergencies).

The mission of the Medical Reserve Corps (MRC) is to improve the health and safety of communities across the country by organizing and using public health, medical and other volunteers. There are seven MRC units in Wisconsin: Dane County MRC (in Madison), Eau Claire County MRC, La Crosse County MRC, Lake Geneva MRC, Southeast Wisconsin MRC (in Waukesha), Wisconsin Disaster Medical Response Team MRC (in Appleton), and Wisconsin Veterinary Corps (in Madison).

Key Findings - 2010

- As of September 1, 2010, WEAVR had 2,577 unduplicated volunteers registered on the system.
- WEAVR count of volunteers by license:
 - Total duplicated count of volunteers: 2,657, vs. 2,036 in 2007, an increase of 31%.*
 - Total unduplicated count of volunteers: 2,577, vs. 1,970 in 2007, an increase of 31%.
 - Unduplicated count of volunteers who are unlicensed (or licensure information was missing): 570, vs. 438 in 2007.
- As of September 1, 2010, Medical Reserve Corps units in Wisconsin had 405 recorded volunteers, an increase of 19% from 2007.

* A volunteer may report more than one kind of license; thus the duplicated count of volunteers is larger than the unduplicated count.

Table 16. Emergency Assistance Volunteer Counts by License Type, Wisconsin 2010

License Type	Number of Volunteers	Percent
Dental hygienist	11	<1%
Advanced practice nurse	68	3
Dentist	12	<1
Emergency medical technician	469	18
Licensed practical nurse	70	3
Marriage and family therapist	14	1
Pharmacist	67	3
Physician	181	7
Physician assistant	36	1
Professional counselor	61	2
Psychologist	21	1
Registered nurse	875	33
Sanitarian	43	2
Social worker	113	4
Veterinarian/vet. technician	29	1
Other licensed	17	1
Licensure missing or unlicensed	570	21
Total (duplicated)	2,657	100%
Total (unduplicated)	2,577	n/a

Source: Wisconsin Emergency Assistance Volunteer Registry (WEAVR), Division of Public Health, Wisconsin Department of Health Services, 2010.

Notes: “**Other licensed**” includes: audiologists, chiropractors, funeral directors, registered dietitians.

“**Social worker**” includes: advanced practice social workers, independent social workers, licensed clinical social workers, and social workers (not specified).

A volunteer may report more than one kind of license; thus the duplicated count of volunteers is larger than the unduplicated count.

Table 17. Medical Reserve Corps Volunteers by Occupation, Wisconsin 2010

Occupational Classification	Number of Volunteers	Percent
Physician	13	3%
Nurse	43	11
Pharmacist	3	1
Veterinarian	75	19
Mental health professional	56	14
EMS professional	27	7
Respiratory therapist	1	<1
Other public health/medical	17	4
Non-public health/medical	170	42
Total	405	100%

Source: Office of the Civilian Volunteer Medical Reserve Corps, Office of the U.S. Surgeon General.

Note: There are no volunteers in Wisconsin Medical Reserve Corps units for the following occupations: physician assistant, nurse practitioner, dentist, and dental hygienist.

Wisconsin Clinical Laboratory Science Workforce

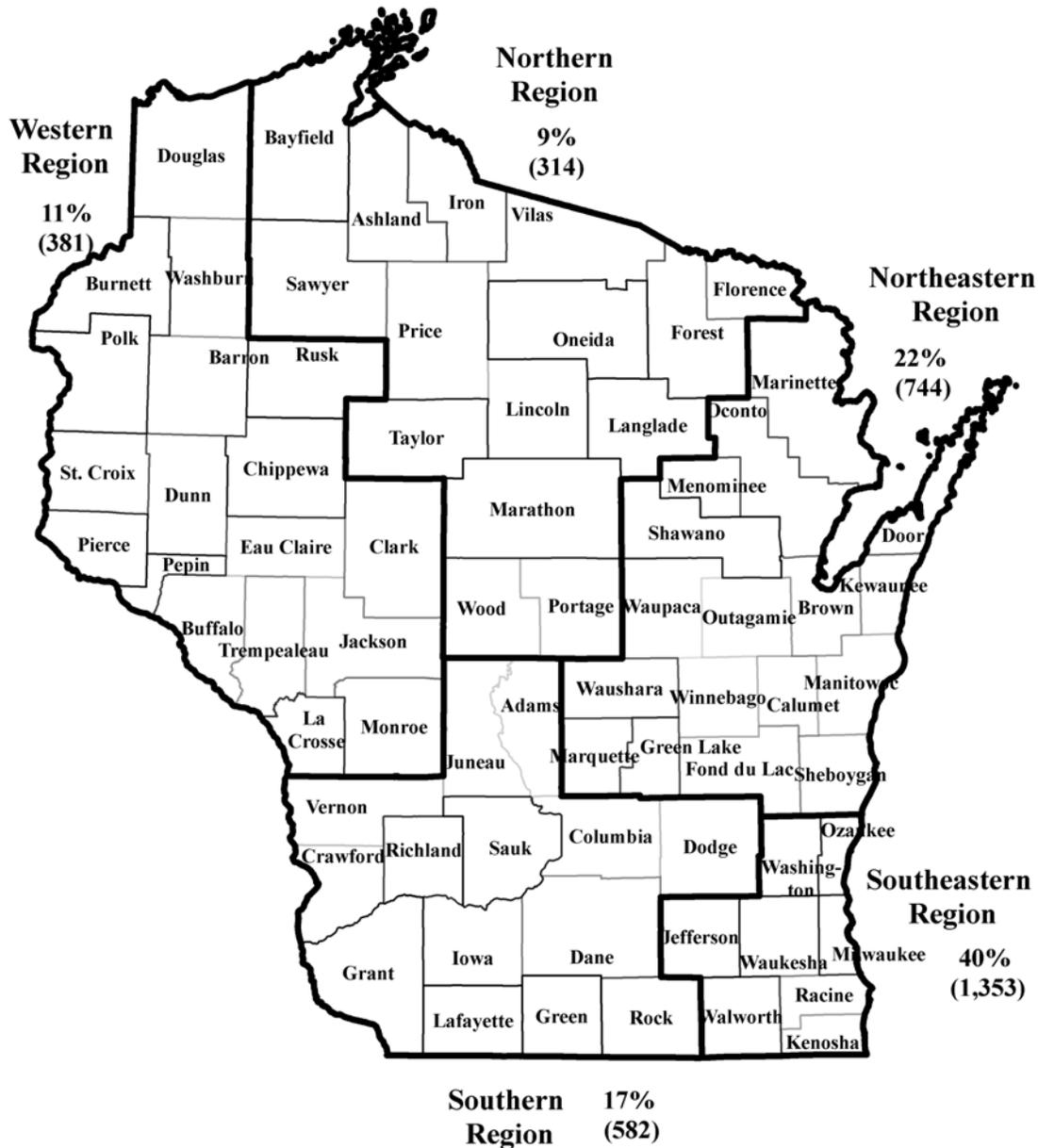
Laboratory science professionals are among the health disciplines that constitute the public health workforce. As demonstrated by the recent Novel Influenza A (H1N1) outbreak, laboratory science professionals address public health challenges. They conduct testing to report results for certain infectious diseases (e.g., HIV, influenza, and Lyme disease), emerging communicable diseases, and chronic diseases; they also assist in monitoring individual health and wellness. In March and April, 2010, the Wisconsin Department of Health Services (DHS) conducted the Wisconsin Clinical Laboratory Science Workforce Survey to assist educational institutions, hospitals, clinics, and others in workforce planning to assure a sufficient, competent, and diverse workforce.

There were 3,374 CLIA-certified (Clinical Laboratory Improvement Amendments certification) laboratories in Wisconsin as of September 2, 2009. CLIA certification ranges from Certificate of Waiver (can perform only relatively simple tests) to Certificate of Compliance and Certificate of Accreditation (can perform tests of high complexity). A sample of 746 laboratories, stratified by CLIA type and DHS region, was drawn from the full list of laboratories. There was a 43% response rate, with 319 laboratories completing the survey. Results were weighted to represent all clinical laboratories in Wisconsin.

Key Findings – 2010

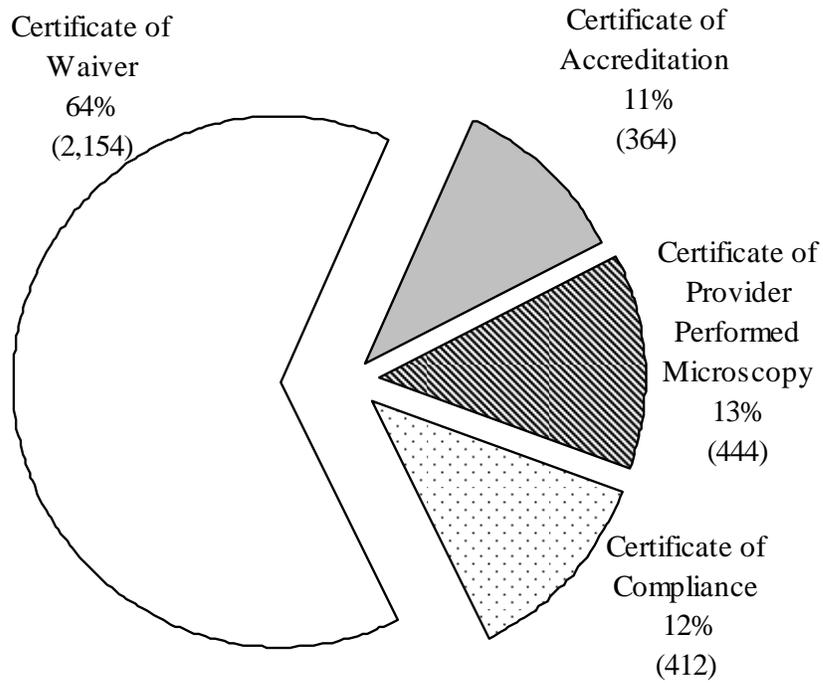
- In 2010, clinical laboratories in Wisconsin had an estimated 51,337 total employees.
- Eighty percent of laboratory employees statewide were female.
- Statewide, 24% of laboratory employees were under age 30, 19% were between 30 and 39, 21% were between 40 and 49, 26% were between 50 and 59, and 10% were 60 years of age and older.
- In 2010, 89% of laboratory employees in Wisconsin were reported to be White; 5% Black or African American, 1% American Indian/Alaska Native, 1% Asian, and 2% other races. Three percent of employees were reported to be Hispanic/Latino. Each employee was counted only once in these groupings; therefore the race groups exclude Hispanics.
- Statewide, 49% of laboratory workers had a job title reflecting clinical laboratory professional education and training.
- Fifteen percent of the employees of Certificate of Waiver and Provider Performed Microscopy certified laboratories had a job title reflecting clinical laboratory professional education and training.
- Seventy-nine percent of the employees of Certificate of Compliance and Certificate of Accreditation certified laboratories had a job title reflecting clinical laboratory professional education and training.
- An estimated 64% of 289 respondent laboratories statewide had an established emergency preparedness and response plan.
- An estimated 29% of laboratories reported that all their employees were trained in emergency preparedness and response. Another 29% reported that none of their employees were trained in emergency preparedness and response.

Figure 10. Number of CLIA-Certified Laboratories by DHS Region, Wisconsin, 2010



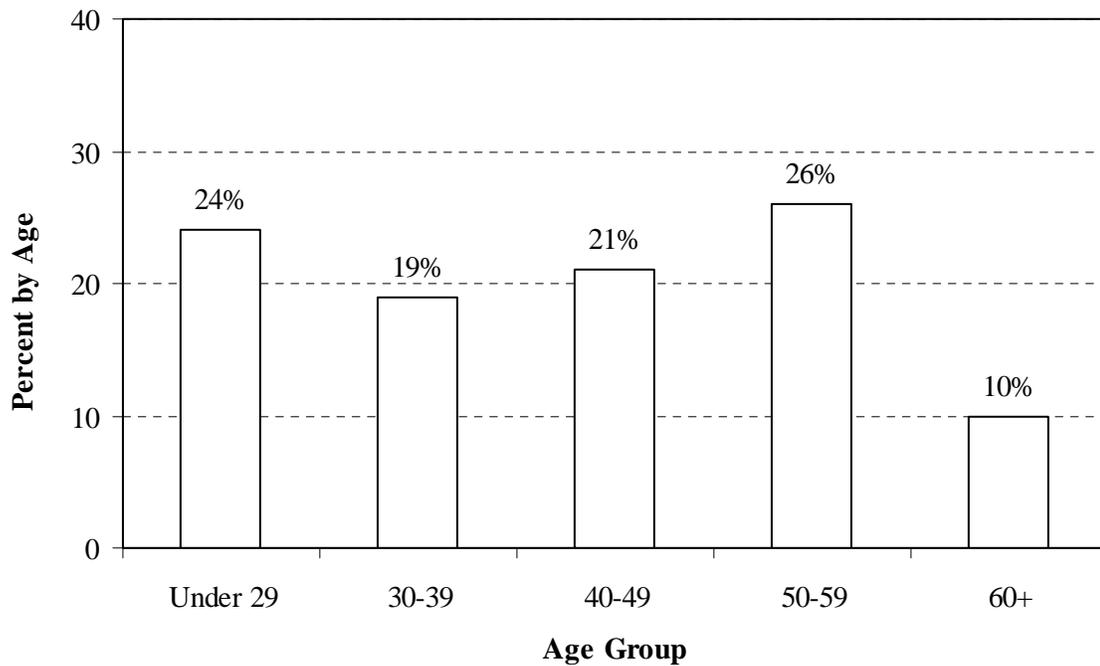
Source: Division of Quality Assurance, Wisconsin Department of Health Services.

Figure 11. Number of Laboratories by CLIA Type, Wisconsin



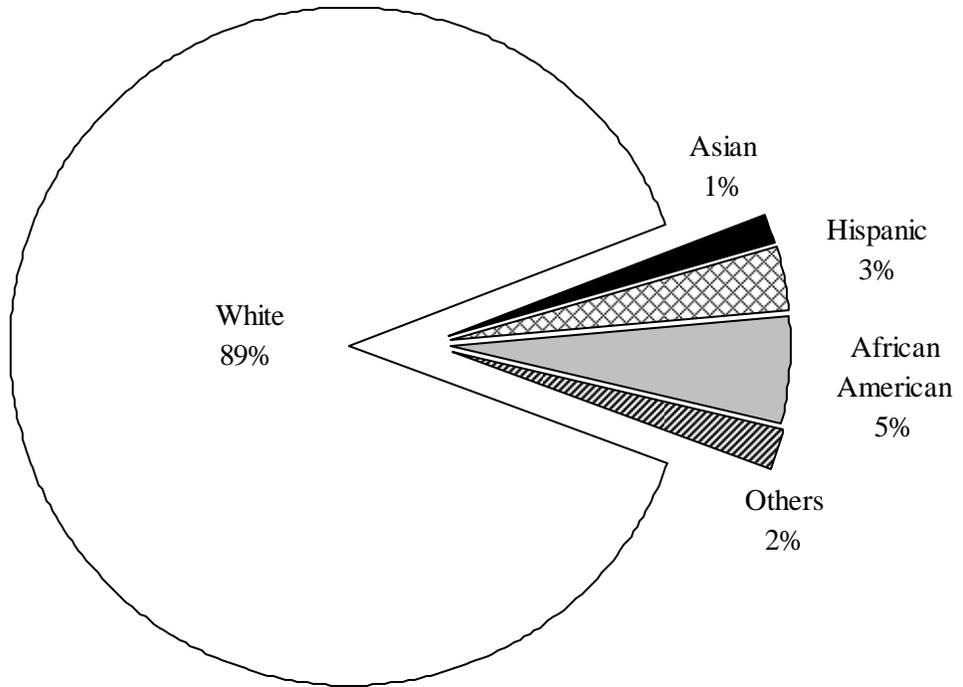
Source: Division of Quality Assurance, Wisconsin Department of Health Services.

Figure 12. Laboratory Employees by Age, Wisconsin, 2010



Source: Wisconsin Department of Health Services, Wisconsin Clinical Laboratory Science Workforce Survey, 2010.

Figure 13. Laboratory Employees by Race and Ethnicity, Wisconsin, 2010



Source: Wisconsin Department of Health Services, Wisconsin Clinical Laboratory Science Workforce Survey, 2010.

Table 18. Estimated Statewide Full-Time Equivalent (FTE) Laboratory Employees by Job Title, Wisconsin, 2010

Job Title/Discipline	Estimated FTEs Statewide	Estimated FTE Vacancies, Statewide
<i>Staff with clinical laboratory professional education and training</i>		
Pathologists	737	8
Pathology Assistants	76	0
Managers/Administrators	2,917	38
Certified Medical Technologists – MT(ASCP), CLS(NCA), etc.	7,826	130
Medical Technologists (non-certified)	3,066	0
Certified Medical Laboratory Technicians – MLT(ASCP), CLT(NCA), etc.	2,981	277
Medical Laboratory Technicians (non-certified)	694	9
Phlebotomists	5,210	258
Histotechnologists (Bachelor of Science degree, B.S.)	303	0
Histotechnician	570	36
Cytologists	428	0
Cytogenetic Technologists	246	0
Molecular Biologists	47	0
<i>Other professionals who perform laboratory testing</i>		
Registered Nurses	4,571	108
Licensed Practical Nurses	2,986	100
CMA/MA	1,061	28
CNA/NA	8,198	280
Other	9,420	454
Total	51,337	1,726

Source: Wisconsin Department of Health Services, Wisconsin Clinical Laboratory Science Workforce Survey, 2010.

Note: Estimated statewide numbers of FTE laboratory employees by job title were based on FTEs reported by the respondent laboratories, and calculated using a multiplier of 9.5. These estimates assume that all Wisconsin laboratories have a distribution of employees by discipline similar to that of the 319 respondent laboratories that completed the survey. Formula used to calculate the multiplier: $319/3,374 \times 100 = 9.5$.

For details of the survey, see Page 39 of the report, *Wisconsin Clinical Laboratory Science Workforce Survey, 2010*, available at

<http://www.dhs.wisconsin.gov/hw2020/infrastructure/workforce/>

Wisconsin Nursing Workforce Survey

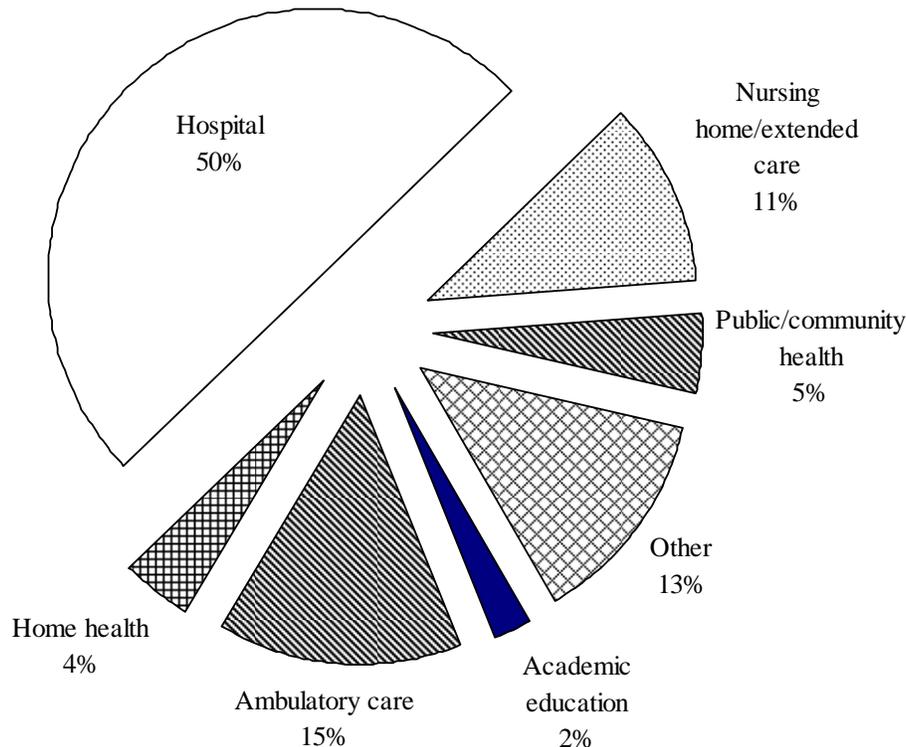
Completion of the Wisconsin Nursing Workforce Survey was mandated under Chapter 106.30, Wis. Stats., for all Wisconsin registered nurses (RNs). The survey was conducted as an element in the biennial license renewal requirement from January 6, 2010 to March 1, 2010. The mandate was communicated to registered nurses through many venues and organizations, including employers.

The survey instrument was designed by the Wisconsin Department of Workforce Development in consultation with the Wisconsin Health Workforce Data Collaborative. The survey questions were based on multiple other surveys of the registered nurse community, and contain all data elements of the National Nursing Workforce Minimum Dataset: Supply. The survey was administered by the Wisconsin Department of Regulation and Licensing. This project is funded in part by the Healthier Wisconsin Partnership Program, a component of the Advancing a Healthier Wisconsin endowment at the Medical College of Wisconsin. The survey data describe the characteristics of 77,553 registered nurses (RNs) in Wisconsin.

Key Findings – 2010

- About 5% (or 2,900) of all registered nurses in Wisconsin work in settings related to public and/or community health.

Figure 14. Number of Registered Nurses by Primary Place of Work, Wisconsin, 2010



Source: Wisconsin 2010 Nursing Workforce Survey, Wisconsin Department of Workforce Development. For additional survey information, email Nelse Grundvig at anelse.grundvig@dwd.wisconsin.gov

Wisconsin Public-Sector Employment Projections

The Wisconsin Department of Workforce Development provides 10-year employment projections for various industries and occupations. The latest 10-year projection is for the period of 2008-2018.

This projection provides a count of jobs rather than people. (An individual may hold more than one job.) The projections provide an estimate of the number of filled jobs in the projected year. The projections do not estimate the demand for and/or supply of workers. A distinction is not made between full-time and part-time jobs. Thus, comparisons between these employment projections and other sources showing the number of workers should be made with caution.

These projections are for selected health occupations in state and local government, excluding education and hospitals.

Projections for individual public health occupations are available in Appendix H.

Key Findings – 2018 Projections

- Between 2008 and 2018, Wisconsin health care jobs in the public sector (excluding state and local education and hospitals) are projected to increase by 3.6%, or 690 positions.
- Total number of health care jobs in the public sector (excludes state and local education and hospitals)*:
2008: 19,160
2018: 19,850 (an increase of 3.6% between 2008 and 2018)

* Occupations included in these projections represent the most prevalent occupations in Wisconsin's public health sector.

Demographic Profile of Wisconsin Health Care Workers in the Public Sector

The American Community Survey (ACS) is a nationwide survey conducted by the U.S. Census Bureau each year that collects information on demographic, social, economic, and housing characteristics. All ACS data are estimates. The data used in this report are from the ACS Public Use Microdata Sample (PUMS), which is a subset of ACS. 2008 PUMS data contain about 1.3 million housing unit records and close to 3 million person records from households, and approximately 83,000 person records from group quarters. Estimates from the 2008 PUMS file are expected to be different from the 2005 or earlier released ACS estimates because they are subject to additional sampling error and further data processing operations. This survey is the only source that provides estimated demographic data for the Wisconsin health care workforce in the public sector. (See Appendix F for available demographic information on selected health care professions from the Wisconsin Department of Regulation and Licensing.)

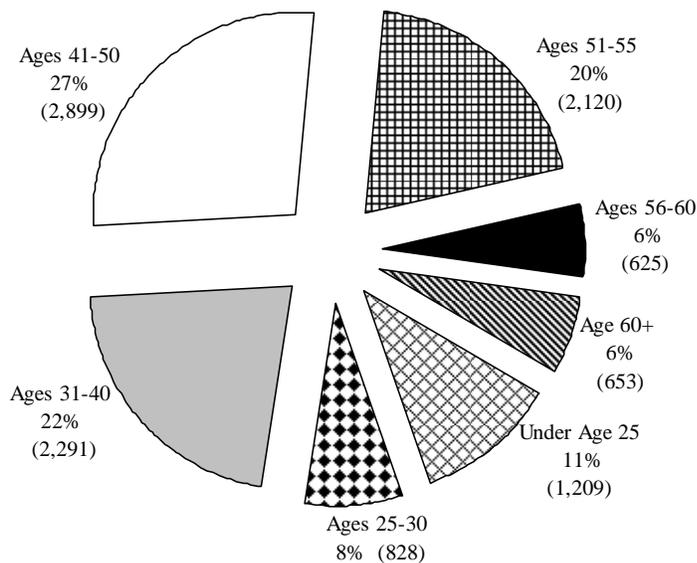
The PUMS data presented in this report exclude managers and all workers in education and hospitals.

In 2008, there were an estimated 10,625 health care workers in the public sector in Wisconsin (excluding managers and all workers in education and hospitals).

Key Findings - 2008

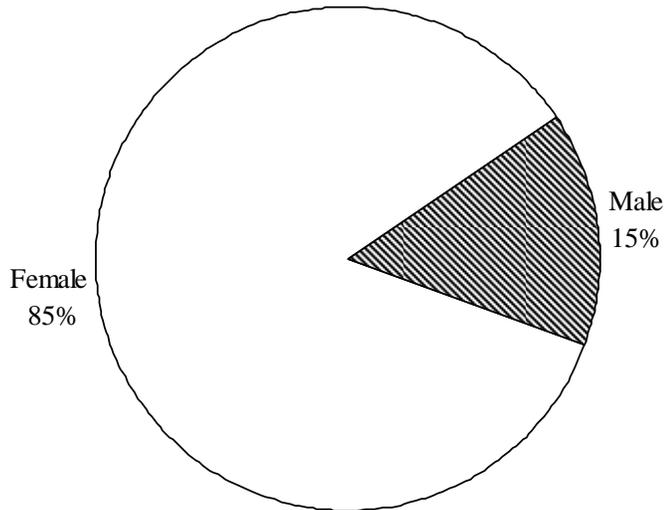
- In 2008, an estimated 32% of Wisconsin's public-sector health care workforce was age 51 and older. An additional 27% was ages 41 to 50.
- Women made up an estimated 85% of the public-sector health care workforce.
- An estimated 79% of Wisconsin's public-sector health care workforce was non-Hispanic white.
- By 2013, an estimated 34% of the public-sector health care workforce in Wisconsin will be eligible to retire (age 55 and older).

Figure 15. Health Care Workforce in the Public Sector by Age, Wisconsin 2008



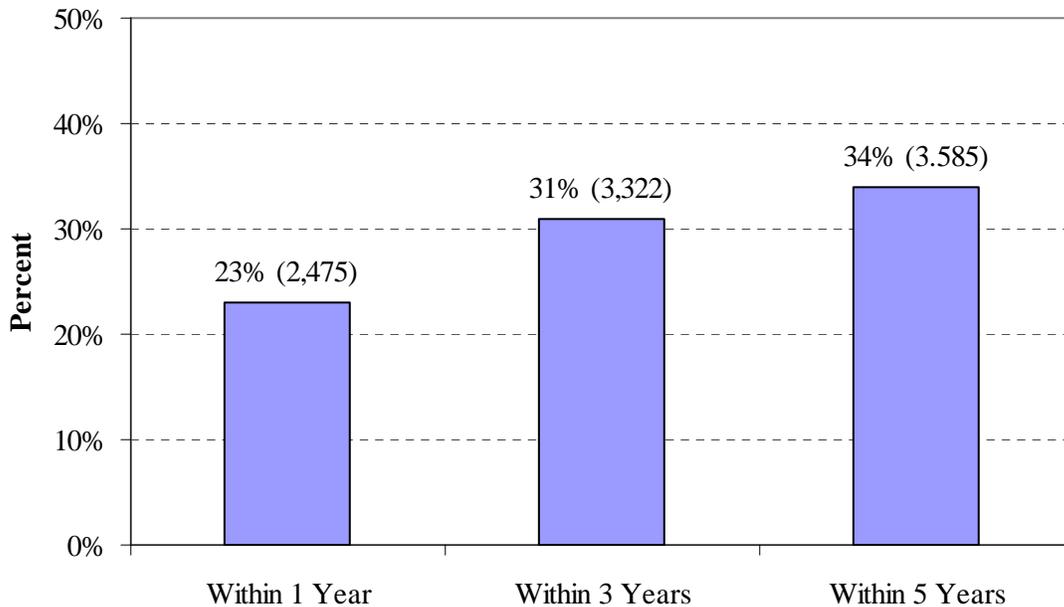
Source: American Community Survey Public Use Microdata Sample (ACS/PUMS), 2008, U.S. Bureau of the Census.
Note: Data exclude managers and all workers in education and hospitals.

Figure 16. Health Care Workforce in the Public Sector by Gender, Wisconsin 2008



Source: American Community Survey Public Use Microdata (ACS/PUMS), 2008, U.S. Bureau of the Census.
Note: Data exclude managers and all workers in education and hospitals.

Figure 17. Percent of Public-Sector Health Care Workers Eligible for Retirement, Wisconsin 2008



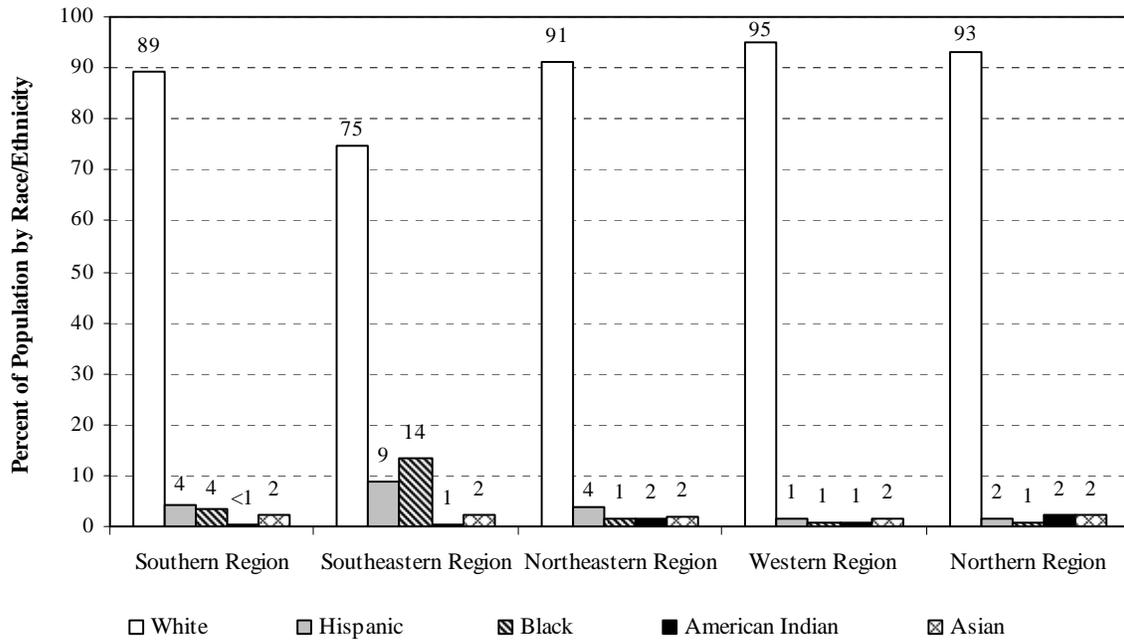
Source: American Community Survey Public Use Microdata Sample (ACS/PUMS), 2008, U.S. Bureau of the Census.
Note: Data exclude managers and all workers in education and hospitals.
Retirement age is based on the assumption that retirement eligibility begins at age 55.

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Appendix B. Wisconsin Population by Race/Ethnicity

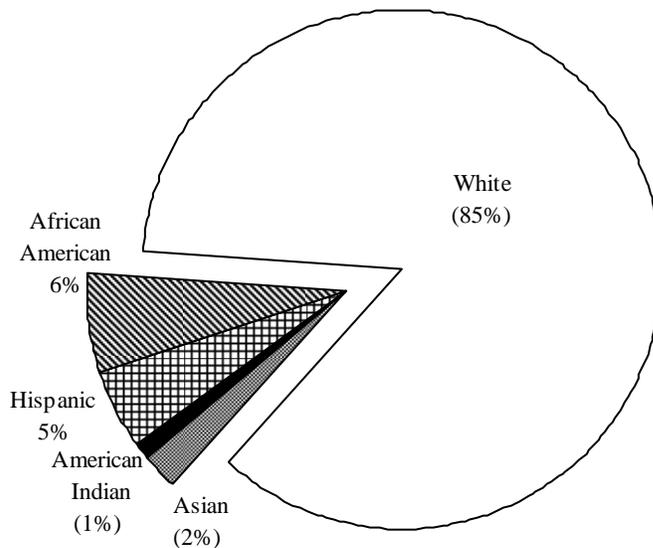
Figure B1. Population Distribution by Race and Ethnicity by Region, Wisconsin 2009



Source: Wisconsin Population Health Information Section, Division of Public Health, Wisconsin Department of Health Services.

Note: Race and ethnicity categories are mutually exclusive. Percent may not add up to 100 due to rounding error.

Figure B2. Population Distribution by Race and Ethnicity, Wisconsin, 2009



Source: Wisconsin Population Health Information Section, Division of Public Health, Wisconsin Department of Health Services.

Note: Race and ethnicity categories are mutually exclusive.

Appendix C. Wisconsin Local Health Department Survey, 2008

Local Health Department Staff, Wisconsin 2008								
LHD	Population	Total Staff	Staff per 10,000 Pop.	Administrator Staff	Public Health Nurse Staff	Other Professional Staff	Para-professional Staff	Support Staff
STATE TOTAL	5,675,156	2,369	4.2	193	655	792	347	382
ADAMS	21,836	13	6.0	1	3	4	4	1
ASHLAND	16,929	18	10.6	8	5	2	2	1
BARRON	47,727	13	2.7	1	6	4	0	2
BAYFIELD	16,160	19	11.8	3	5	4	3	4
BROWN	222,523	46	2.1	6	14	15	7	4
De Pere	22,645	5	2.2	1	2	1	0	1
BUFFALO	14,200	14	9.9	3	2	3	2	4
BURNETT	16,791	10	6.0	1	3	4	1	1
CALUMET	33,464	16	4.8	2	6	2	1	5
CHIPPEWA	61,872	30	4.8	2	7	8	3	10
CLARK	34,589	13	3.8	2	5	2	2	2
COLUMBIA	56,130	11	2.0	2	5	2	1	1
CRAWFORD	17,629	7	4.0	1	3	0	1	2
DANE	471,559	240	5.1	18	50	50	104	18
DODGE	81,232	18	2.2	3	6	4	4	1
DOOR	30,303	17	5.6	1	6	5	2	3
DOUGLAS	44,326	17	3.8	2	4	6	2	3
DUNN	43,292	20	4.6	1	5	9	1	4
EAU CLAIRE	98,302	64	6.5	1	16	22	17	8
FLORENCE	5,317	6	11.3	1	0	3	1	1
FOND DU LAC	101,740	87	8.6	1	21	51	9	5
FOREST	10,393	13	12.5	2	1	5	0	5
GRANT	51,290	29	5.7	3	5	13	3	5
GREEN	36,493	12	3.3	1	4	2	1	4
GREEN LAKE	19,416	8	4.1	1	3	4	0	0
IOWA	24,196	11	4.5	1	4	2	2	2
IRON	7,048	8	11.4	1	1	4	0	2
JACKSON	20,140	11	5.5	2	3	4	0	2
JEFFERSON	66,437	20	3.0	1	8	1	8	2
Watertown	23,163	11	4.7	1	2	4	3	1
JUNEAU	27,359	14	5.1	2	4	4	1	3

* No county health department.

Staffing information includes both health department employees and contracted personnel.

County health departments appear in capital letters. Municipal health departments are indented.

The population count reflects the population in each department's jurisdiction. Populations of county LHDs in counties with municipal health departments do not include the populations of those municipalities.

Populations shown are estimates provided by the Wisconsin Department of Administration for January 1, 2008.

Appendix C, continued

Local Health Department Staff, Wisconsin 2008 (continued)								
LHD	Population	Total Staff	Staff per 10,000 Pop.	Administrator Staff	Public Health Nurse Staff	Other Professional Staff	Para-professional Staff	Support Staff
KENOSHA	162,094	59	3.6	0	23	27	4	5
KEWAUNEE	21,358	8	3.7	1	1	3	1	2
LA CROSSE	112,758	91	8.1	8	11	51	8	13
LAFAYETTE	16,468	14	8.5	1	4	3	4	2
LANGLADE	21,680	11	5.1	2	4	3	0	2
LINCOLN	30,681	27	8.8	2	8	6	7	4
MANITOWOC	84,830	27	3.2	3	12	5	4	3
MARATHON	135,190	55	4.1	6	18	16	6	9
MARINETTE	44,823	15	3.3	1	4	5	1	4
MARQUETTE	15,423	8	5.2	1	3	1	1	2
MENOMINEE	4,630	1	2.2	1	0	0	0	0
MILWAUKEE*								
Cudahy	18,620	16	8.6	1	4	7	1	3
Franklin	33,550	11	3.3	1	7	2	0	1
Greendale	13,995	8	5.7	1	4	1	1	1
Greenfield	36,270	11	3.0	1	4	3	0	3
Hales Corners	7,646	6	7.8	1	2	2	0	1
Milwaukee City	590,870	250	4.2	5	61	136	12	36
North Shore	37,210	9	2.4	1	4	3	0	1
Oak Creek	32,470	11	3.4	2	5	4	0	0
St. Francis	8,952	7	7.8	1	1	2	2	1
Shorewood/ Whitefish Bay	27,300	6	2.2	1	1	3	0	
South Milwaukee	21,310	15	7.0	1	4	6	1	3
Wauwatosa	45,880	17	3.7	2	6	8	1	0
West Allis	64,417	35	5.4	4	10	12	3	6
MONROE	44,170	17	3.8	2	5	2	2	6
OCONTO	39,261	15	3.8	1	3	7	3	1
ONEIDA	38,903	26	6.7	3	7	9	1	6
OUTAGAMIE	114,608	26	2.3	1	10	6	6	3
Appleton	72,297	24	3.3	1	0	19	0	4
OZAUKEE	87,008	17	2.0	2	10	2	0	3
PEPIN	7,743	15	19.4	1	4	5	1	4

* No county health department.
Staffing information includes both health department employees and contracted personnel.
County health departments appear in capital letters. Municipal health departments are indented.
The population count reflects the population in each department's jurisdiction. Populations of county LHDs in counties with municipal health departments do not include the populations of those municipalities.
Populations shown are estimates provided by the Wisconsin Department of Administration for January 1, 2008.

Appendix C, continued

Local Health Department Staff, Wisconsin 2008 (continued)								
LHD	Population	Total Staff	Staff per 10,000 Pop.	Administrator Staff	Public Health Nurse Staff	Other Professional Staff	Para-professional Staff	Support Staff
PIERCE	40,523	34	8.4	1	10	8	1	14
POLK	45,892	36	7.8	2	7	17	5	5
PORTAGE	70,506	29	4.1	1	14	7	4	3
PRICE	16,088	19	11.8	0	7	4	2	6
RACINE*								
Caledonia/ Mt. Pleasant	51,394	9	1.8	1	3	3	1	1
Racine City	82,569	35	4.2	5	9	14	1	6
Western Racine Co.	62,358	18	2.9	1	4	5	5	3
RICHLAND	18,317	8	4.4	2	3	2	0	1
ROCK	160,477	39	2.4	5	15	11	0	8
RUSK	15,657	15	9.6	2	1	4	1	7
ST. CROIX	79,702	22	2.8	2	6	8	3	3
SAUK	61,086	38	6.2	3	6	14	2	13
SAWYER	17,753	17	9.6	2	3	3	2	7
SHAWANO	42,602	11	2.6	1	4	2	1	3
SHEBOYGAN	117,472	43	3.7	4	14	8	10	7
TAYLOR	20,065	12	6.0	1	2	4	3	2
TREMPEALEAU	28,278	12	4.2	1	3	4	1	3
VERNON	29,719	14	4.7	1	5	3	2	3
VILAS	23,044	8	3.5	1	2	2	1	2
WALWORTH	101,315	19	1.9	1	7	4	1	6
WASHBURN	17,646	10	5.7	1	4	1	0	4
WASHINGTON	130,493	32	2.5	4	10	2	9	7
WAUKESHA	382,697	59	1.5	5	21	12	11	10
WAUPACA	54,157	31	5.7	4	6	14	3	4
WAUSHARA	25,322	17	6.7	1	7	4	2	3
WINNEBAGO	57,171	27	4.7	1	10	9	4	3
Menasha	17,408	15	8.6	1	4	1	9	0
Neenah	25,560	14	5.5	1	5	2	4	2
Oshkosh	65,920	14	2.1	1	5	5	1	2
WOOD	77,049	33	4.3	2	9	12	3	7

* No county health department.
Staffing information includes both health department employees and contracted personnel.
County health departments appear in capital letters. Municipal health departments are indented.
The population count reflects the population in each department's jurisdiction. Populations of county LHDs in counties with municipal health departments do not include the populations of those municipalities.
Populations shown are estimates provided by the Wisconsin Department of Administration for January 1, 2008.

Source: Wisconsin Local Health Department Survey, 2008; Division of Public Health, Department of Health Services.

Appendix C, continued

Local Health Department Staffing Survey 2008		
LOCAL AGENCY INFORMATION		
Name of Local Health Department		
Name of Person Completing Survey		
Position of Person Completing Survey		
Telephone of Person Completing Survey		
E-mail of Person Completing Survey		
How many Health Department Staff or Contracted Personnel are bilingual or function as a translator at certain times? This is NOT their primary classification but they have the capability. Indicate only the Number of Staff (whole number only), if applicable.	Health Department Staff	Contracted Personnel
How many Health Department Staff members belong to the following age groups? Indicate only the Number of Staff (whole number only).	Health Department Staff	# of Staff
	Under 40 Years of Age	
	40 – 49	
	50 – 59	
	60 Years and Older	
How many Health Department Staff members belong to the following race/ethnic groups? Indicate only the Number of Staff (whole number only).	Health Department Staff	# of Staff
	White non-Hispanic	
	Hispanic	
	Black or African American	
	American Indian or Alaska Native	
	Asian	
	Native Hawaiian or Other Pacific Islander	
	Other races	
Two or more races		

Appendices

STAFFING INFORMATION Staffing Function	Health Department Staff Only		Contracted Personnel Only	
	FTEs	Number of Staff (whole numbers only)	FTEs	Number of Staff (whole numbers only)
Administrator				
Support Staff				
Computer Specialist				
Registered Sanitarian				
Other Environmental Health Professional				
Epidemiologist				
Emergency Preparedness Coordinator				
Public Health Nurse				
Registered Nurse				
Licensed Practical Nurse				
Nurse Practitioner				
Certified Dietitian				
Public Health Nutritionist				
Dietetic Technician				
Physician				
Dentist				
Dental Hygienist				
Public Health Educator				
Laboratory Professional				
Laboratory Technician				
Bilingual Health Aide/Interpreter/Translator				
Other Public Health Professional				
Other Public Health Paraprofessional				
Total Number of Staff				

Health Department Staff Only	# of Staff
CY2008 New Employees	
CY2008 Retirees	
Eligible to Retire	

Source: Wisconsin Local Health Department Survey, 2008; Division of Public Health, Department of Health Services.

Appendix D. Wisconsin EMS Workforce Survey

The EMS Office, along with its partners, is interested in collecting information about the EMS workforce. **Your answers to this survey are confidential.** Only aggregate data will be reported. Data will assist in learning about workforce demographics and trends as well as assist with planning for needs of EMS in the future. We appreciate your time in completing this **EMS Workforce Survey**. The survey should take about 5 minutes to complete. Your input is crucial for learning more about the EMS workforce. Results will be available at www.dhs.wisconsin.gov/ems as soon as all data is collected and tabulated. **You must also complete the 2010-2012 EMS Provider License Renewal Application that will follow this survey.**

*Length of service as an EMS

Provider:

- Less than 1 year
- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 20 or more years

*What level license do you currently hold?:

- First Responder
- EMT-Basic
- EMT-Intermediate Technician
- EMT-Intermediate
- EMT-Paramedic

*Are you currently providing pre-hospital patient care?:

- Yes
- No

*If yes, at what level are you practicing?:

- First Responder
 - EMT-Basic
 - EMT-Intermediate Technician
 - EMT-Intermediate
 - EMT-Paramedic
-

Appendices

*Please describe your employment status as an EMS Provider?:

- Full-time
- Part-time
- Volunteer

*Number of hours per week practicing as an EMS Provider:

*If you volunteer as an EMS Provider, do you receive any compensation as a volunteer?:

- No
- Yes - Uniform allowance only - non monetary compensation
- Yes - Paid on call - less than minimum wage to be available for call
- Yes - Paid per call - minimum wage or more on call, paid when dispatched
- Yes - Combination of paid on call and paid per call

*If you volunteer, where do you respond from?:

- Home
- Station

*Do you plan to reduce the number of hours you practice as an EMS Provider in the near future?:

- Yes
- No

*Do you plan to increase the number of hours you practice as an EMS Provider in the near future?:

- Yes
- No

*How many different EMS services are you currently credentialed with?:

- One
- Two
- Three
- More than three

*What is the length of your usual EMS shift?:

- More than 24 hours
- 24 hours
- 12-23 hours
- 8-11 hours
- Less than 8 hours

Appendices

How satisfied are you with the following as it relates to the EMS profession:

	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Very Dissatisfied
*Pay	<input type="checkbox"/>				
*Benefits	<input type="checkbox"/>				
*Work Relationships	<input type="checkbox"/>				
*Worksite Location	<input type="checkbox"/>				
*Educational Opportunities	<input type="checkbox"/>				
*Advancement Opportunities	<input type="checkbox"/>				
*Shift	<input type="checkbox"/>				
*Hours	<input type="checkbox"/>				
*Work Environment	<input type="checkbox"/>				
*Personal Rewards	<input type="checkbox"/>				

Are you practicing as an EMT in another state?:

- Yes
- No

If yes, which state(s):

Have you ever seriously considered leaving EMS?:

- Yes
- No

If yes, why?:

Do you work in a field other than practicing as an EMT?:

- No
- Yes, another medical field
- Yes, another non-medical field
- Yes, EMS education
- Combination of the above

Have you ever experienced an EMS work-related injury?:

- Yes
- No

If you have had an EMS work-related injury, how did that injury impact your regular, full-time job?

If you have had a work-related injury, how long were you out of EMS due to the injury?

- Less than 8 hours
- 8-40 hours
- 1 week – 1 month
- 1 month – 6 months
- More than 6 months
- Permanently

What is your highest level of education?:

- No high school diploma or equivalency
- High School diploma or equivalency
- Some college
- Technical College diploma
- Associate Degree
- Bachelor Degree
- Master Degree

Appendices

	<ul style="list-style-type: none">▪ Doctorate Degree
Have you received education or training on emergency preparedness?	<ul style="list-style-type: none">▪ Yes▪ No
If yes, have you taken any of the following courses:	<ul style="list-style-type: none">▪ Incident Command System (ICS) 100▪ Incident Command System (ICS) ICS 200▪ Incident Command System (ICS) ICS 300▪ Incident Command System (ICS) ICS 400▪ National Incident Management Systems (NIMS) 700▪ National Incident Management Systems (NIMS) NIMS 800
Are you a Wisconsin Emergency Preparedness Volunteer (WEAVR)?	<ul style="list-style-type: none">▪ Yes▪ No
Are you in the Medical Reserve Corps (MCR)?	<ul style="list-style-type: none">▪ Yes▪ No

Any additional comments relating to your EMS practice?:

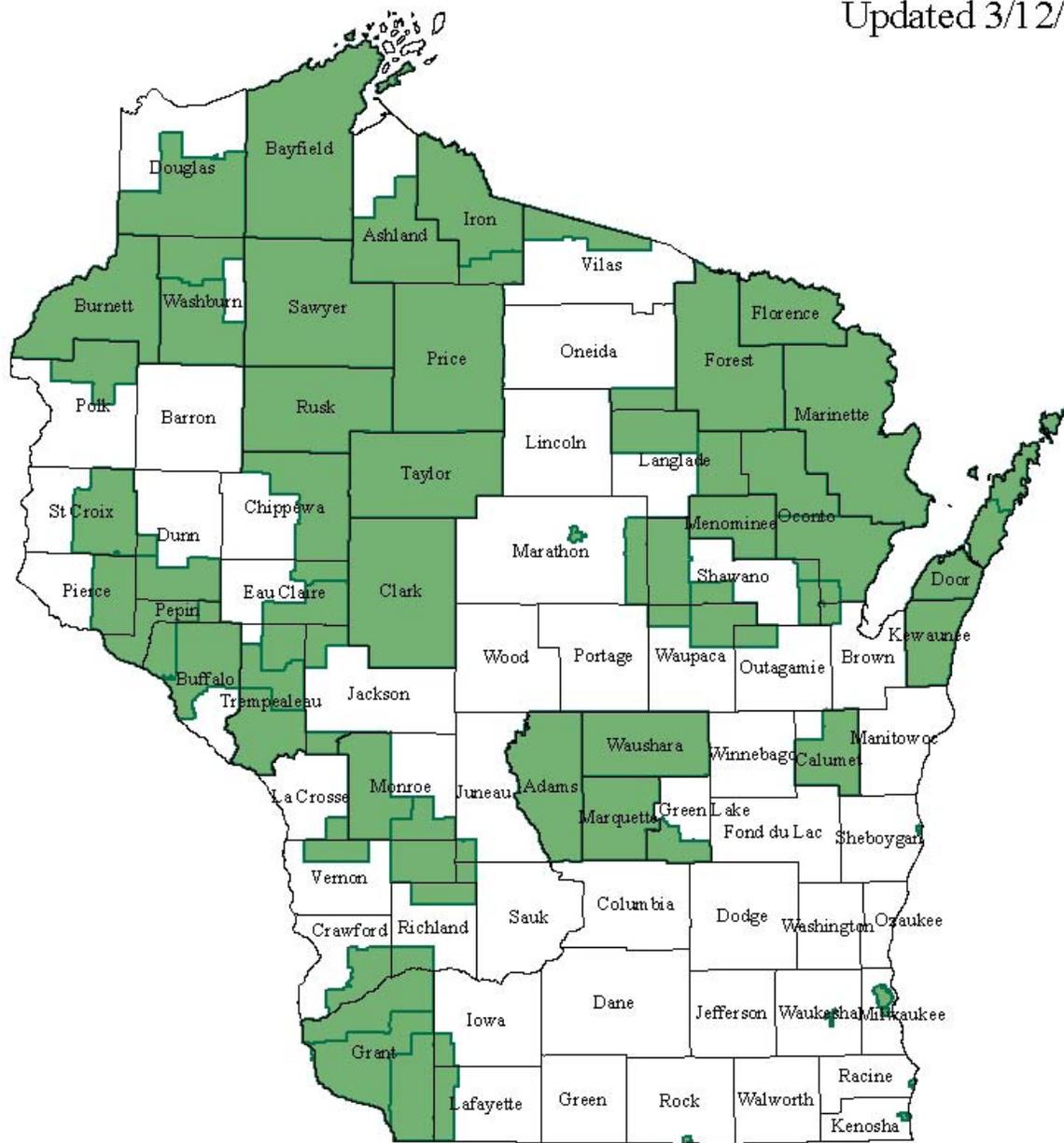
Source: 2010 EMS Workforce Survey, Bureau of Local Health Support and Emergency Medical Services, Division of Public Health, Wisconsin Department of Health Services.

Appendix E. Wisconsin Health Professional Shortage Areas

Wisconsin Primary Care HPSAs

Federally Designated Health Professional Shortage Areas

Updated 3/12/10



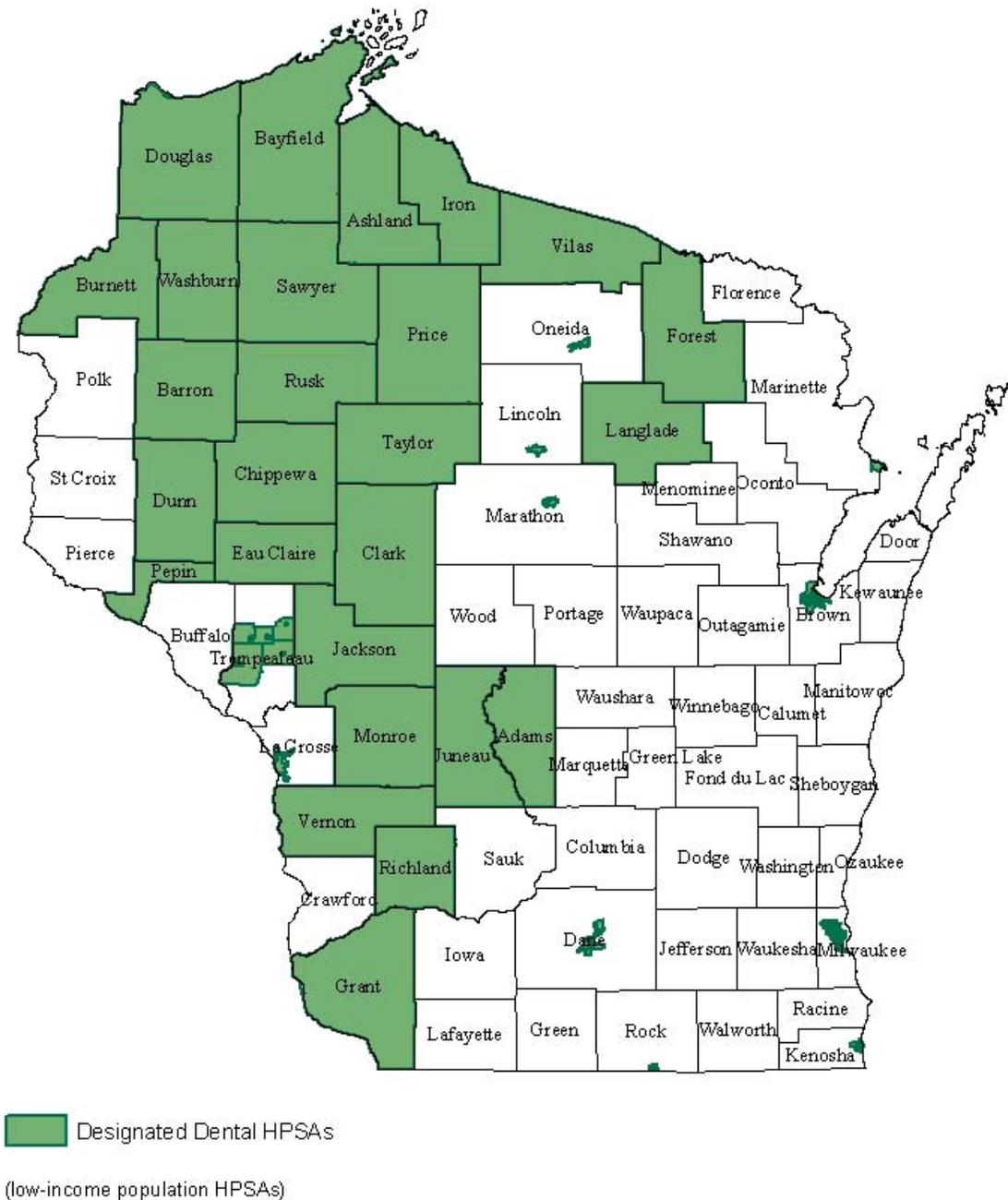
Designated Primary Care HPSAs
(geographic and low-income population HPSAs)

Source: Primary Care Office, Division of Public Health, Wisconsin Department of Health Services. Available at: <http://www.dhs.wisconsin.gov/health/PrimaryCare/maps.htm>.

Wisconsin Dental HPSAs

Federally Designated Health Professional Shortage Areas

Updated 3/12/10

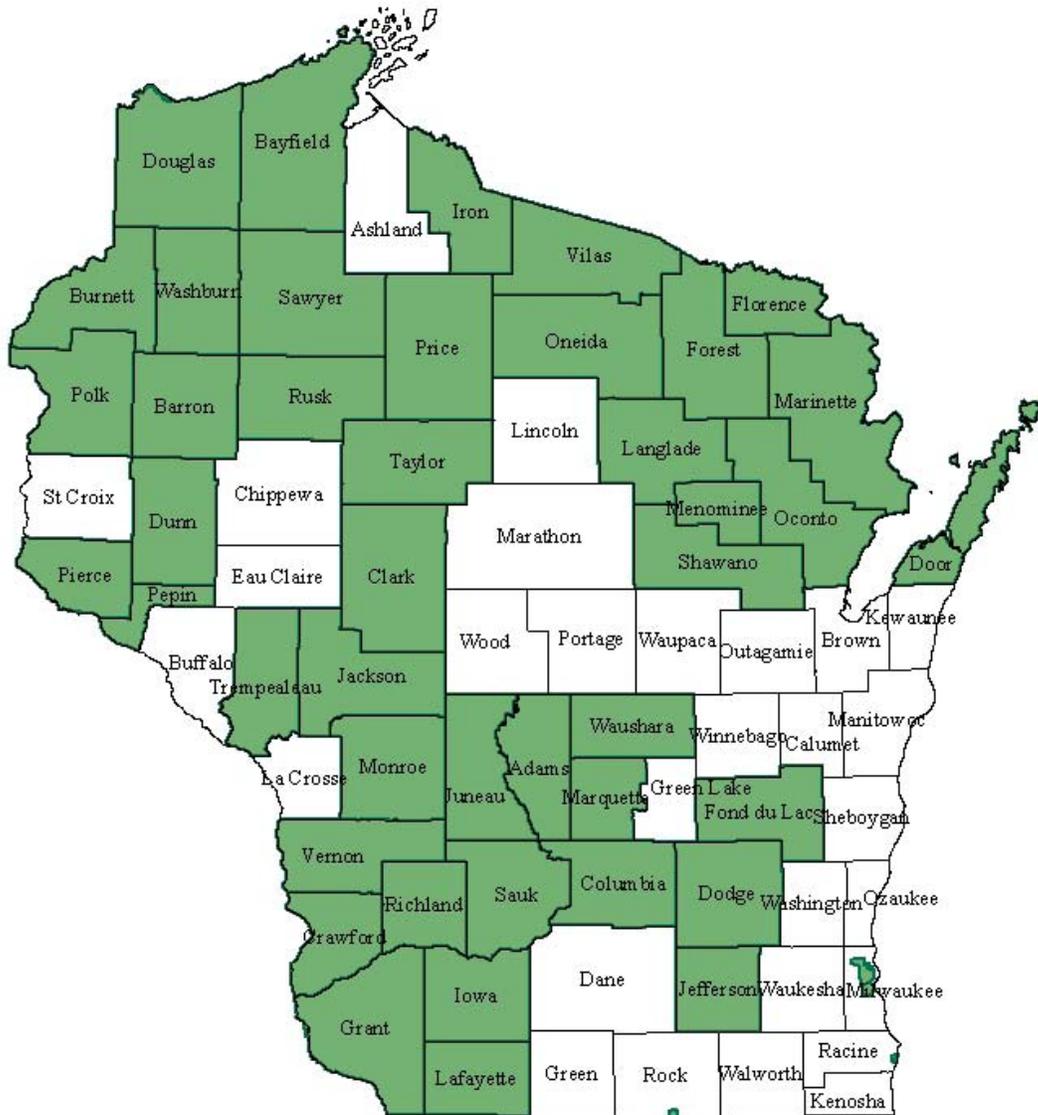


Source: Primary Care Office, Division of Public Health, Wisconsin Department of Health Services. Available at: <http://www.dhs.wisconsin.gov/health/PrimaryCare/maps.htm>.

Wisconsin Mental Health Care HPSAs

Federally Designated Health Professional Shortage Areas

Updated 3/12/10



 Designated Mental Health HPSAs

(geographic and low-income population HPSA)

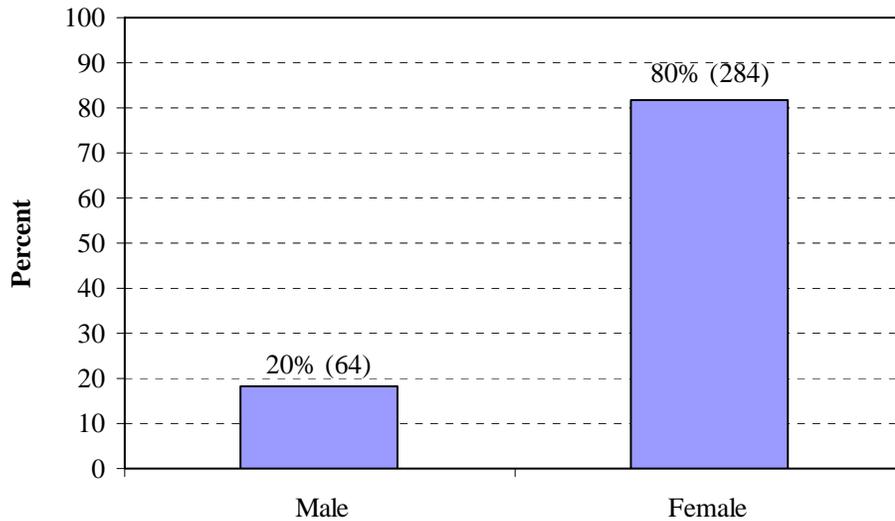
Source: Primary Care Office, Division of Public Health, Wisconsin Department of Health Services. Available at: <http://www.dhs.wisconsin.gov/health/PrimaryCare/maps.htm>.

Appendix F. Health Care Providers Licensed or Certified by the Wisconsin Department of Regulation and Licensing, 2010

Audiologists

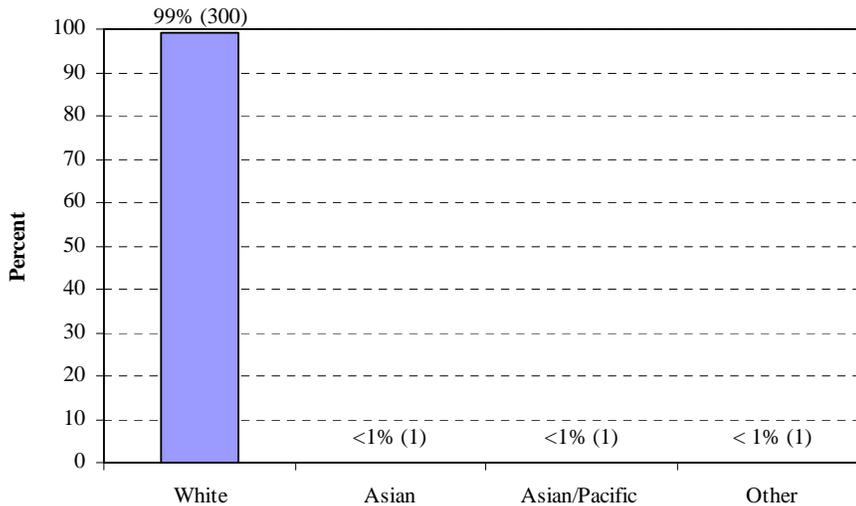
Total number licensed/certified (Current only): 361

Gender: Response Rate = 96% (348 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 84% (303 reported)

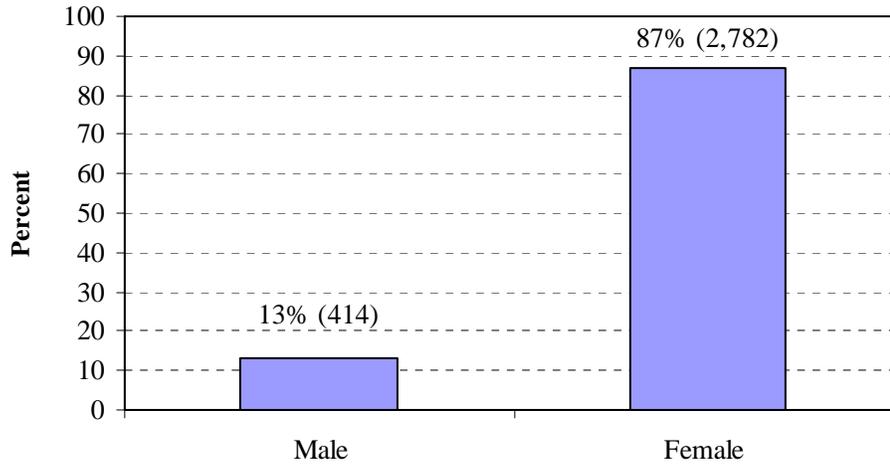


Source: Wisconsin Department of Regulation and Licensing, 2010.

Nurses, advanced practice prescriber

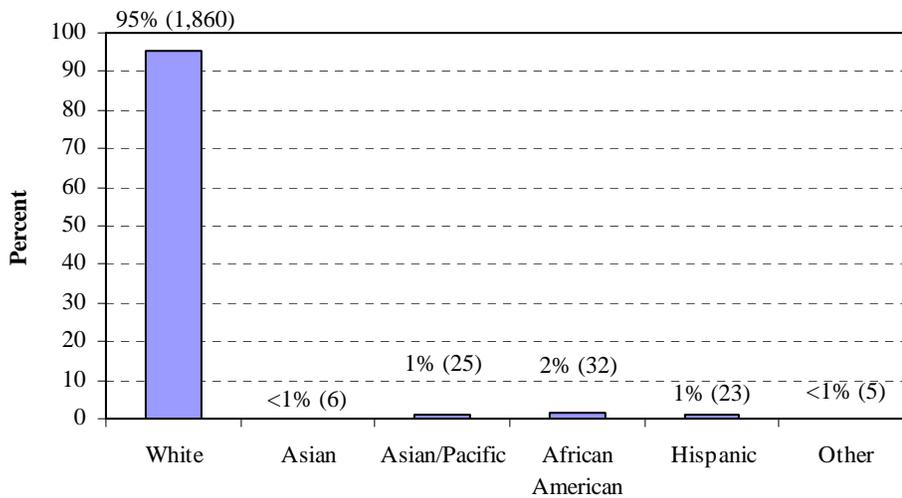
Total number licensed/certified (Current only): 3,547

Gender: Response Rate = 90% (3,196 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 55% (1,951 reported)

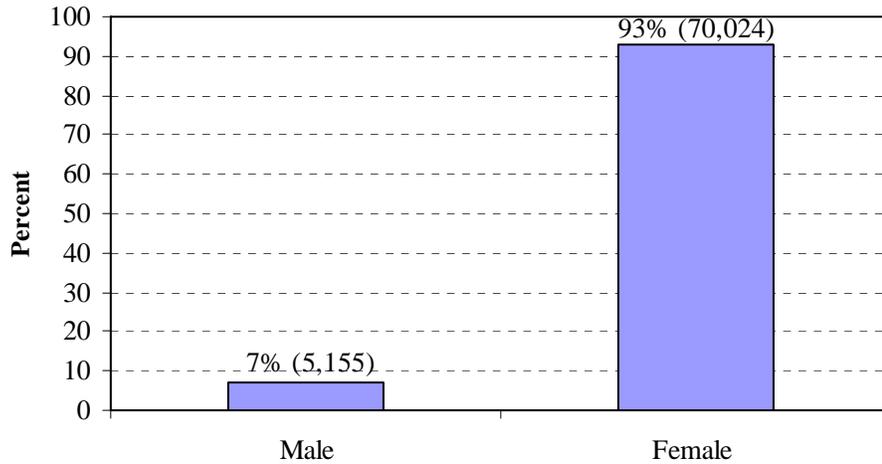


Source: Wisconsin Department of Regulation and Licensing, 2010.

Nurses, RN

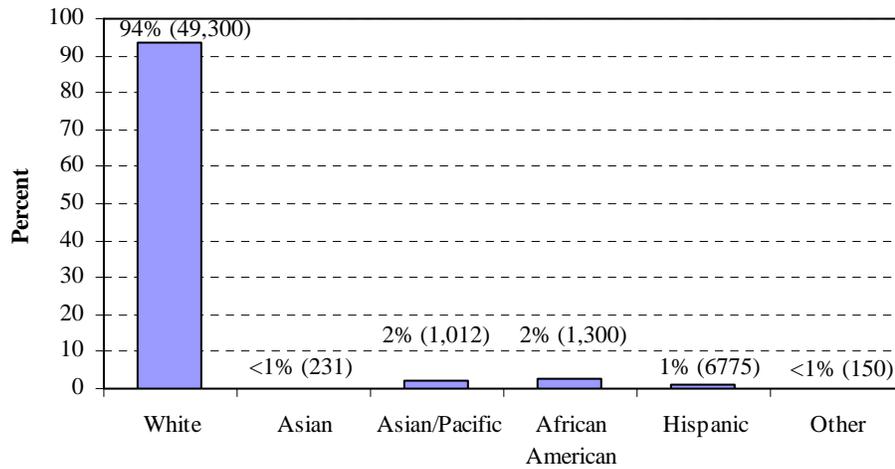
Total number licensed/certified (Current only): 82,327

Gender: Response Rate = 91% (75,179 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 64% (52,670 reported)



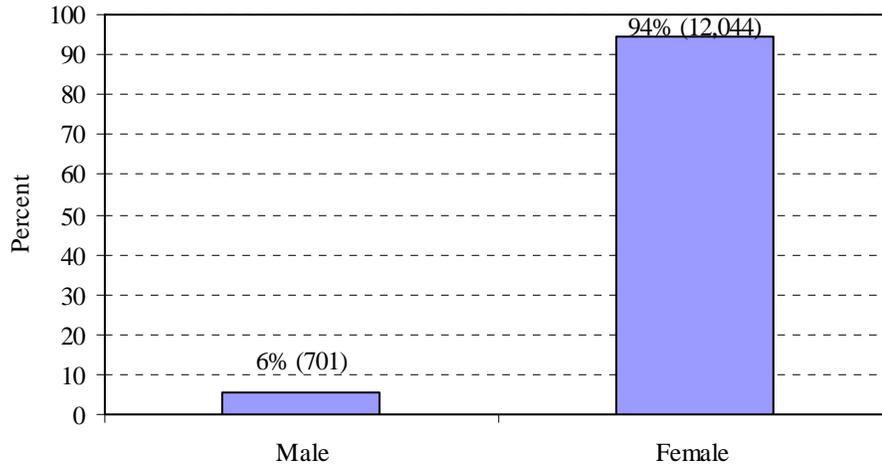
Source: Wisconsin Department of Regulation and Licensing, 2010.

Appendices

Nurses, LPN

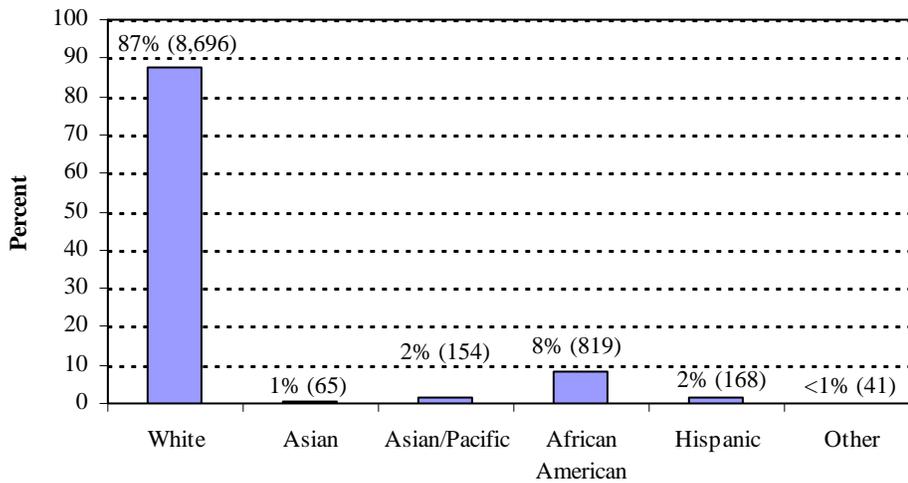
Total number licensed/certified (Current only): 17,335

Gender: Response Rate = 74% (12,745 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 57% (9,943 reported)

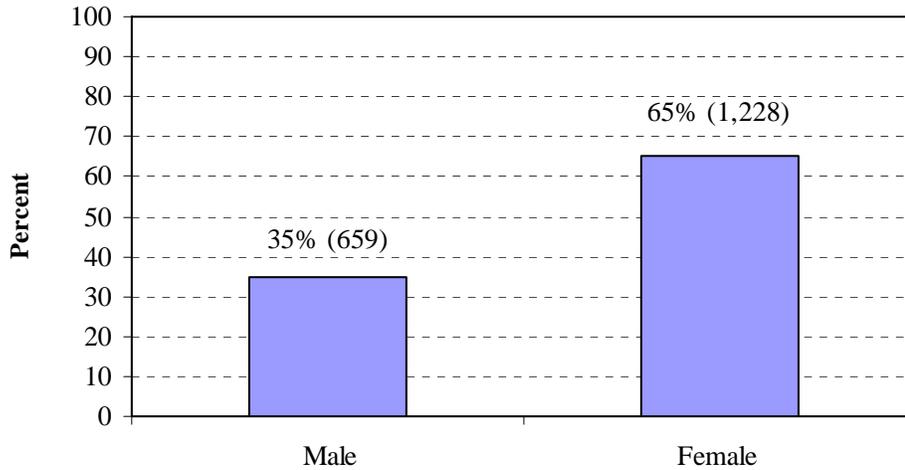


Source: Wisconsin Department of Regulation and Licensing, 2010.

Physician Assistants

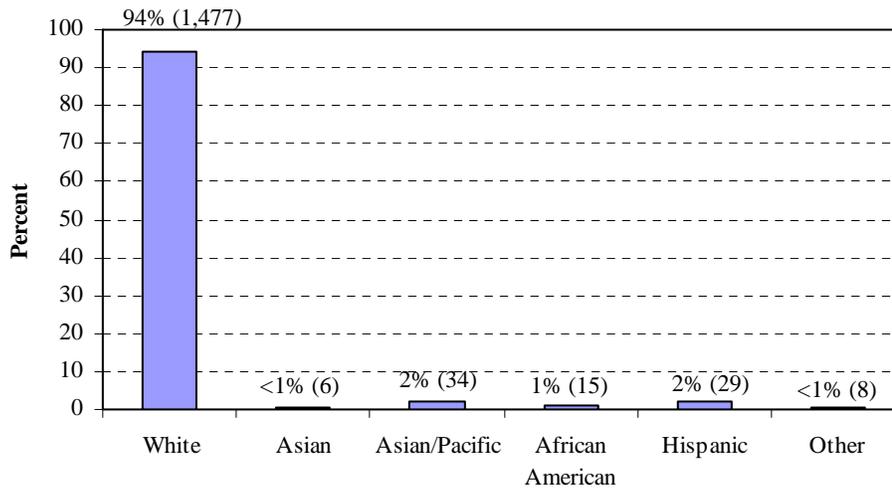
Total number licensed/certified (Current only): 1,892

Gender: Response Rate = 100% (1,887 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 83% (1,569 reported)

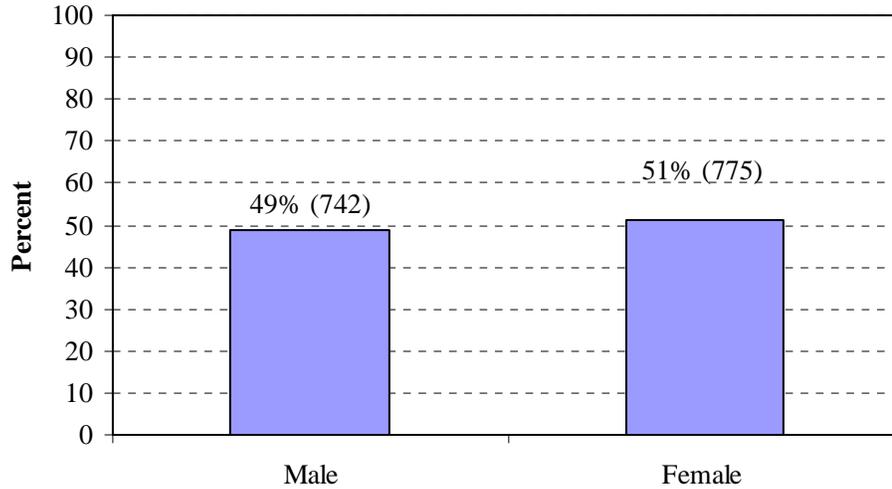


Source: Wisconsin Department of Regulation and Licensing, 2010.

Psychologists

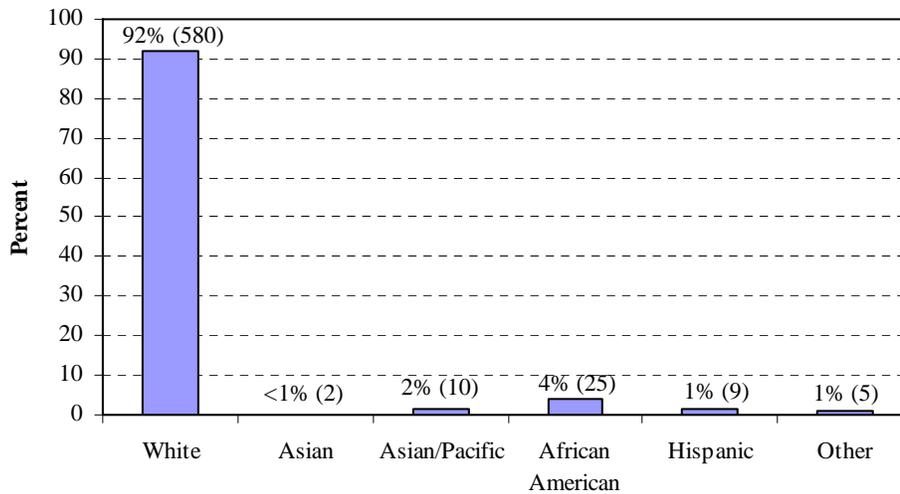
Total number licensed/certified (Current only): 1,628

Gender: Response Rate = 88% (1,517 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 39% (631 reported)

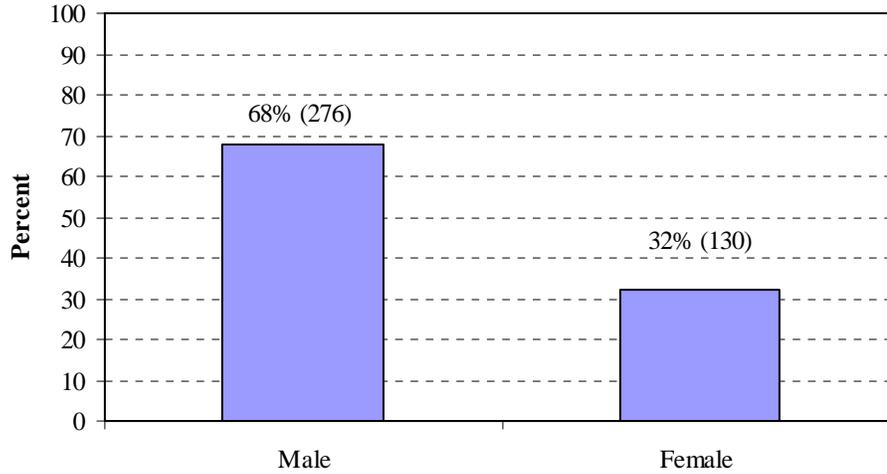


Source: Wisconsin Department of Regulation and Licensing, 2010.

Registered Sanitarians

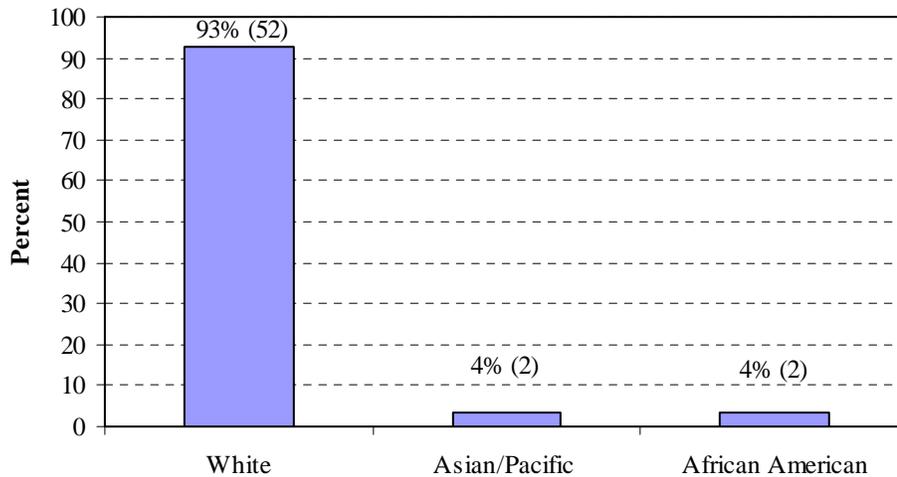
Total number licensed/certified (Current only): 412

Gender: Response Rate = 99% (406 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 14% (56 reported)

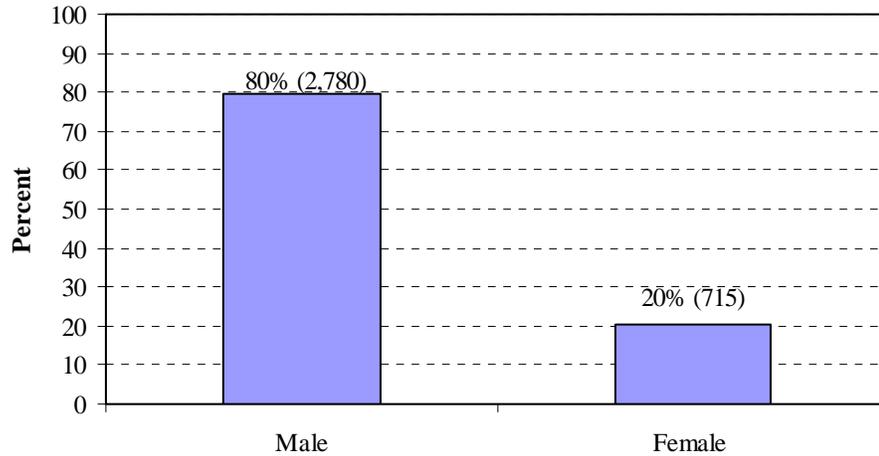


Source: Wisconsin Department of Regulation and Licensing, 2010.

Dentists

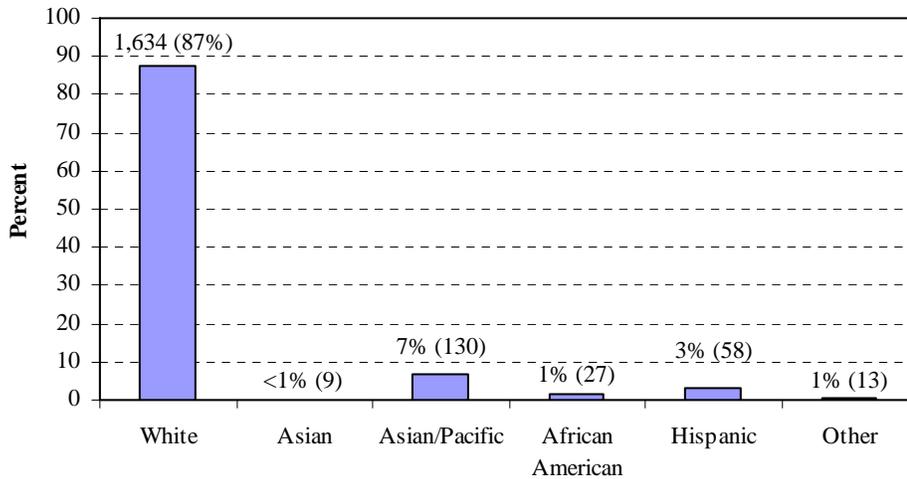
Total number licensed/certified (Current only): 4,305

Gender: Response Rate = 71% (3,495 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 43% (1,871 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Dental Hygienists

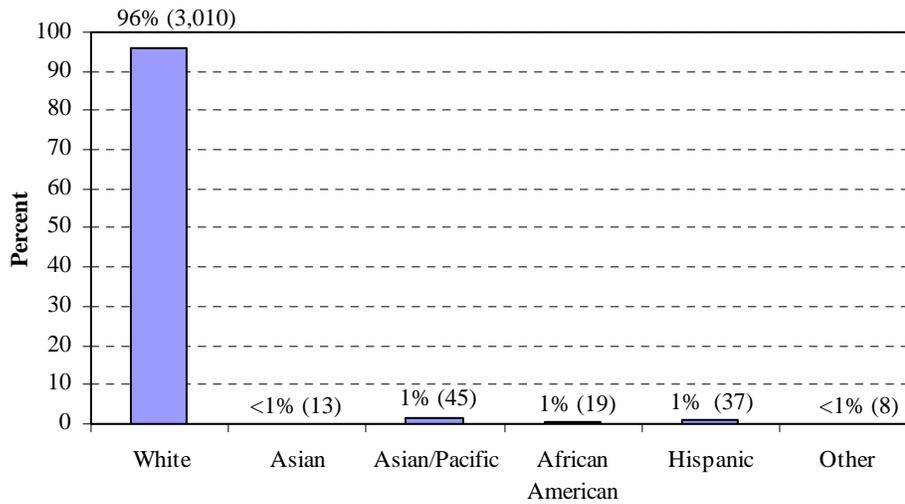
Total number licensed/certified (Current only): 5,097

Gender: Response Rate = 88% (4,504 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 61% (3,132 reported)

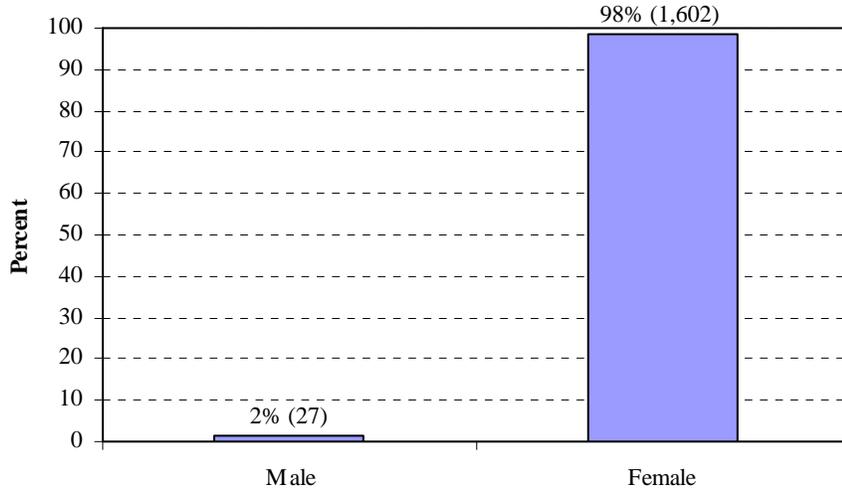


Source: Wisconsin Department of Regulation and Licensing, 2010.

Certified Dietitians

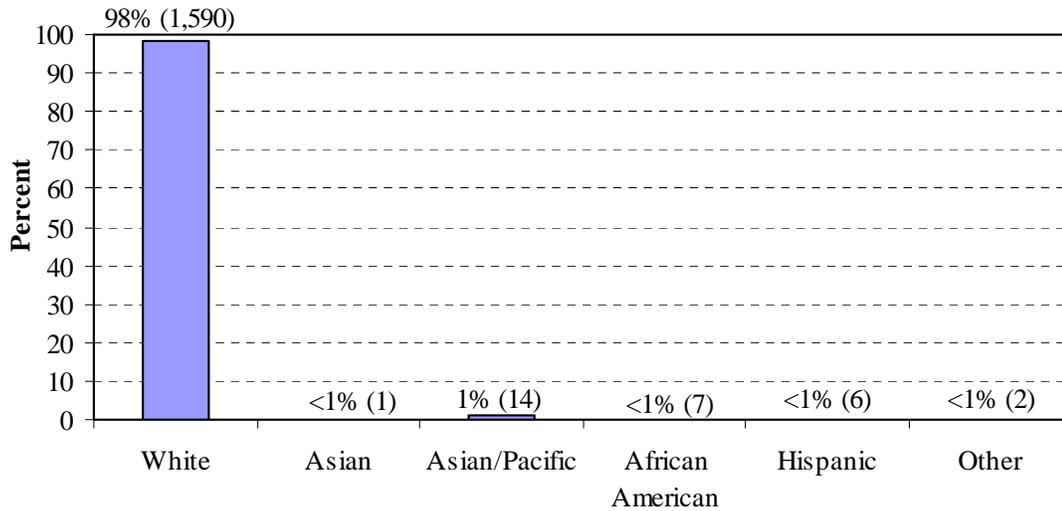
Total number licensed/certified (Current only): 1,644

Gender: Response Rate = 99% (1,629 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 99% (1,620 reported)

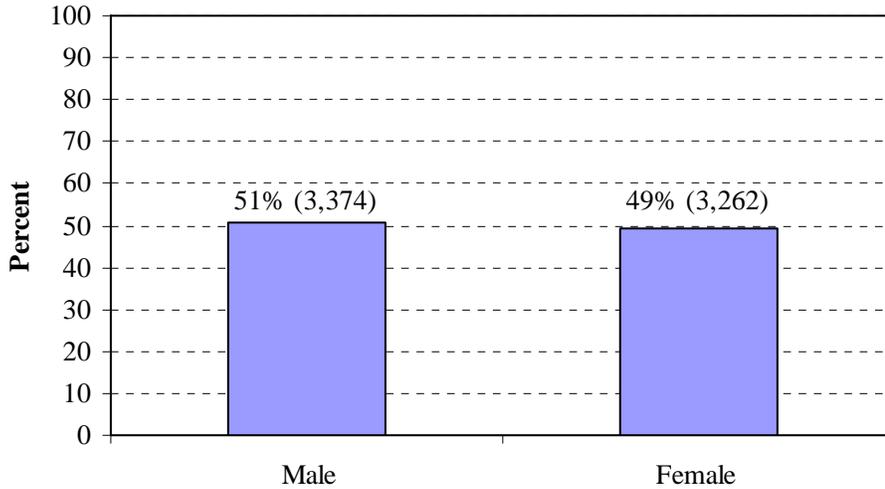


Source: Wisconsin Department of Regulation and Licensing, 2010.

Pharmacists

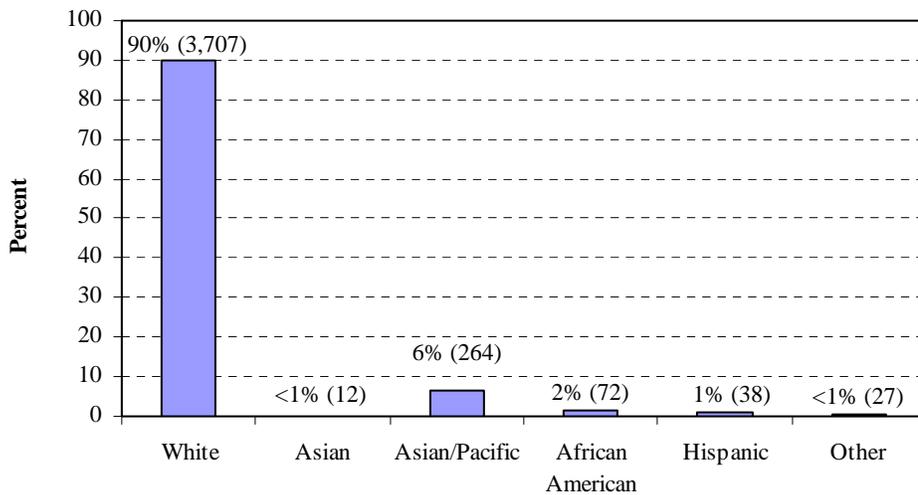
Total number licensed/certified (Current only): 7,235

Gender: Response Rate = 92% (6,636 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 57% (4,120 reported)



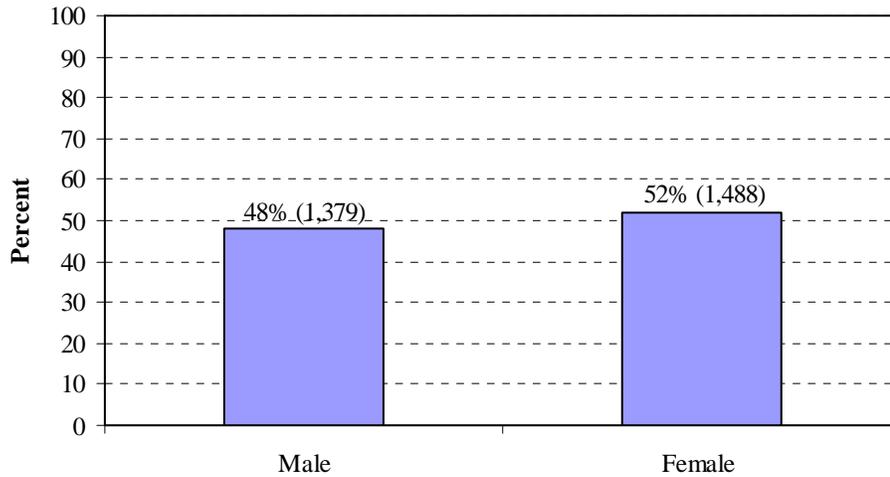
Source: Wisconsin Department of Regulation and Licensing, 2010.

Appendices

Veterinarians

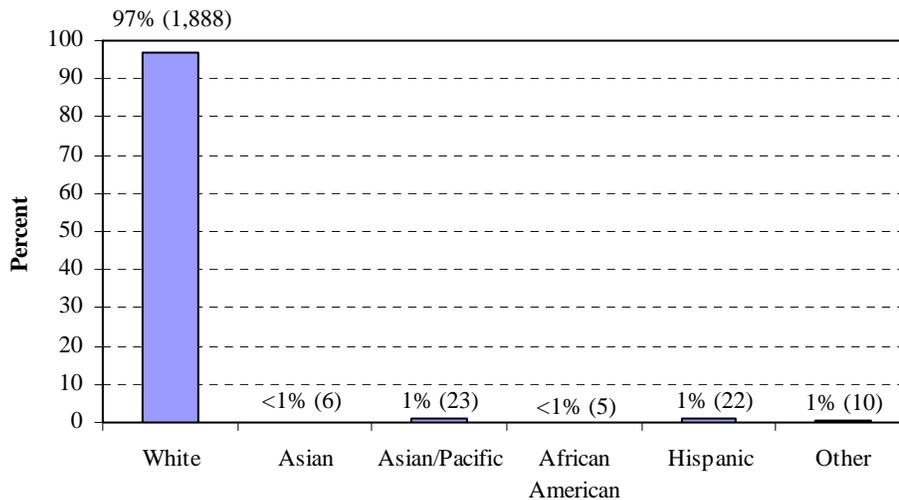
Total number licensed/certified (Current only): 3,240

Gender: Response Rate = 88% (2,867 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Race/Ethnicity: Response Rate = 60% (1,954 reported)



Source: Wisconsin Department of Regulation and Licensing, 2010.

Appendix G: Wisconsin Clinical Laboratory Science Workforce Survey, 2010

Name of Agency/Organization	
Name of Person Completing Survey	
Position of Person Completing Survey	
Telephone of Person Completing Survey	
E-mail of Person Completing Survey	

Instructions: Please provide counts of employees by category for each of the three questions below. **The Total for Table 1 and Table 2 should be the same**, equal to the total number of persons employed by the laboratory. Table 3 asks for the number of **full-time equivalents (FTEs)**, so the Total in Table 3 may be different from the Total in Table 1 and Table 2.

1. Age and gender of staff: Count each employee only once.

Age	Number of Males	Number of Females
Under 25		
25-29		
30-39		
40-49		
50-54		
55-59		
60+		
Total		

2. Race and Ethnicity: Count each employee only once.

Ethnicity:	Number
Hispanic/Latino	
Non-Hispanic/Latino	
Race:	
White	
Black/African American	
American Indian/Alaska Native	
Native Hawaiian /Other Pacific Islander	
Asian	
Other	
Total	

Appendices

3. **Employment status of laboratory administrative and test personnel: Count each employee only once; classify each employee at his/her highest level of employment. Include staff on vacation or other paid leave. (Refer to the definitions below.)**

Job title/discipline	Number of FTEs per Week	Number of FTE Vacancies
Pathologists		
Pathology Assistants		
Managers/Administrators		
Certified Medical Technologists – MT(ASCP), CLS(NCA), etc.		
Medical Technologists (non-certified)		
Certified Medical Laboratory Technicians – MLT(ASCP), CLT(NCA), etc.		
Medical Laboratory Technicians (non-certified)		
Phlebotomists		
Histotechnologists (Bachelor of Science degree, B.S.)		
Histotechnician		
Cytologists		
Cytogenetic Technologists		
Molecular Biologists		
RN		
LPN		
CMA/MA		
CNA/NA		
Other		
Total		

Definitions:

MT (ASCP) = Medical Technologist certified by the American Society for Clinical Pathology.

CLS (NCA) = Clinical Laboratory Scientist certified by the National Credentialing Agency for Laboratory Personnel.

MLT (ASCP) = Medical Laboratory Technician certified by the American Society for Clinical Pathology.

CLT (NCA) = Clinical Laboratory Technician certified by the National Credentialing Agency for Laboratory Personnel.

LPN = Licensed Practical Nurse (met state licensure requirements as a licensed practical nurse).

RN = Registered Nurse (met state licensure requirements as a registered nurse).

CNA/NA = Nursing Assistant (received a Nursing Assistant Technical Diploma through a 120-hour program which included skill pre-work, lecture, lab and clinical experiences; may be certified).

CMA/MA = Medical Assistant (received a Medical Assistant Technical Diploma through a one-year, two-semester, plus three-week program; may be certified).

FTE = Full-time equivalent at 35+ hours/week.

4. **How many employees in your laboratory are trained in the roles, expectations and operations of laboratories in emergency preparedness and response (bioterrorism, chemical emergencies, recent outbreaks and accidents)? The value must be greater than or equal to 0.**

5. **Does your laboratory have an established emergency preparedness and response plan describing potential roles and responsibilities?** Yes - No

Appendix H. Projections for Selected Health Occupations in the Public Sector: State and Local Government

Projections for Selected Health Occupations in the Public Sector: State and Local Government, Excluding Education and Hospitals, Wisconsin Projections, 2008-2018

SOC Code	Occupational Title	2008 Jobs	2018 Jobs	Change	% Change 2008-2018
00-0000	Total, All Occupations (State and Local Gov Excl Educ and Hosp)	165,060	169,910	4,850	2.9%
	Total, Selected Health Occupations in Public Sector	19,160	19,850	690	3.6%
11-9111	Medical and Health Services Managers	360	370	10	3.0%
13-1061	Emergency Management Specialists	170	190	20	13.2%
17-2081	Environmental Engineers	230	230	0	- 0.4%
17-3025	Environmental Engineering Technicians	20	NA	NA	NA
19-1012	Food Scientists and Technologists	10	20	0	7.1%
19-1022	Microbiologists	NA	NA	NA	NA
19-1041	Epidemiologists	50	50	0	2.1%
19-1042	Medical Scientists, Except Epidemiologists	NA	NA	NA	NA
19-2041	Environmental Scientists and Specialists, Including Health	480	480	0	0.6%
19-3031	Clinical, Counseling, and School Psychologists	200	200	0	1.0%
19-3039	Psychologists, All Other	0	NA	NA	NA
19-4011	Agricultural and Food Science Technicians	10	10	0	0.0%
19-4021	Biological Technicians	10	10	0	7.7%
19-4031	Chemical Technicians	NA	NA	NA	NA
19-4091	Environmental Science and Protection Technicians, Including Health	120	130	0	1.6%
21-1011	Substance Abuse and Behavioral Disorder Counselors	160	170	10	3.1%
21-1021	Child, Family, and School Social Workers	2,400	2,480	80	3.2%
21-1022	Medical and Public Health Social Workers	360	370	10	3.6%
21-1023	Mental Health and Substance Abuse Social Workers	640	650	10	1.3%
21-1029	Social Workers, All Other	180	190	0	2.2%
21-1091	Health Educators	250	260	10	2.8%
27-3031	Public Relations Specialists	240	270	30	12.2%
27-3091	Interpreters and Translators	60	70	10	14.1%
29-1021	Dentists, General	50	50	0	0.0%
29-1031	Dietitians and Nutritionists	190	180	- 10	- 4.3%
29-1051	Pharmacists	60	60	0	1.8%
29-1062	Family and General Practitioners	40	40	0	4.9%
29-1063	Internists, General	NA	NA	NA	NA
29-1066	Psychiatrists	30	30	0	3.7%
29-1071	Physician Assistants	NA	NA	NA	NA
29-1111	Registered Nurses	2,460	2,650	190	7.6%
29-1121	Audiologists	NA	NA	NA	NA
29-1122	Occupational Therapists	70	70	0	3.1%
29-1123	Physical Therapists	100	100	0	0.0%
29-1127	Speech-Language Pathologists	50	50	0	4.2%
29-1131	Veterinarians	30	30	0	3.7%
29-2021	Dental Hygienists	40	40	0	2.4%
29-2041	Emergency Medical Technicians and Paramedics	3,070	3,180	110	3.5%
29-2051	Dietetic Technicians	30	30	0	0.0%

Appendices

SOC Code	Occupational Title	2008 Jobs	2018 Jobs	Change	% Change 2006-2016
29-2061	Licensed Practical and Licensed Vocational Nurses	840	860	20	2.5%
29-2071	Medical Records and Health Information Technicians	60	70	0	3.2%
29-2099	Health Technologists and Technicians, All Other	50	50	0	4.4%
29-9011	Occupational Health and Safety Specialists	170	170	0	1.2%
29-9012	Occupational Health and Safety Technicians	40	40	0	2.7%
29-9099	Healthcare Practitioners and Technical Workers, All Other	10	10	0	0.0%
31-1011	Home Health Aides	410		NA	NA
31-1012	Nursing Aides, Orderlies, and Attendants	4,760	4,870	110	2.3%
31-1013	Psychiatric Aides	10		NA	NA
31-9099	Healthcare Support Workers, All Other	130	140	10	3.8%
39-9021	Personal and Home Care Aides	200	210	10	3.5%
43-6013	Medical Secretaries	20	20	0	0.0%
45-2011	Agricultural Inspectors	150		NA	NA

Notes:

Jobs include all part- and full-time nonfarm jobs.

Numbers are rounded to the nearest ten, with numbers less than five rounded to zero. Totals may not add due to rounding.

Local government includes tribal owned operations.

NA: Information is suppressed to protect employer confidentiality.

Projections information is derived using 2009 OES Survey, 2008 QCEW and 2008 CES data.

Unpublished data from the US Bureau of Labor Statistics and US Census Bureau was also used.

To the extent possible, the projections take into account anticipated changes in Wisconsin's economy from 2008 to 2018.

It is important to note that unanticipated events may affect the accuracy of these projections.

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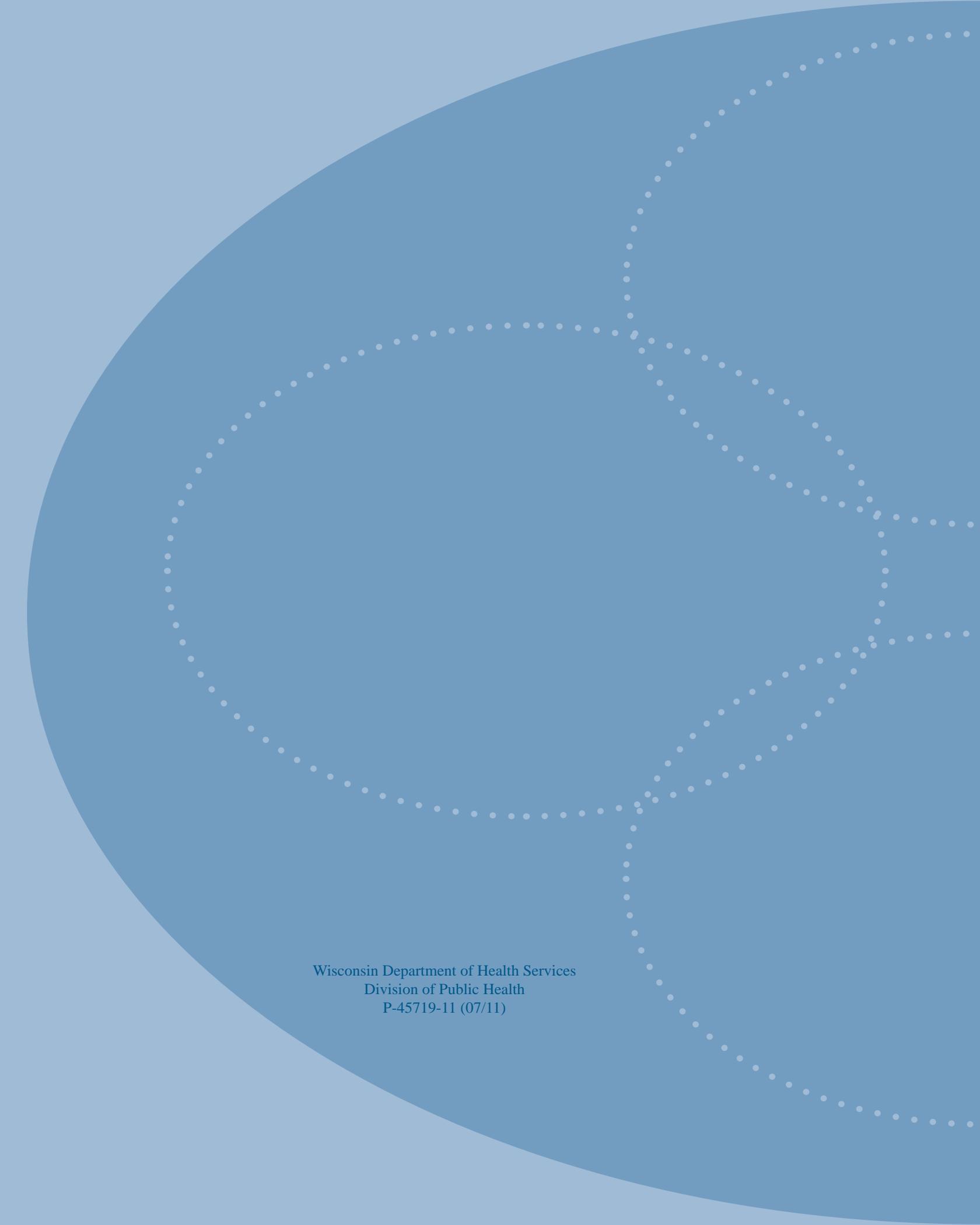
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P-45719-11 (07/11)

The logo features a large, light blue circle on the left side of the page. A dotted white line starts from the top right edge of the circle, curves around the right side, and then curves back down to the bottom right edge of the circle. This dotted line forms a stylized outline of the state of Wisconsin.

Wisconsin Department of Health Services
Division of Public Health
P-45719-11 (07/11)