

THE U.S. HEALTH WORKFORCE CHARTBOOK

Part II: Clinicians and Health Administration

U.S. Department of Health and Human Services
Health Resources and Services Administration
National Center for Health Workforce Analysis



The Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS), provides national leadership in the development, distribution, and retention of a diverse, culturally competent health workforce that can adapt to the population's changing health care needs and provide the highest-quality care for all. The agency administers a wide range of training grants, scholarships, loans, and loan repayment programs that strengthen the health care workforce and respond to the evolving needs of the health care system.

The National Center for Health Workforce Analysis (the National Center) informs public and private-sector decision-making related to the health workforce by expanding and improving health workforce data, disseminating workforce data to the public, improving and updating projections of the supply and demand for health workers, and conducting analyses of issues important to the health workforce.

For more information about the National Center, e-mail us at healthworkforcecenter@hrsa.gov, or visit our website at <http://bhpr.hrsa.gov/healthworkforce/index.html>.

Suggested citation:

U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. The U.S. Health Workforce Chartbook, Rockville, Maryland; 2013.

Copyright information:

All material appearing in this report is in the public domain and may be reproduced or copied without permission. Citation of the source, however, is appreciated.

CONTENTS

Introduction.....	1
Data Sources	2
1.0 Chiropractors	4
2.0 Vision Health.....	7
2.1 Optometrists.....	7
2.2 Opticians, Dispensing	10
3.0 Health Administration	13
3.1 Medical and Health Services Managers.....	13
3.2 Medical Secretaries	16
4.0 Veterinarians.....	19

FIGURES

Figure 1: Chiropractors per 100,000 Working-Age Population by State	4
Figure 2: Number of Chiropractors by State.....	5
Figure 3: Distribution of Chiropractors by Work Setting.....	5
Figure 4: Distribution of Chiropractors by Sex and Age.....	6
Figure 5: Distribution of Chiropractors by Race/Ethnicity,	6
Figure 6: Optometrists per 100,000 Working-Age Population by State.....	7
Figure 7: Number of Optometrists by State.....	8
Figure 8: Distribution of Optometrists by Work Setting	8
Figure 9: Distribution of Optometrists by Sex and Age	9
Figure 10: Distribution of Optometrists by Race/Ethnicity,	9
Figure 11: Opticians, Dispensing per 100,000 Working-Age Population by State.....	10
Figure 12: Number of Opticians, Dispensing by State	11
Figure 13: Distribution of Opticians, Dispensing by Work Setting.....	11
Figure 14: Distribution of Opticians, Dispensing by Sex and Age.....	12
Figure 15: Distribution of Opticians, Dispensing by Race/Ethnicity,	12
Figure 16: Medical and Health Services Managers per 100,000 Working-Age Population	13
Figure 17: Number of Medical and Health Services Managers by State, 2010.....	14
Figure 18: Distribution of Medical and Health Services Managers by Work Setting	14
Figure 19: Distribution of Medical and Health Services Managers by Sex and Age	15
Figure 20: Distribution of Medical and Health Services Managers by Race/Ethnicity, Relative to the Working-Age Population	15
Figure 21: Medical Secretaries per 100,000 Working-Age Population by State.....	16
Figure 22: Number of Medical Secretaries by State.....	17
Figure 23: Distribution of Medical Secretaries by Work Setting	17
Figure 24: Distribution of Medical Secretaries by Sex and Age	18
Figure 25: Distribution of Medical Secretaries by Race/Ethnicity,.....	18
Figure 26: Veterinarians per 100,000 Working-Age Population by State.....	19
Figure 27: Number of Veterinarians by State	20

Figure 28: Distribution of Veterinarians by Work Setting	20
Figure 29: Distribution of Veterinarians by Sex and Age	21
Figure 30: Distribution of Veterinarians by Race/Ethnicity,	21

GENERAL LIST OF ACRONYMS

Acronym	Definition
AAPA	American Academy of Physician Assistants
ACNM	American College of Nurse-Midwives
ACS	American Community Survey
APRN	Advanced Practice Registered Nurse
ARF	Area Resource File
BHPPr	Bureau of Health Professions
BLS	Bureau of Labor Statistics
BSN	Bachelor of Science in Nursing
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare & Medicaid Services
EMT	Emergency Medical Technician
HHS	U.S. Department of Health and Human Services
HRSA	Health Resources and Services Administration
IPEDS	Integrated Postsecondary Education Data System
LPN	Licensed Practical and Licensed Vocational Nurse
NAICS	North American Industry Classification System
NCHWA	National Center for Health Workforce Analysis
NCLEX-PN [®]	National Counsel Licensure Examination for Practical Nurses
NCLEX-RN [®]	National Counsel Licensure Examination for Registered Nurses
NP	Nurse Practitioner
NPI	National Provider Identification
OT	Occupational therapy
PA	Physician Assistant
PA-C	Certified Physician Assistant
PUMS	Public Use Microdata Sample
RN	Registered Nurse

RSE Relative standard error
SOC Standard Occupational Classification

INTRODUCTION

The U.S. Health Workforce Chartbook provides extensive data on 35 health occupations and is part of the Health Resources and Services Administration's (HRSA's) effort to assist states, policymakers, local workforce planners, researchers, and the public in understanding the U.S. health workforce. The Chartbook may also be used as a baseline to track changes in the health workforce. While this Chartbook includes extensive data on supply, including comparative data by state, it does not include data on demand and, as such, does not address the adequacy of the supply.

The 35 occupations included in this Chartbook are classified based on the U.S. government's Standard Occupational Classification (SOC) system and included more than 14 million individuals in 2010.¹ These individuals represent approximately 10 percent of the nation's workforce.² The occupations included in this Chartbook also represent those with the largest current employment and those that are expected to grow substantially in the future.

The vast majority of workers are employed in what the U.S. Office of Management and Budget defines as the "health sector," which includes health settings such as hospitals, clinics, physician offices, and nursing homes. The health sector also includes many workers in occupations that are not considered health occupations. For example, workers such as accountants or food service workers employed in hospitals are working *in* the health sector, even though they are not working in a health occupation. Individuals in health occupations may also work outside the health sector in settings such as local governments, schools, or insurance companies. The information provided in this Chartbook includes individuals in health occupations that are both within and outside the health sector.

For most occupations, the Chartbook relies on the U.S. Census Bureau's ACS to estimate the total number of individuals in each occupation, their geographic distribution, the settings in which they work, and their demographic characteristics. The ACS, which uses self-reported data, is the most comprehensive source available for the broad range of occupations included in this report.³ This report also draws from the U.S. Department of Education's Integrated Postsecondary Education System (IPEDS) to include information on the number of graduates from educational programs leading to entry into specific occupations. No graduate data are presented for occupations in which formal educational requirements are completed in institutions not reporting to IPEDS or vary substantially by state.

Some important components of the health workforce are not included or fully represented in the Chartbook because of data limitations. These components include occupations for which data are not collected or reported separately by the U.S. Census Bureau. For example, data from public health nurses are not collected separately from other types of nurses. The report also does

¹HRSA analysis of the U.S. Census Bureau, American Community Survey (ACS) Public Use Microdata Sample (PUMS), 2008-2010.

²HRSA analysis of the U.S. Bureau of Labor Statistics (BLS), Employment Projections, 2010-2020. Note: The "workforce" is defined as individuals employed in the occupation and individuals whose last job was in the occupation and who are still seeking employment.

³Note: Self-reported data have limitations. Some individuals may report the occupation for which they are trained or licensed even when they are not currently working the majority of their time in that occupation. For example, a physician who is spending a majority of his/her time as an administrator may self-report as either a physician or an administrator. The ACS does not collect data on licensure or professional certification. See the Technical Documentation for additional details on ACS reporting and limitations.

not include important health occupations, because of the small size of the occupation, such as epidemiologists and other public-health oriented disciplines like laboratorians and environmental health professionals. In addition, some occupations in the Chartbook are limited by ACS occupational groupings because of the methods by which the ACS collects and reports SOC data. For example, although the SOC has two separate groupings for “medical and clinical laboratory technologists” and “medical and clinical laboratory technicians,” the ACS only reports on “medical and clinical laboratory technologists and technicians” as a single occupational grouping and does not report the two occupations separately.

The Chartbook is divided into four main parts for ease of reporting. Part I comprises clinicians. Part II presents additional clinician categories and occupations concerned with health care administration duties. Part III discusses health-related technologists and technicians as well as aides and assistants. Part IV describes behavioral and allied health occupations.

DATA SOURCES

Data for this Chartbook come primarily from two federal agencies: the U.S. Census Bureau and the U.S. Department of Education.

The U.S. Census Bureau’s American Community Survey (ACS): The ACS, a household survey, provides detailed self-reported data including demographic information (e.g., age, race, and sex data) on individuals working in the health occupations and is the major source of data for this report.

The U.S. Department of Education’s Integrated Postsecondary Education System (IPEDS): IPEDS data are used to measure the educational pipeline into the health occupations. IPEDS provides enrollment and graduation data on an annual basis for all institutions that receive or apply for federal funds. The number of graduates, by degree type, is presented for occupations for which there is a specific educational pathway into the occupation. No data are reported for those occupations without a distinct educational pathway.

Descriptions of the educational and training requirements for the various occupations have been obtained from the BLS, *Occupational Outlook Handbook*, 2012-13 Edition.

Also, data from ***HRSA’s Area Resource File (ARF)*** are included in this Chartbook. The ARF is a comprehensive, county-level source of health workforce and other health resources data. Included in the ARF are data from the American College of Nurse-Midwives (ACNM) and the Centers for Medicare & Medicaid Services’ National Provider Identification (NPI) file. The NPI file contains data on health professionals that require unique identification for federal billing (e.g., Medicare and Medicaid), private insurance, and other purposes. In this report, NPI data in the ARF have been used for cases in which ACS data were not available (i.e., nurse practitioners and nurse anesthetists).

Details on the data sources, definitions and analysis, and other information provided in the Chartbook are available in the *The U.S. Health Workforce Chartbook: Technical Documentation*, which can be found at <http://bhpr.hrsa.gov/healthworkforce/index.html>. Also, more detailed information on the work settings used in this report can be found on the U.S. Census Bureau website at www.census.gov/eos/www/naics.

The following table lists each of the selected occupations in Part II of *The U.S. Health Workforce Chartbook* along with the associated total workforce estimates from the ACS.

Part II: Clinicians and Health Administration

<u>Occupation</u>	<u>Total Workforce</u> ⁴
1.0 Chiropractors	56,979
2.0 Vision Health	
2.1 Optometrist	36,858
2.2 Opticians, Dispensing	54,375
3.0 Health Administration	
3.1 Medical and Health Services Managers	560,870
3.2 Medical Secretaries	652,618
4.0 Veterinarians	78,875

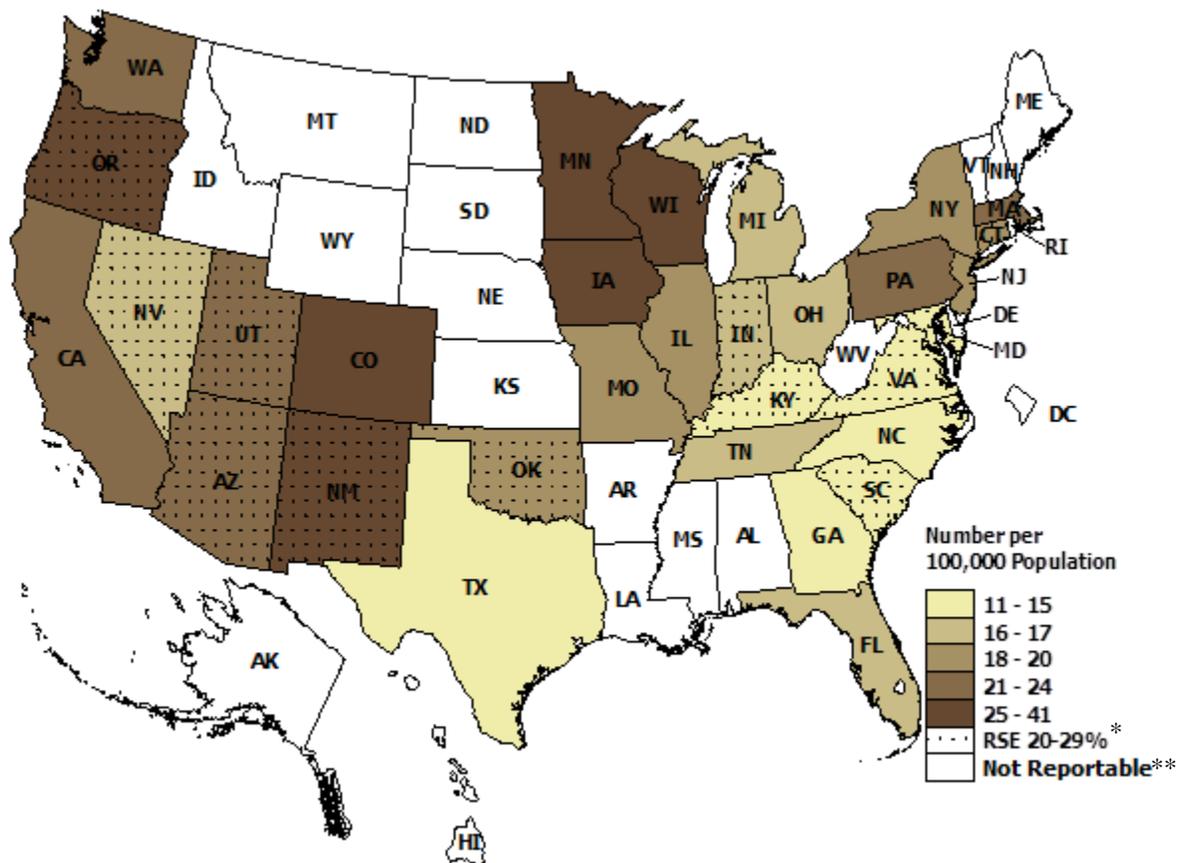
⁴Total workforce from HRSA analysis of the ACS PUMS, 2008-2010.

1.0 CHIROPRACTORS

- An estimated 56,979 individuals in the U.S. workforce reported their occupation as chiropractor.⁵
- The required education for chiropractors is a doctoral or professional degree.⁶

Current Distribution

Figure 1: Chiropractors per 100,000 Working-Age Population, by State



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

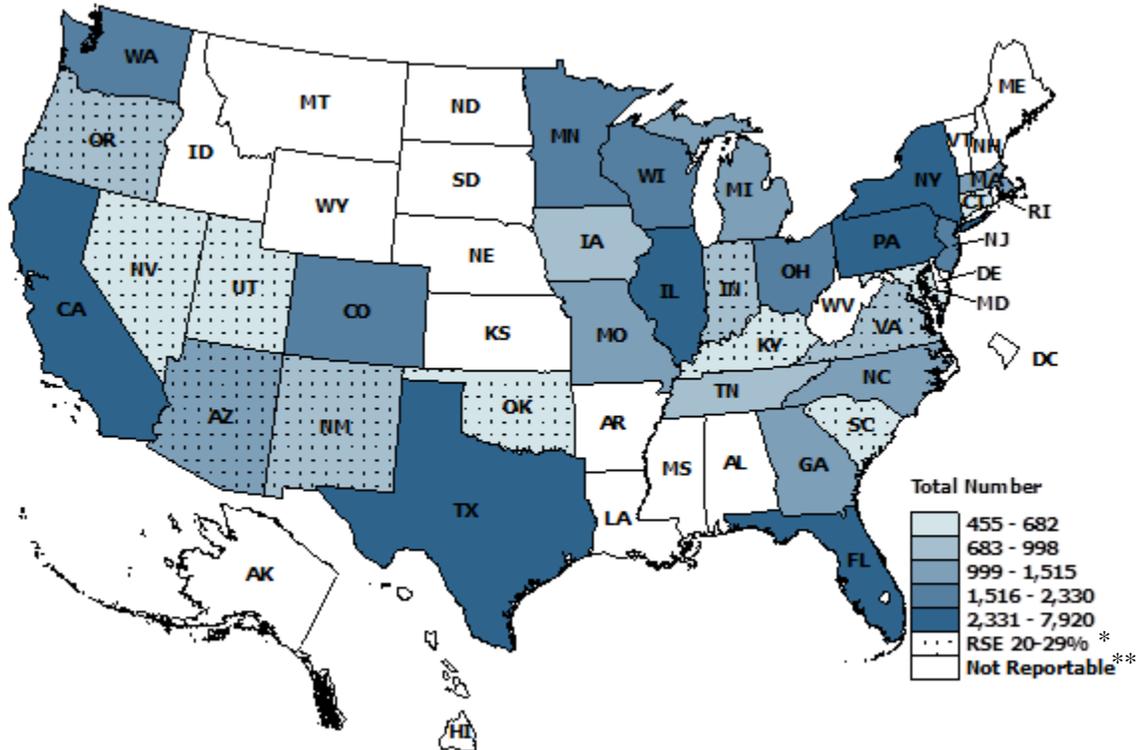
*Note: Estimated ratios in states with a relative standard error (RSE) > 20% should be used with caution because of large sampling error.

**Data are not reported at the state level, because the RSE \geq 30%; estimate does not meet standards of reliability.

⁵Total workforce from Special Tabulations of the ACS PUMS, 2008-2010.

⁶BLS, *Occupational Outlook Handbook*, 2012-13 Edition.

Figure 2: Number of Chiropractors, by State



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

*Note: Estimates in states with an RSE > 20% should be used with caution because of large sampling error.

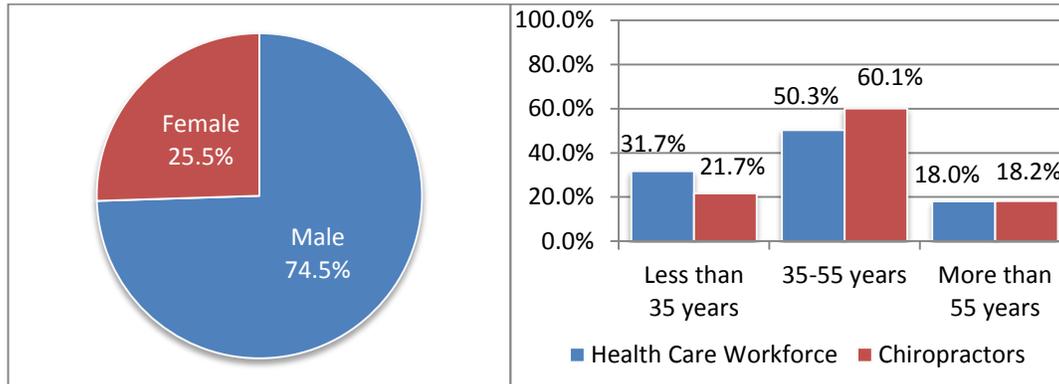
**Data are not reported at the state level, because the RSE ≥ 30%; estimate does not meet standards of reliability.

Figure 3: Distribution of Chiropractors, by Work Setting



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

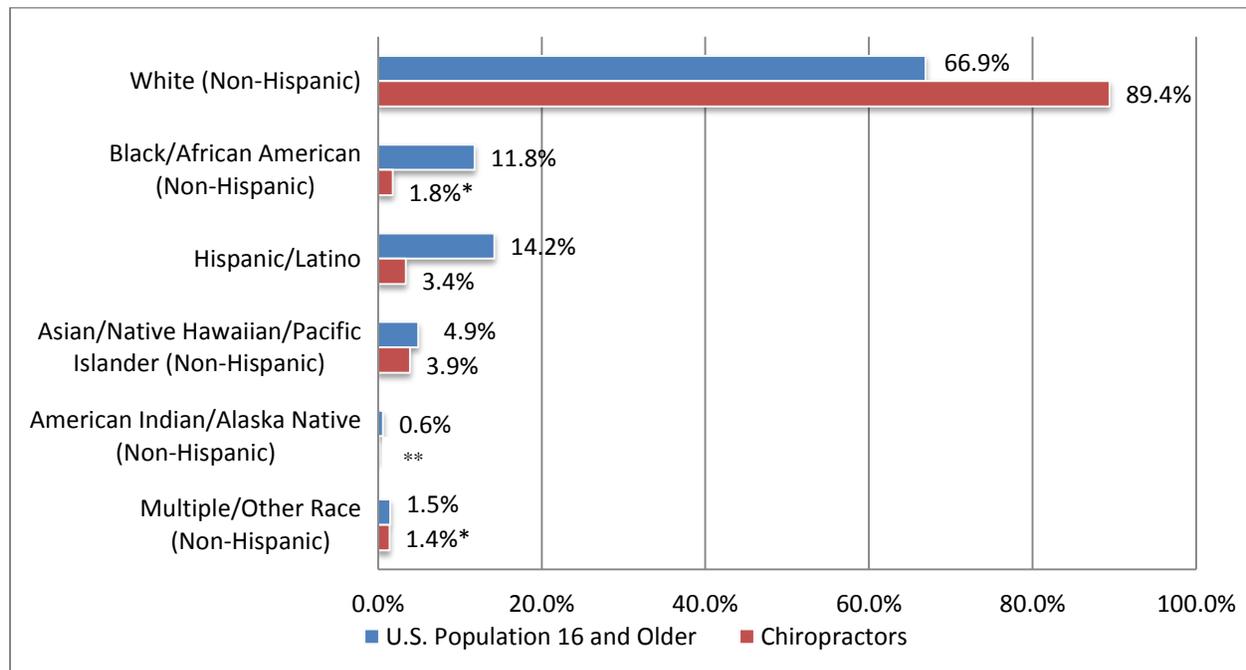
Figure 4: Distribution of Chiropractors, by Sex and Age



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: The "Health Care Workforce" in this figure refers to the health occupations covered in this report.

Figure 5: Distribution of Chiropractors, by Race/Ethnicity, Relative to the Working-Age Population



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: Percentages may not total 100, because of rounding.

*Note: $20\% \leq RSE < 30\%$; estimate should be used with caution because of large sampling error.

** $RSE \geq 30\%$; estimate does not meet standards of reliability.

Graduates

The total number of chiropractic graduates at the doctoral level in the 2009 to 2010 academic year was 2,601.⁷

⁷Special Tabulations of the National Center for Education Statistics IPEDS, 2009-2010.

2.0 VISION HEALTH

Vision health occupations described in this section include:

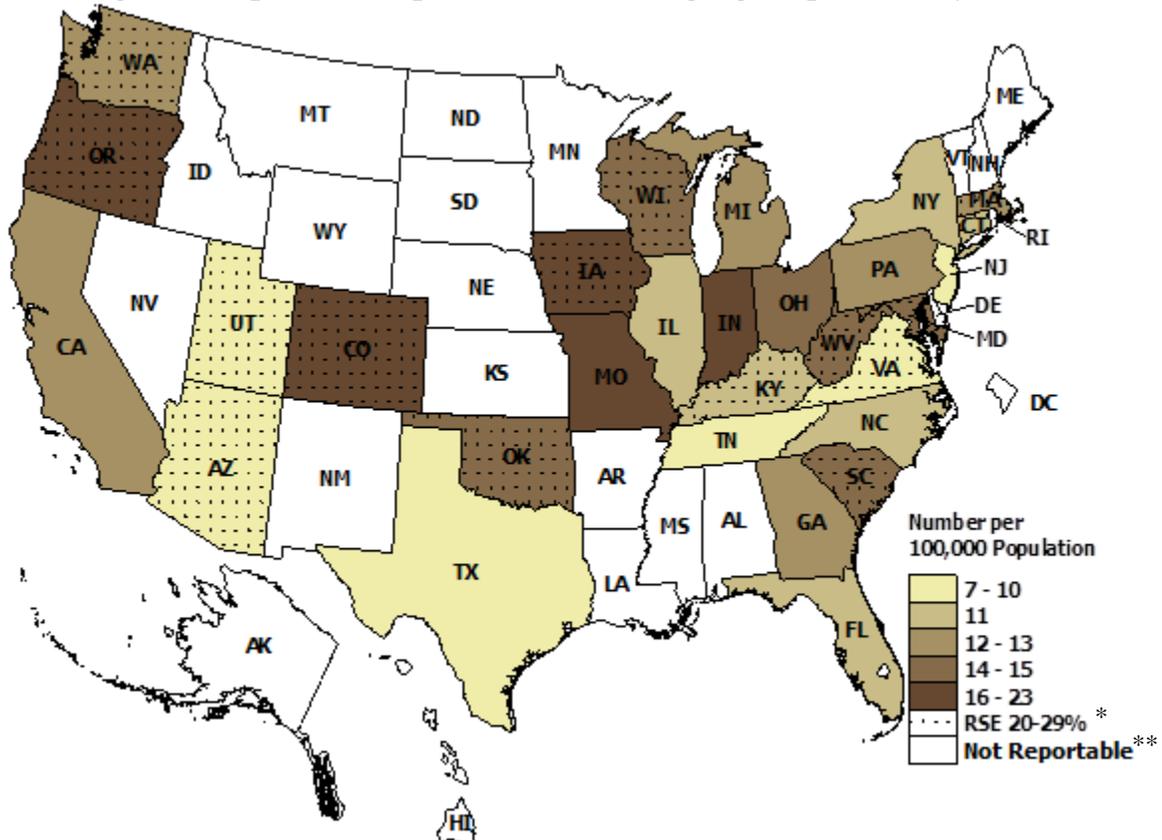
- 2.1 Optometrists; and
- 2.2 Opticians, Dispensing.

2.1 Optometrists

- An estimated 36,858 individuals in the U.S. workforce reported their occupation as optometrist.⁸
- The required education for optometrists is a doctoral degree.⁹

Current Distribution

Figure 6: Optometrists per 100,000 Working-Age Population, by State



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

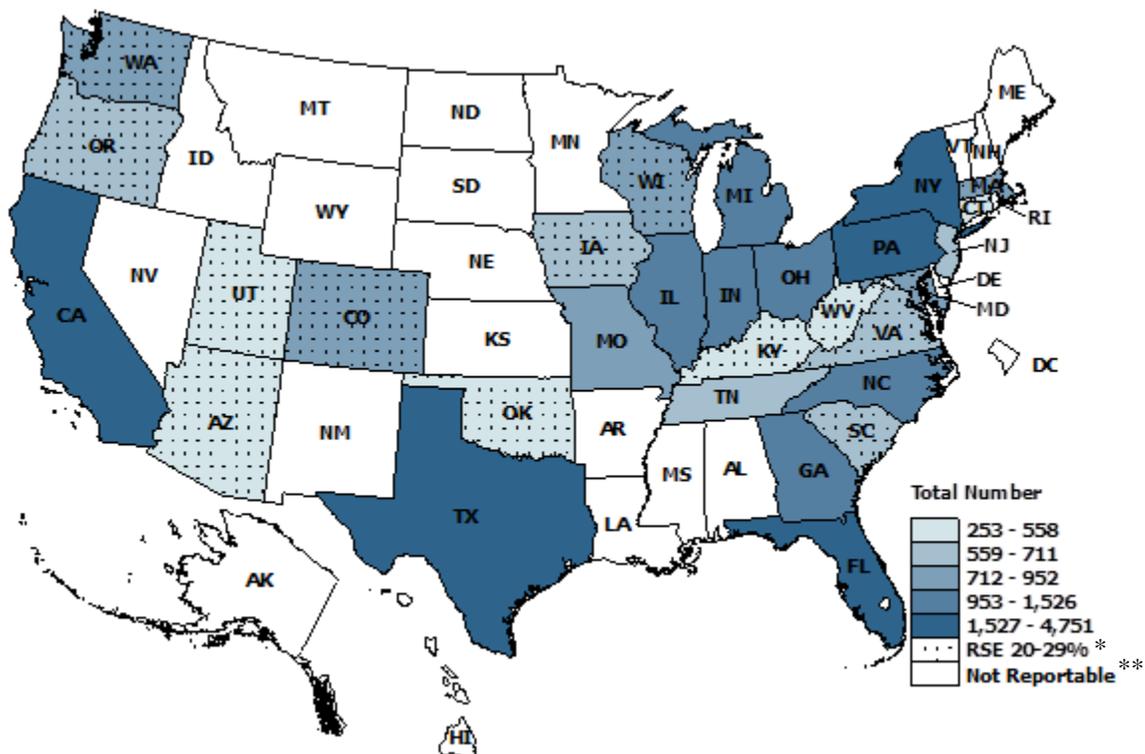
*Note: Estimated ratios in states with an RSE > 20% should be used with caution because of large sampling error.

**Data are not reported at the state level, because the RSE ≥ 30%; estimate does not meet standards of reliability.

⁸Total workforce from Special Tabulations of the ACS PUMS, 2008-2010.

⁹BLS, *Occupational Outlook Handbook*, 2012-13 Edition.

Figure 7: Number of Optometrists, by State

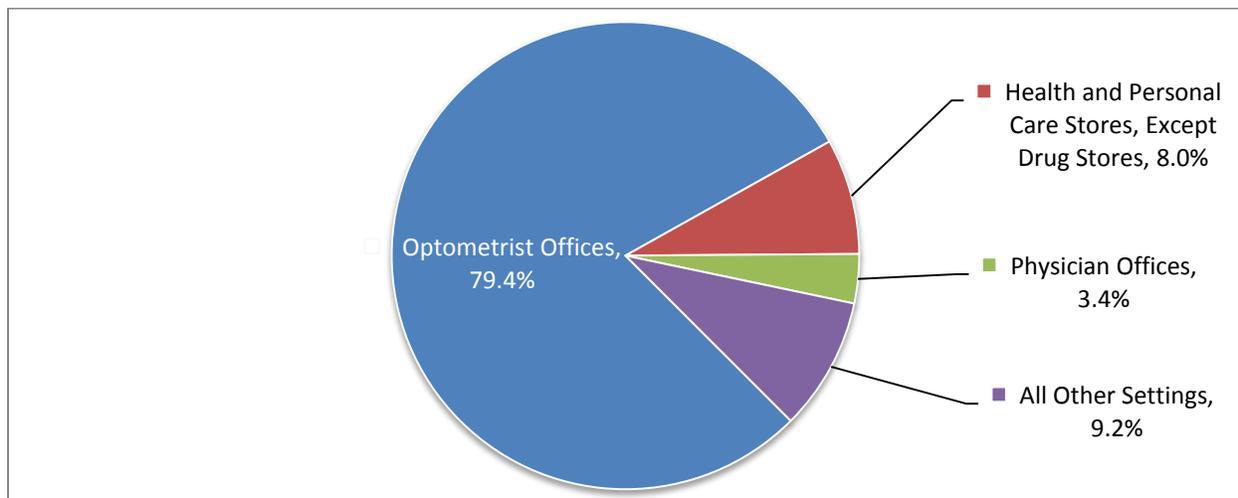


Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

*Note: Estimates in states with an RSE > 20% should be used with caution because of large sampling error.

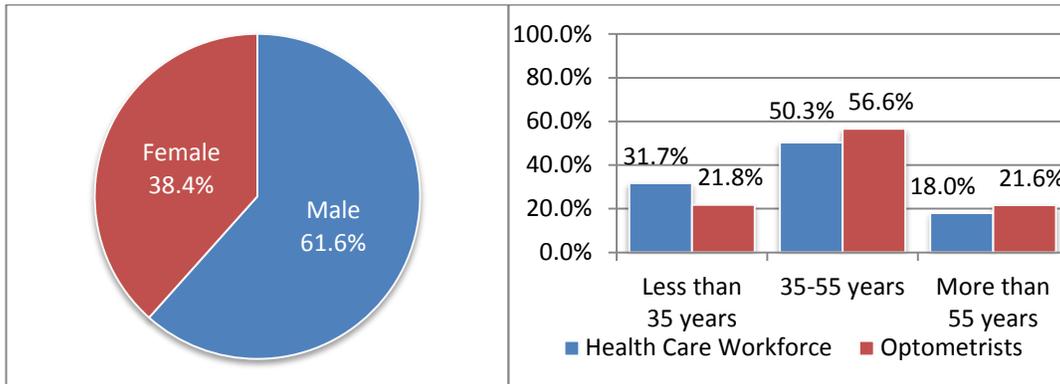
**Data are not reported at the state level, because the RSE ≥ 30%; estimate does not meet standards of reliability.

Figure 8: Distribution of Optometrists, by Work Setting



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

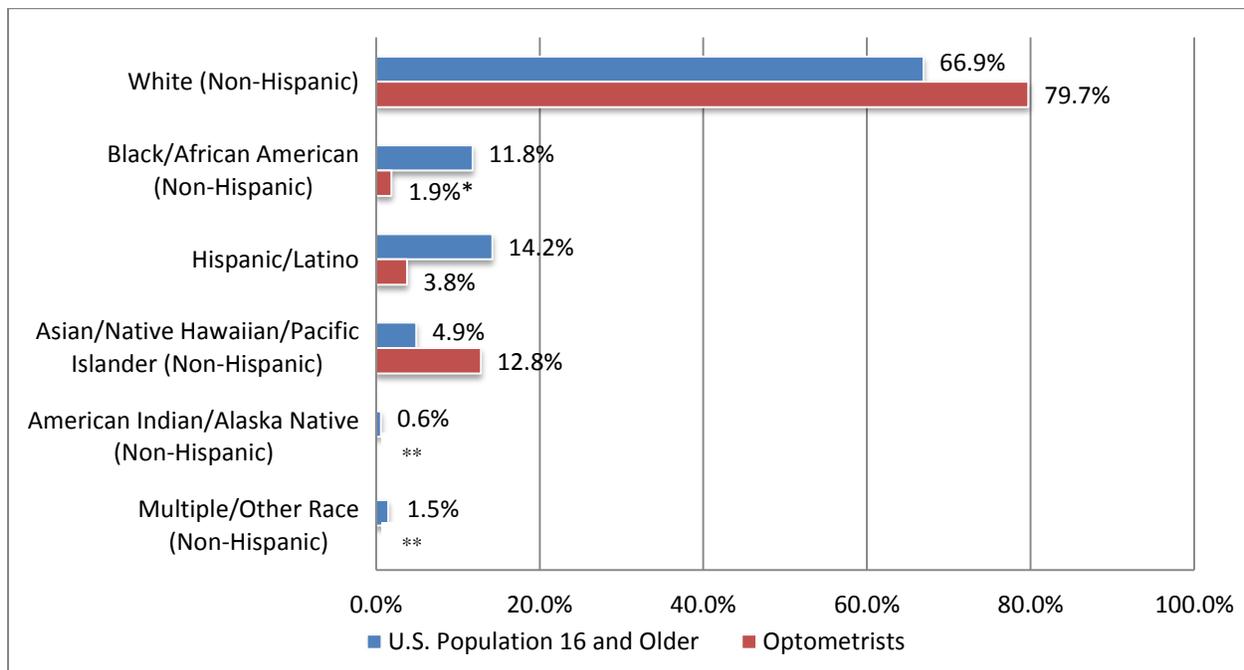
Figure 9: Distribution of Optometrists, by Sex and Age



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: The “Health Care Workforce” in this figure refers to the health occupations covered in this report.

Figure 10: Distribution of Optometrists, by Race/Ethnicity, Relative to the Working-Age Population



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: Percentages may not total 100, because of rounding.

*Note: $20\% \leq RSE < 30\%$; estimate should be used with caution because of large sampling error.

**RSE $\geq 30\%$; estimate does not meet standards of reliability.

Graduates

The total number of optometry graduates at the doctoral level in the 2009 to 2010 academic year was 1,364.¹⁰

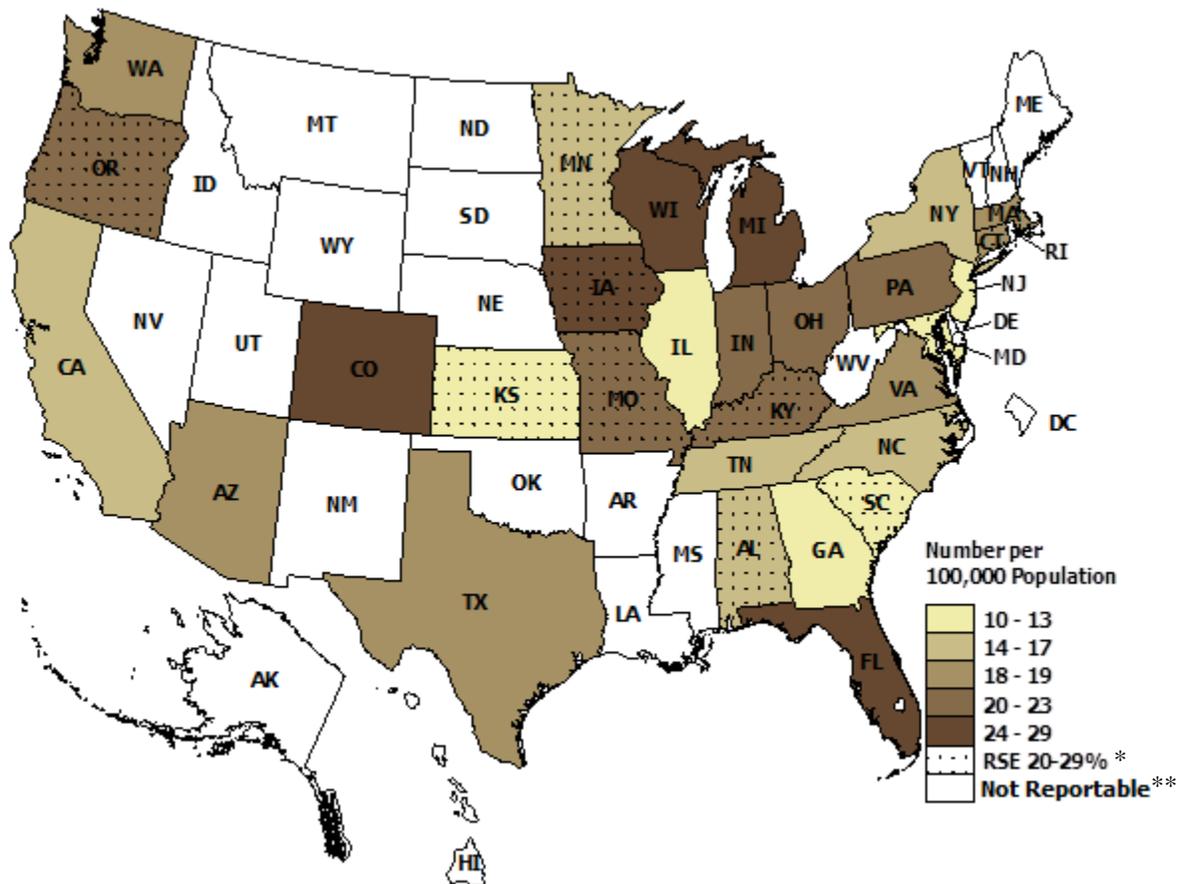
¹⁰Special Tabulations of the National Center for Education Statistics IPEDS, 2009-2010.

2.2 Opticians, Dispensing

- An estimated 54,375 individuals in the U.S. workforce reported their occupation as dispensing optician.¹¹
- The typical entry-level education for dispensing opticians is a high school diploma or equivalent.¹²

Current Distribution

Figure 11: Dispensing Opticians per 100,000 Working-Age Population, by State



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

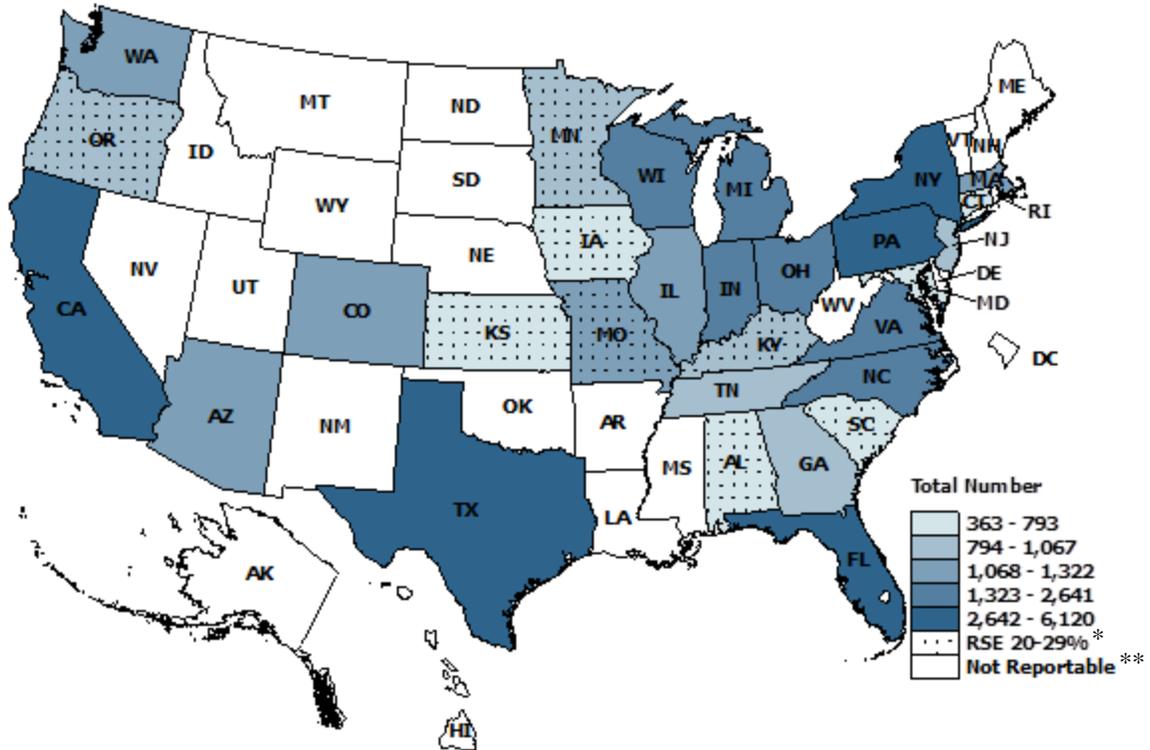
*Note: Estimated ratios in states with an RSE > 20% should be used with caution because of large sampling error.

**Data are not reported at the state level, because the RSE ≥ 30%; estimate does not meet standards of reliability.

¹¹Total workforce from Special Tabulations of the ACS PUMS, 2008-2010.

¹²BLS, *Occupational Outlook Handbook*, 2012-13 Edition.

Figure 12: Number of Dispensing Opticians, by State

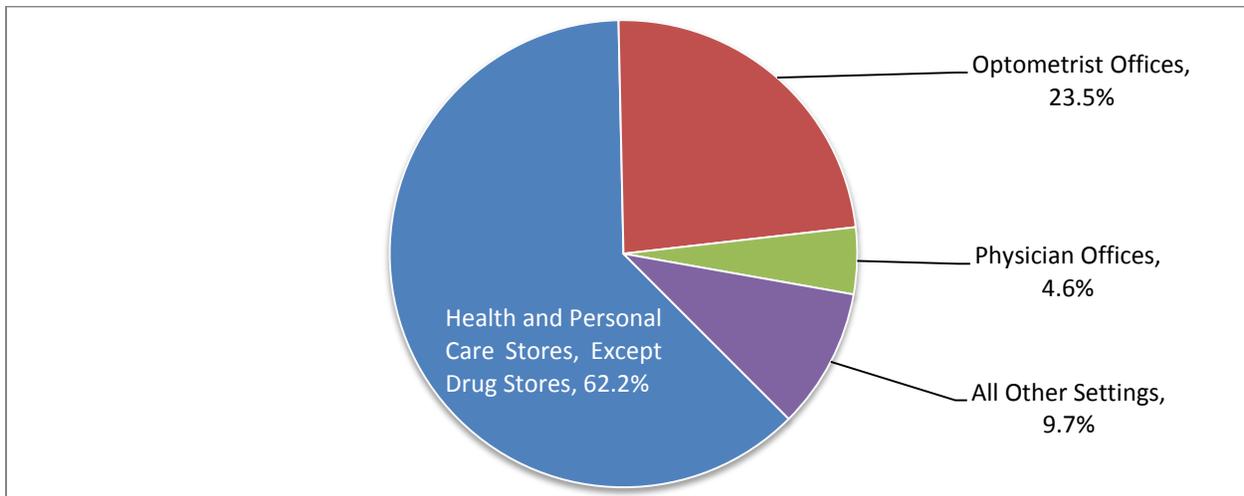


Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

*Note: Estimates in states with an RSE > 20% should be used with caution because of large sampling error.

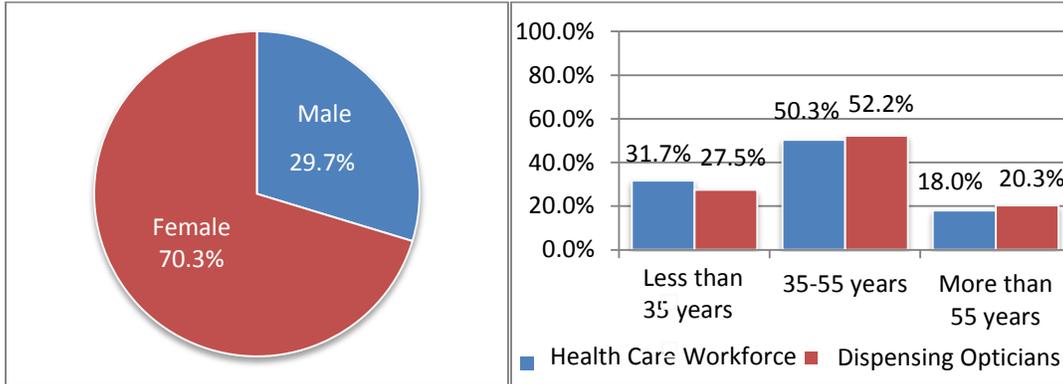
**Data are not reported at the state level, because the RSE ≥ 30%; estimate does not meet standards of reliability.

Figure 13: Distribution of Dispensing Opticians, by Work Setting



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

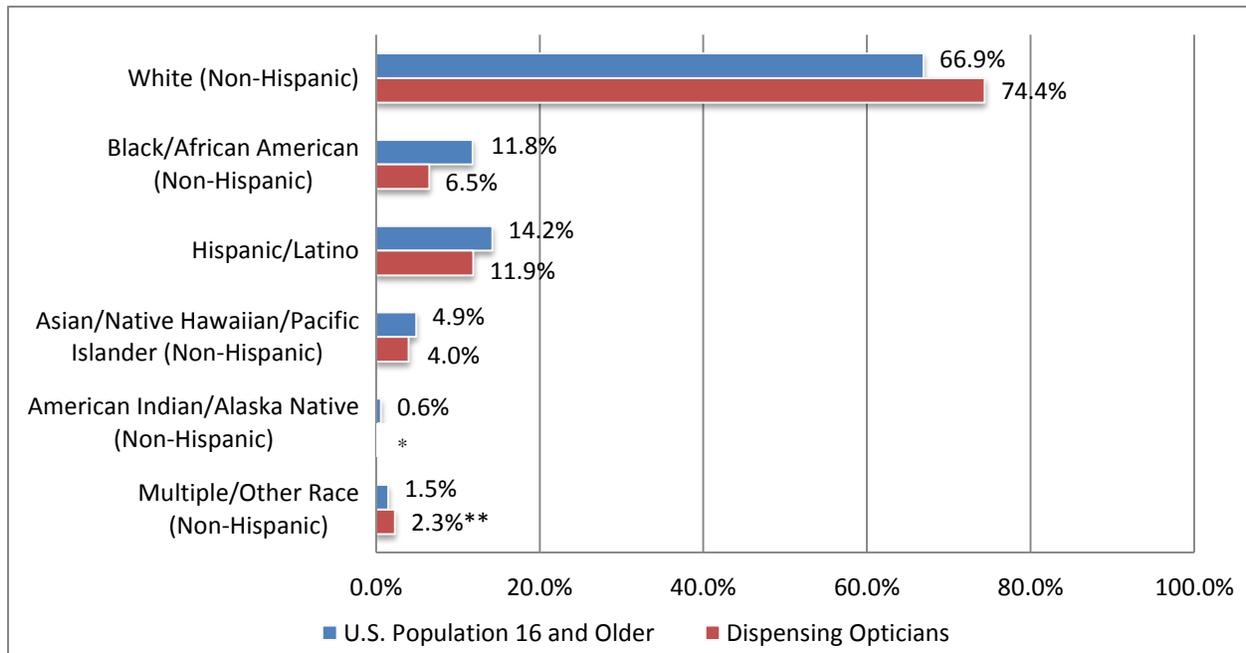
Figure 14: Distribution of Dispensing Opticians, by Sex and Age



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: The “Health Care Workforce” in this figure refers to the health occupations covered in this report.

Figure 15: Distribution of Dispensing Opticians, by Race/Ethnicity, Relative to the Working-Age Population



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: Percentages may not total 100, because of rounding.

*Note: RSE \geq 30%; estimate does not meet standards of reliability.

**20% \leq RSE < 30%; estimate should be used with caution because of large sampling error.

3.0 HEALTH ADMINISTRATION

Health Administration occupations described in this section include:

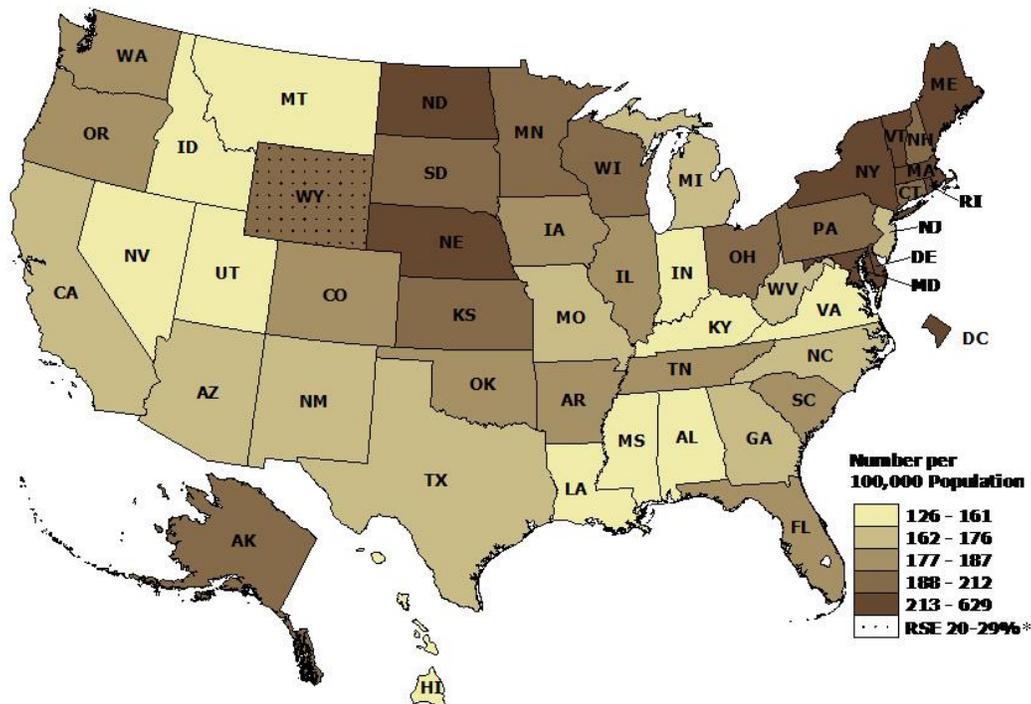
- 3.1 Medical and Health Services Managers; and
- 3.2 Medical Secretaries.

3.1 Medical and Health Services Managers

- An estimated 560,870 individuals in the U.S. workforce reported their occupation as medical and health services manager.¹³
- The typical entry-level education for medical and health services managers is a bachelor's or master's degree.¹⁴

Current Distribution

Figure 16: Medical and Health Services Managers per 100,000 Working-Age Population, by State



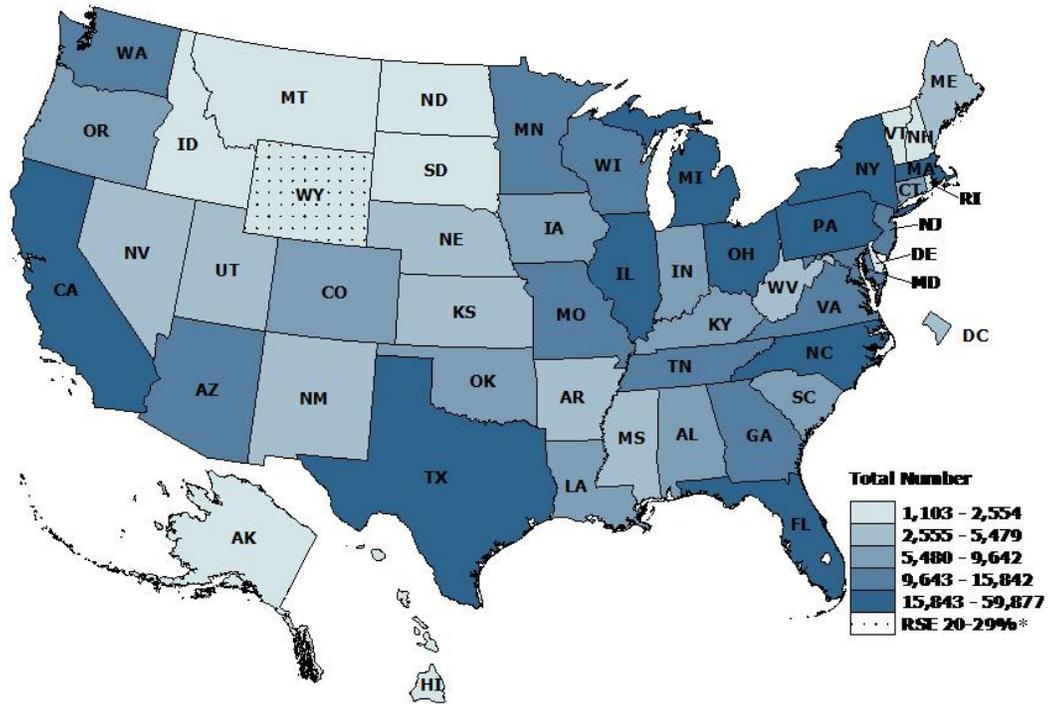
Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

*Note: Estimated ratios in states with an RSE > 20% should be used with caution because of large sampling error.

¹³Total workforce from Special Tabulations of the ACS PUMS, 2008-2010.

¹⁴BLS, *Occupational Outlook Handbook*, 2012-13 Edition.

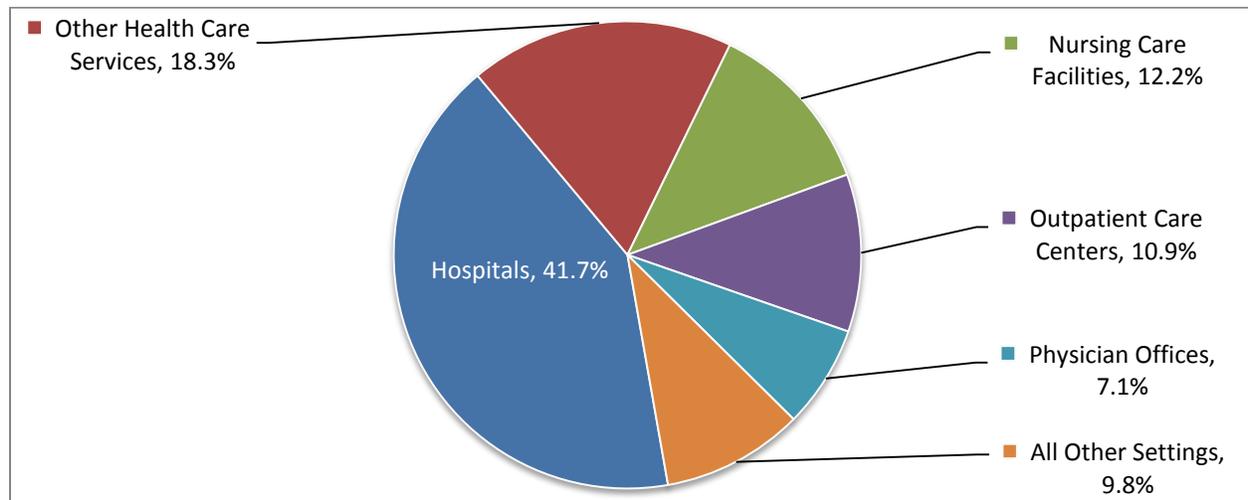
Figure 17: Number of Medical and Health Services Managers, by State



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

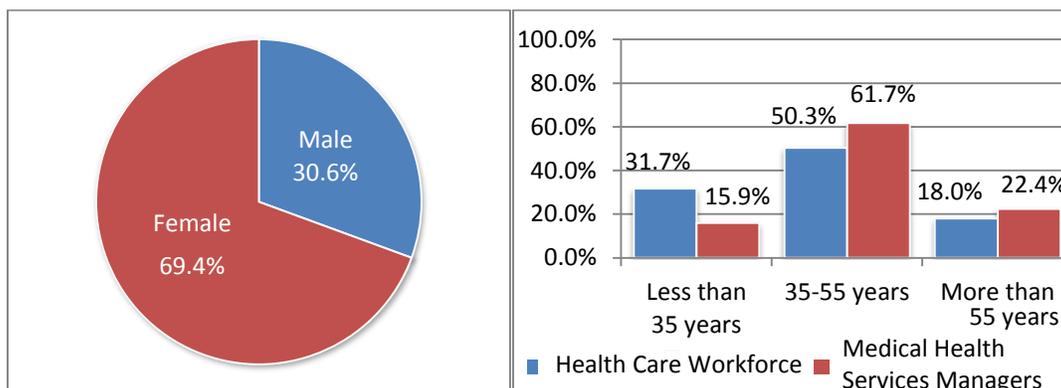
*Note: Estimates in states with an RSE > 20% should be used with caution because of large sampling error.

Figure 18: Distribution of Medical and Health Services Managers, by Work Setting



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

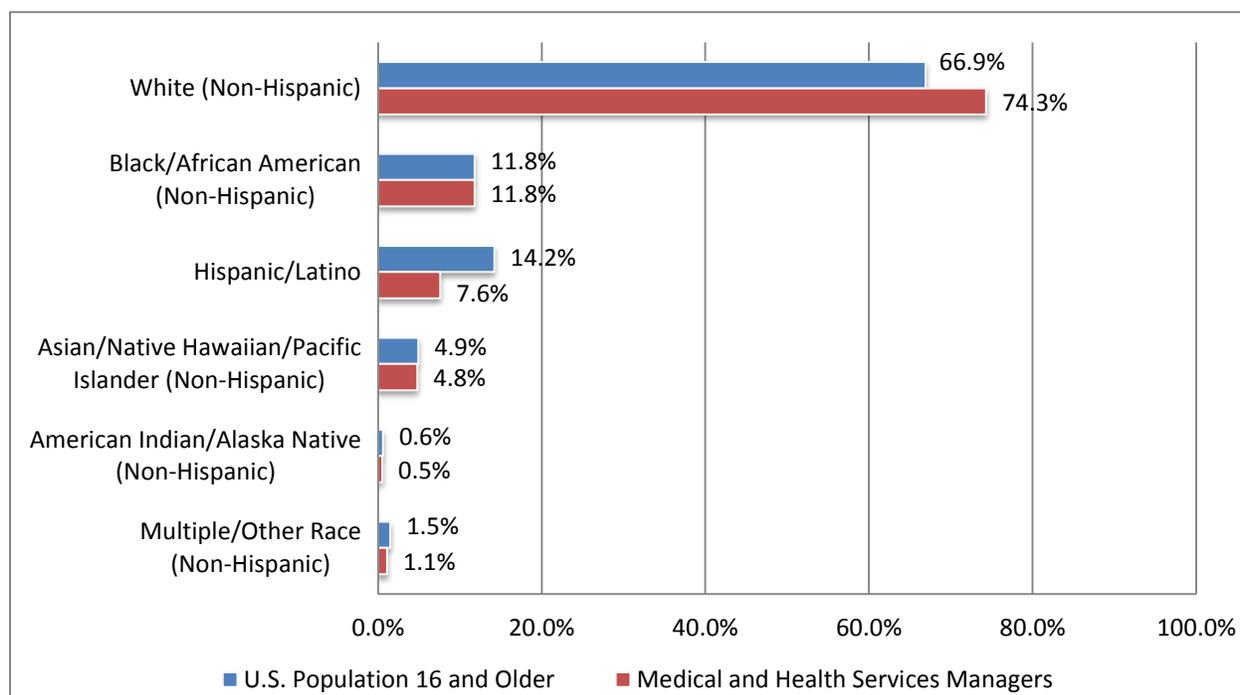
Figure 19: Distribution of Medical and Health Services Managers, by Sex and Age



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: The “Health Care Workforce” in this figure refers to the health occupations covered in this report.

Figure 20: Distribution of Medical and Health Services Managers, by Race/Ethnicity, Relative to the Working-Age Population



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: Percentages may not total 100, because of rounding.

Graduates

The total number of post-secondary graduates at the bachelor’s or master’s levels for medical and health services managers in the 2009 to 2010 academic year was 13,660. Of these, 51.5 percent of graduates received a bachelor’s degree, and 48.5 percent of graduates received a master’s degree.¹⁵

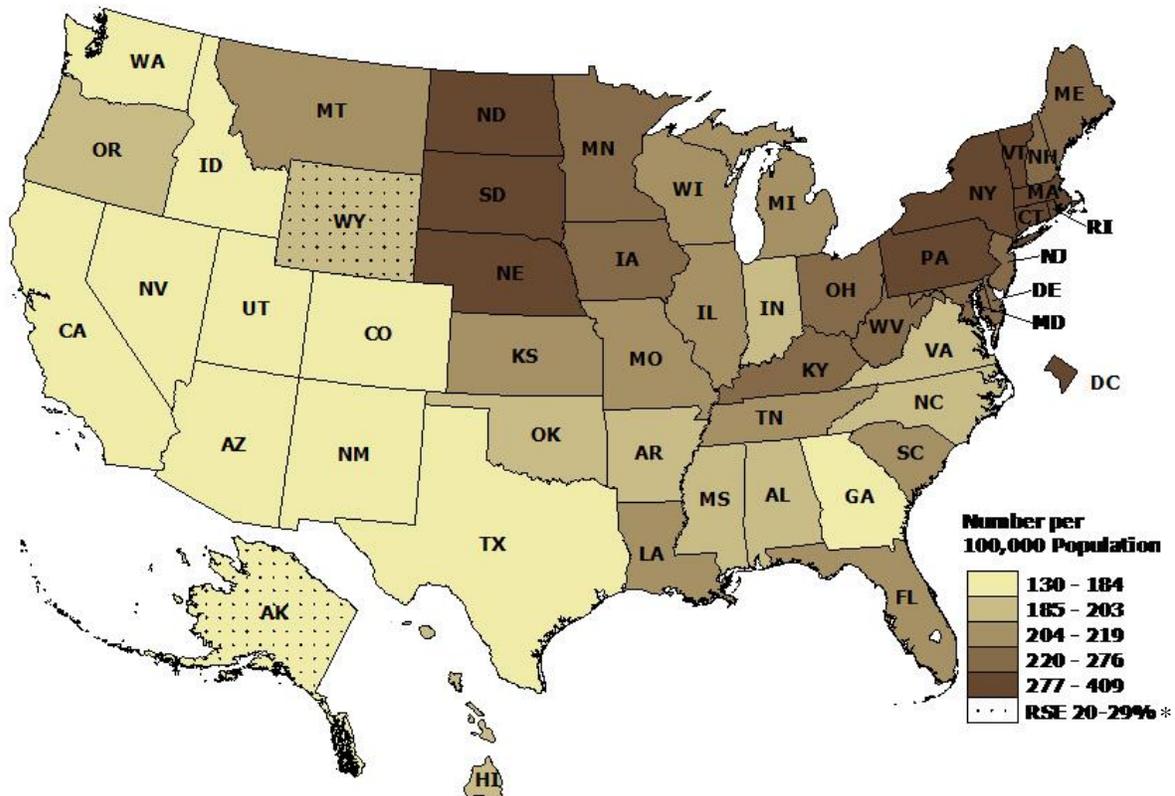
¹⁵Special Tabulations of the National Center for Education Statistics IPEDS, 2009-2010.

3.2 Medical Secretaries

- An estimated 652,618 individuals in the U.S. workforce reported their occupation as medical secretary.¹⁶
- The required education for medical secretaries is a high school diploma or equivalent.¹⁷

Current Distribution

Figure 21: Medical Secretaries per 100,000 Working-Age Population, by State



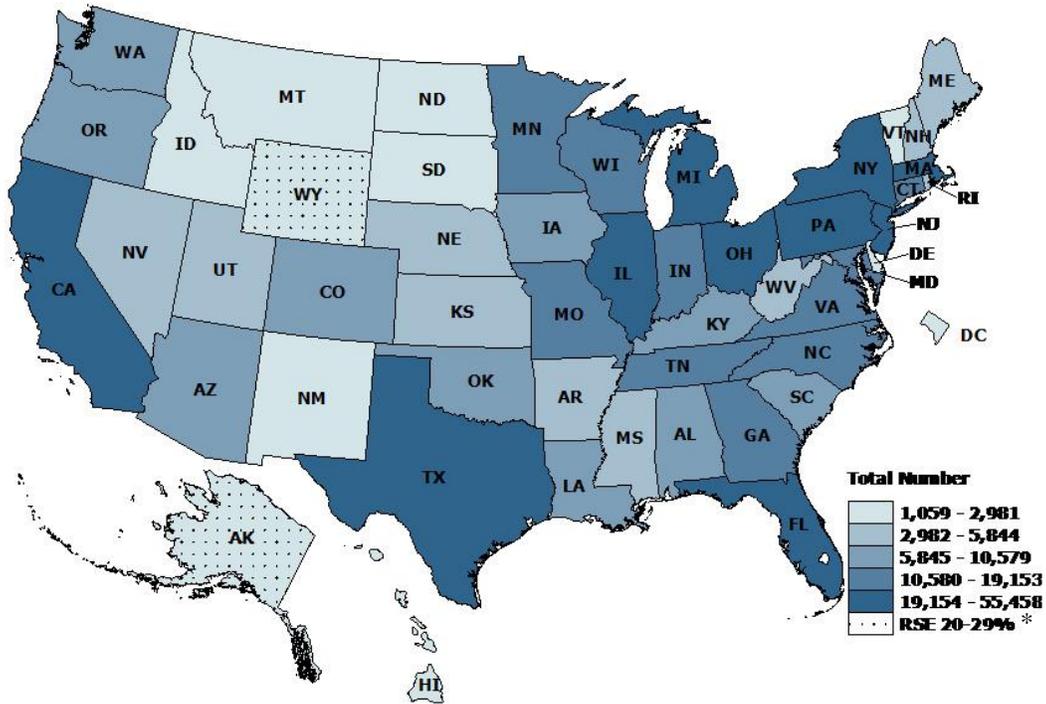
Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

*Note: Estimated ratios in states with an RSE > 20% should be used with caution because of large sampling error.

¹⁶Total workforce from Special Tabulations of the ACS PUMS, 2008-2010.

¹⁷BLS, *Occupational Outlook Handbook*, 2012-13 Edition.

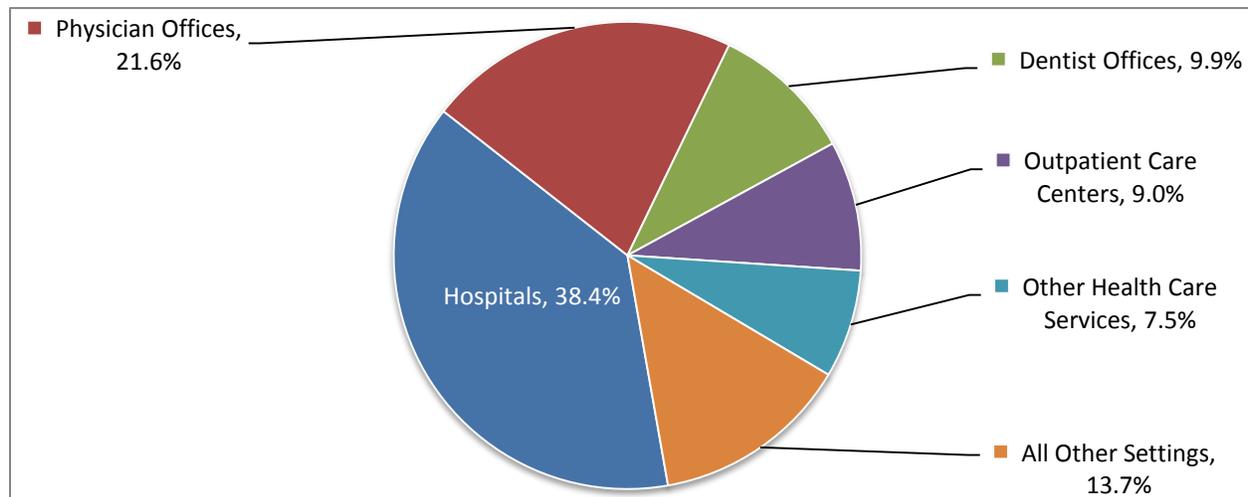
Figure 22: Number of Medical Secretaries, by State



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

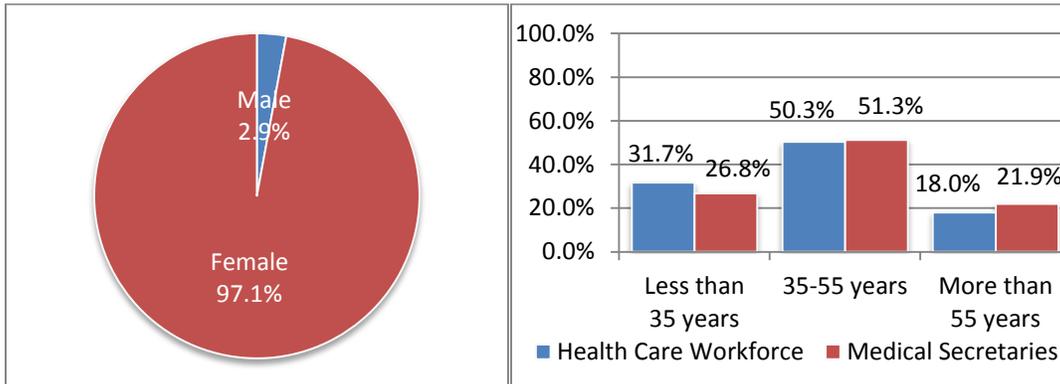
*Note: Estimates in states with an RSE > 20% should be used with caution because of large sampling error.

Figure 23: Distribution of Medical Secretaries, by Work Setting



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

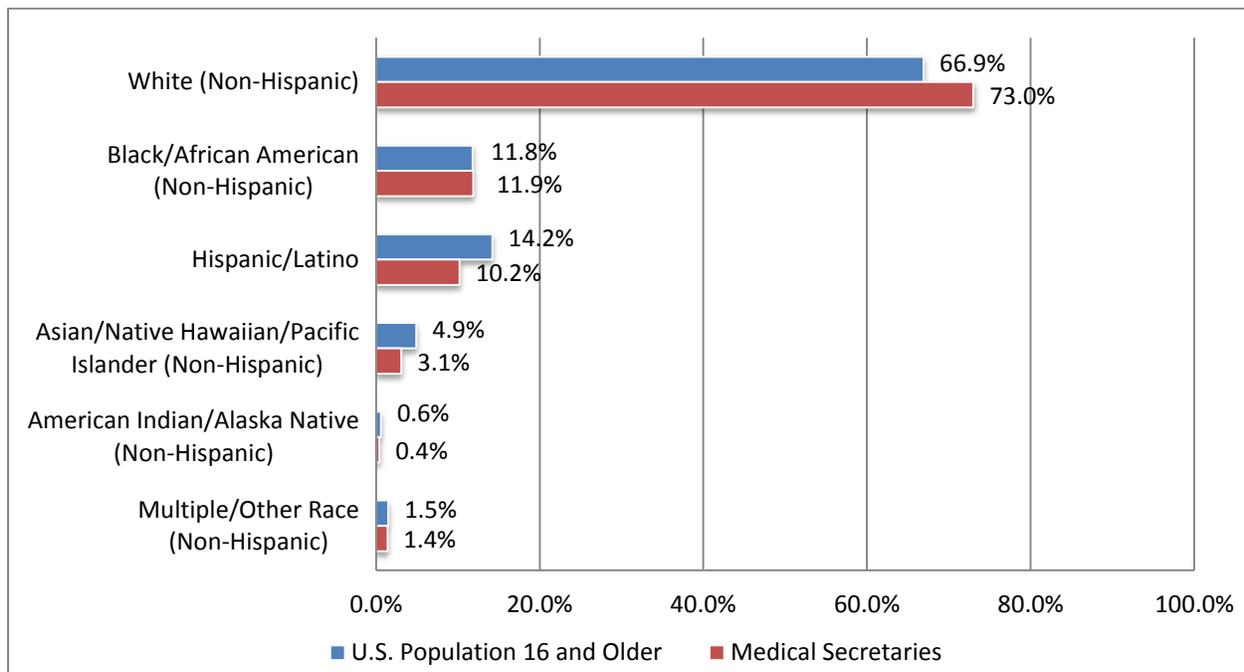
Figure 24: Distribution of Medical Secretaries, by Sex and Age



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: The “Health Care Workforce” in this figure refers to the health occupations covered in this report.

Figure 25: Distribution of Medical Secretaries, by Race/Ethnicity, Relative to the Working-Age Population



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: Percentages may not total 100, because of rounding.

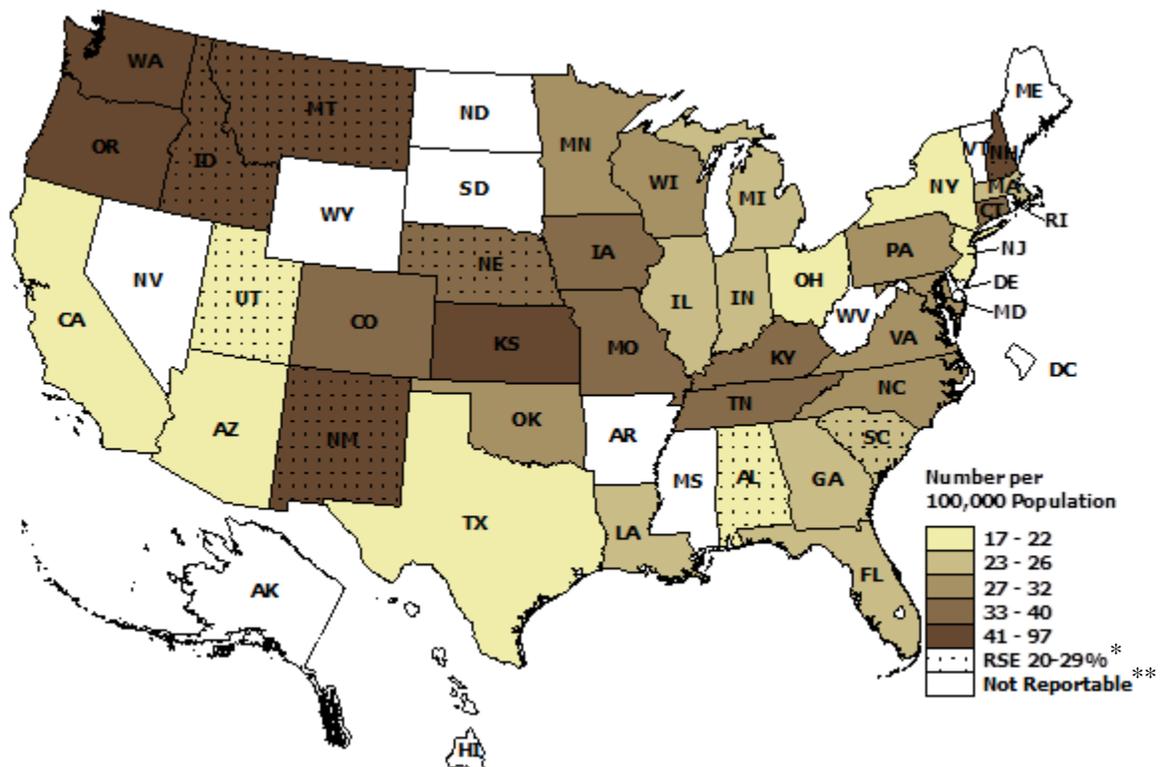
4.0 VETERINARIANS

- An estimated 78,875 individuals in the U.S. workforce reported their occupation as veterinarian.¹⁸
- The required education for veterinarians is a doctoral degree.¹⁹

Background

In addition to providing care for animals, veterinarians contribute to the improvement of human and public health by advancing biomedical and comparative medical research, preventing and addressing infectious diseases that are transmitted from animals to humans, and helping to manage 21st century public health challenges.²⁰

Figure 26: Veterinarians per 100,000 Working-Age Population, by State



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

*Note: Estimated ratios in states with an RSE > 20% should be used with caution because of large sampling error.

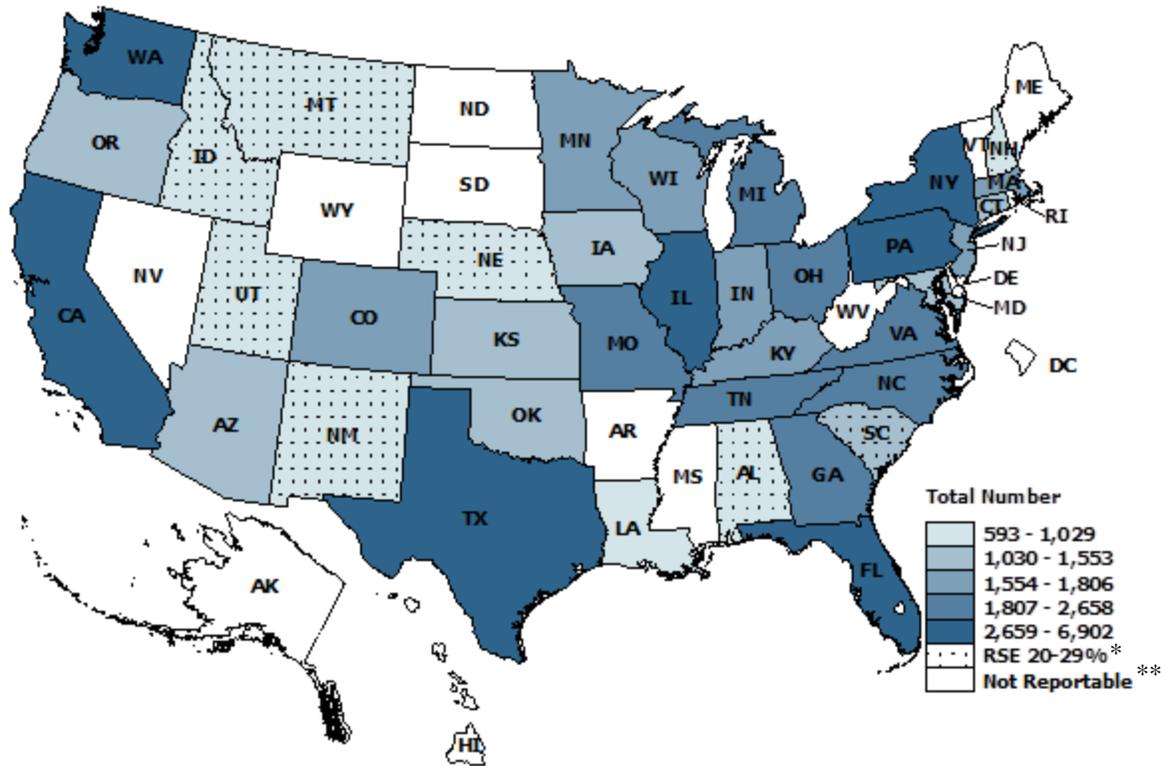
**Data are not reported at the state level, because the RSE ≥ 30%; estimate does not meet standards of reliability.

¹⁸Total workforce from Special Tabulations of the ACS PUMS, 2008-2010.

¹⁹BLS, *Occupational Outlook Handbook*, 2012-13 Edition.

²⁰Centers for Disease Control and Prevention. (2006). Veterinary medicine and public health at CDC. *Morbidity and Mortality Weekly Report*, 55(Suppl. 2), 7-9.

Figure 27: Number of Veterinarians, by State

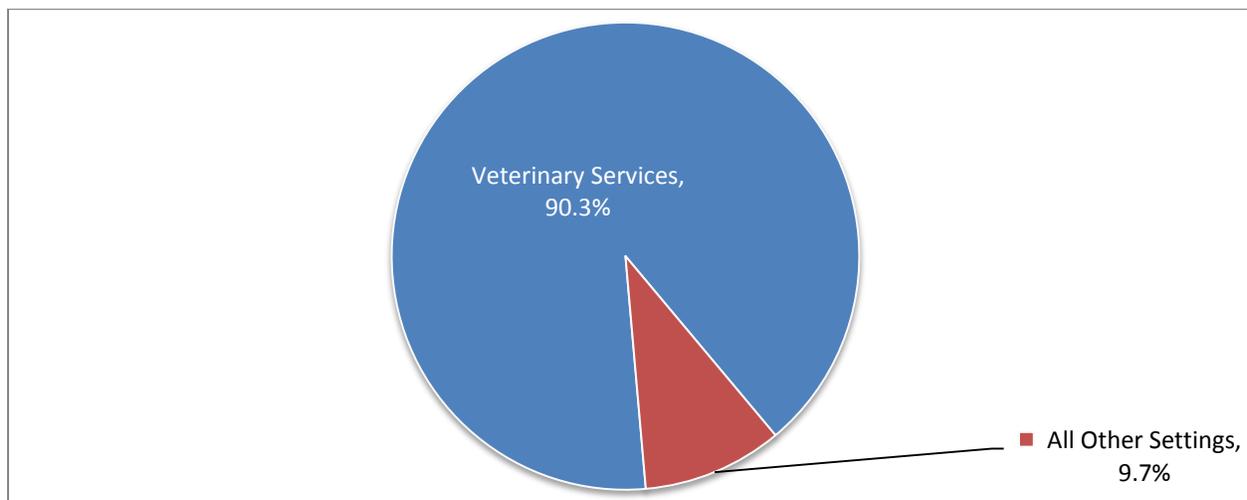


Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

*Note: Estimates in states with an RSE > 20% should be used with caution because of large sampling error.

**Data are not reported at the state level, because the RSE ≥ 30%; estimate does not meet standards of reliability.

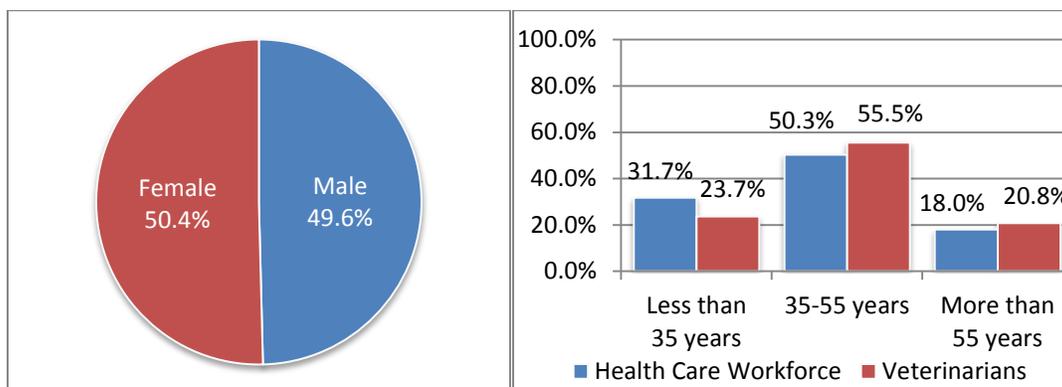
Figure 28: Distribution of Veterinarians, by Work Setting



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: Percentages may not total 100, because of rounding.

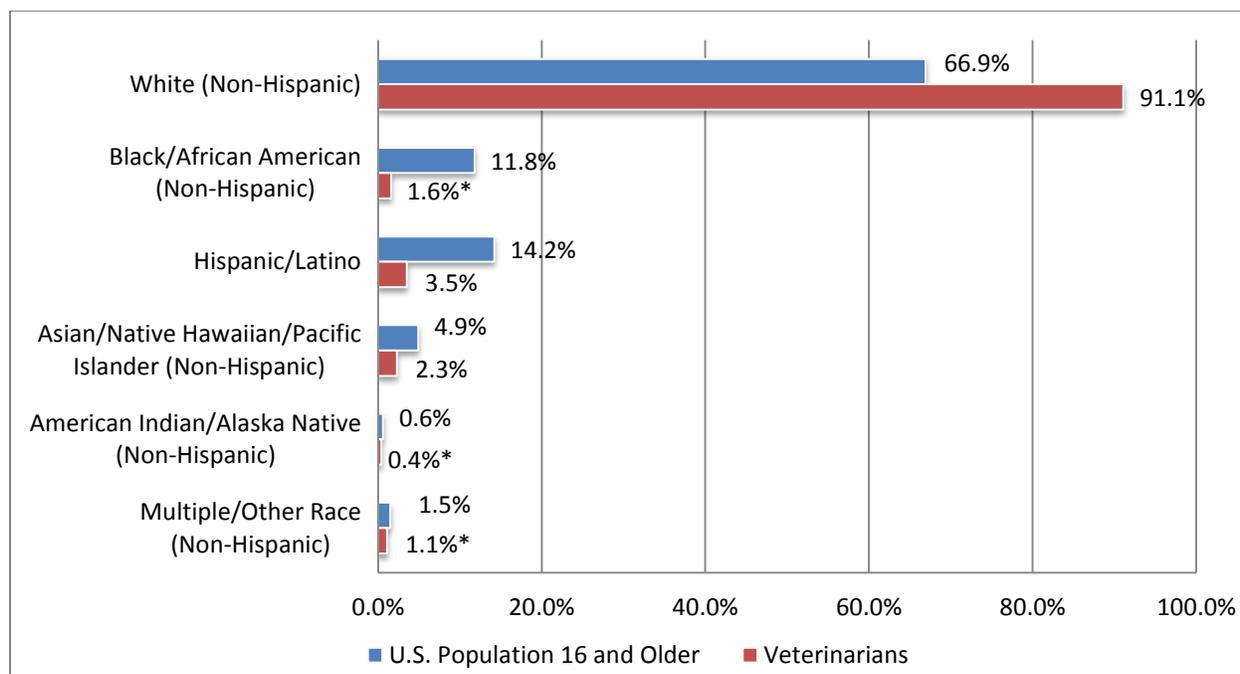
Figure 29: Distribution of Veterinarians, by Sex and Age



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: The “Health Care Workforce” in this figure refers to the health occupations covered in this report.

Figure 30: Distribution of Veterinarians, by Race/Ethnicity, Relative to the Working-Age Population



Data Source: HRSA analysis of the ACS PUMS, 2008-2010.

Note: Percentages may not total 100, because of rounding.

*Note: 20% ≤ RSE < 30%; estimate should be used with caution because of large sampling error.

Graduates

The total number of veterinary graduates at the doctoral level in the 2009 to 2010 academic year was 2,479.²¹

²¹Special Tabulations of the National Center for Education Statistics IPEDS, 2009-2010.