THE U.S. HEALTH WORKFORCE CHARTBOOK

PART II: CLINICIANS AND HEALTH ADMINISTRATION

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

Introduction ................................................................................................................................................... 6
Data Sources .................................................................................................................................................... 7
1.0 Chiropractors ......................................................................................................................................... 10
2.0 Vision Health .......................................................................................................................................... 13
   2.1 Optometrists ....................................................................................................................................... 13
   2.2 Opticians, Dispensing ....................................................................................................................... 16
3.0 Health Administration .......................................................................................................................... 19
   3.1 Medical and Health Services Managers ............................................................................................ 19
   3.2 Medical Secretaries ............................................................................................................................ 22
4.0 Veterinarians ......................................................................................................................................... 25

Figures

Figure 1: Chiropractors per 100,000 Working-Age Population, by State ...................................................... 10
Figure 2: Number of Chiropractors, by State ............................................................................................... 11
Figure 3: Distribution of Chiropractors, by Work Setting .......................................................................... 11
Figure 4: Distribution of Chiropractors, by Sex and Age ......................................................................... 12
Figure 5: Distribution of Chiropractors, by Race/Ethnicity, Relative to the Working-Age Population ... 12
Figure 6: Optometrists per 100,000 Working-Age Population, by State .................................................... 13
Figure 7: Number of Optometrists, by State ............................................................................................... 14
Figure 8: Distribution of Optometrists, by Work Setting ......................................................................... 14
Figure 9: Distribution of Optometrists, by Sex and Age ......................................................................... 15
Figure 10: Distribution of Optometrists, by Race/Ethnicity, Relative to the Working-Age Population ... 15
Figure 11: Dispensing Opticians per 100,000 Working-Age Population, by State .................................... 16
Figure 12: Number of Dispensing Opticians, by State ............................................................................ 17
Figure 13: Distribution of Dispensing Opticians, by Work Setting ......................................................... 17
Figure 14: Distribution of Dispensing Opticians, by Sex and Age ............................................................ 18
Figure 15: Distribution of Dispensing Opticians, by Race/Ethnicity, Relative to the Working-Age Population ............................................................................................................................ 18
Figure 16: Medical and Health Services Managers per 100,000 Working-Age Population, by State ...... 19
Figure 17: Number of Medical and Health Services Managers, by State ................................................. 20
Figure 18: Distribution of Medical and Health Services Managers, by Work Setting .............................. 20
Figure 19: Distribution of Medical and Health Services Managers, by Sex and Age ............................... 21
Figure 20: Distribution of Medical and Health Services Managers, by Race/Ethnicity, Relative to the Working-Age Population ............................................................................................................................ 21
Figure 21: Medical Secretaries per 100,000 Working-Age Population, by State ..................................... 22
Figure 22: Number of Medical Secretaries, by State ............................................................................... 23
Figure 23: Distribution of Medical Secretaries, by Work Setting ............................................................. 23
Figure 24: Distribution of Medical Secretaries, by Sex and Age ............................................................... 24
Figure 25: Distribution of Medical Secretaries, by Race/Ethnicity, Relative to the Working-Age Population
Figure 26: Veterinarians per 100,000 Working-Age Population, by State
Figure 27: Number of Veterinarians, by State
Figure 28: Distribution of Veterinarians, by Work Setting
Figure 29: Distribution of Veterinarians, by Sex and Age
Figure 30: Distribution of Veterinarians, by Race/Ethnicity, Relative to the Working-Age Population
### GENERAL LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAPA</td>
<td>American Academy of Physician Assistants</td>
</tr>
<tr>
<td>ACNM</td>
<td>American College of Nurse-Midwives</td>
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<tr>
<td>ACS</td>
<td>American Community Survey</td>
</tr>
<tr>
<td>APRN</td>
<td>Advanced Practice Registered Nurse</td>
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<tr>
<td>BHW</td>
<td>Bureau of Health Workforce</td>
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<tr>
<td>BLS</td>
<td>Bureau of Labor Statistics</td>
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<tr>
<td>BSN</td>
<td>Bachelor of Science in Nursing</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>CMS</td>
<td>Centers for Medicare &amp; Medicaid Services</td>
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<tr>
<td>CRNA</td>
<td>Certified Registered Nurse Anesthetist</td>
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<tr>
<td>EMT</td>
<td>Emergency Medical Technician</td>
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<tr>
<td>HHS</td>
<td>U.S. Department of Health and Human Services</td>
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<tr>
<td>HRSA</td>
<td>Health Resources and Services Administration</td>
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<tr>
<td>IPEDS</td>
<td>Integrated Postsecondary Education Data System</td>
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<tr>
<td>LPN</td>
<td>Licensed Practical and Licensed Vocational Nurse</td>
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<tr>
<td>NAICS</td>
<td>North American Industry Classification System</td>
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<td>NCHWA</td>
<td>National Center for Health Workforce Analysis</td>
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<td>NCLEX-PN®</td>
<td>National Counsel Licensure Examination for Practical Nurses</td>
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<tr>
<td>NP</td>
<td>Nurse Practitioner</td>
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<tr>
<td>NPI</td>
<td>National Provider Identification</td>
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<tr>
<td>OT</td>
<td>Occupational therapy</td>
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<tr>
<td>PA</td>
<td>Physician Assistant</td>
</tr>
<tr>
<td>PA-C</td>
<td>Certified Physician Assistant</td>
</tr>
<tr>
<td>PUMS</td>
<td>Public Use Microdata Sample</td>
</tr>
<tr>
<td>RN</td>
<td>Registered Nurse</td>
</tr>
<tr>
<td>RSE</td>
<td>Relative standard error</td>
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<td>SOC</td>
<td>Standard Occupational Classification</td>
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Introduction

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 on the U.S. health workforce by expanding and improving health workforce data and its dissemination to the public, and by improving and updating projections of supply and demand for health workers.

For more information about the National Center, please visit our website at https://bhw.hrsa.gov/national-center-health-workforce-analysis.

The U.S. Health Workforce Chartbook provides extensive data on 34 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 purpose of this Chartbook is to provide an update to the HRSA 2013 Chartbook. The five-year 2011 to 2015 American Community Survey (ACS) Public Use Microdata Sample (PUMS) file was analyzed to provide the estimated number of individuals nation-wide within selected health occupations, along with information pertaining to workforce settings (industry), and the demographic makeup of the occupation (i.e., sex, age, race, and ethnicity).1 The 2011 to 2015 ACS data file included more than 15 million individuals and these individuals represent approximately 10 percent of the nation’s workforce.2 The 34 health occupations included in this Chartbook are classified based on the U.S. government’s Standard Occupational Classification (SOC) system. The occupations 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’s 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

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1 HRSA Analysis of the U.S. Census Bureau, American Community Survey (ACS) Public Microdata Sample (PUMS), 2011-2015.
2 HRSA Analysis of the U.S. Bureau of Labor Statistics (BLS), Employment Projections, 2014-2015. 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.
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. 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 health occupations are not included or fully represented in the Chartbook because of data limitations. Only occupations that have 2010 Standard Occupational Classification (SOC) codes are included in this Chartbook. The report also does not include other health occupations because of the small size of the occupation, such as epidemiologists and other public health-oriented disciplines like laboratory workers (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. Finally, some health occupations in this Chartbook are not comparable to those reported in the 2013 Chartbook because the SOC codes changed. More detailed information is available in the U.S. Health Workforce Chartbook: Technical Documentation which can be found at https://bhw.hrsa.gov/health-workforce-analysis/research.

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.

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3 Note: 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 the 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 limitations.
**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*, 2015 Edition.

Details on the data sources, definitions and analysis, and other information provided in the Chartbook are available in the *U.S. Health Workforce Chartbook: Technical Documentation*. 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](http://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

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Total Workforce&lt;sup&gt;4&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Chiropractors</td>
<td>59,525</td>
</tr>
<tr>
<td>2.0 Vision Health</td>
<td></td>
</tr>
<tr>
<td>2.1 Optometrist</td>
<td>38,233</td>
</tr>
<tr>
<td>2.2 Opticians, Dispensing</td>
<td>63,415</td>
</tr>
<tr>
<td>3.0 Health Administration</td>
<td></td>
</tr>
<tr>
<td>3.1 Medical and Health Services Managers</td>
<td>696,024</td>
</tr>
<tr>
<td>3.2 Medical Secretaries</td>
<td>794,765</td>
</tr>
<tr>
<td>4.0 Veterinarians</td>
<td>80,136</td>
</tr>
</tbody>
</table>

<sup>4</sup> Total Workforce from HRSA analysis of the ACS PUMS, 2011-2015. The ACS data are based on self-reported occupation.
1.0 Chiropractors

- An estimated 59,525 individuals in the U.S. workforce reported their occupation as Chiropractor.\(^5\)
- To become a Chiropractor, an individual must obtain a Doctor of Chiropractic degree, licensure, and meet certain additional requirements.\(^6\)

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


*Note: Estimates in states with an RSE = 20% - 29% should be considered 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.*

\(^5\) Total workforce from HRSA analysis of the ACS PUMS, 2011-2015.

FIGURE 2: NUMBER OF CHIROPRACTORS, BY STATE

*Note: Estimates in states with an RSE = 20% - 29% should be considered 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

Note: Percentages may not total 100, because of rounding.
FIGURE 4: DISTRIBUTION OF CHIROPRACTORS, BY SEX AND AGE

Note: The “Health Care Workforce” in this figure refers to the health occupations in this report.
Note: Percentages may not total 100, because of rounding.

FIGURE 5: DISTRIBUTION OF CHIROPRACTORS, BY RACE/ETHNICITY, RELATIVE TO THE WORKING-AGE POPULATION

Note: Percentages may not total 100, because of rounding.
**RSE > 30%; estimate does not meet standards of reliability.

Graduates
Total number of chiropractic school graduates at the doctoral level in the 2014 to 2015 academic year was 2,544.7

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 38,233 individuals in the U.S. workforce reported their occupation as Optometrist.\(^8\)
- To become an Optometrist, an individual must obtain a Doctor of Optometry, licensure, and meet certain additional requirements.\(^9\)

**FIGURE 6: OPTOMETRISTS PER 100,000 WORKING-AGE POPULATION, BY STATE**


*Note: Estimates in states with an RSE = 20% - 29% should be considered 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.

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\(^8\) Total workforce from HRSA analysis of the ACS PUMS, 2011-2015.

**FIGURE 7: NUMBER OF OPTOMETRISTS, BY STATE**

*Note: Estimates in states with an RSE = 20% - 29% should be considered 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**

Note: Percentages may not total 100, because of rounding.
FIGURE 9: DISTRIBUTION OF OPTOMETRISTS, BY SEX AND AGE

Note: The “Health Care Workforce” in this figure refers to the health occupations in this report.
Note: Percentages may not total 100, because of rounding.

FIGURE 10: DISTRIBUTION OF OPTOMETRISTS, BY RACE/ETHNICITY, RELATIVE TO THE WORKING-AGE POPULATION

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

*Note: Estimates with an RSE = 20% - 29% should be considered with caution because of large sampling error.
**RSE ≥ 30%; estimate does not meet standards of reliability.

Graduates

The total number of Optometry graduates at the doctoral level in the 2014 to 2015 academic year was 1,511.10

2.2 Opticians, Dispensing

- An estimated 63,415 individuals in the U.S. workforce reported their occupation as Dispensing Optician.\(^{11}\)
- To become an Optician, an individual typically must have a high school diploma and complete on-the-job training. Some states require licensure.\(^{12}\)

**FIGURE 11: DISPENSING OPTICIANS PER 100,000 WORKING-AGE POPULATION, BY STATE**

*Note: Estimates in states with an RSE = 20% - 29% should be considered 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.

\(^{11}\) Total workforce from HRSA analysis of the ACS PUMS, 2011-2015.
**FIGURE 12: NUMBER OF DISPENSING OPTICIANS, BY STATE**


*Note: Estimates in states with an RSE = 20% - 29% should be considered 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**

- 54.5%
- 26.7%
- 12.9%
- 5.9%


Note: Percentages may not total 100, because of rounding.
**FIGURE 14: DISTRIBUTION OF DISPENSING OPTICIANS, BY SEX AND AGE**

Note: The “Health Care Workforce” in this figure refers to the health occupations in this report.
Note: Percentages may not total 100, because of rounding.

**FIGURE 15: DISTRIBUTION OF DISPENSING OPTICIANS, BY RACE/ETHNICITY, RELATIVE TO THE WORKING-AGE POPULATION**

Note: Percentages may not total 100, because of rounding.
*Note: Estimates with an RSE = 20% - 29% should be considered with caution because of large sampling error.

**Graduates**

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.
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 696,024 individuals in the U.S. workforce reported their occupation as Medical and Health Services Manager.\(^\text{13}\)
- To become a Medical or Health Services Manager, an individual must obtain a Bachelor’s or Master’s degree.\(^\text{14}\)


\(^{13}\) Total workforce from HRSA analysis of the ACS PUMS, 2011-2015.
\(^{14}\) BLS, Occupational Outlook Handbook. 2015.
Figure 17: Number of Medical and Health Services Managers, by State


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

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

The total number of graduates for Medical and Health Services Managers in the 2014 to 2015 academic year was 34,052.\(^\text{15}\)

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\(^\text{15}\) HRSA analysis of the National Center for Education Statistics IPEDS, 2014-2015.
3.2 Medical Secretaries

- An estimated 794,765 individuals in the U.S. workforce reported their occupation as Medical Secretary.\(^\text{16}\)
- To become a Medical Secretary, an individual must obtain a high school diploma or equivalent.\(^\text{17}\)

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


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\(^{16}\) Total workforce from HRSA analysis of the ACS PUMS, 2011-2015.

\(^{17}\) BLS, Occupational Outlook Handbook, 2015.
FIGURE 22: NUMBER OF MEDICAL SECRETARIES, BY STATE

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

FIGURE 23: DISTRIBUTION OF MEDICAL SECRETARIES, BY WORK SETTING

Note: Percentages may not total 100, because of rounding.
FIGURE 24: DISTRIBUTION OF MEDICAL SECRETARIES, BY SEX AND AGE

Note: The “Health Care Workforce” in this figure refers to the health occupations in this report.
Note: Percentages may not total 100, because of rounding.

FIGURE 25: DISTRIBUTION OF MEDICAL SECRETARIES, BY RACE/ETHNICITY, RELATIVE TO THE WORKING-AGE POPULATION

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

Graduates
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.
4.0 Veterinarians

- An estimated 80,136 individuals in the U.S. workforce reported their occupation as Veterinarian.\textsuperscript{18}
- To become a Veterinarian, an individual must obtain a Doctor of Veterinary Medicine, licensure, and meet certain additional requirements

**Background**

In addition to providing care for animals, Veterinarians contribute to the improvement of human 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 21\textsuperscript{st} century public health challenges.\textsuperscript{19}

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\textsuperscript{18} Total workforce from HRSA analysis of the ACS PUMS, 2011-2015.

FIGURE 27: NUMBER OF VETERINARIANS, BY STATE

*Note: Estimates in states with an RSE = 20% - 29% should be considered 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**

- All Other Settings: 8.7%
- Veterinary Services: 91.3%

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

**Figure 29: Distribution of Veterinarians, by Sex and Age**

- Female: 44.8%
- Male: 55.2%

Note: The “Health Care Workforce” in this figure refers to the health occupations in this report.
Note: Percentages may not total 100, because of rounding.
FIGURE 30: DISTRIBUTION OF VETERINARIANS, BY RACE/ETHNICITY, RELATIVE TO THE WORKING-AGE POPULATION

Graduates

The total number of veterinary school graduates in the 2014 to 2015 academic year was 2,815.20

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