



**U.S. Department of Health and Human Services  
Assistant Secretary for Planning and Evaluation  
Office of Disability, Aging and Long-Term Care Policy**

# **MEDICAID SUBSTANCE ABUSE TREATMENT SPENDING: FINDINGS REPORT**

**September 2012**

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# **MEDICAID SUBSTANCE ABUSE TREATMENT SPENDING: Findings Report**

Ellen Bouchery  
Rick Harwood  
Rosalie Malsberger  
Emily Caffery  
Jessica Nysenbaum  
Kerianne Hourihan

Mathematica Policy Research

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## ACRONYMS

ASAM	American Society of Addiction Medicine
BHO	behavioral health organization
BOE	basis-of-eligibility
CADA	Certified Alcohol and Drug Counselor
CI	clinic
CMS	HHS Centers for Medicare and Medicaid Services
CY	calendar year
EDB	enrollment data base
EPSDT	early and periodic screening, diagnostic, and treatment
ER	emergency room
F-SHRP	Federal-State Health Reform Partnership
FFS	fee-for-service
FMAP	federal medical assistance percentage
FY	fiscal year
HCB	home and community-based waiver services
HCPCS	Healthcare Common Procedure Coding System
HHS	U.S. Department of Health and Human Services
HIO	health insuring organization
HMO	health maintenance organization
HOA	health opportunity account
Inp	general inpatient
IP	inpatient (MAX file)
LT	long-term care (MAX file)
M-CHIP	Medicaid expansion Children's Health Insurance Program
MAX	Medicaid Analytic eXtract
MCO	managed care organization
MFP	Money Follows the Person
MH	mental health
MMIS	Medicaid Management Information System
MnDHO	Minnesota Disability Health Options
MSHO	Minnesota Senior Health Options program
MSIS	Medicaid Statistical Information System

N-SSATS	National Survey of SA Treatment Services
NASADAD	National Association of State Alcohol and Drug Abuse Directors
NDC	National Drug Code
NHEA	National Health Expenditure Accounts
NSDUH	National Survey on Drug Use and Health
OT	other services (MAX file)
Outp	outpatient hospital
PASARR	Preadmission Screening and Annual Resident Review
PCCM	primary care case management
PHP	Pre-paid Health Plan
Phys	physician
PIHP	Pre-paid Inpatient Health Plan
PPO	preferred provider organization
Prac	other licensed practitioners
PRTF	psychiatric residential treatment facility
PS	person summary (MAX file)
QEx	QUEST Expanded
RBF	restricted-benefit flag
Rhb	rehabilitation
RX	prescription drug (MAX file)
S-CHIP	State Children's Health Insurance Program
SA	substance abuse
SAMHSA	HHS Substance Abuse and Mental Health Services Administration
SPCM	specialty physician case management
SSE	SAMHSA Spending Estimates
SSR&E	SAMHSA Survey of Revenue and Expenditures
SUD	substance use disorder
TCM	targeted case management
WMIP	Washington Medicaid Integration Program

## EXECUTIVE SUMMARY

This report presents the findings of a study conducted by Mathematica Policy Research to improve knowledge about the data on Medicaid substance abuse (SA) treatment available in the Medicaid Analytic eXtract (MAX), develop methods for using these data to estimate Medicaid SA treatment spending, and generate estimates of Medicaid SA treatment spending in calendar year (CY) 2008 and projections for fiscal year (FY) 2011.

The estimates in this study were developed based on MAX data. However, there are gaps in representation of the Medicaid population in MAX. The most significant gap is incomplete reporting of services provided to managed care enrollees. In addition, data quality issues, reporting anomalies, and inconsistencies in reporting account for other data gaps. We addressed these gaps by imputing expenditures for the managed care enrollees and other populations for whom fee-for-service (FFS) claims data were not available.

This study produced two sets of findings. The first set focuses on a limited number of states for whom FFS SA treatment claims representing a majority of the Medicaid population in the state were available in MAX. The second set of findings reports national estimates of SA treatment expenditures for CY 2008 and projections to FY 2011. A summary of each of these sets of findings is presented here.

### SA Spending in the FFS States

Across the 18 states with representative FFS data in MAX, spending on SA services accounted for less than 1 percent of total Medicaid spending. On average, these states spent \$6.16 per Medicaid enrolled month 12 or older on medical services to treat a SA diagnosis. There was extreme variation across states in the average amount spent on SA treatment services, from less than \$3 per enrolled month to over \$26. This variation appears to be linked to differences between states in the supply of specialty SA treatment providers as well as to Medicaid program decisions regarding coverage of optional populations and optional benefits. States that have chosen to expand Medicaid coverage to optional adult populations, or to cover optional SA treatment services such as residential treatment programs and case management, tend to have higher average spending.

Despite mandatory coverage of SA treatment services for children through the early and periodic screening, diagnostic, and treatment benefit, across all 18 states, adolescents 12-17 represented only 18.1 percent of SA treatment expenditures, with males incurring twice the expenditures of females. Working age adults ages 18-64 represented 75.0 percent of SA treatment expenditures, with 38.9 percent of

expenditures for females and 36.1 percent for males. Enrollees 65 or older represented 6.7 percent of expenditures, with males having more than double the expenditures of females.

About half of all SA spending in these states was for outpatient services, which were used by almost 90 percent of beneficiaries with a SA diagnosis. The next highest share of spending was 35.2 percent for inpatient hospital care. Prescribed drugs and residential treatment represented 5.4 percent and 7.5 percent, respectively.

Overall, 21.4 percent and 62.4 percent of enrollees with an SA diagnosis identified in CY 2008 MAX data used the emergency room with an SA-related or any diagnosis, respectively. Among the same group 33.6 percent had a SA-related inpatient hospital stay. Overall expenditures for enrollees with an identified SA diagnosis were 2.19 times higher than the average for Medicaid enrollees 12 or older.

## National SA Spending Estimates

Medical expenditures to treat a SA disorder were 3.4 billion in CY 2008 (Table ES-1). These services were received by 1.1 million persons (Table ES-2) averaging 3,000 per service user per year. This spending amounted to slightly less than 1.0 percent of the total 334 billion spent on Medicaid, and provided care to about 1.9 percent of the 61 million persons covered by Medicaid.<sup>1</sup> An estimated total of 2.0 billion--or 59 percent--of these expenditures were provided through FFS Medicaid, with the remaining 1.4 billion provided through Medicaid managed care plans. The Federal Government paid for 57 percent of these services.

Type of SA Service	CY 2008 (in millions \$)	FY 2011 (in millions \$)	Annualized Percentage Growth Rate
Core SA Treatment Services	3,367	3,952	6.0
Fetal Drug or Alcohol Exposure and Poisoning	87	98	4.6
Other Medical Conditions 100% Attributable to SA	257	292	4.8
MH Services with SA as a Secondary Diagnosis	1,432	1,586	3.8
Non-MH Services with SA as a Secondary Diagnosis	3,290	3,659	3.9

Spending is projected to have increased to 4.0 billion in federal FY 2011, just slightly slower than the increase in total Medicaid spending, which reflects the long-term correlation between SA treatment and total Medicaid spending.

<sup>1</sup> Total Medicaid expenditures and enrollment are based on federal FY 2008 as reported by the Centers for Medicare and Medicaid Services at <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-State/By-State.html>.

TABLE ES-2. Medicaid Substance Treatment Users, CY 2008	
Type of SA Service	CY 2008 (in thousands)
Core SA Treatment Services	1,138
Fetal Drug or Alcohol Exposure	35
Poisoning Related to Drugs or Alcohol	25
Other Medical Conditions 100% Attributable to SA	53
MH Services with SA as a Secondary Diagnosis	281
Non-MH Services with SA as a Secondary Diagnosis	575
Total Enrollees Identified with SA Related Claim <sup>a</sup>	1,717
a. Rows above do not sum to this total because some users are identified on more than one type of claim.	

Beyond the medical expenditures to treat SA disorders, this study estimated additional categories of costs solely or partially attributable to SA disorders. While these costs are not included in the national SA treatment expenditures, estimated by the Substance Abuse and Mental Health Services Administration (SAMHSA) and known as the SAMHSA Spending Estimates (SSE), such costs generally are included in cost-of-illness studies of drug and alcohol disorders. Costs solely due to drugs and alcohol include fetal exposure to alcohol and/or drugs (49 million, 35,000 persons); alcohol and/or drug poisoning (38 million, 25,000 persons); and other drug and/or alcohol-caused disorders (257 million, 53,000 persons). Much more extensive costs were caused partially by drug/alcohol disorders: mental health (MH) disorders with a co-morbid SA diagnosis (1.4 billion and 282,000 persons) and other health disorders with a co-morbid SA diagnosis (3.3 billion and 575,000 persons). Only a small fraction of these latter costs are due to drug/alcohol disorders, as these expenditures are related primarily to other conditions.

## Discussion

The data quality behind these estimates is reasonably strong. SA treatment utilization data were available for 58 percent of Medicaid enrolled months. The data were missing primarily due to non-reporting of services for Medicaid managed care enrolled months. Utilization and expenditures for the 42 percent of enrolled months with missing data were imputed based either on data from the same state for FFS-insured beneficiaries or the average of data from 18 states with very complete reporting. Imputations were adjusted for age, gender, disability status, Medicare enrollment, and the availability/supply of SA treatment service in the state. Each of these factors was a strong and statistically significant predictor of per-capita utilization of and spending on SA treatment. The imputations represented 42 percent of the final estimates spending on medical treatment for SA disorders.

The estimate of Medicaid core SA treatment spending developed in this study for CY 2008 differs from the projected Medicaid SA treatment spending developed by

SAMHSA in the SSE projections for 2004 to 2014.<sup>2</sup> While no CY 2008 data point is displayed in the earlier SAMHSA study, it did project the 2006 level of Medicaid spending for SA treatment to be \$4,279 million while this study indicates the spending as of 2008 to be \$3,267 million. While the current study is limited because of the level of imputations, the SSE estimates were limited because data on unit prices and the “payer source” distribution for specialty SA treatment providers were unavailable to support development of the SSE after 1998--prior to the SAMHSA Survey of Revenue and Expenditures in 2009.

The core SA treatment estimates from this study parallel the estimates from the SSE including only services with a primary diagnosis of SA treatment. However, in this study we also examined spending on treatment for other medical conditions that are caused by SA. The addition of services with a primary diagnosis of fetal exposure, poisoning, and other medical conditions fully related to SA increased the estimate of expenditures for SA treatment by about 10 percent. In contrast to the SSE, this study also estimated spending on services with a secondary diagnosis of SA. We identified \$1,433 million in expenditures for MH services with a secondary diagnosis of SA and \$3,290 million in Medicaid expenditures for services with a non-MH primary diagnosis and a SA secondary diagnosis. Thus, overall slightly more than 1 percent of Medicaid spending was identified as primarily related to SA and an additional 1½ percent of total Medicaid spending was identified with a secondary SA diagnosis. Both the current study and the SSE exclude costs not directly related to treatment, such as costs stemming from lower productivity, missed workdays, and/or SA-related crimes.

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<sup>2</sup> Levit, K.R., C.A. Kassed, R.M. Coffey, T.L. Mark, D.R. McKusick, E. King, R. Vandivort, J. Buck, K. Ryan, and E. Stranges. *Projections of National Expenditures for Mental Health Services and Substance Abuse Treatment, 2004-2014*. SAMHSA Publication No. SMA 08-4326. Rockville, MD: SAMHSA, 2008.

# I. INTRODUCTION

As federal and state substance abuse (SA) agencies work to establish priorities and coordinate their efforts, policymakers need reliable national and state estimates of Medicaid SA treatment spending and accurate methods for projecting Medicaid and Medicare SA spending. Spending estimates and projections are essential both for aligning funding with policy objectives and developing realistic budgets to support treatment and prevention. Given these needs, the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services (HHS) and the Office of National Drug Control Policy contracted with Mathematica Policy Research to conduct this study with the following purposes:

- To improve knowledge about the data on Medicaid SA treatment available in the Medicaid Analytic eXtract (MAX).
- To develop methods for using these data to estimate Medicaid SA treatment spending accurately and efficiently.
- To generate estimates of Medicaid SA treatment spending in calendar year (CY) 2008 and projections for fiscal year (FY) 2011.

This report presents the findings of this study.<sup>3</sup> In the next section, we provide a brief overview of the study data and methods. In Section III, we present SA treatment expenditure estimates for CY 2008 for states with predominant fee-for-service (FFS) coverage of SA. In Section IV, we review FFS spending estimates derived from MAX CY 2008 for the remaining states. The estimates in Section IV should be interpreted with caution, as they are not representative of all SA treatment spending in these states. A substantial portion of the SA treatment spending in these states is provided through pre-paid health plans and is not included in these estimates. Nevertheless, these estimates are reported to provide policymakers with information about FFS SA treatment spending in these states. Total FFS and managed care imputed expenditures are reported for all states and nationally in Section V. Section V also reports SA treatment spending projections nationally for federal FY 2011.

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<sup>3</sup> Technical issues related to this study are discussed in a separate report: Developing Medicare and Medicaid Substance Abuse Treatment Spending Estimates. Available at <http://aspe.hhs.gov/daltcp/reports/2012/MSATest.shtml>.



## II. OVERVIEW OF DATA AND METHODS

In this chapter, we provide a brief overview of the data and methods for this study. A more complete description of the study methods is provided in Appendix A. The primary data sources are the MAX files for CY 2008. These data contain detailed information on Medicaid enrollment and the services received by Medicaid enrollees in each of the 50 states and the District of Columbia but do not reflect all services received by Medicaid beneficiaries. The most significant gap is incomplete reporting of services provided to managed care enrollees. In addition, data quality issues, reporting anomalies, and inconsistencies in reporting account for other data gaps. We address these gaps by imputing expenditures for the managed care enrollees and other populations for whom FFS claims data are not available. In the next section, we describe our approach to identifying and classifying services provided under FFS Medicaid. In Section II.B, we provide an overview of our approach to imputing expenditures for Medicaid enrollees with managed care coverage of SA or for whom FFS data are lacking in the MAX files.

### A. Identification of FFS SA Treatment Expenditures

We used the CY 2008 MAX person summary (PS), inpatient (IP), other services (OT), long-term care (LT), and prescription drug (RX) MAX files to identify beneficiaries receiving SA services and their associated Medicaid expenditures. In these files, we identified FFS claims providing SA treatment in the following categories:

1. **Core SA treatment services.** This category includes claims for services with a primary diagnosis of an SA disorder. In Appendix Table B.1 and Table B.2, we display the diagnosis codes that we used to define treatments of alcohol and drug disorders, respectively. The third column of the tables identifies these services as “core.” The diagnosis codes are consistent with those used by the Substance Abuse and Mental Health Services Administration (SAMHSA) in its estimates of National Expenditures for Mental Health Services and Substance Abuse Treatment, referred to as the SAMHSA Spending Estimates (SSE).<sup>4</sup> Prescribed drugs for SA treatment are also included in this category. We identified prescribed drugs used to treat SA based on National Drug Codes. The codes used to identify SA treatment are listed in Appendix Table B.3.

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<sup>4</sup> Levit, K.R., C.A. Kassed, R.M. Coffey, T.L. Mark, D.R. McKusick, E. King, R. Vandivort, J. Buck, K. Ryan, and E. Stranges. *Projections of National Expenditures for Mental Health Services and Substance Abuse Treatment, 2004-2014*. SAMHSA Publication No. SMA 08-4326. Rockville, MD: SAMHSA, 2008.

2. **Services related to fetal drug or alcohol exposure.** This category includes services with a primary diagnosis of fetal drug or alcohol exposure. In Appendix Table B.1 and Table B.2, the services are identified as “fetus.”
3. **Services related to poisoning by drugs or alcohol.** This category includes services with a primary diagnosis of poisoning related to drugs or alcohol. In Appendix Table B.1 and Table B.2, the services are identified as “poisoning.”
4. **Medical services for other conditions 100 percent attributable to SA.** This category includes claims for other services with a primary diagnosis of a medical condition 100 percent attributable to SA. This category includes conditions such as alcoholic polyneuropathy and polyneuropathy due to drugs, as well as acute alcoholic hepatitis and alcoholic cardiomyopathy, gastritis, fatty liver, cirrhosis of the liver, and liver damage. In Appendix Table B.1 and Table B.2, the services are identified as “supplemental.”<sup>5</sup>
5. **Mental health (MH) services with a secondary diagnosis of SA disorders.** This category includes services with a primary diagnosis of a mental disorder and a secondary diagnosis on the same claim from one of the first four groups above. We identified claims with a primary MH diagnosis based on the codes listed in Appendix Table B.3.
6. **Other medical services with a secondary diagnosis of SA disorder.** This category includes claims with primary diagnoses not identified as MH disorders but with a secondary diagnosis from the first four categories above.

All Medicaid enrollees with an FFS claim in any of the six categories above were labeled as SA treatment users in the results of this study. We used the Medicaid Statistical Information System (MSIS)-ID to identify enrollees who had multiple FFS claims. Based on the MSIS-ID, we created an unduplicated count of FFS SA treatment users. Within a state, Medicaid enrollees are assigned a single MSIS-ID. However, enrollees who receive treatment in more than one state would be assigned a different MSIS-ID in each state and thus would be counted once in each state. For each Medicaid enrollee identified as an SA treatment user, in addition to extracting SA treatment claims, we also extracted all claims with a primary diagnosis of an MH disorder and all claims for inpatient hospital and emergency room (ER) services. Additional information on Medicaid expenditures, eligibility, and demographic characteristics for SA treatment users was also obtained from each user’s MAX PS file record.

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<sup>5</sup> Bouchery, E.E., H.J. Harwood, J.J. Sacks, C.J. Simon, and R.D. Brewer. “Economic Costs of Excessive Alcohol Consumption in the United States, 2006.” *American Journal of Preventive Medicine*, November 2011; Harwood, H., D. Fountain, and G. Livermore. *The Economic Costs of Alcohol and Drug Abuse in the United States, 1992*. National Institute on Drug Abuse Publication Number 98-4327. Rockville, MD: National Institutes of Health, 1998.

## B. Imputation of Managed Care Expenditures

Our method for estimating managed care SA treatment users and expenditures differed by state, depending on the extent to which state-specific information was available. We divided the states into three groups according to the level and type of available state-specific information. Some states may fall into two groups if they have high managed care penetration in some basis-of-eligibility (BOE) groups but not in others. The three groups of states follow:

- **Managed care states with usable encounter data.** In these states, we imputed expenditures as the product of the number of service units provided in the state's managed care encounter data and the cost per service unit from its FFS data.
- **Other managed care states with less than 60 percent penetration in a given BOE group.** In these states, we imputed expenditures as the product of the number of managed care enrolled months and expenditures per enrolled month by eligibility/demographic group from the state's FFS enrollees.
- **Other managed care states with 60 percent or greater penetration in a given BOE group and FFS states with substantial FFS data quality issues.** In these states, we imputed expenditures as the product of the number of managed care enrolled months and expenditures per enrolled month by eligibility/demographic group from similar states' FFS enrollees.

Maine only reported prescribed drug claims in 2008. Thus, IP/LT/OT claims were not available for Maine in MAX 2008. Because claims data were not available for Maine, its expenditures were imputed in the same manner as a state with more than 60 percent managed care penetration. We considered using a prior year of data to estimate Maine's expenditures, but Maine also did not report IP/LT/OT claims in 2007. A detailed description of the imputation methods is provided in Appendix A.

## C. Estimating Federal Share

We calculated the federal share of each state's SA treatment expenditures in 2008 based on its federal medical assistance percentage (FMAP). The Kaiser Family Foundation provides an FMAP time series from 2004 to 2011, with links to corresponding *Federal Register* notices.<sup>6</sup>

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<sup>6</sup> Available at <http://www.statehealthfacts.org/comparetable.jsp?ind=184&cat=4>. Accessed July 29, 2012.

## D. Methods for Projecting 2008 Estimates to FY 2011

We projected the FY 2008 estimates to FY 2011 based primarily on information reported by state Medicaid programs in CMS-64. The CMS-64 reports summarize annual Medicaid expenditures for each state. Information from the forms was available through FY 2011 for each state by service category.<sup>7</sup> We used these data to project CY 2008 MAX data to FY 2011. SA treatment costs for each state and category of service (for example, inpatient, outpatient, prescription drugs) are projected to FY 2011 based on the annual change in overall Medicaid expenditures for the state among similar services between FY 2008 and FY 2011. Given that the rate of growth in SA treatment expenditures (as identified in the SSE) historically has fallen below that of general health care expenditures as identified in the Centers for Medicare and Medicaid Services (CMS) National Health Expenditure Accounts, we estimated the SA treatment spending trend as only 98 percent of the trend observed for overall Medicaid program spending in each category.

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<sup>7</sup> Available at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/MedicaidBudgetExpendSystem/CMS-64-Quarterly-Expense-Report.html>. Accessed on July 30, 2012.

### **III. SPENDING IN PREDOMINANTLY FEE-FOR-SERVICE STATES**

In this section, we focus on spending in the 18 states that had predominantly FFS coverage of SA treatment in CY 2008. Spending in the other 32 states and the District of Columbia is excluded from this discussion because FFS claims data were not available for a substantial share of the SA treatment services provided in the state, or because of data quality issues.

In the next section, we provide background on Medicaid eligibility guidelines and SA treatment coverage and reimbursement methods in these states. In Section III.B, we report our findings about SA treatment expenditures in these states. Finally, in Section III.C, we describe the Medicaid enrollees identified as SA treatment users in these states.

#### **A. Description of Predominantly FFS States**

In this section, we first describe how we selected these 18 states for this analysis. Then, we describe differences across these states in the individuals eligible for Medicaid and in Medicaid coverage of SA treatment services. We also describe differences in the supply of SA treatment services across these states.

##### **1. *Criteria for Inclusion***

We selected the 18 states included in this section because they had predominantly FFS coverage of SA services and had limited data quality issues. Unfortunately, the CY 2008 MAX files did not include comprehensive encounter data for Medicaid enrollees in managed care programs. The 18 states with SA services and users described in this section thus are limited to those with FFS coverage of SA treatment; these FFS claims data in MAX are broadly representative of the SA treatment services provided to Medicaid enrollees in the state.

We used a two-stage process to identify states with predominantly FFS coverage of SA. First, we identified which states had Health Maintenance Organizations (HMOs), Managed Behavioral Health Organizations (BHOs), or both within their Medicaid program generally. We then looked at the program descriptions for the plans operating in the state to determine whether MH or SA treatment services were provided through the managed care plans operating in that state.

Table III.1 presents findings for the 50 states and the District of Columbia for the first stage of this analysis. We selected 11 of the 18 predominantly FFS states based on this first stage because they were identified as not using an HMO or BHO to provide

services to their Medicaid population. In this analysis, we did not include two of the 13 states identified as FFS-only because of data quality issues. We identified Maine as an FFS-only state but excluded it from our analysis because it is missing a substantial amount of data, having been unable to report accurately on inpatient, long-term care, and other services in MAX 2008; only eligibility and prescription drug information were reported for the state. Alaska was also excluded because only 57 percent of its other services file claims had a primary diagnosis code, and SA services were identified for this analysis based on primary diagnosis.

<b>TABLE III.1. State Medicaid Delivery Systems</b>		
<b>Managed Care</b>	<b>Count</b>	<b>States</b>
FFS-Only	13	AK, AR, ID, LA, ME, MS, MT, NH, ND, OK, SD, VT, WY
State Has Only HMO	18	AL, CA, CT, DE, DC, IL, IN, KY, MD, MN, MO, NV, NJ, OH, RI, SC, VA, WV
State Has Both HMO & BHO	18	AZ, CO, FL, GA, HI, IA, <sup>a</sup> KS, MA, MI, NE, NM, NY, OR, PA, TN, TX, WA, WI
State Has Only BHO	2	NC, UT
<b>SOURCE:</b> MAX 2008 Eligibility Anomaly Tables.		
a. Iowa had only one HMO, with low enrollment, which left in the state in 2008.		

In the next stage, for each state using an HMO or BHO we assessed whether MH and/or SA services were covered by the managed care organization. We examined the 2008 National Summary of State Medicaid Managed Care Programs. This report provided qualitative information, including populations served, services covered, and quality improvement activities. The information in the report was not always sufficiently detailed to determine SA treatment coverage. In particular, if no information was reported about SA treatment coverage, we assumed that the organization providing MH services in the state also provided SA treatment. Table III.2 displays for each state whether MH and SA services were covered by an HMO, carved out of an HMO and covered through FFS or by a BHO, included under both an HMO and a BHO, or covered under a BHO if the state had no HMO.

<b>TABLE III.2. SA and MH Services Coverage, by Delivery System</b>		
<b>SA Coverage</b>	<b>Count</b>	<b>States</b>
SA services covered exclusively by HMO	23	AZ, DE, DC, FL, GA, HI, IL, IN, MD, MA, MI, MN, MO, NJ, NV, NY, OH, OR, RI, TN, TX, VA, WI
SA services carved out of HMO & provided through FFS	2	AL, KY
SA services carved out of HMO & provided through BHO	7	CO, CT, IA, <sup>a</sup> KS, NE, NM, PA
Both HMO & BHO cover SA services	4	CA, SC, WA, WV
BHO covers SA services (state does not have HMO)	2	NC, UT
<b>SOURCE:</b> 2008 National Summary of State Medicaid Managed Care Programs.		
a. Iowa had only one HMO, with low enrollment, which left the state in 2008.		

Following this review and an assessment of data quality, we added seven more states to the predominantly FFS states. With the exception of Alabama, all of these states have some managed care coverage of SA services, as identified here:

- Illinois--Managed care program covered SA services, but a majority of enrollees were not enrolled in the comprehensive managed care plan. Only about 4 percent of enrolled months 12 and older were in the managed care plan.
- Missouri--Managed care program covered SA services, but a majority of enrollees were not enrolled in the comprehensive managed care plan. About one-third of enrolled month 12 and older were in the managed care plan.
- Alabama--Managed care program focused on maternity services and did not include SA treatment services.
- Kentucky--Managed care program covered only medical detoxification services.
- Connecticut--HMOs ceased providing services to Medicaid enrollees from December 2007 through July 2008, so there was no HMO enrollment during this period.
- South Carolina--Managed care program covered SA services, but a majority of enrollees were not enrolled in the comprehensive managed care plan. Almost 20 percent of enrolled months 12 and older were in the managed care plan.
- North Carolina--Pre-paid inpatient MH plan covered inpatient SA services in only five counties in the state.

In Illinois, Missouri, Connecticut, and South Carolina, the months during which an enrollee was covered under a managed care plan were excluded from our analysis. The estimates for Kentucky and North Carolina understated the SA treatment services provided, as the inpatient services provided through the managed care programs are not represented in the FFS claims data included in this analysis.

## **2. Medicaid Eligibility**

To receive federal matching funds, state Medicaid programs must cover basic health services for all individuals in certain mandatory eligibility groups, including low-income children, pregnant women, infants born to Medicaid-eligible women, low-income families with children, SSI enrollees, and low-income Medicare enrollees. States may also elect to cover some optional groups in their Medicaid programs, including medically needy individuals, pregnant women and children with higher income levels, institutionalized individuals, or other groups authorized under waiver programs. Coverage of optional groups of individuals can have a significant impact on SA treatment expenditures. In particular, since children below age 12 have negligible SA treatment expenditures, expansions that shift the Medicaid population toward adults and

groups such as childless adults may result in higher SA treatment expenditures in a given state relative to other states. Table III.3 summarizes coverage of optional groups in the 18 predominantly FFS states.

TABLE III.3. Coverage of Optional Medicaid Groups, 2008				
State	Parent Expansion	Childless Adult Expansion	SSI Coverage (Institutionalized)	Medically Needy
Alabama			X	
Arkansas	X <sup>a</sup>		X	X
Connecticut			X	X
Idaho			X	
Illinois				X
Kentucky			X	X
Louisiana			X	X
Mississippi			X	
Missouri				
Montana			X	X
New Hampshire			X	X
North Carolina				X
North Dakota				X
Oklahoma	X	X	X	
South Carolina			X	
South Dakota			X	
Vermont	X	X	X	X
Wyoming			X	

**SOURCE:** Eligibility Anomaly Tables, MAX 2008.

a. Arkansas did not report whether it had a parent or caretaker expansion in MAX 2008. According to a brief by the Kaiser Family Foundation, the state had a parent expansion through Medicaid as of July 2012. Available at <http://www.kff.org/medicaid/upload/7993-02.pdf>. Accessed July 29, 2012.

### 3. Medicaid Service Coverage

Two types of SA treatment services must be covered in all states. Federal Medicaid guidelines require all states to cover medically necessary inpatient detoxification services. Also, all states are federally mandated to provide early and periodic screening, diagnostic, and treatment (EPSDT) services for individuals under 21 years of age. SA treatment needs identified as part of these screenings must be covered in all states. SA treatment services other than these two types of service are an optional category of Medicaid services that states may provide to Medicaid enrollees but are not mandated to provide. Thus, SA treatment coverage varies substantially across states, with some states offering almost no coverage and others offering a range of treatment services.

In November 2010, the National Association of State Alcohol and Drug Abuse Directors (NASADAD) produced a summary of SA services covered in each state, based on the Medicaid state plans and discussions with state Medicaid officials (47 states provided responses).<sup>8</sup> Table III.4 summarizes the findings of this survey for the 18 predominantly FFS states.

<sup>8</sup> National Association of State Alcohol and Drug Abuse Directors. *NASADAD Inquiry--State Medicaid and SCHIP Coverage of Substance Abuse Services*. Washington, DC: NASADAD, November 2010.



<b>TABLE III.4. Substance Abuse Treatment Coverage for Optional Services, by State</b>						
<b>State</b>	<b>Residential Treatment</b>		<b>Intensive Outpatient/ Partial Hospitalization</b>	<b>Methadone Treatment</b>	<b>Case Management</b>	<b>Outpatient Treatment</b>
	<b>Short-Term</b>	<b>Long-Term</b>				
Alabama	No	No	Yes	Yes	No	Yes
Arkansas	No	No	No	No	No	No
Connecticut	Yes (only <21)	N/A	Yes	Yes	Yes	Yes
Idaho	No	No	Yes	No	Yes	Yes
Illinois	Yes	Yes	Yes	Yes	No	Yes
Kentucky	No	No	No	No	Yes	No
Louisiana	No	No	No	No	No	No
Mississippi	No	No	No	No	No	No
Missouri	No	No	Yes	Yes	Yes	Yes
Montana	Yes	Yes	Yes	No	Yes	Yes
New Hampshire	No	No	No	No	No	No
North Carolina	Yes	No	Yes	Yes	Yes	Yes
North Dakota	N/A	N/A	Yes	N/A	N/A	Yes
Oklahoma	Detox Only	No	N/A	No	Yes	Yes
South Carolina	Detox Only	No	Yes	No	Yes	Yes
South Dakota	Yes	No	Yes	No	No	Yes
Vermont	Yes	Yes	Yes	Yes	Yes	Yes
Wyoming	Yes	Yes	Yes	Yes	Yes	Yes

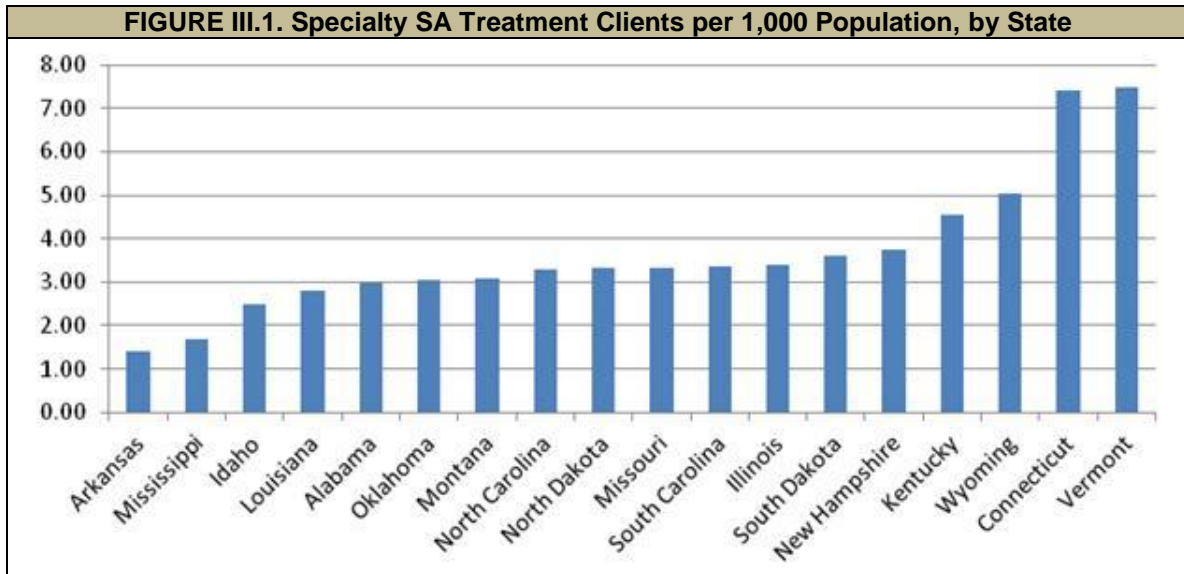
According to this survey, Arkansas, Louisiana, Mississippi, and New Hampshire reported providing no SA treatment services beyond the mandatory coverage categories. Kentucky reported providing only case management services. All of the other states reported providing outpatient treatment. Nine of the states reported providing some residential treatment. Twelve reported providing partial hospitalization or intensive outpatient treatment. Seven reported providing methadone treatment, and ten reported providing case management.

#### **4. Supply of Specialty SA Treatment Coverage**

The availability of SA treatment services varied across the 18 predominantly FFS states. We measured this variation in service access based on the number of clients of all insurance types served in specialty SA treatment facilities in 2008 per 1,000 population. The number of clients served was identified in SAMHSA’s National Survey of SA Treatment Services (N-SSATS). We divided these client counts by the total number of SA treatment clients in care on March 31, 2008 in all settings by the Census Bureau’s estimate of state population.

Figure III.1 displays the number of specialty SA clients per 1000 population in each of the 18 FFS states. Connecticut and Vermont had much higher rates of treatment access relative to the other states. Kentucky and Wyoming also had rates above most states except Connecticut and Vermont. Arkansas and Mississippi had access rates below the average across the other states.

In the next section, we provide estimates of Medicaid SA treatment spending for these 18 states. The variation in these state characteristics should serve as a foundation for understanding these findings.



## B. Medicaid FFS SA Treatment Spending

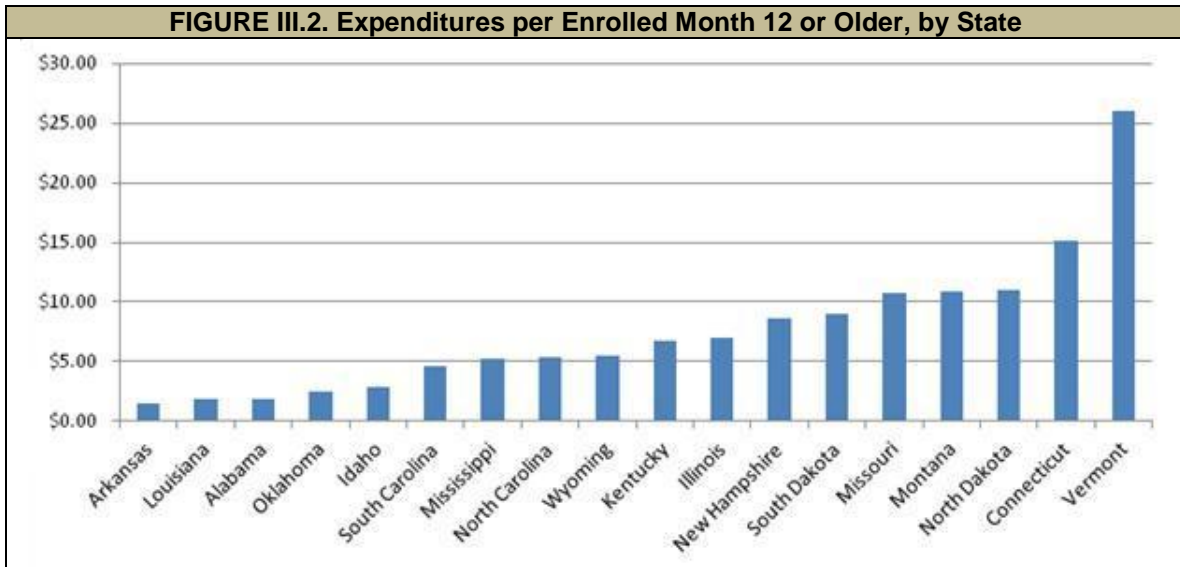
In this section, we present estimates of FFS SA treatment spending for the 18 states. Sections B.1 through B.3 describe expenditures for core SA treatment services only, using the definition used in the SSE. In Section B.1, we present estimates of these expenditures per enrolled month by state. In Section B.2, we disaggregate the estimates by eligibility and demographic group. In Section B.3, we then analyze the same set of SA treatment expenditures by setting of care. In Section B.4, we broaden the definition of SA treatment to look at categories of care not included in the SSE. Finally, in Section B.5, we analyze SA treatment expenditures as a share of overall Medicaid expenditures in the states.

### 1. Core SA Expenditures per Enrolled Month by State

Figure III.2 displays the overall average SA treatment expenditure per enrolled month among enrollees 12 or older in each of the 18 states. These estimates are developed by dividing the total amount of SA treatment expenditures by the total number of Medicaid enrolled months in the state for individuals 12 or older including enrolled months for both individuals who use SA-related services as well as those who do not use these services. The estimates reflect the variation in Medicaid eligibility, service coverage, and the supply of SA treatment services within the states. They may also reflect rates of treatment need among Medicaid enrollees.

Average expenditures for SA treatment per enrolled month in Vermont (25.98) were substantially higher than the average of 6.16 across the 18 states. Vermont had several Medicaid expansion programs targeting adults, including expansions targeting low-income parents and childless adults. Based on the NASADAD survey, Vermont covered a broad range of SA treatment services and, according to N-SSATS, Vermont's specialty SA treatment system served more clients per 1,000 population (7.5) than any

of the other 18 states. Vermont is also unique in its more extensive use of prescribed drugs. Nineteen percent of Vermont’s core SA treatment expenditures were for prescribed drugs in contrast to a 5 percent average across the 18 states. Connecticut had the second highest level of SA treatment expenditures per enrolled month (15.08). In contrast to Vermont, Connecticut provided coverage of SSI and medically needy populations, but did not have parent or childless adult expansions. However, like Vermont, the NASADAD survey indicated that Connecticut provided coverage for a broad range of treatment services and its specialty SA treatment system served a similar number of clients per population (7.4) as that in Vermont (7.5).



We estimated that five states (Arkansas, Louisiana, Alabama, Oklahoma, and Idaho) had SA treatment expenditures less than 3.00 per enrolled month. Based on the NASADAD survey Arkansas and Louisiana did not provide any SA services beyond the mandatory coverage categories. However, the NASADAD survey also indicated that Mississippi and New Hampshire did not provide coverage of SA treatment service beyond the mandatory services, but these states had substantially higher levels of treatment expenditures. Similar to Vermont, Oklahoma had a parent and childless adult expansion, but Oklahoma had more limited coverage of SA treatment services.

Table III.5 displays expenditures per enrolled month by state and demographic group. Males tend to have higher expenditure than females and older enrollees tend to have higher expenditures than enrollees 12-20. However, these patterns are not observed in all the states. For example, Illinois, Kentucky, Missouri, North Dakota and South Dakota had higher expenditures per enrolled month among males 12-20 relative to males 21-44. This pattern may result from coverage of SA through EPSDT programs in these states.

TABLE III.5. Core SA Expenditures per Enrolled Month by State							
State	Total	Male			Female		
	12 or Older	12-20	21-44	45 or Older	12-20	21-44	45 or Older
Alabama	1.84	0.76	2.11	6.27	0.55	1.97	1.11
Arkansas	1.44	0.22	2.11	7.19	0.11	1.22	1.24
Connecticut	15.08	5.30	27.47	41.33	3.00	13.40	11.64
Idaho	2.80	0.61	3.49	9.49	0.53	3.91	2.61
Illinois	7.01	10.95	9.15	14.84	3.36	4.76	4.75
Kentucky	6.69	12.70	7.08	8.05	5.77	7.82	1.59
Louisiana	1.80	0.27	4.66	6.36	0.23	2.60	1.31
Mississippi	5.20	3.95	13.17	10.01	1.74	6.59	2.82
Missouri	10.80	23.27	16.68	10.87	10.72	13.12	3.71
Montana	10.93	8.01	7.74	27.65	5.13	12.13	7.29
New Hampshire	8.63	1.37	13.81	16.43	1.48	18.54	5.42
North Carolina	5.34	3.76	9.64	8.84	1.49	8.67	2.86
North Dakota	11.01	13.91	9.36	22.86	18.14	8.60	2.27
Oklahoma	2.49	1.75	3.92	7.22	0.64	3.13	1.70
South Carolina	4.58	6.41	4.91	3.43	3.58	9.00	1.32
South Dakota	9.03	21.95	0.80	0.80	20.27	1.50	0.12
Vermont	25.98	12.86	55.38	14.68	12.20	46.42	8.15
Wyoming	5.49	3.07	10.55	18.43	2.52	5.60	2.63
<b>Mean (18 States)</b>	<b>6.16</b>	<b>6.19</b>	<b>10.84</b>	<b>11.52</b>	<b>2.81</b>	<b>7.25</b>	<b>3.22</b>

## 2. Core SA Expenditures by Demographic and Eligibility Group

In this section, we discuss the distribution of SA treatment expenditures across demographic and eligibility groups. Figure III.3 displays the distribution of SA treatment expenditures across age and gender group. Children less than 12 represented a negligible share of SA treatment spending. Adolescents 12-17 represented 18.1 percent, with males incurring twice the expenditures of females. Working age adults ages 18-64 represented 75.0 percent of SA treatment expenditures, with 38.9 percent of expenditures for females and 36.1 percent for males. Enrollees 65 or older represented 6.7 percent of expenditures, with males having more than double the expenditures of females.

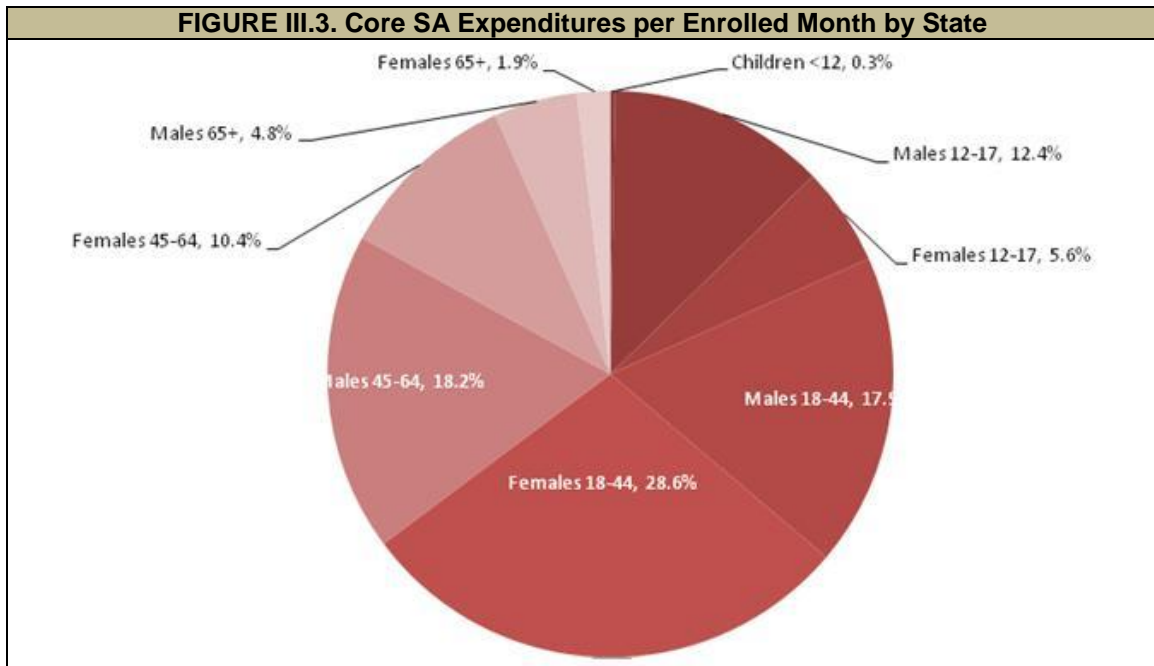


Figure III.4 displays the distribution of expenditures by eligibility group. Children 12-17 represented 18.1 percent of expenditures. Disabled and non-disabled adults have an almost equal share of expenditures (34.1 versus 32.4 percent). Enrollees dually eligible for Medicaid and Medicare represent 15.2 percent of expenditures. The difference in the share of expenditures across age and eligibility groups reflects different rates of Medicaid enrollment among these populations as well as different levels of SA treatment expenditures.

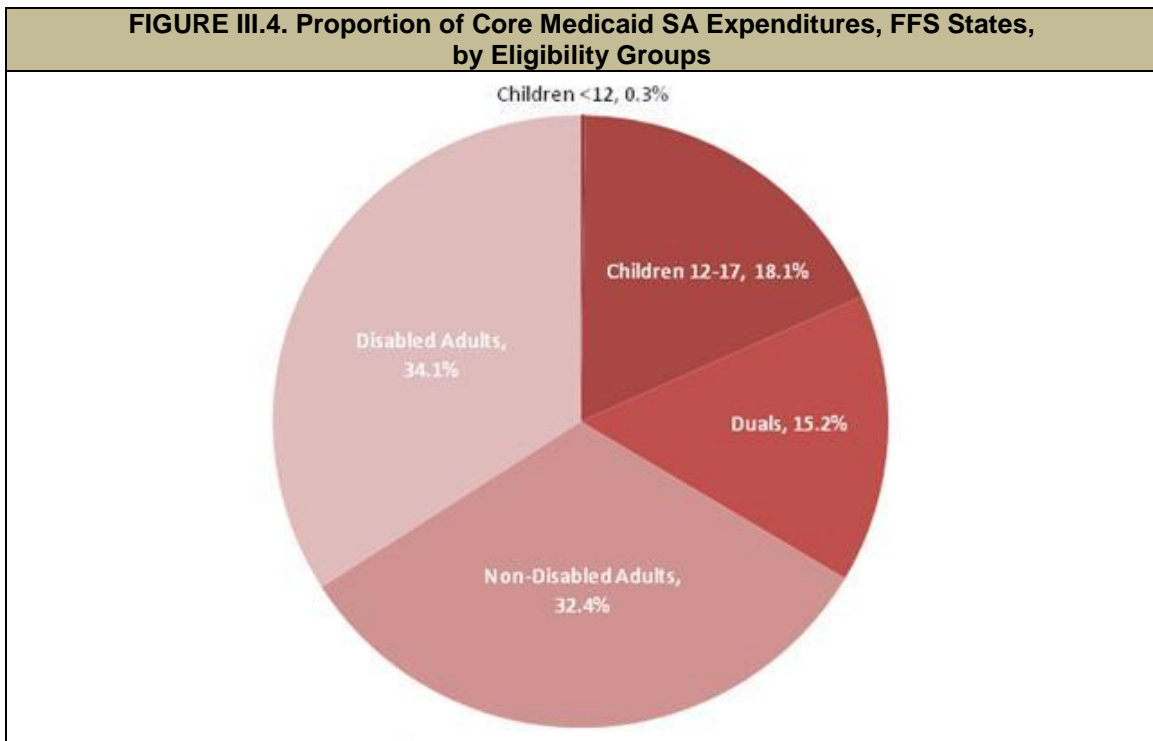


Table III.6 displays average SA treatment expenditures per enrolled month by demographic and eligibility group. Overall non-dual, disabled males age 35-44 (28.47) and 45-64 (26.60) with full Medicaid benefits tended to have the highest levels of expenditures. Females 12-17 (2.75), 18-20 (2.95), and 65 or older (0.96) tended to have lower than average expenditures. Also, Medicare dual eligibles (3.27) and non-dual, disabled individuals with partial-benefits (2.71) tended to have lower than average expenditures.

We excluded from this analysis those Medicare dual eligibles who are eligible only for assistance with Medicare premium payments. For the remaining Medicare duals, Medicare is the first payer for SA services and Medicaid is a secondary payer, covering those services included in the state Medicaid benefit package not covered by Medicare. The expenditures represented are only those covered by Medicaid. In 2008, Medicare covered medically necessary inpatient treatment under Part A; however, inpatient stays were subject to deductibles and coinsurance, which would be covered by Medicaid. Under Part B, Medicare has a coinsurance rate of 50 percent for outpatient SA

treatment; under Part D Medicare would have covered prescribed drugs for SA treatment. Given the substantial available coverage for SA under Medicare, Medicaid expenditures for duals are about 53 percent of the level estimated for enrollees who do not have Medicare coverage.

	All Groups 12 or Older	Non-Dual, Non-Disabled		Non-Dual, Disabled		Medicare Dual Eligibles
		Full- Benefit	Partial- Benefit	Full- Benefit	Partial- Benefit	
<b>Female</b>						
12-17	2.75	2.69	3.59	2.07	1.64	NA
18-20	2.95	2.93	2.93	3.21	2.18	7.66
21-34	6.55	6.71	5.39	8.43	2.56	4.24
35-44	8.71	8.30	3.98	16.40	4.47	4.08
45-64	5.64	6.48	4.23	8.89	3.03	2.40
65 or Older	0.96	1.56	1.74	4.22	0.12	0.91
<b>Male</b>						
12-17	5.87	5.93	7.70	3.96	0.78	NA
18-20	7.46	7.58	13.84	4.61	2.45	5.36
21-34	9.09	10.77	23.31	9.43	2.18	4.43
35-44	12.88	9.16	10.60	28.47	4.02	5.37
45-64	14.49	6.47	7.22	26.60	5.64	6.38
65 or Older	6.46	4.42	4.33	12.43	0.03	6.58
<b>Mean (12 or Older)</b>	<b>6.16</b>	<b>5.58</b>	<b>6.34</b>	<b>13.36</b>	<b>2.71</b>	<b>3.27</b>

### **3. Distribution of Core SA Spending in FFS States by Service Type**

Table III.7 reports the distribution of SA treatment spending by service type. Across the 18 states, 35.2 percent of expenditures were for inpatient hospital care, 51.9 percent was for outpatient care, 5.4 percent was for prescribed drugs, and the remaining 7.5 percent was for residential treatment. The expenditures for inpatient care may be somewhat understated for Kentucky and North Carolina, as Kentucky provided some medical detoxification services through a managed care plan and North Carolina had a pre-paid inpatient behavioral health plan in five counties.

The distribution of expenditures by service type varied substantially across the states. As noted in Section III.A.3, Alabama, Arkansas, Idaho, Kentucky, Louisiana, Mississippi, Missouri, and New Hampshire reported no coverage of residential SA treatment services under Medicaid. However, in Kentucky and Missouri, we identified some services that appear to be residential. These services are related to residential behavioral health and therapeutic foster care procedure codes. Vermont and South Dakota had the lowest share of inpatient expenditures (7.5 percent and 8.5 percent, respectively). Louisiana and Mississippi had the highest percentage of expenditures for inpatient care (80.7 percent and 75.6 percent, respectively). Prescribed drugs represented 19.2 percent of expenditures in Vermont, but represented 1 percent of expenditures in Louisiana and only 0.3 percent of expenditures in South Dakota. In North Carolina, New Hampshire, Missouri, and Connecticut, we found the highest share of expenditures devoted to outpatient care.



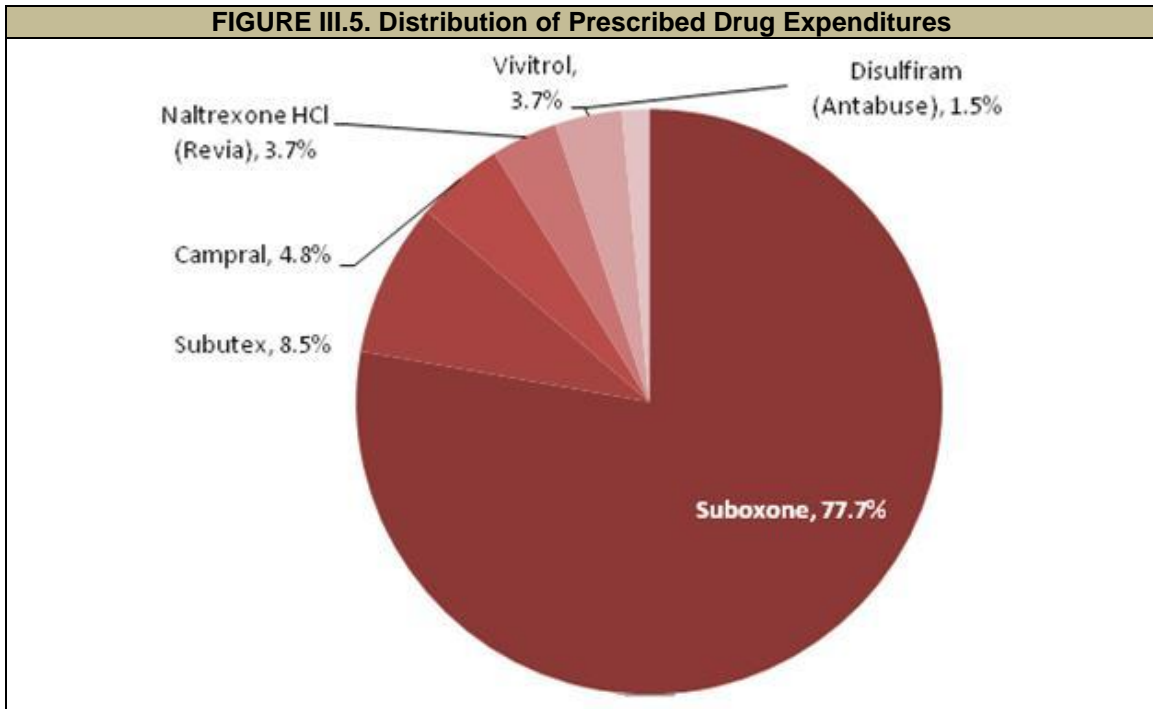
<b>TABLE III.7. Distribution of SA Treatment Spending, by Service Type</b>					
<b>State</b>	<b>Total</b>	<b>Inpatient Hospital</b>	<b>Prescribed Drug</b>	<b>Residential Treatment</b>	<b>Outpatient Treatment</b>
<b>Expenditures</b>					
Alabama	8,309,625	4,733,159	686,260	0	2,890,206
Arkansas	4,960,347	3,305,162	165,897	0	1,489,288
Connecticut	53,443,687	14,235,623	2,276,104	3,580,303	33,351,657
Idaho	2,932,153	1,986,565	299,094	0	646,494
Illinois	107,452,301	46,765,187	2,907,050	1,207,071	56,572,993
Kentucky	35,384,118	14,140,912	3,907,976	1,641,780	15,693,450
Louisiana	11,681,116	9,431,405	120,271	0	2,129,440
Mississippi	20,132,385	15,226,817	753,521	0	4,152,047
Missouri	44,278,809	11,226,183	814,275	3,402,850	28,835,501
Montana	6,136,976	2,817,123	500,181	586,973	2,232,699
New Hampshire	7,066,142	1,655,401	686,548	0	4,724,193
North Carolina	47,771,308	8,554,328	1,970,798	2,637,339	34,608,843
North Dakota	4,280,975	1,197,730	104,204	606,873	2,372,168
Oklahoma	9,106,567	4,144,240	484,876	633,306	3,844,145
South Carolina	17,922,728	4,340,306	1,035,698	5,890,367	6,656,357
South Dakota	5,965,250	509,392	16,879	4,350,769	1,088,210
Vermont	30,132,534	2,262,989	5,781,915	6,914,864	15,172,766
Wyoming	1,977,073	851,723	103,398	NR	1,021,952
<b>Total (18 states)</b>	<b>418,934,094</b>	<b>147,384,245</b>	<b>22,614,945</b>	<b>31,452,495</b>	<b>217,482,409</b>
<b>Percentage of SA Treatment Expenditures</b>					
Alabama	100.0	57.0	8.3	0.0	34.8
Arkansas	100.0	66.6	3.3	0.0	30.0
Connecticut	100.0	26.6	4.3	6.7	62.4
Idaho	100.0	67.8	10.2	0.0	22.0
Illinois	100.0	43.5	2.7	1.1	52.6
Kentucky	100.0	40.0	11.0	4.6	44.4
Louisiana	100.0	80.7	1.0	0.0	18.2
Mississippi	100.0	75.6	3.7	0.0	20.6
Missouri	100.0	25.4	1.8	7.7	65.1
Montana	100.0	45.9	8.2	9.6	36.4
New Hampshire	100.0	23.4	9.7	0.0	66.9
North Carolina	100.0	17.9	4.1	5.5	72.4
North Dakota	100.0	28.0	2.4	14.2	55.4
Oklahoma	100.0	45.5	5.3	7.0	42.2
South Carolina	100.0	24.2	5.8	32.9	37.1
South Dakota	100.0	8.5	0.3	72.9	18.2
Vermont	100.0	7.5	19.2	22.9	50.4
Wyoming	100.0	43.0	5.2	NR	51.6
<b>Overall (18 states)</b>	<b>100.0</b>	<b>35.2</b>	<b>5.4</b>	<b>7.5</b>	<b>51.9</b>
NR = Not Reported. Cells representing fewer than 11 users are not reported to protect confidentiality.					

Table III.8 below identifies the number of individuals who used core SA treatment services according to each service type. Most SA treatment users received some outpatient care (89.9 percent) and 16.6 percent of users needed inpatient services. SA treatment users were much less likely to receive treatment in the form of prescribed drugs or residential services--only 9.8 percent and 4.3 percent, respectively. Vermont had a much higher rate of prescribed drug use (29.7 percent) and residential treatment use (16.9 percent) relative to the other states and also had a much lower rate of inpatient care use (6.3 percent).

<b>TABLE III.8. Distribution of SA Treatment Users, by Type of Service</b>					
<b>State</b>	<b>Total</b>	<b>Inpatient Hospital</b>	<b>Prescribed Drug</b>	<b>Residential Treatment</b>	<b>Outpatient Treatment</b>
<b>Number of Users</b>					
Alabama	8,493	1,681	516	0	7,294
Arkansas	3,537	857	192	0	2,928
Connecticut	17,284	1,438	1,964	1,392	15,891
Idaho	1,841	293	323	0	1,559
Illinois	32,963	6,185	2,941	1,376	30,202
Kentucky	12,694	3,510	2,166	81	10,599
Louisiana	7,540	2,338	316	0	6,025
Mississippi	8,388	2,732	616	0	6,990
Missouri	17,163	2,486	1,431	1,241	15,729
Montana	2,692	399	315	86	2,502
New Hampshire	3,339	337	424	0	3,104
North Carolina	25,507	2,708	1,709	316	23,824
North Dakota	1,736	359	97	13	1,644
Oklahoma	6,366	997	553	63	5,578
South Carolina	9,995	1,177	566	793	9,300
South Dakota	1,398	97	50	482	1,117
Vermont	8,375	528	2,487	1,417	7,964
Wyoming	1,271	159	119	NR	1,183
<b>Total (18 states)</b>	<b>170,582</b>	<b>28,281</b>	<b>16,785</b>	<b>7,260</b>	<b>153,433</b>
<b>Percentage of All SA Treatment Users</b>					
Alabama	100.0	19.8	6.1	0.0	85.9
Arkansas	100.0	24.2	5.4	0.0	82.8
Connecticut	100.0	8.3	11.4	8.1	91.9
Idaho	100.0	15.9	17.5	0.0	84.7
Illinois	100.0	18.8	8.9	4.2	91.6
Kentucky	100.0	27.7	17.1	0.6	83.5
Louisiana	100.0	31.0	4.2	0.0	79.9
Mississippi	100.0	32.6	7.3	0.0	83.3
Missouri	100.0	14.5	8.3	7.2	91.6
Montana	100.0	14.8	11.7	3.2	92.9
New Hampshire	100.0	10.1	12.7	0.0	93.0
North Carolina	100.0	10.6	6.7	1.2	93.4
North Dakota	100.0	20.7	5.6	0.7	94.7
Oklahoma	100.0	15.7	8.7	1.0	87.6
South Carolina	100.0	11.8	5.7	7.9	93.0
South Dakota	100.0	6.9	3.6	34.5	79.9
Vermont	100.0	6.3	29.7	16.9	95.1
Wyoming	100.0	12.5	9.4	NR	93.1
<b>Overall (18 states)</b>	<b>100.0</b>	<b>16.6</b>	<b>9.8</b>	<b>4.3</b>	<b>89.9</b>
NR = Not Reported. Cells representing fewer than 11 users are not reported to protect confidentiality.					

Figure III.5 displays the distribution of prescribed drug expenditures in the 18 FFS states. About three-quarters of expenditures (77.7 percent) were for Suboxone. Suboxone contains a combination of buprenorphine and naloxone. This drug is used to treat opiate addiction. The next highest share of expenditures is for Subutex with 8.5 percent. This is buprenorphine only and is used to treat narcotic addiction. The third highest share of expenditures is for Campral at 4.8 percent. Campral is used to treat alcohol addiction. The share of prescribed drug users represented by Suboxone (57.6 percent) is lower than its share of expenditures. Campral has the next highest share of users (18.5 percent) followed by Naltrexone HCl (Revia) with 15.0 percent. Naltrexone HCl is used to treat narcotic or alcohol addiction.





#### 4. Non-Core SA Treatment Spending

Our analysis in the previous sections focused on expenditures meeting the definition of SA treatment used in SAMHSA SA treatment spending estimates. In this section, we broaden that definition and look at other services that are SA related. Table III.9 displays these additional services in five categories. The first and second are expenditures related to fetal exposure to alcohol or drugs and poisoning from alcohol or drugs. Together, spending on these two categories is about 0.11 dollars per Medicaid enrolled month 12 or older. Other conditions fully attributable to alcohol include conditions such as alcoholic polyneuropathy and polyneuropathy due to drugs. This category also includes acute alcoholic hepatitis and alcoholic cardiomyopathy, gastritis, fatty liver, cirrhosis of the liver, and liver damage. These conditions on average add 0.64 dollars in expenditures per Medicaid enrolled month. The expenditures for fetal exposure, poisoning, and these other conditions are fully attributable to alcohol and drug use.

The expenditures reported in the final two columns of Table III.9 are related only partially to alcohol and drug use, as they are drawn from claims in which a primary diagnosis unrelated to alcohol or drugs was identified. Individuals with SA disorders may be co-morbidly diagnosed, and SA treatment programs increasingly treat both SA and MH diagnoses in tandem. In some states, it appears that reporting of a secondary SA diagnosis is more or less common. For example, expenditures for services with a primary MH diagnosis and a co-morbid SA diagnosis range from only 0.32 and 13.41 per enrolled month in Alabama and Wyoming, respectively. Differences in expenditures may be related to service coding, Medicaid program coverage, or differences in the treatment system across states. On average, 4.07 and 7.50 per enrolled month,

respectively were spent on services with a non-MH primary diagnosis and a secondary SA diagnosis. The primary medical diagnoses included on the claims represented in this category often were medical diagnoses partially attributable to drug or alcohol use these included births with SA treatment, HIV, acute pancreatitis, pneumonia, and hepatic coma related to liver disease.

**TABLE III.9. Expenditures on Non-Core SA Treatment Services,  
per Enrolled Month 12 or Older**

State	Fetus	Poisoning	Other Conditions	MH Expenditures with Secondary SA Diagnosis	Non-MH Expenditures with Secondary SA Diagnosis
Alabama	0.01	0.09	0.08	0.32	1.94
Arkansas	0.01	0.01	0.29	3.20	0.72
Connecticut	0.02	0.02	0.60	10.73	8.77
Idaho	0.03	0.03	0.70	3.54	7.68
Illinois	0.01	0.01	0.97	4.65	9.65
Kentucky	0.02	0.89	0.15	2.45	11.57
Louisiana	0.04	0.01	0.53	2.18	3.98
Mississippi	0.01	0.01	0.37	5.71	5.53
Missouri	0.00	0.04	0.89	6.68	4.02
Montana	0.06	0.04	1.68	6.31	11.01
New Hampshire	0.32	0.03	0.54	2.36	6.10
North Carolina	0.04	0.02	0.74	3.59	9.20
North Dakota	0.02	0.02	0.85	8.10	13.22
Oklahoma	0.02	0.02	0.78	4.28	8.23
South Carolina	0.01	0.01	0.61	1.37	11.09
South Dakota	0.03	0.02	1.04	4.72	6.87
Vermont	0.05	0.02	0.25	4.62	5.32
Wyoming	0.02	0.01	1.07	13.41	11.55
<b>Total (18 states)</b>	<b>0.02</b>	<b>0.09</b>	<b>0.64</b>	<b>4.07</b>	<b>7.50</b>

### **5. SA Treatment Spending as a Share of Overall Medicaid Spending**

Table III.10 displays SA treatment expenditures as a share of overall Medicaid spending. Across all 18 states, core SA treatment expenditures accounted for 0.7 percent of Medicaid expenditures. If expenditures for fetal exposure, poisoning, and other medical conditions that are fully attributable to alcohol are added to the core SA treatment expenditures then this percentage increases slightly to 0.8 percent of Medicaid spending. SA spending as a share of overall Medicaid spending varies by state. Arkansas and Louisiana have the lowest share of Medicaid spending related to core SA services (0.1 percent and 0.2 percent, respectively). In Vermont core SA treatment spending represents 3.3 percent of overall Medicaid spending.

State	Expenditures			Percent of Overall Medicaid FFS Expenditures	
	Total Medicaid FFS	Core SA Treatment	All Expenditures Fully Attributable to SA	Core SA Treatment	All Expenditures Fully Attributable to SA
Alabama	2,913,310,791	8,309,625	9,259,048	0.3	0.3
Arkansas	3,310,688,627	4,960,347	6,253,410	0.1	0.2
Connecticut	3,834,253,096	53,443,687	56,038,805	1.4	1.5
Idaho	1,230,169,201	2,932,153	3,812,654	0.2	0.3
Illinois	9,735,069,107	107,452,301	123,442,978	1.1	1.3
Kentucky	4,378,024,181	35,384,118	41,758,756	0.8	1.0
Louisiana	5,079,957,979	11,681,116	15,620,670	0.2	0.3
Mississippi	3,096,430,669	20,132,385	21,883,456	0.7	0.7
Missouri	4,282,354,451	44,278,809	48,188,389	1.0	1.1
Montana	657,488,444	6,136,976	7,176,917	0.9	1.1
New Hampshire	947,443,772	7,066,142	8,141,948	0.7	0.9
North Carolina	8,883,249,639	47,771,308	55,216,792	0.5	0.6
North Dakota	551,744,708	4,280,975	4,628,033	0.8	0.8
Oklahoma	3,279,858,237	9,106,567	12,120,378	0.3	0.4
South Carolina	3,208,396,386	17,922,728	20,532,386	0.6	0.6
South Dakota	668,219,313	5,965,250	6,714,524	0.9	1.0
Vermont	914,114,015	30,132,534	30,663,997	3.3	3.4
Wyoming	518,587,977	1,980,713	2,379,600	0.4	0.5
<b>Total (18 states)</b>	<b>57,489,360,593</b>	<b>418,937,734</b>	<b>473,832,741</b>	<b>0.7</b>	<b>0.8</b>

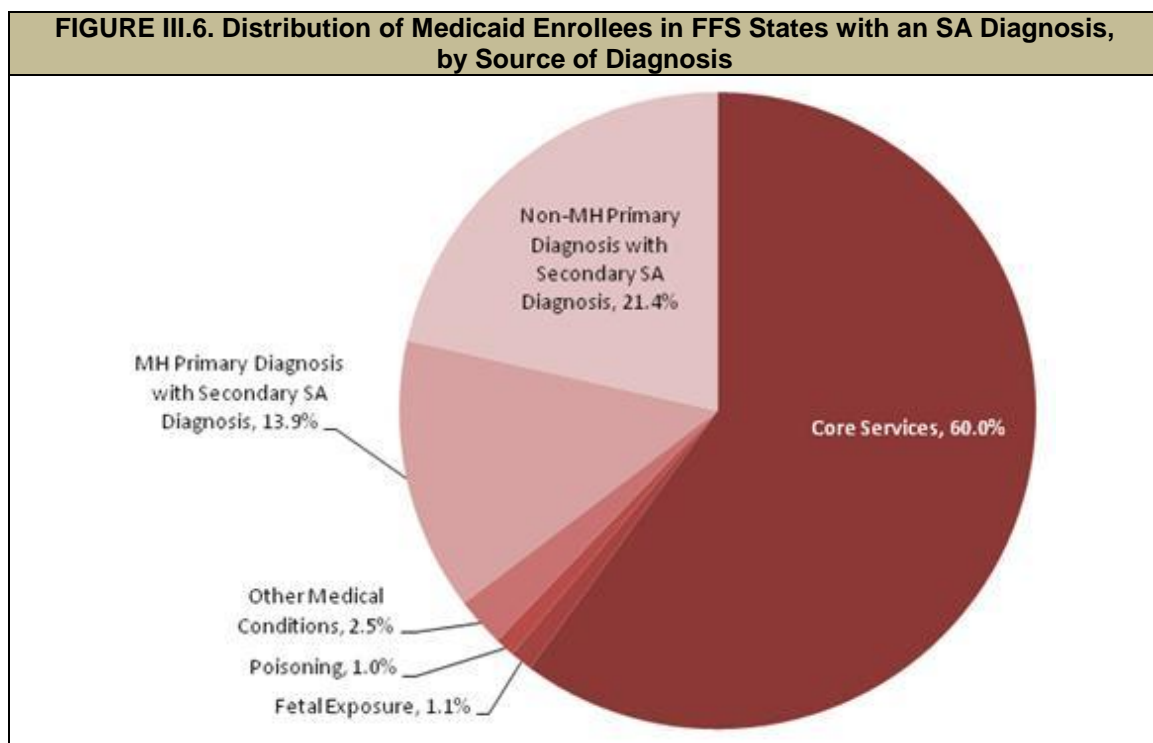
### C. Medicaid Enrollees in FFS States with an SA Diagnosis

In this section, we describe the characteristics of Medicaid enrollees identified with a diagnosis of an SA disorder or SA-related diagnosis on a FFS Medicaid claim in CY 2008 in the 18 predominantly FFS states. In Section III.C.1, we describe the source of identification of these enrollees. In Section III.C.2, we discuss the distribution of treatment users by demographic and eligibility group. In Section III.C.3, we describe whether treatment was received for alcohol only, drug use only, or both, and whether treatment was received for an MH diagnosis. In Section III.C.4, we present statistics on ER and inpatient hospital use among SA treatment users. Finally, in Section III.C.5, we compare expenditures among SA treatment users and other Medicaid enrollees.

The analyses in this section used only the FFS claims data. For individuals who were enrolled in FFS Medicaid for part of the year and in a managed care plan for part of the year, we retained the FFS months and expenditures in this analysis. We assessed the impact of excluding these individuals and found it had a minor impact on the results, because the majority of enrollees in these 18 states have only FFS Medicaid. The most significant impact of this exclusion would have been on Connecticut where there was no managed care enrollment in the first half of the year, but where many Medicaid enrollees participated in managed care late in the year. We believe inclusion of the FFS experience of these enrollees provides an analysis population more representative of the full Medicaid population in Connecticut.

## 1. Source of Identification

Figure III.6 shows the distribution of Medicaid enrollees with a SA diagnosis by source of identification. For individuals who had claims with more than one source, a hierarchy was used to assign one source in the following order: core, fetal exposure, poisoning, other medical conditions, MH primary with secondary SA diagnosis and non-MH with secondary SA diagnosis. The majority of Medicaid enrollees with a SA diagnosis (60.0 percent) were identified base a primary diagnosis of core SA treatment. Few enrollees were identified based on fetal exposure, poisoning, or another medical condition fully attributable to SA (1.1 percent, 1.0 percent and 2.5 percent, respectively). The remainder were identified based on a secondary diagnosis with 13.9 percent having a primary MH diagnosis and secondary SA diagnosis and 21.4 percent having a primary non-MH diagnosis and a secondary SA diagnosis.



## 2. Demographic and Eligibility Characteristics

Figure III.7 displays the distribution of Medicaid enrollees with a SA treatment diagnosis by demographic group. Children less than 12 account for 3.8 percent of Medicaid enrollees with a SA treatment diagnosis. Individuals over 65 also represent a small share of enrollees with a SA diagnosis (4.5 percent). Adolescents 12-17 account for almost 10 percent of enrollees with a SA treatment diagnosis. Thus, the vast majority of enrollees with a SA diagnosis (81.7 percent) are working age adults 18-64. Females 18-44 (31.7 percent) represent more than double the share of females 45-64 (13.4 percent). In contrast, males 18-44 (18.6 percent) represent a similar share of enrollees with SA diagnosis as males 45-64 (18.0 percent).

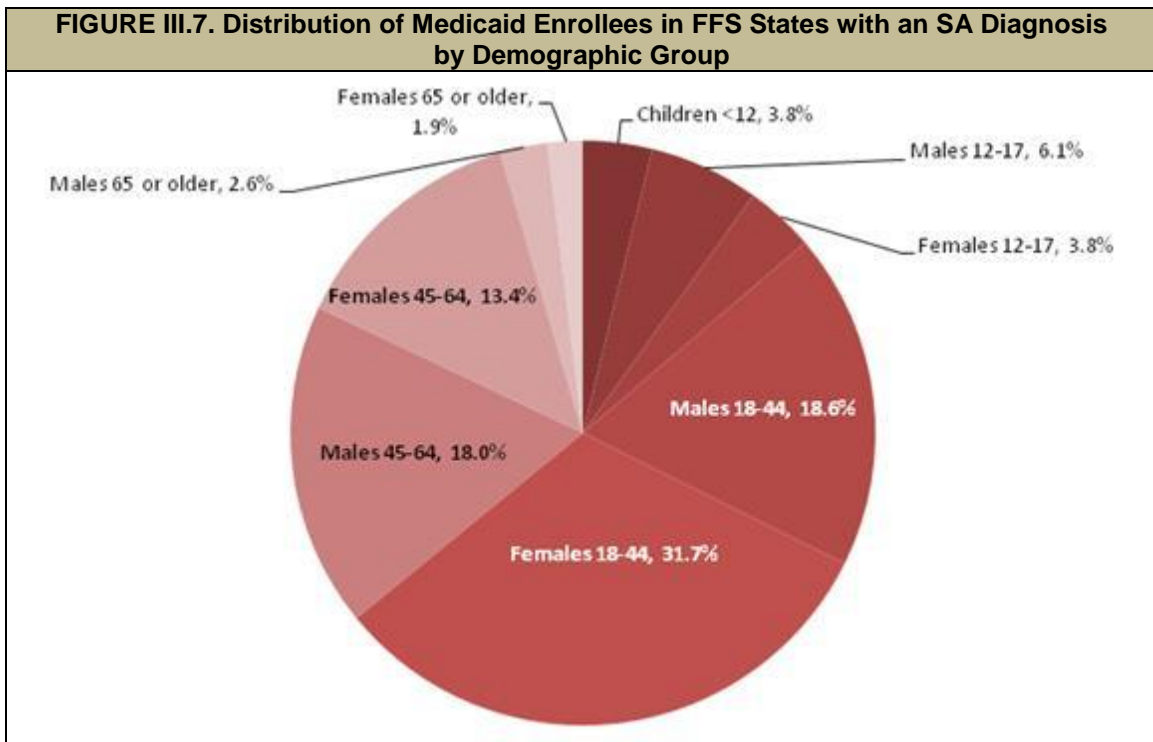


Table III.11 presents the number Medicaid enrollees with a SA diagnosis per 1,000 FFS enrolled months by eligibility and demographic group. In general non-disabled individuals tended to have a lower rate of SA diagnosis than disabled individuals in the same demographic group. Among males, partial-benefit enrollees tended to have higher rates of SA diagnosis, however, among females they had lower rates of diagnosis. By age group, the highest rates of diagnosis are among enrollees 18-44 with one exception. Males with a disability age 45-64 had higher diagnosis rates than their counterparts 18-44.

**TABLE III.11. Number of Enrollees in FFS States with an SA Diagnosis per 1,000 Enrolled Months, by Demographic and Eligibility Group, Enrollees 12 or Older**

	Total FFS Enrolled Months	Non-Dual, Non-Disabled		Non-Dual, Disabled		Medicare Dual Eligibles
		Full-Benefit	Partial-Benefit	Full-Benefit	Partial-Benefit	
<b>Female</b>						
12-17	8,524,660	1.33	1.03	1.82	0.77	NA
18-20	3,313,437	2.86	1.96	4.00	1.95	3.85
21-34	10,162,599	5.10	3.12	7.49	2.66	5.40
35-44	4,916,023	5.45	3.17	10.90	6.23	5.40
45-64	7,691,548	4.51	3.10	7.09	4.91	3.45
65 or Older	8,247,056	0.81	0.90	1.95	2.04	0.67
<b>Male</b>						
12-17	8,810,212	2.07	1.53	2.31	1.07	NA
18-20	2,198,807	4.09	3.87	4.45	1.97	3.95
21-34	2,902,699	7.89	8.96	9.12	2.71	6.53
35-44	2,475,379	6.74	7.17	14.81	8.25	7.41
45-64	5,258,261	5.41	5.60	15.24	12.73	6.51
65 or Older	3,083,516	2.24	2.95	6.54	8.39	2.44
<b>Total (18 States)</b>	<b>67,584,197</b>	<b>1.34</b>	<b>1.14</b>	<b>2.17</b>	<b>1.15</b>	<b>2.44</b>

Table III.12 shows the percentage of enrollees ages 12 or older with an SA diagnosis by the type of treatment received in the 18 predominantly FFS states by state. The enrollees are identified as having only alcohol-related claims, only drug-related claims, or both alcohol and drug-related claims. They also are identified (separately) as being treated for an MH condition.

<b>TABLE III.12. Proportion of Enrollees with SA Diagnosis, by Type of Treatment Received, by State</b>					
<b>State</b>	<b>Count of Enrollees</b>	<b>Percentage of Enrollees</b>			
		<b>Alcohol Only</b>	<b>Drug Only</b>	<b>Alcohol &amp; Drug</b>	<b>MH Condition Treated</b>
Alabama	13,709	31.0	60.4	8.6	53.7
Arkansas	7,784	34.4	58.9	6.7	70.5
Connecticut	23,445	24.7	57.5	17.8	61.6
Idaho	3,871	40.1	47.2	12.7	74.0
Illinois	51,502	31.7	52.5	15.8	57.5
Kentucky	21,915	24.0	65.0	11.0	69.6
Louisiana	17,386	30.6	57.0	12.4	60.3
Mississippi	14,051	34.7	49.3	16.0	67.8
Missouri	25,752	32.2	54.4	13.4	65.8
Montana	4,502	47.8	36.4	15.8	66.1
New Hampshire	4,643	28.5	62.3	9.2	69.7
North Carolina	45,941	28.5	56.6	14.9	65.2
North Dakota	2,725	45.1	28.0	26.9	71.9
Oklahoma	14,438	28.1	59.0	12.9	69.0
South Carolina	15,936	31.2	56.7	12.1	55.1
South Dakota	2,769	43.9	25.3	30.8	63.6
Vermont	9,242	29.6	53.3	17.1	58.6
Wyoming	1,911	46.3	41.8	12.0	61.7
<b>Total (18 states)</b>	<b>281,522</b>	<b>30.6</b>	<b>55.3</b>	<b>14.2</b>	<b>63.0</b>

Overall, 54.3 percent of the individuals identified with an SA diagnosis had only drug-related claims, 30.6 percent had only alcohol-related claims, and 14.2 percent had both types of claims. The percentage of enrollees by each type of treatment varied by state, but the percentage with only drug-related claims was near or above 50 percent, and higher than the percentages falling into the other two treatment categories, in 14 of the 18 states. Montana, Wyoming, and North and South Dakota had the highest share of enrollees with an SA diagnosis who received only treatment for alcohol-related conditions.

Overall, among the enrollees with an SA diagnosis, 63.0 percent had an MH-related claim. The percentage of enrollees with an SA diagnosis who also had an MH diagnosis ranged from 53.7 percent in Alabama to 74.0 percent in Idaho.

### **3. Type of Treatment Received**

Table III.13 shows the percentage of enrollees ages 12 or older with an SA diagnosis by the type of treatment received by demographic group. Type of treatment was identified based on claim diagnosis codes in the first or later field. The diagnoses



used to assign claims to alcohol, drugs, and MH are listed in Appendix B Table B.1, Table B.2 and Table B.3, respectively.

<b>TABLE III.13. Proportion of Enrollees with SA Diagnosis, by Type of Treatment Received, by Demographic Group</b>					
<b>Demographic Group</b>	<b>Count of Enrollees</b>	<b>Percentage of Enrollees</b>			
		<b>Alcohol Only</b>	<b>Drug Only</b>	<b>Alcohol &amp; Drug</b>	<b>MH Condition Treated</b>
<b>Medicare Duals</b>					
12-64	48,084	36.1	50.4	13.5	71.2
65 or Older	12,154	63.1	33.5	3.4	44.5
<b>Non-Disabled, Non-Dual</b>					
12-20	41,622	16.7	69.9	13.5	63.7
21-44	69,904	20.3	68.3	11.4	57.1
45 or Older	9,050	43.0	44.7	12.4	47.6
<b>Disabled, Non-Dual</b>					
12-20	5,556	15.9	71.2	13.0	81.7
21-44	38,513	24.8	54.5	20.8	75.9
45 or Older	56,639	45.1	38.0	17.0	58.4
<b>Total (18 states)</b>	<b>281,522</b>	<b>30.6</b>	<b>55.3</b>	<b>14.2</b>	<b>63.0</b>

Younger enrollees were more likely to receive treatment for drug use or abuse, while older enrollees were more likely to receive treatment for alcohol use or abuse. Relative to the other demographic groups, enrollees in the aged dual group had a much higher percentage (63.1 percent) of enrollees with only alcohol-related claims relative to the other groups and correspondingly lower percentages of enrollees with drug only (33.5 percent) and alcohol and drug-related claims (3.4 percent). In contrast, the disabled and non-disabled, non-dual groups ages 12-20 had the highest percentages (71.2 percent and 69.9 percent, respectively) of enrollees with only drug-related claims and the lowest percentage (15.9 percent and 16.7 percent, respectively) with only alcohol-related claims across all of the demographic groups. Not surprisingly, individuals with a disability, including Medicare dual eligibles ages 12-64 and non-duals with a disability, were more likely to have been treated for an MH condition relative to the average across all demographic groups.

#### **4. Use of ER and Inpatient Hospital Services**

Table III.14 shows the percentage of enrollees ages 12 or older with an SA diagnosis who used an ER or inpatient hospital. It also shows their expenditures for ER and inpatient hospital services per enrolled month. ER services were identified on IP and OT file records based on listing of a procedure code of 99281-99292 or a revenue center code of 450-459 or 981 on any claim. The place of service code equal ER was also used on OT service file claims.

Overall, 21.4 percent and 62.4 percent of enrollees with an SA diagnosis used the ER with an SA-related or any diagnosis, respectively. Vermont and South Dakota had the lowest share of ER visits with a SA-related diagnosis (13.0 percent and 14.8 percent, respectively). Alabama, Arkansas, and Kentucky had the highest share of enrollees with a SA-related ER visit (about 26 percent). When ER claims with any diagnosis are considered, Vermont (55.4 percent) and South Dakota (52.7 percent) still

have among the lowest shares, but Connecticut has the lowest share with 48.9 percent. The share of enrollees with a SA diagnosis using the ER was highest Arkansas with 87.1 percent.

<b>TABLE III.14. Proportion of Enrollees with SA Diagnosis Using ER and Inpatient Hospital, by State</b>							
State	Count of Enrollees	Percentage Using			Expenditures per Enrolled Month (in \$)		
		ER with SA Diagnosis	ER with any Diagnosis	Inpatient Hospital	ER with SA Diagnosis	ER with any Diagnosis	Inpatient Hospital
Alabama	13,709	26.1	66.0	25.3	2.18	25.71	104.77
Arkansas	7,784	26.4	87.1	17.4	7.36	46.29	148.98
Connecticut	23,445	18.9	48.9	26.8	3.65	26.94	375.77
Idaho	3,871	20.1	57.0	38.9	2.32	22.92	396.21
Illinois	51,502	20.4	58.9	41.9	3.61	23.13	575.71
Kentucky	21,915	26.7	65.3	34.4	4.96	51.86	452.35
Louisiana	17,386	23.1	68.2	42.7	4.65	42.22	351.26
Mississippi	14,051	22.0	65.3	42.6	2.28	26.23	456.17
Missouri	25,752	19.8	59.6	28.2	8.52	74.95	293.31
Montana	4,502	22.3	60.4	35.1	2.47	20.47	311.45
New Hampshire	4,643	22.4	64.7	30.0	6.82	64.15	220.57
North Carolina	45,941	22.6	69.2	29.5	4.57	56.75	292.06
North Dakota	2,725	17.3	55.9	27.6	3.66	37.23	325.40
Oklahoma	14,438	19.9	63.6	43.1	2.14	37.06	450.61
South Carolina	15,936	18.1	58.2	33.9	4.47	52.82	475.39
South Dakota	2,769	14.8	52.7	33.0	1.55	31.51	334.89
Vermont	9,242	13.0	55.4	17.8	3.25	29.42	167.26
Wyoming	1,911	22.0	58.6	36.5	4.50	47.31	622.74
<b>Total (18 states)</b>	<b>281,522</b>	<b>21.4</b>	<b>62.4</b>	<b>33.6</b>	<b>4.26</b>	<b>40.94</b>	<b>381.73</b>

**NOTES:**  
 Both full and partial-benefit enrollees are included in this table.  
 All claims marked as ER services on the IP file are not included in the calculations of ER expenditures per enrolled month because these expenditures already are already included in the Inpatient hospital expenditures; ER service claims identified in the IP file make up 3.9% of total ER claims.

Turning to inpatient services, on average, 33.6 percent of enrollees with an SA diagnosis had a SA-related inpatient hospital stay. In Arkansas and Vermont only 17-18 percent of enrollees with an SA diagnosis used inpatient hospital services. In Illinois, Louisiana, Mississippi, and Oklahoma, more than 40 percent of enrollees with an SA diagnosis used inpatient care.

On average per enrolled month enrollees with a SA diagnosis used 4.26, 40.94 and 381.73 dollars in SA-related ER services, all ER services, and SA-related inpatient hospital services, respectively. ER expenditures per enrolled month for any type of diagnosis varied substantially across states: Montana had the lowest expenditures (20.47), and New Hampshire had the highest (64.15). SA treatment-related inpatient hospital expenditures per enrolled month were much higher than ER expenditures but also varied substantially across states: Alabama had the lowest expenditures (104.77), while Wyoming had the highest (622.74).

Table III.15 shows the percentage of enrollees with an SA diagnosis who used the ER or inpatient hospital by demographic group. Non-disabled enrollees 12-20 had a lower rate of both SA-related (16.8 percent) and any ER (51.0 percent) and inpatient hospital use (21.1 percent) relative to the average across all demographic groups. Aged duals and disabled, non-duals 45 or older had a higher rate of inpatient hospital use



(45.3 percent and 47.6 percent) relative to the average across all demographic groups. In terms of expenditures Medicare duals had the lowest level of ER expenditures. Individuals with disability 21 and older had the highest ER expenditures and the highest inpatient hospital expenditures. The lowest inpatient hospital expenditures were for duals 12-64.

<b>TABLE III.15. Proportion of Enrollees with SA Diagnosis Using ER and Inpatient Hospital, by Demographic Group</b>							
State	Count of Enrollees	Percentage Using			Expenditures per Enrolled Month (in \$)		
		ER with SA Diagnosis	ER with any Diagnosis	Inpatient Hospital	ER with SA Diagnosis	ER with any Diagnosis	Inpatient Hospital
<b>Medicare Duals</b>							
12-64	48,084	22.0	66.5	28.0	1.70	15.56	125.25
65 or Older	12,154	13.1	52.7	45.3	0.67	6.71	440.48
<b>Non-Disabled, Non-Dual</b>							
12-20	41,622	16.8	51.0	21.1	2.62	22.10	261.04
21-44	69,904	17.2	58.5	27.1	3.37	42.88	183.78
45 or Older	9,050	18.3	54.8	33.1	3.88	31.52	358.17
<b>Disabled, Non-Dual</b>							
12-20	5,556	22.6	61.9	30.9	3.66	38.35	426.00
21-44	38,513	30.3	73.3	42.1	7.59	75.58	591.86
45 or Older	56,639	25.4	68.2	47.6	7.21	59.55	742.44
<b>Total (18 states)</b>	<b>281,522</b>	<b>21.4</b>	<b>62.4</b>	<b>33.6</b>	<b>4.26</b>	<b>40.94</b>	<b>381.73</b>

Across all enrollees in the 18 FFS states represented in Table III.15, the three diagnoses with the highest total expenditures among ER claims were for alcoholic cirrhosis of the liver; schizoaffective disorder, unspecified; and acute pancreatitis. Taken together, these diagnoses represented 6.8 percent of total spending on ER visits for SA-related services. These were also the top three diagnoses for men (representing 7.9 percent of expenditures), while depressive disorder, not elsewhere classified, replaced acute pancreatitis for women (representing 6.0 percent of expenditures).

When disabled and non-disabled non-duals in the 18 FFS states were examined separately, the top three diagnoses by expenditure amount for non-dual disabled enrollees were alcoholic cirrhosis of the liver; unspecified schizoaffective disorder; and acute pancreatitis, which made up 7.8 percent of spending on ER services by this group. The top three diagnoses for non-dual, non-disabled enrollees were depressive disorder, not elsewhere classified; acute pancreatitis; and major depressive affective disorder, recurrent episode, severe, without mention of psychotic behavior, which made up 7.1 percent of spending by this group of enrollees on ER visits for SA-related services.

When examined separately for each of the 18 FFS states, alcoholic cirrhosis of the liver was among the top three codes in eight of the 18 states; acute pancreatitis was among the top three codes in six of the states; and unspecified schizoaffective disorder was among the top three codes in five of the states.

Across all enrollees in the 18 FFS states represented in Table III.15, the top three diagnoses representing inpatient hospital claims were for unspecified schizoaffective disorder; drug withdrawal; and alcoholic cirrhosis of the liver. Taken together, these

diagnoses represented 9.6 percent of total spending on inpatient hospital stays for SA-related services. These were also the top three diagnoses for men (representing 10.2 percent of expenditures), while unspecified bipolar disorder replaced alcoholic cirrhosis of the liver for women (representing 9.5 percent of expenditures).

When examined separately for non-dual disabled versus non-disabled for each of the 18 FFS states, the top three diagnoses by expenditure amount for non-dual disabled enrollees were unspecified schizoaffective disorder; drug withdrawal; and alcoholic cirrhosis of the liver, which made up 11.8 percent of spending by this group of enrollees on inpatient hospital stays for SA-related services. The top three diagnoses for non-dual non-disabled enrollees were unspecified episodic mood disorder; unspecified bipolar disorder; and depressive disorder, not elsewhere classified, which made up 13.3 percent of spending by this group of enrollees on inpatient hospital stays for SA-related services.

<b>TABLE III.16. Total Medicaid FFS Expenditures per FFS Enrolled Month Among Enrollees with an SA Diagnosis, by State and Demographic Group, Ages 12 or Older (in \$)</b>									
	Total	Male				Female			
		12-20	21-44	45-64	65 or Older	12-20	21-44	45-64	65 or Older
Alabama	805	704	659	757	1,395	1,016	626	776	1,362
Arkansas	1,455	1,562	1,436	1,596	2,186	1,445	1,155	1,428	2,104
Connecticut	1,663	904	1,549	2,193	2,806	1,153	1,116	2,008	2,807
Idaho	1,852	1,022	2,085	2,031	1,895	1,517	1,814	2,182	1,505
Illinois	1,823	1,155	1,944	2,903	2,300	1,377	1,101	2,299	2,358
Kentucky	1,647	1,905	1,346	2,107	2,050	1,714	1,260	2,132	1,951
Louisiana	1,339	627	1,437	1,867	1,284	740	1,096	1,701	1,123
Mississippi	1,296	1,469	1,117	1,420	1,596	1,705	1,069	1,332	1,320
Missouri	1,665	2,350	1,560	1,725	1,419	2,142	1,491	1,639	1,590
Montana	1,565	1,292	1,377	1,999	2,180	1,574	1,279	1,801	1,924
New Hampshire	1,327	1,677	1,203	1,727	2,436	1,470	987	1,441	2,206
North Carolina	1,519	1,448	1,542	1,880	1,341	1,305	1,231	1,811	1,391
North Dakota	1,508	965	1,396	2,253	2,470	1,384	1,078	2,122	2,677
Oklahoma	1,535	1,354	1,639	2,027	1,596	1,397	1,168	1,716	1,609
South Carolina	1,415	948	1,355	1,926	1,010	1,285	1,286	1,707	717
South Dakota	1,680	1,227	2,106	2,668	2,052	1,512	1,490	2,781	778
Vermont	1,175	1,498	850	1,214	1,853	1,752	1,135	1,384	2,485
Wyoming	2,097	1,713	2,210	2,713	3,145	2,252	1,593	2,705	2,197
<b>Total (18 states)</b>	<b>1,541</b>	<b>1,296</b>	<b>1,495</b>	<b>2,025</b>	<b>1,782</b>	<b>1,417</b>	<b>1,175</b>	<b>1,809</b>	<b>1,690</b>

When examined separately for each of the 18 FFS states, alcoholic cirrhosis of the liver, alcohol-induced persisting dementia, and unspecified episodic mood disorder were each among the top three codes for inpatient hospital services in seven of the 18 states. Unspecified schizoaffective disorder was among the top three codes in six of the 18 states.

## 5. Comparison of SA User and Non-SA Medicaid Expenditures

Table III.16 shows the total Medicaid FFS expenditures per FFS enrolled months for enrollees using SA services. Expenditures per FFS enrolled month averaged 1,541 across all SA users in the 18 FFS states. Expenditures were higher for individuals over age 45 relative to those 12-44. In the 12-20 age group, expenditures tended to be

higher for females relative to males. This was true for 14 of the 18 states. In contrast, in the age 21-44 group, expenditures tended to be higher for males. This was true in 17 of the 18 states.

Table III.17 shows the expenditures per FFS enrolled months for SA users relative to expenditures per FFS enrolled months for all enrollees in the same demographic group. Overall expenditures for SA users were 2.19 times higher than the average enrollees. Across the states, SA treatment user expenditures ranged from 1.33 times higher than the average enrollee in New Hampshire to 3.42 times higher in Illinois. The difference between SA treatment user and average expenditures was most pronounced among individuals 12-20. Males 12-20 had expenditures 4.08 times higher than average, and females 12-20 had expenditures 4.81 times higher than average.

<b>TABLE III.17. SA Service User FFS Expenditures as a Share of Mean FFS Expenditures per Enrolled Month for All Enrollees, by State and Demographic Group, Ages 12 or Older</b>									
	Total	Male				Female			
		12-20	21-44	45-64	65 or Older	12-20	21-44	45-64	65 or Older
Alabama	1.48	2.71	1.14	1.07	1.58	3.85	1.25	1.32	1.48
Arkansas	2.02	4.45	1.26	1.37	1.70	5.00	1.68	1.40	1.57
Connecticut	1.61	3.89	1.35	0.99	1.15	6.00	2.61	1.35	1.11
Idaho	2.01	2.53	1.37	1.36	1.31	4.21	1.81	1.51	0.97
Illinois	3.42	6.29	2.85	2.22	2.30	7.51	3.44	2.43	2.33
Kentucky	2.36	5.43	2.03	2.25	1.97	4.55	2.14	2.23	1.59
Louisiana	2.13	3.41	1.17	1.28	1.25	3.41	1.80	1.44	1.15
Mississippi	2.00	4.96	1.31	1.56	1.57	5.30	1.87	1.73	1.32
Missouri	1.69	3.94	1.40	1.39	1.28	4.67	1.83	1.44	1.30
Montana	1.63	2.20	1.76	1.65	1.26	3.00	1.82	1.51	1.00
New Hampshire	1.33	3.28	0.79	1.02	1.31	3.78	1.40	1.13	1.15
North Carolina	1.88	2.89	1.39	1.41	1.30	3.23	1.84	1.60	1.25
North Dakota	1.20	1.73	0.85	1.03	1.07	2.97	1.50	1.22	1.21
Oklahoma	2.17	3.96	1.58	1.56	1.55	4.58	1.71	1.57	1.40
South Carolina	2.10	2.78	1.52	1.78	1.20	3.67	2.01	1.94	0.85
South Dakota	2.03	2.60	1.82	1.91	1.44	3.85	2.11	2.29	0.56
Vermont	1.76	2.39	1.45	1.76	1.66	3.68	2.23	2.06	2.04
Wyoming	1.77	3.27	1.32	1.30	1.42	4.15	1.42	1.51	1.03
<b>Total (18 states)</b>	<b>2.19</b>	<b>4.08</b>	<b>1.64</b>	<b>1.63</b>	<b>1.57</b>	<b>4.81</b>	<b>2.17</b>	<b>1.78</b>	<b>1.43</b>

## IV. FEE-FOR-SERVICE SPENDING IN MANAGED CARE STATES

In this section, we summarize FFS SA expenditures identified in MAX in those states that have predominantly managed care coverage of SA services or substantial reporting issues. Because these data are not representative of the full population of managed care enrollees or are derived from states with reporting anomalies, the results should be interpreted with caution. No results are reported for Maine because it is missing a substantial amount of data, having been unable to report accurately on inpatient, long-term care, and other services in MAX 2008; only eligibility and prescription drug information was reported for the state.

Figure IV.1 shows the distribution of Medicaid FFS SA expenditures in the 31 managed care states and the District of Columbia by demographic group. Males ages 45-64 and 18-44 constitute roughly half of the expenditures (27.9 percent and 24.0 percent, respectively). Females ages 65 and older and children under age 12 account for the smallest and second smallest percentage of all the demographic groups (1.6 percent and 2.5 percent, respectively).

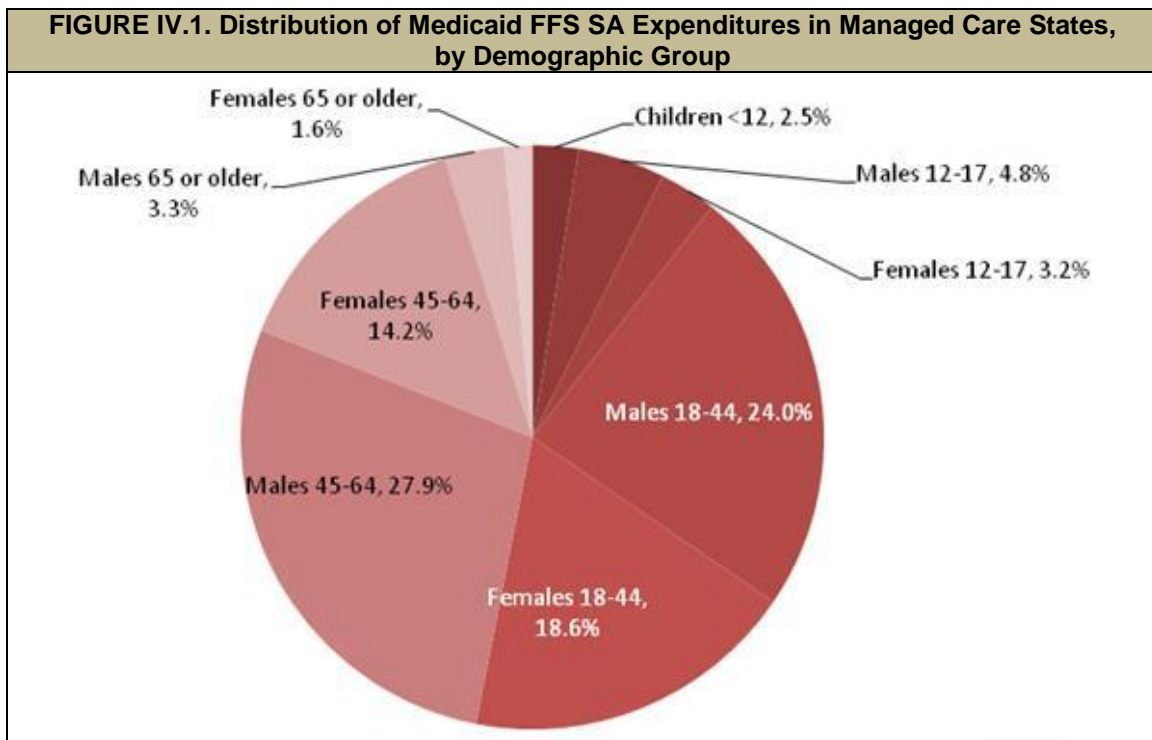


Figure IV.2 shows the distribution of Medicaid FFS SA expenditures in the managed care states by eligibility group. Disabled adults make up the highest percentage of expenditures (45.9 percent), while children under age 12 make up the

smallest percentage (2.5 percent). Among those states with predominantly FFS coverage of SA treatment, adults with disability represented a share of expenditures similar to non-disabled adults. The increased share of FFS expenditures associated with individuals with disability in the managed care states likely results from their exclusion from managed care coverage. Expenditures for non-disabled adults are more likely to be covered under managed care and thus are not represented in these estimates.

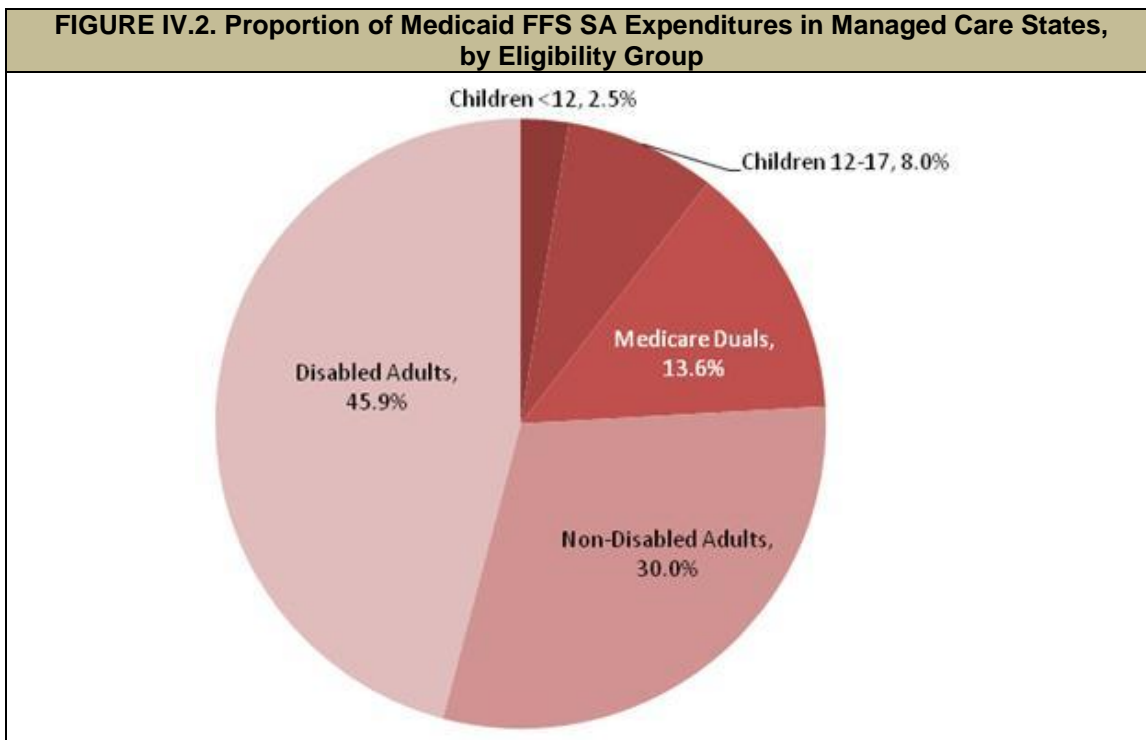


Table IV.1 shows the total core SA treatment FFS expenditures by type of service, state, and age 12 or older in the 32 managed care states. It also shows the percentage of non-duals 12 and older with at least one month of enrollment in a managed care plan that covers SA services. Although Alaska has no managed care enrollment, it was not included in the predominantly FFS service states because of concern that incomplete reporting of primary diagnosis would result in an underestimate of SA treatment services since primary diagnosis is used to identify SA treatment services.

Overall, 1.5 billion in FFS expenditures were identified in these states. This is almost four times the total expenditures identified in the predominantly FFS states. Several states make up a large share of the SA treatment expenditures reported. New York represents 49.4 percent of the FFS expenditures identified in managed care states, although about three-quarters of New York Medicaid enrollees are enrolled in comprehensive managed care, and program descriptions indicate that these plans cover both inpatient and outpatient SA treatment. California, Ohio, and Massachusetts also each represented a substantial share of expenditure, with 12.2 percent, 6.1 percent, and 4.9 percent of managed care states' FFS expenditures, respectively.

<b>TABLE IV.1. Total Core SA Treatment FFS Expenditures, by Type of Service, Managed Care States</b>						
	<b>Expenditures (thousands)</b>					<b>Percentage of Non-Duals 12 &amp; Older Enrolled in Managed Care</b>
	<b>Total Core</b>	<b>Inpatient Hospital</b>	<b>Prescription Drug</b>	<b>Residential Treatment</b>	<b>Outpatient Treatment</b>	
Alaska	6,687	1,523	432	165	4,568	0.0
Arizona	34,143	2,192	0	13	31,938	76.6
California	186,026	21,704	1,313	0	163,009	28.8
Colorado	14,939	8,681	542	0	5,716	93.7
Delaware	6,187	1,046	429	27	4,685	80.6
District of Columbia	5,644	2,560	522	0	2,562	67.4
Florida	27,034	12,950	528	25	13,531	41.2
Georgia	13,641	6,674	154	NR	6,813	67.4
Hawaii	4,447	724	143	1,380	2,200	86.8
Indiana	13,569	4,723	657	221	7,967	75.0
Iowa	3,127	2,188	321	0	619	70.9
Kansas	2,815	2,143	209	120	344	96.3
Maryland	13,391	5,808	244	0	7,339	80.0
Massachusetts	73,898	14,999	10,609	2,154	46,136	31.7
Michigan	7,863	5,535	1,137	0	1,191	73.2
Minnesota	38,095	18,249	626	429	18,791	67.0
Nebraska	15,568	11,692	113	786	2,977	90.0
Nevada	3,527	2,109	118	77	1,224	53.4
New Jersey	31,494	11,477	2,146	326	17,544	82.5
New Mexico	2,092	1,212	21	0	859	60.2
New York	751,205	312,526	16,704	0	421,974	76.7
Ohio	93,192	15,735	1,164	0	76,292	84.5
Oregon	8,697	2,409	127	NR	6,161	72.5
Pennsylvania	14,595	7,828	4,719	NR	2,048	90.8
Rhode Island	11,494	3,563	332	394	7,205	76.0
Tennessee	9,055	2,418	5,447	0	1,189	53.7
Texas	11,097	5,594	1,337	0	4,165	44.7
Utah	8,809	1,623	1,020	NR	6,166	0.0
Virginia	10,982	3,608	1,407	635	5,331	66.4
Washington	54,373	6,147	386	6,297	41,543	99.8
West Virginia	12,823	4,974	2,055	1,353	4,440	48.4
Wisconsin	30,183	17,051	3,007	143	9,982	60.4
<b>Total (32 states)</b>	<b>1,520,706</b>	<b>521,664</b>	<b>57,970</b>	<b>14,561</b>	<b>926,511</b>	<b>57.4</b>

NR = Not Reported. Cells representing fewer than 11 users are not reported to protect confidentiality. Expenditures related to these cells have been removed from column totals for the respective state.

Table IV.2 reports the distribution of FFS expenditures in managed care states by type of care. In the 18 predominantly FFS states, 35.2 percent of expenditures were for inpatient hospital care, 51.9 percent were for outpatient care, 5.4 percent were for prescribed drugs, and the remaining 7.5 percent were for residential treatment. For the managed care states, we found a greater share of expenditures for outpatient care (60.7 percent) and a similar percentage for inpatient care (34.0 percent). Residential treatment accounted for only 1.5 percent of expenditures, and prescribed drugs only 3.8 percent. New York’s expenditures have a significant impact on this distribution, with no reported residential treatment expenditures, 2.2 percent for prescribed drugs, 41.6 percent for inpatient care, and 56.2 percent for outpatient care. Residential treatment makes up the smallest percentage across the four categories (inpatient hospital, prescription drug, residential treatment, and outpatient treatment) in 28 of the 32 states, with 11 of the 33 states spending zero dollars on residential treatment. We identified a very high share of outpatient treatment expenditures in Arizona, California and Ohio,

with 93.5 percent, 87.6 percent, and 81.9 percent of FFS spending for outpatient care, respectively.

<b>TABLE IV.2. Distribution of Core SA Treatment FFS Expenditures, by Type of Service, Managed Care States</b>					
<b>State</b>	<b>Percentage of Core SA Treatment FFS Expenditures</b>				<b>Percentage of Non-Duals 12 &amp; Older Enrolled in Managed Care</b>
	<b>Inpatient Hospital</b>	<b>Prescription Drug</b>	<b>Residential Treatment</b>	<b>Outpatient Treatment</b>	
Alaska	22.8	6.5	2.5	68.3	0.0
Arizona	6.4	0.0	0.0	93.5	76.6
California	11.7	0.7	0.0	87.6	28.8
Colorado	58.1	3.6	0.0	38.3	93.7
Delaware	16.9	6.9	0.4	75.7	80.6
District of Columbia	45.4	9.2	0.0	45.4	67.4
Florida	47.9	2.0	0.1	50.1	41.2
Georgia	48.9	1.1	0.0	49.9	67.4
Hawaii	16.3	3.2	31.0	49.5	86.8
Indiana	34.8	4.8	1.6	58.7	75.0
Iowa	69.9	10.3	0.0	19.8	70.9
Kansas	76.1	7.4	4.3	12.2	96.3
Maryland	43.4	1.8	0.0	54.8	80.0
Massachusetts	20.3	14.4	2.9	62.4	31.7
Michigan	70.4	14.5	0.0	15.1	73.2
Minnesota	47.9	1.6	1.1	49.3	67.0
Nebraska	75.1	0.7	5.0	19.1	90.0
Nevada	59.8	3.3	2.2	34.7	53.4
New Jersey	36.4	6.8	1.0	55.7	82.5
New Mexico	57.9	1.0	0.0	41.1	60.2
New York	41.6	2.2	0.0	56.2	76.7
Ohio	16.9	1.2	0.0	81.9	84.5
Oregon	27.7	1.5	0.0	70.8	72.5
Pennsylvania	53.6	32.3	0.0	14.0	90.8
Rhode Island	31.0	2.9	3.4	62.7	76.0
Tennessee	26.7	60.2	0.0	13.1	53.7
Texas	50.4	12.1	0.0	37.5	44.7
Utah	18.4	11.6	0.0	70.0	0.0
Virginia	32.9	12.8	5.8	48.5	66.4
Washington	11.3	0.7	11.6	76.4	99.8
West Virginia	38.8	16.0	10.6	34.6	48.4
Wisconsin	56.5	10.0	0.5	33.1	60.4
<b>Total (32 states)</b>	<b>34.3</b>	<b>3.8</b>	<b>1.0</b>	<b>60.9</b>	<b>57.4</b>



## V. NATIONAL ESTIMATES OF MEDICAID SUBSTANCE ABUSE TREATMENT SPENDING

In this section, we present our estimates of Medicaid SA-related expenditures. First, we present CY 2008 estimates of SA treatment spending. Second, we present projections to FY 2011.

### A. CY 2008 SA Treatment Spending by State

In Appendix Tables C.1 through C.5, we present estimates of overall Medicaid SA expenditures for CY 2008. These estimates include FFS expenditures reported to MAX as well as imputed expenditure amounts for the managed care populations whose SA treatment expenditures cannot be identified in MAX. The tables array estimates for all 50 states and the District of Columbia for five types of SA-related services.

- **Appendix Table C.1: Core SA Treatment Services.** The expenditures in this table pertain to core SA treatment services--that is, services with a primary diagnosis indicating treatment of an SA disorder. This set of expenditures is defined to parallel the set of services included in SSE.
- **Appendix Table C.2: Services Related to Fetal Exposure or Poisoning Related to Drugs or Alcohol.** These services have either a primary diagnosis of fetal drug or alcohol exposure, noted in Appendix Table B.1 and Table B.2 as "fetus" or a primary diagnosis of poisoning related to drugs or alcohol, identified in Appendix Table B.1 and Table B.2 as "poisoning."
- **Appendix Table C.3: Services for Other Medical Conditions 100% Attributable to SA.** This category includes claims for other services with a primary diagnosis of a medical condition 100 percent attributable to SA. In Appendix Table B.1 and Table B.2, the services comprise all other codes identified as "supplemental."
- **Appendix Table C.4: MH Services with a Secondary Diagnosis of SA Disorders (MH w/SA).** This group comprises services with a primary diagnosis of a mental disorder and a secondary diagnosis on the same claim either from the core or one of the first three supplemental groups listed above. We identified claims with a primary MH diagnosis based on the codes in Appendix Table B.3.
- **Appendix Table C.5: Other Medical Services with a Secondary Diagnosis of SA Disorder (Non-MH w/SA).** This group includes claims with primary diagnoses not identified as MH disorders that include a secondary diagnosis on



the same claim either from the core or one of the first three supplemental groups listed above.

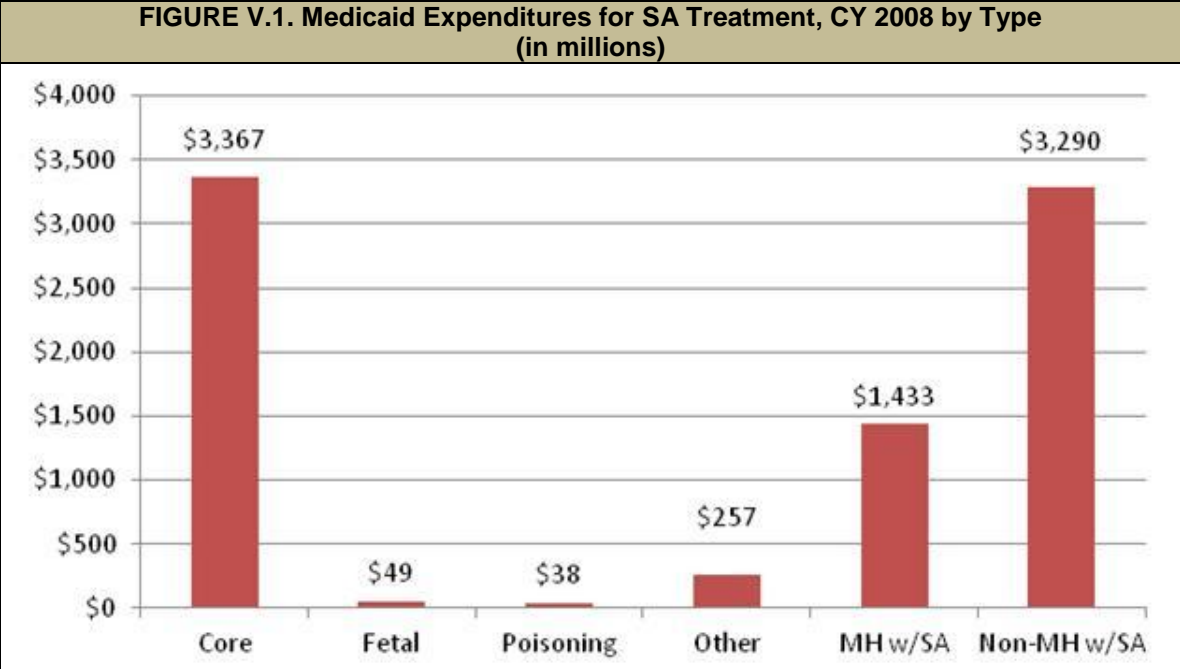
Overall, we estimate Medicaid core SA treatment spending in CY 2008 as 3.4 billion (Appendix Table C.1). The set of services defined as core SA treatment services is designed to parallel estimates of SA treatment spending reported in SAMHSA's spending estimate projections for 2004 through 2014.<sup>9</sup> The SSE estimate for Medicaid spending on SA treatment in 2003 is \$3,710 million with projection to 2006 of \$4,279 million. The average annual growth rate projected for Medicaid SA treatment spending in the SSE is 5.8 percent for 2003 through 2014. Projecting the 2006 estimate forward based on this average projected growth rate would imply an estimate of Medicaid spending for CY 2008 of \$4,790 million. The estimate from this study is approximately 30 percent below this prior estimate. Similar to the current study, the SAMHSA Survey of Revenue and Expenditures (SSR&E) estimates SA treatment expenditures in 2009 at a level below the SSE estimate for 2005. The SSR&E represents only specialty SA treatment providers, in contrast to the current study, which represents all providers. The specialty facility spending represented in the SSR&E is about half of all SA treatment spending represented in the SSE. The SSR&E estimate for 2009 for all payers is 94 percent of the SSE estimate for 2005. The SSR&E estimate of the Medicaid share of specialty SA treatment spending is 14 percent.<sup>10</sup> This contrasts with the SSE estimate of the Medicaid payment share as 18 percent in 2006 increasing to 20 percent by 2014. The gap between the estimates from the SSR&E and the current study and SSE estimates may be attributable to limitations in the data available to support the SSE estimates at the time they were developed. In particular, comprehensive data on unit prices and the "payers source" distribution associated with specialty SA treatment expenditures were unavailable to support development of the SSE after 1998--prior to the SSR&E survey in 2009. Thus, a substantial portion of the SSE estimate of Medicaid SA treatment spending was imputed.

The SSE represents only those SA treatment expenditures to which we refer as core services. The SSE does not include the other five categories of SA treatment-related spending estimated in this study. The estimated expenditures for these categories are displayed in Figure V.1. Appendix Tables C.2 through C.5 display detailed estimates for these categories by state.

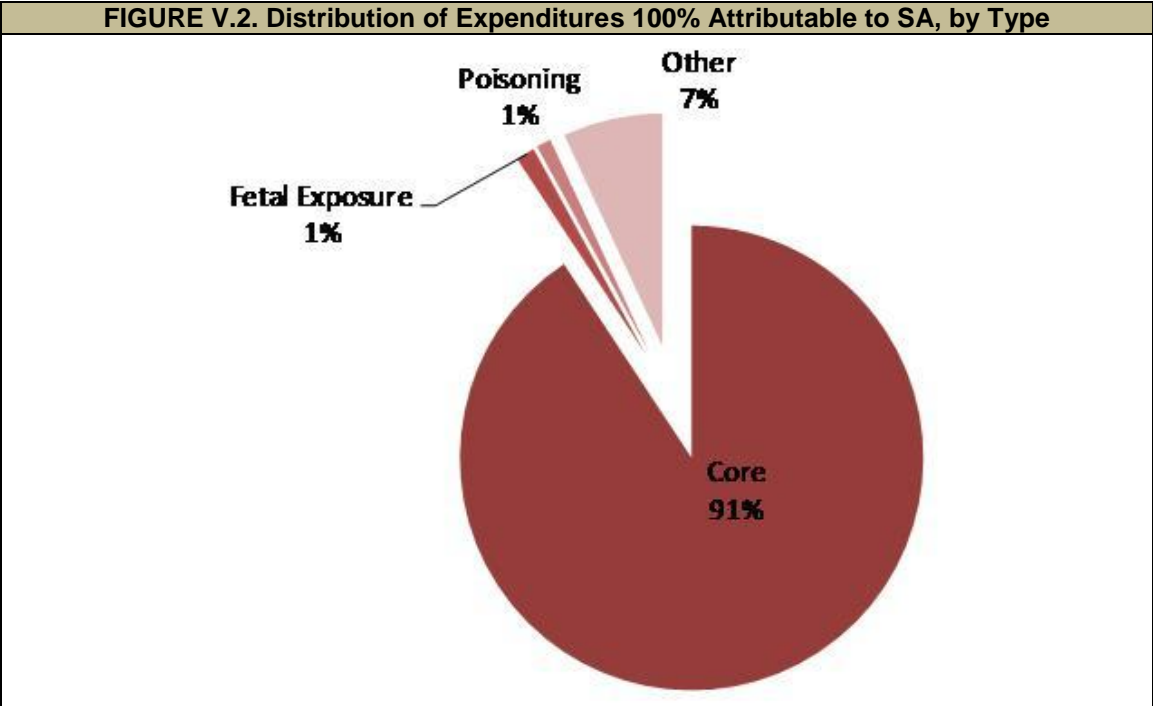
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<sup>9</sup> Levit, K.R. et al. *Projections of National Expenditures for Mental Health Services and Substance Abuse Treatment, 2004-2014*. SAMHSA Publication No. SMA 08-4326. Rockville, MD: SAMHSA, 2008.

<sup>10</sup> Salvucci, S., E. Bouchery, J. Ingels, E. Grau, H. Harwood, Y. Zheng, and C. Ye. *SAMHSA Survey of Revenue and Expenditures: Data on Specialty Substance Abuse and Mental Health Treatment Facilities: Final Report*. Mathematica Report to SAMHSA, submitted September 1, 2011.



The expenditures in Appendix Tables C.1 through C.3 are 100 percent attributable to SA. As displayed in Figure V.2, among the costs 100 percent attributable to SA, 90.8 percent are related to core services. One percent is related to poisoning and another 1.3 percent to fetal exposure, with 6.9 percent related to other medical conditions fully attributable to SA.



The expenditures in Appendix Table C.4 and Table C.5 are only partially related to SA. The \$1.4 billion in expenditures reported in Appendix Table C.4 have a primary diagnosis of MH, and the \$3.3 billion in expenditures reported in Appendix Table C.5 have a non-MH primary diagnosis.

Table V.1 below summarizes the number of Medicaid enrollees identified using SA treatment services in each category. Individuals using more than one category are counted in all service categories they used. Overall, we estimated 1.1 million Medicaid enrollees received core treatment services. Across the other categories of SA services analyzed approximately an additional 600,000 Medicaid enrollees were estimated to have a claim with a SA-related diagnosis.

<b>TABLE V.1. Medicaid Substance Treatment Users, CY 2008</b>	
<b>Type of SA Service</b>	<b>CY 2008 (in thousands)</b>
Core SA Treatment Services	1,138
Fetal Drug or Alcohol Exposure	35
Poisoning Related to Drugs or Alcohol	25
Other Medical Conditions 100% Attributable to SA	53
MH Services with SA as a Secondary Diagnosis	281
Non-MH Services with SA as a Secondary Diagnosis	575
Total Enrollees Identified with SA Related Claim <sup>a</sup>	1,717
a. Rows above do not sum to this total because some users are identified on more than one type of claim.	

## B. FY 2011 SA Treatment Spending by State

We projected the CY 2008 estimates from Appendix C forward to FY 2011. In Appendix D, Tables D.1 through D.5, we present these projections. These tables include estimates for all 50 states and the District of Columbia for six types of SA-related services. Table V.2 below summarizes these projections.

<b>TABLE V.2. Projected Medicaid Substance Treatment Spending, FY 2011</b>			
<b>Type of SA Service</b>	<b>CY 2008 (in millions)</b>	<b>FY 2011 (in millions)</b>	<b>Annualized Percentage Growth Rate</b>
Core SA Treatment Services	3,367	3,952	6.0
Fetal Drug or Alcohol Exposure and Poisoning	87	98	4.6
Other Medical Conditions 100% Attributable to SA	257	292	4.8
MH Services with SA as a Secondary Diagnosis	1,432	1,586	3.8
Non-MH Services with SA as a Secondary Diagnosis	3,290	3,659	3.9

The projected trends vary by state and type of service. The estimated annual percentage growth rate across the service types ranges from 3.8 percent to 6.0 percent between CY 2008 and FY 2011. Based on the CMS-64 reports, overall total net

Medicaid spending increased by 7.8 percent, 6.4 percent and 6.3 percent for the periods FY 2008-FY 2009, FY 2009-FY 2010, and FY 2010-FY 2011, respectively. Thus, the rate of increase for core SA treatment services was slightly lower than the overall rate of increase for Medicaid. Since our method entailed applying 98 percent of the Medicaid trend by service and state, increases below the overall Medicaid trend were likely. However, a rate of increase above that observed in the Medicaid program overall is possible, because states with higher rates of Medicaid spending increase tend to have a disproportionate share of SA treatment-related expenditures.

## VI. DISCUSSION

Although MAX data have a number of limitations, MAX is a viable source for developing estimates of Medicaid SA treatment spending. In the first section below, we discuss the limitations of MAX data and of this study. We then discuss the programmatic implications of the study findings.

### A. Limitations of MAX Data and Study

Despite gaps in and limitations to the data available from MAX for estimating Medicaid SA treatment expenditures, the MAX data provide information on SA treatment expenditures for the majority of Medicaid enrollees ages 12 and over who are eligible for SA treatment coverage. Overall, we imputed SA treatment expenditures for about 42 percent of Medicaid enrolled months. We based about 21 percent of the imputations on encounter data or own-state FFS population experience. We based the remaining 79 percent of the imputations on FFS states' experience. Overall 42 percent of the final estimate of core SA treatment spending was derived from the imputations.

A significant limitation to use of the experience of predominantly FFS states for imputation is the substantial variation in delivery systems and the differences in Medicaid eligibility and programmatic characteristics across states. Our method only partially compensates for these differences by developing estimates by demographic and eligibility groups and adjusting for differences in specialty SA treatment supply across states. The mean expenditures per enrolled month for beneficiaries ages 12 and over in each state generally correlate well with a state's classification as a low, medium, or high-supply state. However, in states with high managed care penetration, the correlation is a function of the imputation method; in other states, the relationship is based on the states' experiences as observed in MAX.

SA and MH treatment are provided through an array of services in various treatment settings. Coverage and delivery of these services vary substantially across states. We used the 2008 National Summary of State Medicaid Managed Care Programs to determine whether SA treatment services were covered under a capitated plan in 2008. However, this document does not detail the nuances of state and managed plan coverage. Our imputations do not capture the details of each state's coverage system and thus should be viewed as gross estimates of the approximate level of managed care spending in each state.

Another limitation of the imputation method relates to the lag in managed care enrollment. Typically, in managed care states, individuals new to Medicaid receive Medicaid coverage under FFS for an initial period as a function of retrospective eligibility and the time needed for an individual to choose and enroll in a managed care plan. The

initial months typically involve higher average expenditures than those associated with managed care enrolled months, because an acute health care need often prompts enrollment in Medicaid and demand for medical services may be pent up. MAX does not identify retrospective months of eligibility or indicate the date an enrollee first became enrolled in Medicaid. Given these limitations of the MAX data, we did not make any related adjustments.

In addition to the lack of expenditure data for the population enrolled in managed care, MAX evidences some reporting anomalies and data quality issues for some states. The final column of Appendix Table F.9 summarizes issues related to these estimates for each of the 50 states and the District of Columbia. Maine's data have the most significant limitations because, with the exception of prescription drug claims, MAX does not include claims files. For other states, limitations are associated largely with the incompleteness of coding for primary diagnosis; our analysis relies on the primary diagnosis to identify SA treatment services. Twenty-one states have incomplete reporting of primary diagnosis in either the long-term care or other service files. However, incomplete reporting often affects only a small minority of claims and may result from claims types such as non-emergency transportation, on which a provider would not record an enrollee's diagnosis. Nonetheless, reporting anomalies and data quality issues bias our estimates downward.

## **B. Comparison to Prior Estimates**

The estimate of Medicaid core SA treatment spending developed in this study for CY 2008 is substantially below the projections of Medicaid SA treatment spending developed by SAMHSA for 2004-2014 in the SSE. While the current study is limited because of the level of imputations, the SSE estimates were limited because data on unit prices and the "payer source" distribution for specialty SA treatment providers were unavailable to support development of the SSE after 1998--prior to the SSR&E survey in 2009. Thus, a substantial portion of the SSE estimates of Medicaid SA treatment spending were imputed. The SSE estimated Medicaid payments represented 18 percent of overall SA treatment payments in 2006 increasing to 20 percent by 2014. The findings from this study suggest that Medicaid likely represents a smaller share of overall SA treatment spending.

In addition to developing SA treatment spending estimates that parallel those in the SSE, this study also examined additional categories of medical treatment that are fully or partially related to SA. The addition of fetal exposure, poisoning, and other medical conditions fully related to SA increased the estimate of expenditures for SA treatment by about 10 percent. Also, we identified \$1,433 million in expenditures for MH services with a secondary diagnosis of SA. This suggests only about 4 percent of Medicaid MH service expenditures had a secondary SA diagnosis.<sup>11</sup> This percentage is

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<sup>11</sup> According to the SSE, the Medicaid program spent approximately \$29,059 million on MH treatment in 2006. Using the SSE average annual projected growth rate from 2003 to 2014 (6.9 percent), we estimate spending in CY 2008 as \$33,207 million.

low given the high rate of co-morbidity between MH and SA disorders. The low percentage of MH expenditures identified with a secondary SA diagnosis may be due to under-coding of secondary diagnoses. Finally, this study identified \$3,290 million in Medicaid expenditures for services with a non-MH primary diagnosis and a SA secondary diagnosis. These expenditures represent almost 1 percent of overall Medicaid expenditures. Thus, overall slightly more than 1 percent of Medicaid spending was identified as primarily related to SA and an additional 1½ percent was identified with a secondary SA diagnosis.

# DEVELOPING MEDICAID ESTIMATES FOR SUBSTANCE ABUSE TREATMENT

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