



Targeting Early Intervention Based on Health Care Utilization of SSDI Beneficiaries By State, with Emphasis on Mental Disorders and Substance Abuse

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Abstract

Until now, little was known about the specific health care services used by beneficiaries of the Social Security Disability Insurance (SSDI) program. Understanding how SSDI beneficiaries use health care services in the years after eligibility can inform our understanding of their continued inability to work, the kinds of challenges they face, and perhaps how to help them. Using complete Medicare Part B fee-for-service claims for people under age 65 in 2012 reveals health care services used by SSDI beneficiaries. I examine the number of office and outpatient non-pharmaceutical services by state and by primary diagnosis for the service. A special focus of this paper is on mental health services and services related to opioid abuse, with additional insights on substance abuse services for SSDI beneficiaries under age 50.

The data show that states differ widely in the number of outpatient, non-pharmaceutical health care services used per SSDI beneficiary for the major diagnosis categories. The variation is especially notable for mental disorders, including depression, anxiety, and substance abuse. Policymakers may want to give special focus to those diagnoses because many younger adults enter the program based on mental health conditions and stay on SSDI for decades. In states with above-average services for particular types of mental disorders and substance abuse issues, targeted early intervention efforts might help people who are struggling in the workplace before they have to drop out of the labor force. Effective treatment could also support some SSDI beneficiaries to work part-time while on the program. States with low levels of mental health services might question if they are providing sufficient support. An applied policy example regarding opioid services suggests that widely accessible, effective treatment efforts can have positive effects on public health measures such as the rate of fatal drug overdoses.

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I. Introduction

Until now, little was known about the specific health care services used by beneficiaries of the Social Security Disability Insurance (SSDI) program. Understanding how SSDI beneficiaries use health care services in the years after eligibility can inform our understanding of their continued inability to work and the kinds of challenges they face. Such knowledge can also inform early intervention efforts for conditions that develop over time and might benefit from professional health care attention prior to limiting a person's ability to work. More than 10 million individuals receive monthly benefits from the SSDI program (Social Security Administration 2018). In recent years, about three-quarters of them also have received Medicare benefits because they have been eligible for SSDI for at least 24 months (Centers for Medicare and Medicaid Services 2011).

Examining the types of health care services used, and how use of those services differs across states, offers insights into how the health care system interacts with the needs of SSDI beneficiaries in different parts of the country. Different states report varying shares of younger, middle-age, and older workers on the SSDI program, and awareness of the health care services used by the SSDI population across states could help explain why (Manchester 2016).

This paper complements analysis of early intervention efforts that address the medical and mental health needs of workers before they become unable to work and decide to apply for SSDI benefits. Recent research suggests that about half of SSDI applicants have strong, stable work histories prior to application, but the other half have struggled to work for several years prior to application (Contreary et al. 2017). Both types of applicants might benefit from early intervention efforts and more timely access to health care. A limited number of beneficiaries on the program might be able to work with additional support as well (Autor and Duggan 2003; Black, Daniel, and Sanders 2002; von Wachter, Song, and Manchester 2011).

Earlier work from the SSDI Solutions Initiative that points to strengthening supports for workers with health challenges, encouraging community-based health and work centers, and providing health coverage for workers with disabling conditions is especially relevant here (Stapleton et al. 2016, Christian et al. 2016, Perriello 2016). Identifying the types of services used by beneficiaries on the SSDI program across states points to services that, if available to workers prior to SSDI application, might keep them in the labor force, either full-time or part-time or on a transitional basis (Fichtner and Seligman 2016, Kerksick et al. 2016). Increasing access to those same services for workers with disabilities already on the SSDI program might allow more SSDI beneficiaries to work in part-time or transitional jobs.

Moreover, many younger adults qualify for the program through mental health disorders, and findings here show that states provide very different amounts of outpatient, non-pharmaceutical services for people with mental health issues. Policymakers might consider increasing services in the areas of mental health or specifically increasing access to treatment for substance abuse, especially for younger people, either before they apply for SSDI or once they are on the program.

Using the full set of Medicare claims data for 2012, the most recent year with complete data available to me, I examine the number of outpatient, non-pharmaceutical services by state and by primary diagnosis for the 5.7 million SSDI beneficiaries under age 65 who qualified for Medicare and were enrolled in Part B, fee-for-service (FFS) benefits (Table 1).¹ After 24 months on the SSDI program, beneficiaries are eligible for Medicare Part A (hospital services) and Part B (office and outpatient services). Part A is free to beneficiaries, but those who choose to enroll in Part B must pay the Part B premium.

This paper will focus on the number of claims for office, laboratory, and other outpatient non-pharmaceutical services covered by Part B in the FFS program. The data files do not contain information on the cost of services, and I do not include the number of hospital stays because I have no information on the length of stay or intensity of treatment.² The focus is on 2012 because data related to substance abuse services were redacted in subsequent years in the Dartmouth Atlas Project data used here, and looking at substance abuse services for the SSDI population is of special interest in this paper. Moreover, I look at SSDI beneficiaries with Medicare Part B FFS benefits who were under age 65 in 2012 to avoid conflating the results with Part B services for the general population who were eligible for Medicare benefits at age 65. About 99.3 percent of the 5.7 million FFS enrollees in Medicare Part B under age 65 in 2012 were SSDI beneficiaries.³

Table 1. Deriving the Number of SSDI Beneficiaries Who Were Also Medicare Part B Enrollees in 2012	
SSDI Beneficiaries in Current Pay Status	10.6 million
SSDI Enrollees in Medicare Part B under age 65	7.7 million
SSDI Enrollees in Medicare Part B FFS under age 65	5.7 million
Sources: Social Security Administration, <i>Annual Statistical Supplement 2012</i> ; Centers for Disease Control and Prevention, Chronic Conditions Data Warehouse 2013; Author's calculations.	
Note: Some SSDI enrollees in Medicare Part B choose Managed Care rather than Fee-for-Service benefits. CMS has no information on the specific health care services used in the Managed Care system. Hence I focus on FFS here.	

The number of fee-for-service Medicare claims for the SSDI population under age 65 by state suggests that the quantity of services used by diagnosis type does not always match up with the reason for eligibility. With help from the Social Security Administration (SSA), I matched 3-digit ICD-9 medical codes from the Medicare claims data to the categories used by SSA to identify the primary reason for eligibility of SSDI beneficiaries. For example, the single largest reason for SSDI eligibility among all SSDI beneficiaries in 2010 (2 years before our Medicare data for 2012) was mental disorders, accounting for more than 36

1 No data on services is available for the 27 percent of Medicare Part B beneficiaries under age 65 who chose to enroll in Medicare Advantage (Part C) in 2012. That percentage varies across states, from 47.6 percent in Minnesota to 0.4 percent in Alaska. For further information, see Appendix Figure A1 of Manchester (2018).
 2 For some earlier work on the cost and quantity of health care used by SSDI beneficiaries, see Weathers et al. 2010.
 3 The 0.7 percent of Medicare enrollees under age 65 who were not SSDI beneficiaries consisted of end-stage renal disease patients who did not receive SSDI, children under age 19, or Railroad Retirement Board beneficiaries with disabilities.

percent of primary diagnoses for eligibility.⁴ The second largest reason for eligibility was conditions of the musculoskeletal system and connective tissue at about 25 percent. Across the country, the quantity of Medicare Part B FFS services shows the largest share of services going to musculoskeletal conditions at 14 percent of office and outpatient services; 10 percent of office and outpatient services were for mental disorders, including substance abuse services.

Of course, the primary diagnosis associated with each non-pharmaceutical service may hide other conditions. For example, many visits for chronic back pain would be coded in the musculoskeletal conditions category even if opioids were prescribed during the visit. If use of opioid prescriptions led to opioid dependence or abuse, however, services to treat those issues would be coded as opioid services.

Drilling down to services relating to substance abuse and opioids using 5-digit ICD-9 codes offers a window into services for SSDI beneficiaries across the states in light of the on-going opioid epidemic. In 2017 across the U.S. population, the age-adjusted rate of drug overdose deaths from various types of opioids was 3.6 times the rate in 1999 (Hedegaard et al. 2018). Rates were highest for adults ages 25-34, 35-44, and 45-54. Recent research suggests that SSDI beneficiaries on Medicare may be at elevated risk of opioid overdose; they accounted for 24.5 percent of hospitalizations for opioid overdose in 2013 (Peters et al. 2018).

Since 1996, individuals have not been able to qualify for SSDI benefits on the basis of substance abuse alone or if drug and/or alcohol addiction or abuse is a “material factor” in causing the individual’s disability (20 Code of Federal Regulations, § 404.1535). However, if the claimant has conditions that would be work-limiting if the substance abuse stopped, SSDI benefits may be awarded. Moreover, because people with mental health disorders are more likely than people without mental health disorders to experience an alcohol or substance use disorder, the high proportion of SSDI beneficiaries who become eligible based on a mental health disorder suggests an elevated risk of substance abuse (Center for Behavioral Health Statistics and Quality 2015).

After a discussion of overall health care services used by state and primary diagnosis in Section II, I look at services used for mental disorders in Section III and services related to substance abuse in Section IV. The term “mental disorders” is used by the Social Security Administration to include both intellectual disabilities as well as mental health conditions. I am able to focus on services related to substance abuse and opioids for SSDI beneficiaries under age 65 and also for SSDI beneficiaries under age 50 to shine a brighter light on the younger age group most affected by the opioid epidemic. Section V concludes the paper with some discussion of policy responses.

⁴ The population of Medicare enrollees under age 65 in 2012 consisted almost entirely of SSDI beneficiaries as of 2010, as SSDI beneficiaries must be eligible for 24 months before they qualify for Medicare. Among SSDI beneficiaries in 2010, fewer than 9 percent are likely to have died between 2010 and 2012 (Zayatz 2015).

II. Overall Health Care Services per SSDI Beneficiary, by State and Primary Diagnosis

Across the United States in 2012, Medicare Part B FFS claims were filed for 149.3 million services that took place in office, laboratory, and outpatient settings for all diagnosis codes. The average number of services per SSDI FFS beneficiary was about 32 in 2012, or 2.7 per month. The number was similar to that for Medicare Part B FFS beneficiaries age 65 and older, reflecting the health challenges faced by the SSDI population. Variation across states was notable, however, ranging from almost 48 per beneficiary in Minnesota to 23 in Arkansas (see Figure 1). Those outcomes are for all Medicare Part B fee-for-service enrollees under age 65, of whom more than 99.7 percent are SSDI beneficiaries. Some states of particular interest for the focus on substance abuse and opioids are highlighted in different colors throughout this paper.

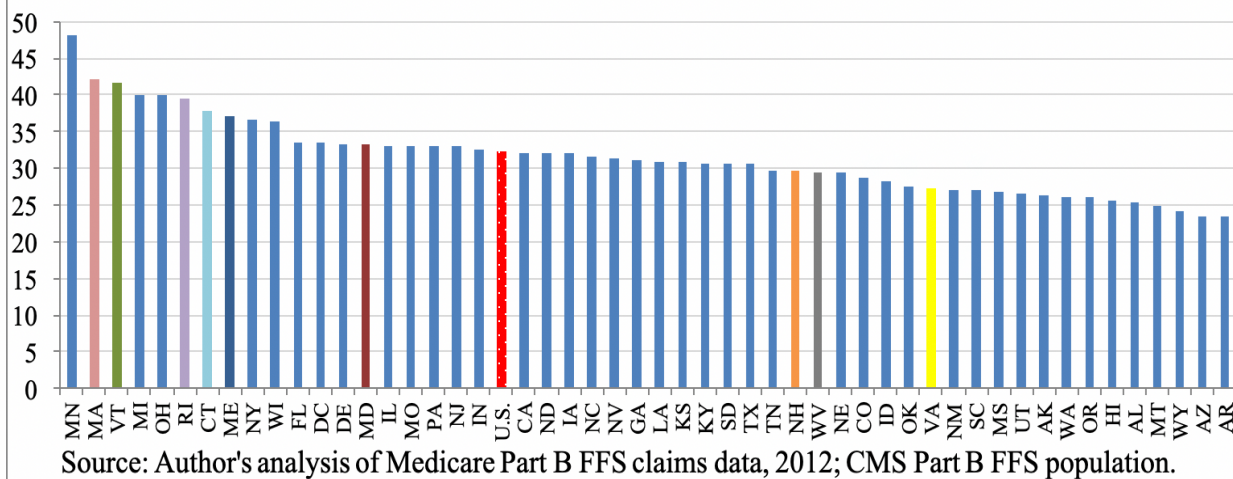
Factors such as the number of health care professionals, hospital beds per capita, the share of the Medicare population on Medicare Advantage, and incarceration rates are associated with health care utilization across states.⁵ For example, Massachusetts had the highest number of health care professionals per 100,000 residents among the 50 states in 2015, and Minnesota had the highest proportion of Medicare enrollees under age 65 on Medicare Advantage.⁶ Both of those states stand out with high numbers of office and outpatient services per FFS beneficiary under age 65 in the 2012 Medicare claims data. On the other hand, states such as North Dakota and South Dakota with relatively large numbers of hospital beds per 100,000 residents tend to have numbers of office and outpatient services per FFS beneficiary below the national average. States with higher incarceration rates per 100,000 residents such as Mississippi or Oklahoma, leaving fewer individuals with mental health issues in the community, also tend to have lower numbers of office and outpatient services per FFS beneficiary (Bronson and Berzofsky 2017).

In Figure 1 and throughout this paper, I highlight particular states of interest by color-coding them in the figures. Each of the New England states has a distinctive color because they tend to have high per capita rates of overall office and outpatient non-pharmaceutical services per capita but also high rates of mental health, substance abuse, and opioid services per capita. I also highlight the U.S. average as well as Maryland and Virginia.

⁵ For further information on factors associated with services per FFS beneficiary, see Section IV.B of Manchester (2018).

⁶ Medicare Advantage likely attracts healthier individuals because plans often offer extra services such as gym memberships that appeal to more fit individuals, leaving the less healthy ones in the FFS system (Cooper and Trivedi 2012).

Figure 1. Total Office and Outpatient Non-Pharmaceutical Services per FFS Beneficiary Under Age 65, 2012



The Social Security Administration categorizes primary diagnoses for SSDI beneficiaries into ten major groups, and I use the same categories to organize the Medicare FFS claims here.⁷ Within the major categories, the variation in per capita services across states might inform policymakers on where to focus early intervention efforts. Services for musculoskeletal impairments, for example, make up the largest share of services for a single major diagnosis group, representing 14 percent of all office and outpatient services. The U.S. average number of services was 4.6 per capita, ranging from 6.7 in Minnesota to 2.5 in Hawaii. Other states with high per capita rates include Michigan, Delaware, and Nevada. In addition to Hawaii, Oregon and Arizona also had a low number of services per capita.

Services for mental disorders are the second most frequently used, accounting for 10.1 percent of all services. Across the United States, 3.2 services per FFS beneficiary took place in 2012. Services for mental disorders are discussed in more detail in the next section.

Office and outpatient services for respiratory diseases and symptoms were the third most frequent, accounting for 9.6 percent of all services. Across the United States in 2012, the average number of services per capita was 3.1. Ohio had the largest number at 4.4, followed by Kentucky and Michigan. Wyoming had the smallest number at 2.0, followed by Montana and Alaska.

Services for circulatory diseases and symptoms were the fourth most frequent, accounting for 8.6 percent of all office and outpatient services. Across the country, the average number of services per FFS beneficiary was 2.8 in 2012. Michigan had the largest number at 3.6, followed by Washington DC and Louisiana. Montana had the lowest number at 1.4, followed by Wyoming and Alaska.

Services per FFS beneficiary for endocrine, nutritional, and metabolic diseases and symptoms and immunity disorders including diabetes were the fifth most frequent and accounted for 8.0 percent of services in the

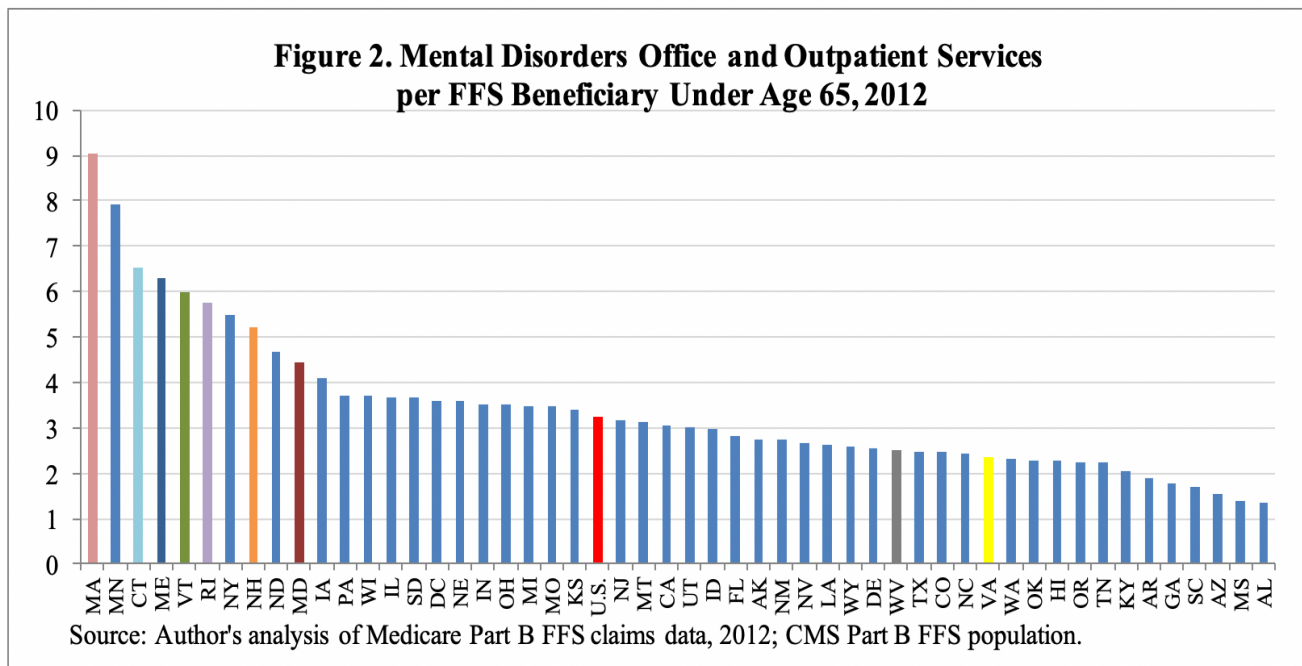
⁷ The statistics group at the Social Security Administration provided the crosswalk between SSDI eligibility types and the ICD-9 codes. Figures showing services per FFS beneficiary for the top five diagnosis groups by state appear in Manchester (2018).

United States. The average number of services per FFS beneficiary was 2.6 in 2012. Minnesota had the highest number at 3.5 services, followed by Ohio and Massachusetts. Wyoming had the lowest number at 1.6 services, followed by Alaska and Arkansas.

III. Services Used for Mental Disorders

The greatest variation occurred in services for mental disorders, averaging 3.2 per FFS beneficiary for the U.S. as a whole in 2012 but ranging from 9.1 in Massachusetts to 1.4 in Alabama (see Figure 2). Mental disorders include mental health diagnoses as well as intellectual and developmental disorders. About 95 percent of all services for mental disorders nationwide fall under the categories of mood disorders, schizophrenic and other psychotic disorders, and “other” mental disorders such as anxiety or substance abuse.

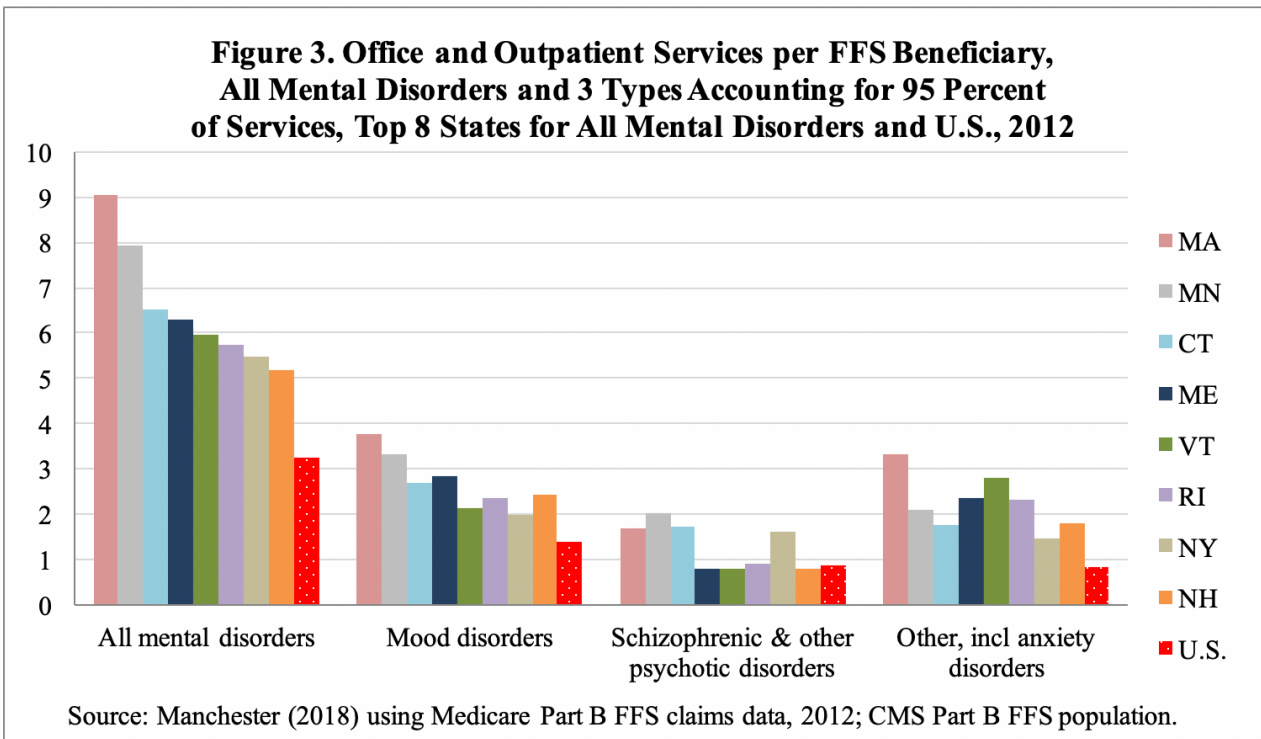
Again, the number of health care professionals, particularly in the field of mental health and psychiatry, appears to play an important role. Massachusetts, Rhode Island, Vermont, and Connecticut have the highest numbers of psychiatrists per 100,000 residents among the 50 states and are among the top states for mental disorder services per FFS beneficiary. Nevada, Idaho, and Mississippi have among the lowest numbers of psychiatrists per 100,000 residents and are among the lowest ranked states for mental disorder services per FFS beneficiary.



All six of the New England states rank in the top eight states for office and outpatient services for mental disorders per FFS beneficiary. They are joined by Minnesota and New York. To look more closely at what conditions underlie the services used with primary diagnosis of mental disorders, I examine the three most common types of services used in the top eight states (see Figure 3). As mentioned above, the three most common types of services cover about 95 percent of all services for mental disorders used by FFS

beneficiaries in 2012. They include mood disorders (43 percent of all mental disorder services; includes depression), schizophrenic and other psychotic disorders (27 percent), and “other mental disorders” (25 percent; includes alcohol or drug dependence or psychoses, anxiety or personality disorders, sleep disorders, and post-traumatic stress disorder).

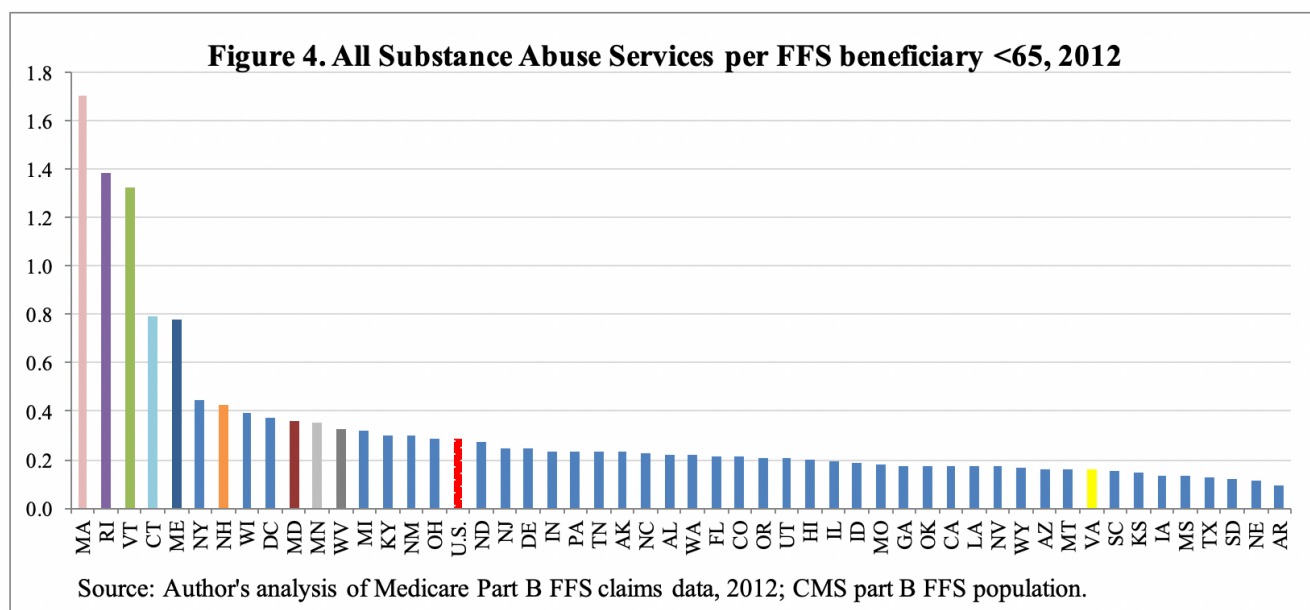
Policymakers may be especially interested in services provided to SSDI beneficiaries in the area of mental disorders because, in general, SSDI beneficiaries whose primary diagnosis at the time of eligibility was mental disorders tend to live longer and stay on the program for many years (Zayatz 2015, Tables 2A and 2B). Not all the services for mental disorders were used by beneficiaries who became eligible for SSDI based on mental disorders as their primary diagnosis. I have no information on services used by diagnosis at time of eligibility, but it’s likely that a large proportion were used by those beneficiaries. One way to see the significance of longer lives for people on SSDI with mental disorders is to compare the proportion of benefit awards with mental disorders as the primary diagnosis at the time of eligibility with the proportion of beneficiaries eligible on the basis of mental disorders among all beneficiaries in current pay status at a point in time. From 2000 to 2012, for example, the proportion of new SSDI awards to disabled workers with mental disorders as the primary diagnosis varied between 18.0 percent and 25.4 percent (Zayatz 2015). But among all disabled workers in current-pay status in 2012, 31.4 percent had become eligible on the basis of mental disorders.



IV. Services for Substance Abuse and Opioids

A particular focus of this project is to identify services related to substance abuse in general and opioids in particular. Substances specifically identified in the 5-digit ICD-9 medical codes for substance abuse include opioids, sedatives, cocaine, cannabis, amphetamines, antidepressants, hallucinogens, combinations of drugs not involving opioids, tobacco, and alcohol. I have bundled all services related to those substances into one group for the purpose of reporting services related to substance abuse per FFS beneficiary by state in this paper. Services include substance abuse, substance dependence, and drug-induced mental disorders that appear in the larger category of mental disorders as well as poisonings, substance use complicating pregnancy, and counseling for substance abuse that appear elsewhere in the ICD-9 codes.

In 2012, the data show 1,613,895 services in the substance abuse category. The U.S. average was 0.3 services per FFS beneficiary in 2012. Massachusetts had the largest number at 1.7, followed by Rhode Island and Vermont. Arkansas had the lowest number at 0.1, with Nebraska, South Dakota, and Texas also showing low numbers.



Large variation across states in the use of services for substance abuse suggests that it might be possible to target early intervention efforts in states with high utilization rates for substance abuse.⁸ Of course, individuals cannot qualify for SSDI on the basis of substance abuse alone. But it seems plausible that in some cases, substance abuse might have followed other unmet medical or mental health needs in the community. Policymakers might be especially interested in providing prevention and support services for younger people who may qualify based on mental disorders related to substance abuse and often stay on the SSDI program for decades.

⁸ As noted above, since 1996 individuals have not been able to be eligible for SSDI on the basis of substance abuse alone. However, if the inability to work is not “materially affected” by the substance abuse, then a person with substance abuse can be found eligible for SSDI.

A closer look at the types of substances involved in the substance abuse visits reveals some interesting differences across states. To set the stage, I first look at the share of all substance abuse services associated with different substances across the United States (Table 2). Nationwide, alcohol was responsible for the largest share of all substance abuse services at 32.9 percent. Opioids came in second at 28.1 percent, other drugs were next at 26.5 percent, and tobacco accounted for 7.8 percent. Services for drug-induced mental disorders and drug use affecting pregnancy were responsible for 4.7 percent.⁹

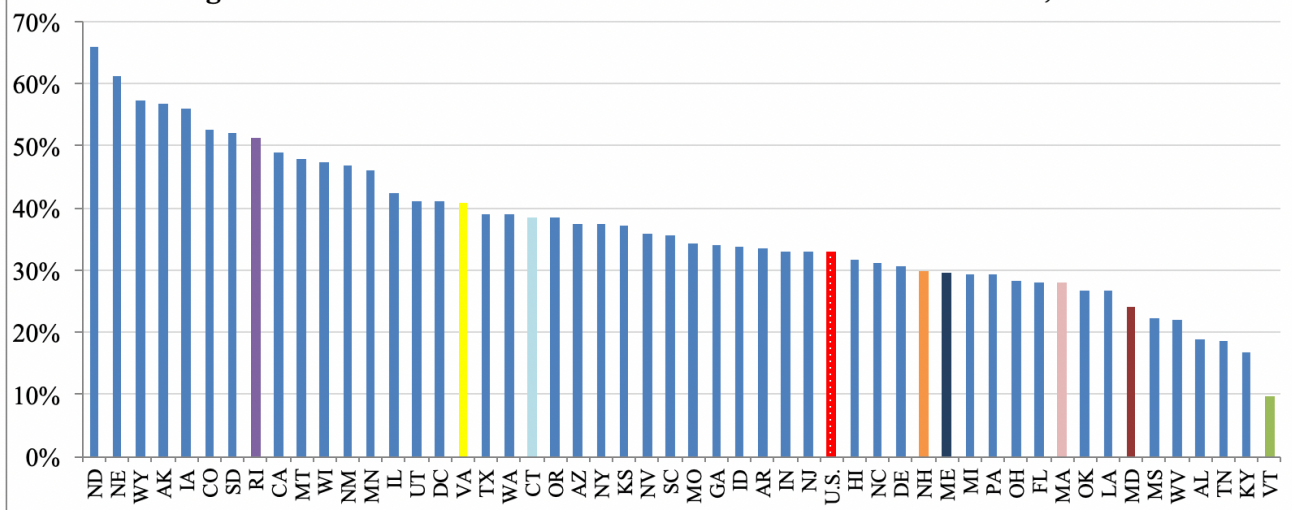
Many states show notably different shares attributed to the various substances. North Dakota has the highest share of alcohol services at almost two-thirds of all substance abuse services (Figure 5). Nebraska, Wyoming, Alaska, and Iowa also have large shares of substance abuse services associated with alcohol. It may be that in parts of the country that have not been hit hard by the opioid epidemic, alcohol remains the substance of choice. Alternatively, patients in some parts of the country may have trouble accessing services for specific types of substance abuse. In New England, Rhode Island had the largest share of substance abuse services associated with alcohol at just over 50 percent. Connecticut followed with about 39 percent of substance abuse services associated with alcohol. The other four New England states were below 30 percent, with Vermont the lowest in the country at 10 percent.

Table 2. Shares of Substance Abuse Services by Substance, 2012	
As a share of all substance abuse services, U.S. average	
Opioids	28.1%
Other drugs	26.5%
Drug-induced mental disorders and drug use affecting pregnancy	4.7%
Tobacco	7.8%
Alcohol	32.9%
Total	100.0%

Source: Author's analysis of Medicare Part B FFS under age 65.

⁹ The data contain only the primary diagnosis. Polysubstance use is common, and many individuals who have a particular substance use disorder listed first (e.g., alcohol) may have additional substance use disorders (e.g., opioids) listed second or third.

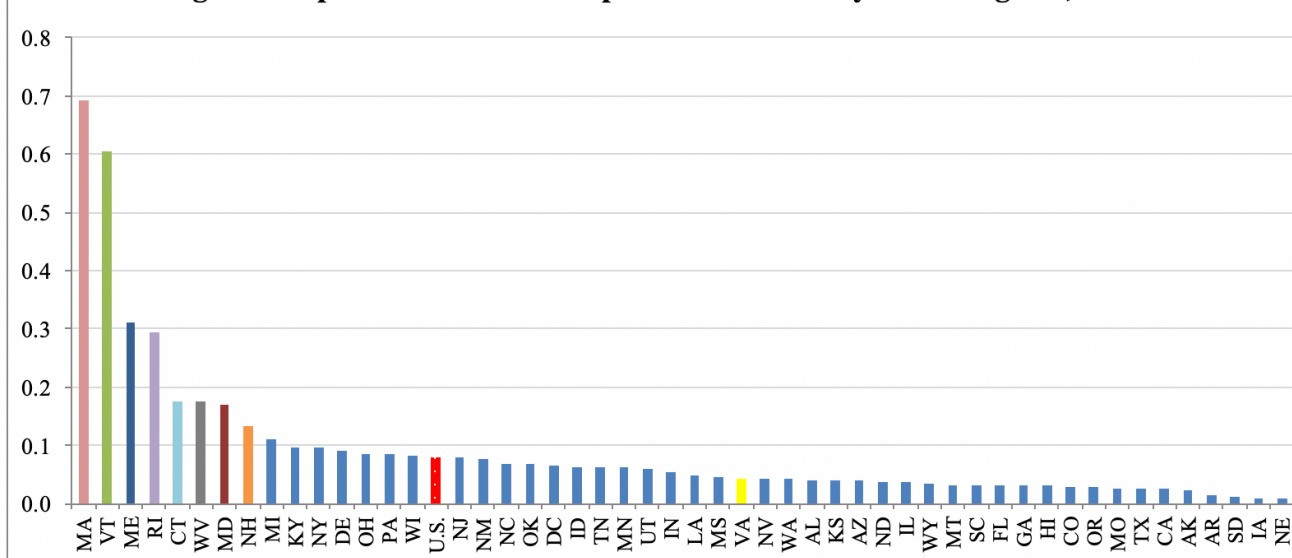
Figure 5. Alcohol Services as a Share of Substance Abuse Services, 2012



Source: Author's analysis of Medicare Part B FFS claims data, 2012; CMS Part B FFS population.

In light of the severity of the on-going opioid epidemic and previous research showing high and rising prevalence of opioid use by SSDI beneficiaries from 2007 to 2011 (Morden et al. 2014), I will shine a light on the services associated with opioids (Figure 6). Massachusetts again has the highest number of services per beneficiary at 0.7, followed by Vermont at 0.6 and Maine at 0.3. For the first time, a Mid-Atlantic state appears in the top eight states. Maryland has 0.2 services per beneficiary, just behind West Virginia and preceding New Hampshire. Some variation across states may arise from the particular types of treatments used.

Figure 6. Opioid Abuse Services per FFS Beneficiary Under Age 65, 2012

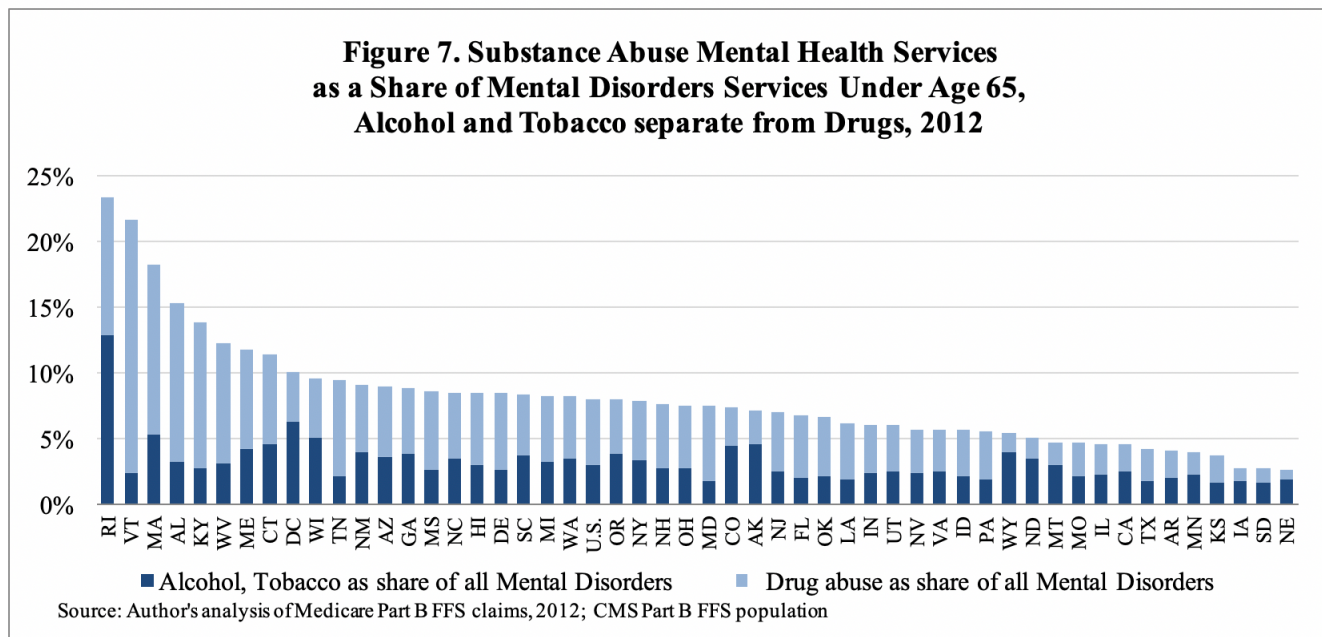


Source: Author's analysis of Medicare Part B FFS claims data, 2012; CMS Part B FFS population.

Services related to substance abuse include some codes that fall under the mental disorders category as “other mental disorders” as well as some codes that do not. Codes in the “other mental disorders” category include services for both substance abuse and substance dependence. Codes that do not fall under mental disorders include services for poisoning, use of substances that complicate pregnancy, and counseling for substance abuse.

One measure of the effort going into services for substance abuse, broadly defined, across the United States is the share of services for mental health services that are associated with substance abuse. The mental disorders/mental health category includes substance dependence, substance abuse, and drug-induced mental disorders. I can further break down those mental health services into one group related to alcohol and tobacco and a second group related to drugs. For the United States as a whole, substance abuse services comprise 8.0 percent of all services for mental disorders. Excluding services for tobacco and alcohol, drug abuse services comprise 5.0 percent of all services for mental disorders nationwide. Again, there is significant variation in those shares across states.

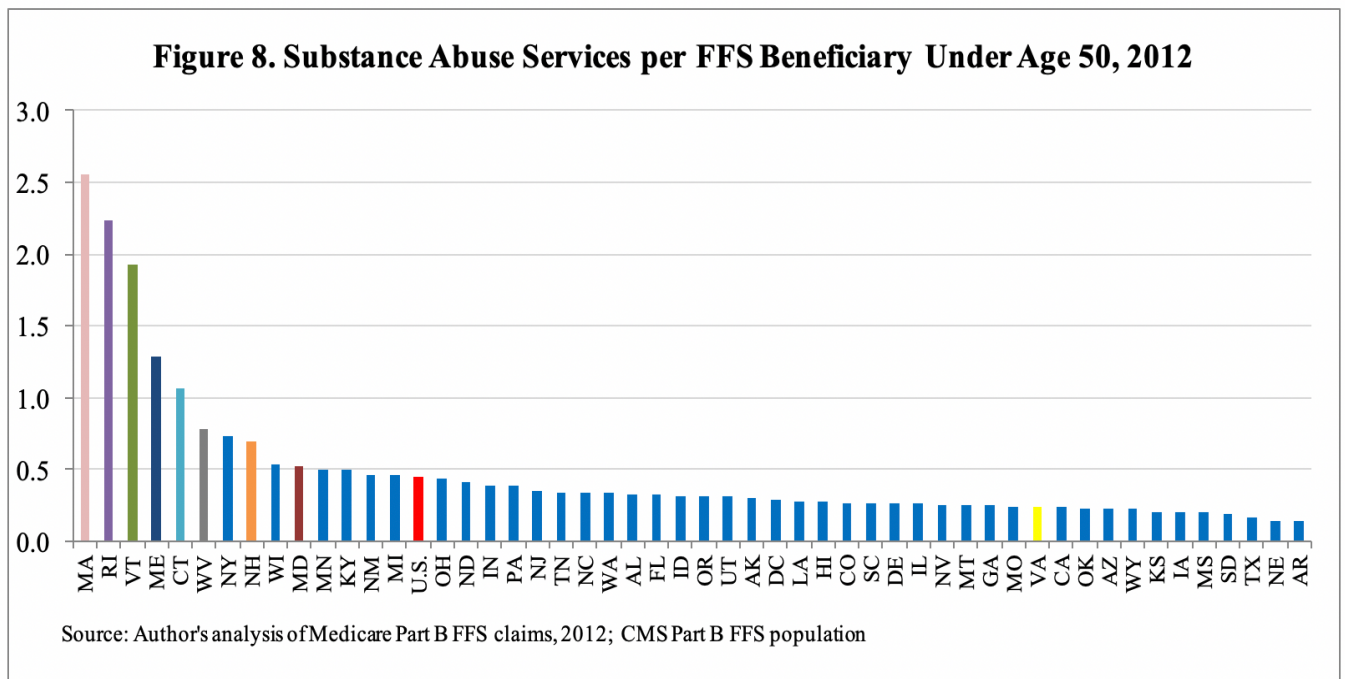
On a state-by-state basis, the share of services for mental disorders that are directly associated with substance abuse broadly defined gives a hint of each state’s investment in tackling substance abuse through the mental health system as well as the demand for such services (Figure 7). The total height of each state’s column in Figure 7 represents the share of mental disorders services associated with substance abuse. Rhode Island has the largest share of services for mental disorders in services for substance abuse at almost 23 percent; Vermont follows at 21.6 percent and Massachusetts at 18.2 percent. At the low end are Nebraska, South Dakota, and Iowa at about 2.7 percent of all mental disorders services going to substance abuse. The breakdown between alcohol/tobacco and drugs is also of interest. About 55 percent of the substance abuse services are for alcohol or tobacco in Rhode Island, for example, but the corresponding share for Vermont is just 11 percent.



V. Services for Substance Abuse and Opioids for SSDI Beneficiaries Under Age 50

The age group most severely hit by the opioid epidemic is young and middle-aged adults, ages 25 to 55 (Hedegaard et al. 2018). To examine the services for substance abuse and opioids used by young and middle-aged adults who are SSDI beneficiaries, I use 100 percent claims data for Medicare Part B FFS beneficiaries under age 50 and compare outcomes to those for FFS beneficiaries ages 50 to 64.¹⁰ Nationwide, beneficiaries under age 50 make up about 32 percent of the Medicare Part B FFS beneficiaries but account for almost 51 percent of the services associated with substance abuse and 75 percent of the services associated with opioids. Again, the states show significant variation in the services per Medicare Part B FFS beneficiary under age 50.

In 2012, the U.S. average number of services for substance abuse broadly defined per Medicare Part B FFS beneficiary under age 50 was 0.45. Massachusetts had the highest at 2.6 services, or more than 5.5 times the U.S. average. Massachusetts was followed by Rhode Island at 2.2 services per beneficiary under age 50 and Vermont at 1.9 services (Figure 8). At the low end, Arkansas, Nebraska, and Texas had just over 0.1 services per beneficiary under age 50.



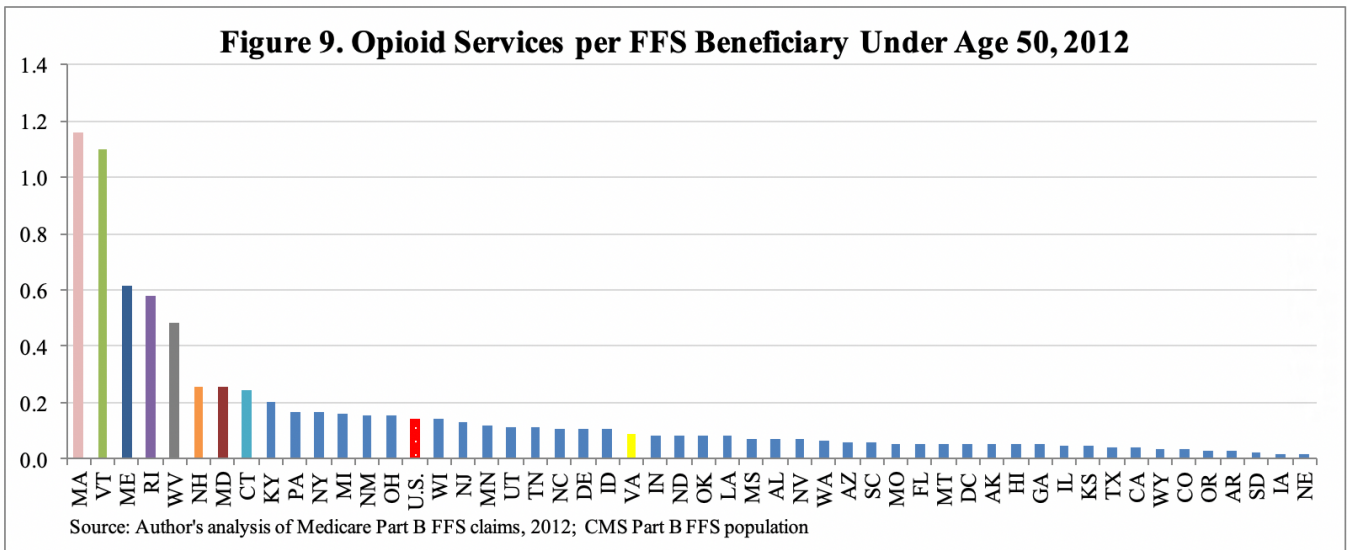
As was the case in the SSDI population under age 65, states differ in the share of substance abuse services associated with alcohol and tobacco. If I isolate opioid services for the population under age 50, Rhode Island, for example, drops down in the ranking because so many of its substance abuse services are

¹⁰ Based on available data from SSA, CMS, the Dartmouth Atlas Project, and the CDC, it was easier to make the break at age 50 than at age 55.

associated with alcohol, not drugs such as opioids. In addition, Rhode Island has stressed the criminal justice approach to treating opioid use disorder rather than the medical treatment approach.¹¹

Nationwide, the average number of services associated with opioids per beneficiary under age 50 is 0.15 (Figure 9). States with the highest number of opioid-related services per FFS beneficiary under age 50 are Massachusetts at 1.2, Vermont at 1.1, and Maine at 0.6. Again, per capita services for opioids are much higher in the New England states than in other states, with per beneficiary services in Massachusetts about 8 times higher than the U.S. average. Moreover, all six New England states are in the top eight states. West Virginia ranks fifth in the top eight states at 0.48 services per beneficiary under age 50. Maryland ranks seventh with 0.26 services for opioids per beneficiary under age 50, following New Hampshire and preceding Connecticut.

Nationwide, the number of opioid services per Medicare Part B FFS beneficiary under age 50 in 2012 was 3.0 times higher than the number per beneficiary ages 50 to 64. That in itself may be a surprising statistic, given the common belief that opioids are associated with chronic back pain and other conditions that tend to be more prevalent among older workers. However, the claims data report only the primary reason for the service. Many visits for chronic back pain would be coded in the musculoskeletal conditions category. If use of opioid prescriptions led to opioid dependence or abuse, services to treat those issues would be coded as opioid services.



Nevertheless, it remains surprising that in West Virginia, for example, the number of opioid services per beneficiary under age 50 is 9.0 times higher than the number per beneficiary ages 50 to 64. In New Hampshire, the number of services is 5.6 times higher per beneficiary under age 50. Such statistics suggest that the opioid epidemic will stick around for many years to come unless opioid users have access to effective treatments or change their substance of abuse over time. The statistics may also reflect interactions between mental health conditions and pain symptoms, especially among younger people. Research shows that depression and anxiety increase pain symptoms, and pain exacerbates depression and anxiety (Kroenke

11 Green et al, JAMA Psychiatry, 2018.

et al. 2011). Younger people who are eligible for SSDI based on depression or anxiety may have pain that is treated with opioids, leading in some cases to many years of opioid dependence or abuse.

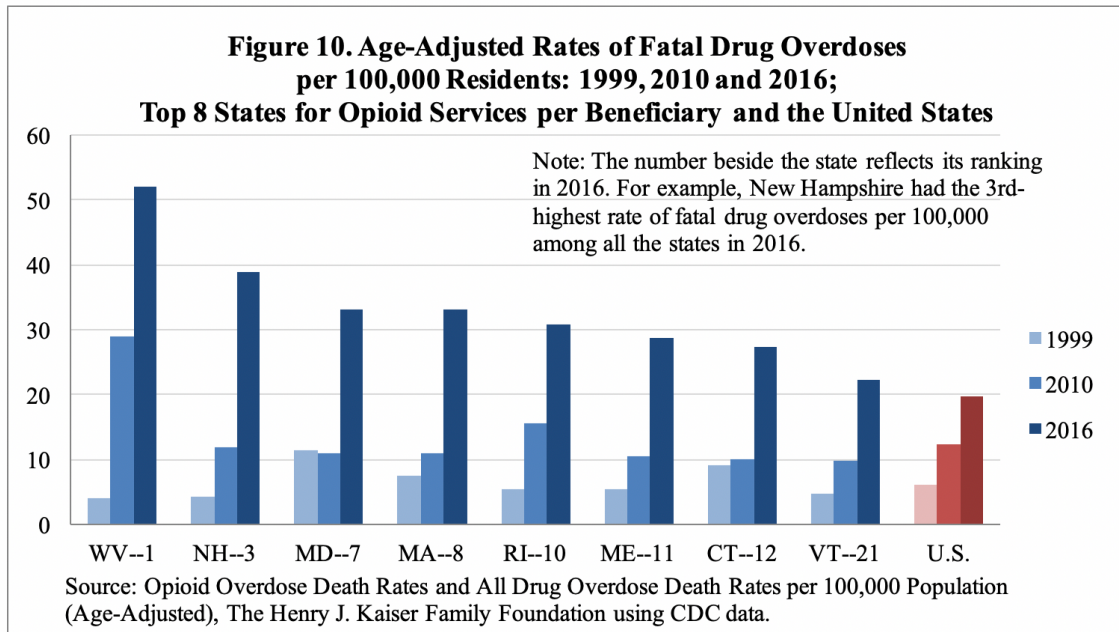
VI. An Applied Policy Example

To illustrate how states might use the data shown here to better focus early intervention efforts, I compare non-hospital, non-pharmaceutical opioid services used per beneficiary in 2012 to the increase in the fatal drug overdose rate for states from 2012 to 2016. The fatal drug overdose rate per 100,000 is adjusted for the age distribution in each state and reflects mainly opioid deaths, including some in which the specific type of opioid cannot be identified.¹² To make the analysis more tractable, I focus on the eight states with the highest levels of opioid services per beneficiary in 2012, as shown in Figure 6.¹³ The idea is to observe how states that are heavily invested in providing widespread, accessible treatment compare regarding the growth in the rate of fatal drug overdoses over time, and also to observe how states with higher or lower increases in the rate of fatal drug overdoses over time compare regarding the frequency of opioid services. States that experience high or growing rates of fatal drug overdoses probably also have a pre-SSDI population at risk for opioid addiction and could consider early intervention services in the larger arena of mental health or in substance use disorder prevention. Of course, the analysis is complicated by state policy differences, state demographics, and the different speeds with which opioids, and fentanyl in particular, are spreading across the states.

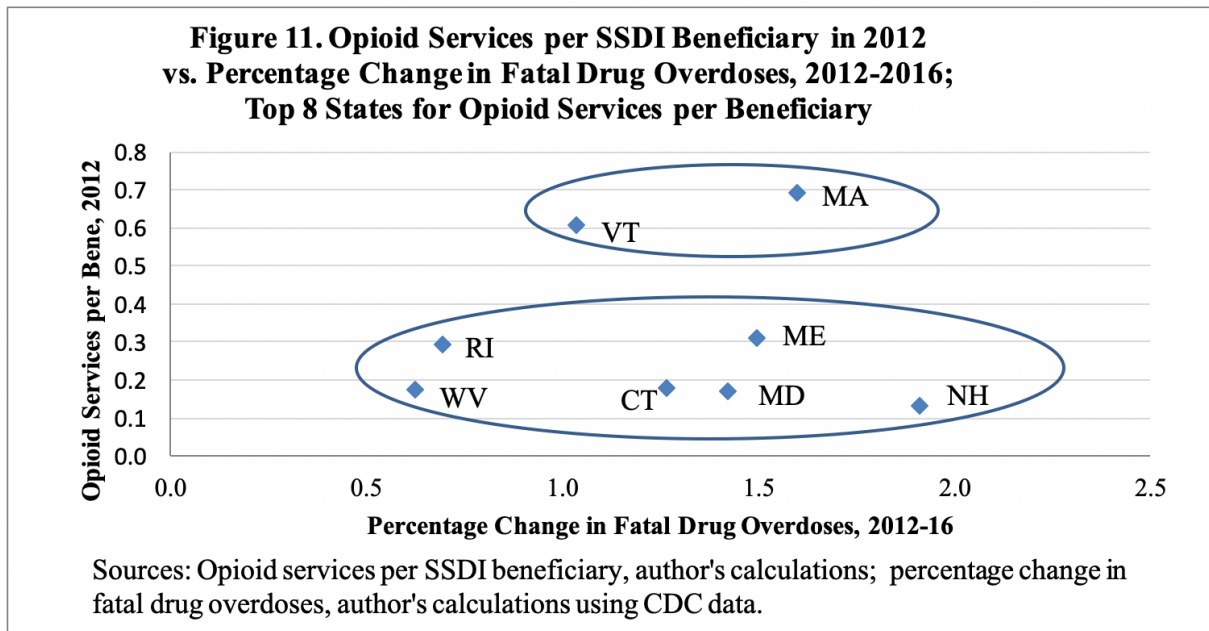
To begin, consider the age-adjusted rates of fatal drug overdoses in 1999, 2010, and 2016 in the eight states with the highest number of opioid services per SSDI beneficiary in 2012 (see Figure 10). In 2016, West Virginia had the highest rate of fatal drug overdoses in the country at 52 per 100,000. New Hampshire was ranked third, Maryland seventh, and so on. The U.S. average rate of fatal drug overdoses was 19.8 per 100,000 in 2016. The figure shows the steady rise of opioid fatalities across the country but also the diverse nature of that rise. In West Virginia, the increase was large from 1999 to 2010 and again from 2010 to 2016. In Maryland, on the other hand, the fatal drug overdose rate held approximately steady between 1999 and 2010 but then rose sharply to 2016. Vermont is the only state of the eight with a fatal drug overdose rate close to the national average in 2016.

12 Kaiser Family Foundation analysis of Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. Multiple Cause of Death 1999-2016 on CDC WONDER Online Database, released 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program.

13 Note that the same eight states had the highest rate of services for mental disorders per SSDI beneficiary, with one exception. New York State appeared in the top eight for mental disorder services but was replaced by Maryland when looking at opioid services per beneficiary.



Next, a scatter plot shows the percentage increase in fatal drug overdoses between 2012 and 2016 and the number of opioid services per SSDI beneficiary in 2012 to get an idea of the association between the use of opioid services in a state and subsequent changes in opioid-related fatalities (see Figure 11). Of course, our data on services pertain only to Medicare Part B FFS beneficiaries under age 65 whereas the fatal overdose rates apply to the entire population of the state. Nevertheless, the supply of health care services and the accessibility of those services for people with Medicare coverage likely reflect the supply and accessibility of services for others (Colla et al. 2017).



Two states had services per SSDI beneficiary in the range of 0.6 to 0.7. Massachusetts had the highest number of opioid services per SSDI beneficiary in 2012 and had the eighth highest rate of fatal drug overdoses in 2016. In contrast, Vermont had the second highest number of opioid services per beneficiary but ranked 21st in the fatal overdose rate. Vermont was on the forefront of medication-assisted treatment (MAT),¹⁴ an example of evidence-based medical practice, and Massachusetts has embraced it as well. The remaining states had services per SSDI beneficiary in the range of 0.1 to 0.3 but fatal drug overdose increases that varied widely. New Hampshire experienced especially high growth in fatalities and had the lowest number of opioid services per beneficiary among the group. West Virginia had slightly higher services per beneficiary but experienced much lower growth in fatalities; of course, its starting rate of fatal drug overdoses in 2012 was very high. Rhode Island and Maine had somewhat higher services per beneficiary, but Rhode Island experienced smaller growth in fatal drug overdoses. Rhode Island has used MAT for a number of years whereas New Hampshire is just now in 2019 expanding the availability of MAT.

Thus, while it is difficult to separate the influence of the supply of opioids coming into a state, the criminal justice stance, and the medical policies in place to provide treatment and recovery services, in this simple exercise, higher numbers of evidence-based opioid services as reflected in claims for Medicare Part B FFS enrollees under age 65 in states like Vermont and Rhode Island seem to be associated with relatively lower fatal overdoses among the general population. Both states have supported the use of MAT, with Vermont generally recognized as the leader in those services. Analyzing data on both services and fatal drug overdoses over more years would help solidify the association between treatment protocols and public health outcomes.

VII. Conclusion

Policymakers can learn about the health care needs of SSDI beneficiaries in their states by looking at the health care services used by SSDI beneficiaries by primary diagnosis. Complete Medicare claims data for people under age 65 enrolled in Part B FFS in 2012 suggest large variation across states, particularly in the area of mental disorders including substance abuse. States might want to focus their early intervention efforts on health care areas where enhanced preventive care might reduce health care needs several years later, perhaps allowing more people to remain in the labor force as productive workers.

Future work might target specific areas of the health care system in which early intervention could prevent or delay the onset of such severe symptoms or conditions that an individual cannot work. Such work might be especially promising in the mental health arena including substance abuse.

14 For more information on Vermont's Hub-and-Spoke treatment system, see Brooklyn and Sigmon (2017) or <http://www.healthvermont.gov/response/alcohol-drugs/treating-opioid-use-disorder>.

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About the McCrery-Pomeroy SSDI Solutions Initiative

The McCrery-Pomeroy SSDI Solutions Initiative is a project dedicated to identifying practical policy changes to improve the Social Security Disability Insurance (SSDI) program and other policies for people with disabilities. Launched in 2014, the initiative originally commissioned a number of accomplished policy experts from a variety of backgrounds to put forward 12 different policy proposals, each addressing a unique issue with current disability policy. These papers were peer-reviewed, presented at the Initiative’s 2015 SSDI Solutions Conference, and ultimately published in the 2016 book [SSDI Solutions: Ideas to Strengthen the Social Security Disability Insurance Program](#). The Initiative’s work helped to elevate SSDI to the attention of policymakers and has led to the proposal, enactment, and implementation of numerous legislative and regulatory improvements.

Beginning in 2018, the SSDI Solutions Initiative commissioned seven additional papers designed to build upon the work of the 2016 book. These papers will present additional research, offer implementation guidance, or offer new ideas to further improve disability policy in the United States.

The SSDI Solutions Initiative is co-chaired by former Congressmen Earl Pomeroy (D-ND) and Jim McCrery (R-LA), both former Chairmen of the House Ways & Means Social Security Subcommittee. The SSDI Solutions Initiative is a project of the Fiscal Institute at the Committee for a Responsible Federal Budget.

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