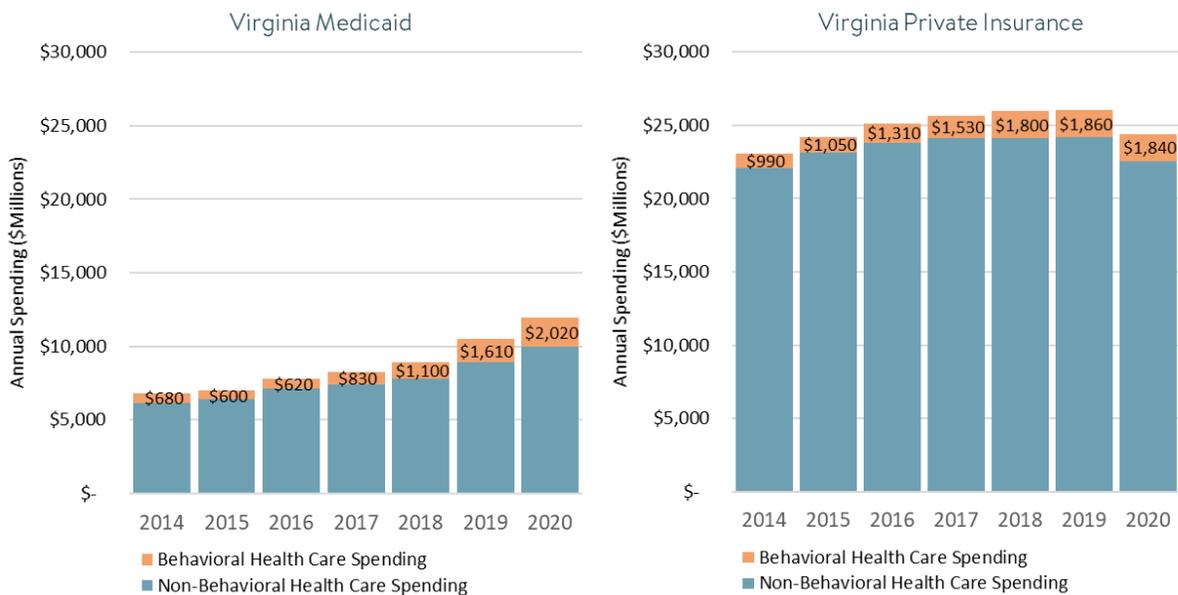


Medicaid and Private Insurance Spending on Behavioral Health Care in Virginia Increases from 2014 to 2020

Health care spending on treating behavioral health conditions—including both mental illness and substance use disorders—grew significantly between 2014 and 2020 in Virginia. Within Medicaid, spending on treatment for mental illness and substance use disorder (SUD) conditions nearly tripled over this period, rising from \$680 million to over \$2.0 billion in annual health care costs, while spending within private insurance nearly doubled, reaching \$1.8 billion in 2020 (Figure 1). As a result of much faster growth over this period, Medicaid spending on behavioral health care actually eclipsed spending from private insurance in 2020, despite greater enrollment in private insurance in Virginia. As of 2020, 16.9% of all Medicaid spending now goes towards treating behavioral health care needs, while 7.5% of private insurance spending goes to this care. These proportions of overall health spending have each doubled in the past six years. Enrollment growth in Medicaid has contributed to its comparatively larger growth in spending, though per-enrollee spending on behavioral health care has also increased significantly in both payers, with an average growth rate of 11.9% for Medicaid and 10.4% for private insurance (details below).

This report summarizes the findings of an analysis of Virginia’s behavioral health care spending over time using data from the Virginia All-Payer Claims Database (APCD), assessing the components of this spending and many of the major factors contributing to the rapid growth.

Figure 1: Virginia Health Care Spending (in Millions), Behavioral and Non-Behavioral Health Care



Author: Corwin Rhyan, MPP, Research Director, Health Economics and Policy, Altarum Institute

Contact: Corwin.Rhyan@altarum.org

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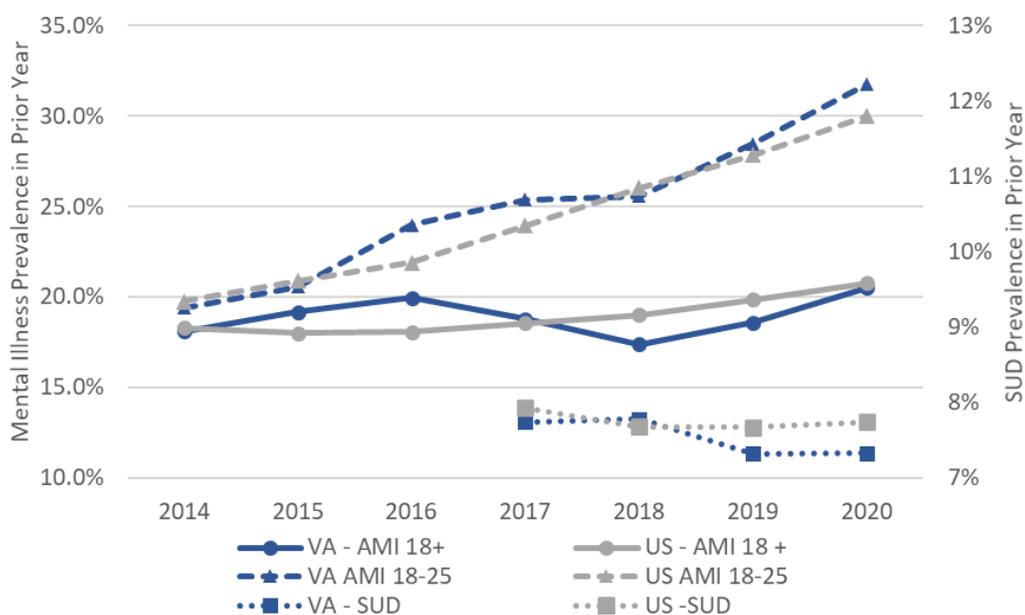


Prevalence of Behavioral Health Care Conditions

One of the reasons for the increased spending on mental illness and substance use disorder treatment between 2014 and 2020 in the Commonwealth is a rise in the prevalence of these conditions. Mirroring a broader national trend, Virginia data from the National Survey on Drug Use and Health (NSDUH), administered by the Substance Abuse and Mental Health Services Administration (SAMHSA) show that the prevalence of mental illness in the prior year among all adults increased from 18.1% in 2014 to 20.5% in 2020.ⁱ While the NSDUH data show a brief decline in any mental illness prevalence from 2016 to 2018, the broader trend over this period is upward. The decline from 2016 to 2018 is also seen in the observed prevalence of serious mental illness in Virginia, but not in either national data or neighboring states. We are not aware of any changes in the NSDUH survey in this time and the brief decline may have been a result of sampling variability as yearly variability remained within the 95% confidence intervals of the NSDUH data.

Amongst young adults, ages 18-25, the prevalence of mental illness from 2014 to 2020 rose from 19.4% to 31.7%, an over 63% increase in a short six-year period (Figure 2). Similar trends were seen in serious mental illness, with increases in need across all age groups and the greatest increases amongst young adults. By 2020, over 8.5% of adults between 18-25 reported having a serious mental illness, a rate nearly double the value from 2014 (4.4%). As seen in Figure 2, the condition prevalence trends over time in Virginia are similar to the rest of the United States.

Figure 2: Mental Illness and Substance Use Disorder Prevalence Among Adults Aged 18+, Virginia and US (2014-2020)



Between 2014 and 2020, overall substance use disorders amongst Virginians appear to have stayed mostly flat, although the state-level SUD data are more difficult to interpret as a change in the NSDUH methodology means the 2014 data are not directly comparable to the later data.ⁱⁱ Yet, despite overall rates of SUD likely holding steady, this period was one of significantly increasing severity of these conditions with the rise of opioid misuse/abuse and the uptick in synthetic



opioids sadly leading to large increases in overdose hospitalizationsⁱⁱⁱ and deaths.^{iv} As a result, it is reasonable to expect that health care spending associated with SUD conditions would be likely to increase over this period as spending on behavioral health care needs includes both preventative care as well as spending to respond to adverse outcomes such as substance overdoses or mental health crises.

Health Care Spending on Mental Illness and Substance Use Disorders

Spending on mental health care significantly exceeds spending on substance use disorder treatment in both Medicaid and private insurance populations. In the analysis of the 2020 APCD data, spending for Medicaid beneficiaries reached nearly two billion dollars on mental health care and around \$100 million on SUD treatment (Figure 3). In commercial insurance \$210 million of \$1.8 billion of the observed behavioral health spending went towards SUD care. Included in the mental health care spending are treatments for all mental health conditions, defined in the attached Appendix A. Of note, this includes care for delirium dementia and related disorders. If dementias were removed from the mental health definitions in 2020, total Medicaid mental health spending would be reduced to an estimated \$1.46 billion and private insurance to \$1.60 billion (12.2% and 6.6% of total spending for each payer respectively).

Figure 3: Table of Behavioral Health Care Spending, 2014 and 2020^v

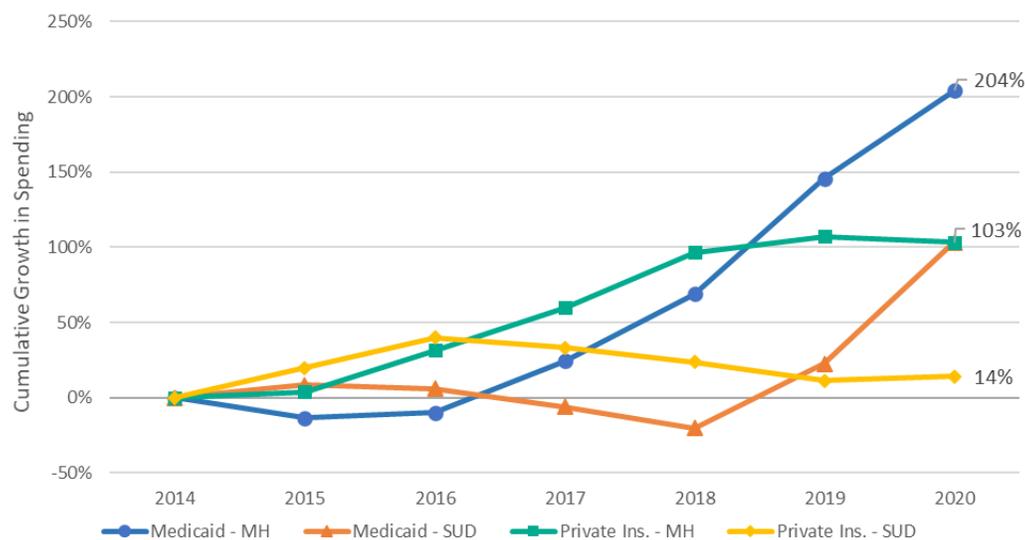
<i>Behavioral Health Care Spending</i>		
	2014	2020
Medicaid – Mental Health	\$630 Million	\$1.92 Billion
Medicaid – Substance Use Disorder	\$50 Million	\$100 Million
Private Insurance – Mental Health	\$800 Million	\$1.63 Billion
Private Insurance – Substance Use Disorder	\$190 Million	\$210 Million

This disparity between mental health and SUD spending is likely due to a few factors. First, mental illness is a more prevalent condition and individuals with mental illness are far more likely to receive treatment. In recent work accessing the gap in mental health and SUD treatment in Michigan, our team found that 38% of those with a mental illness had an unmet need for care within the past year, while an even greater 80% of those with a SUD condition did not receive any treatment.^{vi} As a result, the ratio of Medicaid and private insurance enrollees receiving SUD treatment in a year compared to those receiving mental illness care could be as low as 1 : 10. This gap in receiving treatment is caused both by greater difficulty in getting access to SUD treatment, as well as a greater hesitancy for those with a SUD to seek out treatment due to fears of stigma, an unwillingness to go through treatment, or concerns over legal and employment consequences.

Spending growth on behavioral health care has exceeded underlying condition prevalence increases since 2014. Figure 4 shows Virginia’s cumulative growth in spending on mental health care and SUD treatment between 2014 and 2020. Spending on mental health increased by 204% and 103% from Medicaid and private insurance sources respectively from 2014 to 2020, while SUD treatment spending increased in Medicaid (103%) and the privately-insured population (14%) at relatively slower rates. Note the private insurance data points were based on a subset of private insurance payers, and it is possible some of the data gaps discussed below and in the methodology section impact the computed growth rate estimates.



Figure 4: Cumulative Growth in Spending on Mental Illness and Substance Use Disorders, Medicaid and Private Insurance (2014 - 2020)



In order to calculate the percent of spending going towards mental health and SUD treatment, we used information contained in primary diagnosis ICD-9 and ICD-10 codes and information in grouped medical episode claims (details in Appendix A). Total spending comparison amounts are adjusted for the fact that the diagnosis group data are missing or unknown in some claims. It is also possible that the APCD data do not contain a complete accounting of the Medicaid and private insurance spending on mental health and SUD treatment as a result of either direct payments to community mental health/SUD treatment providers that may not be reflected in APCD claims or payments in the privately-insured population that were made through employee-assistance programs (EAPs), such that their treatment was not captured in our spending totals. While it is possible both mental health and SUD treatment fall into these gaps, it is more likely that SUD treatment spending is omitted, exaggerating the gap between SUD treatment and mental health care spending totals in these data.

Figure 5 shows the growth in spending on behavioral health treatment on a per-enrollee basis for Medicaid and private insurance enrollees. Spending per enrollee on mental health and SUD treatment is much greater in Medicaid than it is in private insurance, and has grown at a faster rate between 2014 and 2020. Increases in both enrollment and per-enrollee spending on mental health and SUD care have made an impact on overall total behavioral health spending—per-enrollee spending: average annual growth was 11.9% over this period while enrollment increased by 7.1% annually. For private insurance, enrollment has been almost flat, increasing by 0.4% annually, but annual per-enrollee spending on mental health increased by 10.4%.



Figure 5: Virginia Health Care Annual Spending, Per-Enrollee, Behavioral and Non-Behavioral Health Care, Medicaid and Private Insurance (2014 - 2020)



Figures 6 and 7 show the breakdown of spending by the major mental health and substance use disorder conditions in 2020, for Medicaid and commercial insurance, respectively. Mood disorders (including conditions such as depression and bipolar disorders) account for the greatest amount of spending for both Medicaid and private insurance, with each near 30% of total behavioral health care spending in the most recent year of data. After mood disorders, condition spending trends diverge between Medicaid and private insurance. The next most costly conditions for Medicaid mental illnesses are those that can be particularly severe, such as dementia, cognitive disorders, and schizophrenia. Conversely, for private insurance, the next most costly conditions are more moderate conditions of anxiety and adjustment disorders—conditions for which Medicaid spends relatively less. Another difference in Medicaid and private insurance spending occurs in substance-related disorders and alcohol use disorders, where Medicaid spends more on treatment of substance-related conditions, but the inverse is true of private insurance, which spends more on alcohol-related disorders.

As a percent of claims, the typically less severe types of mental illnesses make up a greater proportion of the total than their associated percent of spending. For example, in private insurance Anxiety Disorders make up over 28.6% of the mental illness claims, but only 23.7% of the spending. These shares are greater than they are in Medicaid, at 10.8% and 5.9% respectively. Conversely, the proportion of spending on more severe conditions is greater in Medicaid, where delirium dementia and mood disorders account for 23.8% and 30.0% of total spending respectively. In Medicaid, the relatively low spending and large number of claims for substance-related disorders is likely to due to a large number of very simple claims for drug tests that are included in the SUD category. The claim counts by condition for both private insurance and Medicaid are not shown in Figures 6 and 7 as they are not directly comparable to each other because while the APCD Medicaid data are nearly complete, the commercial claims are only a subsample of all private insurance activity in the Commonwealth. Instead a percentage of claims by each diagnosis category are shown.



Figure 6: Top Spending Mental Illness and SUD Conditions, Percent of Claims, Millions of Dollars of Spending and Per-Member Per-Year Spending, Medicaid (2020)

Mental Illness	% of Mental Illness Claims	Medicaid Spending (\$Millions)	% of Total Spending	Per-Member, Per-Year \$
Mood disorders	33.3%	\$574.3	30.0%	\$410
Delirium dementia and amnestic and other cognitive disorders	4.5%	\$455.7	23.8%	\$325
Schizophrenia and other psychotic disorders	15.1%	\$291.3	15.2%	\$208
Disorders usually diagnosed in infancy childhood or adolescence	9.5%	\$165.1	8.6%	\$118
Attention deficit conduct and disruptive behavior disorders	14.5%	\$158.6	8.3%	\$113
Anxiety disorders	10.8%	\$114.0	5.9%	\$81
Adjustment disorders	5.1%	\$61.7	3.2%	\$44
Other mental illness	7.3%	\$96.5	5.0%	\$69
SUD	% of SUD Claims	Medicaid Spending (\$Millions)	% of Total Spending	Per-Member, Per-Year \$
Substance-related disorders	91.8%	\$64.3	65.1%	\$46
Alcohol-related disorders	8.2%	\$34.5	34.9%	\$25

Figure 7: Top Spending Mental Illness and SUD Conditions, Percent of Claims, Millions of Dollars of Spending and Per-Member Per-Year Spending, Commercial Payers (2020)

Mental Illness	% of Mental Illness Claims	Private Ins. Spending (\$Millions)	% of Total Spending	Per-Member, Per-Year \$
Mood disorders	28.5%	\$533.6	32.8%	\$95
Delirium dementia and amnestic and other cognitive disorders	0.8%	\$18.7	1.2%	\$3
Schizophrenia and other psychotic disorders	0.9%	\$34.7	2.1%	\$6
Disorders usually diagnosed in infancy childhood or adolescence	7.9%	\$132.6	8.2%	\$24
Attention deficit conduct and disruptive behavior disorders	8.6%	\$105.4	6.5%	\$19
Anxiety disorders	28.6%	\$386.1	23.7%	\$69
Adjustment disorders	17.3%	\$237.2	14.6%	\$42
Other mental illness	7.2%	\$178.1	11.0%	\$32
SUD	% of SUD Claims	Private Ins. Spending (\$Millions)	% of Total Spending	Per-Member, Per-Year \$
Substance-related disorders	48.9%	\$67.9	32.3%	\$12
Alcohol-related disorders	51.1%	\$142.1	67.7%	\$25



To compare the 2020 spending breakdown by behavioral health conditions to the 2014 data, a few of the condition definitions need to be combined due to a change in the underlying grouping methodology and diagnosis code sets.^{vii} While an imperfect crosswalk, redefined categories of mental illness spending appear to show that the proportion of spending on mood disorders has remained mostly constant in Medicaid expenditures, but has fallen as a proportion of total spending in private insurance. In private insurance, there was an increase in spending on anxiety disorders, adjustment disorders, and other less common mental illnesses through 2020. For Medicaid, the largest increases in spending over this period occurred for delirium dementia and schizophrenia.

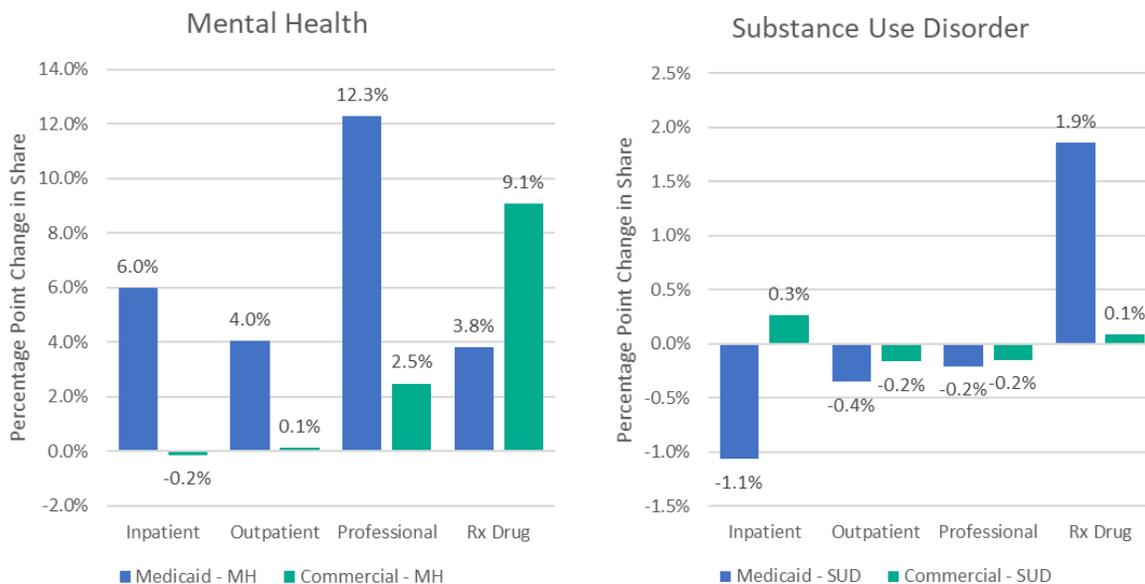
Types of Spending and Place of Service

There are two ways to assess changes in the settings and type of behavioral health care services being provided over time: claim types and places of service. The claim-type analysis is useful to better understand the type of care being provided, to observe transitions from intensity of treatment in inpatient vs. outpatient facilities, and to track the use of medications to treat mental health and substance use disorder conditions. The second way to assess services is by using “place of service” definitions to analyze changes in treatment locations and observe utilization of new modalities of care such as telehealth services.

In Medicaid spending, mental health and substance use disorder treatment have increased as a proportion of spending across all four claim types between 2014 and 2020, while substance use disorder care spending has fallen as a proportion of all claim spending for most claim types, except prescription drug expenditures (Figure 8). The proportion of all Medicaid inpatient facility spending going towards mental health increased from 6.1% to 12.1% (the 6.0 percentage point difference is shown in Figure 8), while the proportion of outpatient facility spending on mental health increased from 2.4% to 6.4% (a 4.0pp increase). The mental health professional share increased by 12.3 percentage points and prescription drug shares by 3.8 percentage points. The only two private insurance claim type mental health services to change meaningfully were professional services (increasing from 4.8% to 7.3%, 2.5 percentage points) and prescription drug shares by 9.1 percentage points. It’s important to note that these increased spending shares are compounded by increased overall spending across all major claim types between 2014 and 2020, leading to the larger increases in total behavioral health care spending for both payers.



Figure 8: Percentage Point Change in Share of Spending by Claim Type (difference between percent of total spending in 2020 vs. percent of total spending in 2014)



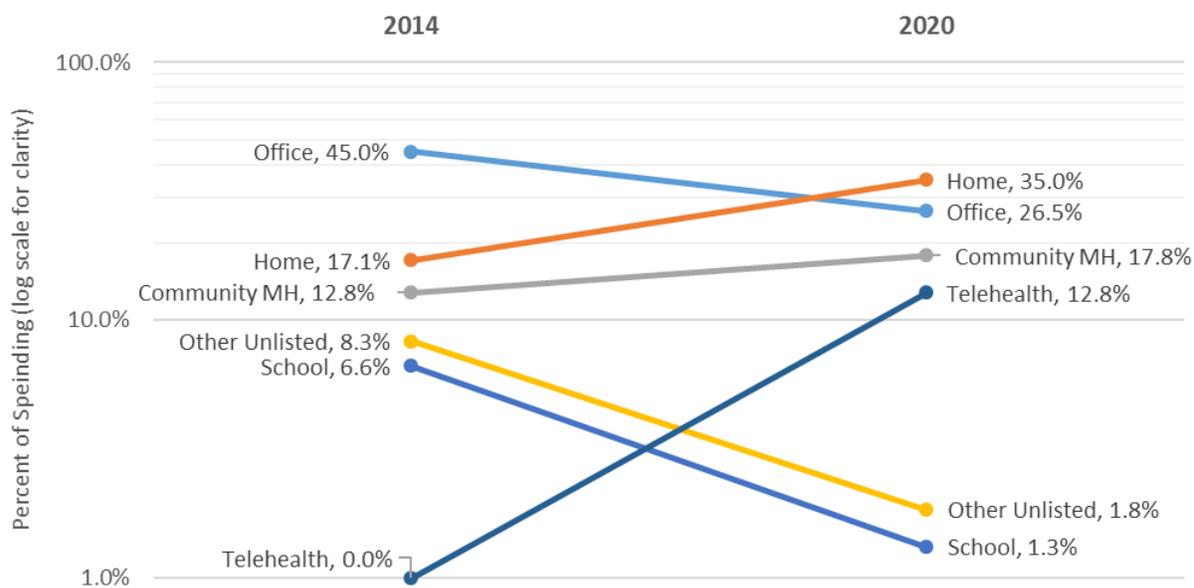
For mental health care, the greater overall increases in Medicaid spending are reflected in the larger percentage point changes in the share of spending for inpatient, outpatient, professional, and prescription drug services. For private insurance, mental health spending increases have been concentrated in prescription drug spending and professional services, while proportions of inpatient and outpatient facility spending have changed only marginally. For substance use disorder conditions, the share of spending by most claim types has held steady or fallen. The one exception is prescription drug care across both payers which increased, likely as a result of greater use of medication-assisted treatment regimens for opioid- and alcohol-use disorders.

Place of service codes can also be used to track changes in the way behavioral health care is provided over time. While place of service codes are not always complete in the APCD data (as some claims leave this field blank or unspecified), it is possible to calculate the proportion of spending occurring at each major location type across claims where this data is complete. Due to the fact this analysis includes the year 2020 (the first year of the COVID-19 pandemic), there are some very drastic shifts in care location as many health care services were shifted to remote or telehealth services to prevent the spread of the COVID-19 virus. As a result, the trends from 2014 to 2020 may not be indicative of future trends in behavioral health care delivery locations, although there is some evidence that the trend of telehealth and home-based services may be a lasting system change for behavioral health care.^{viii}



For Medicaid in 2020, only 26.5% of mental health care spending occurred at an office place of service, compared to 47.8% of spending via either telehealth or “in-home”. The next most common locations for Medicaid mental health spending were a community mental health center (17.8%) and schools (1.3%), (Figure 9). Spending in 2020 was a drastic shift from the typical place of service for spending on mental health care in 2014, when 45.0% of Medicaid spending occurred in an office and only 17.1% occurred at home (and 0% was via telehealth).

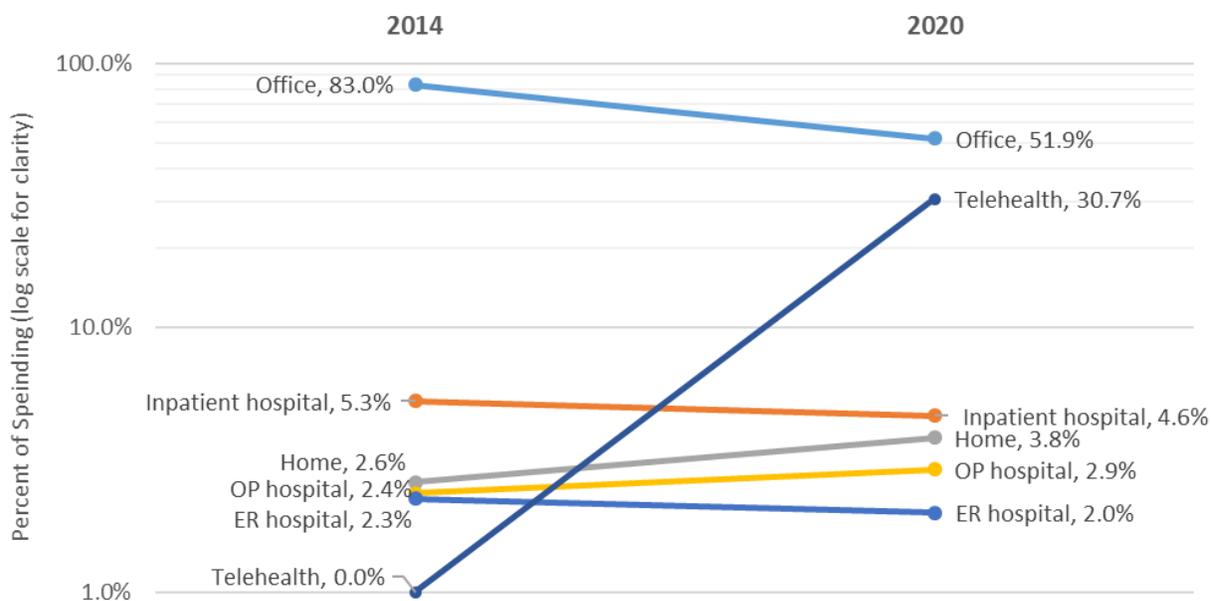
Figure 9: Percent of Spending by Place of Service (subset of claims with complete place of service code) Medicaid, (2014-2020)



A similar trend was seen between 2014 and 2020 for private insurance mental health spending, as in 2014, a whopping 83.0% of care was at an office location, the largest share of any of the assessed years. However, by 2020, for private insurance spending, the most frequent locations, by spending proportion, were: office (51.9%), in-home or telehealth (34.5%), inpatient hospital (4.6%), outpatient hospital (2.9%), and emergency room (2.0%) (Figure 10). The virtual visits increase as a proportion of spending was substantial for private payers as well; yet, as a proportion of total mental health service spending, a greater proportion of Medicaid spending occurred virtually (either via telehealth or in the home) in 2020. This difference in telehealth and in-home billed claims between Medicaid and private insurance could be a result of differences in reimbursement/coverage for telehealth behavioral health services or differences in the patient population seeking out these newer settings of care during the pandemic.



Figure 10: Percent of Spending by Place of Service (subset of claims with complete place of service code) Private Insurance, (2014-2020)

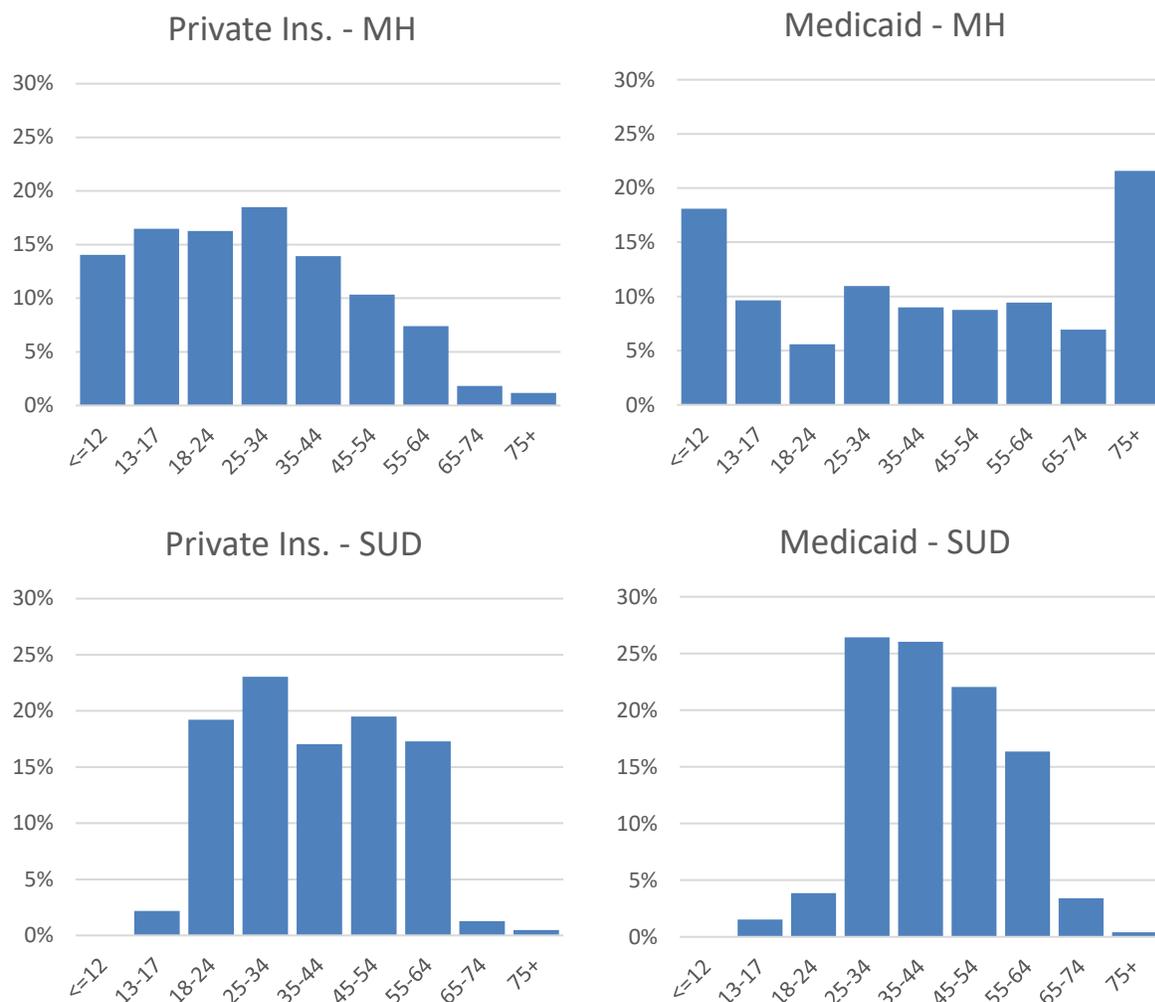


Spending by Patient Age and Geography

Mental health care and SUD spending occurs across the entire age spectrum of patients. Figure 11 shows the percentage of mental health and SUD spending by age group category for both private insurance and Medicaid. These data show how SUD treatment spending is more concentrated in young adults and middle-aged persons, while mental health spending is more likely to occur for the very young and very old. Further, Medicaid spending on mental health tends to occur for children and the elderly), while spending on mental health care services by private insurance is most likely to occur in young adulthood. The distribution of spending in Figure 11 is impacted by coverage trends by age—particularly for private insurance—where the decline in spending for both mental health and SUD care for the over age 65 categories is due to most people qualifying for Medicare coverage at age 65. The 22% of Medicaid mental health spending occurring in those aged 75 and older is almost exclusively due to spending on delirium dementias and other cognitive disorders within the dually-eligible (Medicaid and Medicare) population. Spending on SUD care for older adults is comparatively rare in both insurances.



Figure 11: Mental Health and SUD Services Spending by Age Group, 2020



In analyzing spending geographically, the Central and Southwest Health Regions of the Commonwealth spend a greater amount on mental health and SUD care relative to their population and relative to the other regions. In particular, the Southwest region spends much more on SUD care than the rest of the Commonwealth, while Northern Virginia and Eastern Virginia tend to spend less on both mental health and SUD care relative to their population (data not shown). Northwestern Virginia sits between the other four regions, spending an amount on mental health and SUD care that is proportional to its population.

Figure 12 shows an example of these results in spending on a per-enrollee analysis by the five major Virginia Health Regions for 2020 for Medicaid payers. Total behavioral health spending in the Central and Southwest regions are double and 50% greater respectively than per-enrollee spending in the lowest-spending Northern region. This greater per-enrollee spending includes both SUD treatment and mental health care services.



Figure 12: Medicaid Behavioral Health Spending per Enrollee per year by Health Region, 2020



Conclusion

This report assessing the use of behavioral health care services in Virginia finds that spending on mental health and substance use disorder treatment has accelerated in recent years for both Medicaid and private insurance, leading to a large increase in total spending on these conditions. Combined behavioral health spending (mental health and substance use disorder), taking up 16.9% (Medicaid) and 7.5% (Private Insurance) of the total health spending in 2020 for these two payer types is significant and the rise is likely driven by an increased need for these treatment services as behavioral health conditions are becoming more common and, in some cases, more severe over time. In 2020, there was a drastic shift in the way this care was provided as the use of “in-home” and telehealth care increase substantially for both Medicaid and private insurance populations, making care more accessible to patients. The extent to which this trend continues remains to be seen as much of the remote place of service shift was driven by the COVID-19 pandemic. The trend towards in-home/telehealth behavioral health care was greater among Medicaid enrollees compared to those with private insurance.

This report finds that mental health treatment spending is growing faster than SUD treatment and that Medicaid spending is growing faster than private insurance spending on these conditions. If these behavioral health care costs continue to accelerate, it is likely to create health spending pressure for the Commonwealth both directly and indirectly, due to the fact that those with behavioral health care needs tend to have associated higher risks of physical health care needs over time.^{ix}



Appendix A: Behavioral Health Definitions and Report Methodology

This report estimates the amount of Virginia’s health care spending associated with behavioral health care treatment (mental illness and substance use disorder treatment), by using data from the Virginia All-Payer Claims Database (APCD) and prior Altarum work assessing trends in Virginia’s health care spending.^x The overall approach to computing total behavioral health care spending in the Commonwealth and across the many dimensions shown in this report was to use the underlying claims (and data on the main condition treated on each claim) from the APCD data to estimate the proportion or share as a percent of the total spending of each subset of overall health care spending that went towards mental health and/or substance use disorder care. In this calculation the numerator is the amount spent on mental health and/or substance use disorder care (defined below) and the denominator is the total amount spent on health care for the same category. In order to compute the most appropriate denominator of total spending, a few adjustments were made to the APCD claims. First, claims for the denominator that had missing primary diagnosis, icd_rollup groups, or medical episode groups required to estimate the applicable condition were excluded. Second, for SUD treatment analyses, some private insurance payers and their enrollees were excluded from the analysis as it was observed that select payers were censoring or filtering out SUD treatment claims from their data provided to the APCD (this is a known issue that has occurred in prior SUD analyses^{xi}).

Using the above numerator and denominators, the share (percent of spending) on mental health and/or SUD treatment was then multiplied by the total spending estimates by category already computed by Altarum for prior reports on Virginia’s health care spending^{xii} to compute the total spending on behavioral health care services. Complete data from the APCD were available only for the Medicaid and private insurance populations, as the complete Medicare data were not available at the time of study.

This report’s approach serves to ensure that the results are consistent with the total spending analyses already published and also to eliminate any bias that might occur due to commercial or Medicaid payers with incomplete data across all the years in the APCD dataset. By estimating the proportion of observed spending going to behavioral health care needs alone from the APCD data, all available data providers can be included, without needing to compensate for changes in enrollment covered by the APCD or missing years for some specific payers.

Behavioral health claims were identified using ICD-10 diagnosis codes: “Fxx.xx” and the “primary_icd_rollup” was used to estimate the main clinical purpose of each claim. We use a very broad definition of mental health and SUD conditions in this analysis and claims that fell into the following categories were included in the mental health care and substance use disorder buckets for health care services, for the years 2017 to 2020:

- MH: 'Mood disorders', 'Anxiety disorders', 'Developmental disorders', 'Attention deficit conduct and disruptive behavior disorders', 'Schizophrenia and other psychotic disorders', 'Disorders usually diagnosed in infancy childhood or adolescence', 'Adjustment disorders', 'Delirium dementia and amnesic and other cognitive disorders', 'Miscellaneous mental disorders', 'Suicide and intentional self-inflicted injury', 'Screening and history of mental



health and substance abuse codes', 'Impulse control disorders not elsewhere classified', 'Personality disorders'

- SUD: 'Substance-related disorders', 'Alcohol-related disorders'

The following therapeutic class definitions were used to classify prescription drug spending into mental health care and substance use disorder buckets for health care products:

- MH: 'Antidepressants', 'Antianxiety Agents', 'ADHD/Anti-Narcolepsy/Anti-Obesity/Anorexiant', 'Antipsychotics/Antimanic Agents', 'Psychotherapeutic And Neurological Agents - Misc.', 'Hypnotics'
- SUD: 'Alcohol Deterrents', 'Opioid Antagonists', 'Opioid Partial Agonists'

For the data from the APCD files from 2014 to 2016, we use alternative episode grouper definitions and a mix of ICD-10 and ICD-9 diagnoses as the transition between the two claim standards occurred during this period, with the grouper definitions as follows:

- MH: '2287 Mental Hlth - Neuroses, NEC', '2291 Mental Hlth - Psychoses, NEC', '2289 Mental Hlth - Schizophrenia', '2284 Mental Hlth - Depression', '2283 Mental Hlth - Bipolar Disorder', '2282 Mental Hlth - Autism', '2281 Mental Hlth - Anxiety Disorder', '2280 Mental Hlth - Antisocial Behav', '2286 Mental Hlth - Obsess-Compulsiv', '2285 Mental Hlth - Eating Disorders', '0341 Dementia, Primary Degenerative'
- SUD: '2290 Mental Hlth - Substance Abuse'

This approach assumes that the primary diagnosis on the claim, therapeutic class of the drug, and associated code roll-ups are the best estimate of the reason for care provided. Behavioral health diagnoses not in the primary position of the claim were not included for this analysis, which means these spending estimates may understate the total level of spending on behavioral health care needs if an office or other health care visit treated a patient for multiple conditions and the mental health or SUD diagnosis code was positioned later in the claim. If the mental health condition was still treated when not the primary diagnosis, it was not counted in this analysis, hence the undercount of total MH/SUD spending. Conversely, we do not filter our definition of claims based on the type of procedure listed on the claim, counting all care labeled with the primary behavioral health diagnosis or group definition as a mental health/SUD service. This could potentially overcount the amount spent on mental health care if some of these claims were related to a mental health diagnosis, but not actually for the purpose of treating this condition.

In order to address data variability, some smoothing was used on the trends in the percentage of claim spending going to mental health and SUD care. A moving average in the percentage of claims, by claim type, over the six-year period of study was applied, such that the 2014 and 2020 data estimates were unchanged from the approached described above, but trends within this period were slightly smoothed. When necessary, data from the National Health Expenditure Accounts (NHEA) was used to estimate total spending by setting and claim type for Virginia.^{xiii}

As noted in above, a limitation of this approach to estimate total mental health and SUD treatment spending from claims is that it is only assessing spending in the APCD data and spending contained within medical claims. This report does not include spending on behavioral health care facility or



provider supply, nor does it include estimates of the spending for the privately-insured if that spending was paid for through an employee assistance program. The overall trends in growth in spending on mental health care and SUD treatment should remain accurate despite this limitation, unless there were unobserved shifts in these other types of spending. When the results of this report were compared against other similar analyses nationally,^{xiv xv xvi xvii} we find that the shares and trends of spending appear consistent with other works.

ⁱ Substance Abuse & Mental Illness Health Data Archive, Interactive NSDUH State Estimates, “Any Mental Illness”, “Serious Mental Illness”, and “Any Substance Use Disorder” (2022), last accessed October 31, 2022:

<https://pdas.samhsa.gov/saes/state>.

ⁱⁱ Ibid.

ⁱⁱⁱ Agency for Healthcare Research and Quality, HCUP Fast Stats – Opioid Related Hospital Use (2022), last accessed October 31, 2022: <https://www.hcup-us.ahrq.gov/faststats/OpioidUseServlet>.

^{iv} Centers for Disease Control and Prevention, National Vital Statistics System, Provisional Drug Overdose Death Counts (2022), last accessed October 31, 2022: <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>.

^v A caveat to these mental health and SUD spending estimates are that they only include trends in health spending captured in the Virginia APCD. These claim data do not include mental health spending such as direct support to community behavioral health care providers or investments in treatment facilities. This work also does not capture private insurance spending through some employee assistance programs if funded and administered separately from the employee’s physical health care plan or carved-out Medicaid spending not in the APCD.

^{vi} Rhyan C, Turner A, Ehrlich E, Stanik C, Access to Behavioral Health Care in Michigan, Altarum Institute (2019), https://mihealthfund.org/news/publications/behavioral_health_access_study.

^{vii} Critically, the 2014 claims data are primarily coded in ICD-9 diagnosis codes, while the 2020 data use ICD-10 codes. The condition groupings, while broadly consistent in categories are not identical as a result.

^{viii} Callaghan T, McCord C, Washburn D, Goidel K, Schmit C, Nuzhath T, Spiegelman A, Scobee J. The Changing Nature of Telehealth Use by Primary Care Physicians in the United States. *J Prim Care Community Health*. (2022) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9274427/>.

^{ix} Figueroa JF, Phelan J, Orav EJ, Patel V, Jha AK. Association of Mental Health Disorders With Health Care Spending in the Medicare Population. *JAMA Netw Open*. (2020)

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2762948>.

^x Rhyan C, Daly M. Virginia’s Health Care Sector Economic Trends in 2020. Altarum Institute (2022)

<https://altarum.org/publications/virginia-s-health-care-sector-economic-trends-2020>.

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