



Virginia's Health Care Spending and Employment Trends in 2021

New data show the Commonwealth's health care spending rebounded in 2021, while pressures on health care labor supply intensified

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SOLUTIONS TO ADVANCE HEALTH



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Acknowledgments and Contact

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Report Highlights

VIRGINIA HEALTH SECTOR SPENDING

- Total annual personal health care (PHC) spending in Virginia increased from a revised estimate of \$72.9 billion in 2020 to \$78.5 billion in 2021 (an increase of 7.6%), due primarily to the gradual recovery from the COVID-19 suppression of health care utilization in 2020.
- The return of PHC spending in Virginia has been slower than the national trend, with Q4 2021 spending in Virginia only 7.2% above where it was in Q1 2020, as spending nationally is up 9.2% over the same period.
- Total health spending as a percent of the state Gross Domestic Product for Virginia fell to an estimated 15.3% in Q4 2021, the smallest share since at least 2015. The percentage of the economy going to health care in Virginia is well below the national average of 17.8%.
- If Virginia had spent the same portion of its GDP on healthcare as the U.S. average (17.8%), spending would have been \$15.8 billion dollars more than it actually was in 2021.
- Health spending per capita in 2021 was over \$1,700 lower than the national average in Virginia, with all major spending categories lower than their national comparators. This per capita health care spending gap between Virginia and the U.S. has increased from 2020, when it was previously \$1,400 per person.
- Virginians in 2021, on average, spent \$700 less per capita on hospital services, \$300 less per capita on professional services, \$200 less on prescription drugs, \$100 less on nursing home and home health care, and \$400 less on other care.
- Overall total health spending growth rates in Virginia have averaged 3.8% annually since 2015, lower than the national average of 4.7%.
- The largest payer for PHC products and services in Virginia is private health insurance, spending an estimated \$28.0 billion on personal health care in 2021, followed by Medicare \$17.8 billion, and Medicaid \$13.3 billion, although Medicaid has been the fastest-growing payer in spending and enrollment since 2015.

VIRGINIA PRIVATE HEALTH INSURANCE TRENDS

- For individuals with health insurance coverage through a private-sector employer, the average single premium in 2021 was \$7,300 and the average family premium was \$21,300. These premiums are nearly identical to national averages, despite Virginia's lower-than-average per capita health care spending.
- These annual single and family premiums have increased 22.5% and 21.5%, respectively, between 2015 and 2021, while combined premium and deductible totals have increased even faster (31.1% for single coverage and 27.7% for family coverage).
- Since 2008, single annual premiums have increased 74.3%, and family premiums have increased 78.9%. The combined totals of average premiums and deductibles have risen even faster, 89.1% for single coverage and 91.3% for family coverage. This growth in



premium and out-of-pocket costs is significantly greater than the underlying private per-enrollee health care spending trend, which has risen by 45.7% over the same period.

VIRGINIA HEALTH SECTOR GOVERNMENT ASSISTANCE

- Health care providers in Virginia received a combined \$800 million in direct federal government pandemic-related assistance, including \$500 million in Paycheck Protection Program funds and \$300 million in Provider Relief Funds in 2021. This is down significantly from 2020.
- Hospital pandemic-related assistance fell from \$1.5 billion in 2020 to \$200 million in 2021, while ambulatory and physician setting assistance fell from \$1.4 billion to \$500 million. Nursing home, residential, and home health assistance fell from \$600 to \$100 million.
- As a percent of total health care spending, hospitals and nursing home/home health settings in Virginia received less federal financial support compared to the national average, while ambulatory and physician settings received a greater proportion.
- Federal pandemic assistance increased Virginia's 2020 personal health care spending from \$72.9 billion to \$76.5 billion and 2021 personal health care spending from \$78.5 billion to \$79.3 billion.

VIRGINIA HEALTH SECTOR EMPLOYMENT

- In the fourth quarter of 2021, 370,000 individuals were employed by the health care sector in Virginia, about 11.3% of the total private sector employed population. This up very slightly (1.2%) from Q4 2020, but is still a reduction from the pre-pandemic peak of 381,000 workers.
- Employment fell across some of the major health care sectors between 2020 and 2021; while ambulatory settings gained an estimated 4,000 workers, hospitals lost 3,000 workers, and nursing homes and residential settings lost 10,000 workers.
- As of Q4 2021, total health sector employment in Virginia was 0.4% below the beginning of 2019, with nursing homes and residential care employment down 11.7% and hospital workers down 2.0%. Ambulatory setting employment was the only subsector to see employment gains, up 5.1% as of Q4 2021.
- A tight labor market for health care workers led to rising health care wages across a variety of occupations, with the fastest wage growth in 2021 for physicians, who saw a 15.3% year-over-year increase in earnings, putting significant cost pressure on providers looking to hire. Nurse wages also increased in 2021, at a slower growth rate of 3.3% year over year.
- As of 2021, the unemployment rate in Virginia among those in health care industries was only 2.1% and even lower among those with health care occupations, adding further evidence for a very tight health care labor market in the Commonwealth.



Updates from Prior Reports and Data Sources

This document follows and updates two [previous reports](#) published in January 2021 and June 2022 that detailed analyses of Virginia's health care sector through 2020. Those works provided a comprehensive look at health sector trends for the Commonwealth of Virginia, including measures of health care spending, employment, and insurance costs from 2015 to 2020, using data from the Center for Medicare & Medicaid Services (CMS) National and State Health Expenditure Accounts (NHEA), data from the Commonwealth's All-Payer Claims Database (APCD), and a variety of other government sources.

The prior report found that as of 2020, total health care spending—including both personal health care (PHC) and non-personal health care (non-PHC) expenditures—was an estimated \$91.6 billion or about \$10,700 per resident, falling as a result of the COVID-19 pandemic from \$93.8 billion in 2019, the year prior (the first time in the series a year-over-year decline in health spending had been observed). A new data source for this work was released in the fall of 2022 from CMS, an updated version of the NHEA data for personal health care spending by [state of residence](#). These new data revised spending estimates from 1991 to 2014 and added new years of data from 2015 thru 2020.

While our reports previously used the Virginia claims data (APCD), Bureau of Economic Analysis (BEA) economic data, and other government sources to estimate Virginia health care spending from 2015 to 2020, we have revised and re-benchmarked these trends to the new CMS state health spending levels for these years. We also use new data in the state NHEA on spending by health sector component for Medicare and Medicaid spending through 2020, adding new information to our report on these subcomponents by payer that were previously unavailable.

In this new report we also put a greater emphasis on differentiating between spending trends in PHC categories, non-PHC categories, and total health care spending in Virginia. PHC spending is the subset of health care expenditures that include the direct use of health care goods and services, such as: hospital care, physician and clinical services, nursing home and home health care, prescription drugs, and durable medical equipment. Non-PHC health expenditures are components of health spending not directly tied to health care utilization, such as: the administration costs of Medicare and Medicaid, the net cost of private health insurance, research and development, public health expenditures, and other expenses on infrastructure and equipment. While prior reports have primarily assessed trends in total health spending, the varying impacts of the COVID-19 pandemic have caused some of the underlying PHC and non-PHC spending trends to diverge, such that greater clarity in this report is helpful. As such, some data and charts previously reporting “total health spending”, may now report PHC growth instead or vice versa.

With the new CMS data, PHC spending estimates from 2015 to 2020 were revised downward slightly; for example, 2014 PHC spending (the last year in the old CMS state health spending release) was adjusted from \$62.8 billion to \$60.6 billion in the new 2022 vintage of these data. As a result, the Commonwealth's estimated PHC spending in 2020 has been revised to \$72.9 billion



(from \$76.0 billion in the prior analyses). Based on the PHC spending update, our calculation of total health spending was also revised from \$91.6 billion to \$87.9 billion in 2020. On a per capita basis, this means total health spending for Virginia in 2020 was revised from \$10,700 per person in the prior report to \$10,200 in this update.

In this report, we use the new APCD, BEA, and other economic data for 2021 to estimate how health spending has changed from 2020 to 2021, keeping the 2020 data benchmarked to the CMS NHEA estimates. To use data from varying sources, we standardize most data in this report to be quarterly, using cubic splines to interpolate data when annual sources are available and averages to roll up monthly-level data.

We continue our methodology from last year's report by using the Bureau of Economic Analysis personal consumption expenditure (PCE) data by health sector components, allowing us to update BEA estimates of the Virginia health sector that previously relied only on personal income, a subset of PCE. In this report, we revise our methodology for computing Medicare spending in Virginia because the CMS [Geographic Variation File](#) for 2021 was not available at the time of analysis. Instead, we also use BEA data on state gross domestic product (GDP) government transfer components, which detail the value of Medicare and Medicaid benefits provided to Virginia residents as the approach to estimate the most recent year of Medicare spending trends.

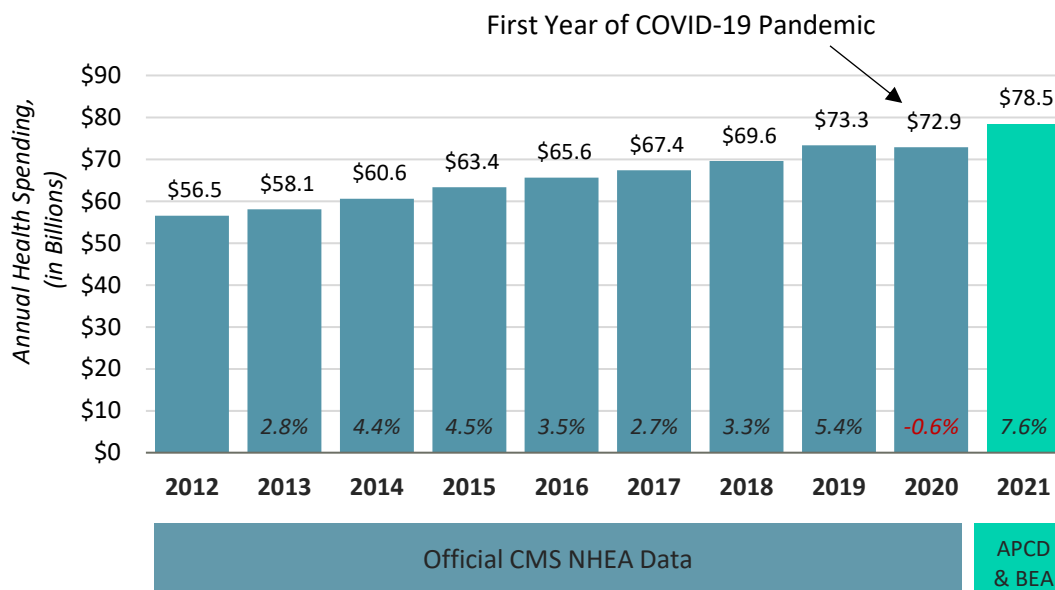
It is essential to note the \$72.9 billion in 2020 personal health care spending and \$78.5 billion in 2021 spending in Virginia takes the CMS state health expenditure data and subtracts one-time federal government financial assistance to providers—Paycheck Protection Program (PPP) and Provider Relief Funds (PRF)—to estimate the true health spending used on the receipt of care in all years. We then separately assess trends in that government assistance between 2020 and 2021 in a subsequent section. CMS in recent releases of the official NHEA for the U.S. for 2020 and 2021 include these payments in their health spending estimates; therefore, to be consistent with our analyses of Virginia health spending trends, we omit the PPP and PRF data from the national health spending findings in all comparisons.

Additional key data sources used in this report include: the Virginia APCD, from which we extracted data on Medicaid and commercial health insurance claims; CMS Form-64 data on state Medicaid expenditures; Altarum's Health Sector Economic Indicators (HSEI) data; Agency for Health Research and Quality's (AHRQ) Medical Expenditure Panel Survey—Insurance/Employer Component (MEPS-IC) data; and BEA state-level PCE for the health sector. We used these data, blended and combined with data on health insurance enrollment statistics from the American Community Survey and official CMS Medicare and Medicaid enrollment files, to estimate by component and payer Virginia health spending trends through 2021. We have designed all estimates to benchmark to the existing CMS state-level health spending data, while extending those data through the most recent period available. More detail on the specific data used in our analyses and the methodologies used to process and standardize the data are detailed in the methods appendix.



Overall Virginia Health Sector Spending

Figure 1: Virginia Annual Personal Health Care Spending (in Billions) and Growth Rate from Prior Year (Percent)



Virginia personal health care (PHC) spending in 2021 was \$78.5 billion,¹ increasing 7.6% (\$5.6 billion) from the prior year’s spending level of \$72.9 billion (Figure 1). This 7.6% increase in PHC spending is the fastest increase since at least 2008, when our Virginia-specific health spending data began. This above-average increase in spending is a reversal of the trend seen in 2020, when the COVID-19 pandemic resulted in significant reductions in utilization for many types of health care services and led to a negative growth rate in PHC spending (-0.6% year-over-year) from 2019 to 2020.

The data shown in Figure 1 are updated from our prior report to now include new CMS National Health Expenditure (NHE) data on PHC by state through 2020 (adjusted to exclude PPP and PRF funding from spending totals). These new CMS data revise downward prior NHE Virginia estimates up to 2014 and Altarum’s derived estimates of Virginia’s health spending through 2020, while also altering the overall growth trend. 2014 PHC spending estimates fell from \$62.8 billion to \$60.6

¹ In this report we show personal health care (PHC) spending as the amount spent on the traditional CMS-defined PHC categories, while excluding supplemental federal government support in 2020 or 2021 for health providers, such as Paycheck Protection Program (PPP) forgivable loans or Provider Relief Fund (PRF) provider payments. PHC spending includes direct spending on health care products and services (e.g. hospital, physician, and prescription drug spending), while non-PHC spending includes other expenditures such as: the administration of public health insurance, the net cost of private insurance, public health spending, and research & development. In contrast to our prior work, we make a greater effort in this report to differentiate the underlying growth trends in PHC vs. non-PHC categories. More details on PHC vs. non-PHC definitions are here: <https://www.cms.gov/files/document/definitions-sources-and-methods.pdf>

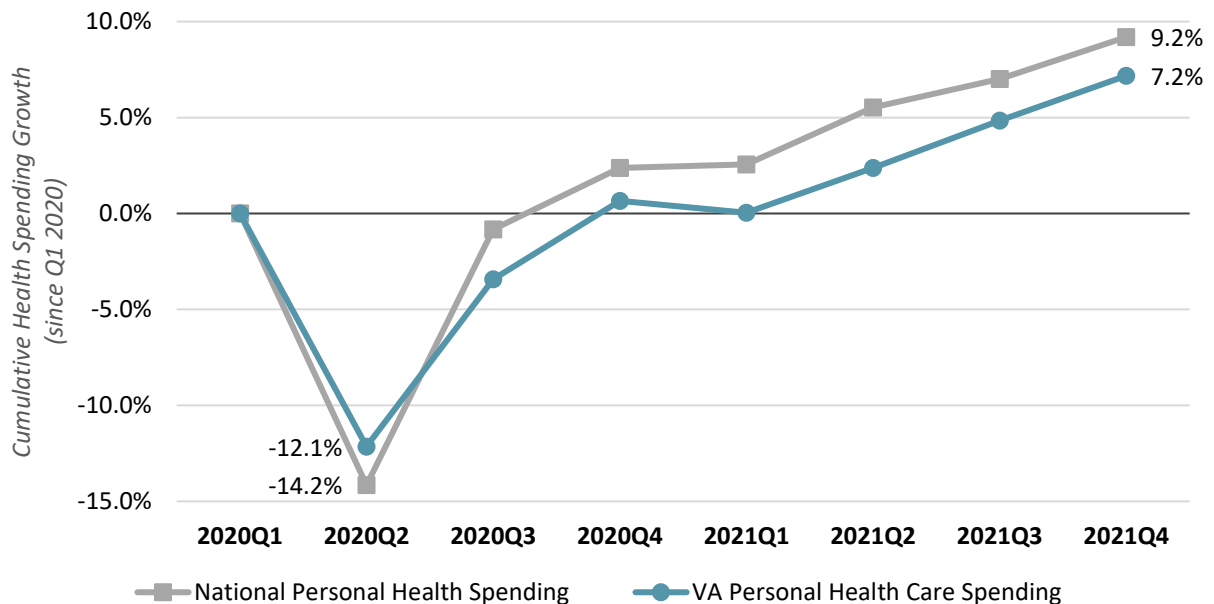


billion with the new CMS data and 2020's estimate fell from \$76.0 billion to \$72.9 billion after updating. As a result of the new data, the 2020 PHC spending totals reveal total spending fell by a slightly lower rate between 2019 and 2020 in Virginia.

Adding in the non-PHC spending categories, total health care spending in Virginia in 2021 was an estimated \$93.6 billion, a 6.5% increase over the revised 2020 total spending estimate of \$87.9 billion. While PHC spending rebounded in 2021, the opposite trend was seen in the growth for non-PHC categories (e.g. public insurance administration costs, net cost of private insurance, public health care spending, and research & development). Growth in non-PHC spending slowed significantly in 2021 to 1.1% year-over-year, following the 2019 to 2020 rapid increase of 11.0% which was the largest since at least 2008.

Figure 2 shows the quarterly trend in Virginia's PHC spending relative to national growth in the last eight quarters, showing that the Commonwealth had an initially smaller decline in total spending, -12.1% versus -14.2%, in the second quarter of 2020 (the peak of initial COVID-19 infections and a period of significant economic lockdowns), but then has had a slower recovery in spending through the end of 2021. By Q4 2021, national personal health care spending was 9.2% higher than it was in Q1 2020; yet, for Virginia, personal health care spending was only 7.2% greater over the same period. The majority of this gap in the spending recovery occurred between the fall of 2020 and the spring of 2021. Since Q2 2021, national and Virginia PHC spending growth has been similar. The difference in this recovery could be due to differences in how the pandemic lockdowns and health care utilization reductions impacted Virginia or the willingness of residents to go back to seeking care as the pandemic continued into 2021 with the delta and omicron COVID-19 pandemic waves.

Figure 2: Virginia and National Quarterly Health Care Cumulative Spending Growth (since Q1 2020)

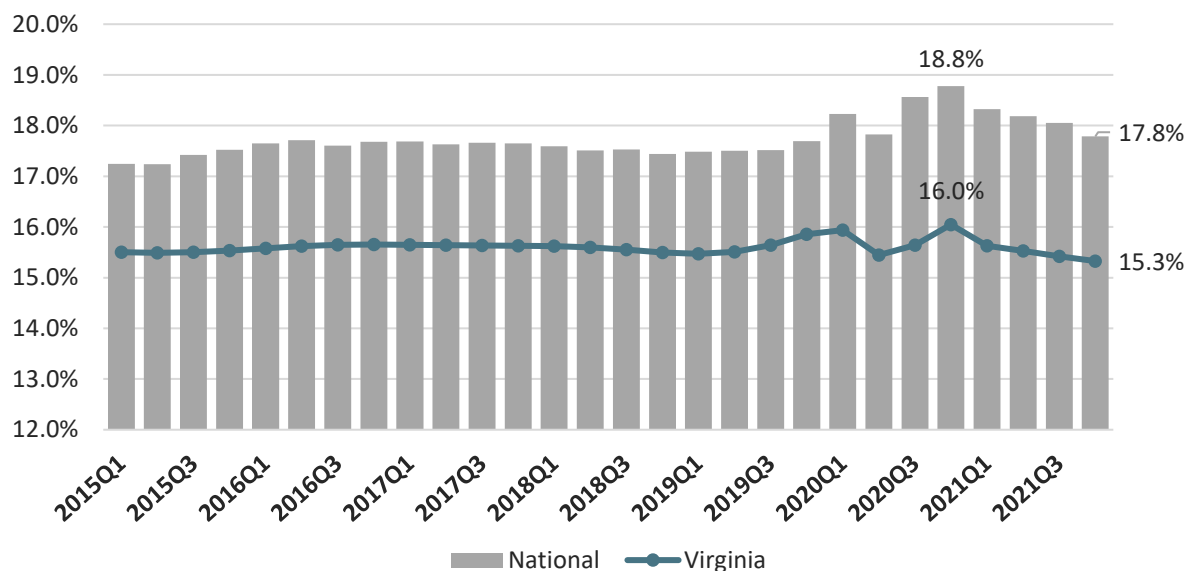




As a percent of Gross Domestic Product (GDP), Virginia’s total health spending (including both PHC and non-PHC) stayed mostly constant between 2019 and 2021. Both total health care spending and state GDP fell slightly in 2020, before each rebounded significantly in 2021. Primarily due to faster inflation in economywide products relative to price increases for health care products and services, GDP increased faster than overall health spending in the Commonwealth between 2020 and 2021. As a result, the percent of state GDP spent on health care fell from an estimated 15.8% to 15.5% in 2021. The 15.5% of GDP spent on health care in Virginia is the lowest since 2015 and is well below the national average.

Figure 3 shows quarterly data on how Virginia’s total health care spending as a percent of the economy has been consistently less than the national average by between 1.5 and 3.0 percentage points, although both have trended up slightly over time. National health spending as a percent of GDP peaked in Q4 2020, at 18.8%, while Virginia health spending as a percent of GDP peaked at 16.0% in Q1 2021. Since that local maximum in Q1 2021, Virginia health care spending as a percent of GDP has fallen 0.7 percentage points to 15.3% in Q4. Given the trends we’ve observed in national health spending in Altarum’s monthly HSEI throughout 2022, we expect the declining trend of health care’s share of the economy for Virginia will likely continue into future quarters in 2022, leading to a share closer to 15% of the state’s economy.

Figure 3: Virginia and National Health Spending as a Percent of GDP (2015 to 2021)

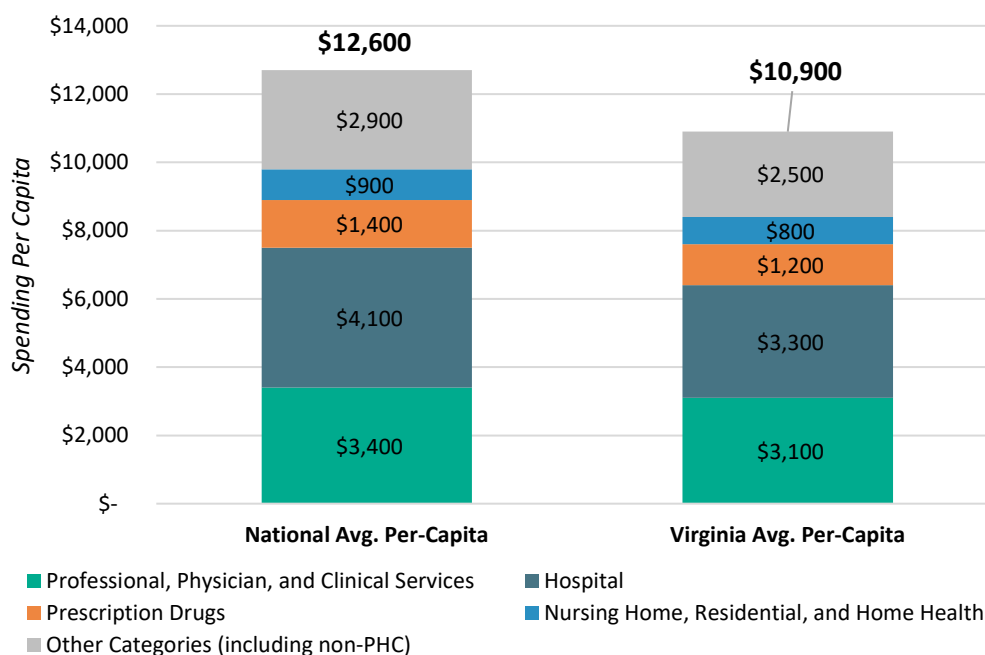


In 2021, if Virginia had spent the same proportion of its state GDP as the national average on health care, the size of health care spending would have been a whopping \$15.8 billion dollars greater (\$109.4 billion versus the actual \$93.6 billion). As both the overall size of Virginia’s GDP has increased over time and the gap in the percentage of GDP relative to the national average going to health care has increased, this otherwise averted share of health care spending has grown—last year we reported a difference of \$8.3 billion between actual spending and the hypothetical total spending based on the national GDP share (data not shown).



As a result of the recovery in total health care spending following the pandemic, health spending on goods and services increased on a per capita basis in Virginia between 2020 and 2021, from \$10,200 per person in 2020 to \$10,900. However, despite this increase, Virginia’s per capita health spending remains far below the national average, which increased from \$11,700 in 2020 to \$12,600 per capita in 2021. As a result, Virginia’s estimated health spending per capita in 2021 was over \$1,700 less than the national average (Figure 4). Among the major health spending components, residents on average in Virginia spent less per capita in 2021 than the national average on professional, physician, and clinical services (\$300 less per capita); hospital care (\$700 less per capita); nursing home, residential, and home health (\$100 less per capita); prescription drugs (\$200 less per capita); and other care (\$400 less per capita) (*differences may not match chart values exactly due to rounding*).

Figure 4: Average Total Health Spending Per Capita, by Category, 2021



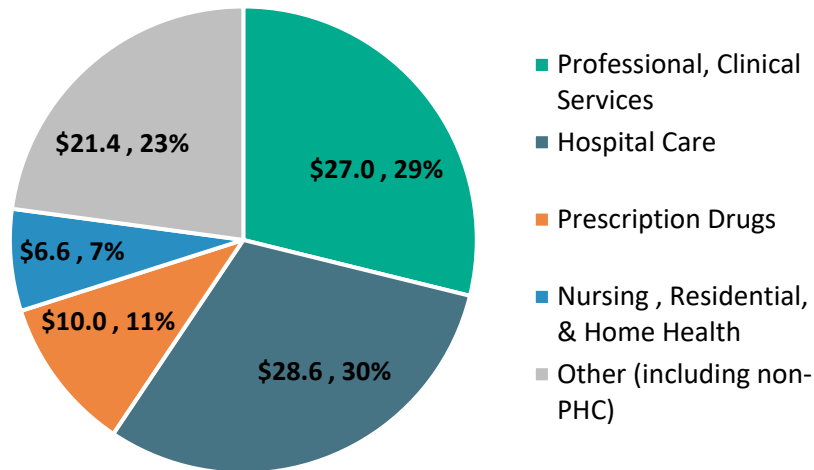
This means, relative to the national average spending per capita, Virginia residents spend 8.4% less on professional and physician care, 18.2% less on hospital care, 15.2% less on nursing home, residential and home health care, and 14.9% less on prescription drugs (*values may not match chart exactly due to rounding*). These variances do not account for differences in the population (age, demographics, economic factors, or health status); however, [a recent analysis](#) in Health Affairs Forefront that did adjust for these factors found Virginia to be 4th lowest spending state in the country in “standardized health spending”.

As a percent of total health spending in Virginia, hospital spending was the largest major category of spending in 2021, accounting for \$28.6 billion (30%) of spending (Figure 5). Professional, physician, and clinical services were the next largest category at \$27.0 billion (29%), followed by other care and non-PHC categories at \$21.4 billion (23%). The smallest two categories for the year were prescription drug spending and nursing home, residential, and home health spending, which



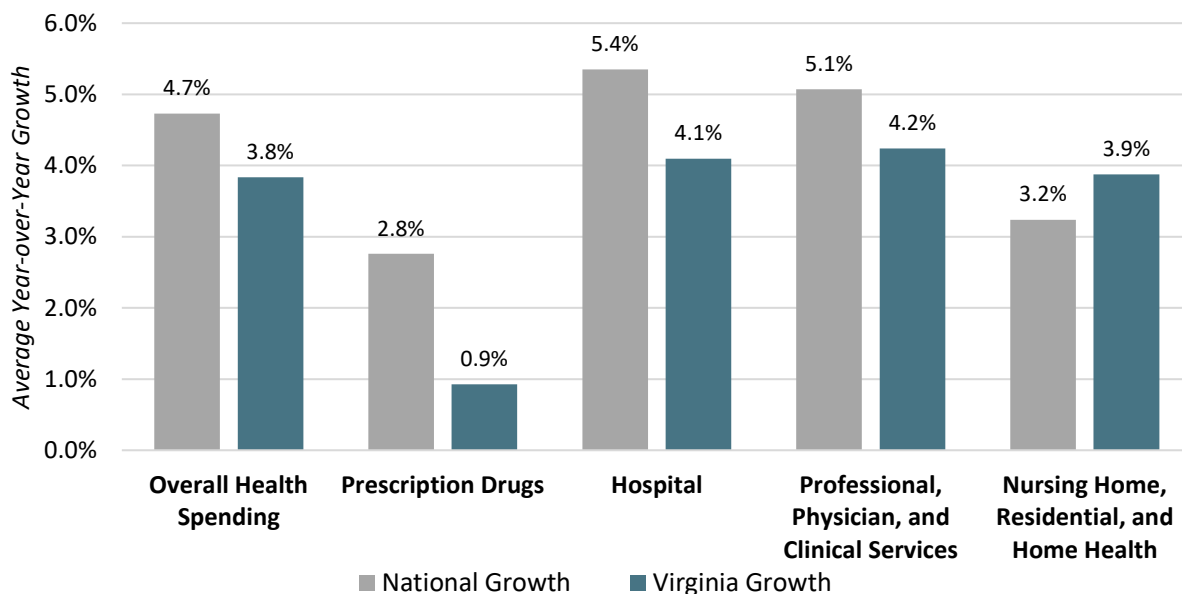
accounted for \$10.0 billion (11%) and \$6.6 billion (7%), respectively, in 2021. These proportions of total spending are broadly similar to the national averages, where hospital spending accounts for 32% of total health, professional and physician services 27%, nursing home and home health care 7%, and prescription drug spending 11% of 2021 health spending.

Figure 5: Virginia Health Care Spending by Category (in Billions), 2021



Since 2015, Virginia’s fastest-growing health spending category has been professional, physician, and clinical spending, averaging 4.2% average annual growth over this period (Figure 6). The next fastest-growing categories of spending have been hospital care (4.1%); nursing home, residential, and home health care (3.9%); and prescription drug spending (0.9%). Of note, spending growth in hospital, professional, and prescription drug categories has been slower in Virginia than the national average over this period, while spending growth on nursing home care has been faster.

Figure 6: Average Spending Growth Rates (2015-2021) for Virginia and Nationwide, by Major PHC Spending Category





Looking at the more recent period since 2019, we see that many components of Virginia’s health care sector have grown somewhat slower than the comparable national averages over the pandemic period (Figure 7). Hospital, physician, other professionals, dental, home health care, nursing home/residential care, prescription drugs, and other health have all seen faster national compound average growth rates than Virginia growth. Additionally, these more detailed data categories reveal that dental care (3.8%) has been the fastest-growing component of Virginia health spending since 2019; that hospital spending (3.6%) has grown slightly faster than physician and clinical services (3.5%) and that home health care spending (1.4%) has grown faster than traditional nursing home and residential care (1.1%).

Figure 7: Virginia and National Compound Annual Growth Rates for PHC and Categories 2019-2021, by detailed Spending Category

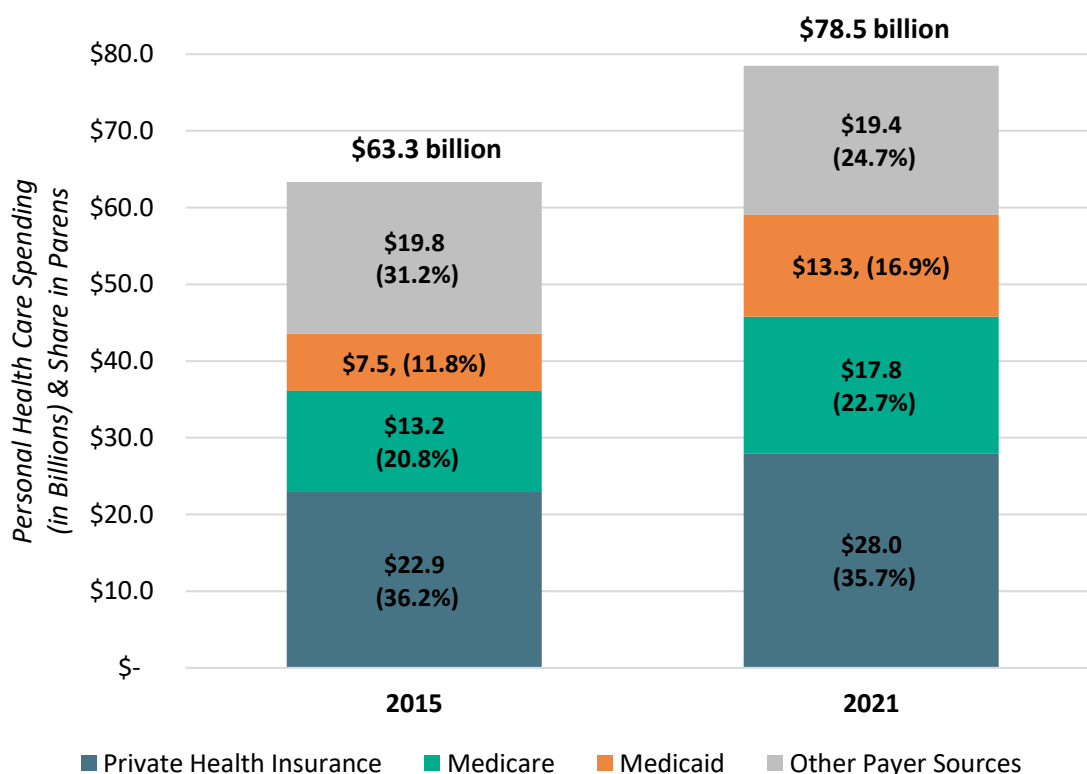
	Virginia	National
Personal Health Care	3.4%	4.7%
Hospital	3.6%	4.5%
Physician & Clinical Services	3.5%	4.4%
Other Professionals	2.0%	6.5%
Dental	3.8%	4.0%
Home Health	1.4%	3.9%
Nursing Home and Residential	1.1%	1.2%
Drugs and Non-Durables	2.2%	5.7%
Durables	1.3%	8.5%
Other Health	4.2%	5.8%



Virginia Health Sector Payers

The largest payer for health care products and services in Virginia in 2021 was private health insurance, spending an estimated \$28.0 billion in PHC expenditures,² followed by Medicare \$17.8 billion, and Medicaid \$13.3 billion (Figure 8). As a share of total personal health care spending, the proportion of health care dollars covered under private insurance has fallen from 36.2% in 2015 to an estimated 35.7% in 2021. Conversely, the percentage of PHC paid by Medicare has increased from 20.8% to 22.7% in 2021 and spending covered through Medicaid has increased from 11.8% in 2015 to 16.9%, an increase from \$7.5 billion in total spending to over \$13 billion. We expect some of the growth in Medicaid spending in 2021 is coming from the previously privately-insured pool, while much is picked up from what would have been out-of-pocket spending or uncompensated care from the uninsured due to Medicaid expansion. In 2020 and 2021, Medicaid disenrollments were not allowed during the public health emergency, leading to greater Medicaid total spending and adding to the near doubling in total Medicaid spend through 2021.

Figure 8: Virginia PHC Spending Levels by Major Payer, 2015 & 2021



² CMS NHE state spending by payer estimates only include PHC spending. Public health spending, investment, research & development, net cost of insurance, and government administration of public insurance costs that are included in “total health spending” are not included in the “other payer” PHC data in this section.



The enrollment in each of these major payer types follows the spending trends, with the greatest number enrolled in private health insurance (5.9 million), then Medicaid (1.8 million), and Medicare (1.6 million). Of note, the new 2020 and 2021 data show that in Virginia, Medicaid enrollment has now exceeded enrollment in Medicare. This is due to the public health emergency described above that is preventing all states from disenrolling Medicaid beneficiaries during the pandemic. Growth in personal health care spending and enrollment for the public payers has been inversely proportional to their starting size. Medicaid enrollment and annual spending growth have been the fastest of the three payers since 2015, where enrollment growth averaged 9.1% year over year since 2015 and spending growth averaged 10.3% (Figure 9). Medicare growth is the second fastest-growing payer, with enrollment growth averaging 2.6% and spending 5.1% through 2021. Lastly, private insurance enrollment is growing very slowly, with only 0.9% year-over-year average growth since 2015 and spending has increased by 3.9% on average.

The dramatic rise in Medicaid spending growth between 2015 and 2021 is primarily due to the growth in enrollment and Medicaid expansion for the Commonwealth. As of mid-2021, there were an estimated 1.8 million people covered by Medicaid, up from 1.1 million just three years before. The rate of this growth remained high in 2021, increasing 14.5% from the year before. Medicaid remains by far the fastest-growing payer population in the Commonwealth.

Figure 9: Virginia PHC Spending and Enrollment Growth by Major Payer, 2015 thru 2021

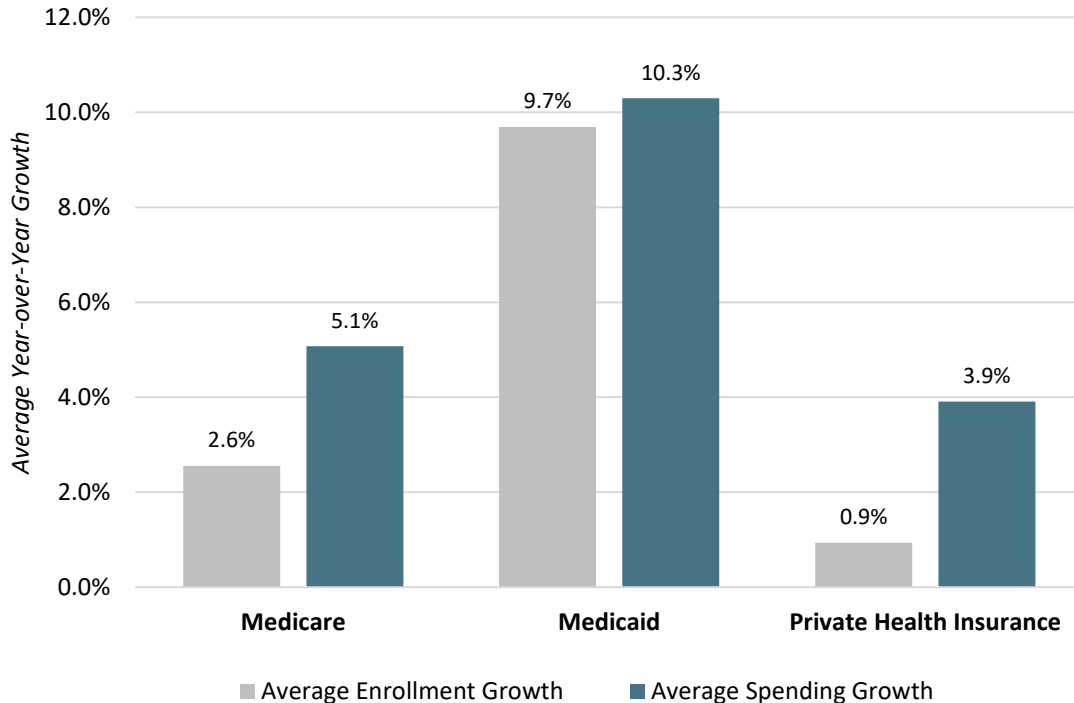
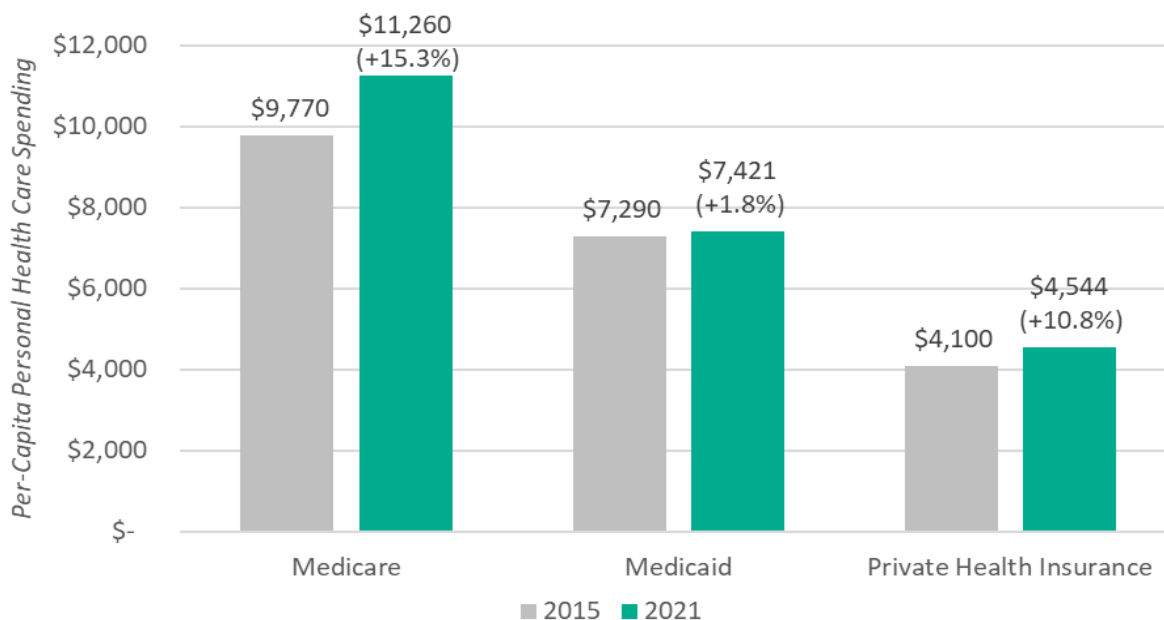




Figure 10 shows spending per capita changes by in PHC spending payer between 2015 and 2021 for Virginia, where per capita Medicare spending has grown the fastest (15.3%), then private health insurance health spending per capita (10.8%), and lastly Medicaid per capita spending growth (1.8%). Slower Medicaid per capita growth is likely the result of the rapidly growing new enrollment of comparatively healthier individuals during the expansion period.

Figure 10: Virginia Per Capita PHC Spending by Major Payers, 2015 & 2021



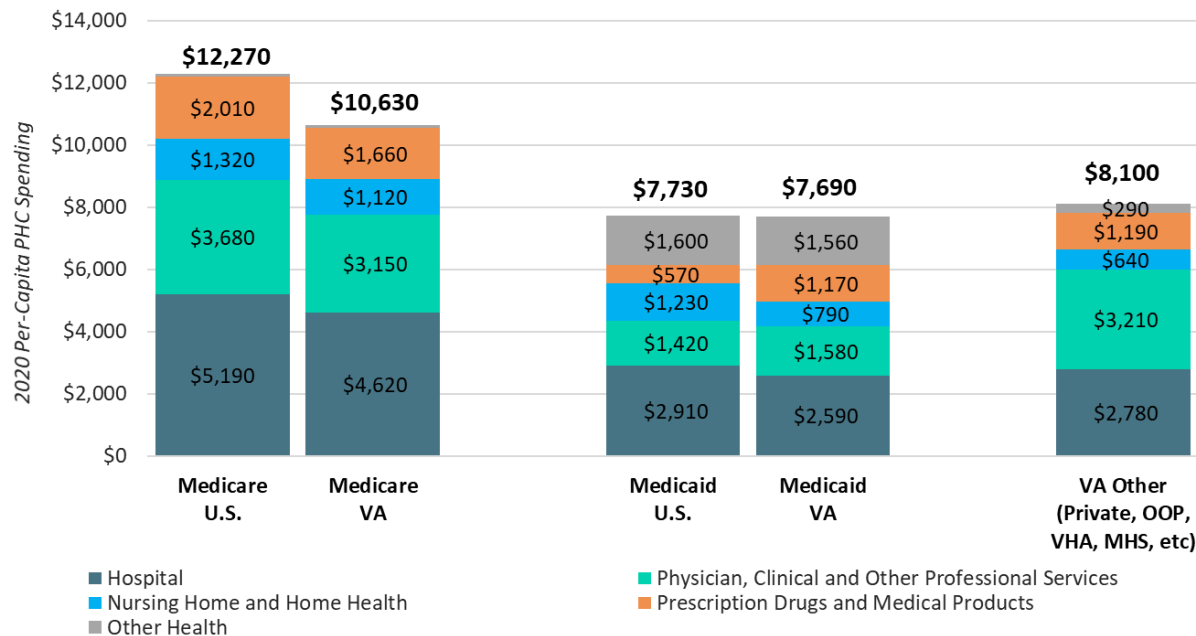
In 2021, average PHC spending was \$11,300 per Medicare enrollee, \$7,400 per Medicaid enrollee, and \$4,500 per private health insurance enrollee (note this spending is estimated only for the PHC spending component of total health expenditures and does not include out-of-pocket costs, as this is the CMS NHEA state data standard). When compared to the national average in 2021, annual personal health care spending per enrollee in Virginia is below average for private insurance enrollees (\$4,500 vs. \$5,400), Medicare enrollees (\$11,300 vs. \$13,400), and is also slightly lower for Medicaid enrollees (\$7,400 vs. \$7,600) (national data not shown).

The new CMS NHE data by state now provides a breakdown of spending for some payers by health spending categories, as is done for the national NHE data. These data allow, for the first time in this report, an assessment of not only how overall per capita spending and growth across the three insurance types compare but also how the underlying distribution of health care spending differs. These data reveal that the largest components of Medicare spending in Virginia are hospital and physician and professional spending, accounting for nearly three-quarters of the total Medicare health costs. Conversely, for Medicaid, the combined hospital and physician spending accounts for just over half of health expenditures, where a much greater proportion of Medicaid costs go to “other health” expenses. Lastly, for the remaining insurance types, physician, clinical and professional care account for the greatest proportion of health spending costs, followed by hospital care and then prescription drug and other medical product spending.



Figure 11 shows the per capita PHC split across the major health care settings in Virginia and across the United States by Medicare, Medicaid, and all other insurance types combined in 2020, the most recent year available in the CMS state data. Unfortunately, there is no ability to specifically assess categories of private health insurance per capita spending by itself in the NHE. Instead, the residual of all other insurance and out-of-pocket (OOP) spending is shown in the final stacked bar in Figure 11.

Figure 11: Virginia and United States Per Capita PHC Spending by Major Payers and Spending Components, 2020



When comparing the Medicaid spending by setting in Virginia to national averages for 2020, we find that the greatest differences are that about \$320 less per enrollee is spent on hospital care in Virginia and \$440 less per capita is spent on home health and nursing home care by Medicaid (Figure 11). Conversely, in Virginia, Medicaid spends nearly \$600 more per enrollee on prescription drugs and non-durable products, while \$160 more is spent on physician and clinical services compared to the national average.

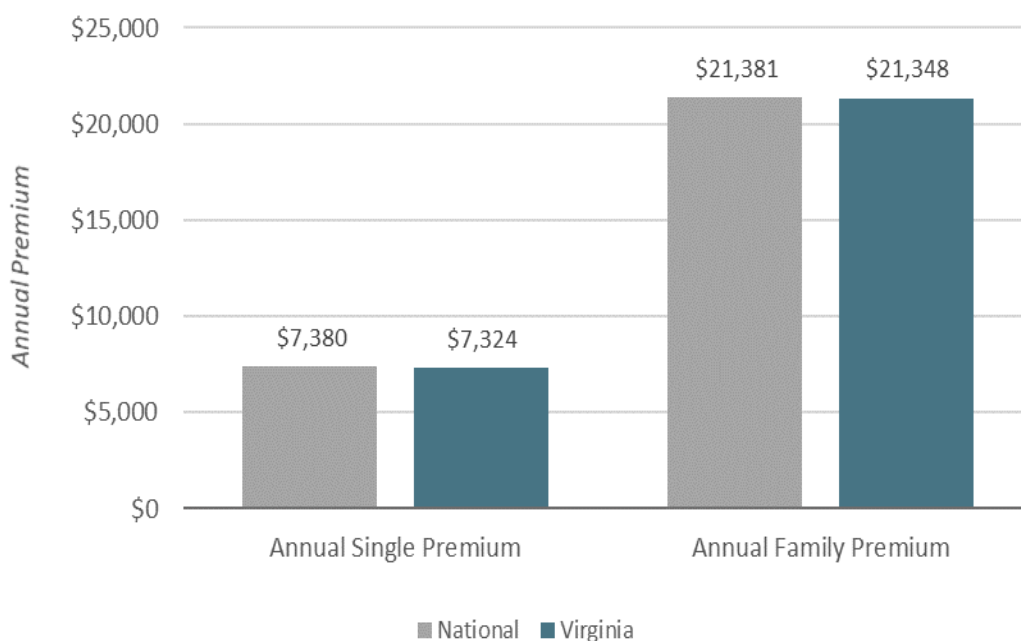
In Medicare, per enrollee spending on hospital expenses in Virginia is also less than the national average, over \$570 less per enrollee, while \$530 less is spent on physician and clinical services. In contrast to Medicaid, Virginia Medicare enrollees also spend less on prescription drugs relative to the nation, a bit more than \$350 in lower spending per enrollee. Due to the variance in the mix of other insurance types between Virginia and other states (private health insurance, Veteran’s Health Administration insurance, Military Health System insurance, Indian Health Service, and uninsured plus out-of-pocket costs), the per capita estimates of the other combined category are not directly comparable between Virginia and the U.S. average and are therefore not shown.



Virginia Private Health Insurance Cost Trends

With the COVID-19-induced pandemic impacts on health care spending continuing to impact both Virginia and the nationwide health care sectors, our insights from the prior report contrasting private health insurance PHC spending per enrollee with insurance premium trends continuing to hold in the 2021 data. Data on insurance premiums for those with coverage from a private-sector employer and those that purchase insurance directly on the insurance exchange show that payments to insurers for coverage are slightly less in the Commonwealth relative to the national average. However, the premium differences between Virginia and the U.S. are much narrower than the actual health expenditure variation. While Virginia’s private health insurance spending (not including out-of-pocket costs) per capita in 2021 is approximately \$890 (16%) less than the national average (\$4,550 vs. \$5,440), the accompanying private insurance premiums in Virginia for single and family coverage are just barely below national averages, -0.8% and -0.2% respectively (Figure 12).

Figure 12: Private-Sector Employee Annual Health Insurance Premiums, 2021

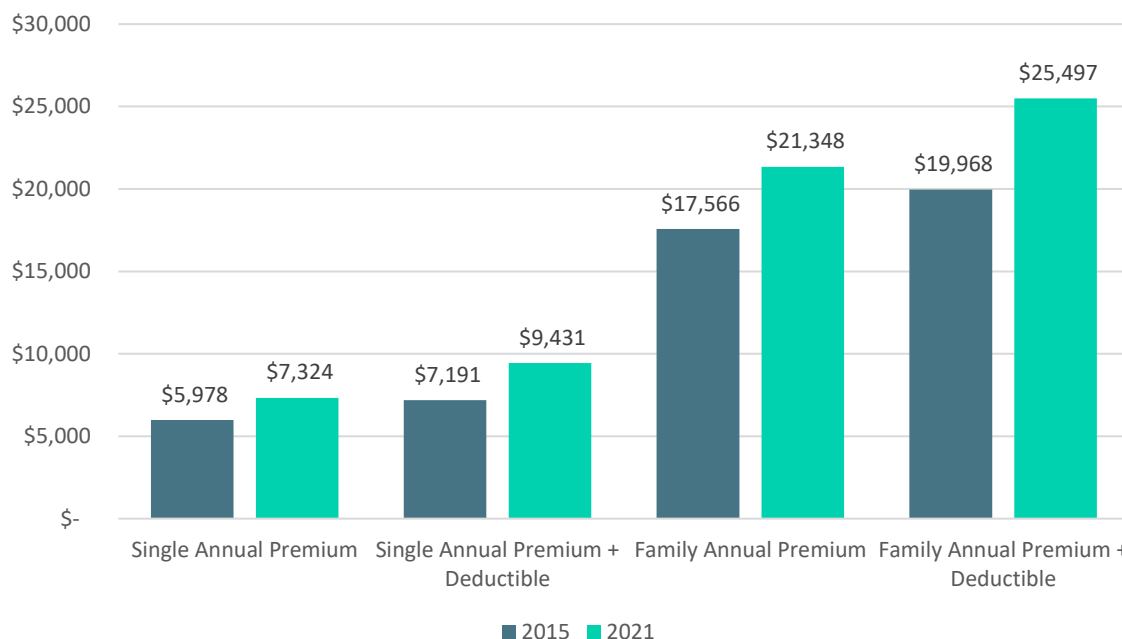


For individuals with single coverage from a private-sector employer, annual average premiums were \$7,300, less than \$100 less than the national average of \$7,400. For those with family plans, annual premiums from a private-sector employer were \$21,350 compared to \$21,400 nationally, less than a \$50 difference. Moreover, private insurance premiums for Virginia residents continue to increase over time (even in 2020 when PHC spending per capita fell). When looking over the period since 2015, private insurance premiums for individual coverage have increased 22.5%, while premiums for family coverage have increased 21.5%. Even greater has been the increases in estimates of total health care insurance payments computed based on total premiums plus



average deductibles for each plan type. When rising deductibles are included in the calculations, single private insurance coverage got 31.2% more expensive over the past 6 years, while family coverage got 27.7% more costly (Figure 13).

Figure 13: Virginia Private-Sector Employee Health Insurance Premiums, 2015 & 2021

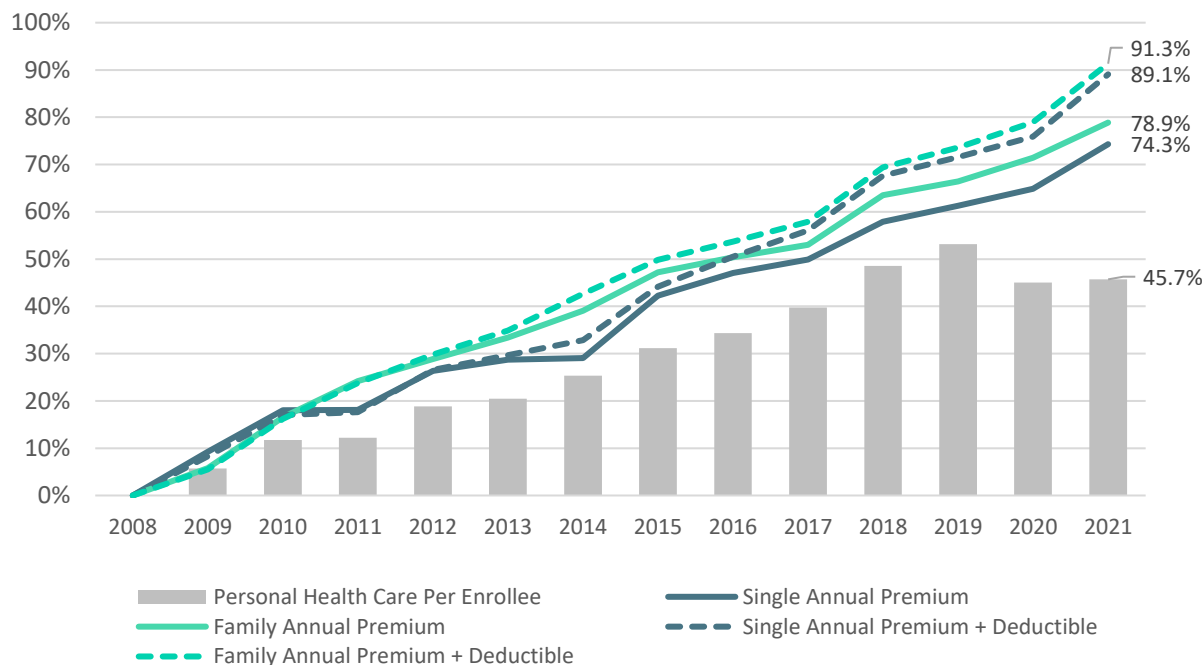


We find that this trend persists when analyzing data on coverage purchased directly from a health insurer on the public exchange. Using data on the average benchmark premiums across the state, insurance costs are higher in Virginia, with an average individual annual premium of \$5,750 versus \$5,400 across the U.S. Recently released data on 2022 and 2023 benchmark premiums on the marketplace for Virginia show insurance premiums will decrease in 2023 and average Virginia premiums will fall below the national average; however, the primary reason for this decline is likely a result of the upcoming \$292.5 million dollar [reinsurance program](#) that is projected to reduce overall premiums by reimbursing marketplace insurers for a portion of high-cost claims and beneficiaries.

When looking at the impact of these growth differences over a longer period, it is clear that, for Virginia, the cumulative growth in both single and family annual premiums has outpaced underlying spending on PHC products and services by private insurance plans. Since 2008, personal health care expenditures per private insurance enrollee are up 45.7%, while the premiums for single coverage of a private-sector employee are up 74.3%, and family premiums are 78.9% higher (Figure 14). Furthermore, over this period, other types of cost-sharing have also increased—average deductibles are substantially higher, as are many types of co-payments for specific services. If the annual deductible were added to each of the single and family plan annual premiums, total plan costs would be 89.1% and 91.3% higher, respectively, in 2021 (Figure 14).



Figure 14: Cumulative Growth in Private Insurance Personal Health Care Expenditures, Single Premiums, and Family Premiums, Virginia, 2008-2021



These increases in insurance premiums and cost-sharing for individuals with private insurance are particularly notable in 2020 and 2021, given the drop in the utilization of care and spending on health care products and services over the past two years. Premiums for many plan types increased as they had in years prior, with many plans collecting more in payments for health insurance and yet paying out similar amounts or less for medical care. In many cases, this will result in consumer rebates, but only when [Medical Loss Ratio rules](#) apply to a particular insurance category and when a plan is near the federally-mandated limit. Even with rebates, national data from 2020 and 2021 indicate there were increases in private insurance premiums net of health care claims paid (net cost of insurance).

There are a variety of sources that can be used to estimate the total net cost of insurance expenditure trends, although not all are available annually at the state level. For national totals, we use the CMS National Health Expenditure Accounts (NHEA) data to find that the net cost of insurance expenditures increased from \$236 billion in 2019 to \$297 billion in 2020 and remained high at \$256 billion in 2021. Unfortunately, these NHEA data are not available at the state level to observe the total magnitude of the net cost of insurance increases for Virginia private insurance plans in 2020 or 2021.



Federal Government Direct Pandemic Financial Assistance

Up until this point in this report, we have reported on health care spending data for Virginia in 2021 absent supplemental federal financial support to the health care sector. In this section, we add to the analysis of Virginia’s health care sector details of the direct financial support from the federal government to health care systems and providers in the Commonwealth to help providers cope with the adverse impacts of the COVID-19 pandemic. These funds came mostly through two major programs—the Provider Relief Fund (PRF) and the Paycheck Protection Program (PPP)—each of which we analyze here to compare the level of financial assistance received by Virginia providers relative to national averages.

PRF was federal financial support specific to health care entities and was primarily provided to large hospital and health care systems to assist with additional costs required to treat COVID patients and make up for lost revenues due to delayed and forgone care during the pandemic. PRF funds were typically direct payments that would not be expected to be repaid. PPP was conversely a program that offered financial assistance to businesses in all industries (although health care was one of the largest recipients of these funds) and support in health care settings mostly went to small- or medium-sized practices and these dollars were offered as forgivable loans as long as conditions such as maintaining staff employment levels were met. The amount of federal financial support by setting for Virginia and nationwide is shown in **Figure 15**. The table also includes the percentage of total 2021 health care spending attributable to federal financial assistance.

Figure 15: 2021 Provider Relief Funds and Paycheck Protection Program Dollars, Virginia and Nationwide

	2021 Virginia Financial Support (in \$Billions)				2021 Nationwide Financial Support (in \$Billions)			
	PPP	PRF	Total	As a % of H.C. Spend	PPP	PRF	Total	As a % of H.C. Spend
Total Healthcare	0.5	0.3	0.8	0.8 %	21.4	28.3	49.7	1.2 %
Hospitals	< 0.1	0.2	0.2	0.7 %	0.5	16.8	17.3	1.3 %
Professionals	0.4	< 0.1	0.4	2.0 %	16.3	8.3	24.6	1.8 %
Nursing and Home Health	< 0.1	< 0.1	0.1	1.5 %	3.7	2.3	6.0	2.0 %
Other Settings	< 0.1	< 0.1	< 0.1	-	0.9	1.0	1.9	-



In total, Virginia’s health care providers received \$800 million in combined PRF and PPP financial support from the federal government in 2021, representing 0.8% of total health care spending (down from 4.0% of total health care spending a year ago). This is a lower percentage than the 1.2% of national health care spending that was offered nationwide, representing nearly \$49.7 billion in financial COVID relief in 2021.

In Virginia, hospitals received the majority of their support from the PRF, amounting to \$200 million or 0.7% of total hospital spending in 2021, a significantly lower value than the 1.3% average across the U.S. Compared to 2020, hospital combined PRF and PPP financial assistance declined from \$1.5 billion to \$200 million in 2021. Ambulatory settings and professions such as physicians, clinicians, received a greater proportion in 2021 federal assistance in Virginia, 2.0% of total spend, compared to 1.8% nationwide, with the majority of those funds coming from PPP and not PRF. This support declined from 2020 to 2021, falling from \$1.4 billion to \$500 million. Nursing homes and home health settings received the smallest total federal financial support in 2021, about \$100 million, but the greatest as a percent of their baseline spending.

When these financial supports are added to the underlying trends in health care spending for 2020 and 2021, it is possible to contrast the slowdown in real health care spending compared to 2019 with the direct financial support received by different types of health care providers. **Figure 16** is a table showing the trend from 2019 spending and the difference between reductions in actual health care spending for care in 2020 and the financial support from the federal government, represented as the difference between 2019, 2020, and 2021 health care spending with and without federal support.³

Figure 16: 2019 to 2021 PHC Spending by Setting, including Provider Relief Funds and Paycheck Protection Program Dollars, Virginia

	Virginia Spending (in \$Billions)				
	2019 PHC Spend	2020 PHC (without support)	2021 PHC (without support)	2020 PHC (with support)	2021 PHC (with support)
Total Personal Health Care	73.3	72.9	78.5	76.5	79.3
Hospitals	26.6	26.5	28.6	28.0	28.7
Professionals	25.3	25.0	27.0	26.4	27.5
Nursing and Home Health	6.4	6.5	6.6	7.0	6.7

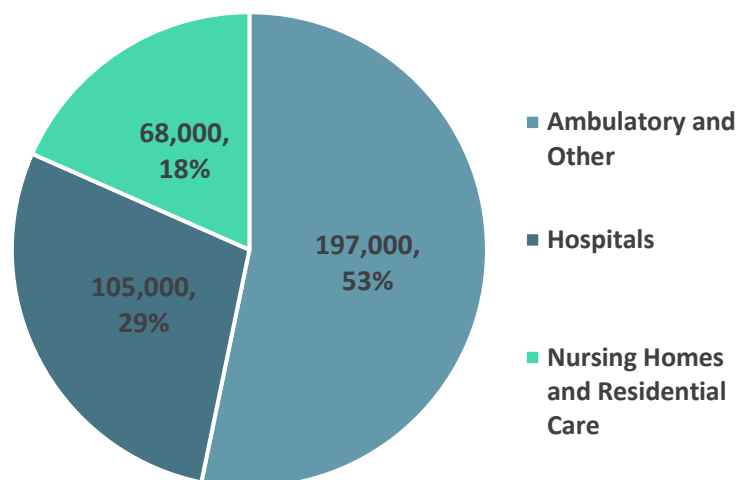
³ Note that 2020 total national spending and growth rates including federal support will differ slightly from CMS NHEA data, because those data include additional federal support above and beyond PPP and PRF financial assistance; however, those additional supports could not be detailed by setting as done in Figure 16.



Virginia Health Sector Employment

As of the fourth quarter of 2021, the Commonwealth's private sector employed approximately 3.3 million Virginians, with 370,000, or about 11.3%, of that privately-employed population working in the health sector.⁴ Health sector employees had steadily increased over time, growing from 338,000 individuals in early 2015 to 381,000 in Q1 2020. This then fell dramatically at the start of the pandemic due to furloughed health workers (to a bottom of 350,000) before bouncing back to the current 370,000. Among those employees, 197,000 (53.2%) work in ambulatory care settings, 105,000 in hospital settings (28.3%), and 68,000 (18.5%) in nursing homes and residential care settings (Figure 17).

Figure 17: Virginia Health Sector Employment, Q4 2021



Compared to overall employment growth in Virginia, the health sector had expanded slightly faster prior to the pandemic, increasing the number of employed at an average year-over-year rate of 2.2% between 2015 and 2019, compared to only 1.4% for all nonfarm employment (data not shown). However, in 2020 reductions in health employment were seen across the board in Virginia. Health care employment declined at a year-over-year average rate of -2.7%, while total nonfarm employment dropped an even steeper -4.9%. In health care between Q1 and Q4 2020, ambulatory settings lost an estimated 2,000 workers, hospitals another 4,000 workers, and nursing homes and residential settings 6,000 workers in Virginia.

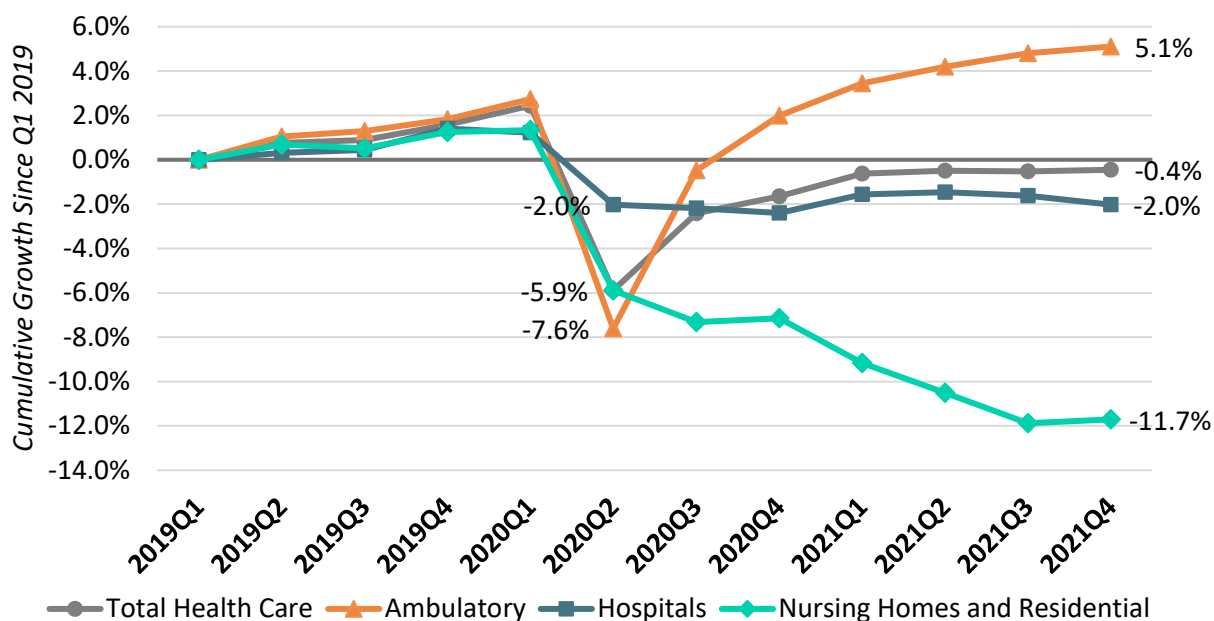
⁴ Note that this 370,000 and other employment count estimates come from the BLS Current Employment Statistics (CES) via a survey of Virginia business and government establishments. As a result, temporary and contract employees and self-employed health care workers are not included in these statistics.



The sharp decline in employment in the second quarter of 2020 coincided with a peak of the COVID-19 pandemic and lockdowns in the Commonwealth. While a reduction in medical personnel in the midst of a nationwide pandemic is counterintuitive, despite the number of new COVID patients requiring treatment, there were also significant reductions in other types of care and overall demand for medical services. As seen in **Figure 18**, the reduction in Virginia’s health workforce was initially sharpest for those in ambulatory settings (such as physician offices and dental offices), followed by nursing homes and residential settings, and then hospitals.

However, while ambulatory setting employment trends quickly rebounded, some downward pressure on hospital employment continued through the end of 2021, with even greater employment declines for nursing homes. By the end of 2021, hospitals had yet to recover to their pre-pandemic levels of employment (down 2.0% from Q1 2019) and nursing home and residential care facilities were down nearly 12.0% in total employment over the same period. These trends were similar to the national health care employment situation, where nursing homes and residential care facilities employment down significantly more than the other two settings and hospital employment recoveries are lagging ambulatory settings.

Figure 18: Virginia Health Sector Employment Cumulative Growth, by Major Category



One possible explanation for the continued decline in hospital and nursing home employment in 2021 is that demand for health care services was impacted by subsequent waves of the COVID-19 pandemic causing health care employers to slow hiring and shrink their staff sizes. Conversely, an alternative explanation is that hospitals and other health employers saw health care demand return, but despite attempting to hire more workers, full-time workers were more difficult and expensive to hire due to a tight labor market. This would have caused health care employment to stagnate and providers would have been forced to make do with additional contract and

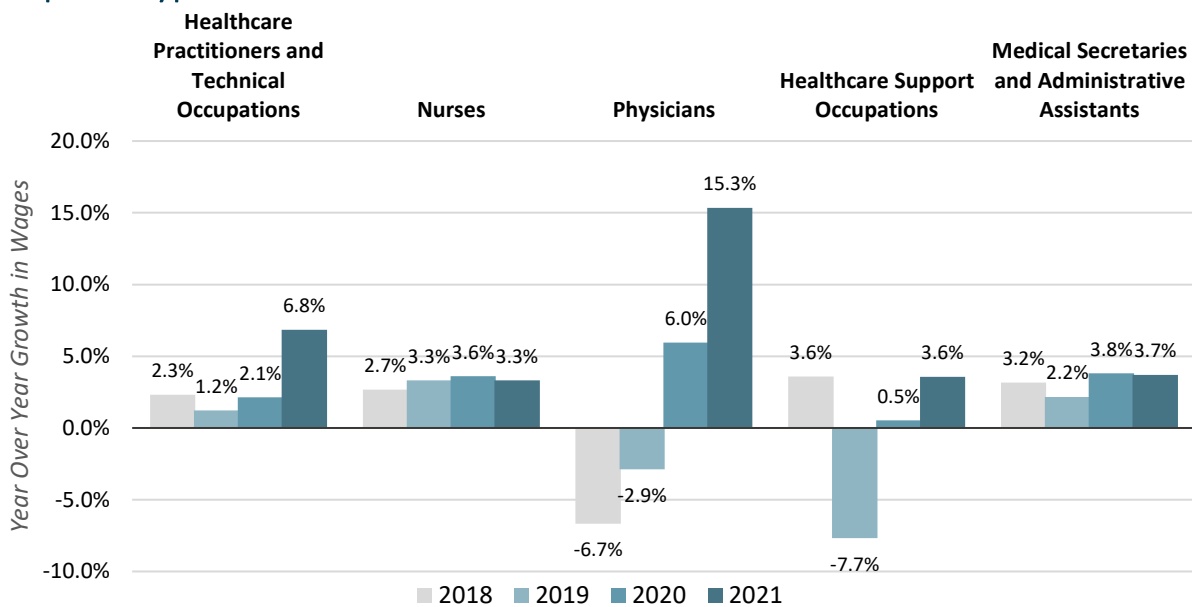


temporary employees. The state-level data on counts of employed workers do not offer much information in illuminating which of these causes were the driving factor; therefore, we turn to wage and unemployment rate data for Virginia to better understand dynamics of the health care labor market crunch.

While health care employment would decline under both scenarios described above, in the second instance of a very tight and expensive labor market, we would expect significant increases in health care wages, as well as very low unemployment rates among health care occupations and industries. In Virginia, health care occupations saw significant increases in year-over-year wage growth, with the largest increase among healthcare practitioners, such as physicians, nurses, and specialists. In 2021, wages among these jobs in Virginia grew by 6.8% year over year, the fastest since 2018 and greater than the growth in wages for healthcare diagnosing or technologist occupations (Figure 19).

The wage growth for healthcare practitioners and technical occupations in Virginia (6.8%) was slightly faster than the national average (6.1%) in 2021, as was the 2021 wage growth for support occupations (3.6% versus 3.3% in the U.S.). Physicians in 2021 saw particularly large earnings increases in Virginia, increasing over 15% from a year prior. This is all evidence that the lack of employment growth in 2021 was likely caused by an extremely tight labor market for health employers and a lack of available medical professionals to fill open, permanent roles.

Figure 19: Virginia Health Sector Year-over-Year Wage Growth (2020-2021), by Occupation Type

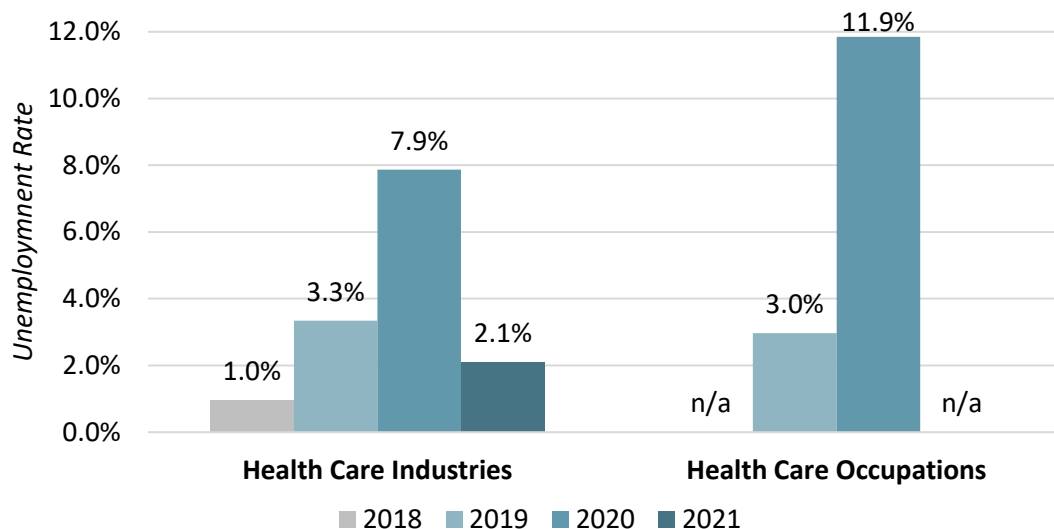


Furthermore, the unemployment rate among those in either health care occupations or health care industries in Virginia was extremely low in 2021 and well below the broader rate of unemployment. While these data are quite variable, in combination with the wage data above, they provide significant evidence that there was an extremely constrained market for health care



workers in 2021, increasing costs for providers. **Figure 20** shows the change in unemployment rate based on both industry and occupation definitions. In 2021, the unemployment rate among Virginia health care industries was 2.1%, below the non-health care average of 4.5% (data not shown) at the time. Further, the unemployment rate in Virginia among healthcare occupations was actually 0.0% (likely due to a small sample size), but was well below the 4.6% of non-health care occupations (data not shown).

Figure 20: Virginia Unemployment Rate in Health Care Jobs, by Occupation and Industry Definitions



Conclusion

Following the chaotic year of 2020 for the Virginia health care sector, 2021 offered some return to normalcy in health spending, costs, and employment trends. After the decline in PHC spending in Virginia in 2020 (-0.6%), 2021 PHC spending increased at an above-average rate of 7.6%. Virginia health care expenditures have increased more slowly relative to the broader U.S. trends since the pandemic began, leading to a growing gap in the average health spending per capita compared to the national average. Health spending per person and as a percent of the state’s GDP in Virginia are well below the U.S. overall, as has been the rate of growth in health care expenditures since 2019.

However, despite the much lower average health spending among all insurance types (including the privately-insured), healthcare premiums and deductibles in 2021 are nearly identical to the nation’s average, revealing a mismatch in underlying cost vs. health insurance premium trends. We will continue to assess Virginia 2022 health spending trends as data become available, expecting that, as a share of the overall economy, the health spending proportion likely continued to fall in 2022. We will also track the Commonwealth’s health sector employment market return to normal, including a recovery in the labor supply for healthcare workers, alleviating some of the crunch observed in 2021 across many types of health care occupations.



Appendix A: Report Methodology

VIRGINIA HEALTH SECTOR SPENDING

CMS National Health Expenditure Accounts Benchmarking

Analyses in this report follow the spirit and strategy of Altarum's national-level [Health Sector Economic Indicators](#) (HSEI) briefs and data, while bringing these techniques to the state level for a novel analysis of health sector trends in Virginia. HSEI spending analyses are designed to provide the most up-to-date possible estimates of health expenditures that are consistent with and build upon the CMS [National Health Expenditure Accounts](#) (NHEA). Among health economists and health sector experts, these data are among the most frequently cited and most trusted estimates of health sector spending and provide robust, consistent, and understandable estimates of health sector expenditure trends. The NHEA accounts contain data at the national level (updated annually) and state level (updated every 4 or 5 years), data by payer, data by spending category, and data for specific demographic groups (age and gender). Also included in the NHEA are projections of future health national health sector expenditures, which are updated annually. Yet, despite their reliability, official NHEA data suffer from significant data lags in the release of this information, particularly at the state level (the most recent data at the time of writing are available through the year 2020).

Therefore, this work directly incorporates and benchmarks to CMS NHEA data whenever it is available, and then subsequently builds on those data to generate estimates of spending for periods that are not yet available in the NHEA data: in this report the quarterly data for 2021. When subsequent releases of NHEA data become available, this approach makes it possible to re-benchmark our findings for the years provided and continue estimating for new periods not yet available from CMS. All category definitions, populations, and spending estimates in this report match directly with the CMS definitions used in the NHEA. Details on the NHEA methodology and how it compares to other health sector spending estimates, for example those in GDP accounting, is [available on the NHEA homepage](#). In the case of the state health spending trends, we benchmark to the data available from 2008 through 2020 in the state-level NHEA accounts, using data on total spending by health category, spending by payer, and spending per enrollee for each of the three major insurance type. Data on state health spending trends come in two variants, based on residence and provider location, we use [data by residence](#) as the source for this report.

In some cases, data from CMS (which are reported annually), need to be portioned into quarterly or monthly estimates to support the estimates of future periods and to ensure consistent reporting over time. In the national level HSEI, within year trends are estimated using the underlying health spending estimates from Bureau of Economic Analysis (BEA) [National Income and Product Accounts](#) (NIPA) data, while splined to ensure that the national annual HSEI totals match with the CMS NHEA totals. In the state-level work, we follow a similar approach, yet often do not have the same historical data in our underlying series to generate intra-year trends.

Therefore, in this work we instead use a [simple cubic spline](#) for intra-year trends of the state-level



CMS total spending, spending by category, and spending by payer data from 2008 to 2020. As a result, averages of quarterly data in the final workbooks may differ very slightly from the annual data reported by CMS, due to the cubic spline methodology. Generally, our approach is to report on annualized data, which estimates spending quarterly based on what an annual total of spending would be for that period if it continued for an entire year.

In order to estimate future periods of data, while benchmarking to the CMS NHEA state-level data through 2020, we use the same approach in this work as is employed in the national-level HSEI analyses. We calculate from other data year-over-year growth rates for subsequent periods in categories and series that are comparable to the official NHEA statistics. For example, data from the [Virginia APCD](#) and data from [state-level GDP and NIPA](#) sources are used to calculate year-over-year growth rates and those are then applied directly to the base year (2020) CMS NHEA estimates. This approach is made separately and independently for total state spending category spending, spending by payer, and enrollment by payer. This approach ensures that future period estimates are consistent with the CMS NHEA data and that there are not discontinuities between the official CMS NHEA data and the more recent periods in this report and the underlying data. We specifically highlight this in [Figure 1](#) of this report, showing the official and estimated periods in different colors.

Some estimates of health expenditures that are available at the national level are not available in the CMS state-level data (or differ slightly from the national data). For example, State NHEA data does not include estimates of spending beyond personal health care expenditures (PHC), nor do they directly contain estimates of total spending or spending per enrollee from minor insurance types (like military health systems or the Indian Health Service) or for the uninsured. Generally, when CMS spending data are not available to be used as benchmarks, we do not include estimates of those components in this report. The exception to that is our estimate of total health expenditures for the state of Virginia (in addition to the PHC expenditure data). We estimate this by applying the ratio of national total health spending to national PHC expenditures to the state-level estimates of PHC to estimate state-level total health spending. This statistic is then used in our comparison of total health spending as a percent of GDP nationally to health spending as a percent of state GDP.

The benchmarking approach discussed above also applies to estimates of enrollment by major insurance types in the state, using CMS data through 2020. We attempt to remain consistent with NHEA population data, including the way that individuals are reported with multiple insurance types, and do not specifically report on the number of individuals uninsured at the state level. Details on data used to estimate enrollment in subsequent periods is described below, primarily relying on U.S. Census American Community Survey data.

Population and Health Insurance Enrollment Estimates

Data used to estimate enrollment by insurance type in Virginia for 2021 incorporate data from the U.S. Census American Community Survey (ACS) and official Medicaid enrollment data. 1-year ACS data on health insurance status by type were obtained from the Kaiser Family Foundation [State Health Facts](#), and 2021 data were used for individuals residing in the state of Virginia, using the



growth rates from 2019 to estimate the change in those insured with private health insurance and Medicare. Note that despite the fact the ACS data allow for respondents to flag multiple insurance types, this approach does not double-count enrollees, because only the growth rate from ACS is applied to the benchmark CMS enrollment data. Individuals with private insurance include both those that reported receiving insurance directly from their employer and those who purchased insurance directly from an insurance company during the year.

For Medicaid enrollment, we used [data on enrollment by state](#) from the Kaiser Family Foundation, again applying the year-over-year growth rate from this data to the benchmark CMS NHEA Medicaid enrollment counts. This yielded what we believe to be a more accurate count of Medicaid enrollment growth statistic, particularly for the years 2019-2021, where enrollment expanded greatly due to the state passing Medicaid expansion in the prior year.

Private Health Insurance Personal Health Care (PHC) Spending Estimates

Total health spending and spending per enrollee for those with private health insurance in this report benchmark to CMS NHEA estimates of spending from private health insurance sources. The primary data source used to build on the CMS NHEA data (which ends in the year 2020) is data on private health insurance spending captured in medical claims contained within the Virginia [All-Payer Claims Database](#). Importantly, we use this data only in combination with the enrollment data described above to estimate trends in health sector private insurance spending. We do this by estimating trends in the APCD for health spending per private insurance enrollee over time and then multiply this data on spending per enrollee by the enrollment data from ACS above to estimate total year-over-year growth trends for Virginia's private health insurance funded spending. Spending per enrollee is calculated from the APCD on a monthly basis based on data using the sum of health expenditures in the four major claim types (Inpatient-IP, Outpatient-OP, Prescription Drug-RX, and Professional-PB) and then dividing by the number of enrollees in that month in the APCD enrollment tables.

We use this approach to incorporate the APCD data into our health spending estimates, rather than simply using total spending from private insurers directly from the APCD because the APCD does not cover all individuals with private insurance in Virginia. Those covered by a self-insured employer are potentially missing from this data, due to the fact that those entities are not required to submit their claims to the APCD. This is particularly an issue during periods following March 2016, when the [Gobeille v. Liberty Mutual Insurance Co.](#) case was decided by the U.S. Supreme Court. Moreover, the number of submitters and enrollees covered by the APCD are not consistent over time. Therefore, the approach of using monthly computations of total spending and enrollment compensates for changes in enrollment over the year and also for potential loss of submitters over time in a way that does not bias our estimates of total spending.

The monthly data on per enrollee spending were then combined via averaging into quarterly data and annual data and applied to the enrollment counts discussed in the prior section to estimate total spending. Some monthly data series derived from the APCD, such as commercial prescription drug spending in later periods, required smoothing to estimate year-over-year spending growth trends, where necessary this was done using an 18-month trailing average.



Medicaid Personal Health Care (PHC) Spending Estimates

An identical approach to the one used in the private insurance personal health care spending data was applied to estimate spending by Medicaid in Virginia for the periods building on the 2020 CMS benchmark data. Although the concerns about total spending computed in the APCD for Medicaid are less significant, because it is likely all Medicaid enrollees are covered by the APCD submitters (unlike those with private insurance), we chose to use the same approach to ensure consistency between the Medicaid and private health insurance methodology. However, for Medicaid, an additional step was taken to also include additionally available data on spending trends from [CMS State Expenditure Reporting for Medicaid & CHIP](#) data collected via CMS-64 forms for each state. We believe that this data, which measures trends in total spending by the Virginia Medicaid program in each state over time is also likely to be strongly predictive of the official CMS reported health sector spending (separately from the underlying claims data reported to the APCD).

Therefore, to estimate final Medicaid PHC spending and spending per enrollee, we blend two separate estimates of Virginia Medicaid spending over time, one generated from the APCD approach described above and one directly from estimates in spending growth by the Medicaid program from the Form-64 data. These data are blended by computing annual growth rates and then using a simple average of the two approaches to estimate Virginia health spending from the NHEA 2020 benchmark year.

Medicare Personal Health Care (PHC) Spending Estimates

Estimates of total personal health care expenditures for Medicare differ from the above approaches, due to the fact that comprehensive Medicare claims were not available in the APCD for all necessary time periods at the time of analysis. We therefore use data from the BEA [state Gross Domestic Product](#) data, which details the size of government transfer payments to state residents for Medicare benefits. This varies from prior works where we used Medicare [Geographic Variation Public Use File](#) and the [Medicare Part D Provider Utilization and Payment Data: Part D Prescriber](#) file to estimate per enrollee spending trends for Virginia and multiply those data with the enrollment counts from the ACS to estimate year-over-year growth in Medicare spending. At the time of analysis, the Medicare Geographic Public Use file was unfortunately unavailable, leading to our use of the alternate BEA source.

Spending by Personal Health Care Category

Independent of the spending estimates by payer, we also estimate spending by the major NHEA health expenditure categories for Virginia, including physician and professional services, hospital services, nursing home and residential care services, and prescription drug expenditures. These results by category are generated using the underlying year-over-year growth trends in the data for each payer attributable to each NHEA category (and mixed using weighted averages, weighted by the enrollment in each insurance type). The categories in the underlying data are attributed in varying ways, depending on the category and data source. For example, data from the APCD for private insurance and Medicaid are attributed based on claim type (Inpatient claims attributed to hospital spending, professional claims to physician and clinical spending, and prescription drug



claims to prescription drug spending) and data from the Medicaid Form-64 data are attributed based on the category of spending listed. The overall state of Virginia growth rate from these combined data for each category is then applied to the base year (2020) CMS NHEA spending by category to calculate the 2021 spending estimates.

Also incorporated into the health spending category estimates are data from BEA [state-level personal consumption expenditures data](#) for the following settings: hospitals, nursing and residential, and ambulatory services. A simple average is used to combine the year-over-year growth rate estimate derived from the state-level BEA data and the data directly from the APCD, Medicaid, and Medicare sources. The blended growth rate is then applied to the CMS NHEA data. Details on the differences between spending category estimates derived from the blended payer data and growth estimated directly from the BEA personal consumption expenditures data are available upon request.

Lastly, to generate estimates of total PHC expenditures for the state for 2021, data on growth in spending for those not covered by the three major insurance types was required. An estimate of this aggregate PHC spending was computed directly from Virginia [personal consumption expenditure data](#) for health care services and then blended with the data described above on the three major payers. This “other” category is used to estimate spending both from other sources and on categories not described above.

VIRGINIA HEALTH SECTOR EMPLOYMENT

Data on health care employment is taken directly from the Bureau of Labor Statistics (BLS) [Current Employment Statistics](#) (CES) data for Virginia. These data are available directly for all categories used in this report. Monthly data are collected and then combined via an average to generate quarterly and annual data. State-level data are only available in the “Not Seasonally Adjusted” data series; however, this has a minimal impact, as seasonal trends in health care employment are very slight. Health employment as a percent of total employment is calculated in two ways (described in the report), using both a base of total nonfarm employment and total private sector employment (also not seasonally adjusted). The difference between these two series is that private sector employment excludes those employed by public state and federal government entities.

We add in this year’s report data on health employment and wage trends by occupation from the BLS [Occupational Employment and Wage Statistics \(OEWS\)](#) and also findings from the [Current Population Survey \(CPS\)](#). These data were processed to reveal findings for the Commonwealth of Virginia for specific health employment statistics, while analyzing the underlying microdata such that findings were consistent with aggregate, publicly-available findings.

VIRGINIA PRIVATE HEALTH INSURANCE COSTS

Data on private employer health insurance premiums are calculated based on the Agency for Health Research and Quality’s (AHRQ) [Medical Expenditure Panel Survey– Insurance/Employer Component](#) (MEPS-IC). These data track and allow for the comparison of private health insurance



premiums and plan characteristics, such as deductibles, for individuals with coverage from a private-sector employer across the U.S. and for specific states. The data were curated using the [MEPSnet/I.C. Trend Query](#) online portal, and data for private-sector establishments were taken for Virginia to include all plan types (single, family, and employee+1) separately, all provider types (HMO, PPO, any-provider plans) combined, for all firm types combined, and all firm sizes combined for the Commonwealth. Comparable data for national premiums and deductibles were obtained using the same approach.

We collected additional data on insurance coverage purchased directly by individuals (not through an employer) from the Healthcare.gov marketplace, specifically trends in the state's average "benchmark" premium—the second-lowest-cost silver plan for a 40-year-old. These data are compiled by the Kaiser Family Foundation and made publicly available in the [State Health Facts: Marketplace Average Benchmark Premiums tables](#).

VIRGINIA FEDERAL GOVERNMENT PANDEMIC FINANCIAL SUPPORT ANALYSES

Direct financial support for health care systems and providers was calculated using data on the [Provider Relief Fund](#) payments (Health Resources & Services Administration) and [Paycheck Protection Program](#) (U.S. Small Business Association) from their respective agencies. Data were collected by year, state, and (when possible) type of provider receiving the funds. These spending totals by program were aggregated together and then contrasted with the total health care spending by health sector category. In order to identify the quantity of Provider Relief Fund payments allocations among the seven health care service categories, the Paycheck Protection Program allocations were subtracted from the total allocations [reported by CMS](#) in the 2020 and 2021 NHEA.