HWDC Methodology

Contents

Overview 1
Renewal Cycles & the HWDC Survey Year 1
Estimates 2
Virginia's CareForce 3
Data Products 4
- Profession Reports 4
- Virginia CareForce Snapshots 4
- Regional Reports 4

Glossary 5
- HWDC CareForce Indicators 5
  - Executive Summary 5
  - Survey Response Rates 6
- The Workforce 7
  - Demographics 7
  - Background 8
  - Education 9
  - Current Employment Situation 9
  - Employment Quality 9
  - 2012 Labor Market 10
  - Work Site Distribution 11
  - Establishment Type 11
  - Time Allocation 11
  - Retirement and Future Plans 12
  - Full-Time Equivalency Units 12
- HWDC Regional Reports & CareForce Snapshot Map 13
  - Map Pages 13
- Regional Indicators 15

Overview

The Healthcare Workforce Data Center (HWDC) administers voluntary surveys to healthcare practitioners regulated by the Virginia Department of Health Professions (DHP). We administer the surveys through the DHP's online renewal system. New applicants, practitioners who did not renew and practitioners who request a paper ballot do not have access to our surveys.

Initially, the HWDC administered surveys developed by the DHP's regulatory boards or by advisory committees made up of professionals. Beginning in December of 2012 the HWDC began to use a standard survey template for all of its surveys. This template measures similar concepts with the same instrument while also providing flexibility to address the needs of each profession. In particular, we adjust the response sets to reflect differing educational, specialty, income, establishment types and work patterns of each profession. We may also incorporate additional questions if requested by our advisory committees, DHP's regulatory Boards, policy-makers or other stakeholders. Adjustments to the standard survey occur annually in the fall and are implemented beginning with the December surveys.

The standard survey template is processed using a standard coding system and methodology embodied in an SPSS Syntax program. This process produces standardized data sets but may also be adjusted to incorporate the needs of each profession. Our methodology creates a standard set of comparable indicators, called the HWDC CareForce Indicators, for each profession. These indicators are published in the "At a Glance" section of our Profession reports, which provide the foundation for HWDC findings, and are the basis of many other HWDC reports and analysis.

Renewal Cycles & the HWDC Survey Year

The HWDC administers its surveys during the renewal process. Renewal cycles vary by profession. Some licensees are required to renew every year, and some every two years. Some Boards require all licensees to renew in a single month, while others spread renewals over the course of the year. In the latter case, licensees are usually required to renew during the month of their birth.

The Healthcare Workforce Data Center uses the survey year as the basis for its reporting. Each survey year conforms to the calendar year. Thus the 2014 survey year begins with the March 2014 renewal cycles and ends with the December renewal cycles, or the last renewals collected in December. With the exception of Nursing, all data reported for a survey year are collected during the survey year.

Nursing uses a continuous, biennial renewal cycle, with nurses renewing every other year based on their birth dates. The HWDC uses a full year of data, from October to September each year. For example, the 2014 survey year will include all surveys submitted from October 2013 through September 2014. These dates were selected to spread the workload of processing the reports through the calendar year. While previously the HWDC waited to collect a full cycle of data, the HWDC began processing nursing data based on a single year of data in 2013.

Note that HWDC surveys are not traditional, scientifically valid snapshot surveys. We ask practitioners to report on both their current situation, and to give information about their activities in

the prior 12 months. So persons responding to March surveys are reporting on activities as far back as April of the prior year. Nurses completing an October survey are reporting on activities that will be almost two years old by the time we process the surveys.

Surveys are conducted during different times of the year, and the environment for health workers may change significantly throughout the HWDC survey year. This may include mundane changes such as the seasons or events such as recessions and changes in the law. These may lead to real changes in behavior, as well as influence mood, effort and recall. Continuous renewal cycles for some professions further complicates data interpretation. Users are encouraged to consider these complications when reviewing the results.

Surveys in current collection, grouped by renewal date, include:

Every March:	**Every December**	**December, Even Years**
Assisted Living Facility Administrators Dental Hygienists Dentists Nursing Home Administrators **Every June:** Clinical Psychologists Licensed Professional Counselors **June, Odd Years** Licensed Clinical Social Workers	Audiologists Optometrists Pharmacists Pharmacy Technicians Speech-Language Pathologists **December, Odd Years†** Physician Assistants† Radiologic Technologists† Respiratory Care Practitioners†	Doctors of Osteopathic Medicine† Medical Doctors† Occupational Therapists† Occupational Therapy Assistants† Physical Therapists Physical Therapy Assistants **Every October** Certified Nurse Aides* Licensed Practical Nurses* Nurse Practitioners** Registered Nurses*

†Renew every other year during their birth month.

*Nurses renew biennially during their birth month on an ongoing basis. Our data collection period for nurses runs from October to September. Each survey report and data release is based on a single year of data. The first Nurse Practitioner collection ran from March 2011 to February 2013. Subsequent collections will conform to the Nursing schedule.

Estimates

The HWDC's voluntary surveys consistently achieve high response rates, usually above 75 percent but often around 90 percent. Nevertheless, the surveys are not a census. Rather, our sample is a convenience sample of regulated practitioners who renewed online.

The methodology excludes some, but not all, new applicants during the renewal cycle. Some new applicants are required to renew at the next opportunity, while others are covered by a grace period. This requirement varies by profession. It excludes practitioners who do not renew their licenses, but

who may have been active in Virginia for part of the survey period. Additionally, practitioners may request paper renewals.

The methodology also excludes practitioners who choose to renew using paper renewals. These practitioners may be older, less technologically savvy or lack access to high speed internet (e.g., rural practitioners). Using administrative data in our licensee files, we are able to determine response rates based on age and the metro status of the practitioner's mailing address with the Department.

To account for differences in response rates by key characteristics, this report uses weighted estimates. The HWDC assigns a weight to each response based on the overall response rate based on the age of the respondent in five year categories and the rural status of the respondent's mailing address. For the latter, the HWDC uses a measure of rurality developed by the US Department of Agriculture known as the Rural-Urban Continuum Code. More information on these codes is available on the USDA website: http://www.ers.usda.gov/Briefing/Rurality/RuralUrbCon/.

Response rates may vary on other important characteristics such as race/ethnicity, gender, specialty or worksite characteristics. However, the HWDC does not have population-wide data on these characteristics to generate response rates and weights.

Due to the rounding of weighted data in HWDC's statistical software, weighting may result in some minor anomalies in tables and other presented data (e.g., data may not add to totals in tables). Additionally, users of the data should be aware that these estimates are more robust for larger populations. Estimates for smaller populations are less robust, and the HWDC avoids publishing specific estimates for small populations.

Virginia's CareForce

The survey's population is all regulated practitioners in Virginia during each profession's renewal cycle. From this population, we are particularly interested in those who worked or were available to work in Virginia: Virginia's CareForce.

Not all of Virginia's licensed practitioners live or work in the state. Out-of-state practitioners maintain licenses in-state for a variety of reasons. Those serving in the military or working for the federal government may be required to hold a license, or may choose to do so, but they may do so in any state. Retired practitioners may maintain their licenses for prestige or occasional practice. Practitioners may occasionally travel to Virginia to work, particularly those practicing in Virginia's border jurisdictions. Others may provide remote services (e.g., telemedicine).

For HWDC's purposes, Virginia's workforce consists of respondents who reported having at least one practice or work location in a profession-related field AND who identified at least a primary or secondary practice location in Virginia during the survey period (Note: we do not collect location information for third or subsequent work locations). If a respondent indicated practicing but did not list a location, mailing address was used as a proxy to determine participation in Virginia's workforce. Virginia's workforce also includes those who reside in Virginia and did not work over the survey period, but who intend to return to practice at some point.

Those familiar with federal data should note that this is a broader measure than the Bureau of Labor Statistics' civilian labor force which includes only those who are employed or those who are actively seeking work and excludes those in the military. Users should also note our estimates are only for practitioners who hold or held a Virginia license, certification or registration for the specific profession during the survey period. Some practitioners may work in the state under compact rules or through certain profession-specific exceptions. Additionally, some practitioners in training roles may provide significant services under supervision. These practitioners may or may not be required to hold a license, registration or certificate, or may hold a separate license, registration or certificate (e.g., physician residents or interns). We do not account for these practitioners.

Data Products

Profession Reports

The HWDC Profession Reports are the mainstay of the HWDC's data products. They provide a statewide look at the healthcare workforce on a profession-by-profession basis. Profession reports are published following end of the data collection period. Profession reports include HWDC CareForce Indicators (see below), as well as more detailed information pertaining to the professions.

Virginia CareForce Snapshots

The Virginia CareForce Snapshot is a compilation of the CareForce indicators for all professions, statewide, in a given HWDC survey year. The Careforce Snapshot, published annually in spring, provides an easy tool to compare indicators across professions. The CareForce Snapshot also includes additional, statewide information including population estimates and projections from the Weldon Cooper Center, information on health and access from the Virginia Atlas of Community Health and the Virginia Department of Health. A map of statewide facilities is also included.

Regional Reports

Produced in collaboration with the Virginia Healthcare Workforce Development Authority, (VHWDA) our regional reports provide breakdowns of select CareForce indicators for Virginia's eight Area Health Education Center (AHEC) regions. Regional Reports are published each spring. The Regional Reports also include additional information for each AHEC region including population estimates and projections from the Weldon Cooper Center, information on health and access from the Virginia Atlas of Community Health and the Virginia Department of Health. A map of facilities within each AHEC is also included.

Glossary

HWDC CareForce Indicators

The following are brief definitions for our CareForce indicators, organized by sections found in our Profession Reports. Not all indicators are published for all professions in Profession Reports. Unless otherwise indicated, indicators refer to Virginia's Workforce. They also appear in our annual *Virginia CareForce Snapshot.*

Executive Summary

The Workforce

Licensees: The count of practitioners who held a Virginia license during the survey period.

Virginia's Workforce: Includes licensees with a primary or secondary work location in Virginia or licensees who are not currently working but who live in Virginia and who plan to work in Virginia in the future. (If work location is not provided, mailing address is used as a proxy for working practitioners)

FTEs: Full-time equivalency units. The HWDC uses a 2,000 hour year as one FTE. Hours worked are calculated by taking the midpoint of hour ranges and multiplying by weeks worked for each location. If either variable is missing, we use the average value to impute each variable, controlling for age range and rural location.

Survey Response Rates

All Licensees: The proportion of all Licensees who submitted a survey. This is the response rate used to calculate weights.

Renewing Practitioners: The proportion of renewing practitioners who submitted a survey. This is the proportion of the sample that submitted a survey.

Demographics

Female: The proportion who are female.

Diversity Index: In a random encounter between two practitioners, the likelihood that they would be of different race or ethnicity (using the categories listed in the Demographics section of the report). It is calculated by squaring the percent for each group, summing the squares, and subtracting the sum from 1.00.

Median Age: The 50th percentile age. Half of the workforce is younger than the median age, and half is older.

Background

Rural Childhood: The proportion who self-identify as growing up in a rural area.

HS Diploma in VA: The proportion who completed high school in Virginia.

Prof Degree in VA: The proportion who completed their initial professional degree in Virginia.

Education

The proportion with the listed degrees.

Finances

Median Salary: The 50th percentile salary range. 50% earn more and 50% earn less.

Health Benefits: Proportion who receive health benefits from any employer.

Under 40 w/Ed Debt: The proportion of those under age 40 who carry any educational debt.

Current Employment

Employed in Prof: The proportion employed in a profession-related capacity at the time they completed the survey.

Hold 1 Full-time Job: The proportion who held only one full time job at the time they completed the survey.

Satisfied?: The proportion who indicated being somewhat satisfied or very satisfied with their current employment situation.

Job Turnover

Switched Jobs in prior year: The proportion who switched jobs in the year prior to taking the survey.

Employed over 2 yrs: The proportion employed at their primary work location from more than two years.

Time Allocation

Patient Care: The amount of time a typical (median) practitioner spends on patient care.

Administration: The amount of time a typical (median) practitioner spends on administration.

Primarily in PC: The proportion of practitioners who spend 60% or more of their time on patient care.

Survey Response Rates

Licensed Practitioners

Number: The count of practitioners who held a Virginia license during the survey period.

New: The proportion of licensees who acquired their license during the survey period.

Not Renewed: The proportion of licensees who did not renew their license at their renewal date and who did not reinstate it before the survey period ended.

Response Rates

All Licensees: The proportion of all Licensees who submitted a survey. This is the response rate used to calculate weights.

Renewing Practitioners: The proportion of renewing practitioners who submitted a survey. This is the proportion of the sample that submitted a survey.

The Workforce

Workforce

Virginia's Workforce: Includes licensees with a primary or secondary work location in Virginia or licensees who are not currently working but who live in Virginia and who plan to work in Virginia in the future. (If work location is not provided, mailing address is used as a proxy for working practitioners).

FTEs: Full-time equivalency units. The HWDC uses a 2,000 hour year as one FTE. Hours worked are calculated by taking the midpoint of hour ranges and multiplying by weeks worked for each location. If either variable is missing, we use the average value to impute each variable, controlling for age range and rural location.

Utilization Ratios

Licensees in VA Workforce: The proportion of licensees in Virginia's Workforce.

Licensees per FTE: The number of licensees per FTE. This can be thought of as the number of licensees required to produce one FTE.

Workers per FTE: The number of participants in Virginia's workforce per FTE. This can be thought of as the number of workers required to produce one FTE. (NOTE: The inverse of Workers per FTE is not the same as Average FTEs as calculated in the Full-Time Equivalency Units section, which includes only employed workers.)

Demographics

Gender

% Female: The proportion who are female.

% Under 40 Female: The proportion under age 40 who are female.

Age

Median Age: The 50th percentile age. Half of the workforce is younger than the median age, and half is older.

% Under 40: The proportion under age 40.

%55+: The proportion age 55 and over.

Diversity

Diversity Index: In a random encounter between two practitioners, the likelihood that they would be of different race or ethnicity (using the categories listed in the Demographics section of the report). It is calculated by squaring the percent (as a decimal) for each group, summing the squares, and subtracting the sum from 1.00.

Under 40 Div. Index: The Diversity Index for those under 40 years of age.

Background

Childhood

Urban Childhood: The proportion who self-identify as having spent their childhood in an urban area.

Rural Childhood: The proportion who self-identify as having spent their childhood in a rural area.

Virginia Background

HS in Virginia: The proportion who completed high school in Virginia.

Prof. Ed. In Virginia: The proportion who completed their initial professional education in Virginia.

HS or Prof. Ed. In VA: The proportion who completed either high school or their initial professional education in Virginia.

Location Choice

% Rural to Non-Metro: The proportion who had a rural childhood whose primary practice location is in a non-Metro area, using USDA Rural-Urban Continuum Codes.

% Urban/Suburban to Non-Metro: The proportion who had an urban or suburban childhood whose primary practice location is in a non-Metro area, using USDA Rural-Urban Continuum Codes.

Not in VA Workforce:

Total: The number of licensees who did not participate in Virginia's Workforce.

% of Licensees: The proportion of licensees who did not participate in Virginia's Workforce.

Federal/Military: The proportion of licensees NOT in Virginia's Workforce who worked for the Military or other areass of the Federal government.

Va. Border State/DC: The proportion of licensees NOT in Virginia's Workforce who had a primary work location in a state bordering Virginia or in Washington D.C.

Education

Education
The proportion with the listed degrees.

Educational Debt
Carry Debt: The proportion who carry any educational debt related to their profession.

Under age 40 w/ debt: The proportion under age 40 who carry debt related to their profession.

Median debt: The median amount of profession-related educational debt still owed by those who carry educational debt.

Current Employment Situation

This part of the survey asks participants to report their circumstances *at the time they complete the survey*. Renewal cycles vary among the professions resulting in a different time frame for these questions among the professions.

Employment
Employed in Profession: The proportion who are employed in their profession.

Involuntarily Unemployed: The proportion who are involuntarily unemployed.

Positions Held:
1 Full-time: The proportion who hold one full-time position.

2 or more positions: The proportion who held two or more positions.

Weekly Hours
40 to 49: The proportion who worked, on average, 40 to 49 hours per week.

60 or more: The proportion who worked, on average, 60 or more hours per week.

Less than 30: The proportion who worked, on average, fewer than 30 hours per week.

Employment Quality

Earnings
Median Income: The 50th percentile salary range.

Middle 50%: Roughly, the 25th percentile salary range to the 75th percentile salary range. The lower bound, rounded, of the salary range containing the 25th percentile earner to the upper bound of the 75th percentile salary range.

Benefits

Employer Health Insrnce: The proportion who have employer-sponsored health insurance from any employer. Note: Professions in which private practice is common may have lower employer-sponsored benefits figures.

Employer Retirement: The proportion who have employer-sponsored retirement from any employer. Note: Professions in which private practice is common may have lower employer-sponsored benefits figures.

Satisfaction

Satisfied: The proportion who indicated being somewhat satisfied or very satisfied with their *current* employment situation.

Very Satisfied: The proportion who indicated being very satisfied with their *current* employment situation.

2012 Labor Market

Unemployment Experience

Involuntarily Unemployed: The proportion who were involuntarily unemployed at any time in the twelve months prior to taking the survey.

Underemployed: The proportion who worked part-time or temporary positions, but who would have preferred a full-time and/or permanent position at any time in the twelve months prior to taking the survey.

Turnover & Tenure

Switched Jobs: The proportion who switched employers or practices in the twelve months prior to taking the survey.

New Location: The proportion who switched work locations (though not necessarily employer or practice) in the 12 months prior to taking the survey.

Over 2 years: The proportion who have worked for three or more years at their primary work location.

Over 2 years, 2nd location: The proportion who have a secondary work location and who have worked for three or more years at their secondary work location.

Employment Type

Salary or Wage: The proportion who are salary or wage employees at their primary work location.

Work Site Distribution

Concentration

Top Region: The proportion of the workforce in the Council on Virginia's Future Regions with the largest number of primary work locations.

Top 3 Regions: The proportion of the workforce in the three Council on Virginia's Future Regions with the largest number of primary work locations.

Lowest Region: The proportion of the workforce in the Council on Virginia's Future Regions with the lowest number of primary work locations.

Locations

2 or more (prior year): The proportion of the workforce who worked at more than one work location over the prior year.

2 or more (now): The proportion of the workforce which has more than one work location now.

Establishment Type

Sector

For Profit: The proportion of the workforce whose primary work location is in the for-profit sector (e.g, corporate or private practice).

Federal: The proportion of the workforce whose primary work location is part of the Federal government, including the military or the Veterans Administration.

Top Establishments

Lists the three top establishment types and provides the proportion of the workforce in each type.

Time Allocation

Typical Time Allocation

The median amount of time members of the workforce spent on the specified roles (Patient Care, Administration, Education and Research) at their primary work location.

Roles:

The proportion of the workforce who spent 60% or more of their time on the specified roles (Patient Care, Administration, Education and Research) at their primary work location. The remainder split their time between multiple roles.

Administration Time

Median Administration Time: The median proportion of time spent on administrative tasks.

Ave. Administration Time: The average proportion of time spent on administrative tasks. The average is calculated using the mid-points of the ranges.

Retirement and Future Plans

Retirement Expectations

All, Under 65: The proportion of the workforce which expects to retire prior to age 65.

All, Under 60: The proportion of the workforce which expects to retire prior to age 60.

50 and Over, Under 65: The proportion of the workforce age 50 and over which expects to retire prior to age 65.

50 and Over, Under 60: The proportion of the workforce age 50 and over which expects to retire prior to age 60.

Time until Retirement

Within 2 years: The proportion of the workforce that expects to retire within the next two years.

Within 10 years: The proportion of the workforce that expects to retire within the next ten years.

Half the Workforce: The year by which half the workforce expects to retire. Note: Due to the response choices offered, this occurs in 5 year increments.

Full-Time Equivalency Units

CareForce FTEs

Total: The total sum of Full-time equivalency units produced by Virginia's CareForce. The HWDC uses a 2,000 hour year as one FTE. Hours worked are calculated by taking the midpoint of weekly hours worked ranges and multiplying by weeks worked for each location. If either variable is missing, we use the average value to impute each variable, controlling for age range and rural location.

Note that some of these FTE's may have been provided outside of Virginia. For a measure of FTEs provided in Virginia only, see HWDC's Annual CareForce Snapshot and HWDC's Regional Reports.

Average: Full-Time Equivalency Units per member of the workforce who worked at least some hours in Virginia in the twelve months prior to completing the survey.

Age & Gender Effect

Age, Partial Eta^2: Partial Eta^2 is a statistical measure of the magnitude or size of an effect, in this case the magnitude of the effect of age on FTEs. Since HWDC surveys often deal with large numbers of respondents, the statistical power of standard tests is increased, making it more likely those tests will find a statistically significant difference. In these cases, the magnitude or size of the effect may be more

meaningful. A Partial Eta^2 of .01 means age has only a small effect on FTEs, a .06 is a medium effect and .138 is a large effect.

The statistical tests used compare averages. There is often wide variation among FTEs per individual within age groups even if statistical differences of medium or large effect are found.

Gender, Partial Eta^2: Partial Eta^2 is a statistical measure of the magnitude or size of an effect, in this case the magnitude of the effect of gender on FTEs. Since HWDC surveys often deal with large numbers of respondents, the statistical power of standard tests is increased, making it more likely those tests will find a statistically significant difference. In these cases, the magnitude or size of the effect may be more meaningful. A Partial Eta^2 of .01 means gender has only a small effect on FTEs, a .06 is a medium effect and .138 is a large effect.

The statistical tests used compare averages. There is often wide variation among FTEs of either gender even if statistical differences of medium or large effect are found.

HWDC Regional Reports & CareForce Snapshot Map

HWDC Regional Reports include some non-HWDC data, some additional indicators, and a different definition for FTEs. Some of this information is included in the CareForce Snapshot Map.

Map Pages

Population & Projections

Population: The population and projected population, calculated by the HWDC using the latest population estimates and projections from the University of Virginia's Weldon Cooper Center for Public Service, Demographics Research Group. http://www.coopercenter.org/demographics/virginia-population-projections

% 65 and over: The proportion of the population estimated or projected to be age 65 and over, calculated by the HWDC using the latest population estimates and projections from the University of Virginia's Weldon Cooper Center for Public Service, Demographics Research Group. http://www.coopercenter.org/demographics/virginia-population-projections

% under 15: The proportion of the population estimated or projected to be under age 15, calculated by the HWDC using the latest population estimates and projections from the University of Virginia's Weldon Cooper Center for Public Service, Demographics Research Group. http://www.coopercenter.org/demographics/virginia-population-projections

Dependency Ratio: Conceptually, the proportion of the population which is "dependent" on the working age population to provide goods and services. Operationally, the HWDC uses the World Bank definition for a dependent, which are those under age 15 and over age 64. The HWDC aggregates to the regional level using the latest population estimates and projections from the University of Virginia's Weldon Cooper Center for Public Service, Demographics Research Group. http://www.coopercenter.org/demographics/virginia-population-projections

Health Risk

% in Poverty: The proportion of the population in poverty. HWDC aggregates to the regional level using data from the Virginia Atlas of Community Health. http://atlasva.org/.

Per Capita Income: Income per person. HWDC aggregates to the regional level using data from the Virginia Atlas of Community Health. http://atlasva.org/.

% of Adults Fair or Poor Health: The estimated proportion of persons 18+ who reported Fair or Poor Health, using the Behavioral Risk Factor Surveillance System (BRFSS 2006-2010) as the data source. Estimates are formulated by Community Health Solutions. The HWDC aggregates to the regional level using data available from the Virginia Atlas of Community Health. http://atlasva.org/.

% of Adults Overweight or Obese: The estimated proportion of persons 18+ whose reported information results in an overweight (25 <= BMI < 30) or obese (30 <= BMI) body mass index, using the Behavioral Risk Factor Surveillance System (BRFSS 2006-2010) as the data source. Certain categories of persons (e.g., pregnant women) are excluded. Estimates are formulated by Community Health Solutions. The HWDC aggregates to the regional level using data available from the Virginia Atlas of Community Health. http://atlasva.org/.

% of High School Age Overweight or Obese: The estimated proportion of persons age 14-19 whose reported information results in an overweight or obese body mass index, using the Youth Risk Factor Surveillance System (YRFSS 2010) as the data source. BMI used to determine overweight and obese varies by age and gender. Estimates are formulated by Community Health Solutions. The HWDC aggregates to the regional level using data available from the Virginia Atlas of Community Health. http://atlasva.org/.

Access

Uninsured Non-Elderly: The estimated proportion of persons age 0-64 without health insurance. Estimates are formulated by Community Health Solutions using data from the US Census Bureau, Kaiser Family Foundation, Virginia Department of Social Services and Alteryx, Inc. The HWDC aggregates to the regional level using data available from the Virginia Atlas of Community Health. http://atlasva.org/.

Medicaid Enrollees: The estimated proportion of persons enrolled in Medicaid. Estimates are formulated by Community Health Solutions using data from the US Census Bureau, Kaiser Family Foundation, Virginia Department of Social Services and Alteryx, Inc. The HWDC aggregates to the regional level using data available from the Virginia Atlas of Community Health. http://atlasva.org/.

Medicare Enrollees: The estimated proportion of persons enrolled in Medicare. Estimates are formulated by Community Health Solutions using data from the US Census Bureau, Kaiser Family Foundation, Virginia Department of Social Services and Alteryx, Inc. The HWDC aggregates to the regional level using data available from the Virginia Atlas of Community Health. http://atlasva.org/.

Hospital Beds: The number of hospital beds, calculated by HWDC using data from Virginia Health Information (VHI): www.vhi.org.

LTC Beds: The number of long-term care beds, calculated by HWDC using facility listing from the Virginia Department of Health, Office of Licensure and Certification, Facility Directories: http://www.vdh.virginia.gov/OLC/Facilities/.

Workforce (FTEs)

The total sum of Full-Time Equivalency units (FTEs) produced by each profession within the region. Note that this is slightly different than CareForce FTEs, which includes **all** FTES provided by persons with an instate work location, including those provided out of state at second locations. The HWDC uses a 2,000 hour year as one FTE. Hours worked are calculated by taking the midpoint of weekly hours worked ranges and multiplying by weeks worked for each location. If either variable is missing, we use the average value to impute each variable, controlling for age range and rural location.

Regional Indicators

Full-Time Equivalency Units: The total sum of Full-time equivalency units produced within each region. The HWDC uses a 2,000 hour year as one FTE. Hours worked are calculated by taking the midpoint of weekly hours worked ranges and multiplying by weeks worked for each location. If either variable is missing, we use the average value to impute each variable, controlling for age range and rural location.

Note that this definition is slightly different than CareForce FTEs reported in our profession reports as it only includes FTEs provided in each defined region. If the region is all of Virginia, it only includes FTEs provided in Virginia. For a measure of FTEs provided by all members of Virginia's Careforce, see the Profession Reports.

Employment Instability, past year: Similar to turnover rates for businesses, employment instability is a measure of churn and underemployment in the labor market from the perspective of employees. In other words, we are examining how successful members of the workforce are at maintaining one, stable position that meets their employment needs at the time. Operationally, we define it as anyone who has experienced any of the circumstances listed in the following table at any point in the twelve months prior to taking the survey (example from Licensed Clinical Psychologists, 2013). Employment Instability, past year is equivalent to the final row "Experienced at least 1".

Employment Instability in Past Year		
In the past year did you . . .?	#	%
Experience Involuntary Unemployment?	18	1%
Experience Voluntary Unemployment?	102	4%
Work Part-time or temporary positions, but would have preferred a full-time/permanent position?	52	2%
Work two or more positions at the same time?	660	28%
Switch employers or practices?	128	6%
Experienced at least 1	**825**	**35%**

Source: Va. Healthcare Workforce