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Assessment #9

The Un-coordinated Costs of Behavioral and Primary Health Care: An Analysis of State Studies

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1. INTRODUCTION

1.1. PURPOSE OF REPORT

Behavioral health services cost state governments over \$40 billion in direct expenditures for mental health services and an additional \$5 billion for substance use treatments provided by the State Mental Health Agency (SMHA) and State Substance Abuse (SSA) systems.¹ However, research suggests that the direct costs of behavioral health services through the specialty state agencies are only a small portion of overall state government behavioral health expenditures. In 2009, Medicaid expended an estimated additional \$26.1 billion (SAMHSA estimated total Medicaid expenditures for mental health (MH) and substance use treatment of \$44 billion. SMHA systems accounted for \$17.9 billion of those expenditures).²

In addition to direct expenditures for behavioral health services, people with behavioral health issues often have inadequately treated co-occurring health concerns and therefore have much higher average expenditures for general medical care provided through Medicaid and other health care providers.³ These services are often provided in some of the most expensive and/or inappropriate settings, including emergency departments (EDs), jails, and prisons.⁴

To address these concerns, a number of states have conducted analyses of the general health care expenditures throughout state agencies of persons receiving behavioral health services and supports – often with a focus on Medicaid expenditures. States have reported that these analyses have been instrumental in documenting the impact on costs of individuals with mental illness across state government agencies and have been important catalysts in convincing state policy makers to support efforts to better integrate behavioral health services with general health services. Although these individual state studies are used within state governments to determine policy, states rarely use this information to generate peer-reviewed articles that disseminate this information beyond their state's borders. Instead, these studies are discussed at conferences and meetings and are often informally shared, but are not generally available to other states that could benefit from the experiences and hard work of their peers.

¹ Substance Abuse and Mental Health Services Administration. In press. *Funding and Characteristics of State Mental Health Agencies, 2015*. Rockville, MD: Substance Abuse and Mental Health Services Administration.

² Substance Abuse and Mental Health Services Administration. 2013. *National Expenditures for Mental Health Services and Substance Abuse Treatment, 1986–2009*. HHS Publication No. SMA-13-4740. Rockville, MD: Substance Abuse and Mental Health Services Administration. Table 2A, page 58.

³ Melek, S.P., Norris, D.T., Paulus, J. 2014. *Economic Impact of Integrated Medical-Behavioral Healthcare, Implications for Psychiatry*. Denver: Milliman.

⁴ Hackman, A.L., Goldberg, R.W., Brown, C.H., Fang, L.J., Dickerson, F.B., Wohlheiter, K., Medoff, D.R., Kreyenbuhl, J.A., Dixon, L. 2006. Use of emergency department services for somatic reasons by people with serious mental illness. *Psychiatric Services*, 57:4.

In order to identify relevant state conducted or sponsored studies, NRI led short discussions during NASMHPD's Monthly Commissioner calls and during the monthly calls of the NASMHPD Finance and Medicaid Division. During these calls, NRI staff discussed the goals of the project and requested states to identify potential studies to include in this review. NRI staff also reviewed state websites and conducted internet searches to find additional studies to include in this analysis.

This report summarizes findings and highlights common study designs, approaches, and results from published and unpublished studies that states have conducted internally to assess the impact of behavioral health services across state government (with a focus on Medicaid).

1.2. THE FULL HEALTH CARE COST OF MENTAL ILLNESS

The expenditures for treatment and supports for mental illness and substance use disorders paid by SMHAs and SSAs represent only a portion of the total cost of behavioral health disorders to the state. The cost of behavioral health services and health services for behavioral health consumers to other parts of state government, in particular Medicaid Agencies, as well as to society is far greater than the \$45 billion expended by state SMHAs and SSAs. Far higher rates of premature mortality, co-morbid medical conditions, incarceration, homelessness⁵ and lost earning potential⁶ among individuals with behavioral health issues combine with higher use of EDs to create tremendous costs for state governments and society.

On average, persons with serious mental illness live 25 years less than the general population.⁷ Parks et al. attributed this trend to the fact that individuals with mental illness have higher rates of mortality than the general population due to a higher incidence of preventable diseases.⁸ This is especially noticeable for chronic conditions such as obesity, diabetes, dyslipidemia, and respiratory disease, complications of which can be life-threatening and expensive to treat. Except for respiratory diseases, these conditions are associated with the use of modern antipsychotic medications.

Comorbidity of medical conditions with mental illness, some of which may be caused by medications intended to treat the mental illness, does not entirely explain the high medical costs

⁵ Insel, T. 2008. Assessing the economic costs of serious mental illness. *American Journal of Psychiatry*, 165:6.

⁶ Kessler, R.C., Heeringa, S., Lakoma, M.D., Petukhova, M., Rupp, A.E., Schoenbaum, M., Wang, P.S., Zaslavsky, A.M. 2008. The individual-level and societal-level effects of mental disorders on earnings in the United States: Results from the National Comorbidity Survey Replication. *American Journal of Psychiatry*, 165:6.

⁷ Lutterman, T., Ganju, V., Schacht, L., Shaw, R., Monihan, K. et al. 2003. *Sixteen State Study on Mental Health Performance Measures*. DHHS Publication No. (SMA) 03-3835. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration.

⁸ Parks, J., Svendsen, D., Singer, P., Foti, M.E.. 2006. *Morbidity and Mortality in People with Serious Mental Illness*. Alexandria: National Association of State Mental Health Program Directors Medical Directors Council.

of individuals with mental illness. Individuals with serious mental illness – particularly paranoid and anxiety disorders – have high use of EDs.⁹

2. STATE STUDIES

2.1. OVERVIEW: DIVERSITY OF STUDY APPROACHES

States have approached the question of uncoordinated care from a variety of directions. California and Missouri implemented coordinated (integrated) care pilot programs, including experimental groups enrolled in the programs and control groups receiving treatment as usual. Some states, including Ohio and Washington, took a broad view to document expense and utilization by persons with mental illness or substance use disorders (M/SUD) using Medicaid claims in all settings. Michigan focused on the service utilization settings of clients enrolled in Medicaid managed care organizations. New York focused more narrowly on the differences in potentially preventable hospital readmissions between Medicaid recipients with mental health and/or substance use disorders and all others.

Table 1 provides a snapshot of the data sources and relevant measures of each state study. Note that some studies explore topics broader than the purview of this paper and therefore incorporate other measures and data sources. This table includes only those data sources and measures that are most relevant to understanding the coordination of behavioral health care costs. For more information about other measures considered in each study, see the detailed description of studies in Section 2.2.

TABLE 1: STATE STUDIES ON UN/COORDINATED CARE WITH DATA SOURCES AND PRIMARY MEASURE

Study	Data Source	Measure
California – County Medical Services Program Behavioral Health Pilot Project	Claims data from the County Medical Services Program (a public medical program for rural counties for low-income individuals who do not meet the requirements for Medicaid) run by the California Department of Health.	Expenditure and utilization. Difference in CMSP service utilization and expense between an experimental group receiving behavioral health care in addition to primary care and a control group receiving primary care only.
Michigan – 2010-2011 Coordination of Care/Medical Services Utilization Focused Study Report	Medicaid eligibility, enrollment, claims and encounters data	Utilization.

⁹ Salsberry, P.J., Chipps, E., Kennedy, C. 2005. Use of general medical services among Medicaid patients with severe and persistent mental illness. *Psychiatric Services*, 56:4.

Study	Data Source	Measure
Missouri – Mental Health Community Case Management and Its Effect on Healthcare Expenditures	Medicaid claims linked to clinical data from the Missouri Department of Mental Health.	Expenditures. Difference in monthly expenditures for Medicaid members with schizophrenia receiving case management versus Medicaid members with schizophrenia receiving hospital, outpatient and pharmacological services without case management. Also, difference in monthly expenditures for Medicaid members with schizophrenia before and after receiving case management.
New York – Potentially Preventable Hospital Readmissions among Medicaid Recipients with Mental Health and/or Substance Abuse Health Conditions Compared with All Others	Medicaid claims and encounter records from the New York State Department of Health.	Utilization. Difference of rate of potentially preventable hospital readmissions between Medicaid recipients with a behavioral health disorder and all other Medicaid recipients.
Ohio – By the Numbers: Developing a Common Understanding for the Future of Behavioral Health Care	Medicaid claims and caseload data from the Ohio Departments of Job and Family Services, Aging, Mental Health, Alcohol and Drug Addiction Services and Developmental Disabilities	Expenditures. Monthly cost per Medicaid member for those with mental health spending compared to those without. Percent of spending by age group for Medicaid members with mental health spending compared to those without.
Ohio – Making the Ohio Medicaid Business Case for Integrated Physical and Behavioral Health Care	Medicaid claims.	Utilization and expenditures. Medicaid recipients were categorized by their most serious diagnosis and expenditures, utilization of medical system for co-morbidities and expenditures accruing to co-morbidities are presented.
Washington – Mental Health Services Cost Offsets and Client Outcomes Technical Report	Medicaid claims data linked with client data from the Washington Department of Social and Health Services.	Expenditures. Cost difference between recipients of medical care paid for by Medicaid or state funds with a diagnosis of a mental illness who received mental health treatment and recipients of medical care paid for by Medicaid or state funds with a diagnosis of a mental illness who did <i>not</i> receive mental health treatment.

2.2. DETAILED DESCRIPTION OF STUDIES

2.2.1. CALIFORNIA: COUNTY MEDICAL SERVICES PROGRAM BEHAVIORAL HEALTH PILOT PROJECT (2011)

Available: [Evaluation of the CMSP Behavioral Health Pilot Project, Final Report](#)

This 2011 study by the Lewin Group profiles the County Medical Services Program's Behavioral Health Pilot Project. The County Medical Services Board is operated by the California Department of Health to provide subsidized medical services in 34 rural counties to residents who are low-income, but not eligible for Medicaid. The study operated from March 2008 through February 2011 at 14 sites. It enrolled 2,339 participants, of which 1,313 were eligible for limited behavioral health services. Services included mental health and substance use assessments, individual and group counseling sessions, opioid detoxification, and drug prescriptions. 87.2 percent of participants (including those in the control group) had a moderate or greater mental illness (a Global Assessment of Functioning score of 60 or less). The study showed a redistribution of health care expenditures among clients receiving the intervention. Inpatient expenditures decreased from 33 percent of total expenditures pre-intervention, to 17 percent post-intervention; while other expenditures increased, including pharmacy (23 percent to 31 percent), clinical (20 percent to 27 percent), and physician (14 percent to 16 percent). Inpatient per member per month (PMPM) costs decreased 37.1 percent for the intervention group, while they increased 6.6 percent for the control group. Emergency room visits for the intervention group also decreased 12.3 percent, while they increased 7.8 percent for the control group. Although expenditures shifted away from more costly inpatient care, total expenditures for the intervention group increased 20.3 percent from before enrollment (from \$454 to \$546 PMPM), while total expenditures for the control group increased 17.5 percent (from \$523 to \$614). This study also measured overall client health in both the pilot and the control groups using the [Duke Health Profile](#), a 17 item questionnaire that measures physical, mental, and social health across 11 different scales. For clients with 2 or more visits, profile scores saw statistically significant improvement in 10 out of 11 scales from the beginning to the end of the study period. For clients with 5 or more visits, profile scores saw statistically significant improvement in 7 out of 11 scales.

2.2.2. MICHIGAN: 2010-2011 COORDINATION OF CARE/MEDICAL SERVICES UTILIZATION FOCUSED STUDY REPORT (2012)

Available: [2010-2011 Coordination of Care/Medical Services Utilization Focused Study Report](#)

This study analyzed service utilization patterns of Medicaid recipients with a diagnosis of serious mental illness and/or developmental disabilities. The study population was limited to consumers who were age 21 or older on September 30, 2010 and who were continuously enrolled in Medicaid Health Plans (managed care organizations for primary care) from October 1, 2009 to

September 30, 2010. The population was also limited to those who had at least one claim or encounter in a Prepaid Inpatient Health Plan (managed care organization for inpatient care for consumers with severe behavioral health issues) with a diagnosis of severe mental illness (SMI) and/or developmental disabilities (DD). Nearly 30,000 (29,932) consumers met these conditions and were included in the study. 78.8 percent of consumers in the study had a diagnosis of SMI, 9.3 percent had a diagnosis of DD, and 12 percent had both diagnoses. The authors presented the percentage of consumers in each diagnostic category who used ambulatory services, EDs and/or inpatient admission to a hospital during FY 2010. Consumers with SMI were significantly more likely to use EDs and have inpatient admissions to hospital than consumers with DD or a dual diagnosis. The study's authors calculated the frequency of inpatient admissions and ED visits by diagnostic category, which showed that consumers with a diagnosis of SMI were much more likely to have an inpatient admission or ED visit. Consumers in each diagnostic category had a similar probability of having a single inpatient admission or ED visit. The rates of two or more inpatient admissions or ED visits in FY 2010 were higher for consumers with SMI than for consumers with a dual diagnosis, which was higher than for consumers with DD.

2.2.3. MISSOURI: MENTAL HEALTH COMMUNITY CASE MANAGEMENT AND ITS EFFECT ON HEALTHCARE EXPENDITURES (2010)

Available: [Mental Health Community Case Management and Its Effect on Healthcare Expenditures](#)

This article, whose first author was the chief clinical officer of the Missouri Department of Mental Health, examines the effect of community mental health case management (CMHCM) on overall health care expenditures for Missouri Medicaid participants with a diagnosis of schizophrenia. According to the authors, "community mental health case managers... provide care coordination, address medication adherence, and assist in accessing healthcare services." The authors hypothesize that CMHCM will reduce total healthcare use and expenditures. They test this using a pre- and post-test of 636 participants who began CMHCM in 2005. Participants were eligible for inclusion in the study "if they had 9 months of Medicaid claims in each of the two preceding years, a diagnosis of severe mental illness, a history of psychiatric hospitalization or multiple emergency room visits, and functional limitations as a result of their illness." The authors collected Medicaid claims data for this cohort from the period 2003 to 2007 and calculated average per user per month (PUPM) cost. In the two years prior to beginning CMHCM, PUPM costs showed an upward trend and increased \$750. During the first month clients were enrolled in CMHCM, PUPM costs spiked almost \$750 before declining over the following two years to \$500 less than the PUPM cost before enrolment.

2.2.4. NEW YORK: POTENTIALLY PREVENTABLE HOSPITAL READMISSIONS AMONG MEDICAID RECIPIENTS WITH MENTAL HEALTH AND/OR SUBSTANCE ABUSE HEALTH CONDITIONS COMPARED WITH ALL OTHERS: NEW YORK STATE (2007)

Available: [Potentially Preventable Hospital Readmissions among Medicaid Recipients with Mental Health and/or Substance Abuse Health Conditions Compared with All Others](#)

This statistical brief compares rates of potentially preventable hospital readmissions between Medicaid recipients who have mental health and/or substance use disorders and all other Medicaid recipients. The study determined these rates in two steps. First, the authors used 3M's Potentially Preventable Readmission software to assign an all patient refined diagnosis related group (APR-DRG) to each Medicaid inpatient admission event. The APR-DRG was used to determine whether a given Medicaid inpatient admission was "at risk" for a potentially preventable hospital readmission and for what reason. (The logic the software uses to determine this is presented in a [companion brief](#).) The authors then used 3M's Clinical Risk Group software to categorize Medicaid recipients by primary health issue. These were further aggregated into four groups: mental health condition, substance use condition, mental health and substance use condition, and no mental health or substance use condition. Out of 917,641 Medicaid inpatient admission events in New York State during 2007, the authors determined that the total rate per 100 of "at risk" Medicaid inpatient admissions was 9.4. The disparity in rates between those with a behavioral health disorder and all other Medicaid patients was stark. Those with a mental health condition had a rate of 8.0, while those with a substance use condition had a rate of 10.3. Those with co-occurring mental health and substance use disorders had the highest rate, 17.9. Finally all other Medicaid patients had a rate of 4.8.

2.2.5. OHIO: BY THE NUMBERS: DEVELOPING A COMMON UNDERSTANDING FOR THE FUTURE OF BEHAVIORAL HEALTH CARE (2011)

Available: [By the Numbers: Developing a Common Understanding for the Future of Behavioral Health Care](#)

This wide-ranging study examined the impact of behavioral health issues on multiple domains, including Medicaid spending, ED and inpatient hospital utilization, housing and long-term care facilities, the cost of mental health treatment in adult and juvenile correctional settings, educational attainment, and mortality and premature death. The study drew data from eight Ohio state departments and five non-governmental organizations. For the purposes of this report, we will only consider the third section of the report, "Special Study: Medicaid Spending for Individuals Previously Treated in the Community Mental Health System". This study started with all people "who had at least one claim processed through the community mental health system in FY 2009." Of that group, 88 percent, or 244,296 people, also had Medicaid spending in FY 2010. The study compared these individuals with all individuals who had Medicaid spending

in FY 2010. The FY 2010 monthly cost for Medicaid of those with a mental health claim in FY 2009 was \$823 compared to \$653 for those without a mental health claim in FY 2009. The study also breaks down these populations by age groups. Children and the elderly with mental health claims exhibited a higher level of Medicaid spending compared to the overall Medicaid population. Children ages 6 to 17 made up 25 percent of the overall Medicaid caseload and 11 percent of total spending. Of those with a prior mental health claim, children ages 6 to 17 made up 34 percent of the Medicaid caseload and 18 percent of spending. Adults ages 65 and over made up 9 percent of the overall Medicaid caseload and 23 percent of total spending. Of those with a prior mental health claim, adults ages 65 and over made up 3 percent of the Medicaid caseload and 8 percent of spending.

2.2.6. OHIO: *MAKING THE OHIO MEDICAID BUSINESS CASE FOR INTEGRATED PHYSICAL AND BEHAVIORAL HEALTH CARE (2011)*

Available: [Making the Ohio Medicaid Business Case for Integrated Physical and Behavioral Health Care](#)

This study used Medicaid claims data to compare the Medicaid expenditures for adults with SMI to adults without SMI. It categorizes every individual with SMI according to their most debilitating diagnosis (according to a hierarchy determined by the authors). The study subdivided adults with SMI into three categories: (1) specialty only, those adults who used only the community behavioral health system; (2) non-specialty only, those adults who did not use the community behavioral health system; and (3) both, those adults who used both the community behavioral health system as well as other providers. The study found that adults with SMI made up 10 percent of the Medicaid population, but accounted for 22 percent of expenditures. Of all adults receiving Medicaid, adults with SMI made up 22 percent of the population, but accounted for 44 percent of Medicaid expenditures. The study was able to segment these costs by primary diagnosis and determined that adults with schizophrenia incurred three times more hospitalizations and two times more ED visits for diabetes, with “twice the number of hospital emergency department visits for hypertension.” Adults with schizophrenia also “have three times higher costs for skilled nursing facility, prescription drug and home health services than” adults without SMI.

2.2.7. WASHINGTON: *WASHINGTON STATE MENTAL HEALTH SERVICES COST OFFSETS AND CLIENT OUTCOMES (2003)*

Available: [Washington State Mental Health Services Cost Offsets and Client Outcomes Technical Report](#)

This FY 2002 study by the State of Washington examined the effect on medical costs one and two years after recipients of public medical assistance with diagnosed mental disorders received

mental health treatment. The study included a comparison group of recipients of public medical assistance with mental health disorders who did not receive mental health treatment. The authors drew client data from several sources, although primarily from the Medicaid Management Information System Extended Database, the primary database of the Washington state Medicaid agency, and the Client Services Database, the primary database of the Washington Department of Social and Health Services. The authors determined client diagnoses by examining Medicaid claims data from July 1998 to June 2002, which they categorized by ICD-9-CM code.

The study examined three groups of people: (1) those who were on Medicaid only, (2) those who were dually eligible for Medicaid and Medicare, and (3) those who received medical benefits under the category General Assistance Unemployable, which was a state-funded assistance program in Washington State. The study incorporated cost data only for medical care paid for by state funds or Medicaid; dual eligible clients were not included in the cost-savings portion of the study since the majority of their medical care was paid for by Medicare.

For outpatient Medicaid clients, the authors found statistically significant cost savings of \$109 PMPM in year one and \$126 PMPM in year two. The study's authors pointed out that these cost savings respectively covered 40 percent and 50 percent of the average cost of providing the mental health treatment. Upon further investigation, the authors determined that the greatest cost savings came from those receiving both outpatient mental health treatment and psychotropic medication: those recipients showed cost savings of \$144 PMPM in year one and \$176 PMPM in year two. Among clients receiving inpatient mental health treatment, the authors analyzed cost savings by diagnosis and determined that no statistically significant cost savings accrued to non-psychotic diagnoses. Clients with a psychotic disorder alone showed statistically significant cost savings ranging from \$135 PMPM and \$205 PMPM after one year of treatment. Clients with a psychotic disorder, in addition to another disorder, showed statistically significant cost savings ranging from \$216 PMPM and \$299 PMPM after one year of treatment. These cost savings offset 13 to 19 percent of the cost of inpatient mental health treatment.

3. THE RESULTS OF STATE STUDIES ON THE COSTS OF BEHAVIORAL HEALTH CARE

Every study showed the benefit of coordinating mental health and primary care. However, since these studies used a variety of measures and theoretical approaches, the results vary significantly across the studies. Table 2 highlights the differences in outcome measures, data categorization and study populations between the studies.

TABLE 2: STUDY OUTCOMES, DATA SOURCES AND STUDY POPULATIONS

Study	Outcomes:						Data Linkages, Inclusion Requirements and Categorizations	Population:					
	Health	Justice	Criminal	Outpatient	ED Use	Hospitalization		Inpatient	Mortality	Cost	Children and/or Adults?	MH Only	MH & SUD
CA	✓			✓	✓	✓	✓	County Medical Services Program (CMSP) claims data linked with CMSP diagnostic data. Divided by diagnostic categories: mental health, substance use, dual diagnosis, mental health and substance use.	Adults		✓		
MI				✓	✓	✓		Medicaid claims, enrollment, eligibility and encounters for clients with diagnosis of SMI or DD. Client continuously enrolled in same managed care organization for at least 320 days. At least one claim or encounter with a SMI or DD diagnosis (using ICD-9-CM diagnosis). Clients divided by diagnostic categories: SMI only, DD only, dual diagnosis, SMI and DD.	Adults				✓
MO				✓		✓	✓	Medicaid claims and cost data linked with MO DMH case management enrollment data. Compare/contrast analysis participants required to be “continuously eligible for Medicaid and had a monthly claim with a diagnosis of schizophrenia.” Clients who had received care in a nursing home or had a co-occurring diagnosis of intellectual disability were excluded. Clients were divided by intensity of case management (CM), as measured by cost: CM (low), CM (mid), CM (high) and non-CM. Clients in the pre-post analysis were required to have had “9 months of Medicaid claims in each of the two preceding years,” a diagnosis of SMI as well as “a history of psychiatric hospitalization or multiple emergency room visits, and functional limitations as a result of their mental illness.”	Unknown	✓			
NY						✓	✓	Medicaid claims and encounters data, divided by payment category (FFS and MC) and diagnostic category: mental health; substance use; dual diagnosis, mental health and substance use; and all others. Medicaid costs for FFS and estimated costs for MC clients based on FFS costs.	Adults and Children		✓		

Study	Outcomes:						Data Linkages, Inclusion Requirements and Categorizations	Population:				
	Health	Criminal Justice	Outpatient	ED Use	Inpatient Hospitalization	Mortality		Cost	Adults and/or Children?	MH Only	MH & SUD	MH & DD
OH: By the Numbers				✓			✓	Multiple studies. Medicaid costs for FY 2010 from OH Departments of Job and Family Services, Aging, Mental Health, Alcohol and Drug Addiction Services, and Developmental Disabilities for clients who had at least one claim processed through community mental health system in FY 2009. ED utilization and cost data from Ohio Hospital Association for behavioral health related visits.	Adults and Children		✓	
OH: Business Case			✓	✓	✓		✓	De-identified Medicaid claims and encounter data. FFS cost data and MCO pseudo-priced cost data. Claims were categorized by most serious mental illness based on custom hierarchy of diagnoses. Clients were further classed into three categories: <i>specialty only</i> , for clients “who only used the community behavioral health system for diagnosis and treatment of mental health conditions;” <i>non-specialty</i> , for clients that did not use the community behavioral health system; and <i>both</i> , for clients that used both the community behavioral health system as well as other treatment providers. Clients with co-occurring substance use disorder and ambulatory care sensitive conditions (as defined by the Agency for Healthcare Research and Quality) were also identified.	Adults		✓	
WA		✓	✓		✓		✓	Clients eligible for Medicaid (aged, blind, disabled or presumptively disabled), dual eligible clients with Medicare and General Assistance – Unemployable (GA-U) clients (a former Washington State public health program for unemployed individuals) 18 or older. Includes cost data for Medicaid and state funds only (the latter being the only source of funds for GA-U clients).	Adults		✓	

California and Missouri examined the effect on costs of providing mental health care to those receiving only primary care. As detailed in section 2.2.1, California’s study showed a large shift away from inpatient medical care after providing limited behavioral health care to rural public health consumers. However this was largely balanced by an increase in the cost of pharmacy and physician services. Costs increased at roughly similar rates between the pilot group and control group in California. Thus the pilot was cost-neutral compared to the control and showed a change in spending from greater to less restrictive treatment settings.

Missouri's pre- and post-analysis of Medicaid costs before and after implementing community mental health case management for clients with schizophrenia showed a sustained reduction in cost PMPM after an initial spike in cost during the first month. These costs included the expense of case management, and thus showed a true medical cost offset. However, a breakdown of costs by intensity of case management in Missouri's study indicates that the cost offset may not continue to hold for the most severely ill.

Washington State's multi-year study showed lower medical costs for clients with mental illness who received mental health treatment compared to clients with mental illness who did not receive treatment through the mental health system. Cost savings varied between years but, in some years, the savings more than offset the costs of mental health care. Washington's study also showed a significant reduction in mortality for clients receiving mental health treatment compared to clients with mental illness not receiving mental health treatment.

Ohio's By the Numbers study showed a higher average PMPM Medicaid cost across all agencies. The study further showed higher Medicaid spending for children and seniors with prior mental health claims than for the overall child and elderly Medicaid populations. Ohio's second study further determined that Medicaid recipients with SMI made up 10 percent of the total recipient population but accounted for 26 percent of total Medicaid expenditures. Adult Medicaid recipients with schizophrenia showed even higher costs compared to adult Medicaid recipients without SMI, with three times the number of hospitalizations for uncontrolled diabetes and twice the number of ED visits for hypertension and uncontrolled diabetes. Costs for skilled nursing facilities, prescription drugs, and home health services were three times higher for adult Medicaid recipients with schizophrenia than for adult Medicaid recipients without SMI. At the same time, 29 percent of Medicaid recipients with SMI received no services from the specialty mental health system.

Michigan's more narrow study of Medicaid managed care recipients with SMI, DD, or both showed that SMI-only clients were most likely to use EDs and inpatient hospital stays than the other two groups. Close to 60 percent of SMI-only clients used an ED during the study period. The study also showed that over 50 percent of SMI-only clients had a diagnosis for either hypertension or a disorder of lipid metabolism.

Finally, in the narrowest study profiled in this report, New York found that Medicaid recipients with co-occurring mental health and substance use disorders had the highest rate of potentially preventable hospital readmissions, over four times the potentially preventable readmission rate for Medicaid recipients without mental health or substance use disorders. Medicaid recipients with a substance use disorders alone had a higher rate than recipients with only a mental health disorder. Both, however, exhibited higher rates than did Medicaid recipients without any mental health or substance use disorder.

4. CONCLUSION

These seven studies from six states, representing the Northeast, Midwest and Western regions of the United States, display the seven potential routes states can take to make the case to stakeholders and legislatures for greater coordination of behavioral and primary health care. These studies consistently show higher medical costs associated with clients who have behavioral disorders as well as the higher use of intensive, more expensive settings under uncoordinated care. Some of these studies also demonstrate the ability of coordinated behavioral and primary health care to lower state costs.

The studies from Missouri, New York, and Washington State were performed in-house, by staff from the SMHA and Medicaid Agency. The studies from California, Michigan, and Ohio were performed by research consultants commissioned by the SMHA and Medicaid Agency. Thus, states had a choice of research partners to work with, both within state government and without.

The diversity of study populations, outcome measures, and statistical methods and algorithms (using free or proprietary software) present in these studies reflect the diversity of the states. States can take a broad overview of the entire system, as Ohio did in both of its studies, to help stakeholders and legislatures understand the full scope of the behavioral health cost structure. Or states can narrow in on a single topic across the system, as New York did, to provide a compelling argument for focused change. States can broadly study specific parts of the behavioral health population, as Michigan did, to create knowledge tailored to the needs of specific stakeholders, or states can group existing data based client treatment paths, as Missouri did, to illuminate differences between treatment approaches. Finally, states can construct a formal experiment, as California did, and assign clients to an experimental group or control group to test variations in outcomes.