American Psychiatric Association

1000 Wilson Boulevard
Suite 1825
Arlington, VA 22209
Telephone 703.907.7300
Fax 703.907.1085
E-mail apa@psych.org
Internet: www.psychiatry.org

February 11, 2015

The Honorable Lawrence J. Hogan, Jr.
Governor of Maryland
100 State Circle
Annapolis, MD 21401-1925

Al Redmer, Jr., Commissioner
Maryland Insurance Administration
200 St. Paul Place
Suite 2700
Baltimore, MD 21202

Dear Governor Hogan and Commissioner Redmer:

We are writing to you on behalf of the American Psychiatric Association (APA), the medical specialty society representing over 36,000 psychiatric physicians throughout the United States, and the Maryland Psychiatric Society, representing more than 650 psychiatric physicians throughout Maryland, to bring to your attention the very serious problem of access to mental health care, and in particular to psychiatrists, in Maryland's 2014 Qualified Health Plans ("QHPs") sold through Maryland Health Connection. The Maryland Health Benefit Exchange's failure to ensure that plans on its exchange meet state network adequacy standards results in higher health care costs for citizens in the State of Maryland and patients with untreated mental illnesses.

On January 26, 2015, the Mental Health Association of Maryland (MHAMD) published the attached report, "Access to Psychiatrists in 2014 Qualified Health Plans" ("Access Report"). The report chronicles a study of the adequacy of the psychiatric networks in Maryland's four QHPs through a study of the accuracy of the provider directories and availability of the 1,154 psychiatrists in those directories to see patients within 45 days. The results are devastating to those with mental illness or substance use disorders.

Specifically,

- only 43% of the psychiatrists listed could be reached primarily because phone numbers were not working or incorrect, or the physician died, retired or relocated. (Access Report at 5)
- 19% of those who were reached were not actually psychiatrists although they were listed as such. (Access Report at 5)

- Less than 40% of the providers listed accepted the insurance of the company listing them as a participating provider. (Access Report at 6)
- Less than 18% of the psychiatrists listed were taking new out patients. (Access Report at 6)
- Only 14% of psychiatrists listed and taking on new patients could see the patient in less than 45 days. (Access Report at 1)

Mental illness and substance use disorder are not rare diseases. One in four adults will be diagnosed with a mental illness or substance use disorder in their lifetime. Yet, Maryland has plans on its health benefit exchange that are not capable of meeting the needs of mental health patients and permits carriers on the exchange to incorrectly represent that psychiatrists are available in the plan to meet the members mental health needs when, too often, they are not.

Health plans have ready access to the claims data to know whether a physician is taking new patients and whether the physician is an active participant in the plan, but there is no evidence that they use their data to assure their network is sufficient to meet the consumer's needs. Plans can and should run the data on claims filed for each physician listed in their network on a quarterly basis. If a listed physician has not filed a claim in the past quarter, the physician obviously is not taking that insurance. Likewise, a small volume of claims should lead the carrier to question whether the physician is an active participant in the network and fairly included in the carrier's analysis of network adequacy. For plans that have an out of network benefit, the plan should run out of network claims data; a large volume of out of network claims means there are not sufficient choices in network because most patients would not voluntarily choose to pay out of pocket if the network in the plan was sufficient.

As you know, the state has the authority to require plans to verify the adequacy of their network and plans have the means to do it. APA respectfully requests that you require all exchange plans (indeed we recommend the state should require *all* insurance plans) on a quarterly basis to verify the adequacy of their network by publicly reporting (a) the number of claims filed by each psychiatrist listed in the network; and (b) publicly reporting the number of psychiatric claims paid on an out of network basis. Plans must then be required to update the network directories and their network adequacy analysis to remove those physicians that are not actively participating.

Appropriate treatment of mental health conditions will ensure overall health of the population and it will decrease the overall cost of medical care. As evidenced in the attached study by Milliman, spending on mental health care actually reduces the overall cost of health care for individuals and for the state.

Accordingly, APA asks that the state of Maryland ensure that: (a) citizens of the state get access to the mental health care for which they have paid, and (b) health insurance carriers are responsible for providing the resources promised to their customers.

APA would like to work with the state of Maryland to make mental health care, an essential health benefit, available to all of its citizens. We would be pleased to meet with you and share information and solutions to the problem of network adequacy and potential solutions.

If you have any questions, or wish to discuss this further, please feel free to contact Colleen Coyle, General Counsel of the APA (ccoyle@psych.org or 703-907-8695), or Sam Muszynski, Director of the APA's Office of Healthcare Systems and Financing (imuszynski@psych.org or 703-907-8594). Thank you in advance for your attention to this urgent healthcare matter.

Sincerely,

Saul M. Levin, M.D., M.P.A.
CEO and Medical Director, APA

Sally A. Waddington, M.D.
President, Maryland Psychiatric Society

cc: Kevin Counihan, Deputy Administrator and Director
Center for Consumer Information and Insurance Oversight
Centers for Medicare and Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244

Milliman

Economic Impact of Integrated Medical-Behavioral Healthcare

Implications for Psychiatry

Prepared for:
American Psychiatric Association

Prepared by:
Milliman, Inc.

Stephen P. Melek, FSA, MAAA
Douglas T. Norris, FSA, MAAA, PhD
Jordan Paulus, FSA, MAAA

1400 Wewatta Street
Suite 300
Denver, CO 80202-5549
USA

Tel +1 303 299 9400
Fax +1 303 299 9018

milliman.com

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EXECUTIVE SUMMARY

Continually escalating healthcare costs have prompted payers to seek ways to improve member health while reducing the growth of healthcare claims expenditures. One such initiative is the integration of medical and behavioral healthcare (IMBH). Some of the advances in IMBH have been driven by primary care providers, while others have been driven by behavioral healthcare practitioners. The field of psychiatry is poised to become a major participant as IMBH evolves. Psychiatry has a direct role in the value proposition of integrated/collaborative care and stands to benefit from the savings generated by effective integration programs.

The analysis provided in this report is intended to be used to help educate psychiatrists about the elevated levels of healthcare costs related to beneficiaries who have chronic medical and behavioral comorbidities. Based on the experience of recent successful IMBH programs, this report also estimates the portion of the elevated healthcare costs that can be controlled through such programs. We also discuss the possibility of shared savings that can bring some of those savings back to behavioral health and psychiatry.

Medical costs for treating those patients with chronic medical and comorbid mental health/substance use disorder (MH/SUD) conditions can be 2-3 times as high as those beneficiaries who don't have the comorbid MH/SUD conditions. The additional healthcare costs incurred by people with behavioral comorbidities are estimated to be $293 billion in 2012 across commercially-insured, Medicaid, and Medicare beneficiaries in the United States. Most of the increased cost for those with comorbid MH/SUD conditions is attributed to medical services (more than behavioral), creating a large opportunity for savings on the medical side through integration of behavioral and medical services. Based on our literature review on the results of effective IMBH programs, we calculate that 9-16% of this total additional spending may be saved through effective integration of care, although additional work and direct experience will be needed in this area. Figure 1 shows the resulting projected potential cost savings achieved by integration for each of the three large insurance markets. This is the value proposition for IMBH.

Figure 1: Projected Healthcare Cost Savings Through Effective Integration (National, 2012)

Payer Type	Annual Cost Impact of Integration
Commercial	$15.8-$31.6 billion
Medicare	$3.3-$6.7 billion
Medicaid	$7.1-$9.9 billion
Total	**$26.3-$48.3 billion**

As shown above, an estimated $26 - $48 billion can potentially be saved annually through effective integration of medical and behavioral services. To put these nationally projected savings in context, the total national expenditures for mental health and substance abuse services provided by all physicians, including psychiatrists and non-psychiatric physicians, is projected to be about $35 billion by 2014.[1] This estimate is before recent changes resulting from the Mental Health Parity and Addiction Equity Act (MHPAEA) and the Patient Protection and Affordable Care Act (PPACA), which will likely increase this spending estimate.

[1] Levit, K. R., et al. Projections of national expenditures for mental health services and substance abuse treatment 2004 -2014. website http://www.samhsa.gov/financing/fileDownload.aspx?file=2009%2F06_21_Projections+of+National+Expenditures+for+Mental+Health+Services+and+Substance+Abuse+Treatment%2C+2004-2014.pdf

LIMITATIONS

People with chronic medical conditions may certainly be more expensive to treat, and also may more often be subject to social isolation, economic worries, and a variety of other problems that could lead to depression, anxiety, substance abuse and other behavioral disorders. It can be difficult to determine the direction from which the causality arises — does the MH/SUD disorder cause a more severe medical condition, or does the more severe medical condition cause the MH/SUD disorder? Whatever the link, there are clearly elevated healthcare costs observed in claim data that result in an opportunity for improved clinical-care programs and potential for healthcare cost savings. Our analysis does not include a detailed risk assessment of each insured member. Those with comorbid medical and behavioral disorders may have more severe cases of their chronic medical conditions than those without the behavioral comorbidity.

Unfortunately, many individuals with chronic medical conditions and co-occurring MH/SUD disorders are never diagnosed and treated for their behavioral conditions. Since this study used administrative claim data to identify illnesses and costs, these patients were not identified as suffering from these conditions. However, the establishment of evidence-based collaborative care models would likely identify many individuals with behavioral disorders that have been previously undiagnosed. This would results from the proactive use of screening tools and better awareness of behavioral disorders among the professionals working together in the collaborative care teams. This factor suggests that our savings projections could be understated.

The studies in the literature that we used to help guide out healthcare cost savings assumptions for effective integrated medical-behavioral healthcare do not cover the full gamut of chronic medical and behavioral conditions used in our analysis. The studies tend to cover a specific set of comorbid conditions, such as diabetes with depressions. To the extent that the results from these studies cannot be achieved across all of the medical-behavioral comorbidities included in our analysis, the savings projections would be overstated.

These same studies tend to reflect a care management approach using a team of professionals for the healthcare being provided to their target population cohort, not just MDs. To achieve the potential savings we project in our analysis, it is very likely that a team based approach of psychiatrists, psychologists and other healthcare providers and managers would be needed.

We relied on data obtained through published literature and through proprietary and purchased data sources as the basis for our analysis and did not independently audit or verify the source of the information. If this information is incomplete or inaccurate, our observations and comments may not be appropriate. We performed general reasonable tests on the underlying data. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work.

Our national projections extrapolate the results from our database analyses (see Appendix E) to national population estimates for the Commercial, Medicare and Medicaid population cohorts. To the extent that the national population healthcare costs and risk levels for any of these cohorts differs from that represented in the databases that we used, our national estimates may need adjustment. The databases we used represent the best available sources for our analysis.

The information in this study is designed to describe the prevalence and healthcare costs of insured members with certain chronic medical conditions, behavioral conditions, or both. It may not be appropriate, and should not be used, for other purposes.

QUALIFICATIONS

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. The authors of this report, Stephen P. Melek, Douglas T. Norris and Jordan Paulus are members of the American Academy of Actuaries, and meet the qualification standards for performing the analysis in this report.

RESULTS – HEALTHCARE COSTS OF BENEFICIARIES WITH AND WITHOUT BEHAVIORAL DISORDERS

We first studied the healthcare costs of individuals enrolled in commercial insurance, Medicare, and Medicaid in 2010, and trended these costs to 2012. This was intended to show the distribution of healthcare spending between medical and behavioral costs by population cohort. We stratified our commercial and Medicare populations into four groups, and the Medicaid members into two groups, based on the type of behavioral illnesses present. These groupings were developed based on the available data for each population group. The criteria used for identification of behavioral conditions are described in Appendix C.

The four groups used for Medicare and commercial insurance were:

- Those with no mental health / substance use disorder diagnoses (No MH/SUD)
- Those with mental health diagnoses, but no serious and persistent mental illness (Non-SPMI MH)
- Those with serious and persistent mental illness (SPMI)
- Those with substance use disorder diagnoses (SUD)

Members with both mental illness and substance abuse diagnoses would appear in both the mental health (either SPMI or non-SPMI) and the substance abuse groups.

We stratified Medicaid members into two groups:

- Those with no mental health / substance use disorder diagnoses (No MH/SUD)
- Those with mental health / substance use disorder diagnoses (MH/SUD)

Figure 2 shows a high-level cost comparison for people with a behavioral condition (Non-SPMI MH, SPMI, and SUD) compared to those without a behavioral condition (No MH/SUD). The Total rows include all covered beneficiaries within a population segment. The costs presented are average per member per month (PMPM) costs. The costs are displayed separately for the three population segments (commercial, Medicare, and Medicaid). The costs are also split out by broad service categories: Medical, Behavioral, Medical Rx and Behavioral Rx (as described in Appendix D). The 'Medical' column shows the facility and professional charges for non-behavioral services and the 'Medical Rx' column shows the pharmacy charges for drugs used to treat medical conditions (non-behavioral conditions). Similarly, the 'Behavioral' column shows the facility and professional charges for treating behavioral conditions and the 'Behavioral Rx' column shows the charges for prescription drugs used to treat behavioral conditions. Pharmacy data was not available for the Medicare population.

Figure 2: Per Member Per Month (PMPM) Healthcare Costs by Population and Presence of Behavioral Conditions – 2012 Costs

Population	Behavioral Health Diagnosis	Member Months	Medical	Behavioral	Medical Rx	Behavioral Rx	Total
Commercial	*No MH/SUD*	2,048,000,000	$280	$3	$53	$4	$340
	Non-SPMI MH	278,000,000	$661	$23	$145	$74	$903
	SPMI	47,000,000	$759	$128	$135	$175	$1,197
	SUD	22,000,000	$830	$73	$102	$67	$1,072
	Total	2,386,000,000	$335	$8	$66	$16	$425
Medicare	*No MH/SUD*	508,000,000	$579	$3	*N/A**	*N/A**	$582
	Non-SPMI MH	23,000,000	$1,369	$40	*N/A**	*N/A**	$1,409
	SPMI	21,000,000	$1,222	$215	*N/A**	*N/A**	$1,437
	SUD	6,000,000	$1,291	$213	*N/A**	*N/A**	$1,504
	Total	556,000,000	$640	$13	*N/A**	*N/A**	$653
Medicaid	*No MH/SUD*	437,000,000	$309	$4	$63	$5	$381
	MH/SUD	109,000,000	$757	$286	$172	$86	$1,301
	Total	546,000,000	$398	$61	$85	$21	$565
Total	*No MH/SUD*	2,993,000,000	$335	$3	$55	$4	$397
	MH/SUD	494,000,000	$751	$100	$148	$86	$1,085
	Total	3,487,000,000	$394	$17	$69	$17	$497

** Pharmacy data not available for the Medicare population and the totals for Medicare do not reflect pharmacy costs*

Figure 2 shows that individuals with a treated behavioral condition typically cost 2-3 times as much on average as those without a behavioral condition in all market segments. Additionally, the increased medical (non-behavioral) costs for those with MH/SUD conditions suggest significant potential for savings in medical costs through integration programs. Please note that the member months for 'No MH/SUD', 'Non-SPMI MH', 'SPMI', and 'SUD' do not sum to the total because members frequently have both a mental health disorder and a substance-abuse disorder and are included under both cohorts. The 'Total' rows represent the total non-duplicated member months. Member months represent the total number of insured months of coverage in each cohort, which is a good indication of the distribution of the population in each cohort.

Figure 3 displays the total medical, behavioral, and pharmacy spending for each category of MH/SUD diagnoses. This is the same information displayed in Figure 2, but is shown in terms of total spending (as opposed to average costs).

Figure 3: Total Healthcare Spending by Population and Presence of Behavioral Conditions – 2012 Costs (millions)

Population	Behavioral Health Diagnosis	Medical	Behavioral	Medical Rx	Behavioral Rx	Total
Commercial	*No MH/SUD*	$573,171	$5,628	$109,464	$8,833	$697,096
	Non-SPMI MH	$184,147	$6,502	$40,361	$20,507	$251,517
	SPMI	$35,408	$5,954	$6,312	$8,167	$55,841
	SUD	$18,227	$1,596	$2,236	$1,473	$23,532
	Total	$800,317	$18,336	$157,038	$37,695	$1,013,386
Medicare	*No MH/SUD*	$294,241	$1,619	*N/A**	*N/A**	$295,860
	Non-SPMI MH	$31,167	$914	*N/A**	*N/A**	$32,081
	SPMI	$26,142	$4,596	*N/A**	*N/A**	$30,738
	SUD	$8,346	$1,379	*N/A**	*N/A**	$9,725
	Total	$355,559	$7,234	*N/A**	*N/A**	$362,793
Medicaid	*No MH/SUD*	$134,920	$1,963	$27,710	$2,176	$166,769
	MH/SUD	$82,655	$31,264	$18,759	$9,389	$142,067
	Total	$217,575	$33,227	$46,468	$11,566	$308,836
Total	*No MH/SUD*	$1,002,332	$9,210	$137,173	$11,009	$1,159,724
	MH/SUD	$371,119	$49,587	$66,333	$38,252	$525,291
	Total	$1,373,451	$58,797	$203,507	$49,261	$1,685,016

** Pharmacy data not available for the Medicare population and the totals for Medicare do not reflect pharmacy costs*

The total spending in the US across all service categories and the three populations for those with MH/SUD disorders is estimated to be $525 billion annually, compared to $1.7 trillion for all service categories and all cohorts combined. In other words, even though members with treated MH/SUD constitute only 14% of the total insured members across the three markets, they account for over 30% of total healthcare spending. Please note that the healthcare spending for 'No MH/SUD', 'Non-SPMI MH', 'SPMI', and 'SUD' do not sum to the total because members frequently have both a mental health disorder and a substance-abuse disorder and are included under both cohorts.

Figures 3a through 3c present the results by major service category as a percentage of total costs by presence of behavioral conditions for the Commercial, Medicare and Medicaid populations.

Analysis of healthcare spending by service category

Medical and behavioral healthcare non-drug spending was further analyzed by major service category to identify the sources of the healthcare spending associated with behavioral conditions. Above, we established that members with behavioral disorders use more medical services, and not just more behavioral services. This section helps to identify whether these additional medical services are high-cost facility-based services (such as inpatient hospital admissions or outpatient facility services that include ER) or lower-cost professional services.

Spending was classified as either inpatient (IP) facility, outpatient (OP) facility, or professional (PROF) services (as described in Appendix D). Figure 4a below shows 2012 spending levels by service category and MH/SUD cohort for the commercial population. The Total row combines all of the behavioral condition row results. Please note that the healthcare costs for 'No MH/SUD', 'Non-SPMI MH', 'SPMI', and 'SUD' do not sum to the total because members frequently have both a mental health disorder and a substance-abuse disorder and are included under both cohorts.

Figure 4a: Total Healthcare Costs by Service Category and Presence of Behavioral Conditions - 2012 Costs, Commercially-Insured US Population (millions)

	Medical Costs				Behavioral Costs			
Behavioral Condition	IP Facility	OP Facility	PROF	Total Non-Pharmacy	IP Facility	OP Facility	PROF	Total Non-Pharmacy
No MH/SUD	$67,516	$238,249	$267,406	$573,171	$1,203	$735	$3,690	$5,628
Non-SPMI MH	$22,792	$80,086	$81,270	$184,147	$1,242	$738	$4,522	$6,502
SPMI	$5,379	$14,903	$15,126	$35,408	$1,714	$783	$3,457	$5,954
SUD	$3,111	$8,527	$6,590	$18,227	$696	$438	$462	$1,596
Total	**$96,851**	**$336,940**	**$366,526**	**$800,317**	**$4,256**	**$2,343**	**$11,738**	**$18,337**

The medical spending distribution is different for the cohort without MH/SUD conditions as compared with the three cohorts with MH/SUD conditions. The groups with behavioral conditions have a higher proportion of their total non-pharmacy medical dollars being spent on facility-based services than professional services. For example, inpatient and outpatient medical services constitute about 53% of the total medical spending for the group without MH/SUD ($67.5 billion + $238.2 billion out of $573.2 billion). The groups with mental health disorders see a higher proportion of dollars spent on facility-based services than the group without MH/SUD. The Non-SPMI MH cohort spends 56%, and the SPMI group spends 57%, on facility-based services. The SUD group spends 64% of total healthcare dollars on facility-based services, a percentage significantly higher than the group without MH/SUD.

Behavioral service costs are split in a similar fashion, with more facility-based spending for those with behavioral conditions compared to those without. The group without MH/SUD sees about 34% of their total behavioral non-pharmacy dollars spent on facility-based care, compared with 42% for the SPMI group and 71% for SUD group. Interestingly, the Non-SPMI MH group spent only 30% of their behavioral care dollars on facility-based services.

Figure 4b below shows similar data for the Medicare population.

Figure 4b: Total Healthcare Costs by Service Category and Presence of Behavioral Conditions – 2012 Costs, Medicare (millions)

	Medical Costs				Behavioral Costs			
Behavioral Condition	IP Facility	OP Facility	PROF	Total Non-Pharmacy	IP Facility	OP Facility	PROF	Total Non-Pharmacy
No MH/SUD	$99,031	$93,124	$102,086	$294,241	$1,153	$118	$348	$1,619
Non-SPMI MH	$9,329	$13,314	$8,523	$31,167	$474	$73	$367	$914
SPMI	$8,363	$9,662	$8,117	$26,142	$2,918	$712	$967	$4,596
SUD	$3,291	$2,425	$2,630	$8,346	$1,049	$188	$142	$1,379
Total	**$118,379**	**$117,244**	**$119,935**	**$355,559**	**$4,626**	**$914**	**$1,693**	**$7,234**

As with the commercial population, we see that facility-based medical and behavioral services constitute a greater proportion of care delivery for those with MH/SUD conditions than for those without.

Figure 4c below shows totals for the Medicaid population.

Figure 4c: Total Healthcare Costs by Service Category and Presence of Behavioral Conditions – 2012 Costs, Medicaid (millions)

Behavioral Condition	Inpatient	Behavioral Carve-Out	ER	LTC	Other	Total Non-Pharmacy
No MH/SUD	$28,734	$1,963	$6,797	$10,602	$88,787	$136,883
MH/SUD	$21,651	$31,264	$5,976	$6,805	$48,223	$113,919
Total	**$50,385**	**$33,227**	**$12,774**	**$17,407**	**$137,010**	**$250,801**

In the Medicaid population, inpatient spending for the No MH/SUD group constitutes about 21% of the total non-pharmacy medical spending (IP, ER, LTC, and Other). For the MH/SUD group, this proportion is higher at 26%. Another important observation to note here is that even though the MH/SUD group constitutes just 20% of the total Medicaid membership, the total healthcare expenditures on this group accounts for 46% of the total Medicaid spending on healthcare services. Similarly, 20% of the total Medicaid members are incurring about half of the total Medicaid spending on ER visits.

IMPACT OF BEHAVIORAL COMORBIDITIES ON OVERALL HEALTHCARE COSTS OF MEMBERS WITH CHRONIC MEDICAL CONDITIONS

Comorbid Costs Per Patient by Medical and Behavioral Condition

We identified several chronic medical conditions in the sample populations for further analysis of cost and value opportunity through medical/behavioral integration. These conditions were selected based on relatively high prevalence rates and ease of identification in claim data. The identification criteria that we used for these chronic medical conditions (diagnosis codes and prescriptions filled) are listed in Appendix B.

The various figures presented in this section compare the total healthcare costs associated for members with chronic medical conditions and a comorbid behavioral condition, compared with those with the chronic medical condition but no behavioral comorbidity. We refer to the difference in these members' costs as the 'value opportunity' representing the potential for savings if we could manage all of a patient's comorbid conditions more effectively. Obviously, this total savings potential is unlikely to be achievable. However, a significant percentage of this differential may demonstrably be saved, and is estimated in the next section of this report.

Figure 5a shows the per member per month costs by medical condition and MH/SUD comorbidity for the Commercial populations. This sort of comparison is useful for gauging the relative potential for savings for each medical condition if only the members with the given condition were targeted for integration programs.

Figure 5a - Impact of Behavioral Comorbidities, Commercial Population – 2012 Total PMPM Costs

Medical Condition	No MH/SUD	SPMI	Non-SPMI MH	SUD
Arthritis	$814	$2,065	$1,586	$1,827
Asthma	$569	$1,851	$1,389	$1,774
Cancer	$1,360	$2,525	$2,338	$2,668
Chronic Kidney Disease	$4,650	$5,664	$6,232	$6,901
Congestive Heart Failure	$1,274	$2,649	$1,955	$2,827
Chronic Obstructive Pulmonary Disease	$992	$2,719	$2,088	$2,028
Chronic Pain	$1,259	$2,355	$1,780	$2,387
Back Pain	$1,624	$3,109	$2,395	$2,705
Headache	$1,659	$3,311	$2,221	$3,354
Diabetes (with complications)	$1,821	$3,366	$2,681	$3,678
Diabetes (without complications)	$811	$1,775	$1,353	$1,848
Hypercholesterolemia (with complications)	$1,369	$2,769	$2,061	$2,349
Hypercholesterolemia (without complications)	$649	$1,498	$1,065	$1,411
Hypertension (with complications)	$1,447	$3,056	$2,220	$2,621
Hypertension (without complications)	$688	$1,641	$1,157	$1,494
Ischemic Heart Disease	$1,443	$3,006	$2,319	$2,335
Osteoporosis	$874	$2,312	$1,592	$1,720
Stroke	$1,673	$3,556	$2,590	$2,554
No Medical Condition	$221	$762	$528	$615
Any Medical Condition	$695	$1,690	$1,271	$1,577
Total	$340	$1,197	$903	$1,071

Chronic kidney disease shows the greatest value opportunity per patient with $2,251 PMPM ($6,901 - $4,650) additional healthcare spending for those treated for substance abuse and $1,582 PMPM ($6,232 - $4,650) additional costs for those treated for Non-SPMI conditions. This finding is corroborated by those of other researchers who note that patients with kidney disease and comorbid depression are twice as likely to be hospitalized or worse, die[2]. Other conditions with significant potential include cancer, COPD, and diabetes with complications. Generally speaking, patients with a SPMI condition comorbid alongside a chronic medical condition show the greatest value opportunity through integration with an average additional spending of $995 ($1,690 - $695) PMPM followed by patients with a chronic medical condition and a comorbid substance abuse disorders with an average additional spending of $882 PMPM ($1,577 - $695). All of these costs can be compared to the "Total" row costs which represents the average costs across all commercial beneficiaries for the behavioral condition cohort columns.

Figure 5b shows an example of these PMPM costs by major service category to show where the extra spending occurs. It shows costs for Arthritis with the various comorbid behavioral disorders. The majority of the higher healthcare costs when comorbid behavioral conditions are present are in medical spending as opposed to behavioral spending, with significant increases in facility-based costs.

Figure 5b - Healthcare Costs PMPM by Service Category and Presence of Behavioral Conditions - 2012 Costs - Commercial, Arthritis Only

	Per Member Per Month Spending									
	Medical Costs, non-Rx				Behavioral Costs, non-Rx					
Behavioral Diagnosis	IP Facility	OP Facility	Prof	Total Medical	IP Facility	OP Facility	Prof	Total Behavioral	Medical Rx	Behavioral Rx
No MH/SUD	$81	$288	$303	$672	$1	$0	$3	$4	$128	$10
Non-SPMI MH	$164	$534	$522	$1,221	$4	$2	$15	$22	$239	$105
SPMI	$227	$632	$599	$1,458	$36	$17	$82	$135	$234	$238
SUD	$251	$693	$521	$1,466	$35	$17	$23	$76	$161	$124
Total	**$108**	**$362**	**$368**	**$837**	**$3**	**$2**	**$9**	**$14**	**$158**	**$43**

Figure 5c below shows comparable results for the Medicare population. As pharmacy claims were primarily used to identify those patients with chronic pain, back pain, and headache, and pharmacy data was not available for the Medicare population, those conditions were removed from our analysis here.

[2] Medical News Today. The National Kidney Foundation Inc. (2009, September 3). Kidney Disease Linked to Depression Even in Early Stages. Retrieved from http://www.medicalnewstoday.com/releases/162766.php

Figure 5c - Impact of Behavioral Comorbidities, Medicare Population – 2012 Total PMPM Costs				
Medical Condition	**No MH/SUD**	**SPMI**	**Non-SPMI**	**SUD**
Arthritis	$1,237	$2,109	$1,852	$2,010
Asthma	$1,381	$2,227	$2,051	$2,325
Cancer	$1,230	$2,117	$1,826	$2,083
Chronic Kidney Disease	$2,677	$3,986	$3,772	$4,581
Congestive Heart Failure	$2,230	$3,478	$2,882	$3,713
Chronic Obstructive Pulmonary Disease	$1,598	$2,546	$2,335	$2,171
Diabetes (with complications)	$1,740	$2,964	$2,755	$3,085
Diabetes (without complications)	$811	$1,486	$1,379	$1,719
Hypercholesterolemia (with complications)	$1,292	$2,465	$2,119	$2,302
Hypercholesterolemia (without complications)	$676	$1,186	$1,043	$1,267
Hypertension (with complications)	$1,608	$2,917	$2,438	$2,936
Hypertension (without complications)	$822	$1,528	$1,326	$1,642
Ischemic Heart Disease	$1,392	$2,659	$2,261	$2,634
Osteoporosis	$1,052	$1,882	$1,627	$1,988
Stroke	$1,567	$2,809	$2,400	$2,409
None	$185	$665	$673	$821
Any Condition	$971	$1,701	$1,561	$1,744
Total	$582	$1,436	$1,410	$1,504

Chronic kidney disease patients again show the greatest potential value on a per member basis. Other conditions with high value opportunities through integration include congestive heart failure and diabetes with complications comorbid with substance abuse.

Figure 5d below shows similar results for the Medicaid population, comparing costs of patients both with and without a comorbid behavioral condition. Due to the level of data available, we were not able to segregate results by SPMI, non-SPMI mental health, and substance use disorder subcategories. Additionally, the list of medical conditions available in the Medicaid data are different than the ones studied for the commercial and Medicare populations. They are more reflective of body system than medical condition.

Figure 5d - Impact of Behavioral Comorbidities, Medicaid Population – 2012 Total PMPM Costs		
Body System (Condition)	**No MH/SUD**	**MH/SUD**
Benign/In Situ/Uncertain Neoplasm	$686	$1,580
Cardio-Respiratory Arrest	$4,798	$5,134
Cerebro-Vascular	$2,052	$3,299
Cognitive Disorders	$2,319	$3,552
Diabetes	$1,066	$2,368
Ears, Nose, and Throat	$488	$1,455
Eyes	$587	$1,625
Gastrointestinal	$843	$1,932
Genital System	$662	$1,538
Heart	$1,023	$2,134
Hematological	$1,419	$3,003
Liver	$1,328	$2,564
Lung	$737	$1,912
Malignant Neoplasm	$1,913	$3,185
Musculoskeletal and Connective Tissue	$693	$1,624
Neurological	$1,476	$2,365
Nutritional and Metabolic	$815	$1,923
Pregnancy-Related	$1,147	$1,669
Skin and Subcutaneous	$598	$1,771
Urinary System	$1,079	$2,395
Vascular	$1,808	$3,375
Total ***(including those without any medical conditions)***	**$382**	**$1,301**

Blood-related conditions have the highest value opportunity per member in the Medicaid market, with additional costs of $1,584 PMPM for those with hematological conditions, and $1,567 for those with vascular conditions. Most other conditions have similar value opportunities, with savings potential ranging from $336 to $1,584 PMPM.

Note that the "Total" row above illustrates the total PMPM costs for the entire Medicaid population, including those with no medical conditions as well as those with medical conditions other than the ones listed above (the "Total" row is not the total of the conditions listed in the rows above it).

TOTAL VALUE OPPORTUNITY THROUGH INTEGRATION OF COMORBID MEDICAL AND BEHAVIORAL CONDITIONS

Some of the conditions described above may provide significant potential for value through integration at an individual patient level, but are low incidence medical conditions, and so focusing efforts on those conditions may not provide the best total dollar savings opportunity overall. On the other hand, some chronic medical conditions are highly prevalent, but per member savings opportunities are lower, resulting in similar total overall savings but much larger disease management program costs. We studied the total additional healthcare cost dollars associated with a behavioral comobidity for each medical condition.

Figures 6a through 6c display the total value opportunity through integration by medical condition for commercial, Medicare, and Medicaid populations. Value opportunities were calculated as the difference in per member per month costs between those treated for MH/SUD conditions and those not treated for MH/SUD conditions, multiplied by the

enrolled member months for those members who would be targets for intervention (the members with a behavioral comorbidity). Note that the value opportunities from each condition are not additive, because individuals can have multiple medical conditions (and in fact, many do), and these individuals would be included separately under each of their conditions. In calculating the total value opportunity, we have removed this extra counting, and hence, the sum of each row does not equal the "Total" row. Medical conditions are listed from highest value opportunity to lowest.

Figure 6a - Annual Value Opportunity - Commercial Population – Total 2012 Dollars (millions)

Medical Condition	SPMI	Non-SPMI MH	SUD	Total
Arthritis	$7,931	$26,567	$3,013	$36,372
Asthma	$6,298	$22,770	$2,633	$30,801
Hypertension (without complications)	$5,645	$20,161	$2,505	$27,241
Hypercholesterolemia (without complications)	$5,151	$17,842	$1,596	$24,000
Cancer	$2,236	$13,100	$1,149	$16,201
Congestive Heart Failure	$2,981	$10,166	$1,308	$13,953
Diabetes (without complications)	$2,850	$9,982	$798	$13,334
Chronic Obstructive Pulmonary Disease	$2,369	$7,829	$1,590	$11,428
Hypertension (with complications)	$2,399	$7,905	$1,090	$11,031
Diabetes (with complications)	$1,745	$6,246	$586	$8,381
Hypercholesterolemia (with complications)	$1,707	$6,106	$720	$8,285
Ischemic Heart Disease	$1,380	$5,321	$732	$7,208
Back Pain	$1,688	$4,598	$841	$6,894
Chronic Pain	$1,007	$3,686	$455	$5,002
Chronic Kidney Disease	$267	$2,082	$192	$2,485
Stroke	$632	$1,689	$262	$2,465
Osteoporosis	$518	$1,602	$90	$2,209
Headache	$231	$398	$119	$683
None	**$13,373**	**$42,270**	**$4,547**	**$56,991**
Any Condition	**$21,781**	**$81,029**	**$9,188**	**$105,376**
Total	**$35,154**	**$123,299**	**$13,735**	**$162,366**

We estimate a total annual value opportunity of $162 billion in the commercial market through integration (and a portion of this potential can actually be realized as discussed in the next section). A majority of the savings potential in the commercial market comes through effective integration of Non-SPMI mental conditions. Arthritis ($36 billion), asthma ($31 billion), hypertension with complications ($27 billion) and hypercholesterolemia without complications ($24 billion) provide the highest value opportunities in the commercial market. Comorbid Non-SPMI conditions make up the highest portion of total value opportunity.

Table 6b below shows similar results for the entire Medicare population.

Figure 6b - Annual Value Opportunity - Medicare Population - Total 2012 Dollars (millions)				
Medical Condition	**SPMI**	**Non-SPMI MH**	**SUD**	**Total**
Arthritis	$5,791	$5,042	$1,522	$11,929
Hypertension (without complications)	$4,641	$3,987	$1,477	$9,620
Hypertension (with complications)	$3,804	$3,616	$1,012	$8,114
Ischemic Heart Disease	$3,322	$3,269	$993	$7,278
Chronic Obstructive Pulmonary Disease	$3,157	$2,498	$945	$6,408
Diabetes (with complications)	$2,733	$2,555	$594	$5,727
Hypercholesterolemia (without complications)	$2,158	$1,495	$551	$4,034
Diabetes (without complications)	$2,060	$1,405	$563	$3,842
Congestive Heart Failure	$1,866	$1,538	$494	$3,740
Hypercholesterolemia (with complications)	$1,725	$1,676	$392	$3,676
Cancer	$1,614	$1,582	$453	$3,535
Asthma	$1,320	$809	$584	$2,570
Chronic Kidney Disease	$1,107	$1,159	$327	$2,522
Stroke	$1,047	$1,224	$214	$2,453
Osteoporosis	$570	$700	$125	$1,348
None	**$2,626**	**$1,889**	**$1,072**	**$5,318**
Any Condition	**$11,635**	**$11,141**	**$3,699**	**$25,485**
Total	**$14,260**	**$13,030**	**$4,771**	**$30,803**

We estimate a total annual value opportunity of $31 billion in the Medicare market through integration of MH/SUD and medical treatments. Arthritis ($12 billion) and hypertension without complications ($10 billion) provide the most value potential amongst Medicare patients. Comorbid SPMI conditions make up a higher portion of total value potential here as compared to the commercial market.

Table 6c below shows similar results for the entire Medicaid population – the total annual value opportunity for Medicaid beneficiaries with comorbid medical conditions and MH/SUD conditions.

Figure 6c - Annual Value Opportunity - Medicaid Population – Total 2012 Dollars (millions)	
Medical Condition	**Total**
Musculoskeletal and Connective Tissue	$50,340
Nutritional and Metabolic	$43,519
Ears, Nose, and Throat	$42,018
Gastrointestinal	$40,341
Lung	$37,261
Skin and Subcutaneous	$34,738
Heart	$34,227
Eyes	$29,592
Urinary System	$21,800
Genital System	$19,410
Hematological	$18,072
Neurological	$16,792
Diabetes	$14,748
Liver	$14,511
Vascular	$10,619
Benign/In Situ/Uncertain Neoplasm	$9,201
Cognitive Disorders	$5,934
Malignant Neoplasm	$4,103
Cerebro-Vascular	$3,568
Pregnancy-Related	$2,390
Cardio-Respiratory Arrest	$866
Total ***(including those without any medical conditions)***	**$100,374**

We estimate a total annual value opportunity of $100 billion in the Medicaid market through integration of MH/SUD and medical treatments. The value opportunity was similar for most conditions on a per-patient basis. Consequently, conditions with higher incidence exhibit a greater total value potential. Musculoskeletal and connective tissue, nutritional and metabolic, ear/nose/throat and gastrointestinal conditions have the highest value potential. Although they were the most valuable on a per-patient basis, low-incidence vascular and hematological conditions are lower in terms of total value opportunity through integration in the Medicaid population.

Note that the total row is the total for the entire Medicaid population, and not just the sum of the condition-specific rows above it. The total row also counts the savings from people who have multiple conditions only once.

Across all populations (commercial plus Medicare plus Medicaid), we estimate a total annual value opportunity of $293 billion through integration of behavioral and medical services in the U.S. Arthritis is one of the most cost savings opportunistic conditions in both the commercial and Medicare markets. When combining those with and without complications, hypertension has the greatest value opportunity in both the commercial ($38 billion) and Medicare ($18 billion) markets.

While high-cost conditions such as chronic kidney disease provide the most potential value on a per-patient basis, higher-prevalence conditions such as hypertension and arthritis provide the most value potential for the entire population.

Note that we are not suggesting that the members with these highlighted medical conditions are necessarily the best targets for integration. The decision to optimally focus limited resources on integration to fewer medical conditions

should be based on the costs of integration specific to those conditions, and the likelihood of being able to improve both clinical and financial outcomes for the patient cohorts. This question falls outside the scope of this report, and is a good subject for further analysis. There also may be other unmeasured or unknown medical or epidemiologic factors which make the actual value proposition different than noted here.

Next, we look at the potential financial impact of reducing total healthcare costs for those with co-morbid conditions through effective integration of medical and behavioral services.

FINANCIAL IMPACT OF EFFECTIVE IMBH PROGRAMS

A variety of approaches to integrated medical-behavioral healthcare have been the focus of cost-effectiveness research over the past three decades, with most studies finding that integrated care can lead to reductions in total healthcare costs. Typical cost savings estimates range from 5% to 10% of total healthcare costs over a two to four year period for patients receiving collaborative care, although the most robust evidence is in the care of depression in older adults.

One study focused on a collaborative depression care management program directed toward low-income, predominantly Hispanic diabetics. The program, called the Multifaceted Diabetes and Depression Program (MDDP), was administered through a randomized clinical trial, and was compared with enhanced usual care (EUC). Although not statistically significant, medical cost savings of approximately $39 per member per month (PMPM) were observed during the eighteen months following the implementation of the MDDP program. The study identified the 95% confidence interval for the savings of the program as savings of $110 PMPM at the upper limit to an additional cost (or negative savings) of $32 PMPM at the lower limit.

The Pathways study focused on the outcomes of a program utilizing specialized nurses to deliver a twelve-month depression treatment program for patients with diabetes. This program was administered through a randomized controlled trial that compared the systematic depression treatment program with care as usual. Total outpatient costs were approximately equal during the 12-month intervention period for both the intervention group and the usual care group, but during the 12-month period following the intervention, median outpatient costs for the intervention group were $50 PMPM lower than costs for the usual care group. Over the entire two year period, including the intervention period, total healthcare costs (including inpatient and outpatient health services) were $46 PMPM lower for the intervention group than for the usual care group. This represents savings of about 5% of total healthcare costs for the intervention group over a 2 year period.

The IMPACT study focused on a twelve-month collaborative care management program for elderly patients with depression. The program was administered through a randomized clinical trial that compared a collaborative care intervention using teams of depression care managers, primary care doctors and psychiatrists to the usual care for depression. Total healthcare costs were tracked for a 4-year period following the intervention, and costs for the intervention group were an average of $70 PMPM lower than costs for those receiving usual care. This represents savings of about 10% of total healthcare costs for the intervention group over a 4 year period. Patients in the collaborative care management program had lower costs in every category that was observed, and the results of a bootstrap analysis indicated that patients in the collaborative care program were 87% more likely to have lower total healthcare costs than those receiving usual care.

Missouri established Community Mental Health Center healthcare homes in 2012 for Medicaid eligible persons with serious and persistent mental illnesses, comorbid mental health and substance use disorders, and certain chronic medical conditions comorbid with a mental health or substance use disorder. Their early results showed that independent living increased by 33%, vocational activity increased by 44%, legal involvement decreased by 68%, psychiatric hospitalization decreased by 52%, and overall healthcare costs decreased by 8.1%.

A meta-analysis of cost-effectiveness research studies identified 23 studies addressing the economics of collaborative care over the past three decades. In nearly all of these studies, collaborative care programs were found to be at least cost neutral, with most studies indicating actual savings. One study compared the financial outcomes of clinics newly

practicing collaborative care to demographically similar clinics practicing usual care. Healthcare costs increased for both groups of clinics following the introduction of collaborative care, but clinics practicing collaborative care saw only 73% of the increase that clinics practicing usual care experienced, and their patients were 54% less likely to use the emergency department, and 49% less likely to use inpatient psychiatric care. Additional studies and innovation projects will be needed to confirm these findings in other populations and non-research settings.

PUTTING THINGS IN PERSPECTIVE

Patients with behavioral health conditions cost an estimated $525 billion in health care expenditures annually. Literature suggests that an estimated 5-10% of these total healthcare expenditures for those with behavioral conditions may be eliminated through effective integration of behavioral healthcare with medical care, particularly in older patients with depression. Total cost savings were estimated by applying 5-10% expected savings to the total costs for MH/SUD patients in the commercial and Medicare markets and 5-7% in the Medicaid market to introduce conservatism into the Medicaid estimate. The Medicaid population tends to have unstable enrollment periods and is more difficult to manage than the commercially insured or Medicare populations. These calculations result in projected annual savings of $26-48 billion through IMBH efforts, or 9-16% of the total value opportunity of $293 billion in the commercial, Medicare, and Medicaid markets as shown in Figures 6a-6c.

The American Medical Association estimates that there are 41,784 psychiatrists practicing patient care as of 2012[3]. The Bureau of Labor Statistics estimates average annual earnings of $174,170 per practicing psychiatrist as of May 2011.[4] This translates to $7.3 billion in psychiatrist wages annually. Comparing this estimate to the projected savings estimate of $26-48 billion means that the potential financial impact of IMBH programs can be up to 3.5 to 6.6 times annual psychiatrist earnings. Stated another way, a 10% gain sharing arrangement for psychiatrists (where they are credited with a certain percentage of actual achieved healthcare cost savings through a contractual arrangement) of savings from integration has the potential to increase annual earnings estimates for psychiatry overall by about 50%. In this example, that leaves the other 90% of savings through collaborative care to be shared with others in the collaborative care teams, to be used to lower healthcare premiums, and to be reinvested in community based care.

A 2003 study from the Substance Abuse and Mental Health Services Administration (SAMHSA) reports that the total national expenditures for mental health and substance abuse services provided by all physicians, including psychiatrists and non-psychiatric physicians, is projected to be about $35 billion by 2014.[5] This estimate is before recent changes resulting from MHPAEA and PPACA and includes all payers - private and public; federal, state and local. Our estimates of savings from effective IMBH programs approach 75-140% of this total.

[3] American Medical Association. Physician Characteristics and Distribution in the U.S. Chicago: AMA, 2012

[4] Occupational Employment and Wages, May 2011, 29-1066 Psychiatrists (March 27, 2012). In Bureau of Labor Statistics. Retrieved January 10 201[illegible] from http://www.bls.gov/oes/current/oes291066.htm#nd

[5] Levit, K. R., et al. Projections of national expenditures for mental health services and substance abuse treatment 2004 –2014. website http://www.samhsa.gov/[illegible]/Projections+of+National+Expenditures+for+Mental+Health+Services+and+Substance+Abuse+Treatment [illegible]2004[illegible]14.pdf

CONCLUSIONS – WHERE DO WE GO FROM HERE?

There is clear potential for healthcare expenditure savings through effective integration of behavioral healthcare with medical services. Figure 7 summarizes membership, claims, and cost impact potential through integration.

Figure 7: Average Annual Cost Savings and Impact Through Effective Integration – 2012 Totals

(All Costs in Millions)

Payer Type	Member Months	Total Claims	Value Opportunity	Cost Impact of Integration
Commercial	2,386,000,000	$1,013,386	$162,366	$15,815-$31,629
Medicare	556,000,000	$362,793	$30,803	$3,347-$6,693
Medicaid	546,000,000	$308,836	$100,374	$7,103-$9,945
Total	**3,487,000,000**	**$1,685,016**	**$293,543**	**$26,265-$48,267**

The potential cost impact of $26-48 billion is several times that of expected psychiatric salaries and approaches the level of total national expenditures on psychiatric services provided by physicians (including non psychiatric physicians), estimated to reach about $35 billion in 2014.

To realize this savings, it may be best to implement integration among conditions that show the highest potential for savings either per person or through the entire population. Figures 5a - 5c showed that high-severity conditions such as chronic kidney disease, COPD, hypertension, and circulatory conditions have the greatest potential for savings on a per patient basis, while high-incidence illnesses such as arthritis and asthma have the greatest potential for savings through the entire population. Regarding comorbid behavioral conditions, those with more severe SPMI conditions have the greatest potential for savings on a per patient basis. Non-SPMI conditions are more prevalent and therefore represent a higher portion of the savings for all patients combined.

Potential healthcare savings should not be the only factor used in determining which conditions to concentrate integration efforts. Additional consideration should be given to which comorbid conditions and patients that physicians, practitioners and care management teams believe can most optimally improve clinical and financial outcomes, thus reducing healthcare expenditures through their integration implementation efforts.

APPENDIX A: STUDY DESIGN AND METHODOLOGY

Sample Selection

People eligible for inclusion in the study for the commercial and Medicare populations must meet the following criteria:

1. Must have at least 3 months of enrollment in 2009 to ensure that minimum credible claim data to identify chronic conditions was present.

2. Must have 12 months of continuous enrollment in 2010

3. Must be eligible for pharmacy benefits in both 2009 and 2010 during the entire period of enrollment

Patients with chosen conditions in 2009 were identified and the patients' healthcare utilization and costs were followed through 2010. People with chronic medical conditions without any comorbid behavioral conditions were compared against those with both a chronic medical condition and at least one comorbid behavioral condition

The Medicaid population was based on 2010 MassHealth Medicaid data (see Appendix E below for more details) and adjusted to represent a national population.

Condition Selection

Eighteen chronic medical conditions were chosen for analysis for the Commercial and Medicare populations:

- Arthritis
- Asthma
- Cancer (Malignant)
- Chronic Kidney Disease (CKD)
- Congestive Heart Failure (CHF)
- Chronic Obstructive Pulmonary Disease (COPD)
- Chronic Pain (excluding back pain and headache)
- Back Pain
- Headache
- Diabetes
  - with complications (IHD, CHF, Stroke, Chronic Kidney Disease, Retinopathy, Neuropathy)
  - without complications
- Hypercholesterolemia
  - with IHD, CHF, or Stroke

  - without IHD, CHF, or Stroke
- Hypertension
  - with IHD, CHF, or Stroke
  - without IHD, CHF, or Stroke
- Ischemic Heart Disease (IHD)
- Osteoporosis
- Stroke

Twenty-one condition categories were chosen for analysis for the Medicaid population:

- Musculoskeletal and Connective Tissue
- Nutritional and Metabolic
- Gastrointestinal
- Ears, Nose, and Throat
- Heart
- Lung
- Skin and Subcutaneous
- Eyes
- Neurological
- Urinary System
- Genital System
- Hematological
- Diabetes
- Liver
- Vascular
- Benign/In Situ/Uncertain Neoplasm
- Cognitive Disorders
- Cardio-Respiratory Arrest
- Malignant Neoplasm
- Cerebro-Vascular

- Pregnancy-Related

Eleven MH/SUD disorders were selected for this study based on ease of identification in claims data:

- Adjustment reaction
- Alcoholism
- Anorexia / Bulimia
- Anxiety
- Depression
- Drug Abuse
- Neurotic Disorder
- Dementia
- Mental Retardation
- Somatoform Disorders
- Psychosis

Criteria for identification of chronic medical conditions and comorbid behavior conditions are provided on Appendix B.

APPENDIX B: IDENTIFICATION OF MEDICAL AND BEHAVIORAL CONDITIONS (COMMERCIAL AND MEDICARE)

Certain conditions were identified using just the primary and secondary ICD-9 diagnosis codes for claims for inpatient (IP), emergency (ER), and outpatient (OP) healthcare services. For other conditions, pharmacy-based criteria were used as well. A patient can have multiple chronic medical conditions; these patients were analyzed once for each condition. The diagnosis code(s) and pharmacy criteria for identifying each of the conditions are described below. Note that the pharmacy based criteria was used for commercial population only and not for Medicare population due to the lack of pharmacy data for the Medicaid population.

For prescription-based criteria, when drugs were used to treat up to 4 conditions, we required presence of a diagnosis code within 30 days prior to the prescription to identify the condition. If a drug is used to treat a single condition, then we did not require the 'diagnosis within 30 day' criteria. Certain conditions are treated with prescription medications that are also used for more than 4 other conditions. Since these drugs do not help us uniquely identify the patient's condition, we have not included such drugs in the condition identification criteria below.

For certain chronic conditions (arthritis and osteoporosis) that are managed using drugs, we may see only prescription claims and no diagnosis of the condition. In such cases, we applied age-and-gender-based criteria to reduce the false positives. For example, for Osteoporosis, if only prescriptions for the condition but no diagnosis codes are available, then we required that the member also be a female over the age of 50 to be assessed as having Osteoporosis.

Certain prescription-based criteria use therapeutic classes.

Other prescription-based condition-identification criteria were obtained from Milliman Underwriting Guidelines. The guidelines include non-FDA approved uses for some of the drugs. If a drug has 3 or more FDA approved uses, then they would not list the non-FDA approved conditions for that drug. If the drug has fewer than 3 FDA-approved uses, then they would list up to 3 'generally-accepted' uses. If no such uses exist, then they list up to 3 'limited evidence uses'.

Chronic Medical Conditions

ARTHRITIS

Any claim with a diagnosis code in the 710.0 - 719.99 range

ASTHMA

Any claim with a diagnosis code in the 493.0 - 493.99 range, or a prescription drug claim with an NDC number identified as an asthma medication according to NCQA.

CANCER (MALIGNANT)

Any claim with a diagnosis code in the 140.0-208.99 or 230.0-239.99 ranges

CHRONIC KIDNEY DISEASE

Any claim with a diagnosis code in the 585.00-585.99 range

CONGESTIVE HEART FAILURE (CHF)

Any claim with a diagnosis code of 402.01, 402.11, 402.91, 404.01, or 404.11, or 428.XX. Several drug classes are used to treat CHF. However, the only therapeutic classes that appear to uniquely identify CHF are "Cardiac, Cardiac

Glycosides", "Diuretics, Misc.", "Diuretics, Loop Diuretics", "Diuretics, Osmotic", "Diuretics, Potassium-Sparing", and "Diuretics, Carb Anhydrase Inhib". Other therapeutic classes such as "Cardiac, ACE Inhibitors" and "Diuretics, Thiazides & related" are also used to treat other conditions and, therefore, excluded from this criteria.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Any claim with a diagnosis code in one of the following ranges: 490.0-492.99, 494.0-496.99, or 500.0-508.99.

Or, any member over the age of 50 and having at least 2 prescription drug claims for any of the following drugs:

Table B1				
Airet	Aralast	Arcapta Neohaler	Combivent	Daliresp
Glassia	Perforomist	Prolastin	Spiriva	Volmax
Zemaira				

Or, at least 1 prescription drug claim within 30 days of diagnosis for any of the following drugs:

Table B2				
Accuneb	Duoneb	Proventil	Acetylcysteine	Dyflex-G
Quibron-T	Advair	Dy-G	Qvar	Aerobid
Dylix	Symbicort	Aerolate	Dyphylline-GG	Theo-24
Albuterol	Elixophyllin	Theocap	Aminophylline	Factive
Theochron	Brondil	Flovent Diskus	Theolair	Brovana
Foradil Aerolizer	Theophylline	Cedax	Jay-Phyl	Uniphyl
Copd	Ketek	Ventolin HFA	Dg 200	Levalbuterol
Vospire ER	Difil-G	Lufyllin	Xopenex	Dilex-G
Mucomyst	Dilor	Proair		

CHRONIC PAIN

Any patient who had a medication possession ratio (MPR) for 75% of his/her enrolled period. Any patient with chronic back pain and chronic headaches will not be counted under this condition; they are carved out into separate conditions as described below.

BACK PAIN

Any claim with a diagnosis code of 724.XX and an MPR of 75% (as described in Chronic Pain)

HEADACHE

Any claim with a diagnosis code of 784.0X and an MPR of 75% (as described in Chronic Pain)

DIABETES MELLITUS

Diabetes identification: Any claim with a diagnosis code starting with 250 or a pharmacy drug claim with a therapeutic class of "Diabetes Mell/Diab Supply NEC", "Antidiabetic Ag, Sulfonylureas", "Antidiabetic Agents, Insulins", or "Antidiabetic Agents, Misc" resulted in the assignment of this condition.

Complications: member must also have had IHD, CHF, stroke, kidney disease, retinopathy, or neuropathy. Retinopathy was identified as claims with an ICD-9 code starting with 362.0x or 362.2x. Neuropathy was identified as claims with ICD-9 code starting with 365.0x or 356.8x. All other conditions were identified as mentioned elsewhere in this section.

HYPERCHOLESTEROLEMIA

Any claim with a diagnosis code of 272.0, 272.1, 272.2, 272.3, 272.4, or 272.9.

Or, at least 2 prescription drug claims for any of the following drugs:

Table B3				
Advicor	Antara	Fenofibrate	Fenofibric Acid	Fenoglide
Fibricor	Lipofen	Livalo	Lofibra	Lovaza
Niaspan	Simcor	Tricor	Triglide	Trilipix
Vytorin	Zetia			

Or, at least 1 prescription drug claim within 30 days of diagnosis for any of the following drugs:

Table B4				
Altoprev	Lovastatin	Amlodipine Besylate / Atorvastatin Calcium	Mevacor	Atorvastatin Calcium
Micronized Colestipol Hcl	Caduet	Neo-Fradin	Cardiosterol	Niacin
Cholestyramine	Pantothenic Acid	Colestid	Policosanol	Colestipol
Prevalite	Crestor	Questran	Gemfibrozil	Simvastatin
Juvisync	Vanadium	Lescol	Welchol	Lipitor (Brand)
Zocor	Lipitor (Generic)	Zyncol	Lopid	

HYPERTENSION

Any claim with a diagnosis code in the 401.0-405.99 range except for those in the range for congestive heart failure above.

Or, at least 2 prescription drug claims for any of the following drugs:

Table B5				
Accuretic	Aldoclor	Aldoril	Amlodipine Besylate / Benaxepril Hydrochloride	Amturnide

Table B5				
Avalide	Azor	Bisoprolol Fumarate / Hydrochlorothiazide	Bystolic	Cartrol
Cleviprex	Clorpres	Corlopam	Corzide	Edarbi
Enalaprilat	Enduronyl	Eprosartan Mesylate	Exforge	Exforge Hct
Fenoldopam Mesylate	Fosinopril Sodium / Hydrochlorothiazide	Guanabenz Acetate	Inderide	Innopran Xl
Kerlone	Levatol	Lotrel	Methyclothiazide	Methyldopa / Hydrochlorothiazide
Methyldopate Hcl	Minizide	Moexipril	Naturetin	Olmesartan Medoxomil
Quinaretic	Rauwolfia / Bendroflumethiazide	Tarka	Tekamlo	Tekturna
Tekturna Hct	Tenoretic	Teveten	Timolide	Trandolapril / Verapamil Hcl
Tribenzor	Twynsta	Uniretic	Univasc	Valturna
Ziac				

Or, at least 1 prescription drug claim within 30 days of diagnosis for any of the following drugs:

Table B6				
Accupril	Aceon	Adalat	Afeditab	Aldactazide
Altace	Amlodipine Besylate	Amlodipine Besylate / Atorvastatin Calcium	Atacand	Atenolol
Avapro	Benazepril Hcl	Benicar	Betaxolol Hcl	Bisoprolol Fumarate
Blocadren	Brevibloc	Bumetanide	Caduet	Calan
Capoten	Capozide	Captopril	Captopril / Hydrochlorothiazide	Cardene
Cardizem	Cardura	Cartia Xt	Carvedilol	Catapres
Chlorothiazide	Chlorothiazide Sodium	Chlorthalidone	Clonidine Hcl	Coreg
Corgard	Covera-Hs	Cozaar	Demadex	Demser
Dibenzyline	Dilacor	Diltia Xt	Diltiazem	Dilt-Xr
Diltzac	Diovan	Diuril	Doxazosin Mesylate	Dyazide
Dynacirc	Dyrenium	Enalapril Maleate	Enalapril Maleate / Hydrochlorothiazide	Eplerenone
Esmolol Hcl	Felodipine	Fosinopril Sodium	Furosemide	Guanfacine Hcl
Hydralazine	Hydrochlorothiazide	Hytrin	Hyzaar	Indapamide
Inspra	Isoptin	Isradipine	Labetalol Hcl	Lasix
Linseed Oil	Lisinopril	Losartan Potassium	Losartan Potassium / Hydrochlorothiazide	Lotensin
Lozol	Lytensopril	Magnesium Sulfate	Matzim La	Mavik

Table B6				
Maxzide	Methyldopa	Metolazone	Metoprolol	Micardis
Microzide	Midamor	Minipress	Minoxidil	Monopril
Nadolol	Nexiclon Xr	Nicardipine Hcl	Nifediac Cc	Nifedical Xl
Nifedipine	Nisoldipine	Nitroglycerin	Nitropress	Norvasc
Perindopril Erbumine	Pindolol	Plendil	Prazosin Hcl	Prinivil
Prinzide	Procardia	Quinapril	Ramipril	Renese
Reserpine	Sodium Edecrin	Sular	Taztia Xt	Tenex
Tenormin	Terazosin Hcl	Thalitone	Tiazac	Toprol Xl
Torsemide	Trandate	Trandolapril	Triamterene / Hydrochlorothiazide	Vaseretic
Vasotec	Verapamil Hcl	Verelan	Zaroxolyn	Zebeta
Zestoretic	Zestril			

ISCHEMIC HEART DISEASE

Any claim with a diagnosis code starting with any number between 410.XX – 414.XX (including 410, 414).

OSTEOPOROSIS

Claim lines were identified as pertaining to osteoporosis if either of the ICD-9 diagnosis codes was in the range 733.00-733.09 inclusive.

Or, any female over the age of 50 and having at least 2 prescription drug claims for any of the following drugs:

Table B7				
Actimmune	Atelvia	Calcitonin-Salmon	Forteo	Fortical
Fosteum				

Or, at least 1 prescription drug claim within 30 days of diagnosis for any of the following drugs:

Table B8				
Activella	Actonel	Alendronate Sodium	Alora	Boniva
Calafol	Calcium Acetate	Calcium*	Cavarest	Cavirinse
Citrus Calcium + D	Clinpro	Controlrx	Denta 5000 Plus	Dentagel
Dentall 1100 Plus	Estraderm	Estropipate	Evista	Femhrt
Florical	Fluoride Mouthwash	Fluoridex Daily Defense	Fluorigard	Fosamax
Gynodiol	Jevantique	Jinteli	Karigel	Listerine Tooth Defense
Listermint	Menostar	Miacalcin	Mimvey	Nafrinse

Table B8				
Neutragard Advanced	Neutral Sodium Fluoride	Nitrobid	Ogen	Ortho-Est
Phos-Flur	Phos-Flur Otc	Prefest	Premphase	Prempro
Prevident	Prolia	Reclast	Rembrandt	Sodium Fluoride
Sodium Fluoride Plain	Thera-Flur-N	Vivelle		

STROKE (ISCHEMIC)

Any claim with a diagnosis code in the 430.0 - 434.9 range.

Or, any member over the age of 50 and having at least 2 prescription drug claims for Aggrenox.

Or, at least 1 prescription drug claim within 30 days of diagnosis for any of the following drugs:

Table B9				
Activase	Altace	Atorvastatin calcium	Clopidogrel	Cozaar
Hyzaar	Juvisync	Lipitor (brand)	Lipitor (generic)	Losartan potassium
Losartan potassium / hydrochlorothiazide	Micardis	Nimodipine	Nimotop	Plavix
Pradaxa	Ramipril	Reopro	Simvastatin	Ticlid
Ticlopidine HCL	Xarelto	Zocor		

Behavioral Conditions

ADJUSTMENT REACTION

Any claim with a diagnosis code in the range 309.0 - 309.99 excluding those in the range for anxiety below.

ALCOHOLISM

Any claim with a diagnosis code in the ranges 303.0-303.99 or 305.00-305.09

ANOREXIA/BULIMIA

Any claim with a diagnosis code of 307.1, 307.50, 307.51, 307.52, 307.53, 307.54, or 307.59

ANXIETY DISORDER

Any claim with a diagnosis code of 293.84, 300.00, 300.01, 300.02, 300.09, 300.20-300.29, 300.3, 308.3, or 309.81, or a pharmacy drug with a generic name of "Clonazepam", "Buspirone Hydrochloride", or "ASH, Benzodiazepines".

DEPRESSION

Any claim with a diagnosis code in the 296.0-296.99 range or the 311.0-311.99 range, a diagnosis code of 300.4, or a pharmacy drug claim with a therapeutic class of "Psychother, Antidepressants"

DRUG ABUSE

Any claim with a diagnosis code in the ranges 304.0-304.99 or 305.1-305.99

NEUROTIC DISORDER

Any claim with a diagnosis code in the range 300.0-300.99 excluding those in the range for anxiety above

DEMENTIA

Any claim with a diagnosis code starting with 290 or 294.1X.

Or, any member over the age of 65 and having at least 2 prescription drug claims for Reminyl or Ergoloid Mesylates.

Or, at least 1 prescription drug claim within 30 days of diagnosis for any of the following drugs

TABLE B10				
Cardiosterol	CLA	DHEA	Eldepryl	Emulsified Omega-3
EPA	Fish Oil	Galantamine	Ginkgo Biloba	Namenda
Nicotine	Omega-3	Razadyne	Selegiline HCL	Triple Omega Complex

Namenda

MENTAL RETARDATION

Any claim with a diagnosis code in the range 317-319

SOMATOFORM DISORDERS

Any claim with a diagnosis code in the range 300.81-300.82

PSYCHOSIS

Any claim with a diagnosis code in the range 293.XX-302.XX or 306.XX-314.XX excluding those in the ranges listed above

Additional Criteria for Determination of Medical and Behavioral Conditions

To ensure that we believe credible evidence exists of chronic medical and comorbid behavioral conditions, we applied the following additional criteria to determine presence of a condition:

- For all conditions where drug-based identification criteria were not used, members had to meet any one of the following criteria: member must have 1 IP admission, 1 ER visit, or 2 OP visits with a diagnosis code identified above.
- For all other conditions except chronic pain, the member had to meet any one of the following criteria: 1 IP admission, 1 ER visit, 1 OP visit and 1 Rx script (when the Rx is used to treat only condition), 1 OP visit and 1 Rx within 30 days of OP visit (when Rx is used to treat more than 1 condition), 2 OP visits, or 2 Rx scripts related to

the condition (that is, diagnosis code for the condition was present on the visit or the script met the therapeutic class / generic name criteria described above).

- The chronic pain identification criteria are described above.

APPENDIX C: IDENTIFICATION OF MENTAL HEALTH/SUBSTANCE USE DISORDER CATEGORIES

For those included in the study based on the criteria presented in Appendix B and identified as having comorbid behavioral conditions as defined in Appendix B, patients were identified as having serious and persistent mental illness (SPMI) diagnoses, mental health diagnoses but no serious and persistent mental illness (Non-SPMI MH) diagnoses, and substance use disorder (SUD) diagnoses based on the criteria below.

Serious and Persistent Mental Illness (SPMI)

Patients meeting the criteria for inclusion in the study and diagnosed with at least one comorbid behavioral condition as defined in Appendix B were identified as having SPMI diagnoses if at least one ICD-9 code in the following ranges was present:

Table C1: ICD-9 Codes Used to Identify Those with Serious and Persistent Mental Illness (SPMI) Diagnoses

Condition	ICD-9 Range(s)
Paranoid and Other Psychotic Disorders	293.81-293.82, 298.9, 301.0
Schizophrenia	295.00-295.99
Bipolar Disorder	296.00-296.19, 296.40-296.89
Major Depressive	296.20-296.39

Mental Health Diagnoses but No Serious and Persistent Mental Illness (non-SPMI MH)

Patients meeting the criteria for inclusion in the study and diagnosed with at least one comorbid behavioral condition as defined in Appendix B were identified as having Non-SPMI MH diagnoses if no ICD-9 Codes fell within the ranges to be considered for inclusion with SPMI diagnoses.

Substance Use Disorders (SUD)

Patients meeting the criteria for inclusion in the study and diagnosed with at least one comorbid behavioral condition as defined in Appendix B were identified as having substance use disorder diagnoses if the patient was identified as treated for drug abuse (ICD-9 Codes within the ranges 304.0-304.99 or 305.1-305.99) or alcoholism (ICD-9 Codes within the ranges 303.0-303.99 or 305.00-305.09) as described in Appendix B. Individuals identified with substance abuse could also be identified as having SPMI or Non-SPMI MH conditions if they also met the criteria described above.

APPENDIX D: CLAIM CATEGORIES

We previously conducted our analysis grouping claims by using the healthcare service categories listed below. This allowed us to identify where the elevated costs existed and where the greatest potential for savings exists. The details on how these service categories were identified are described below.

- Inpatient Facility (Behavioral)
- Inpatient Facility (Medical)
- OP Facility (Behavioral)
- OP Facility (Medical)
- Professional (Behavioral)
- Professional (Medical)
- Prescription Drugs (Behavioral)
- Prescription Drugs (Medical)

These categories were summarized into the following categories for Figures 2-3.

- Medical: Inpatient Facility (Medical), OP Facility (Medical), Professional (Medical)
- Behavioral: Inpatient Facility (Behavioral), OP Facility (Behavioral), Professional (Behavioral)
- Medical Rx: Prescription Drugs (Medical)
- Behavioral Rx: Prescription Drugs (Behavioral)

Inpatient facility – behavioral

These claims were identified using revenue codes of 114, 116, 124, 126, 134, 136, 144, 146, 154, 156, 204, 1000, 1001, 1002, 1003, 1004, 1005

Inpatient facility – medical

If the revenue code falls between 100 and 249 or between 720 and 729, then the claim is tagged as inpatient facility – medical

Outpatient facility - behavioral

Partial Hospitalization and Intensive Outpatient claims are identified by revenue codes of 944, 945, or between 900 and 919

Outpatient facility - medical

Any claim with a revenue code populated but was not mapped into Inpatient Facility – Medical, Inpatient Facility – Behavioral, or Outpatient Facility - Behavioral, is assigned to this category.

Outpatient professional – behavioral

If the claim is not Inpatient Facility – Medical, Inpatient Facility – Behavioral, PHP/IOP, or Hospital ER/Lab/Rad/Oth, then HCPCs procedure codes of G0176, G0177, M0064, S9475, S9480, S9481, S9482, S9483, S9484, S9485, or codes between 90801 and 90911 are used to map claims into OP Professional – Behavioral.

Outpatient professional - medical

Any claim not mapped into one of the categories above is tagged under this category.

Prescription drugs - behavioral

Any claims identified by the following criteria were allocated to these categories.

- Anti-anxiety drugs: Therapeutic classes of "ASH, Benzodiazepines", "Anticonvulsant, Benzodiazepine", and "Anxiolytic/Sedative/Hypnot NEC"
- Central Nervous System (CNS) agents: Therapeutic classes of "Analg/Antipyr, Opiate Agonists", "Anticonvulsants, Misc", and "CNS Agents, Misc."
- Anti-psychotics: Therapeutic classes of "Antimanic Agents, NEC" and "Psychother,Tranq/Antipsychotic"
- Anti-depressants: Therapeutic class of "Psychother, Antidepressants"
- Anorexiants: Therapeutic class of "Stimulant, Amphetamine Type"
- Memory enhancers: the dementia medication described under the section for identifying Dementia above.

Prescription drugs – medical

Any prescription drug claim not categorized as a behavioral drug above is tagged under this category.

APPENDIX E: CLAIMS DATABASES USED IN ANALYSIS

Medstat MarketScan Database

For purposes of the commercial analyses, the Medstat MarketScan claims database was used. The MarketScan database represents the inpatient and outpatient healthcare service use of individuals in the United States who are covered by the benefit plans of large employers, health plans, and government and public organizations.

The MarketScan database links paid claims and encounter data to detailed patient information across sites and types of providers, and over time. The annual medical database includes private-sector health data from approximately 100 payers. Historically, more than 500 million claim records are available in the MarketScan database.

These data represent the medical experience of insured employees and their dependents (for active employees), early retirees, COBRA continues, and Medicare eligible retirees with employer provided Medicare supplemental plans. No Medicaid or Workers' Compensation data are included.

Medstat data for 2009 and 2010 were used in these analyses, covering a total of more than 200 million member-months. When restricting our study to members who were eligible in both 2009 and 2010, with full 2010 prescription history, we are left with approximately 17.4 million individuals for study.

Medicare 5% Sample

For purposes of the Medicare analyses, the Medicare 5% Sample claims database was used. This data contains claims and enrollment for a randomly selected, de-identified 5% of the Medicare population. Claims of all categories are included, including inpatient, outpatient hospital, SNF, home health, hospice, physician and supplier, and DME. This data set includes approximately 2.4 million unique lives.

No commercial, Medicaid or Workers' Compensation data are included. Pharmacy data is not included.

Sample data for 2009 and 2010 were used in these analyses.

Medicaid

We used 2010 MassHealth Medicaid data as our starting point to inform the PMPM spending levels for people with various medical conditions with and without behavioral comorbidities. Since this data does not reflect the national estimates of average costs or prevalence rates, we made a variety of adjustments to arrive at our national estimates.

We trued up the average costs in the MassHealth data to nationwide averages from Kaiser State Health Facts data to reflect nationwide area factor, enrollment mix, a/s distribution, and utilization patterns.

We used census estimates of Medicaid enrollment and applied that to the average costs to get total spending.

We also adjusted the prevalence rates of various medical and behavioral conditions in the MassHealth population to reflect a more national estimate of prevalence rates using literature review and actuarial judgment.

We compared our estimates of spending by various categories and conditions to national healthcare estimates (NHE) data from the Centers for Medicare and Medicaid Services website as well as to the conclusions from various other researchers.

APPENDIX F: DEMOGRAPHIC COMPARISONS USED IN EXTRAPOLATION

Population differences were considered and reviewed when extrapolating the sample population to reflect the full populations for each payer type. Population distribution by gender and age characteristics for the commercial and Medicare are provided in Figures F1 (Commercial) and F2 (Medicare). In both instances, population differences were considered minimal and no cost adjustments were made.

Figure F1: Demographic Distribution, Commercial Sample

		% of Database Total	
Gender	**Age Band**	**MarketScan Sample**	**Commercial Census, 2010**
Female	*00 to 24*	16.5%	17.5%
	25 to 29	3.0%	3.7%
	30 to 34	3.7%	3.7%
	35 to 39	4.3%	4.0%
	40 to 44	4.6%	4.3%
	45 to 49	5.4%	4.8%
	50 to 54	5.6%	4.8%
	55 to 59	5.2%	4.2%
	60 to 64	3.7%	3.6%
Male	*00 to 24*	16.9%	18.3%
	25 to 29	2.5%	3.6%
	30 to 34	3.2%	3.5%
	35 to 39	3.8%	3.9%
	40 to 44	4.1%	4.1%
	45 to 49	4.7%	4.6%
	50 to 54	4.9%	4.5%
	55 to 59	4.5%	3.9%
	60 to 64	3.4%	3.2%

Figure F2: Demographic Distribution, Medicare Sample

		% of Database Total	
Gender	**Age Band**	**Medicare 5% Sample**	**Medicare Census, 2010**
Female	*00 to 24*	0.1%	0.9%
	25 to 29	0.2%	0.3%
	30 to 34	0.3%	0.4%
	35 to 39	0.5%	0.5%
	40 to 44	0.7%	0.7%
	45 to 49	1.1%	0.9%
	50 to 54	1.4%	1.3%
	55 to 59	1.7%	1.7%
	60 to 64	1.8%	2.6%
	65 to 69	13.4%	9.3%
	70 to 74	10.7%	11.2%
	75 to 79	8.8%	9.7%
	80+	14.5%	14.9%
Male	*00 to 24*	0.1%	0.9%
	25 to 29	0.3%	0.4%
	30 to 34	0.4%	0.2%
	35 to 39	0.5%	0.4%
	40 to 44	0.8%	0.6%
	45 to 49	1.2%	0.9%
	50 to 54	1.5%	1.2%
	55 to 59	1.8%	1.6%
	60 to 64	1.9%	2.1%
	65 to 69	12.2%	12.0%
	70 to 74	9.1%	9.1%
	75 to 79	6.7%	7.2%
	80+	8.1%	9.0%

APPENDIX G: ASSUMPTIONS

Figure G1: Trend Assumptions

Service Type	Commercial	Medicare	Medicaid
Medical	7%	1.90%	4%
Behavioral	10%	1.60%	2%
Med Rx	6%	*N/A**	6%
Behavioral Rx	7%	*N/A**	4%
Population Trend, 2011 to 2012		0.75%	

** Pharmacy data not available for Medicare population*

By Laurence Baker, M. Kate Bundorf, and Anne Royalty

Private Insurers' Payments For Routine Physician Office Visits Vary Substantially Across The United States

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ABSTRACT **Anecdotal reports suggest that substantial variation exists in private insurers' payments for physician services, but systematic evidence is lacking. Using a retrospective analysis of insurance claims for routine office visits, consultations, and preventive visits from more than forty million physician claims in 2007, we examined variations in private payments to physicians and the extent to which variation is explained by patients' and physicians' characteristics and by geographic region. We found much variation in payments for these routine evaluation and management services. Physicians at the high end of the payment distribution were generally paid more than twice what physicians at the low end were paid for the same service. Little variation was explained by patients' age or sex, physicians' specialty, place of service, whether the physician was a "network provider," or type of plan, although about one-third of the variation was associated with the geographic area of the practice. Interventions that promote more price-consciousness on the part of patients could help reduce health care spending, but more data on the specific causes of price variation are needed to determine appropriate policy responses.**

Laurence Baker is chief of health services research, a professor of health research and policy, and a CHP/PCOR fellow at Stanford University in California, and a research associate at the National Bureau of Economic Research

M. Kate Bundorf (bundorf@stanford.edu) is a professor of health research and policy and a CHP/PCOR fellow at Stanford University and a faculty research fellow at the National Bureau of Economic Research

Anne Royalty is a professor of economics at Indiana University–Purdue University Indianapolis

In the US health care system, a uniform system of paying for physician office visits does not exist. Prices paid by public insurers are set through regulation, while prices paid by private insurers are set in markets. Although prices paid by public insurers, particularly the Medicare program, are well documented, relatively little information on the prices private insurers pay for services has been available until very recently. Some researchers have identified differences across physicians in the payments they receive for similar services.[1,2] But few offer systematic evidence about the extent or patterns of variation across the United States.

One recent report examining data from four private insurers in eight cities found noticeable variation in payment rates for physician services both across and within the areas.[3] A 2005 Government Accountability Office study of payments to physicians by insurers participating in the Federal Employees Health Benefits (FEHB) program also reported sizable geographic variation in average payments for bundles of services.[4] Studies have also reported substantial differences in the amounts insurers pay hospitals for similar services.[5–7]

A better understanding of price variation is needed to help manage health care spending and improve health care delivery. In this article we report on nationwide variation in payments to physicians by private health plans for a set of common outpatient evaluation and management services, including office visits for new and established patients, office consultations, and preventive visits with established patients.

These well-defined services are among the most frequently billed physician services in the United States.

We examined actual transaction amounts rather than billed charges, since the payment received by a provider often differs from the amount charged. The article adds to the literature on price variation in the commercial insurance market by using actual transaction prices, focusing on a clearly defined set of frequently billed services, and providing evidence from a larger nationwide sample that includes claims from many different insurers.

We also examined variation in payments both within and across geographic areas, and we analyzed the extent to which payment variation can be explained by patient and physician characteristics and by geographic region.

Study Data And Methods

DATA We studied claims for physician services in 2007 from the Truven Health MarketScan Commercial Claims and Encounters Database, which contains information from insurance claims for people with employer-based insurance at many large employers. Although the database is not representative of the US population, it offers a large, robust sample, with nearly thirty-three million covered lives from many insurers across the United States.

We extracted information about physician payments from claims for patients enrolled in preferred provider organizations (PPOs) and noncapitated point-of-service (POS) plans. In both cases, because physicians are paid using fee-for-service arrangements, services and payments are clearly defined. These two plan types encompass 75–80 percent of claims in the MarketScan database for the services we studied.

From each claim, we analyzed what is commonly referred to as the "allowed amount," or the contractually agreed amount the plan allows the physician to be paid for the service. The physician may receive this amount partly from the insurance plan and partly from the patient in the form of copayments or deductibles. Note that the payment the provider ultimately receives for a particular service, which we studied, may be quite different than the amount the provider initially charged.[7]

We studied claims for four groups of services: office visits with established patients, office visits with new patients, office consultations (often billed by specialized physicians), and preventive visits with established patients. Office visits and consultations are billed in five levels reflecting the complexity of the visit. For preventive visits, different billing codes reflect the age of the patient. Exhibit 1 identifies and provides a brief definition of the *Current Procedural Terminology* (CPT) codes for each service type.[8] We analyzed separately each CPT code within each type of service. Total spending for the claims included in our analyses represents 39 percent of all paid claims among the physicians in our sample.

We restricted our analysis to claims for services provided in physician offices, by physicians practicing in Metropolitan Statistical Areas (MSAs). Because of confidentiality agreements, we do not directly identify MSAs by name. We also excluded claims with missing or potentially inaccurate data. Detailed information on these exclusions is available in the online Appendix.[9]

ANALYSES For each procedure, we report the mean; median; and fifth, tenth, ninetieth, and ninety-fifth percentiles of the distribution of allowed amounts across all claims in the data set. We also report the ratio of the ninety-fifth percentile to the fifth percentile. Focusing on the ratio of percentiles provides a sense of the magnitude of the difference in payments between high- and low-price providers, and it minimizes the effect of outliers. We report median prices by physician characteristics and plan type.

We used analysis of variance to determine the portion of the observed variation in allowed amounts that can be attributed to patient, physician, and health plan characteristics and to the physician's geographic area. Patient characteristics include patient age (with nine age groups) and sex. Physician characteristics include physician specialty and whether or not the physician is identified as a "network provider" for the health plan. Plan characteristics include whether the plan is identified as a PPO or a noncapitated POS plan. Geographic area is represented by the MSA in which the physician is located.

In sensitivity analyses reported in the online Appendix, we found that our main findings were very similar if we controlled for county rather than MSA.[9] We report the share of the variance in allowed amounts attributable to each variable as well as the share unexplained. The methodology is explained in greater detail in the Appendix.[9]

To explore the effect of geographic area further, we used graphical analysis to illustrate variation across and within fifty large areas for intermediate office visits with established patients.

When interpreting our results, one must keep in mind that we analyzed a very large data set. As a result, most comparisons are statistically significant, even when the differences are very small. Thus, we have not reported the significance of each comparison, focusing our interpretation on the magnitudes of the differences. All comparisons noted in the text are statistically

EXHIBIT 1

Procedure Code Descriptions And Descriptive Statistics, Study Of Allowed Physician Office Payment By Private Insurers, 2007

Code	Description	Number of claims	Allowed MD payment amount ($ 2007)	
			Mean	SD
OFFICE VISIT WITH ESTABLISHED PATIENT				
99211	Minimal presenting problem, usually 5 minutes or less	841,371	26	15
99212	Problem-focused exam/history, straightforward complexity	2,760,621	45	12
99213	Expanded, problem focused exam/history, low complexity	17,588,316	63	14
99214	Detailed exam/history; moderate complexity	8,256,991	95	25
99215	Comprehensive exam/history; high complexity	1,074,042	135	41
OFFICE VISIT WITH NEW PATIENT				
99201	Problem-focused exam/history, straightforward complexity	98,656	46	15
99202	Expanded, problem focused exam/history, straightforward complexity	780,198	76	17
99203	Detailed exam/history; low complexity	1,695,951	107	24
99204	Comprehensive exam/history; moderate complexity	828,430	150	36
99205	Comprehensive exam/history; high complexity	256,575	188	49
OFFICE CONSULTATION				
99241	Problem-focused exam/history; straightforward complexity	60,206	65	22
99242	Expanded, problem-focused exam/history, straightforward complexity	259,617	110	29
99243	Detailed exam/history, low complexity	873,931	144	37
99244	Comprehensive exam/history, moderate complexity	901,293	200	52
99245	Comprehensive exam/history; high complexity	316,419	255	70
PREVENTIVE VISIT WITH ESTABLISHED PATIENT				
99391	Infant (age <1 year)	598,989	89	21
99392	Early childhood (age 1-4)	628,612	99	23
99393	Late childhood (age 5-11)	450,007	99	23
99394	Adolescent (age 12-17)	365,171	108	26
99395	Age 18-39	733,375	111	26
99396	Age 40-64	1,361,705	123	29

SOURCE Authors' analysis of data from the 2007 Truven Health Analytics MarketScan® Commercial Claims and Encounters Database (copyright © 2007 Truven Health Analytics all rights reserved) **NOTE** SD is standard deviation

significant.

LIMITATIONS There are some caveats to keep in mind when interpreting our results. Although the data we used reflect the experience of a large group of people, they are not nationally representative. We also focused on PPOs and non-capitated POS plans; patterns of payment in other types of private plans may be different.

The analyses presented are designed to identify variation and test the importance of some possible explanatory factors. Some explanatory factors are not assessed here, including quality of care and provider or insurer market power. Further research will be needed to provide empirical evidence on additional possible causes of the payment variations we observed.

Study Results

Our data set includes nearly forty-one million claims. The majority (75 percent) are from office visits with established patients. In addition, most claims are from PPOs (85 percent) rather than POS plans. Physicians are identified as network providers in 84 percent of the claims. Further information about the characteristics of the sample is available in the Appendix.[9]

As expected, mean allowed amounts for office visits and office consultations increased for more intensive services, as indicated by the higher mean payments for more intensive visit codes within each service category (Exhibit 1). For example, the mean allowed amount for the least complex office visit with an established patient (code 99211) was $26, compared with $135 for the most complex office visit with an established patient (code 99215). Median payments also increased with service intensity, and the mean and median payments for each service were very similar, which suggests that the distribution of payments in the sample was not highly skewed (Exhibit 2).

PAYMENT VARIATION FOR EVALUATION AND MANAGEMENT SERVICES For each of the services we studied, allowed amounts varied substantially (Exhibit 2). For example, for an intermediate office visit with an established patient (code 99213)—the most commonly billed service in the data set—the allowed amounts we observed ranged from less than $50 to more than $85.

EXHIBIT 2

Measures Of Variation In Allowed Physician Payment Amount (In 2007 Dollars) By Private Payers, By Procedure Code

	Allowed amount ($), mean, median, and percentile						
Code	Mean	5th	10th	Median	90th	95th	Ratio 95/5
OFFICE VISIT WITH ESTABLISHED PATIENT							
99211	26	18	20	24	30	37	2.07
99212	45	34	36	43	54	62	1.82
99213	63	47	49	62	77	86	1.82
99214	95	63	72	94	118	131	2.08
99215	135	87	102	131	165	189	2.16
OFFICE WITH NEW PATIENT							
99201	46	34	36	43	58	66	1.95
99202	76	52	60	75	94	104	2.00
99203	107	73	81	106	132	147	2.00
99204	150	94	103	149	183	204	2.16
99205	188	103	135	186	226	257	2.50
OFFICE CONSULTATION							
99241	65	46	48	60	85	101	2.20
99242	110	76	86	106	141	160	2.11
99243	144	98	110	141	180	205	2.09
99244	200	128	146	196	251	284	2.22
99245	255	160	191	250	324	372	2.32
PREVENTIVE VISIT WITH ESTABLISHED PATIENT							
99391	89	57	65	89	114	124	2.19
99392	99	63	70	98	126	138	2.19
99393	99	65	72	99	127	138	2.12
99394	108	69	75	108	140	152	2.19
99395	111	70	83	109	141	158	2.25
99396	123	78	93	121	158	176	2.26

SOURCE Authors' analysis of data from the 2007 Truven Health Analytics MarketScan® Commercial Claims and Encounters Database (copyright © 2007 Truven Health Analytics, all rights reserved) NOTE Procedure codes are defined in Exhibit 1.

For the fifth percentile of physician payments, the allowed amount was $47, compared to $86 for the ninety-fifth percentile; thus, the ratio of the ninety-fifth to the fifth percentile is 1.82. Each of the services we examined exhibited similar or greater variation. For eighteen of the twenty-one services we studied, the allowed amount for the ninety-fifth percentile was more than twice the amount for the fifth percentile.

Some other studies of variations in prices in settings outside the health care system have used a measure called the "coefficient of variation" (the standard deviation divided by the mean) to summarize the amount of variation in prices. To compare the amount of variation in payments we found with results from other studies, we computed coefficients of variation in our data. Results for the services we studied ranged from 0.22 to 0.58; nearly all services were in the range of 0.22–0.34. (These results are in the Appendix.)[9] This range is similar to that of other types of nonhealth services, which we discuss in greater detail below.

FACTORS CORRELATED WITH PAYMENT VARIATION Provider payments were not highly correlated with the patient and provider characteristics we examined. Exhibit 3 reports median allowed amounts for the most frequently billed CPT codes within each category. The results for the unreported services were very similar. Given the large sample sizes, differences across the categories shown were generally statistically significant, although in many cases the magnitudes of the differences were sufficiently small that they may have limited practical importance.

There are few differences in payments by physician specialty or plan type. This suggests that differences in physician income by specialty type are more likely to be driven by service mix than by payment levels. We did find that claims where the physician was identified as a nonnetwork physician had higher median allowed amounts than claims where the physician was identified as a network physician or where network status was not indicated.

CONTRIBUTION OF CHARACTERISTICS TO PAYMENT VARIATION For each service, the patient, physician, and plan characteristics explained little of the variation in payments: less than 1 percent in almost all cases (Exhibit 4). A

EXHIBIT 3

Median Allowed Physician Office Payment Amounts (In 2007 Dollars) By Private Insurers, By Selected Provider And Plan Characteristics, Selected Procedures

	Procedure code							
	99212	99213	99214	99202	99203	99204	99243	99396
PHYSICIAN SPECIALTY								
Internal medicine	$44	$62	$95	$76	$107	$150	$145	$129
Family practice	43	61	92	75	105	146	144	122
Pediatrics	45	62	92	75	106	145	151	119
Obstetrics and gynecology	44	62	94	75	107	150	144	119
Surgery	44	62	92	75	108	150	141	118
Medical or pediatric subspec.	43	61	94	73	103	150	137	119
Emergency medicine	43	63	98	77	113	152	147	119
Other specialty	44	62	97	79	112	152	144	153
HEALTH PLAN TYPE								
POS plan	43	61	92	74	105	147	140	120
PPO	43	62	94	75	106	149	141	121
PHYSICIAN NETWORK STATUS								
Network physician	43	61	94	75	106	149	140	120
Nonnetwork physician	46	65	98	77	106	162	145	132
Network status not identified	42	60	88	71	105	145	135	116

SOURCE Authors' analysis of data from the 2007 Truven Health Analytics MarketScan® Commercial Claims and Encounters Database (copyright © 2007 Truven Health Analytics, all rights reserved) **NOTES** Procedure codes are defined in Exhibit 1. POS is point-of-service plan. PPO is preferred provider organization.

much higher share was explained by geographic location (generally about one-third of the variation). This left a substantial share of the variation unexplained by observable factors. More than half of the variation in payments for evaluation and management services was not statistically related to the observable characteristics we examined.

PAYMENT VARIATION WITHIN AND ACROSS AREAS To illustrate the amount of variation across and within geographic areas, we computed the median and the fifth and ninety-fifth percentile allowed amounts within each MSA for the fifty MSAs with the largest number of claims for intermediate office visits with established patients (99213)—the most common service. Exhibit 5 plots the median allowed amount in each area and the spread between the fifth and ninety-fifth percentiles. Across MSAs, there was notable variation in median allowed amounts. For these services, medians in the lowest areas were below $50, and medians in the highest areas were above $80.

There was also an interesting pattern of within-MSA variation. Some MSAs had very little within-area variation, and others had wide within-area variation. For intermediate office visits with established patients, the geographic areas with the greatest amount of variation had ninety-fifth percentiles more than twice the amount of the fifth percentile. That is, even within the same geographic area, physicians at the high end of the distribution were paid twice what those at the low end were paid. Averaging across the fifty MSAs shown in the exhibit, doctors at the ninety-fifth percentile received about 60 percent more than doctors at the fifth percentile within the same area.

In summary, we found substantial variation in payments for common physician services both across and within MSAs, with very little variation explained by patient or physician characteristics.

Discussion

The prices paid by private PPOs and noncapitated POS plans to physicians for common evaluation and management services vary greatly. Physicians at the high end of the payment distribution are paid more than twice what physicians at the low end are paid for the same service. This magnitude of variation was observed in all of the services we studied, including office visits, office consultations, and preventive visits. These results are generally consistent with other reports that have focused attention on variation in high-price, advanced services. Our results demonstrate that there is much variation even in common bread-and-butter services for which payments are relatively low but volume is very high.

COMPARISON WITH OTHER STUDIES Our approach differed from those of other studies of

EXHIBIT 4

Percentage Of Variation In Allowed Physician Office Payment Amounts By Private Insurers Explained By Observable Claim Characteristics, By Procedure Code And Type Of Visit, 2007

	Percent explained by variable						
Code	Patient age (1)	Patient sex (2)	Physician specialty (3)	Plan type (4)	Network status (5)	MSA (6)	Percent unexplained (7)
OFFICE VISIT WITH ESTABLISHED PATIENT							
99211	<0.1	<0.1	0.5	<0.1	0.6	26.5	70.1
99212	<0.1	<0.1	0.1	<0.1	0.6	23.1	75.8
99212	<0.1	<0.1	<0.1	<0.1	0.3	33.2	66.2
99212	<0.1	<0.1	0.2	<0.1	0.3	29.8	69.7
99212	0.3	<0.1	0.4	<0.1	1.6	20.4	77.0
OFFICE VISIT WITH NEW PATIENT							
99201	<0.1	<0.1	<0.1	<0.1	1.3	26.8	71.1
99202	<0.1	<0.1	0.4	<0.1	0.2	38.2	60.7
99203	<0.1	<0.1	0.3	<0.1	0.2	35.2	63.8
99204	<0.1	<0.1	0.2	<0.1	0.6	36.4	62.6
99205	<0.1	<0.1	0.4	<0.1	2.3	28.8	67.9
OFFICE CONSULTATION							
99241	0.1	<0.1	0.2	<0.1	1.0	34.2	63.4
99242	0.3	<0.1	0.1	<0.1	0.2	38.3	60.4
99243	0.6	<0.1	<0.1	<0.1	0.4	33.7	64.7
99244	1.0	<0.1	<0.1	<0.1	0.3	33.4	64.4
99245	0.9	<0.1	0.1	<0.1	1.2	28.3	69.2
PREVENTIVE VISIT WITH ESTABLISHED PATIENT							
99391	<0.1	<0.1	<0.1	<0.1	<0.1	41.6	57.4
99392	<0.1	<0.1	<0.1	<0.1	<0.1	43.3	55.8
99393	<0.1	<0.1	<0.1	<0.1	<0.1	42.5	56.7
99394	<0.1	<0.1	0.3	<0.1	<0.1	38.9	60.1
99395	<0.1	<0.1	0.2	<0.1	<0.1	41.8	55.7
99396	<0.1	<0.1	0.3	<0.1	0.1	43.0	54.3

SOURCE Authors' analysis of data from the 2007 Truven Health Analytics MarketScan® Commercial Claims and Encounters Database (copyright © 2007 Truven Health Analytics all rights reserved). NOTES Procedure codes are defined in Exhibit 1. Results based on partial sum of squares from analysis of variance models in which all of the variables shown in columns 1–6 are simultaneously included. When one is using the partial sum of squares method, the variance share explained by each factor and the share unexplained will not always sum to 1. MSA = Metropolitan Statistical Area.

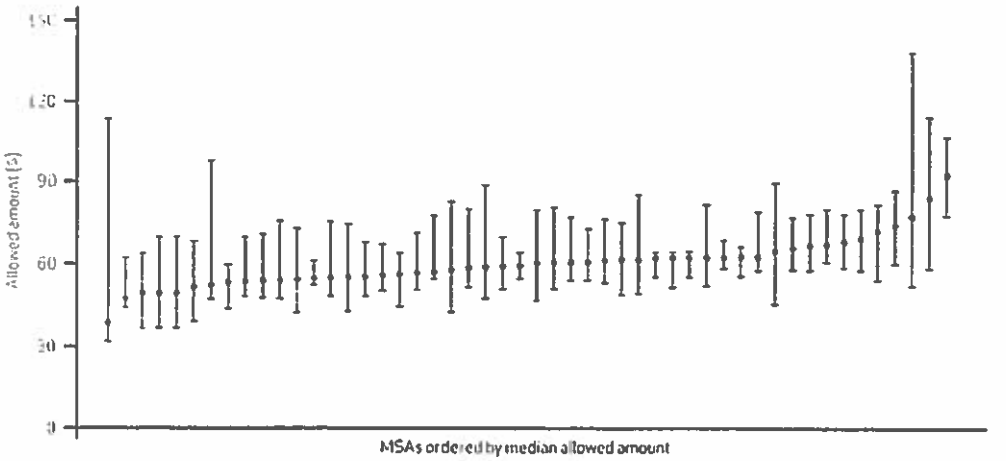
price variation for physician services, yet those studies' findings generally support our conclusions. We analyzed specific CPT codes, to focus on a well-defined set of services, and we examined a broad set of markets and insurers, while other studies have examined fewer markets and made comparisons across a more diffuse set of services.[1,2] Although these studies also reported that prices for physician services vary substantially both across and within markets, they suggested that prices of hospital services generally vary even more than those of physician services.

Variation in the prices of goods and services is not unique to health care. Our estimates of the degree of price variation in physician services generally falls within, although at the higher end of, the range documented by studies of other goods and services. For example, the coefficient of variation of prices of other types of goods and services can fall as low as 0.05 and can exceed 0.50.[3,4] The coefficient of variation of many of the services in these studies fell in the range of 0.20–0.40, as did all but one of those we calculated. (Results are in the online Appendix.)[9]

GEOGRAPHIC LOCATION Although patient, physician, and health plan characteristics explain little of the variation we encountered, geographic location explained about one-third of the variation for many services. Factors that could explain differences across MSAs include differences in the costs of doing business, the structure of provider markets, and differences in patients' preferences for medical care in a given area. Characteristics of geographic areas, and their impact on payment variation, are potentially a useful avenue for further study. A more complex research design than ours would be necessary to establish causality, however. In our analysis, even after we accounted for differences by area (either MSA or county), much of the variation in payment amounts remained unexplained by the factors we considered.

EXHIBIT 5

Within- And Across-Market Variation In Allowed Physician Office Payment Amounts By Private Insurers For An Intermediate Office Visit With Established Patient, 2007



SOURCE Authors' analysis of data from the 2007 Truven Health Analytics MarketScan® Commercial Claims and Encounters Database (copyright © 2007 Truven Health Analytics, all rights reserved) **NOTES** This exhibit contains data for the fifty Metropolitan Statistical Areas (MSAs) with the largest number of claims for *Current Procedural Terminology* (CPT) code 99213, intermediate office visit with established patient, in 2007. Red dots show the median within each MSA, and bars show the range from the 5th to the 95th percentile within each MSA. All MSAs shown had a minimum of 89,979 claims in 2007. The area with the most claims had more than 1.1 million.

QUALITY Our results suggest that policies addressing price variation could be worth considering. However, it is also necessary to understand the reasons for the price variation, to determine whether the variation is appropriate, or even beneficial, to the health care system or whether it indicates important problems. For instance, payment variations across physicians may reflect differences in the quality of the services provided. Economists typically view variation in prices related to the value of a good or service, such as the quality of medical care, as being justified. When physicians are able to obtain higher payments for higher-quality services, they have incentives to provide higher-quality care. Given the magnitude of the differences we observed, however, future research should address whether differences in either measured clinical quality or patients' perceptions of quality are large enough to warrant such large payment differentials.

ILLNESS SEVERITY Price variation may also reflect differences in patients' severity of illness that make patients with more complex conditions more costly to treat. Physicians who often treat such patients may negotiate higher rates with private insurers. We found no evidence, however, that age—the most easily observable measure of patient severity—explains price variation. This is consistent with the view that price differences might not be driven in large part by other unobservable differences in patient severity.

MARKET POWER Differences across physicians in payment rates could also be driven by the balance of "market power" between physicians and health plans. For our purposes, *market power* refers to the relative strength of physician practices and health insurers when bargaining over payment amounts. When physicians have more market power, physician payment rates will tend to be higher, and vice versa. Market power is closely associated with organizational size and market share—physician practices or health insurers that control larger parts of the market typically have more market power—and it appears to be an important factor in hospital payments.[12,13]

Physician payments may be inappropriately high in markets where physicians acquire too much market power, driving up health care spending and possibly influencing clinical decision making in ways that are not beneficial for patients. Recent evidence of increasing consolidation in health care markets has raised concern about this possibility.[2,11,14] However, prices driven inefficiently low because of health plans' market power could disrupt the provision of services and lead to misalignment of service availability with patient demand for care. Studies providing evidence on the extent to which price variation is caused by differences across organizations in market power would help policy makers evaluate the likely consequences of further consolidation

of health care providers.

CONSUMER SEARCH Another factor that may be important in perpetuating price variation is the lack of information available to consumers and the lack of incentives on the part of consumers to search for lower-cost providers. "Search costs"—the costs that market participants must incur to obtain information about the prices and attributes of goods—can cause prices to vary within markets. Economic theory suggests that consumers will search more, leading to less variation in prices within a market, when the benefits of search are greater or the costs are lower.[16] For example, when patients have generous insurance, they have little incentive to seek information on prices and to switch to lower-price providers. Because insurance dampens the value of search in health care markets, policies such as the use of reference pricing types of cost sharing, in which patients pay more out of pocket for more expensive providers of similar services, could be beneficial.

Conclusion

In summary, several types of factors—including differences in service quality, market power, and search costs—could contribute to price variation. These factors may generate price differences either across or within markets, and we observed both types of differences in the data. Interestingly, the extent to which prices varied within markets differed across areas (Exhibit 4). This also suggests an intriguing area for further research.

Current health reforms may also affect price variation. For example, greater attention to quality in payment setting could affect payment variation, possibly in beneficial ways, by establishing a tighter link between payment levels and quality of care. Other components of the reforms could promote the formation of larger, more consolidated provider groups that may have beneficial effects for health care delivery but may also increase physicians' market power and raise prices. Other aspects of reform would move payment toward bundles of services, which may lead to completely new dynamics in physician payment variation.

Our study documents substantial differences across physicians in the prices they charge for standard office visits, pointing to the possibility that there could be beneficial effects from policies that would reduce variation. However, more information on the causes of price variation is needed to identify the appropriateness of policy changes and the likely effectiveness of different types of interventions. ■

This project was funded in part by the Robert Wood Johnson Foundation's Changes in Health Care Financing and Organization initiative. MarketScan is a registered trademark of Truven Health Analytics Inc.

NOTES

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9 To access the Appendix, click on the Appendix link in the box to the right of the article online.

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Access to Psychiatrists in 2014 Qualified Health Plans

A Study of Network Accuracy and Adequacy Performed from June 2014-November 2014

Mental Health Association of Maryland
1/26/2015

Summary

In June of 2014 the Mental Health Association of Maryland (MHAMD) performed a study to assess the accuracy and adequacy of the psychiatric networks of the 2014 Qualified Health Plans (QHP) sold through the Maryland Health Connection. The QHPs are provided by carriers that also sell plans outside the Maryland Health Connection, but the only network listings that are publicly available are the QHP networks.

The study results indicate that only 14% of the 1154 psychiatrists listed were accepting new patients and available for an appointment within 45 days. Researchers spent six months calling multiple numbers for the listed providers to find that 57% of the 1154 psychiatrists were unreachable- many because of nonworking numbers or because the doctor no longer practiced at the listed location. As the number of newly insured continues to grow, wait times will increase, and individuals may forgo care or resort to paying high out of pocket costs to access critical care outside their insurance network if they have the means to do so.

Background

MHAMD is the state's only volunteer, nonprofit citizen's organization that brings together consumers, families, professionals, advocates and concerned citizens for unified action in all aspects of mental health and mental illness. In 2011, MHAMD launched the Maryland Parity Project to educate consumers and providers of the rights afforded to them under the Mental Health Parity and Addiction Equity Act of 2008 and assist them in enforcing those rights through the appeal and grievance process.

Since 2012, the Maryland Parity Project has responded to hundreds of calls from consumers and providers with concerns about their private health insurance plan and the challenges they face in obtaining the mental health or substance use treatment they need. In the last year, calls to the project related to an inability to secure an appointment with an in-network psychiatrist have dramatically increased. Individuals and families are experiencing wait times of three to six months or huge out of pocket costs to seek care from a psychiatrist who doesn't accept their insurance.

Unfortunately, this is not a new phenomenon in the privately insured market. Previous studies done over the last 25 years by MHAMD and other organizations found there were long delays for individuals to access psychiatric care. In 1988, MHAMD published, "Study of Mental Health Coverage Provided by Maryland HMOs." This study sought to provide a comprehensive picture of the impact of HMOs on access to mental health care. The anecdotes from mental health professionals in 1988 illustrated the long wait times their patients faced when trying to secure an appointment with a psychiatrist. As a follow-up, in 2002, the Mental Health Coalition of Maryland conducted a survey of mental health professionals to ascertain how the managed care system affected an individual's ability to access mental health care. Many respondents reported dropping out of private insurance networks, resulting in more consumers having to pay out of pocket for mental health care. In 2007, the Maryland Psychological Association published a white paper titled, "Access to Care in the State of Maryland." Their survey found that 44% of mental health professionals listed in the managed care networks were unreachable, and that the average wait time for an appointment with a psychiatrist was 25 days.

In 2014 the Affordable Care Act was fully implemented in Maryland with the establishment of the Maryland Health Benefit Exchange (MHBE), Maryland's state health insurance marketplace, and its consumer-facing website, the Maryland Health Connection. New QHPs were certified by the MHBE to meet the requirement, among other nondiscrimination provisions, of adequate networks of specialists to serve their members. MHAMD undertook a study in 2014 to determine the adequacy of QHP psychiatric networks. The study was specifically designed to determine a QHP-insured individual's ability to access in-network psychiatrists because the networks for these plans are publically available.

Methods

The study, performed in June 2014 through November 2014, had two specific goals: (1) to determine the accuracy of information in the provider directory linked from the Maryland Health Connection; and (2) to determine the accessibility of the psychiatrists listed in the directories for the four insurance carriers selling QHPs through the Maryland Heath Connection for plan year 2014, by determining the timeframe for the next available outpatient appointment. The research team consisted of three trained interviewers, supervised by the Director of the Maryland Parity Project of the Mental Health Association of Maryland. The researchers used the provider search tool uploaded by the Chesapeake Regional Information System for our Patients (CRISP). CRISP, Maryland's Health Information Exchange, was contracted by the MHBE to manage the provider search tool, enabling consumers to determine whether their current providers were participating with the new plans they could choose. Consumers have access to this provider search tool through the Maryland Health Connection website with updated data from carriers being uploaded every two weeks. The researchers performed an advanced search for each carrier to identify all providers tagged with a psychiatry specialty, including adolescent and geriatric psychiatry. The alphabetical directory of psychiatrists provided by the search was then transferred into an excel spreadsheet denoting name, license, addresses and telephone numbers. The total list size varied depending on the insurance plan with considerable overlap among lists.

The researchers used CRISP contact information to make the initial call for the purpose of determining whether: (1) the provider was a practicing psychiatrist; (2) the address and phone number were correct; (3) the provider was accepting new patients on an outpatient basis; and (4) the provider was in-network with the plan of reference. In addition, the interviewer determined the timeframe for the next available appointment. The researchers' prescribed script (see Appendix A) used separate question paths depending on responses given, and responses were recorded in the spreadsheet. For providers who could not be reached initially, at least one additional call was made at a later date and at least two voice mails were left requesting a call back. The researchers spoke with individual doctors or appointment managers in nearly every case when a working number for the listed provider could be found, and the phone was answered.

Data Collection

Data was collected from June 2014 to November 2014 and was analyzed in December 2014. Data was separately collected and recorded for each of the four carriers selling QHPs for the 2014 plan year: Carefirst, Evergreen Health, Kaiser Permanente, and United Health Care. Carriers are listed here alphabetically but were randomly assigned letters for data collection and reporting. Using the CRISP search tool a total of 1154 psychiatrists were identified across all four carriers: totals listed for each carrier: Carrier A - 1030; Carrier B - 600; Carrier C - 453; and Carrier D - 33. Some psychiatrists were identified as participating with multiple carriers. In these cases, the researchers determined the correct addresses and phone numbers for each doctor on the initial call. Subsequent calls to that doctor verifying information for a different carrier were made using the correct number, but data related to veracity of the in-network status with each insurer and the time frame for an outpatient appointment were recorded separately for each carrier network.

"That Doctor hasn't worked here in eight or nine years. We told the insurance company that years ago, but we can't get him removed."

Appointment Manager in a large practice

Results

Accuracy of directory information

Only 43% (497 of 1154) of psychiatrists listed could be reached. The top two reasons for this were, 1) nonworking numbers, including numbers that went to a non health care establishment, and 2) psychiatrist no longer practicing at the locations indicated for reasons that included retirement, death, and relocation out of state or to another mental health facility or organization. Other reasons included messages that were unreturned or an inability to leave a message when no one answered the phone.

Carrier	**Percentage Reachable**	Number Reachable	Total Number of Psychiatrists Listed
Carrier A	**40%**	410	1030
Carrier B	**25%**	151	600
Carrier C	**37%**	167	453
Carrier D	**85%**	28	33

19% (216 of 1154) of mental providers listed as psychiatrists who were able to be reached indicated that they were not psychiatrists. This does not include the number of providers listed who were unreachable. Some incorrectly listed as psychiatrists were non prescribing mental health providers; others were medical doctors, such as neurologists or family doctors.

Carrier	**Percentage NOT Psychiatrist**	Number Not Psychiatrist	Total Number of Psychiatrists Listed
Carrier A	**12%**	121	1030
Carrier B	**18%**	108	600
Carrier C	**24%**	107	453
Carrier D	**0%**	0	33

Availability of psychiatrists

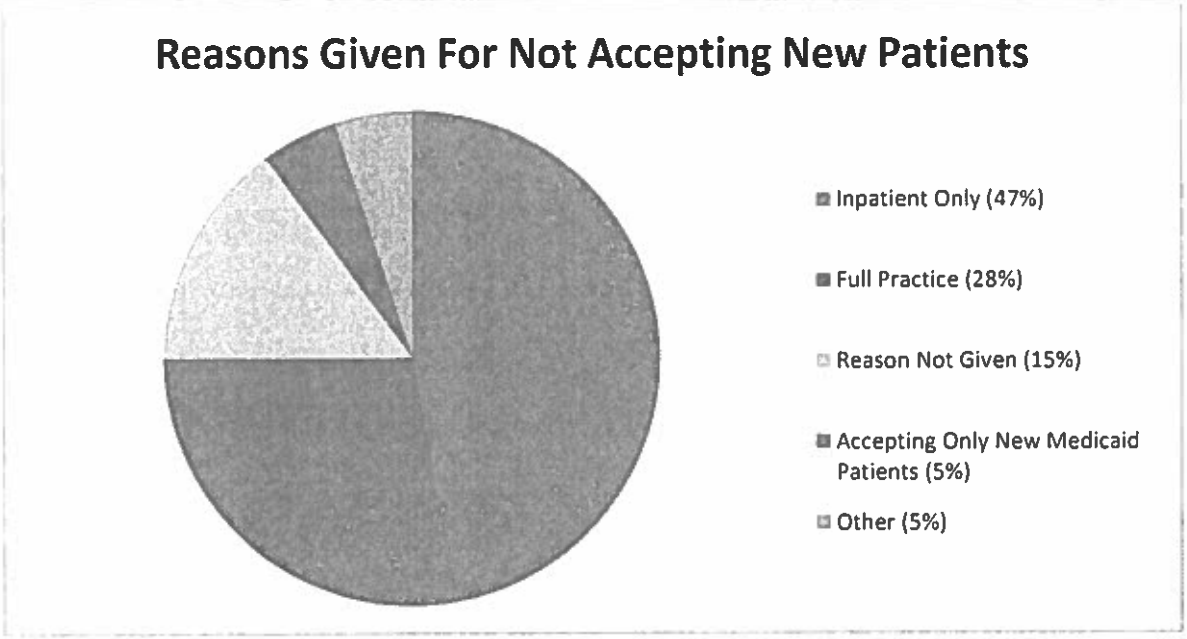
Less than 40% (457 of 1154) of providers listed in the directory were psychiatrists who reported they accepted the insurance they were listed as accepting.

Carrier	**Percentage Accepting Insurance Listed**	Number Accepting Insurance Listed	Total Number of Psychiatrists Listed
Carrier A	**35%**	363	1030
Carrier B	**22%**	129	600
Carrier C	**34%**	153	453
Carrier D	**79%**	26	33

Less than 18% (203 of 1154) of the providers listed reported that they were psychiatrists accepting the designated insurance and new outpatients.

Carrier	**Percentage Accepting New Outpatients**	Number Accepting New Outpatients	Total Number of Psychiatrists Listed
Carrier A	**15%**	157	1030
Carrier B	**15%**	88	600
Carrier C	**13%**	57	453
Carrier D	**79%**	26	33

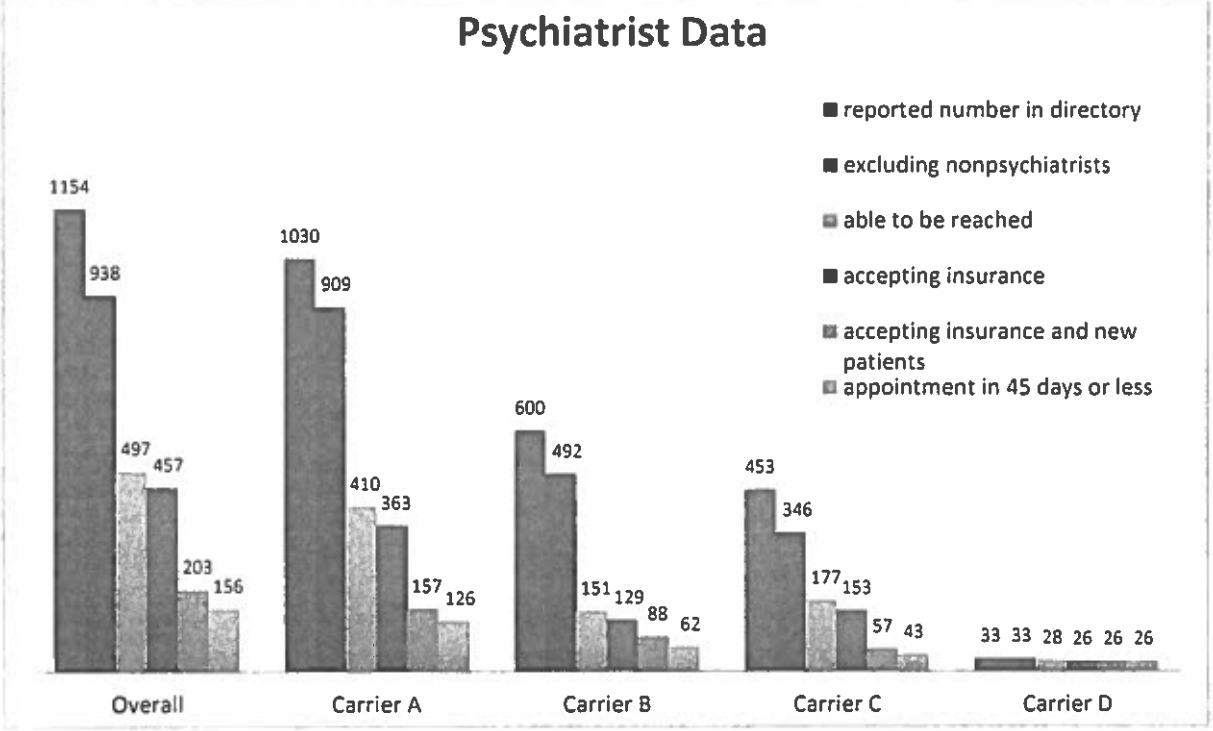
Respondents often gave the researchers additional information, including why they were unable to take new outpatient appointments at the time of the call.



Less than 14% (156 of 1154) of the providers listed reported being psychiatrists, accepting the insurance and available for an appointment in less than 45 days.

Carrier	**Percentage available for appointment in 45 days or less**	Number available for appointment in 45 days or less	Total Number of Psychiatrists Listed
Carrier A	**12%**	126	1030
Carrier B	**10%**	62	600
Carrier C	**10%**	43	453
Carrier D	**79%**	26	33

Carrier D was an outlier in the study. Although it had the smallest number of psychiatrists listed, nearly all of the information was correct and the majority of their psychiatrists were reachable and accepting new patients. All of the providers listed worked for carrier-owned and operated facilities. This carrier covers the one of the smallest geographic service area of the four carriers, excluding many rural areas.



Implications

According to the Maryland Board of Physicians, as of January 1, 2015, there are 1193 licensed psychiatrists in Maryland. As of May 15, 2014 the Maryland Health Connection reported enrolling 67,900 individuals in Qualified Health Plans. According to a study published by the Federal Substance Abuse and Mental Health Services Administration in October of 2014, approximately 22.5% of the US population has experienced one or more mental health or substance use disorders within the past year. Extrapolating this data across the population of those enrolled in QHPs in Maryland, approximately 15,278 individuals in the newly enrolled population will likely need to see a mental health professional within one year. With the second QHP enrollment period starting in mid-November 2014, the researchers briefly reviewed the CRISP database for the 2015 plan networks. Researchers compared the total number of psychiatrists listed for the 2014 and 2015 plans and

"None of our doctors participate with insurance anymore because of the frustrating credentialing and authorization process."

Manager in a small practice

"We don't have any appointments for 4 months. If you can get an appointment with a psychiatrist that takes this insurance in 8 or 9 weeks, you should take it."

Manager in a small practice

noted little change and limited improvement. With the anticipated influx of tens of thousands of new people purchasing QHPs, the demand for in-network psychiatrists will increase, exacerbating wait times for appointments for those currently insured as well as those new to coverage. Maryland Insurance Code 15-112 (j)(3)(i) requires insurers to update their internet published, provider directory every 15 days with any provider-noted changes. Based upon the findings of our six-month study, there is no evidence that the QHP lists for participating providers have been substantially updated. In fact, the lists remained unchanged from June to December of 2014 for two of the plans in the study.

It is imperative that insurers be held accountable for ensuring that the information in their provider directories is accurate and updated in accordance with Maryland statute. In addition, the inaccuracy in the directories combined with the apparent lack of in-network psychiatrists – for the three insurers with the largest networks, no more than 15% of any carrier's reported in-network psychiatrists are accepting new patients within the next 45 days - is also a violation of Maryland COMAR 31.10.34.04, which requires carriers to maintain a provider panel that is sufficient in numbers and types of available providers to the meet the health care needs of its enrollees.

As long as errors persist, and substantial numbers of doctors who appear as in-network providers are not, then individuals will be unable to access the care they need in a timely fashion. They will make numerous calls only to find out that doctors are not available to them; resign themselves to long wait times to get an appointment and risk the likelihood that the symptoms of their illness will escalate while they wait; go out-of-network for needed care if they can afford the associated high out of pocket expenses; or give up.

Recommendations

The Mental Health Association of Maryland will continue to work with community partners, stakeholders, and decision makers to advance policies and strategies to improve an individual's ability to access mental health and substance use disorder care. In response to the inaccuracy and inadequacy of psychiatry networks within the Qualified Health Plans, MHAMD recommends that policies be implemented to require that:

- Insurance carriers make public a self-audit of the QHPs yearly, using an approved format that is consistent across all carriers to ensure comparability of results;
- Insurance carriers publish on their website and annually in writing, the process by which insured individuals can access out of network care at the in-network cost-sharing level, as required in Maryland Insurance Article 15-830(d) and (e); and
- The Maryland Insurance Administration publish the process that insured individuals can use to enforce their rights to out of network care pursuant to Maryland Insurance Article 15-830 (d) and (e), including making this information available on their website and in print on the complaint form.

APPENDIX A: SURVEY QUESTIONS

RECORD DATE AND INITIALS ON DATA SHEET;
RECORD PROVIDER NAME AND CONTACT INFORMATION BEFORE PROCEEDING

Question 1: **Hello, I got our name from (insert name of health insurance company). I am looking for a psychiatrist. Do you accept (insert name of health insurance company)?**
RECORD ANSWER
If yes, proceed to Question 2. If no, skip to Question 5

Question 2: **Are you accepting new outpatients?**
RECORD ANSWER
If yes, proceed to Question 3, if no, skip to Question 6

Question 3: **When is the soonest I can get an appointment to see the psychiatrist?**
RECORD ANSWER
Proceed to question 4

Question 4: **Before I make the appointment, I would like to verify your office address.**
RECORD ANSWER

Thank you for your time, I think I will call back to make an appointment.
End the Call

Question 5: **I understand you are not accepting (insert insurance name), but may I still verify your address for future reference?**
RECORD ADDRESS VERIFICATION

Thank you for your time. End the Call

Question 6: **I understand you are not accepting new outpatients at this time, but may I still verify your office address for future reference?**
RECORD ADDRESS VERIFICATION

Thank you for your time. End the Call.