Virginia's Licensed Pharmacist Workforce: 2011

Healthcare Workforce Data Center

June 2012

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Healthcare Workforce Data Center
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Healthcare Workforce Data Center

Overview

The Virginia Department of Health Profession's Healthcare Workforce Data Center (HWDC) collects and disseminates workforce information on Virginia's licensed healthcare practitioners. The 2007 report of the Governor's Health Reform Commission recommended that the HWDC be established within the Department of Health Professions (DHP) due to its existing repository of licensure information for over 80 professions. In the spring of 2008, HWDC was launched with Workforce Investment Act grant funding and continues with support from the Department and shared grant funding from the U.S. Health Resources Services Administration on behalf of the new Virginia Health Workforce Development Authority and other partner organizations.

With significant input and collaborative effort from key stakeholders and experts, HWDC has developed initial supply and demand forecasts for physicians and nurses, published results from existing physician and nursing workforce surveys originally developed by the Board of Medicine and Board of Nursing, updated and launched revised surveys as well as developed new workforce surveys as listed in the "Current Collection" in the HWDC Survey Timetable below. Beginning in winter 2012, HWDC began development of audiology & speech language pathology surveys and long term care administrator surveys which are poised for rollout later this fiscal year.

HWDC Survey Timetable

In Current Collection:

Medical Doctors
Doctors of Osteopathy
Registered Nurses and
Licensed Practical Nurses
Certified Nurse Aides
Physician Assistants
Nurse Practitioners
Licensed Professional Counselors
Clinical Psychologists
Licensed Clinical Social Workers
Pharmacists
Pharmacy Technicians
Dentists
Dental Hygienists

Projected 2012 Rollout:

Speech-Language Pathologists
Audiologists
Long-Term Care Administrators

Proposed:

Physical Therapists
Physical Therapy Assistants
Occupational Therapists
Occupational Therapy Assistants

The 2011 Pharmacist Workforce Survey

Methodology

The Pharmacist Workforce Survey is administered to Licensed Pharmacists through the Department of Health Professions online renewal process. The Board of Pharmacy has an annual renewal cycle, with licenses expiring Dec. 31 of each year. Currently, HWDC surveys are only available to those renewing their licenses online. New Virginia licensees and those returning from a long absence did not have access to the online survey.[1] Additionally, paper renewals were available. The survey was not offered to students or new applicants. This survey was conducted during the 2011 renewal period ending December 31, 2011. The survey text is available in Appendix C.

Response Rates

Statistic	Licensed Pharmacists
Renewing Practitioners, 2011	11,229
Licensees, 2011 Renewal Cycle	11,756
Completed Surveys	10,084
Proportion of licensees who completed a survey.	86%
Response Rate, Renewing Practitioners	90%

Statistic	Non Respondents	Respondent	Response Rate
By Age			
Under 30	160	1068	87.0%
30 to 34	183	1329	87.9%
35 to 39	202	1423	87.6%
40 to 44	228	1426	86.2%
45 to 49	190	1205	86.4%
50 to 54	165	1131	87.3%
55 to 59	131	1053	88.9%
60 to 64	116	686	85.5%
65 to 69	82	418	83.6%
70 to 74	77	204	72.6%
75 to 79	40	92	69.7%
80+	45	40	47.1%
Age Unknown	53	9	14.5%
Total	**1672**	**10084**	**85.7%**
New Licenses, 2011			
License Issued in 2011	175	571	76.5%
By Metro Status (Virginia Only)			
Non-Metro	168	953	85.0%
Metro	933	6302	87.1%
Total	**1101**	**7255**	**86.8%**

The survey's population is all licensees in Virginia during the renewal cycle. From this population, we are particularly interested in those who worked or were available to work in Virginia: Virginia's Pharmacist Workforce. Our sample is a convenience sample of licensed professionals who renewed their licenses and chose to renew online. This method, along with the voluntary efforts of practitioners, results in a very high overall response rate (see above).

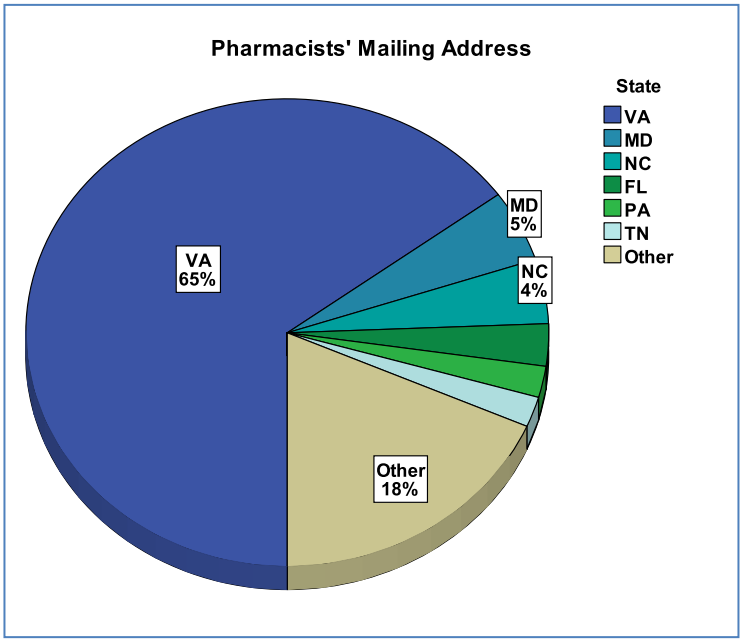
The methodology excludes pharmacists first licensed in the Commonwealth in October, November or December of the survey year, as these practitioners are not required to renew until the next renewal cycle. It excludes pharmacists who did not renew their licenses. The methodology also excludes practitioners 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).

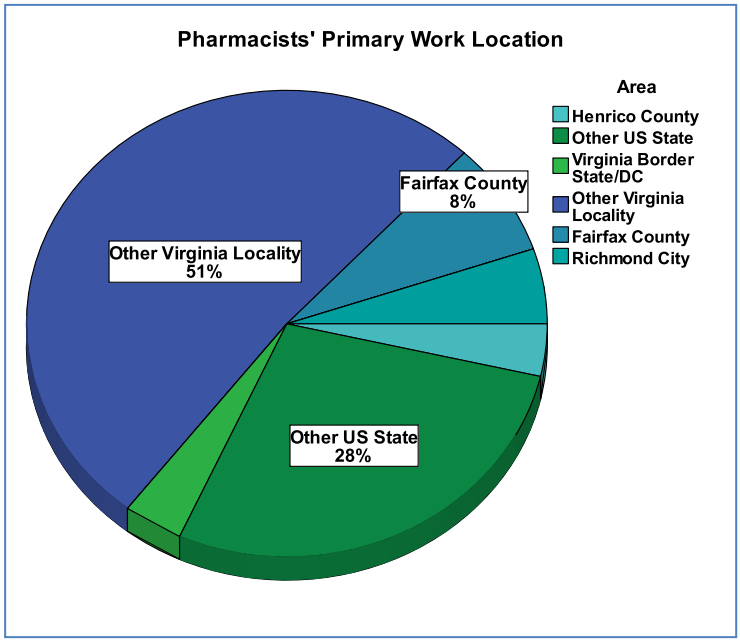
Using administrative data in our licensee files, we are able to determine response based on age and the metro status of the practitioner's mailing address with the department. Although we do find statistically significant differences in renewal rates by these variables the magnitude of the difference is small.[2] Nevertheless, we do see a steadily declining response rate past age 60. Additionally, over three-quarters of pharmacists licensed for the first time in Virginia in 2011 submitted survey responses.

Virginia's Licensed Pharmacists

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 must maintain a license, but they may do so in any state. Retired practitioners may maintain their licenses for prestige or occasional practice. Practitioners may consult or occasionally travel to Virginia to care for their patients, particularly those practicing in Virginia's border jurisdictions.

About 65 percent of Pharmacists have mailing addresses in Virginia, and 14 percent have mailing addresses in a state bordering Virginia or in Washington D.C. However, 68 percent of pharmacists who reported a primary work location reported one in Virginia, with another four percent reporting their primary work location is in a bordering jurisdiction.





Virginia's Pharmacist Workforce

Virginia's workforce consists of respondents who reported having at least one practice location and who identified at least one practice location in Virginia. 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 are not working, 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.

Statistic	Pharmacists
Indicated working, Virginia Work Location.	5,239
Indicated working, Work location not listed, Resides in Virginia.	101
Not working, Plans to return to work, Resides in Virginia.	414
Total	**5,754**

Using these criteria, 5,754 respondents are in Virginia's workforce. An additional 132 respondents not included in Virginia's pharmacist workforce report providing at least some remote services to Virginia residents.

Weighted Estimates

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 of pharmacists based on two characteristics:

1) The age of the respondent, in five year categories, and,
2) 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 here: 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 level data on these characteristics to generate response rates and weights. For information on weights, see Appendix A. 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 totals in tables).

Using these weighted estimates, the HWDC estimates there are 6,605 pharmacists in Virginia's pharmacist workforce. The remainder of this document presents weighted estimates of Virginia's pharmacist workforce.

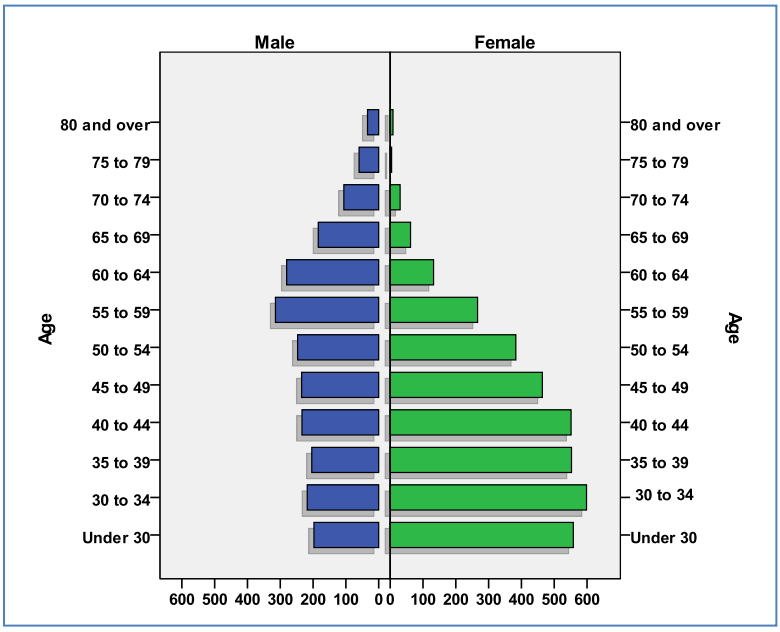
Virginia's Pharmacist Workforce

Demographics

Age & Gender

The median age of Virginia's pharmacist workforce, as of December 31, 2011, was 43. For both the nation as a whole and the Commonwealth of Virginia, the median age of the civilian labor force was 42 years of age in 2010.[3] Almost 30 percent were age 35 or younger, and 42 percent were under age 40. However, a third were over age 50. The survey excludes some new applicants and students, so the pharmacist workforce was likely somewhat younger than the survey results indicate.

Just over 60 percent of Virginia's pharmacists were female, compared to about 51 percent of Virginia's population. Additionally, men appear to be making up a declining share of the pharmacist workforce. Among pharmacists under age 40, only 27 percent were male.



Diversity[4]

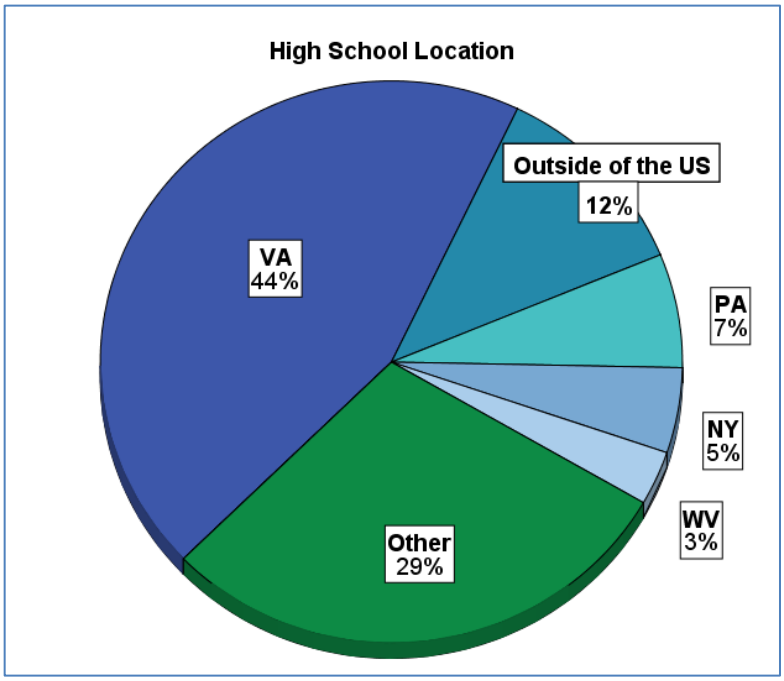
Non-Hispanic whites accounted for almost three quarters of Virginia's pharmacists, compared to 65 percent of Virginia's population, while Asians accounted for thirteen percent of Virginia's pharmacists and six percent of the population. Non-Hispanic blacks and Hispanics are underrepresented compared to Virginia's population. Underrepresented groups are not making significant gains in younger cohorts. Among pharmacists under age 40, Hispanics, non-Hispanic blacks and persons identifying two or more races made some gains in representation. However the largest gains in representation were made by Asians.

Race/ Ethnicity	2010 Virginia Population		Virginia Pharmacists		Virginia Pharmacists under 40	
	Weighted Estimate	%	Weighted Estimate	%	Weighted Estimate	%
Hispanic of any race	631,825	8%	71	1%	39	2%
White, non-Hispanic	5,186,450	65%	4262	74%	1393	63%
Black, non-Hispanic	1,523,704	19%	527	9%	249	11%
American Indian or Alaskan Native	20,679	0%	9	0%	2	0%
Asian	436,298	6%	762	13%	479	22%
Native Hawaiian or Pacific Islander	5,061	0%	16	0%	8	0%
Other Race	15,338	0%	23	0%	9	0%
Two or more races	181,669	2%	77	1%	42	2%

Percentages many not add to 100% due to rounding. 371 persons selected "prefer not to respond", including 146 persons under age 40.

High School Location

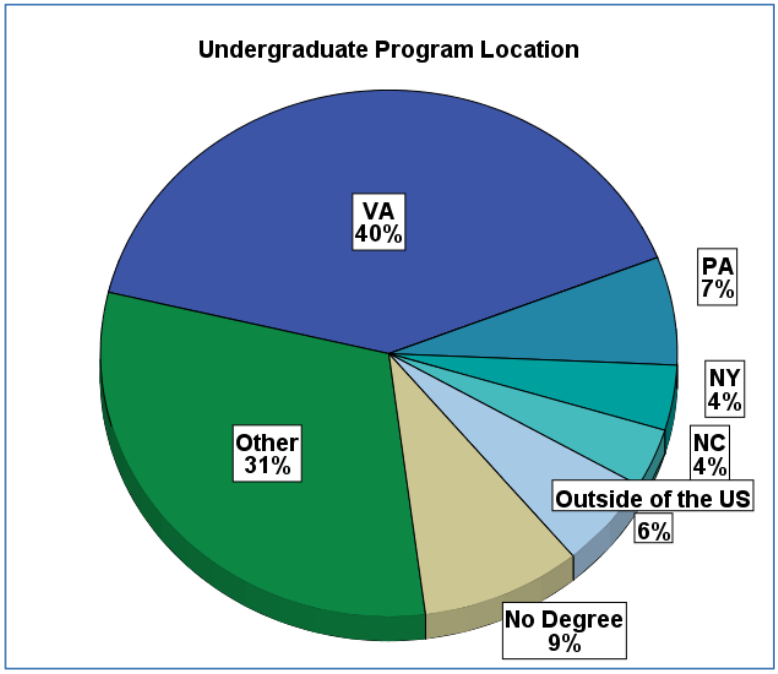
High school location provides an indication of where Virginia's pharmacists were raised. Forty-four percent of Virginia's pharmacists are native Virginians according to this measure. Twelve percent completed secondary school outside of the United States. Outside of Virginia, Pennsylvania, New York and West Virginia are the largest suppliers of Virginia pharmacists, accounting for seven, five and three percent respectively. Fewer than three percent of Virginia's Pharmacists were born in each other US state or territory.



Post-Secondary Degree Location

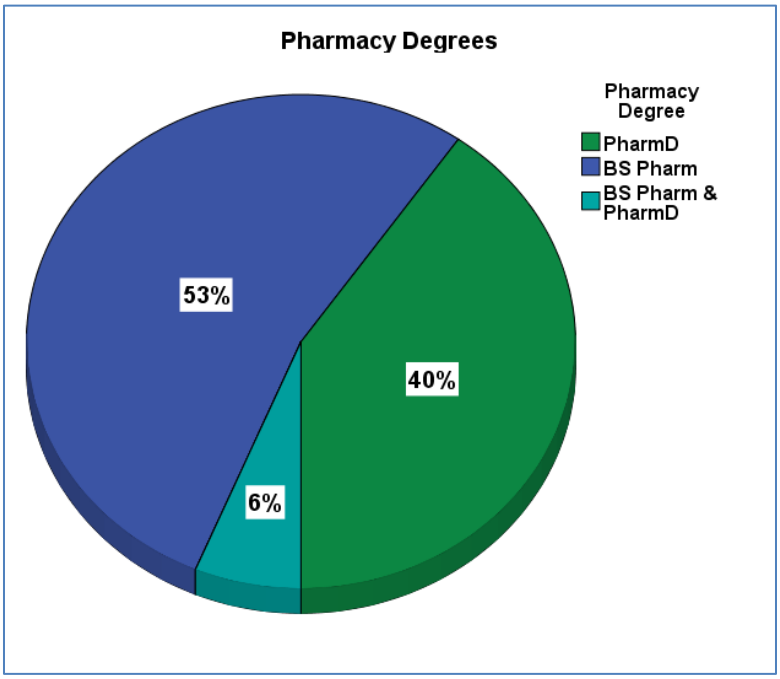
Only 40 percent of Virginia's pharmacists completed their undergraduate degree in Virginia. Nine percent report not completing an undergraduate degree. These pharmacists likely entered the profession before baccalaureate degrees were required.

Forty-six percent of Virginia's pharmacists completed their initial pharmacy degree in Virginia. Pennsylvania, New York and North Carolina are prominent source of both undergraduate and initial pharmacy degrees (these categories are the same for pharmacists with only a baccalaureate in Pharmacy). Only five percent of Virginia's pharmacists report completing their initial pharmacy degree outside of the United States.



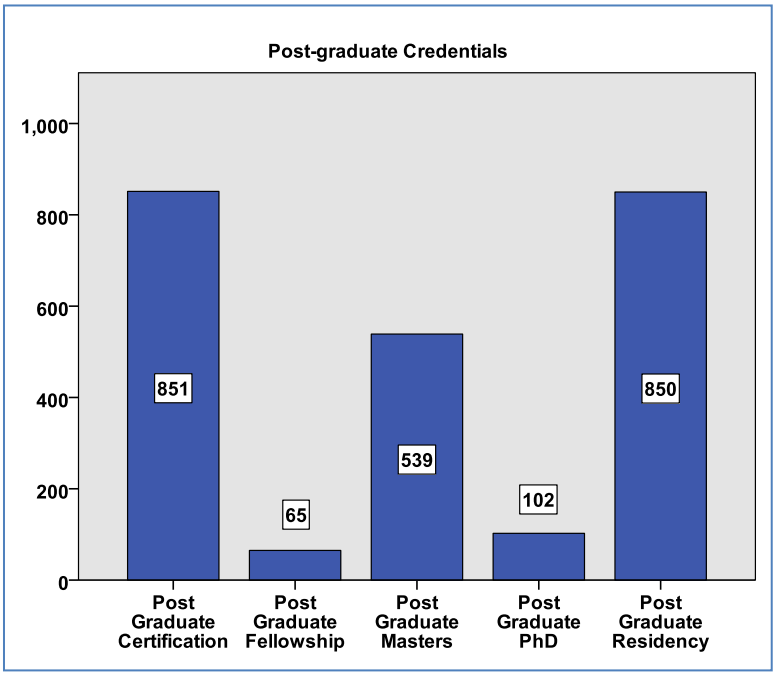
Pharmacy Education

Forty-six percent of pharmacists had obtained a PharmD, including six percent who also obtained a baccalaureate in pharmacy. The remaining 53 percent obtained a baccalaureate in Pharmacy.



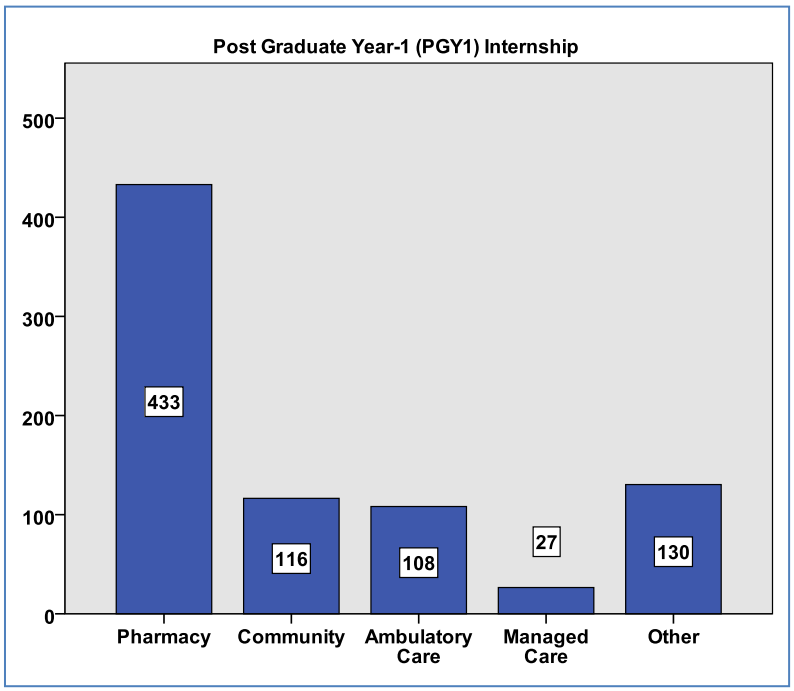
Post-graduate Credentials

In addition to their pharmacy degrees, 2,006 pharmacists obtained post-graduate credentials. This includes 851 who obtained post-graduate certifications, 850 who completed post-graduate residencies and 539 with post-graduate masters. 283 Virginia pharmacists have two or more post-graduate credentials.



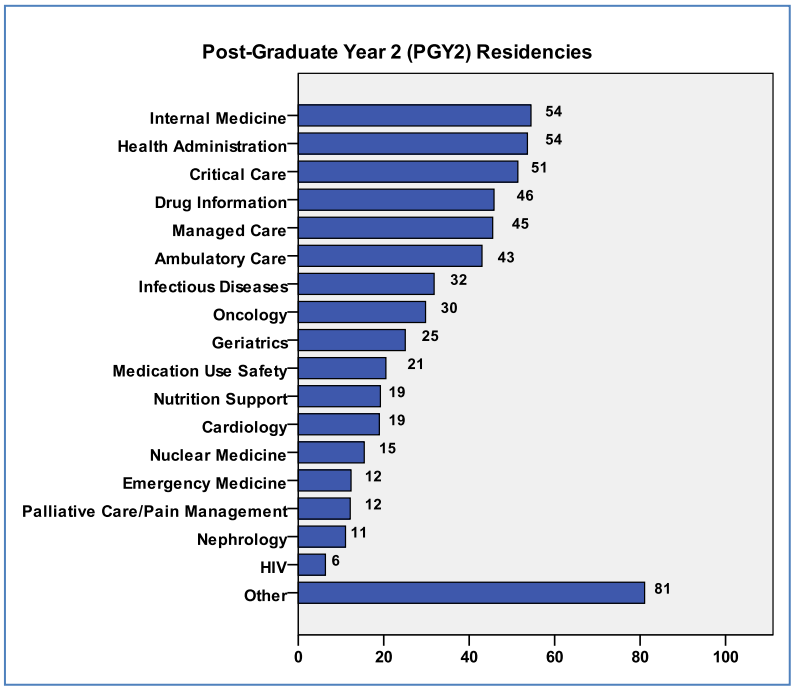
Post-Graduate Residency, Year 1

Of the 850 pharmacists who completed a post-graduate residency, we have enough information to estimate the residency type for 814 of them. Over half of these reported a Health-Systems/Pharmacy internship. A large proportion (16 percent) indicated "other" residency. Many of these filled in hospital, general or general pharmacy residencies. Future surveys will clarify the response set for this question.



Post-Graduate Residency, Year 2

Virginia's pharmacist workforce includes 366 pharmacists who completed a post-graduate year 2 (PGY2) residency. Internal medicine, health administration and critical care were the most cited specialties, with over 50 each. Notably, 25 pharmacists completed residencies in geriatrics. The total includes 81 pharmacists with an unlisted residency. Open-ended descriptions varied. These included law, pediatrics, pharmaceutical research and development and veterinary pharmacy.



Board Certifications

Of those who attained post-graduate certifications, 350 have current Board Certifications, including 16 who have attained two or more. The Board of Pharmacy Specialties (BPS) provided 323 of these certifications, including 244 with BPS certification in pharmacotherapy. Notably, 46 have certifications from the Commission for Certification in Geriatric Pharmacy (CCGP). Only two Virginia pharmacists have a certification from the American Board of Applied Toxicology.

Certification	Weighted Estimate
ABAT-Applied Toxicology Certification	2
BPS-Pharmacotherapy Certification	244
BPS-Ambulatory Care Certification	6
BPS- Nuclear Pharmacy Certification	10
BPS-Nutrition Certification	18
BPS-Oncology Certification	25
BPS-Psychiatric Certification	20
CCGP-Geriatrics Certification	46
Total	371

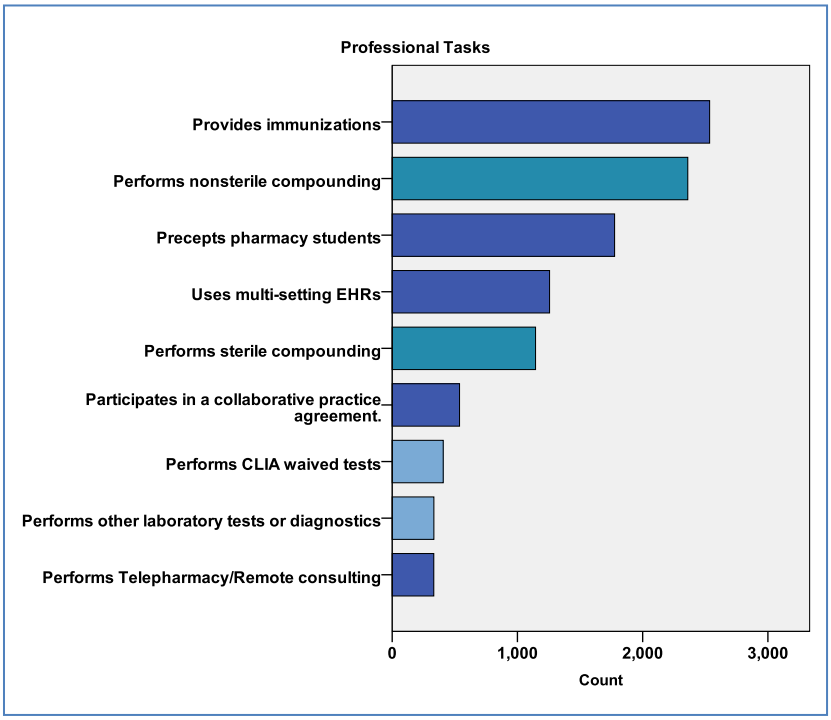
Other Certifications

A total of 2,067 Virginia pharmacists have also obtained certifications in other areas, including 165 with two or more non-board certifications. Certificates in immunization made up the bulk of these certifications. Notably, 127 pharmacists have certifications as diabetic educators and in geriatric pharmacy.

Certification	Weighted Estimate
Anticoagulation	121
Applied Toxicology	3
Diabetic Educator	127
Geriatric	44
Immunization	1,857
Nuclear Medicine	30
Nutrition	15
Oncology	13
Pharmacotherapy	22
Psychiatric	13
Total	2,245

Professional Tasks

Pharmacists performed a variety of advanced professional tasks. About a third (2,535) performed immunizations. A similar proportion performed nonsterile compounding. Almost 27 percent precepted pharmacy students. Nineteen percent used multi-setting Electronic Health Records at one or more of their work locations and eight percent (538) participated in collaborative practice agreements. Fewer than 500 performed CLIA-waived tests (407), other laboratory tests (333) or performed telepharmacy (332).



Employment characteristics

Number of Work Locations

Locations	Weighted Estimate	%
0	538	8.1%
1	5,436	82.3%
1 Location	*5,147*	*77.9%*
Switched Locations	*289*	*4.4%*
2	415	6.3%
3 +	216	3.3%
Average*	1.14	

***Those with at least one location, and including switched locations as one location. Does not account for those with more than three locations.**

Survey respondents provided detailed information on up to two work locations the respondent had worked at over the 12 months prior to the survey, and estimates of weekly hours worked at any additional work locations. Respondents also indicated the number of weeks they worked at the first two locations. Using this data, we were able to estimate the number of locations each pharmacist worked, and separate out those who appear to have switched jobs or locations over the course of the year. This provides an indication of the number of locations worked by each pharmacist concurrently. More specific information about turnover appears later in this report.

Over 80 percent of pharmacists maintained one work location, including the 289, or 4.4 percent, of Virginia's pharmacists we estimate switched locations during the year. Less than ten percent worked at two or more locations concurrently. About eight percent did not have a work location, indicating they did not work in 2011.

Distribution of Work Locations

The HWDC uses the eight regions defined by the Council of Virginia's Future to give a general idea of how Virginia's Pharmacist workforce is distributed across the state (for information on COVF regions see the *Virginia Performs* website: http://vaperforms.virginia.gov/extras/regions.php). To get a better sense of the geographic distribution of pharmacists, see the Map section on page 23.

Almost all pharmacists (99%) with a work location had their primary work location in Virginia. The rest had a secondary location in Virginia. Most work locations were in Virginia's major metropolitan regions: Northern Virginia, Hampton Roads and Central Virginia (which includes both the Richmond and Charlottesville metro areas). A total of 154 pharmacists in Virginia's Workforce had at least one work location in another state or outside of the United States in addition to having a work location in Virginia. Less than a third (47) of these were located in a state bordering Virginia or the District of Columbia.

COVF Region	Primary Work Location		Secondary Work Location	
	Weighted Estimate	Percent	Weighted Estimate	Percent
Central	1459	24.4%	123	16.0%
Eastern	112	1.9%	21	2.7%
Hampton Roads	1078	18.0%	116	15.0%
Northern	1536	25.7%	183	23.7%
Southside	217	3.6%	29	3.8%
South-west	347	5.8%	65	8.4%
Valley	380	6.4%	54	7.0%
West Central	698	11.7%	80	10.4%
Several Localities	76	1.3%	31	4.0%
Virginia	5903	98.8%	702	91.0%
Border State/DC	26	0.4%	21	2.7%
Other US State	57	0.9%	48	6.3%
Outside of the US	2	0.0%	0	0.0%
Total	5988	100.0%	771	100.0%

Percentages may not add to 100% due to rounding

Compensation

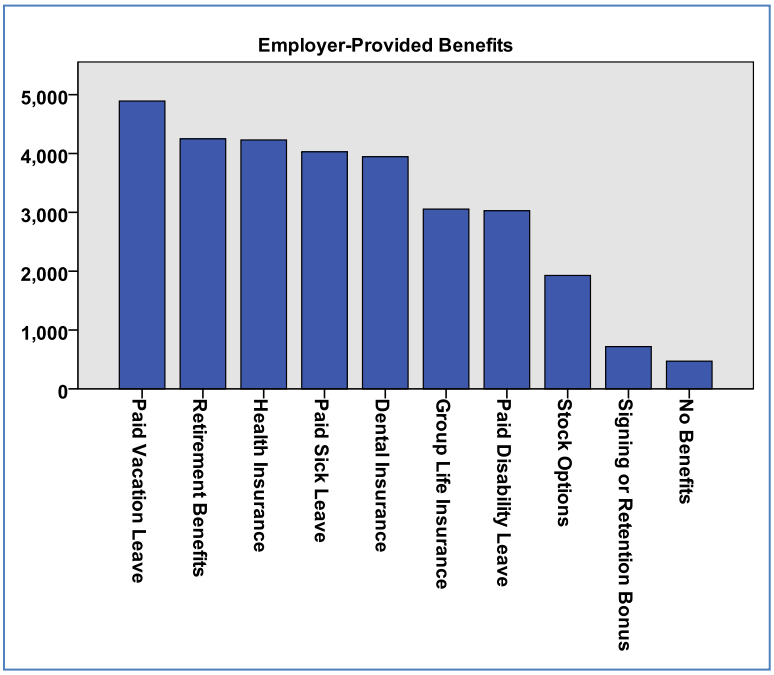
Hourly Compensation	Weighted Estimate	Percent
Volunteer work only	35	0.7%
$12/hr or less	13	0.2%
$12.01-$24.00/hr	55	1.1%
$24.01-$36.00/hr	47	0.9%
$36.01-$48.00/hr	292	5.6%
$48.01-$60.00hr	3136	60.0%
$60.01-$72.00/hr	1402	26.8%
$72.01-$84.00/hr	105	2.0%
$84.01-$96.00/hr	33	0.6%
$96.01-$108.00/hr	31	0.6%
$108.01-$120.00/hr	30	0.6%
$120.01-$132.00/hr	23	0.4%
$132.01-$144.00/hr	7	0.1%
>$144.00/hr	19	0.4%
Total	5228	100.0%
Missing	1377	

Over 86 percent of pharmacists earned, on average, between $48.01 per hour and $72.00 per hour, including 60 percent who earned between $48.01 and $60.00 per hour. An estimated 35 pharmacists provided volunteer services only. Very few pharmacists earned incomes outside of this range. Due to the clustering of responses in only two response categories, further parsing or statistical tests on the data are inappropriate. Future pharmacist surveys will use a more refined response set.

Benefits

Almost 85 percent of Virginia's pharmacists received at least some employer provided benefits. Almost 75 percent received paid vacation while only 61 percent received paid sick leave. Almost two-thirds received health insurance and 60 percent received dental insurance. Almost two-thirds received retirement benefits. A little over seven percent received no benefits from their employer and eight percent did not work in 2012.

Note that this question referred to benefits received by any current employer at the time the survey was completed (December 2011).

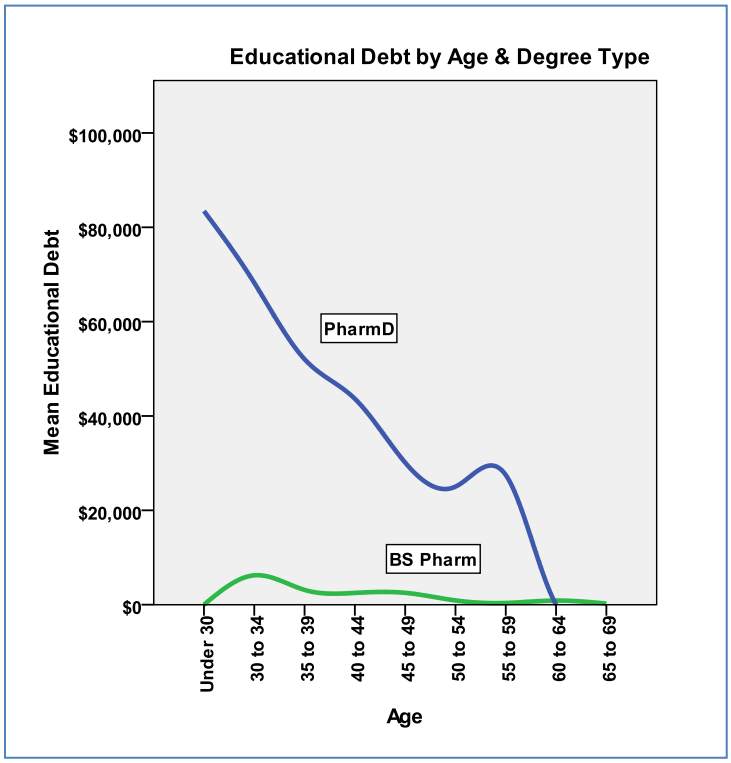


Educational Debt

Virginia's pharmacists owed an average of about $28,000 in educational debt. The amount of debt varied widely by degree type, with those holding a Doctor of Pharmacy degree owing substantially more in educational debt.

Since the Doctor of Pharmacy became the minimum standard in 2006, we are likely to see the debt load of Virginia's pharmacist's increase. Among pharmacists age 30 to 39, more of those with Doctor of Pharmacy carried educational debt. Additionally, they carried far higher amounts of debt (see table below). This is likely the result of higher educational costs combined with lost income while pursuing additional years of schooling.

Almost seventeen percent of pharmacists aged 30 to 39 with a Doctor of Pharmacy degree owed over $120,000 in educational debt, compared to less than one percent in the same age range holding a Bachelor in Pharmacy only. Almost 90 percent of pharmacists age 30 to 39 with a Bachelor in Pharmacy degree have no educational debt, compared to less than a quarter with a Doctor of Pharmacy having no debt.



Note: Means assume uniform distribution within response categories in $10,000 increments. See table for category list.

	BS Pharm		PharmD	
	Weighted Estimate	%	Weighted Estimate	%
None	257	87.0%	265	23.1%
$10,000 or less	15	5.0%	36	3.1%
$10,001-$20,000	*	*	29	2.6%
$20,001-$30,000	6	1.9%	47	4.1%
$30,001-$40,000	6	1.9%	55	4.8%
$40,001-$50,000	*	*	51	4.4%
$50,001-$60,000	*	*	53	4.6%
$60,001-$70,000	*	*	56	4.9%
$70,001-$80,000	*	*	73	6.4%
$80,001-$90,000	*	*	69	6.0%
$90,001-$100,000	*	*	79	6.9%
$100,001-$110,000	*	*	75	6.6%
$110,001-$120,000	*	*	66	5.8%
$120,000 or more	*	*	190	16.6%

***Less than 4 per cell. Total for all cells is 11.**

Turnover

Action	Weighted Estimate	Rate
Began working for a new employer or practice.	364	5.5%
Ceased working for an employer or practice.	161	2.4%
Ceased working for an employer or practice and began working for a new one.	240	3.6%
Total	**765**	**11.6%**

Numbers may not add due to rounding.

Almost 12 percent of Virginia's pharmacists had some change in employment in the 12 months prior to completing the survey. This includes persons who may have taken on or left a second or third job during the course of the year.

Establishment Type

Almost a third of pharmacists worked primarily in large chain community pharmacies, while 10 percent worked in independent pharmacies consisting of one to four stores. Few pharmacists worked in mid-sized chains ranging from five to ten stores. Another 12 percent worked primarily in super market or mass merchandiser based pharmacies. Twenty-seven percent worked primarily in hospitals or health systems, mainly (20.4% of pharmacists) in non-governmental hospitals in inpatient settings.

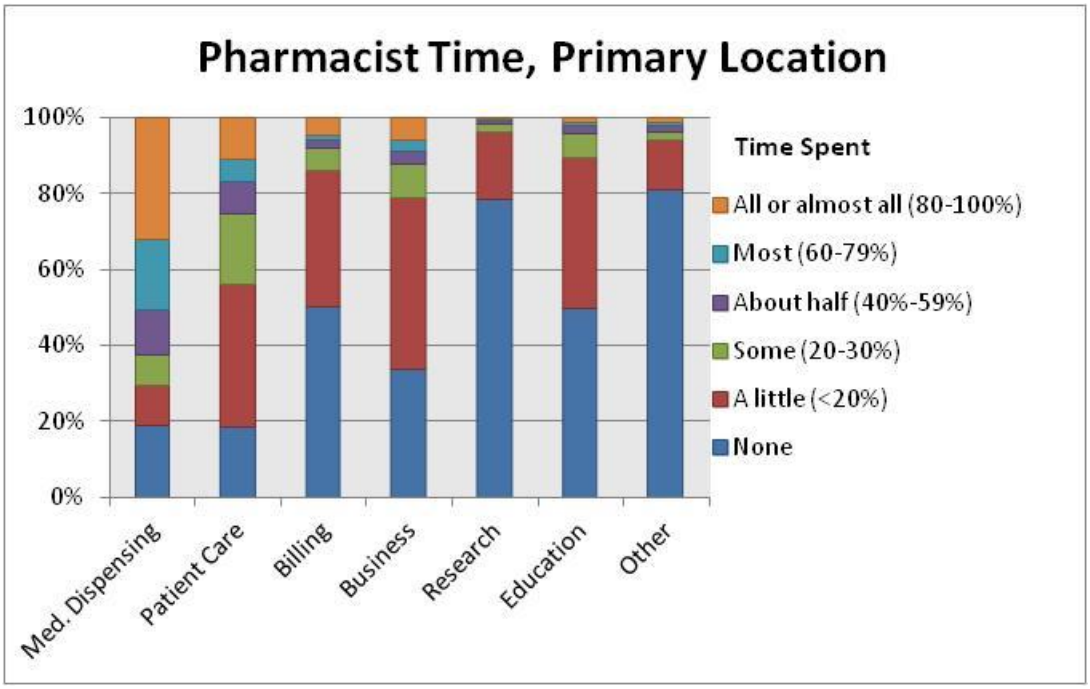
Secondary work locations exhibited a similar pattern. However a slightly smaller proportion of pharmacists who had a second workplace worked in large chains, or in supermarket or mass merchandise based pharmacies. Independent pharmacies, non-profits and clinics make proportional gains in the secondary work location category, as do long-term care facilities, academic institutions and for-profit corporations.

Establishment Type	Primary Work Location		Secondary Work Location	
	Weighted Estimate	%	Weighted Estimate	%
Large Chain Community Pharmacy (11+ stores)	1818	30.9%	188	25.5%
Non-government Hospital / Health System, Inpatient	1199	20.4%	111	15.1%
Independent Community Pharmacy (1-4 stores)	564	9.6%	109	14.8%
Supermarket Pharmacy	496	8.4%	35	4.8%
Mass Merchandiser (i.e. Big Box Store)	288	4.9%	30	4.1%
Nursing Home, Long Term Care	221	3.8%	39	5.3%
Government Hospital / Health System, Inpatient	188	3.2%	16	2.2%
Other Non-profit Corporation / Organization	176	3.0%	58	7.9%
Other For-profit Corporation / Organization	167	2.8%	30	4.1%
Government Hospital / Health System, Outpatient	160	2.7%	11	1.5%
Academic Institution	138	2.3%	33	4.5%
Clinic-Based Pharmacy	104	1.8%	34	4.6%
Home Health / Infusion	101	1.7%	9	1.2%
Non-government Hospital / Health System, Outpatient	96	1.6%	15	2.0%
Pharmacy Benefit Administration (e.g. PBM, managed care)	93	1.6%	8	1.1%
Mail Service Pharmacy	48	0.8%	7	1.0%
Small Chain Community Pharmacy (5-10 stores)	23	0.4%	5	0.7%
Total	**5881**	**100.0%**	**736**	**100.0%**
Missing	181		92	
Total With Location	6062		828	
Ineligible (Do not have location)	543		5776	
Total	6605		6605	

Work Roles

The survey asked respondents to report the percentage of time spent working in each of six roles at their primary work location, as well as an "other" category. Proper analysis of these questions requires valid combined responses for all of the roles. We obtained valid responses for 4,945 of Virginia's pharmacists (weighted), excluding those without a primary work location.

About 50 percent of Virginia's pharmacists spent most or almost all, or all of their time on medication dispensing, including 30 percent who spent all or almost all of their time. Only 50 percent of Virginia's pharmacists spent any time educating pharmacists. Of those that did, over three quarters spent less than 20 percent of their time on education, while only 4 percent spent 80 percent or more of their time. Even fewer pharmacists (22%) spent any time on research, and three quarters of these spent less than 20 percent of their time on research. Only 21 percent of Virginia's pharmacists spent more than 20 percent of their time on non-billing business & administration, and a third spent no time on non-billing business and administration. However, 44 percent spent more than 20 percent of their time on billing, including 11 percent who spent all or almost all of their time on billing.



Work Hours

The pharmacist workforce survey asked respondents to estimate the average weekly hours provided at any primary and secondary work location and the number of weeks worked at each location in the past twelve months. As with all surveys, and particularly online surveys, our responses suffered from some item-missing data. To get a more complete look at the pharmacist labor supply, we imputed missing data on these variables. Although these changes had little effect on aggregate descriptive statistics, they may have a larger effect on estimates when examining small groups (e.g. estimates for rural counties.) Details of our methodology appear in Appendix B.

The tables on this page show the results of the imputation. Respondents were asked to provide average hours for the weeks worked at each location. Note, respondents reported individual work locations rather than employers. About 19 percent of those who had a second work location worked at that location for 48 or more weeks, and indication of those who worked the entire year at two locations. About two thirds worked at a secondary location for less than half the year. By contrast, over two-thirds of those with a work location worked 48 weeks or more at their primary work location. Only 15 percent worked less than 26 weeks at a primary location. Over 80 percent of persons worked 30 or more hours per week at their primary work locations, including almost two-thirds who worked 40 hours or more. Over 70 percent worked fewer than 20 hours at a secondary work location.

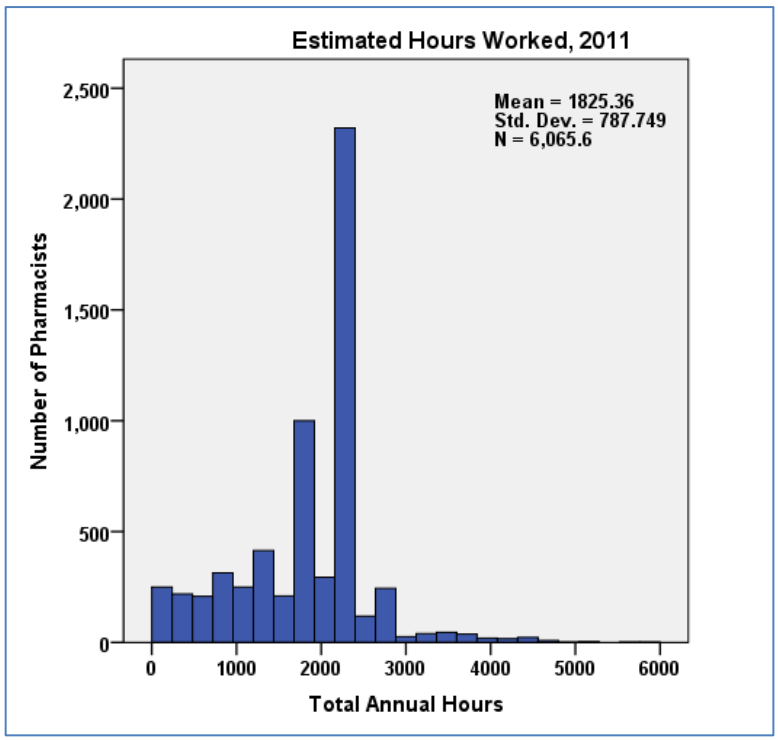
Ave. Hours per Week Worked	Primary Location		Secondary Location	
	Frequency	%	Frequency	%
1 to 9 hours	229	3.8%	328	39.7%
10 to 19 hours	268	4.4%	263	31.8%
20 to 29 hours	488	8.1%	74	9.0%
30 to 39 hours	1276	21.0%	52	6.3%
40 to 49 hours	3271	54.0%	88	10.7%
50 to 59 hours	305	5.0%	10	1.2%
60 to 69 hours	81	1.3%	7	0.8%
70 to 79 hours	91	1.5%	1	0.1%
80 or more hours	53	0.9%	3	0.4%
Total	6062		826	
Ineligible	543		5776	

Weeks Worked	Primary Location		Secondary Location	
	Weighted Estimate	%	Weighted Estimate	%
10 weeks or less	211	3.5%	308	37.3%
11 to 20 weeks	393	6.5%	166	20.1%
21 weeks	15	0.2%	5	0.6%
22 weeks	30	0.5%	14	1.7%
23 weeks	18	0.3%	5	0.6%
24 weeks	93	1.5%	19	2.3%
25 weeks	46	0.8%	15	1.8%
26 weeks	134	2.2%	37	4.5%
27 weeks	15	0.2%	5	0.6%
28 weeks	53	0.9%	8	1.0%
29 weeks	10	0.2%	3	0.4%
30 weeks	62	1.0%	21	2.5%
31 weeks	4	0.1%	0	0.0%
32 weeks	55	0.9%	4	0.5%
33 weeks	12	0.2%	3	0.4%
34 weeks	9	0.1%	4	0.5%
35 weeks	14	0.2%	3	0.4%
36 weeks	58	1.0%	7	0.8%
37 weeks	13	0.2%	0	0.0%
38 weeks	27	0.4%	0	0.0%
39 weeks	12	0.2%	0	0.0%
40 weeks	153	2.5%	15	1.8%
41 weeks	12	0.2%	1	0.1%
42 weeks	40	0.7%	3	0.4%
43 weeks	18	0.3%	0	0.0%
44 weeks	90	1.5%	6	0.7%
45 weeks	78	1.3%	5	0.6%
46 weeks	140	2.3%	6	0.7%
47 weeks	120	2.0%	7	0.8%
48 weeks	607	10.0%	14	1.7%
49 weeks	461	7.6%	10	1.2%
50 weeks	970	16.0%	50	6.1%
51 weeks	128	2.1%	6	0.7%
52 weeks	1962	32.4%	75	9.1%
Total	6063	100.0%	825	100.0%
Ineligible	543		5776	

Total Hours

According to our estimates, a total 6066 Virginia pharmacists worked an average of 1,825 hours in 2011 providing over 11 million man-hours of labor. An additional 539 Virginia pharmacists did not work in 2011. The average of 1,825 hours is equivalent to about 46 weeks at 40 hours per week, or 50 weeks at 36.5 hours per week. The median is 2,070 hours, just short of 40 hours a week over all 52 weeks.

The distribution is skewed towards lower hours, with a quarter of workers working 1,300 or fewer hours in 2011, the equivalent of 32.5 weeks at 40 hours per week or 26 hours a week over 50 weeks. Only 1.5% worked twice the average (3,650 hours) or more. That equates to 70 hours per week with no weeks off.



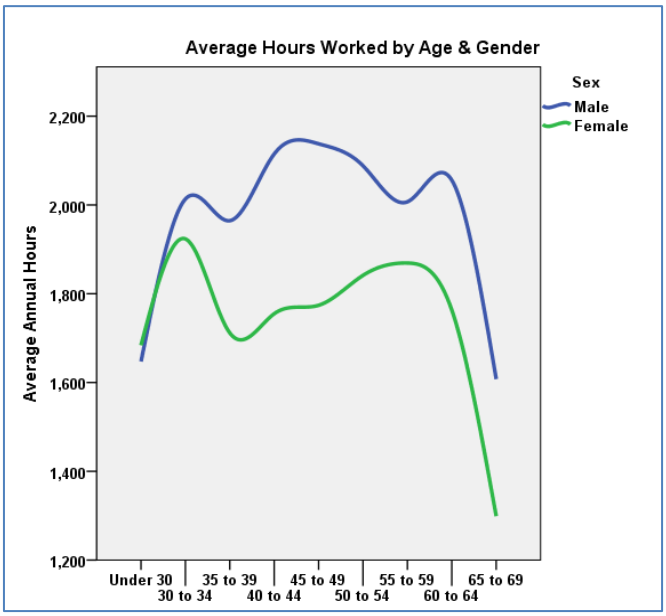
Work Hours and Age

Annual hours worked varied by age, although the affect seems to be small.[5] The number of annual hours worked peaked from age 50 to 64, although persons age 30 to 34 also worked a high number of hours. For most age groups the mean is lower than the median, in these cases indicating a significant number of persons working a low number of hours in the year. For pharmacists age 70 and over, a small number of pharmacists working a large number of hours pulled up the average.

Age	Total Annual Hours	
	Mean	Median
Under 30	1,695	1,820
30 to 34	1,941	2,205
35 to 39	1,774	1,820
40 to 44	1,852	2,070
45 to 49	1,881	2,070
50 to 54	1,947	2,160
55 to 59	1,933	2,160
60 to 64	1,953	2,160
65 to 69	1,541	1,715
70 to 74	1,056	840
75 to 79	862	750
80 and over	1,211	780

Work Hours and Gender

Due to the changing demographics of many health professions, the HWDC examines work participation by gender. Except for those under age 30, male pharmacists appear to work more hours than female pharmacists. However, statistical tests failed to confirm this difference. Age appears to have a stronger effect on total hours than gender.



Full Time Equivalency Units (FTEs)

Researchers and human resources professionals often refer to Full Time Equivalency units (or FTEs) when discussing labor market participation. Conceptually, an FTE represents one full time worker or one full time position. One FTE may be provided by two part-time workers or one full time worker. Alternatively, one worker with one full time job and one part time job may provide 1.5 FTEs. FTEs provide an easy way to compare labor or job supply while accounting for differing levels of work from individuals.

Age	Total FTEs	
	Mean	Sum
Under 30	0.85	689.26
30 to 34	0.97	854.09
35 to 39	0.89	693.8
40 to 44	0.93	738.91
45 to 49	0.94	676.55
50 to 54	0.97	632.11
55 to 59	0.97	585.86
60 to 64	0.98	398.96
65 to 69	0.77	164.96
70 to 74	0.53	55.59
75 to 79	0.43	21.46
80 and over	0.61	20.61
Total	**0.91**	**5532.17**

FTEs are defined using a variety of methods. Human resources professionals (and employees) often think in terms of positions or jobs, with one full time position equivalent to one FTE and one part time position equivalent to 0.5 FTEs. Economists (and payroll professionals), however, often need more precise measures of hours worked. Researchers often use, simply, hours worked (as we did in the previous section). Using FTEs, however, provides a human scale for examining data and provides for easy benchmarking across data sources.

When using FTEs, readers are cautioned to look closely at how FTEs are defined. Does FTE refer to positions, or is it derived from hours worked (or some other measure of services provided, such as surgeries performed)? How many hours equates to one FTE? Unless defined equivalently, direct comparisons of FTEs require caution. In many cases, direct comparisons are not appropriate. The HWDC defines one FTE as 2,000 hours worked per year. That equates to someone working 40-hours per week for 50 weeks (2-weeks off).[6] Other common methods, such as a full 52 week schedule, or a 35-hour work week can be calculated using the HWDC's raw figures.

FTEs by age, along with the FTE per individual in the age group, are reported in the table above. The distribution (proportion by age group) is equivalent to the distribution by hour. All told, the 6,066 Virginia pharmacists who worked in 2011 provided approximately 5,536 FTEs at their primary and secondary locations, or about 0.91 FTEs per pharmacist. FTEs are reported alongside hours in the charts and maps on the following pages.

Work Hours and Type of Establishment

About 30 percent of all work hours provided by pharmacists were provided at large chain community pharmacies. Another 21 percent were provided at non-governmental inpatient hospitals or health systems. Combined, about 13 percent were provided at pharmacies located in supermarkets or mass merchandisers. Only 9.1 percent were provided at independent pharmacies. Less than 4 percent of all hours were provided at all other establishment types.

Establishment Type	Primary Location		Secondary Locations		Combined Locations		
	Average Hours	Total Hours	Average Hours	Total Hours	Total	FTEs	Percent of all Hours (Valid)
Large Chain Community Pharmacy (11+ stores)	1,720	3,125,747	475	89,419	3,215,166	1607.6	30.0%
Non-government Hospital / Health System, Inpatient	1,858	2,227,398	456	49,804	2,277,202	1138.6	21.2%
Independent Community Pharmacy (1-4 stores)	1,666	940,484	306	32,769	973,253	486.6	9.1%
Supermarket Pharmacy	1,792	888,409	333	11,512	899,921	450.0	8.4%
Mass Merchandiser (i.e. Big Box Store)	1,812	522,601	247	7,363	529,965	265.0	4.9%
Nursing Home, Long Term Care	1,639	362,945	458	17,809	380,753	190.4	3.5%
Government Hospital / Health System, Inpatient	1,960	368,045	741	11,886	379,931	190.0	3.5%
Other For-profit Corporation / Organization	1,832	306,630	336	9,978	316,608	158.3	3.0%
Government Hospital / Health System, Outpatient	1,898	303,175	203	2,320	305,495	152.7	2.8%
Other Non-profit Corporation / Organization	1,607	283,529	262	15,166	298,695	149.3	2.8%
Academic Institution	1,913	264,204	476	15,656	279,860	139.9	2.6%
Pharmacy Benefit Administration (e.g. PBM, managed care)	2,051	190,691	787	6,423	197,114	98.6	1.8%
Home Health / Infusion	1,831	185,397	397	3,630	189,026	94.5	1.8%
Clinic-Based Pharmacy	1,645	171,639	296	10,132	181,771	90.9	1.7%
Non-government Hospital / Health System, Outpatient	1,723	164,895	528	7,761	172,657	86.3	1.6%
Mail Service Pharmacy	1,826	87,286	440	3,058	90,344	45.2	0.8%
Small Chain Community Pharmacy (5-10 stores)	1,644	37,691	786	3,564	41,254	20.6	0.4%
Total Valid		**10,430,768**		**298,249**	**10,729,017**	**5364.5**	**100.0%**
Establishment Type Missing	1,660	300,890	466	42,037	342,928	171.5	
Total	1,770	10,731,658	413	340,286	11,071,945	5536.0	

Work Hours by Location

As noted earlier, the HWDC uses the eight regions defined by the Council of Virginia's Future to give a general idea of how Virginia's Pharmacist workforce is distributed across the state (for information on COVF regions see the *Virginia Performs* website: http://vaperforms.virginia.gov/extras/regions.php). For more detailed information of the geographic distribution of pharmacists, see the Map section on page 24.

Not surprisingly, the distribution of work hours tends to follow the distribution of work locations. Over half of pharmacist work hours were provided to the Central and Northern Virginia regions combined. An additional 19 percent were provided in the Hampton Roads region. The remaining 30 percent were divided among the remaining five regions, with Eastern Virginia receiving the lowest share. Only 1.6 percent of pharmacist work hours are provided in Eastern Virginia. Pharmacists in Virginia's workforce provide almost all of their services in Virginia, with only 1.9 percent of work hours occurring in other states.

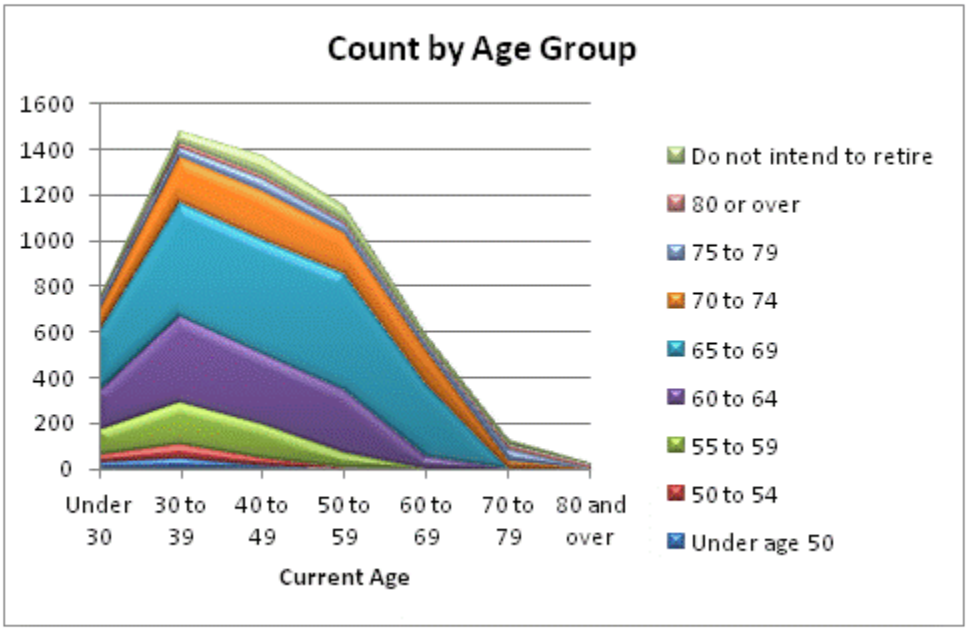
Locality	Primary Location	Secondary Location	Combined Locations	FTEs by Location	% of Valid Total	% of Virginia Total
In Virginia						
Central	2,681,583	47,611	2,729,193	1,364.6	25.0%	25.5%
Eastern	165,832	5,813	171,645	85.8	1.6%	1.6%
Hampton Roads	1,969,500	38,200	2,007,700	1,003.8	18.4%	18.8%
Northern	2,592,334	69,014	2,661,348	1,330.7	24.4%	24.9%
Southside	394,033	9,897	403,929	202.0	3.7%	3.8%
Southwest	627,206	24,207	651,413	325.7	6.0%	6.1%
Valley	677,026	14,261	691,287	345.6	6.3%	6.5%
West Central	1,238,423	21,321	1,259,743	629.9	11.6%	11.8%
Several Localities	109,225	13,402	122,627	61.3	1.1%	1.1%
Virginia Total	**10,455,160**	**243,725**	**10,698,886**	**5,349.4**	**98.1%**	**100.0%**
Outside of Virginia						
Virginia Border State/DC	43,389	13,836	57,225	28.6	0.5%	
Other US State	113,456	32,139	145,596	72.8	1.3%	
Outside of the US	2,648	.	2,648	1.3	0.0%	
Total outside Virginia	**159,493**	**45,975**	**205,469**	**102.7**	1.9%	
Totals & Missing						
Total Valid	**10,614,653**	**289,700**	**10,904,355**	**5452.2**	**100.0%**	
Location Unknown	117,004	50,586	167,590	83.8		
Total, Virginia Phamacist Workforce	10,731,658	340,286	11,071,945	5536.0		

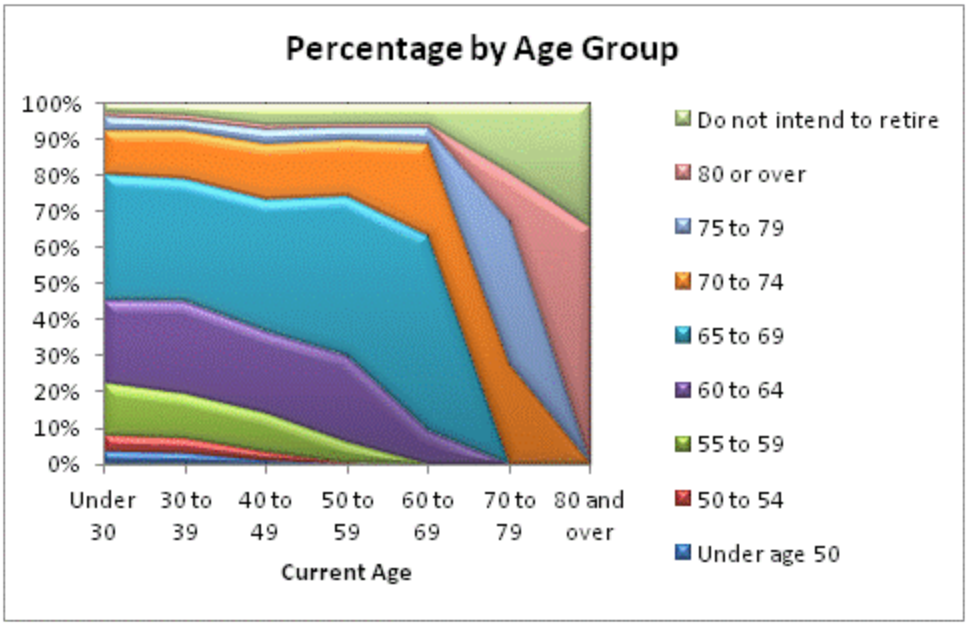
Future Plans

Expected Retirement Age

Almost 60 percent of pharmacists expected to retire between the ages of 60 to 69, including almost 40 percent who expected to retire between ages 65 and 69. The proportions remain relatively stable across the generations, with the exception that the proportion of Virginia pharmacists expecting to retire under age 60 is highest in younger cohorts, but diminishes as pharmacists approach age 50.

After that age it is difficult to tell if expectations of early retirement change due to circumstances, or because people who wish to retire younger do so and thus drop out of our sample. Over time, we will be able to examine whether pharmacists who seek to retire early are successful in doing so, whether retirement expectations change as people age, and whether intergenerational differences in retirement expectations exist.





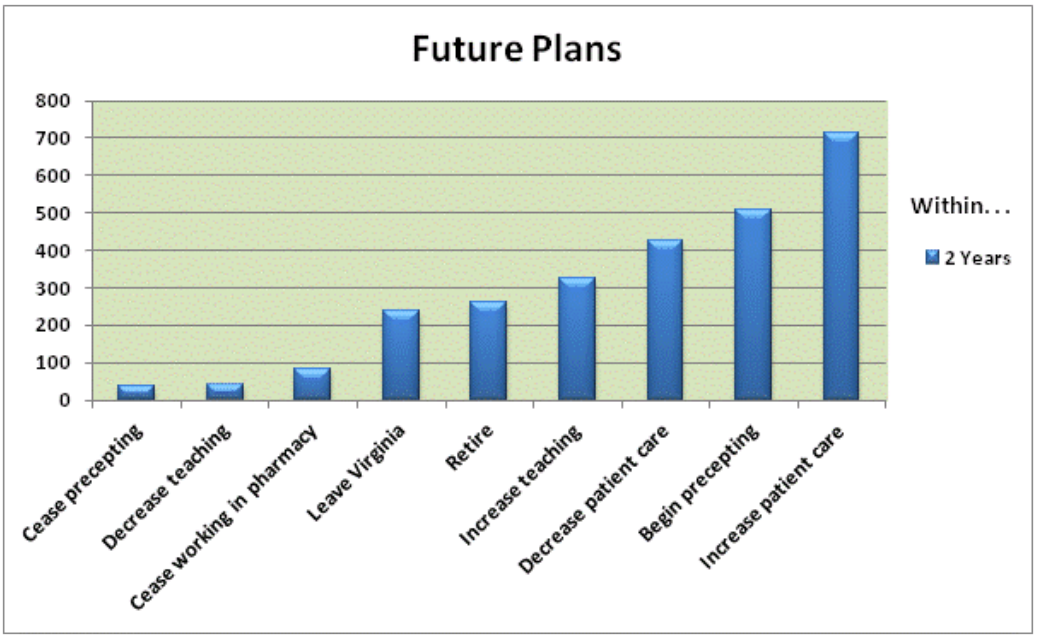
Retirement Plans

By comparing pharmacist's retirement expectations to their actual age, we can estimate how many pharmacists plan to retire within the near future. Pharmacists also provide information on their near-term plans, including plans to retire, allowing us to make more definitive estimates of retirement rates within the next five years. Almost 13% of Virginia's pharmacists planned to retire within the next 5 years, including 5.3 percent who planned to retire within two years of completing the survey.

	Weighted Estimate	%	Cumulative %
Within 2 Years	277	5.3	5.3
Within 3 -5 Years	386	7.4	12.8
Within 6 -10 Years	329	6.3	19.1
Within 7-14 Years	475	9.1	28.2
Within 11-19 Years	582	11.2	39.4
Within 16-25 Years	684	13.2	52.6
Within 21-30 Years	681	13.1	65.7
Within 26-35 Years	669	12.9	78.6
Within 31-40 Years	552	10.6	89.2
Within 36-45 Years	395	7.6	96.8
Within 41-50 Years	121	2.3	99.1
Within 46-55 Years	38	0.7	99.8
Within 51-60 Years	9	0.2	100
Total	5199	100	
Missing	1406		
Total	6605		

Future Plans

Overall, Virginia's pharmacists planned to increase their involvement in the workforce over the next two years. 712 pharmacists planned to increase patient care hours in the next two years. However, 426 planned to decrease patient care hours. 509 planned to begin precepting and 323 planned to increase hours spent teaching. Few planned to cease precepting or decrease hours teaching. A total of 584 planned to cease participating in Virginia's pharmacy workforce, including 84 who plan to cease working in pharmacy, 239 who plan to leave Virginia and 261 who plan to retire.



Plans to Enter Virginia's Pharmacist Workforce

A total of 421 licensed pharmacists currently NOT in Virginia's workforce planned to return to Virginia's workforce, including 74 who planned to return within the next year. These figures include only licensed pharmacists whose mailing address is not in Virginia.

Plans to Return	Weighted Estimate
Within 1 year	74
Within 1-2 years	50
Within 3-5 years	42
In more than 5 years	27
Yes, but do not know when	228
Total	**421**

Reasons for Not Working

An estimated 543 pharmacists in Virginia's pharmacist workforce did not work in pharmacy in 2011. These pharmacists had mailing addresses in Virginia and indicated plans to return to Virginia's workforce. Of these, an estimated 359 provided information on why they did not work and what they did. Some provided multiple responses (e.g. experienced voluntary unemployment, pursued specialty education). Only 16 percent indicated they did not work due to involuntary unemployment, while 30 percent experienced voluntary unemployment (including for medical reasons) and 18 percent worked in another profession.

	Weighted Estimate	%
Experienced involuntary unemployment	58	16%
Experienced voluntary unemployment	109	30%
Retired	89	25%
Performed occasional charity or consultant services	75	21%
Pursued specialty education	14	4%
Pursued non-pharmacy education	6	2%
Worked in another profession	66	18%
Total number reporting	359	

Figures do not add due some respondents providing multiple responses.

A quarter are retired but plan to return to the workforce in some capacity, and a fifth provided some occasional charity or consulting services. About six percent pursued additional education, including two percent who pursued non-pharmacy education.

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[1] Military personnel may renew within 60 days of returning from an overseas deployment, as long as renewal occurs within five years of license expiration. All others must renew licenses biennially.

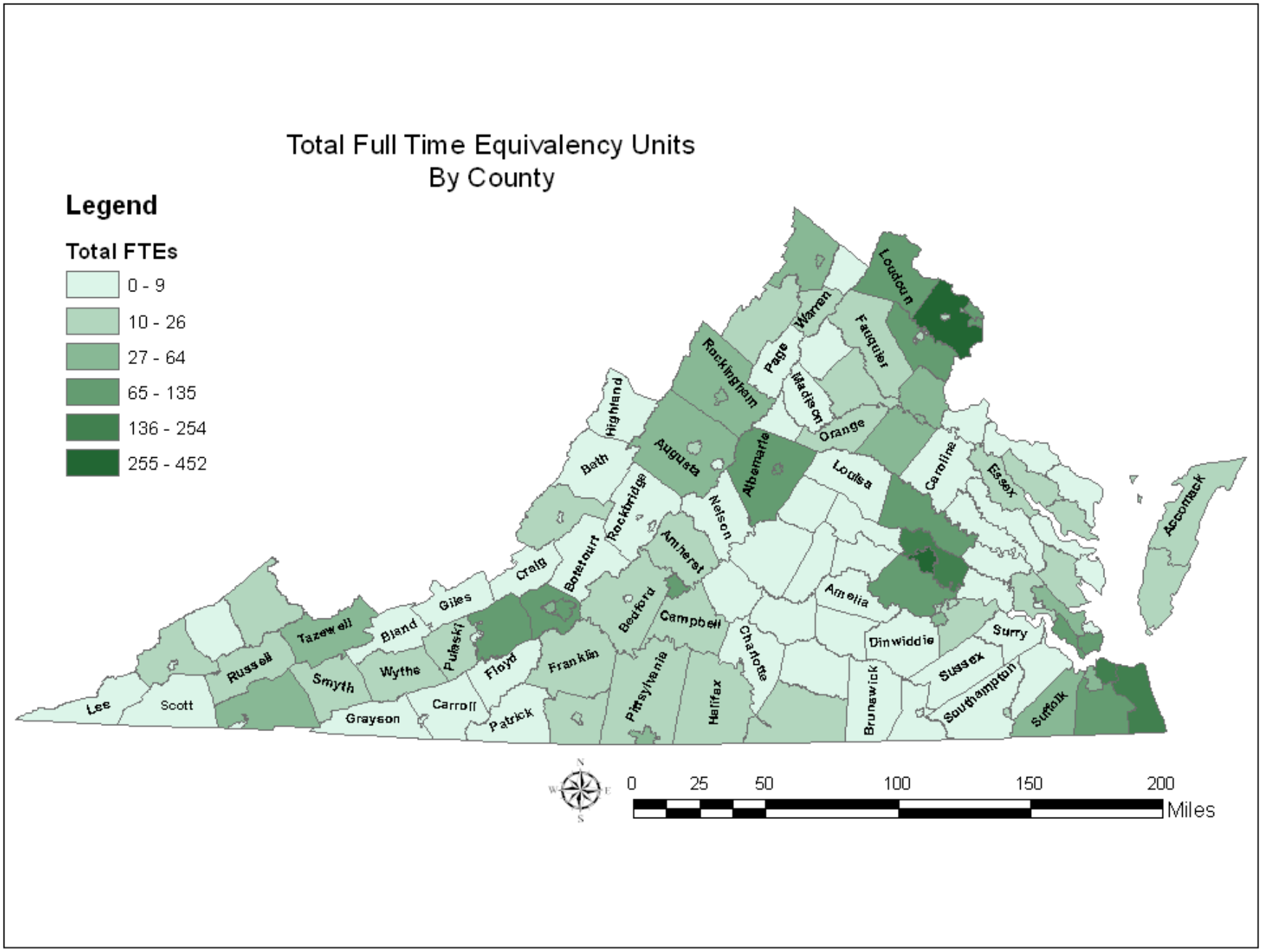
[2] For Age, $\chi 2$ is significant at the 99% confidence level, with a Cramer's V of 0.131 indicating small effect size. Spearmans' Rho is also significant at the 99% confidence level, with a value of -0.050. For Metro Status, χ^2 is significant at the 10% confidence level (p=0.054) with a phi coefficient of .021.

[3] National workforce information is provided by the Current Population Survey, administered by the US Bureau of Labor Statistics and the US Census Bureau. Age information appears in "Table 15: Employed persons by detailed occupation, sex and age, Annual Average 2010" for the 2010 Survey. Due to issues with sample size, median age information at the state level is not generally available, but was estimated at the request of the HWDC. Special thanks to Steve Hipple and Thomas Krolik of the Bureau of Labor Statistics for their assistance.

[4] All Healthcare Workforce Data Surveys follow Federal OMB standards for data collection on race and ethnicity. This allows valid comparisons with data collected by the US Census Bureau and other sources. For more information on these standards see: http://www.whitehouse.gov/omb/inforeg_statpolicy.

[5] Confirmed using Kolmogov-Smirov Test. Mean hours worked for persons age 70 and over were affected by a few persons working a high number of hours. The K-S test was run twice, once with and once without these categories. Both tests were significant at the 99.9% level. Follow-up with Mann-Whitney U tests also revealed differences on key categories, but with small or very small effect sizes.

[6] There does not seem to be a common method for estimating FTEs. The method described here is used by the US Bureau of Labor Statistics when calculating accident rates in the workforce. Readers should note that previous reports of FTEs by the HWDC referred to positions, not a derivation of hours worked, usually by asking directly whether employees worked full time or part time. Since HWDC surveys are not monthly "snapshot" surveys this method caused some confusion. The pharmacy survey, for instance, occurs annually, with practitioners generally renewing in December. Pharmacists report their activities for the prior 12 month period and work participation can change drastically over this time period.


Total Full Time Equivalency Units
By County
Legend
Total FTEs
0 - 9
10 - 26
27 - 64
65 - 135
136 - 254
255 - 452
Loudoun
Warren
Fauquier
Page
Rockingham
Madison
Highland
Orange
Augusta
Albemarle
Bath
Louisa
Caroline
Essex
Accomack
Rockbridge
Nelson
Amherst
Botetourt
Craig
Giles
Bedford
Amelia
Campbell
Bland
Tazewell
Pulaski
Charlotte
Dinwiddie
Surry
Russell
Floyd
Franklin
Wythe
Smyth
Pittsylvania
Halifax
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25
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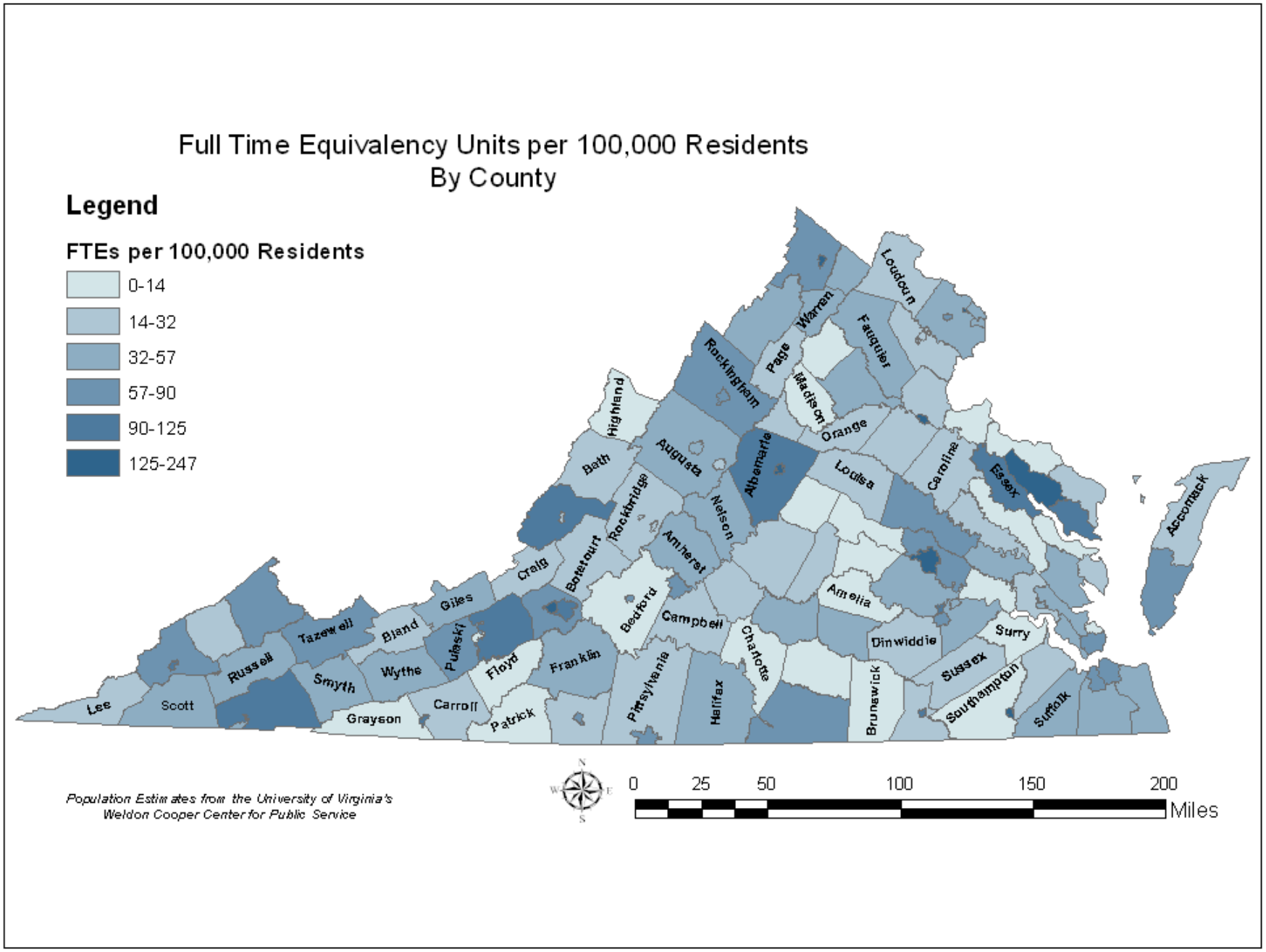
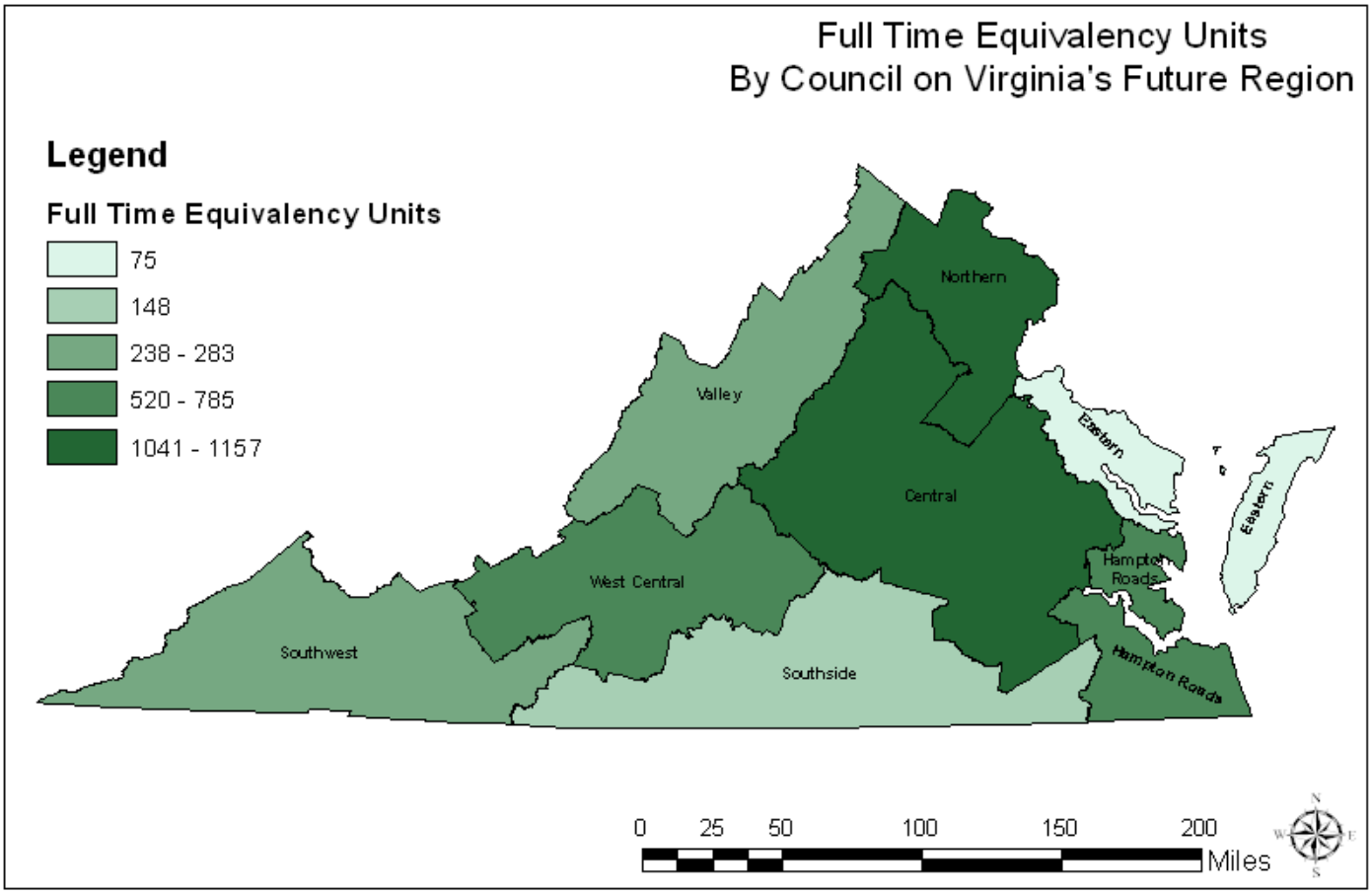
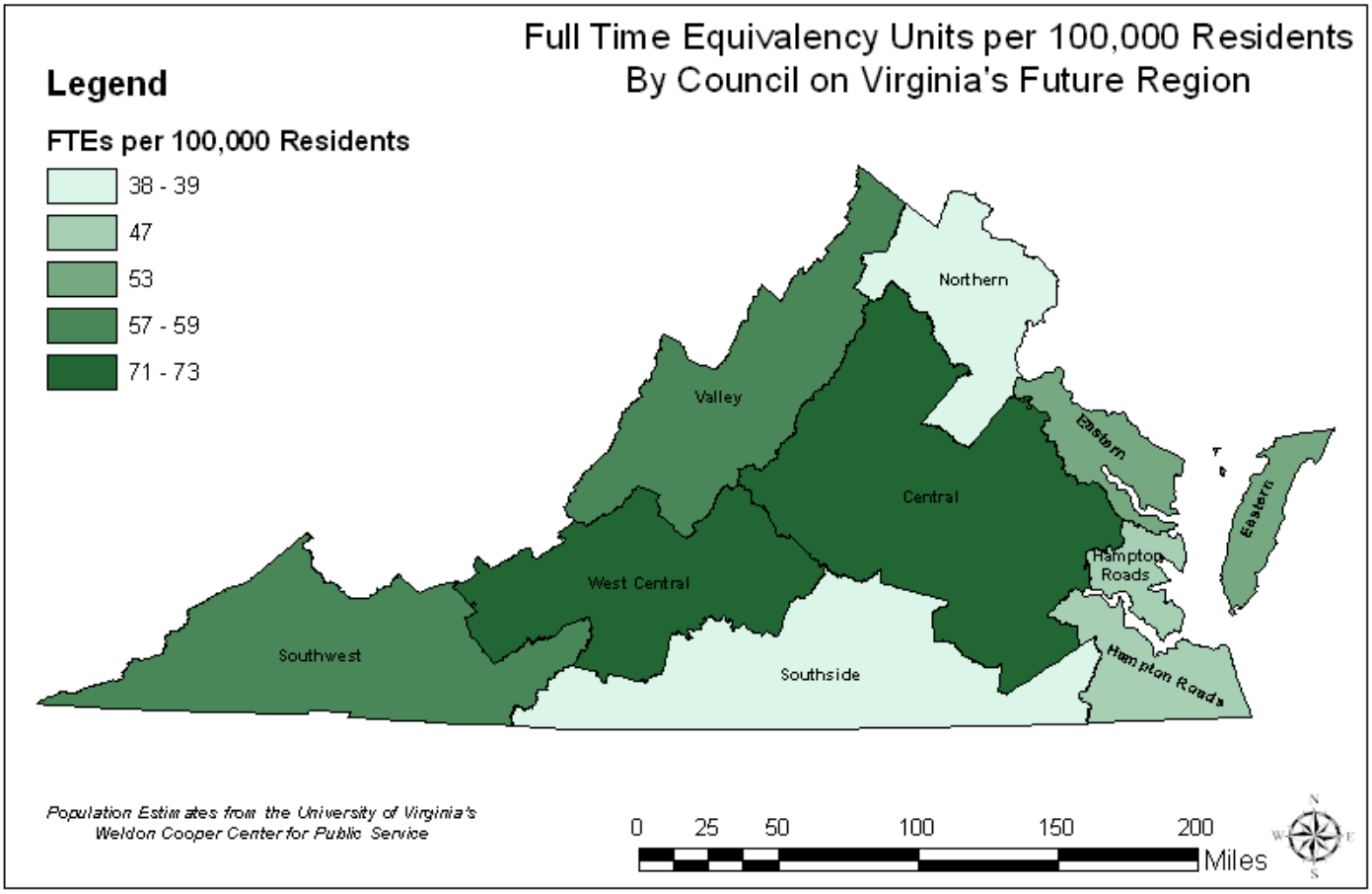
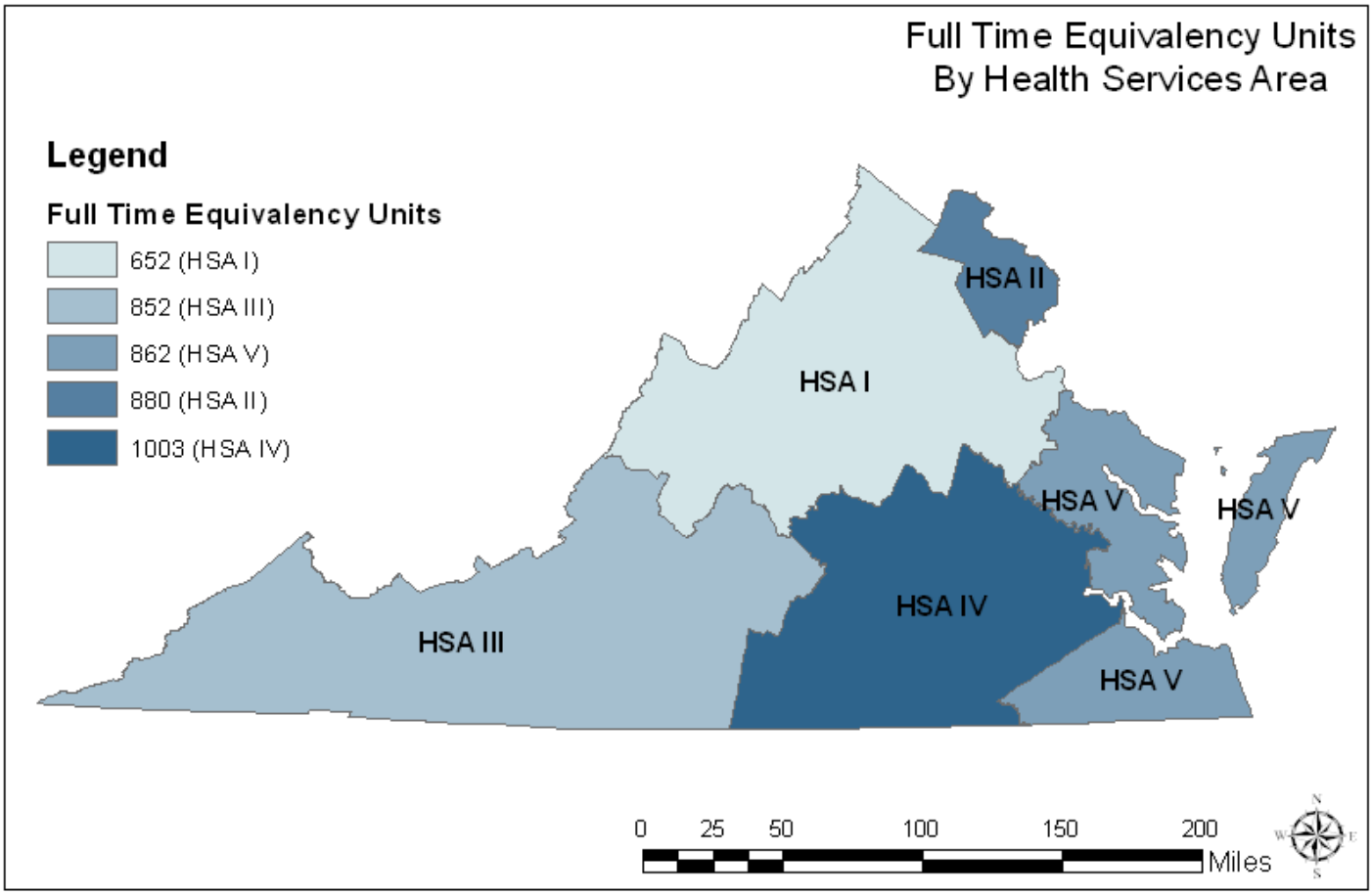
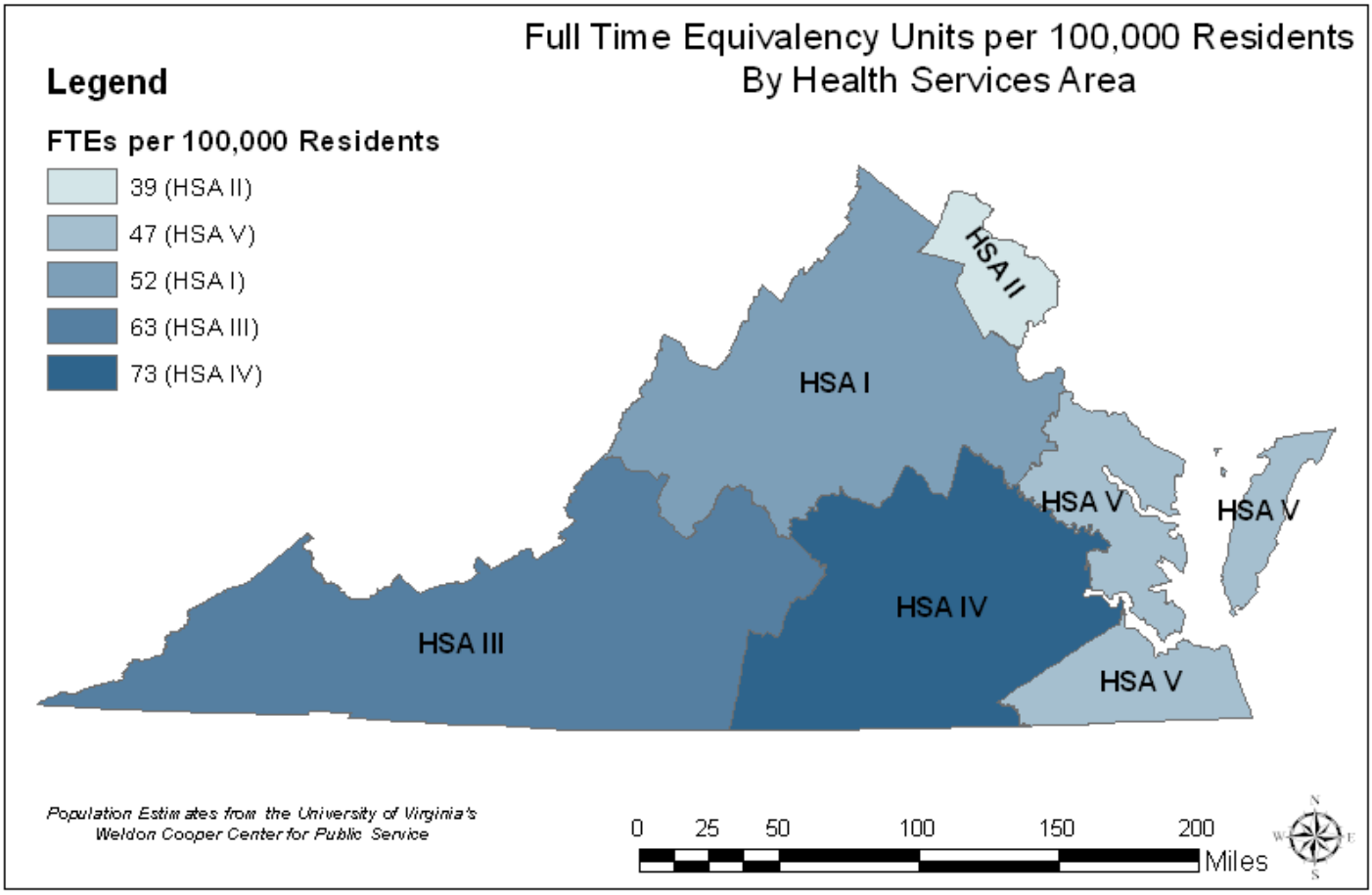

Full Time Equivalency Units per 100,000 Residents
By County
Legend
FTEs per 100,000 Residents
0-14
14-32
32-57
57-90
90-125
125-247
Loudoun
Warren
Fauquier
Page
Rockingham
Madison
Highland
Orange
Augusta
Albemarle
Louisa
Caroline
Essex
Accomack
Bath
Rockbridge
Nelson
Amherst
Botetourt
Craig
Bedford
Amelia
Campbell
Giles
Bland
Tazewell
Pulaski
Floyd
Franklin
Charlotte
Dinwiddie
Surry
Sussex
Russell
Smyth
Wythe
Pittsylvania
Halifax
Brunswick
Southampton
Suffolk
Lee
Scott
Grayson
Carroll
Patrick
Population Estimates from the University of Virginia's
Weldon Cooper Center for Public Service
0
25
50
100
150
200
Miles


Full Time Equivalency Units
By Council on Virginia's Future Region
Legend
Full Time Equivalency Units
75
148
238 - 283
520 - 785
1041 - 1157
Northern
Valley
Eastern
Central
Eastern
Hampton Roads
West Central
Southwest
Southside
Hampton Roads
0 25 50 100 150 200
Miles

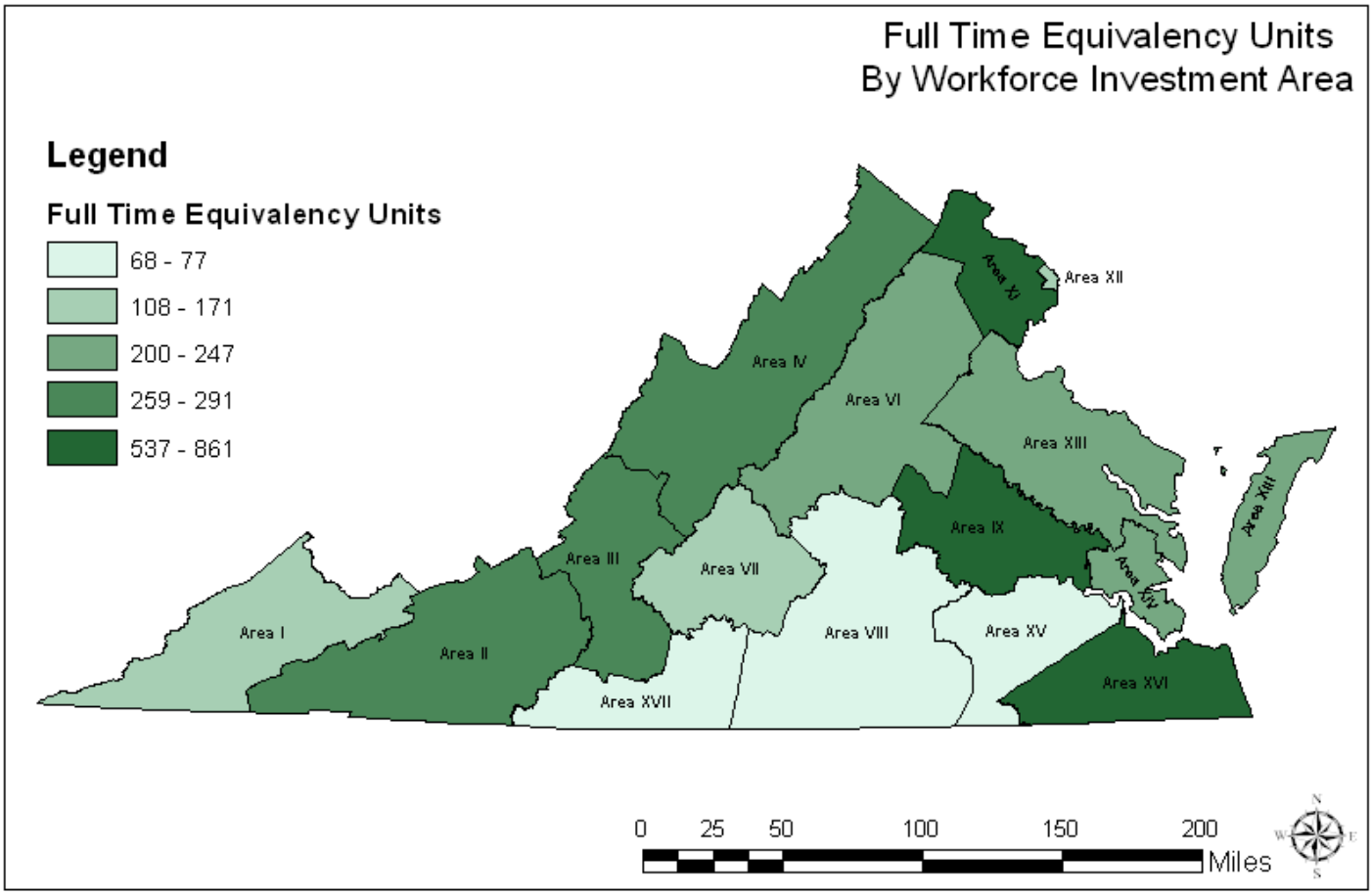

Full Time Equivalency Units per 100,000 Residents
By Council on Virginia's Future Region
Legend
FTEs per 100,000 Residents
38 - 39
47
53
57 - 59
71 - 73
Northern
Valley
Eastern
Central
Eastern
Hampton Roads
West Central
Southwest
Southside
Hampton Roads
Population Estimates from the University of Virginia's
Weldon Cooper Center for Public Service
0 25 50 100 150 200
Miles

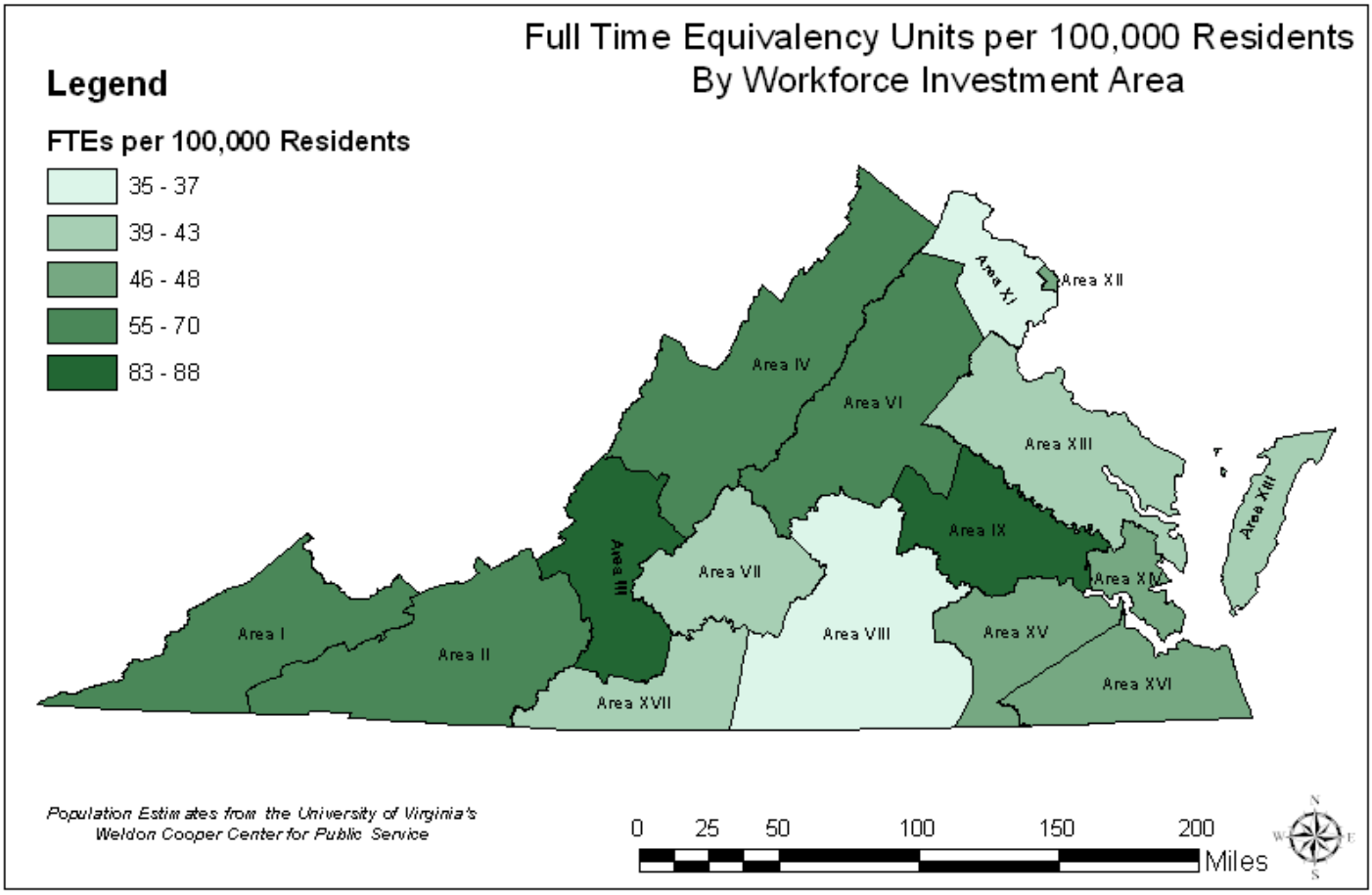
Health Services Areas

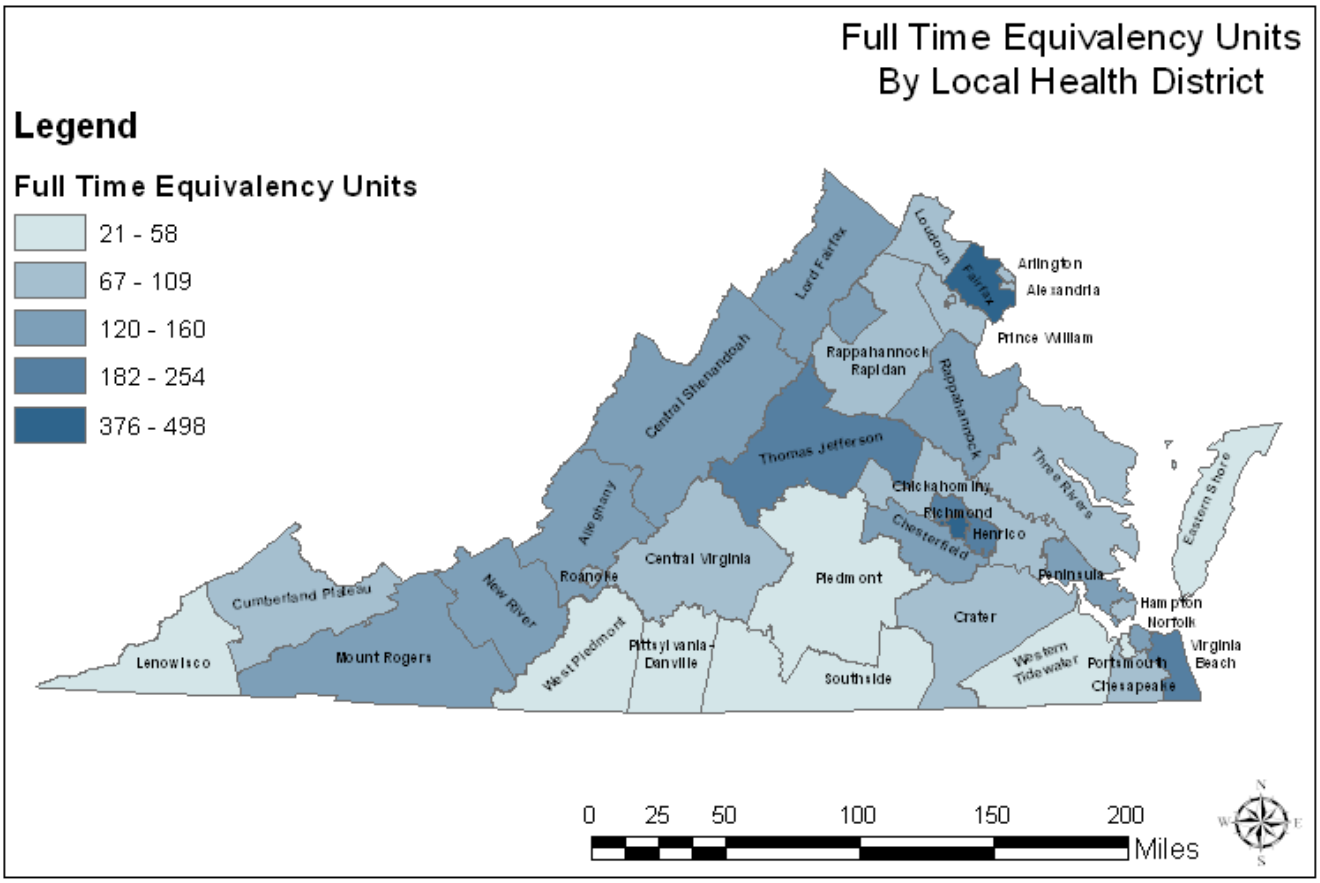


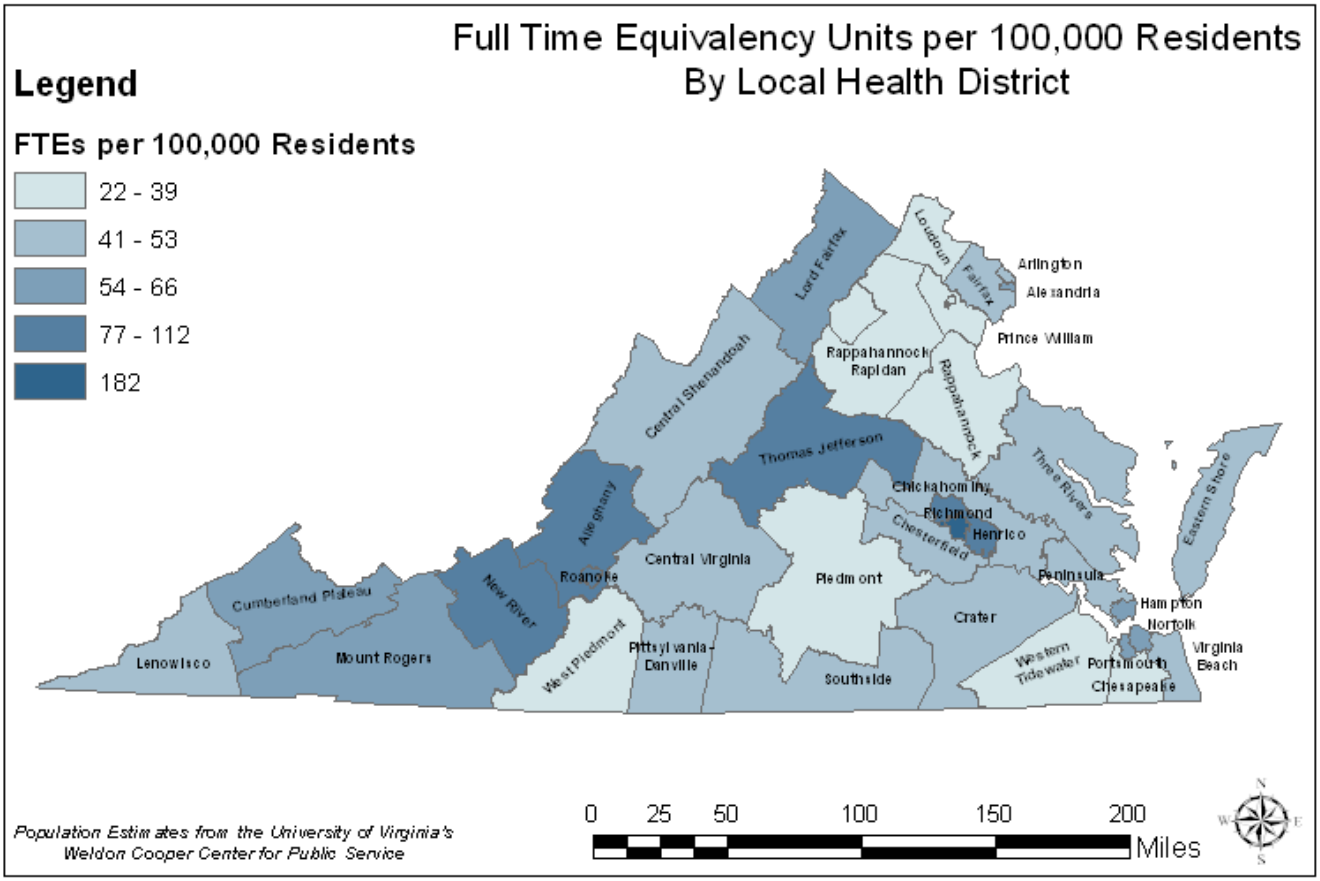


Workforce Investment Area

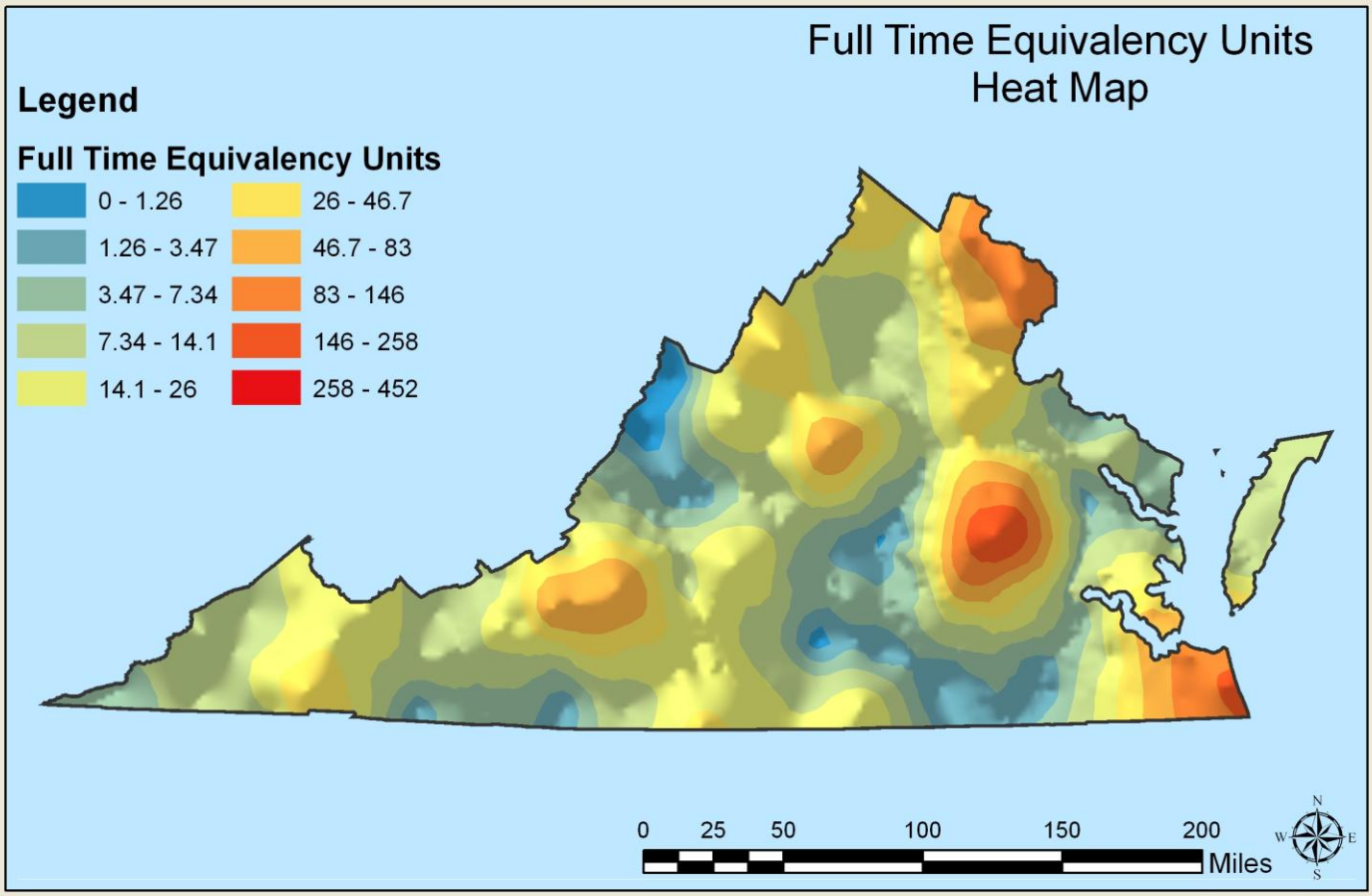


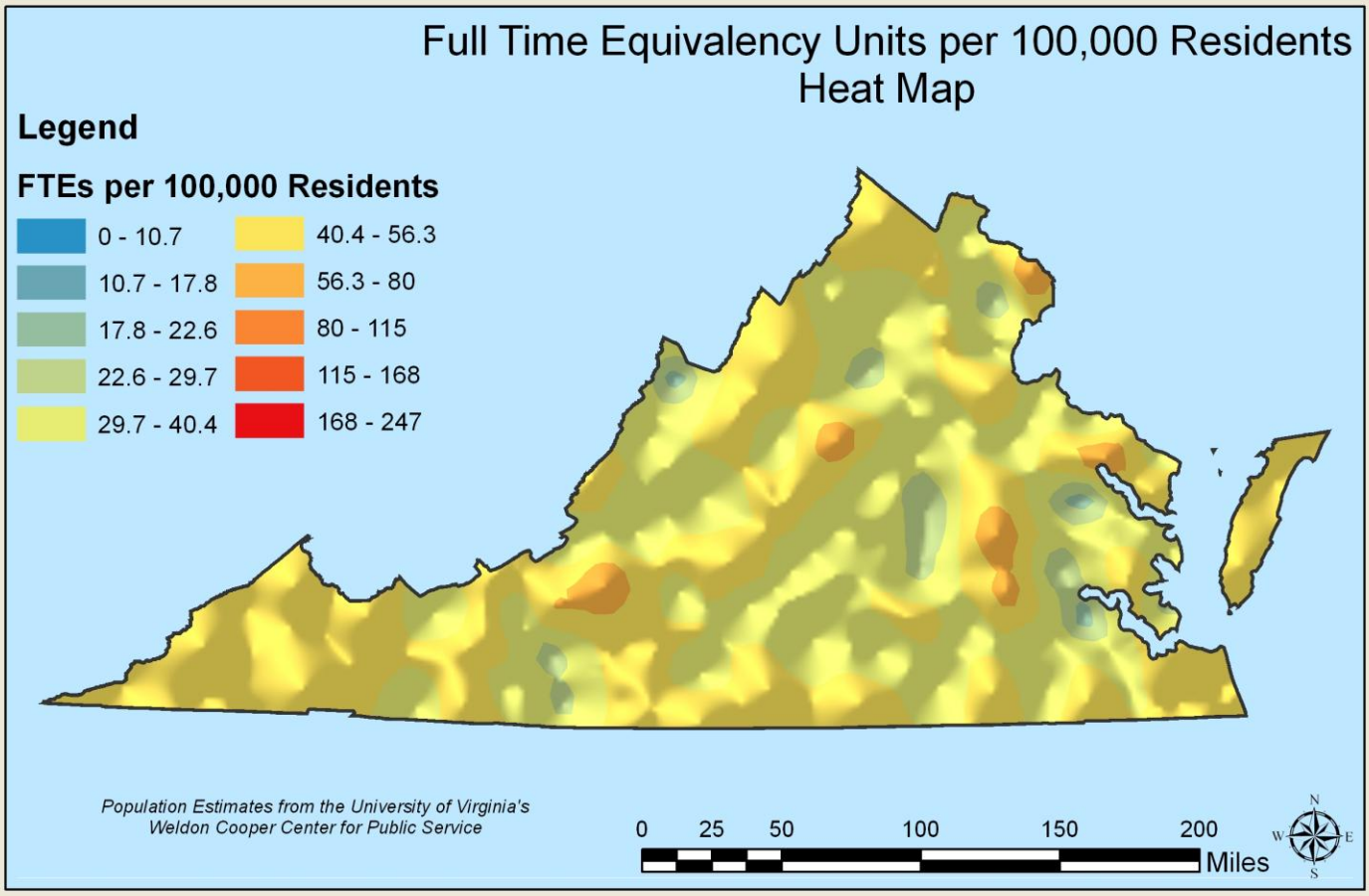



Full Time Equivalency Units
By Local Health District
Legend
Full Time Equivalency Units
21 - 58
67 - 109
120 - 160
182 - 254
376 - 498
Lord Fairfax
Loudoun
Fairfax
Arlington
Alexandria
Prince William
Rappahannock Rapidan
Rappahannock
Central Shenandoah
Thomas Jefferson
Three Rivers
Eastern Shore
Chickahominy
Richmond
Henrico
Chesterfield
Allegheny
Central Virginia
Roanoke
Piedmont
Peninsula
Hampton
Norfolk
Virginia Beach
Cumberland Plateau
New River
Crater
Lenowisco
Mount Rogers
West Piedmont
Pittsylvania-Danville
Southside
Western Tidewater
Portsmouth
Chesapeake
0 25 50 100 150 200
Miles


Full Time Equivalency Units per 100,000 Residents
By Local Health District
Legend
FTEs per 100,000 Residents
22 - 39
41 - 53
54 - 66
77 - 112
182
Lord Fairfax
Loudoun
Fairfax
Arlington
Alexandria
Prince William
Rappahannock Rapidan
Rappahannock
Central Shenandoah
Thomas Jefferson
Three Rivers
Eastern Shore
Chickahominy
Richmond
Henrico
Chesterfield
Allegheny
Central Virginia
Roanoke
Piedmont
Peninsula
Hampton
Norfolk
Virginia Beach
Cumberland Plateau
New River
Crater
Lenowisco
Mount Rogers
West Piedmont
Pittsylvania-Danville
Southside
Western Tidewater
Portsmouth
Chesapeake
0 25 50 100 150 200
Miles
Population Estimates from the University of Virginia's
Weldon Cooper Center for Public Service

Heat Maps


Full Time Equivalency Units
Heat Map
Legend
Full Time Equivalency Units
0 - 1.26
1.26 - 3.47
3.47 - 7.34
7.34 - 14.1
14.1 - 26
26 - 46.7
46.7 - 83
83 - 146
146 - 258
258 - 452
0 25 50 100 150 200
Miles
N
W
E
S


Full Time Equivalency Units per 100,000 Residents
Heat Map
Legend
FTEs per 100,000 Residents
0 - 10.7
10.7 - 17.8
17.8 - 22.6
22.6 - 29.7
29.7 - 40.4
40.4 - 56.3
56.3 - 80
80 - 115
115 - 168
168 - 247
Population Estimates from the University of Virginia's
Weldon Cooper Center for Public Service
0 25 50 100 150 200
Miles
N
W
E
S

Appendices

Appendix A: Weights

Final weights were calculated by multiplying the two weights and the overall response rate: ageweight x ruralweight x responserate = final weight.

Note: No pharmacists had mailing addresses in counties with rural status "Urban pop 20,000+, nonadj".

Age	Response Rate	Weight
Under 30	87.00%	1.149425287356320
30 to 34	87.90%	1.137656427758820
35 to 39	87.60%	1.141552511415530
40 to 44	86.20%	1.160092807424590
45 to 49	86.40%	1.157407407407410
50 to 54	87.30%	1.145475372279500
55 to 59	88.90%	1.124859392575930
60 to 64	85.50%	1.169590643274850
65 to 69	83.60%	1.196172248803830
70 to 74	72.60%	1.377410468319560
75 to 79	69.70%	1.434720229555240
80 and over	47.10%	2.123142250530790

Rural Status	Response Rate	Weight
Metro, 1 million+	87.10%	1.148105625717570
Metro, 250,000 to 1 million	88.80%	1.126126126126130
Metro, 250,000 or less	86.70%	1.153402537485580
Urban pop 20,000+, Metro adj	90.90%	1.100110011001100
Urban pop 20,000+, nonadj	NA	NA
Urban pop, 2,500-19,999, Metro adj	85.40%	1.170960187353630
Urban pop, 2,500-19,999, nonadj	87.10%	1.148105625717570
Rural, Metro adj	75.00%	1.333333333333330
Rural, nonadj	85.60%	1.168224299065420
Not in Virginia	83.20%	1.201923076923080

Appendix B: Hours Worked Imputation

As with all surveys, and particularly online surveys, our responses suffered from some item-missing data. The extent of the missing data appears in the tables on this page. To get a more complete look at the pharmacist labor supply, we imputed missing data on the hours worked and weeks worked variables for each location. Although these changes had little impact on aggregate descriptive estimates (See tables, next page), they may have a large effect on estimates when examining small groups (e.g. estimates for rural counties.)

We imputed data using a two-step process. First, we imputed weighted group means for groups of pharmacists related on three key variables: age, metro-status of the location and total number of locations. The location, and thus the metro status of the location, was sometimes missing itself, resulting in a separate group. Additionally, locations outside of Virginia were also treated as a separate group. Second, we recoded the imputed means into an existing response. In the case of weeks, we rounded to the nearest integer week. (Note: 20 or fewer weeks are aggregated in the table only. The data is precise to the week). In the case of hours, we used our existing censored ranges. Decimals were truncated.

Ave. Hours per Week Worked	Primary Location		Secondary Location	
	Frequency	%	Frequency	%
1 to 9 hours	229	4.1%	327	46.5%
10 to 19 hours	261	4.7%	174	24.7%
20 to 29 hours	472	8.6%	59	8.3%
30 to 39 hours	1014	18.4%	42	5.9%
40 to 49 hours	3004	54.5%	80	11.4%
50 to 59 hours	305	5.5%	10	1.5%
60 to 69 hours	81	1.5%	7	1.0%
70 to 79 hours	91	1.6%	1	0.2%
80 or more hours	53	1.0%	3	0.5%
Total non-missing	**5510**	**100%**	**702**	**100%**
Missing (excluding ineligible)	552	9.1%	127	15.3%
Ineligible	543		5776	

Weeks Worked	Primary Location		Secondary Location	
	Weighted Estimate	%	Weighted Estimate	%
10 weeks or less	212	3.5%	304	40.2%
11 to 20 weeks	393	6.6%	147	19.4%
21 weeks	15	0.2%	1	0.1%
22 weeks	30	0.5%	12	1.6%
23 weeks	18	0.3%	2	0.3%
24 weeks	93	1.6%	9	1.2%
25 weeks	46	0.8%	9	1.2%
26 weeks	134	2.2%	33	4.4%
27 weeks	13	0.2%	1	0.1%
28 weeks	51	0.9%	5	0.6%
29 weeks	10	0.2%	3	0.4%
30 weeks	62	1.0%	17	2.3%
31 weeks	4	0.1%	0	0.0%
32 weeks	55	0.9%	3	0.4%
33 weeks	12	0.2%	1	0.1%
34 weeks	9	0.2%	1	0.1%
35 weeks	14	0.2%	3	0.4%
36 weeks	56	0.9%	7	0.9%
37 weeks	9	0.2%	0	0.0%
38 weeks	26	0.4%	0	0.0%
39 weeks	12	0.2%	0	0.0%
40 weeks	152	2.5%	15	2.0%
41 weeks	8	0.1%	1	0.1%
42 weeks	36	0.6%	3	0.4%
43 weeks	15	0.2%	0	0.0%
44 weeks	68	1.1%	6	0.7%
45 weeks	76	1.3%	5	0.6%
46 weeks	113	1.9%	6	0.8%
47 weeks	119	2.0%	7	0.9%
48 weeks	603	10.1%	14	1.9%
49 weeks	459	7.7%	10	1.4%
50 weeks	970	16.2%	50	6.7%
51 weeks	128	2.1%	6	0.8%
52 weeks	1961	32.8%	74	9.8%
Total	**5981**	**100%**	**757**	**100%**
Missing (excluding ineligible)	81	1.3%	72	8.6%
Ineligible	543		5776	

There are limitations inherent in this method. Two are related to the use of censored intervals for continuous data for hours worked. The first weakness is that it we assign the center of the category as the numeric value for each interval. This assumes actual hours worked are symmetrically distributed within the categories. In reality, hours are likely distributed on a curve (e.g. more people likely worked closer to 50 hours per week than 59 hours per week in the "50 to 59 hours" category). The second is we could not use parametric statistical tests to measure correlation. Rather, we used Spearman rank-order correlation to determine correlation to confirm relationships. Some of the correlations found were weak (see table next page). Additionally, there are significant correlations between the imputed variables themselves. The HWDC is researching methods to apply modern multiple imputation methods to its data.

Despite these limitations, the imputation method appears to have only minimal affect on standard indicators. Results for the original variable, the group-mean imputed variable, and the rebinned variable (estimates) appear below:

Table 1: Indicators of the effects of imputation, Primary Location.

		Primary Weeks Worked	SMEAN (PriWeeks)	Primary Weeks, Estimated	Primary Average Hours	SMEAN(PriHours)	Primary Hours, Estimated
Valid		5981	6062	6062	5510	6062	6062
Missing		624	543	543	1095	543	543
Mean		43.58	43.582	43.58	40.10	40.017	40.02
Std. Error of Mean		.167	.1648	.165	.180	.1651	.166
Median		50.00	50.000	50.00	45.00	45.000	45.00
Std. Deviation		12.910	12.8316	12.832	13.393	12.8528	12.908
Variance		166.667	164.651	164.655	179.365	165.194	166.604
Skewness		-1.704	-1.713	-1.713	-.337	-.344	-.338
Std. Error of Skewness		.032	.031	.031	.033	.031	.031
Kurtosis		1.687	1.741	1.740	1.941	2.313	2.221
Std. Error of Kurtosis		.063	.063	.063	.066	.063	.063
Sum		260639	264205.8	264208	220932	242592.5	242613
Percentiles	25	44.00	44.000	44.00	35.00	35.000	35.00
	50	50.00	50.000	50.00	45.00	45.000	45.00
	75	52.00	52.000	52.00	45.00	45.000	45.00

Table 2: Indicators of the effects of imputation, Secondary Location.

		Secondary Weeks Worked	SMEAN (SecWeeks)	Secondary Weeks, Estimate	Secondary Average Hours	SMEAN (SecHours)	Secondary Hours, Estimated
Valid		757	825	825	702	826	826
Missing		5848	5780	5780	5903	5778	5778
Mean		21.61	21.741	21.74	17.29	17.624	17.65
Std. Error of Mean		.666	.6152	.615	.601	.5245	.526
Median		15.00	17.690	18.00	15.00	15.000	15.00
Std. Deviation		18.312	17.6706	17.671	15.930	15.0784	15.117
Variance		335.343	312.249	312.254	253.752	227.358	228.538
Skewness		.580	.576	.576	1.391	1.392	1.390
Std. Error of Skewness		.089	.085	.085	.092	.085	.085
Kurtosis		-1.194	-1.089	-1.089	1.455	1.694	1.660
Std. Error of Kurtosis		.177	.170	.170	.184	.170	.170
Sum		16358	17937.8	17936	12143	14564.1	14588
Percentiles	25	6.00	6.000	6.00	5.00	5.000	5.00
	50	15.00	17.690	18.00	15.00	15.000	15.00
	75	40.00	35.000	35.00	25.00	25.000	25.00

Table 3: Correlations.

	Spearman's rho	Location Count	Primary Average Hours	Primary Weeks Worked	Secondary Average Hours	Secondary Weeks Worked
Age 5 yr	Correlation Coefficient	-.086**	-.151**	.088**	-.132**	.065
	Sig. (2-tailed)	.000	.000	.000	.001	.095
	N	5776	4832	5241	613	661
Location Count	Correlation Coefficient	1.000	-.049**	-.061**	-.079	-.062
	Sig. (2-tailed)	.	.001	.000	.052	.110
	N	5782	4834	5247	613	661

Appendix C: The 2011 Pharmacist Workforce Survey

Question and Question Choices 2011 Pharmacist (0202) Survey

question	**question_choice**
Education and Background	
1) Where did you attend high school (secondary school)?	Outside Of The U.S. or Canada Canada 57 US States and Territories
2) Where did you complete your undergraduate degree?	Did not obtain an undergraduate degree Outside of the US or Canada Canada 57 US States and Territories
3) Where did you obtain your initial pharmacy degree?	Outside of the US or Canada Canada 57 US States and Territories
4a) Which pharmacy degrees have you attained as of today? Check all that apply	BS Pharm PharmD
4b) Which post-graduate programs have you completed as of today? Check all that apply	Residency Fellowship Certification Program Masters PhD
If you completed a residency, please indicate your area:5a) PGY1: Check all that apply	Health Systems Managed Care Community Settings Ambulatory Care Other
5b) PGY2: Check all that apply	Ambulatory Cardiology Critical Care Drug Information *Emergency Medicine* Geriatric Health Administration Pharmacy *HIV* Infectious Disease Internal Medicine *Managed Care Pharmacy Systems* Medication Use Safety *Nephrology* Nuclear Nutrition Support Oncology Palliative Care/Pain Management Other
5c) If you chose “other” for either PGY1 or PGY2 residency, please provide a brief description of your specialty area:	*Open-ended*
6a) Please indicate any Board Certifications for pharmacy you have attained as of today: Check all that apply	BPS-Ambulatory Care

6b) Please indicate any other (non-Board) certifications for pharmacy you have attained as of today: Check all that apply	BPS-Nuclear Pharmacy BPS-Nutrition BPS-Oncology BPS- Pharmacotherapy BPS-Psychiatric CCGP-Geriatrics ABAT-Applied Toxicology Ambulatory Care Nuclear Pharmacy Nutrition Oncology Pharmacotherapy Psychiatric Geriatrics Applied Toxicology Diabetic Educator Anticoagulation Immunization
7) Within the past 12 months, have you worked, volunteered, taught or practiced, in any environment related to pharmacy or in any position that drew on your knowledge of pharmacy? (if only occasional practice--less than 100 hrs--please select "No")Please note: Answer "yes" for any pharmacy-related activities, including administrative, educational, regulatory or other activities.If you answered "No" to Question 7, please go to Question 33 in the Demographics section. If you answered "Yes", please continue.	*Yes/no*

Primary Work LocationQuestion 8 through Question 15 refer to your primary place of employment, work or practice. This is the place where you spend the most work hours during an average workweek, or where you spent the most weeks working in the past 12 months. Please use these questions to describe a particular work location, not an employer. Temporary or traveling workers who spend or spent a significant amount of time at a particular location should use that location as his or her primary work location. Persons who consistently work in multiple locations (i.e. temporary workers, locum tenens) should indicate this in Question 8.

8) Please select the location of your primary place of employment, work or practice:	List of VA counties Several localities (temporary, mobile clinic, etc.) Outside of US Virginia Border State/DC Other US State
9) Approximate number of weeks at which at least some time was spent at this work location within the past twelve months (exclude vacation, medical leave, etc.)	1 - 52 weeks
10a) Please select the type of practice setting:	Independent Community Pharmacy (1-4 stores) Small Chain Community Pharmacy (5-10 stores) Large Chain Community Pharmacy (11+ stores) Mass Merchandiser (i.e. Big Box Store) Supermarket Pharmacy Clinic-Based Pharmacy Mail Service Pharmacy Government Hospital / Health System,

	Inpatient Government Hospital / Health System, Outpatient Non-government Hospital / Health System, Inpatient Non-government Hospital / Health System, Outpatient Nursing Home, Long Term Care Home Health / Infusion Pharmacy Benefit Administration (e.g. PBM, managed care) Academic Institution Other For-profit Corporation / Organization Other Non-profit Corporation / Organization
10b) If you selected Other For-profit or Non-profit Corporation / Organization, please provide a brief descripiton:	*Open-ended*
11a) Do you provide any of the following services for another pharmacy at this location?If you do not perform any remote services at this location, please proceed to Question 12.Telepharmacy: Off-site collaboration using telephone, video or other telecommunications devices.	Remote order processing Central filling Remote consulting/telepharmacy
11b) If you checked any of the boxes in number 11a, how would you describe your remote, telepharmacy, or remote consulting services client population?	State/local Regional National International
11c) If you checked any of the boxes in number 11a, what proportion of your remote, telepharmacy or remote consulting services are spent serving clients in Virginia?	All or almost all Most About half Some None or only occasional
12) How many hours did you work at this location during your average workweek?	1 to 9 hours 10 to 19 hours 20 to 29 hours 30 to 39 hours 40 to 49 hours 50 to 59 hours 60 to 69 hours 70 to 79 hours 80 or more hours
13) In the average workweek, what percentage of your working hours were spent in the following roles:13a Medication Dispensing	None 1% to 9% 10% to 19% 20% to 29% 30% to 39% 40% to 49% 50% to 59 % 60% to 69%

	70% to 79%
	80% to 89%
	90% to 99%
	100%
13b) Patient Care (including direct patient care, patient education and reviewing charts)	None
	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%
	100%
13c) Third party payor billing & coordination	None
	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%
	100%
13d) Business/Organization management, Administration, Recordkeeping	None
	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%
	100%
13e) Formal Research (including practice-based research)	None
	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%

	100%
13f) Education (including preceptoring)	None 1% to 9% 10% to 19% 20% to 29% 30% to 39% 40% to 49% 50% to 59 % 60% to 69% 70% to 79% 80% to 89% 90% to 99% 100%
13g) Other	None 1% to 9% 10% to 19% 20% to 29% 30% to 39% 40% to 49% 50% to 59 % 60% to 69% 70% to 79% 80% to 89% 90% to 99% 100%
14) How are you paid for your services at your primary work location? Check all that apply	Salary Hourly wage Profits (owner/part owner) Volunteer/Not paid
15) Do you currently receive reimbursements for non-dispensing services such as medication therapy management at this location? If you only have one practice location, please skip to question 25. If you have additional practice locations, please continue.	*Open-ended*

Secondary Practice SettingQuestion 16 through Question 23 refer to your secondary place of employment, work or practice. This is the place where you spend the second most work hours during an average workweek, or where you spent the second most weeks working in the past 12 months. Please use these questions to describe a particular work location, not an employer. Temporary or traveling workers who can identify a second location where he or she spends or spent a significant amout of time should use this as his or her secondary work location. Persons who consistently work in multiple locations (i.e. temporary workers, locum tenens) should indicate this in Question 16.

16) Please select the location of your secondary place of employment, work or practice:	List of VA counties Several localities (temporary, mobile clinic, etc.) Outside of US Virginia Border State/DC Other US State
17) Approximate number of weeks at which at least some time was spent at this work location within the past twelve months (exclude vacation, medical leave, etc.)	1 - 52 weeks
18a) Please select the type of practice setting:	Independent Community Pharmacy (1-4 stores) Small Chain Community Pharmacy (5-10

	stores) Large Chain Community Pharmacy (11+ stores) Mass Merchandiser (i.e. Big Box Store) Supermarket Pharmacy Clinic-Based Pharmacy Mail Service Pharmacy Government Hospital / Health System, Inpatient Government Hospital / Health System, Outpatient Non-government Hospital / Health System, Inpatient Non-government Hospital / Health System, Outpatient Nursing Home, Long Term Care Home Health / Infusion Pharmacy Benefit Administration (e.g. PBM, managed care) Academic Institution Other For-profit Corporation / Organization Other Non-profit Corporation / Organization
18b) If you selected Other For-profit or Non-profit Corporation / Organization, please provide a brief description:	*Open-ended*
19a) Do you provide any of the following services for another pharmacy at this location? If you do not perform any remote services at this location, please proceed to Question 20. Telepharmacy: Off-site collaboration using telephone, video or other telecommunications devises.	Remote order processing Central filling Remote consulting/telepharmacy
19b) How would you describe your remote, telepharmacy, or remote consulting services client population?	State/local Regional National International
19c) What proportion of your remote, telepharmacy or consulting services are spent serving clients in Virginia?	All or almost all Most About half Some None or only occasional
20) How many hours did you work at this location during your average workweek?	1 to 9 hours 10 to 19 hours 20 to 29 hours 30 to 39 hours 40 to 49 hours 50 to 59 hours 60 to 69 hours 70 to 79 hours 80 or more hours
21) In the average workweek, what percentage of your working hours were spent in the following roles:21a Medication Dispensing	None

	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%
	100%
21b) Patient Care (including direct patient care, patient education and reviewing charts)	None
	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%
	100%
21c) Third party payor billing & coordination	None
	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%
	100%
21d) Business/Organization management, Administration, Recordkeeping	None
	1% to 9%
	10% to 19%
	20% to 29%
	30% to 39%
	40% to 49%
	50% to 59 %
	60% to 69%
	70% to 79%
	80% to 89%
	90% to 99%
	100%
21e) Formal Research (including practice-based research)	None
	1% to 9%
	10% to 19%
	20% to 29%

	30% to 39% 40% to 49% 50% to 59 % 60% to 69% 70% to 79% 80% to 89% 90% to 99% 100%
21f) Education (including preceptoring)	None 1% to 9% 10% to 19% 20% to 29% 30% to 39% 40% to 49% 50% to 59 % 60% to 69% 70% to 79% 80% to 89% 90% to 99% 100%
21g) Other	None 1% to 9% 10% to 19% 20% to 29% 30% to 39% 40% to 49% 50% to 59 % 60% to 69% 70% to 79% 80% to 89% 90% to 99% 100%
22) How are you paid for your services at your primary work location? Check all that apply	Salary Hourly wage Profits (owner/part owner) Volunteer/Not paid
23) Do you currently receive reimbursements for non-dispensing services such as medication therapy management at this location?	*Open-ended*
24) Total hours of patient care services provided at all other locations in the past 12 months:	None 1 to 9 hours 10 to 19 hours 20 to 29 hours 30 to 39 hours 40 to 49 hours 50 to 59 hours 60 to 69 hours 70 to 79 hours 80 or more hours

Employment Information<i>The Healthcare Workforce Data Center collects compensation information to assess the balance of supply and demand in the state and in localities, and to assist students in planning health careers and choosing specialties.

Information from the questions will only be presented in the aggregate. The confidentiality of information for these and all questions is protected by law. All questions are voluntary.</i>

25) Within the past 12 months, have you: Check all that apply

Ceased working for an employer or practice?
Begun working for a new employer or practice?
Transferred to a new work location with the same employer or practice?

26) Do you perform or participate in any of the following activities? Check all that apply

Provide immunizations
Participate in a collaborative practice agreement
Precept pharmacy students
Use multi-setting Electronic Health Records
Participate in Virginia's Prescription Monitoring Program
CLIA waived laboratory tests
Other laboratory tests or diagnostics
Sterile compounding
Nonsterile compounding
Telepharmacy/Remote Consulting

27) What is your estimated hourly income from your work as a Pharmacist over the past 12 months?

Volunteer work only
$12/hr or less
$12.01-$24.00/hr
$24.01-$36.00/hr
$36.01-$48.00/hr
$48.01-$60.00hr
$60.01-$72.00/hr
$72.01-$84.00/hr
$84.01-$96.00/hr
$96.01-$108.00/hr
$108.01-$120.00/hr
$120.01-$132.00/hr
$132.01-$144.00/hr
>$144.00/hr

28) Do you receive any of the following benefits from your current employer(s)? Check all that apply

Paid Vacation
Paid Sick Leave
Paid Disability Leave
Health Insurance
Dental Insurance
Stock options
Retirement (401k, Pension, etc.)
Group Life Insurance
Signing/retention bonus
No Benefits

29) What is your estimated current educational debt?

None
$10,000 or less
$10,001-$20,000
$20,001-$30,000
$30,001-$40,000
$40,001-$50,000

	$50,001-$60,000 $60,001-$70,000 $70,001-$80,000 $80,001-$90,000 $90,001-$100,000 $100,001-$110,000 $110,001-$120,000 >$120,000
30) At what age do you predict you will retire?	Under age 50 50 to 54 55 to 59 60 to 64 65 to 69 70 to 74 75 to 79 80 or over I do not intend to retire
31) Within the next two years do you plan to do any of the following: Check all that apply	Retire Cease working in the field of Pharmacy. Continue working or teaching in the field of Pharmacy, but cease doing so in Virginia Increase hours working in patient care and/or medical dispensing Decrease hours working in patient care and/or medical dispensing Increase time spent teaching pharmacy students in an academic setting Decrease time spent teaching pharmacy students in an academic setting Pursue additional pharmacy-related education Begin precepting pharmacy students Cease precepting pharmacy students
32) Within the next five years do you plan to do any of the following: Check all that apply	Retire Cease working in the field of Pharmacy. Continue working or teaching in the field of Pharmacy, but cease doing so in Virginia Increase hours working in patient care and/or medical dispensing Decrease hours working in patient care and/or medical dispensing Increase time spent teaching pharmacy students in an academic setting Decrease time spent teaching pharmacy students in an academic setting Pursue additional pharmacy-related education Begin precepting pharmacy students Cease precepting pharmacy students
Demographic Questions33) Year of Birth	1996 --> 1920
34) Sex	Male

	Female
Please select the items that best describe your race/ethnicity. Please answer both question 35a about Hispanic origin and 35b about race/ethnicity.35a) Select One:	Hispanic, Latino or Spanish origin Not Hispanic, Latino or Spanish origin Prefer not to respond
35b) Select all that apply:	American Indian of Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White Some other race Prefer not to respond
35c) If some other race, please describe:	*Fill in the blank*

End of Questionnaire for active Pharmacists. Please click the “submit” button below to complete the survey. Thank you! If you answered "No" to Question 7, please continue.

36 If you did not practice or teach pharmacy within the past twelve months, did/are you. . .? Check all that apply:	I am retired. Practice occasionally for charity/consultation/special patients? Pursue specialty education? Pursue non-pharmacy education? Work in another profession? Experience temporary voluntary unemployment (including for medical reasons)? Experience temporary involuntary unemployment?
37) Do you expect to begin working in the pharmacy field in Virginia? If so, when?	Not currently planning to practice/work in Virginia. Yes, within the next year Yes, within 1-2 years Yes, within 3-5 years Yes, in more than 5 years Yes, do not know when

Appendix D: The 2012 Pharmacist Workforce Survey

While striving to maintain continuity, the HWDC continuously improves its surveys based on results of previous surveys. The HWDC has adopted a standard survey template to serve as the basis of all of its workforce surveys. The 2012 Pharmacy Survey incorporates standard survey template and includes elements specific to the Pharmacist survey. Please note that the survey appears online through our licensing renewal system. The final appearance of the survey for practitioners is dictated by this system. The HWDC may make additional changes before implementing the 2012 survey.

Pharmacist Survey		
Instructions:		
The following survey will assist policymakers at the state, federal and local levels assess the adequacy of the current pharmacist workforce and project future workforce trends in relation to Virginia's changing population and health needs. It will help us advance the practice of pharmacy and to improve the health of all Virginians. By law, information collected as part of this survey is confidential. License numbers and other individually identifying information are removed from Healthcare Workforce Data Center data sets. The Healthcare Workforce Data Center only releases information in the aggregate or to qualified research organizations who meet our strict confidentiality standards. Participation in this survey is voluntary.		
The survey questions are designed to allow comparisons across professions, and among state and federal data collection efforts. Some of the questions, particularly demographic questions, match Federal data collection standards.		
Education and Background		
1)	Year of Birth:	*Dropdown: 1996 to 1920 (reverse order)*
2)	Sex:	*Dropdown: Male/Female*
	Please select the items that best describe your race/ethnicity. Please answer both question 3a about Hispanic origin and 3b about race/ethnicity.	
3a)	Select one:	*Check one*
		Hispanic, Latino or Spanish Origin
		Not Hispanic, Latino or Spanish Origin
3b)	Select all that apply:	*Check all that apply*
		White
		Black or African American
		American Indian or Alaska Native
		Asian
		Native Hawaiian or Pacific Islander
		Some other race
3c)	If some other race, please specify:	*Fill in the blank*
4)	Where did you graduate from high school (Secondary School)?	*Dropdown*
		Outside of the US or Canada
		Canada
		57 US States and Territories
5)	Was your childhood spent mostly in rural, urban or suburban areas?	*Dropdown: urban, rural, suburban*

6	Where did you obtain your undergraduate degree?	*Dropdown*
		Did not obtain an undergraduate degree
		Outside of the US or Canada
		Canada
		57 US States and Territories
7)	Where did you obtain the degree that initially qualified you to practice pharmacy?	*Dropdown*
		Outside of the US or Canada
		Canada
		57 US States and Territories
8)	Please indicate the highest level of pharmacist education you have completed as of today:	*Dropdown*
		BS Pharm
		PharmD
9)	Do you hold an active license to practice pharmacy in any other jurisdiction?	*Check all that apply*
		District of Columbia
		Kentucky
		Maryland
		North Carolina
		Tennessee
		West Virginia
		One or more other US states
	Please indicate any residencies you have completed as of today:	
	Note: The list here is structured to match the current ASHP residency structure. General and clinical residencies were consolidated in 1993 into "pharmacy practice". The current PGY1/PGY2 structure was adopted in 2005. For those who completed residencies prior to these dates, please select the residency from either PGY1 or PGY2 that best matches your residency.	
10a)	PGY1:	*Dropdown*
		Community Pharmacy
		Managed Care Pharmacy
		Pharmacy Practice (Post 1993)
		Pharmacy Practice (Pre-1993--Health Systems, Ambulatory Care, Clincal, etc.)
		Other
10b)	PGY2:	*Dropdown*
		Ambulatory Care
		Cardiology
		Critical Care
		Drug Information
		Emergency Medicine

		Geriatrics
		Health-system Pharmacy Administration
		Infectious Disease
		Informatics
		Internal Medicine
		Managed Care Pharmacy Systems
		Medication Safety
		Nuclear
		Nutrition Support
		Oncology
		Palliative Care
		Pediatrics
		Pharmacogenetics
		Pharmacotherapy
		Psychiatry
		Solid Organ Transplant
		Other
10c)	If you selected "other" for either residency, please provide a brief description and indicate whether the residency was PGY1 or PGY2:	*Open-ended*
11a)	Please indicate any Board Certifications for pharmacy you have attained as of today:	*Check all that apply*
		BPS-Ambulatory Care
		BPS-Nuclear Pharmacy
		BPS-Nutrition
		BPS-Oncology
		BPS- Pharmacotherapy
		BPS-Psychiatric
		CCGP-Geriatrics
		ABAT-Applied Toxicology
11b	Please indicate any other (non-Board) certifications for pharmacy you have attained as of today:	*Check all that apply*
		Ambulatory Care
		Nuclear Pharmacy
		Nutrition
		Oncology
		Pharmacotherapy
		Psychiatric
		Geriatrics
		Applied Toxicology
		Diabetic Educator
		Anticoagulation
		Immunization
Current Employment Status		
12	Which choice best describes your *current* employment or	*Dropdown*

	work situation?	
		I am currently employed in a pharmacy related capacity.
		I am currently employed, but not in a pharmacy related capacity.
		I am retired.
		I am currently voluntarily unemployed (including for medical reasons).
		I am currently involuntarily unemployed.
13)	Overall, and taking into account all positions you fill, how satisfied are you with your *current* employment or work situation?	*Dropdown*
		Very satisfied
		Somewhat satisfied
		Somewhat dissatisfied
		Very dissatisfied
14)	How many positions do you *currently* hold?	*Dropdown*
		One part-time position
		One full-time position
		Two part-time positions
		One full-time position & one part-time position
		Two full-time positions
		More than two positions
15)	Considering all postions you *currently* fill, how long is your average workweek?	*Dropdown*
		I am not currently working
		1 to 9 hours
		10 to 19 hours
		20 to 29 hours
		30 to 39 hours
		40 to 49 hours
		50 to 59 hours
		60 to 69 hours
		70 to 79 hours
		80 or more hours
Unless otherwise noted, the rest of the questions draws on your experiences over the past 12 months. If you did not work in the past 12 months in a capacity that drew on your pharmacy background, please skip to question 41.		
Primary Work Location		

Question 16 through Question 23 refer to your primary place of employment, work or practice, including volunteer work, over the past 12 months. This is the location where you spend the most work hours during an average workweek, or where you spent the most weeks working in the past 12 months. You do not need to currently work at this location. These questions describe a particular work location, not an employer. Temporary or traveling workers who spend or spent a significant amount of time at a particular location should use that location as his or her primary work location. Persons who consistently work in multiple locations (i.e. temporary workers, locum tenens) should choose the location where they spent the most time or where they are based. When answering these question, please consider the entire 12 month period.		
16)	Please select the location of your primary place of employment, work, volunteer work or practice:	*Dropdown:*
		Outside of US
		Virginia Border State/DC
		Other US State
		List of Virginia's Cities and Counties
17)	How long have you worked at this particular location?	Dropdown
		I do not currently work at this location
		Less than 6 months
		6 months to 1 year
		1 to 2 years
		3 to 5 years
		6 to 10 years
		More than 10 years
18a)	Approximate number of weeks at which at least some time was spent at this work location within the past twelve months (exclude vacation, medical leave, etc):	*Dropdown: 1 week - 52 weeks*
18b)	How many hours do you (or did you) work in an average workweek at this location?	*Dropdown*
		1 to 9 hours
		10 to 19 hours
		20 to 29 hours
		30 to 39 hours
		40 to 49 hours
		50 to 59 hours
		60 to 69 hours
		70 to 79 hours
		80 or more hours
19)	In the average workweek at this location, roughly what percentage of your working hours were spent in the following roles: **(Answers should roughly equate to 100%)**.	*Dropdown: (for each sub-question)*
19a)	Medication Dispensing	None
19b)	Patient Care (including direct patient care, patient education and reviewing charts)	1% to 9%
19c)	Third party payor billing & coordination	10% to 19%
19d)	Business/Organization management, Administration, Recordkeeping	20% to 29%
19e)	Formal Research (including practice-based research)	30% to 39%

19f)	Education (including preceptoring)	50% to 59 %
19g)	Other	60% to 69%
		70% to 79%
		80% to 89%
		90% to 99%
		100%
20a)	Please select the choice that best describes this location's organizational sector:	*Dropdown*
		For-profit (e.g. private, corporate)
		Non-profit (including religious affiliated)
		State/local-government
		US military
		Veteran's Administration
		Other federal government
20b)	Please select the choice that best describes this practice setting:	*Dropdown:*
		Independent Community Pharmacy (1-4 stores)
		Small Chain Community Pharmacy (5-10 stores)
		Large Chain Community Pharmacy (11+ stores)
		Mass Merchandiser (i.e. Big Box Store)
		Supermarket Pharmacy
		Clinic-Based Pharmacy
		Mail Service Pharmacy
		Hospital / Health System, Inpatient
		Hospital / Health System, Outpatient
		Nursing Home, Long Term Care
		Home Health / Infusion
		Pharmacy Benefit Administration (e.g. PBM, managed care)
		Academic Institution
		Other
20c)	If you selected "other practice setting" please provide a brief description:	*Open-ended*
21)	Please indicate how you are (were) personally compensated for activities at this location:	*Dropdown*
		Salary
		Hourly wage
		Per Diem
		Business/contractor profits
		Volunteer, unreimbursed
22)	Do you currently receive reimbursements for non-dispensing services such as medication therapy management at this location?	*Dropdown yes/no*

23a)	Do you provide any of the following services for another pharmacy at this location? *If you do not perform any remote services at this location, please proceed to Question 24. Telepharmacy: Off-site collaboration using telephone, video or other telecommunications devices.*	Remote order processing
		Central filling
		Remote consulting/telepharmacy
23b)	If you checked any of the boxes in Question 23a, how would you describe your remote, telepharmacy, or remote consulting services client population?	State/local
		Regional
		National
		International
23c)	If you checked any of the boxes in Question 23a, what proportion of your remote, telepharmacy or remote consulting services are spent serving clients in Virginia?	All or almost all
		Most
		About half
		Some
		None or only occasional
If you only had one practice location in the past 12 months, please skip to question 35. If you had additional practice locations, please continue.		
Secondary Work Location		
Question 24 through Question 32 refer to your secondary place of work or practice, including volunteer work, over the past 12 months. This is the location where you spend the second most work hours during an average workweek, or where you spent the second most weeks working in the past 12 months. You do not need to currently work at this location. These questions describe a particular work location, not an employer. Temporary or traveling workers who spend or spent a significant amount of time at a secondary location should use that location as his or her secondary work location. Persons who consistently worked in multiple locations (i.e. temporary workers, locum tenens) in addition to a primary location should choose the secondary location where they spent the most time or where they are based. When answering these question, please consider the entire 12 month period.		
24)	Is this location with the same employer or practice as your primary location, or a different employer/practice?	*Dropdown*
		Same employer or practice
		Different employer or practice
25)	Please select the location of your primary place of employment, work, volunteer work or practice:	*Dropdown:*
		Outside of US
		Virginia Border State/DC
		Other US State
		List of Virginia's Cities and Counties
26)	How long have you worked at this particular location?	Dropdown

		I do not currently work at this location
		Less than 6 months
		6 months to 1 year
		1 to 2 years
		3 to 5 years
		6 to 10 years
		More than 10 years
27a)	Approximate number of weeks at which at least some time was spent at this work location within the past twelve months (exclude vacation, medical leave, etc):	*Dropdown: 1 week - 52 weeks*
27b)	How many hours do you (or did you) work in an average workweek at this location?	*Dropdown*
		1 to 9 hours
		10 to 19 hours
		20 to 29 hours
		30 to 39 hours
		40 to 49 hours
		50 to 59 hours
		60 to 69 hours
		70 to 79 hours
		80 or more hours
28)	In the average workweek at this location, roughly what percentage of your working hours were spent in the following roles: **(Answers should roughly equate to 100%)**.	*Dropdown: (for each sub-question)*
28a)	Medication Dispensing	None
28b)	Patient Care (including direct patient care, patient education and reviewing charts)	1% to 9%
28c)	Third party payor billing & coordination	10% to 19%
28d)	Business/Organization management, Administration, Recordkeeping	20% to 29%
28e)	Formal Research (including practice-based research)	30% to 39%
28f)	Education (including preceptoring)	50% to 59 %
28g)	Other	60% to 69%
		70% to 79%
		80% to 89%
		90% to 99%
		100%
29a)	Please select the choice that best describes this location's organizational sector:	*Dropdown*
		For-profit (e.g. private, corporate)
		Non-profit (including religious affiliated)
		State/local-government
		US military
		Veteran's Administration
		Other federal government
29b)	Please select the choice that best describes this practice	*Dropdown:*

	setting:	
		Independent Community Pharmacy (1-4 stores)
		Small Chain Community Pharmacy (5-10 stores)
		Large Chain Community Pharmacy (11+ stores)
		Mass Merchandiser (i.e. Big Box Store)
		Supermarket Pharmacy
		Clinic-Based Pharmacy
		Mail Service Pharmacy
		Hospital / Health System, Inpatient
		Hospital / Health System, Outpatient
		Nursing Home, Long Term Care
		Home Health / Infusion
		Pharmacy Benefit Administration (e.g. PBM, managed care)
		Academic Institution
		Other
29c)	If you selected "other practice setting" please provide a brief description:	*Open-ended*
30)	Please indicate how you are (were) personally compensated for activities at this location:	*Dropdown*
		Salary
		Hourly wage
		Per Diem
		Business/contractor profits
		Volunteer, unreimbursed
31)	Do you currently receive reimbursements for non-dispensing services such as medication therapy management at this location?	*Dropdown yes/no*
32a)	Do you provide any of the following services for another pharmacy at this location? *If you do not perform any remote services at this location, please proceed to Question 33. Telepharmacy: Off-site collaboration using telephone, video or other telecommunications devices.*	Remote order processing
		Central filling
		Remote consulting/telepharmacy
32b)	If you checked any of the boxes in Question 32a, how would you describe your remote, telepharmacy, or remote consulting services client population?	State/local
		Regional
		National
		International

32c)	If you checked any of the boxes in Question 32a, what proportion of your remote, telepharmacy or remote consulting services are spent serving clients in Virginia?	All or almost all
		Most
		About half
		Some
		None or only occasional
If you had only two locations in the past 12 months, please skip to question 35. If you had additional practice locations, please continue.		
33)	How many **total** work locations have you had *over the past 12 months?*	*Dropdown*
		3
		4
		5
		6 or more
34)	How many work locations do you have *currently?*	*Dropdown*
		3
		4
		5
		6 or more
Employment Information		
The Healthcare Workforce Data Center collects compensation information to assess the balance of supply and demand in the state and in localities, and to assist students in planning health careers and choosing specialties. Information from these questions will only be presented in the aggregate. The confidentiality of information for these and all questions is protected by law. All questions are voluntary.		
35)	Within the past 12 months, have you experienced any of the following:	*Check all that apply*
		Voluntary unemployment (including for medical reasons)?
		Involuntary unemployment (including for medical reasons)?
		Switched employers/practices?
		Worked part-time or temporary positions, but would have preferred a full-time or permanent position?
		Worked two or more positions at the same time?
36)	What is your estimated annual net income from pharmacy-related activities?	*Dropdown:*
		Volunteer work only
		$20.00/hr or less
		$20.01 to $30.00/hr
		$30.01 to $40.00/hr
		$40.01 to $45.00/hr
		$45.01 to $50.00/hr
		$50.01 to $55.00/hr

		$55.01 to $60.00/hr
		$60.01 to $65.00/hr
		$65.01 to $70.00/hr
		$70.01 to $75.00/hr
		$75.01 to $80.00/hr
		More than $80.00/hr
37)	Do you receive any of the following benefits from any *current* employer?	*Check all that apply:*
		Paid Vacation Leave
		Paid Sick Leave
		Health Insurance
		Dental Insurance
		Retirement (401k, Pension, etc.)
		Group Life Insurance
		Signing/retention bonus
38)	What is your estimated current educational debt?	*Dropdown:*
		None
		$10,000 or less
		$10,001-$20,000
		$20,001-$30,000
		$30,001-$40,000
		$40,001-$50,000
		$50,001-$60,000
		$60,001-$70,000
		$70,001-$80,000
		$80,001-$90,000
		$90,001-$100,000
		$100,001-$110,000
		$110,001-$120,000
		More than $120,000
39)	At what age do you plan to retire from pharmacy?	*Dropdown*
		Under age 50
		50 to 54
		55 to 59
		60 to 64
		65 to 69
		70 to 74
		75 to 79
		80 or over
		I do not intend to retire
40)	Within the next two years do you plan to do any of the following:	*Check all that apply*
		Retire
		Cease working in pharmacy
		Continue working in pharmacy, but cease working in Virginia

		Increase patient care hours
		Decrease patient care hours
		Increase time spent teaching pharmacy
		Decrease time spent teaching pharmacy
		Pursue additional pharmacy education
End of Questionnaire for active practitioners-Thank you!		
41)	If you did not practice, teach or otherwise work in pharmacy within the past twelve months, did/are you. . .?	*Check all that apply:*
		I am retired.
		Work occasionally for charity/consultation/special patients?
		Pursue pharmacy education or certifications?
		Pursue education not related to pharmacy?
		Work in another profession or field?
		Experience temporary **voluntary** unemployment (including for medical reasons)?
		Experience temporary **involuntary** unemployment?
42)	Do you provide any pharmacy-related volunteer, mentoring or other services in Virginia? If so, approximately how many hours in the past year?	*Dropdown:*
		None
		1-25 hours
		26-50 hours
		51-75 hours
		76-100 hours
		Over 100 Hours
43)	Do you expect to begin working in Pharmacist in Virginia? If so, when?	*Dropdown:*
		Not currently planning to practice/work in Virginia
		Plan to practice/work in a volunteer capacity
		Yes, within the next year
		Yes, within 1-2 years
		Yes, within 3-5 years
		Yes, in more than 5 years
		Yes, do not know when
End of Questionnaire-Thank you!		