The Value of Medicaid: How Coverage Impacts the Care of Serious Chronic Health Conditions 2018

Patients covered by Medicaid who are diagnosed with asthma, diabetes mellitus, or mood disorders had clinical care that was comparable to patients with commercial health care coverage. Their clinical experiences were far superior to those of patients without health care coverage.

Medicaid enrollees with asthma received inhalers and recommended medicines far more often than patients without coverage. People with asthma and no health coverage also went to emergency rooms and saw other doctors more frequently.

Medicaid enrollees with diabetes received monitoring services like annual cholesterol tests, eye exams, and foot exams more often than people without health care coverage.

Medicaid enrollees with mood disorders like major depressive disorder or bipolar disorder were **much more likely to receive a recommended combination of medication and psychotherapy treatments than uninsured people.**

Study Summary

This study compared variations in clinical quality measures and prescription drug use patterns among people diagnosed with asthma, diabetes mellitus, or mood disorders based on insurance coverage. The three groups studied had either commercial health coverage, Medicaid health plan coverage, or no health insurance during 2013-2015. Study findings are based on data captured by the ongoing Medical Expenditures Panel Survey (MEPS), a comprehensive survey of U.S. households begun in 1996 and administered by the Agency for Healthcare Quality and Research (AHRQ). Based on evidence-based treatment guidelines for asthma, diabetes, and mood disorders in use during the 2013-2015 period, this study aimed to describe the clinical experiences of patients to determine if people with Medicaid health plan coverage received guideline-recommended care on par with commercially insured patients and the uninsured.

The data clearly demonstrate that **people covered by Medicaid can manage these serious chronic health conditions much better than people who are uninsured,** helping them to stay healthy and productive.

Background

Nearly 75 million Americans – including half of America's children and two million veterans – would be uninsured if not enrolled in Medicaid. Medicaid managed care covers more than 55 million of them. In recent years, researchers have demonstrated that the clinical experiences and outcomes of patients having Medicaid coverage are comparable to commercially insured patients and superior to the uninsured.[5-8] Despite the growing base of compelling data, some critics of the Medicaid program continue to cite a few outdated studies to suggest that having Medicaid coverage is related to poorer clinical outcomes.[9-12]

The aim of this study is to build on existing research to understand how patients with serious, chronic health conditions access essential care and services when they have a commercial health plan, a Medicaid health plan, or no health insurance coverage. The study uses 2013-2015 data from the Medical Expenditures Panel Survey (MEPS). To ensure adequate sample sizes and reliable statistical analyses, this study focused on pediatric patients diagnosed with asthma, and adult patients diagnosed with either diabetes mellitus or mood disorders (major depressive disorder or bipolar disorder). See Appendix A for a detailed description of the study methodology.

Recent studies of the 2014 MEPS data found about 60% of Americans living with at least one chronic condition, the treatment of which is an important factor in overall healthcare spending:[13,14]

1. Asthma affects one out of every twelve children in the United States each year (8.3%) and results in median annual medical costs of about $1,000 per child, according to 2016 data from The Centers for Disease Control and Prevention (CDC).[15,16]

2. According to the American Diabetes Association and the CDC, diabetes was ranked as the seventh leading cause of death in the United States, with about 23.1 million Americans diagnosed with the disease in 2017.[17,18] Total direct medical expenses for the 23.1 million known cases in the United States was $327 billion in 2017.[17]

3. Major depressive disorder affects about one out of ten Americans each year, and about one out of five will experiences at least one depressive episode throughout their lifetime.[19,20] Depression drives total annual medical costs of over $211 billion.[21]

4. Bipolar diseases is estimated to affect about 3% of the adult U.S. population and drives total annual medical costs of $202 billion.[22,23]

Taken together, asthma, diabetes, and mood disorders affect tens of millions of Americans and result in hundreds of billions of dollars in health care costs each year. Ensuring that patients receive prompt, effective care to manage these chronic conditions will result in better health and financial stability for these Americans and their families, as well as a stronger U.S. economy.

FIGURE 1A: ASTHMA: Service Utilization By Service Type

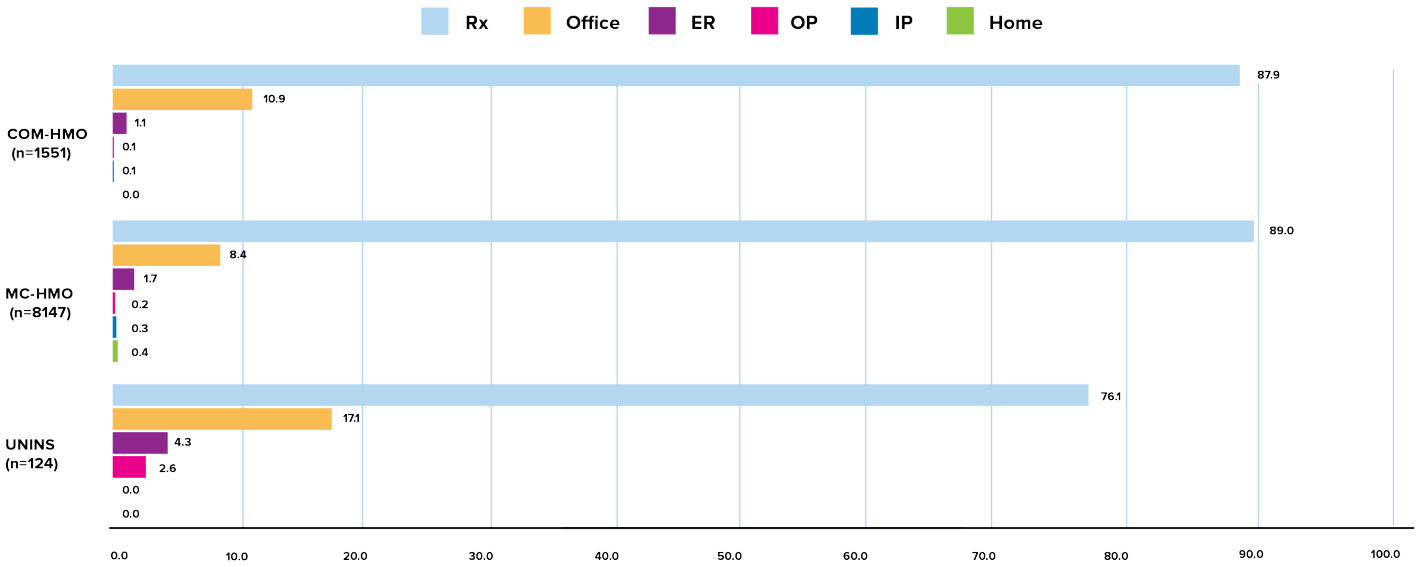


FIGURE 1B: Diabetes Mellitus: Service Utilization By Service Type

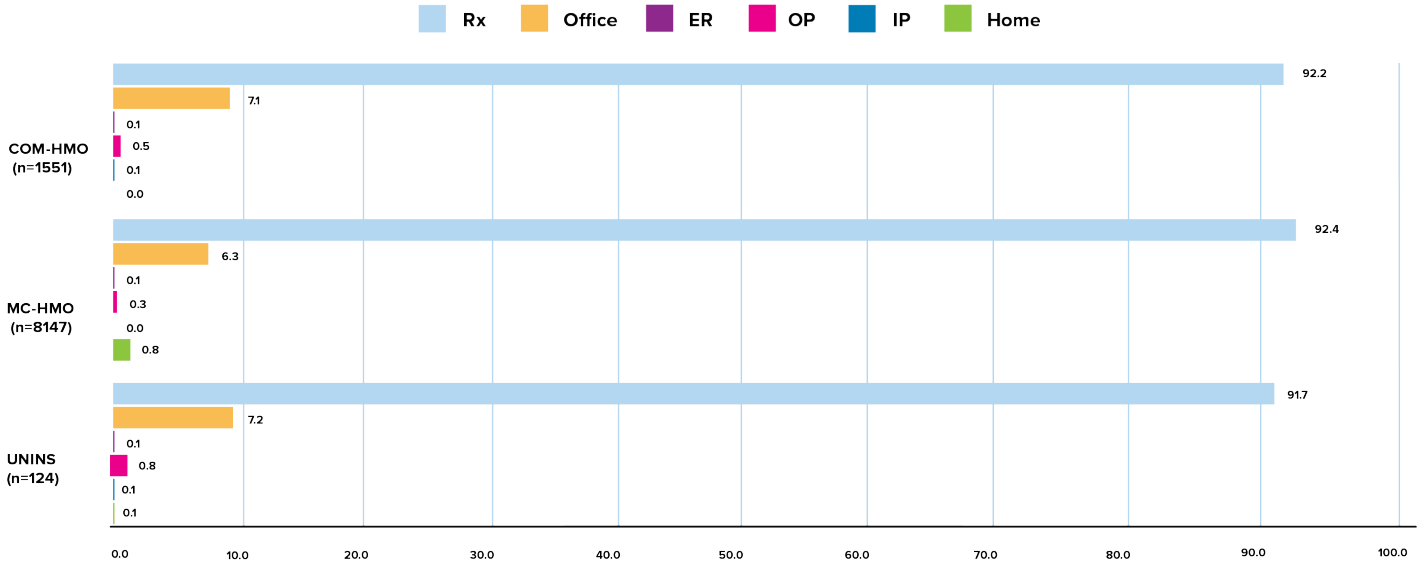


FIGURE 1C: MOOD DISORDERS: Service Utilization By Service Type

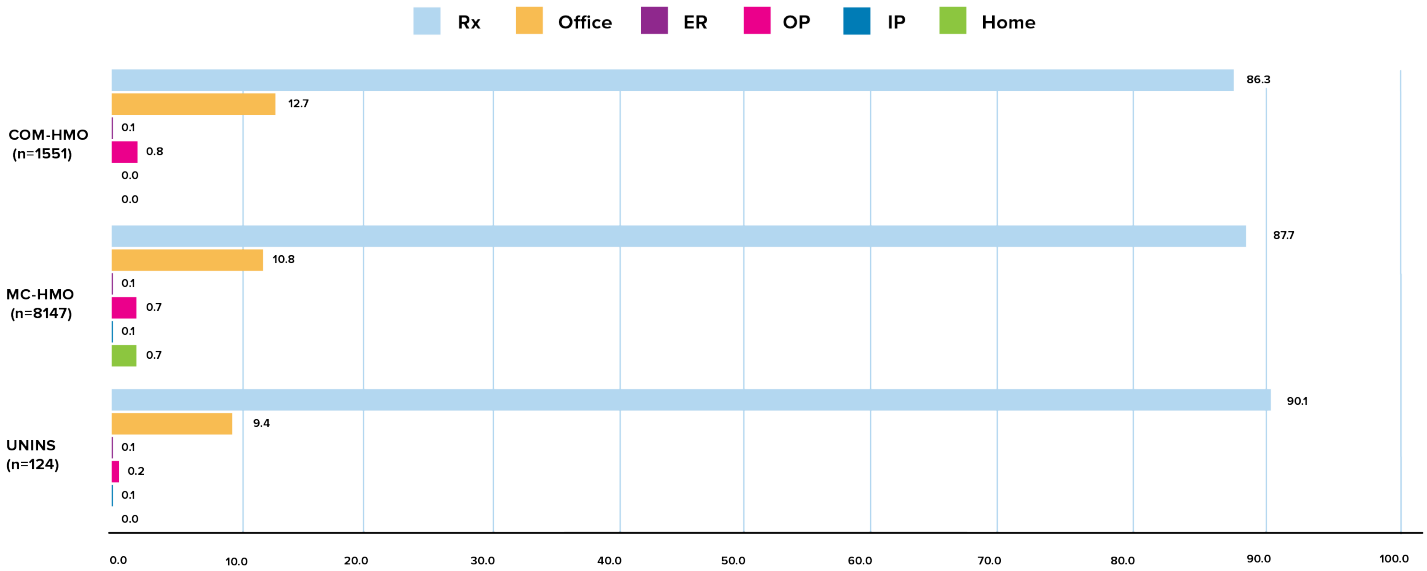


FIGURE 2A: ASTHMA: Percentage of Untreated Patients By Payer Type (p=0.0021)

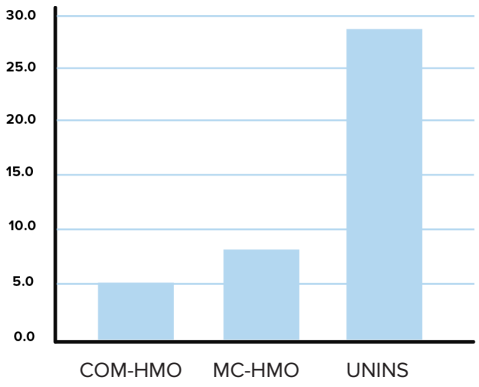


FIGURE 2B: DIABETES: Percentage of Untreated Patients By Payer Type (p=0.1134)

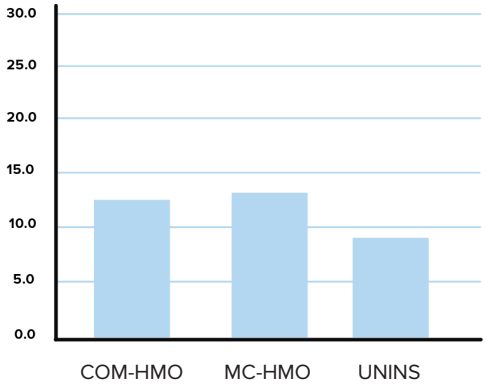
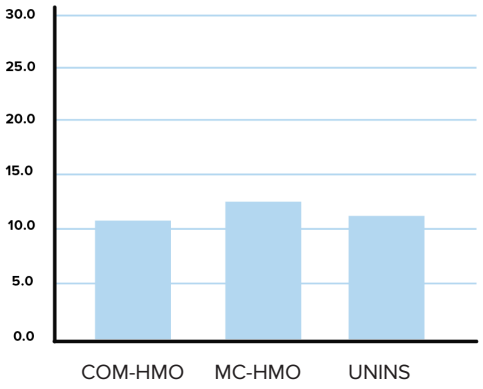


FIGURE 2C: MOOD DISORDERS: Percentage of Untreated Patients By Payer Type (p=0.8640)



Results

OVERALL SAMPLE

After applying all inclusion and exclusion criteria, we identified a total sample of 4,116 individuals. Of these, 1,430 and 1,652 had continuous commercial health coverage or Medicaid health plan coverage throughout the study period, respectively. Our final analytical sample included 1,034 who had no health insurance coverage at all. Of the 4,116 patients, 788 children were diagnosed with asthma; 1,860 adults had diabetes mellitus; and the remaining 1,468 adult patients had been diagnosed with either major depressive disorder or bipolar disorder (herein, 'mood disorders').

SERVICE UTILIZATION

The following figures (Figures 1A-1C) summarize, for each disease state, the frequency of use of disease-related health care services by each insurance subgroup: prescription medications; office visits; emergency department visits; outpatient clinics; hospital stays; and home health care. Prescription medications comprised the greatest number of disease-related services used across all three insurance groups for each disease state. Routine physician office visits comprised the second most commonly used service. Of note, patients with asthma who were uninsured tended to use asthma medications less, and physician office visits, emergency department visits, and outpatient clinic visits more, compared with the insured patients.

More specifically, over one-fourth of uninsured patients did not fill a prescription for a recommended asthma medication, about five times more than the insured groups (Figure 2A). With respect to diabetic patients (Figure 2B) and those suffering from mood disorders (Figure 2C), no significant differences were detected across all three insurance status subgroups with respect to the proportion of patients not receiving recommended medications---likely stemming from urgent patient need (in the case of glucose-controlling medications) and availability of low-cost drugs (for those with mood disorders).

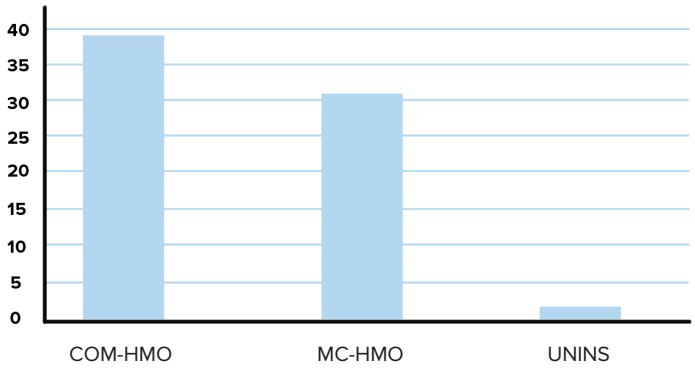
QUALITY MEASURES

We explored variations in quality of care among the three insurance groups for each of the disease states of interest. Although there are many clinical quality metrics available, not all of them can be evaluated using MEPS data.

ASTHMA

In the figure below (Figure 3A), a statistically significant difference among the three insurance groups was detected with respect to the percentage of children having a corticosteroid inhaler dispensed. As shown below, significantly fewer uninsured asthmatic children (p=0.0001) received these recommended asthma inhalers compared to those children having either commercial health insurance or Medicaid health plan coverage.

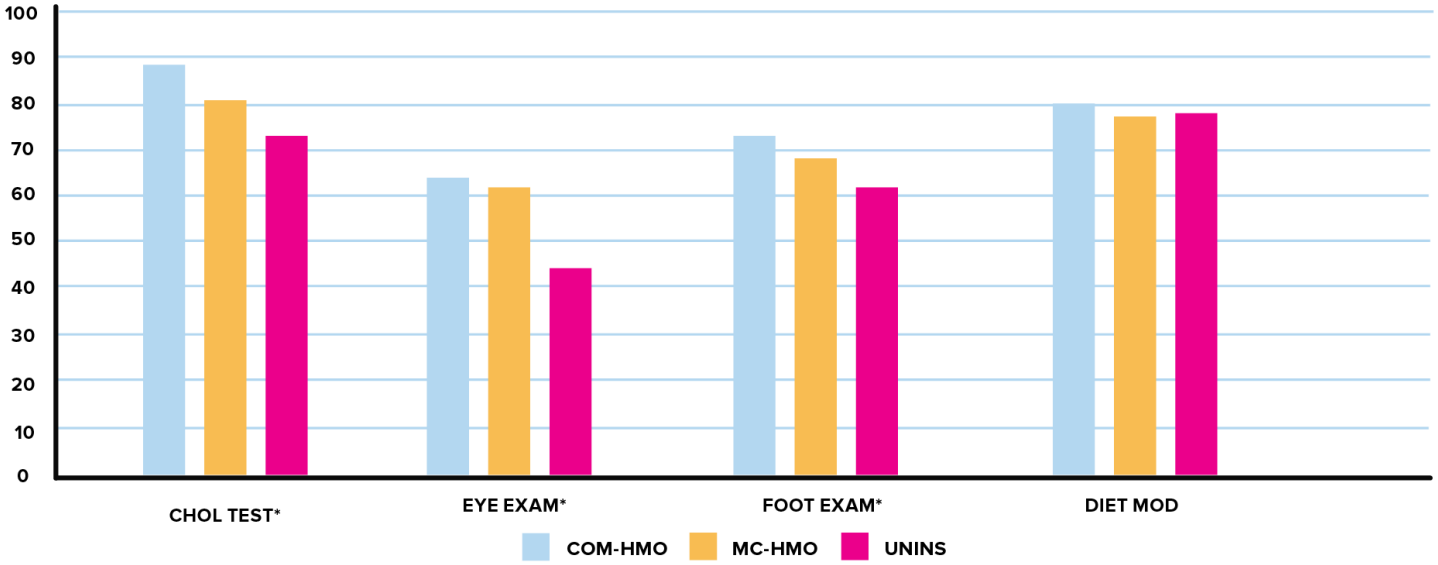
FIGURE 3A: ASTHMA: Percentage of Children Having Corticosteroid Inhalers Dispensed



DIABETES MELLITUS

As summarized below (Figure 3B), a statistically significantly smaller percentage of uninsured people with diabetes had an annual cholesterol test (p=0.0001), eye exam (p=0.0001), or foot exam (p=0.0124) relative to their insured peers. These measures are important as uncontrolled diabetes can lead to vision-loss and foot-amputation. Interestingly, no significant differences were found among the three insurance groups (p=0.5125) with respect to having discussions with their health care provider regarding making appropriate modifications to their diet, in light of their diabetes diagnosis. Unlike cholesterol tests, eye, and foot exams, which are typically performed by licensed professionals, diet counseling is a relatively 'low-cost' service. Therefore, it is not entirely surprising that the experiences of uninsured diabetic patients are similar to patients with commercial health care coverage or Medicaid health plan coverage.

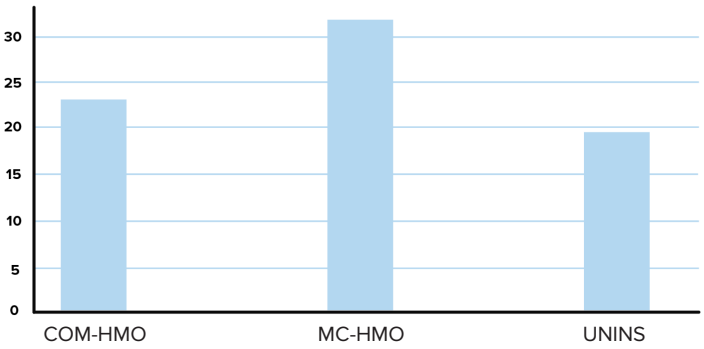
FIGURE 3B: DIABETES: Percentage of Patients Undergoing Recommended Blood Tests, Phsical Exams, and Dietary



MOOD DISORDERS

With respect to patients diagnosed with either major depressive disorder or bipolar disorder, as shown below (Figure 4C), a statistically significant proportion of patients (p=0.0002) with Medicaid health plan coverage was treated with both medication and psychotherapy. This combination therapy is considered the optimal approach to managing mood disorders, and about one out of three Medicaid health plan enrollees received this treatment.[24]

FIGURE 3C: MOOD DISORDERS: Percentage of Adult Patients Using Combined Psychotherapy and Recommended Mood Disorder Medications



PRESCRIPTION MEDICATIONS

As summarized in Appendix B, overall, for treatment guideline-recommended medications, across all three disease states, patients with health coverage had similar prescription medication use patterns. Both commercial and Medicaid health plan enrollees filled both brand-name and generic medications to the same degree; however, there were variations observed with respect to the uninsured patient group. With respect to asthma medications (Appendix B1), there was almost no evidence of prescriptions filled for the uninsured during the study period, in sharp contrast to the insured patient groups. However, drug utilization among uninsured people was consistent with the use observed for both the commercial and Medicaid health plan coverage groups for diabetes medications and mood disorder drugs. As uncontrolled blood glucose levels can rapidly lead to a life-threatening situation, for many people, the clinical course of diabetes means that foregoing pharmaceutical treatment is not an option, regardless of their insurance status (Appendix B2). With respect to the mood disorder treatments (Appendix B3), the majority of these treatments are now low-cost generic medications and thus, people without insurance can likely afford these drugs out-of-pocket.

Discussion

Overall, across three major disease states, people with Medicaid health plan coverage had clinical experiences consistent with their peers having commercial health care coverage. Both insured groups had superior clinical experiences relative to people lacking insurance. The majority of patients having Medicaid health plan coverage were treated for their conditions, and the treatment they received was comparable to that received by the commercially insured. This comparison was consistent for corticosteroid inhalers for asthmatics, important tests and exams for diabetics, or combined medication and psychotherapy for mood disorders. Regarding recommended generic and brand-name prescription drugs, those having Medicaid health plan coverage had similar utilization patterns as those with commercial health insurance.

This study echoes findings from our earlier research comparing measures of care access and provision of preventive care services among the same insurance groups.[25] In that study, patients having Medicaid health plan coverage had similar access and receipt of preventive care as their commercially insured peers. Moreover, both insured groups had far superior access and preventive care than the uninsured. In this study, people without health care coverage had comparable clinical experiences only for those services with relatively low-cost burdens, such as filling generic prescription medications to manage their mood disorder or discussing diet modifications with their health care providers. However, uninsured patients, particularly uninsured people with asthma, were consistently lagging insured patients across a number of measures. This study's findings suggest that people with asthma who are uninsured limit their interactions with the health care system, and in the case of appropriate medication use for asthma control, had virtually no evidence of appropriate care.

The proposition that having Medicaid coverage is somehow detrimental to one's health is simply not supported by the clinical experiences described in this and other studies. Indeed, results from this study suggest that quite the opposite is true. Medicaid is an essential program that helps millions of Americans get the care they need to stay healthy and productive. It plays a valuable role in strengthening our society – from keeping children healthy to ensuring seniors receive the care they need.

Appendix A: Detailed Methodology Description

DATA SOURCE

The data used in this research project came from the Household Component of the Medical Expenditure Panel Survey (MEPS), 2013-2015. The MEPS program is operated by The Agency for Healthcare Research and Quality (AHRQ), a part of the United States Department of Health and Human Services. Multiple times per year, AHRQ researchers collect data from a sample of families and individuals, drawn from a nationally representative subsample of households that participated in the prior year's National Health Interview Survey. During several rounds of household interviews covering two full calendar years, AHRQ researchers collect detailed information for each person in the household on demographic characteristics, health conditions, use of medical services, health care payments, and satisfaction with care. Publicly available data sets and the corresponding data dictionaries were downloaded from the website, https://meps.ahrq.gov/mepsweb/data_stats/download_data_files.jsp and then imported into SAS Enterprise Guide, 6.1 for further analysis.

DATA MANAGEMENT

- Individuals where classified as having commercial health care coverage (that is, coverage through their

employer or the individual market) if they reported having this type of coverage during both interviews when this question was asked during the same calendar year (variables PRVHMO31 and PRVHMO42).

- Individuals where classified as having Medicaid health plan coverage if they reported having this type of coverage during both of the interviews when this question was asked during the same calendar year (variables MCDHMO14 and MCDHMO1).
- All individuals whose coverage changed during the study year was excluded from the analysis.
- For people with diabetes and mood disorders those under 18 and over 64 years of age were excluded from the analysis. For people with asthma individuals 18 years old and older were excluded from the analysis
- Since only a small subsample of individuals were asked some of the MEPS questions used in our study, the annual datasets for 2013, 2014, and 2015 have been merged into a single 2013-15 file to increase the number of valid cases for analysis.

ANALYTICAL APPROACH

For each of the insurance status subgroups, individuals diagnosed with one of the three conditions of interest (diabetes, asthma, and mood disorders) were identified using MEPS Medical Condition 2013-2015 files by using MEPS-provided clinical classification categories that, in turn, had been generated using Clinical Classification Software provided on the Healthcare Cost and Utilization Project (HCUP) website. Any individual having more than one of the conditions of interest was excluded from the study.

For each person that had one of the conditions of interest, all outpatient clinic visits, office-based medical provider visits, hospital inpatient stays, emergency room visits, home health visits, other medical expenses, and prescribed medicine records were extracted to capture all of the disease-related medical and pharmacy expenses for that individual in a given year.

To analyze our final dataset, for each person with a condition of interest, the total annual disease-related medical expenses and the corresponding number of care events were calculated and disaggregated by outpatient visits, office-based medical provider visits, hospital inpatient stays, emergency room visits, dental visits, home health visits, other medical expenses, and prescribed medicine. All expenses were inflation-adjusted to 2015 dollars.

Average unit cost of treatment was calculated as total spending on disease-related care divided by the number of disease-specific treatment events (doctor visits, hospitalizations, prescriptions etc.). For each type of service (inpatient care, ER utilization, etc.), a service utilization statistic was calculated defined as the number individuals who had any events for this type of service during the calendar year divided by the total number of people with this condition in the calendar year, expressed as a percentage.

To measure the quality of care that individuals with different insurance status receive for diabetes, asthma and mood disorders, we reviewed the relevant clinical guidelines that were current during the period 2013-2015 (Table A1). Given the limitations of the dataset we were unable to measure how medical care received by individuals aligned with all of the recommendations in those guidelines.

For diabetes, we measured the share of individuals that had an annual blood cholesterol check, annual eye exam, or annual foot exam, and/or who reported receiving counseling on modifying their diet. For mood disorders, we measured the proportion of individuals who used both antidepressants and psychotherapy. The use of psychotherapy was identified with Current Procedural Terminology codes following the methodology used by Bhattacharya, *et al.*[13] We measured the percentage of all asthmatic children having an inhaled corticosteroid dispensed at least once during the calendar year. The Rao-Scott chi-square test was used for comparisons by insurance status subgroups with an a priori alpha level set at 0.05.

Next, we compiled lists of medications recommended for treatment for each of three conditions of interest (Table A1). To assess patterns of utilization, for each prescription drug, we counted the total number of prescriptions filled and the total number of people who received the medication. Comparisons of the proportions of individuals for whom there was no evidence of filling a recommended prescription in a calendar year were conducted by using the Rao-Scott chi-square test.

The AHRQ-provided personal weights were used to obtain nationally-representative estimates, using SAS program statements designed for the multi-stage survey sampling, such as PROC SURVEYFREQ and PROC SURVEYMEANS.

Finally, for each medication we averaged its Wholesale Acquisition Cost unit price across all NDCs available in 2015, as reported by REDBOOK ™.

Table A1: Treatment Guidelines

CONDITION	SOURCE
 Diabetes	a) American Diabetes Association. Standards of Medical Care in Diabetes 2012. 2012 Jan; 35(Suppl 1): S11–S63 b) American Diabetes Association. Standards of Medical Care in Diabetes 2016. Diabetes Care 2016 Jan; 39 (Supplement 1); Table 7.1.
 Asthma	a) Clinical Practice Guidelines. National Asthma Education and Prevention Program, Third Expert Panel on the Diagnosis and Management of Asthma. Bethesda (MD): National Heart, Lung, and Blood Institute (US); 2007 Aug. b) U.S. Department of Health and Human Services, National Institutes of Health. Asthma Care Quick Reference: Diagnosing and Managing Asthma. NIH Publication No. 12-5075. Revised September 2012.
 Mood Disorders	a) American Psychiatric Association. Practice Guideline for the Treatment of Patients with Major Depressive Disorder, Third Edition. Am J Psychiatry 2010; 167 (supplement):1. b) Armstrong C. APA Releases Guideline on Treatment of Patients with Major Depressive Disorder. Am Fam Physician. 2011 May 15;83(10):1219-1227. c) Elmaadawi A, Singh N, Reddy J. Prescriber's Guide to Using 3 New Antidepressants: Vilazodone, Levomilnacipran, Vortioxetine. Current Psychiatry 2015. 14:28–29, 32–26. d) Department of Veterans Affairs, Department of Defense. Management of Bipolar Disorder in Adults (BD). Clinical Practice Guideline. May, 2010, available at https://www.healthquality.va.gov/bipolar/bd_306_sum.pdf (accessed on 10.22.2018)

Appendix B1: Prescriptions of Recommended Asthma Medications By Insurance Status

Recommended Rx	Commercial-HMO		Medicaid-HMO		Uninsured	
	N	Patients	N	Patients	N	Patients with Rx, N
Montelukast	122	21	599	88	2	1
Fluticasone	103	33	598	101	1	1
Beclomethasone	73	15	182	47	0	0
Fluticasone_Salmeterol	48	9	146	21	1	1
Budesonide	31	14	120	34	2	1
Budesonide_Formoterol	22	4	29	10	0	0
Prednisolone	18	11	79	49	0	0
Mometasone	15	1	63	7	0	0
Prednisone	12	11	57	33	3	3
Ciclesonide	0	0	0	0	0	0
Cromolyn	0	0	0	0	0	0
Flunisolide	0	0	6	1	0	0
Formoterol	0	0	0	0	0	0
Methylprednisolone	0	0	3	2	0	0
Mometasone_Formoterol	0	0	41	5	0	0
Omalizumab	0	0	0	0	0	0
Salmeterol	0	0	0	0	0	0
Theophylline	0	0	0	0	0	0
Zafirlukast	0	0	0	0	0	0
Zileuton	0	0	0	0	0	0

Appendix B2: Prescriptions of Recommended Diabetes Mellitus Medications by Insurance Status

Recommended Rx	Commercial-HMO		Medicaid-HMO		Uninsured	
	N	Patients	N	Patients	N	Patients
metformin	2364	349	2194	248	2073	328
insulins	1517	160	2442	175	1479	158
glipizide	518	80	483	54	445	64
glimepiride	376	49	117	22	175	31
glyburide_glibenclamide	282	41	349	48	336	58
sitagliptin	267	46	240	31	128	28
pioglitazone	192	22	104	14	55	7
canagliflozin	65	10	4	4	10	2
linagliptin	53	6	13	4	2	1
exenatide	39	7	51	4	0	0
saxagliptin	34	5	77	9	22	4
dapagliflozin	31	4	0	0	5	2
acarbose	0	0	0	0	0	0
albiglutide	0	0	0	0	0	0
bromocriptine	0	0	0	0	0	0
colesevelam	0	0	0	0	5	2
dulaglutide	0	0	0	0	0	0
empagliflozin	0	0	0	0	0	0
liraglutide	0	0	0	0	0	0
miglitol	0	0	0	0	0	0
nateglinide	0	0	0	0	0	0
pramlintide	0	0	0	0	0	0
repaglinide	0	0	0	0	0	0
rosiglitazone	0	0	0	0	0	0

Appendix B3: Prescriptions of Recommended Mood Disorder Medications By Insurance Status

Recommended Rx	Commercial-HMO		Medicaid-HMO		Uninsured	
	N	Patients	N	Patients	N	Patients
bupropion	598	79	370	45	132	29
sertraline	578	75	463	73	256	49
fluoxetine	408	59	404	60	344	51
venlafaxine	307	34	218	24	173	29
citalopram	306	55	469	61	399	59
trazodone	305	43	574	72	311	55
escitalopram	293	46	334	39	69	11
lamotrigine	282	32	193	21	62	10
duloxetine	154	21	225	30	121	15
paroxetine	140	17	285	27	183	21
quetiapine	128	17	404	55	134	18
aripiprazole	110	12	342	39	42	7
lithium	106	11	117	12	41	9
vilazodone	75	8	14	6	13	4
amitriptyline	61	11	207	24	92	10
desvenlafaxine	42	4	25	2	10	1
valproate	31	6	235	24	95	10
risperidone	28	4	214	25	67	7
mirtazapine	16	7	109	16	10	3
nortriptyline	16	3	52	7	0	0
olanzapine	13	1	128	17	7	2
ziprasidone	12	1	62	8	33	3
doxepin	10	4	18	4	8	2
haloperidol	7	1	41	4	7	2
carbamazepine	0	0	18	2	0	0
clozapine	0	0	0	0	0	0
desipramine	0	0	0	0	0	0
imipramine	0	0	1	1	0	0
Isocarboxazid	0	0	0	0	0	0
levomilnacipran	0	0	0	0	0	0
maprotiline	0	0	0	0	0	0
nefazodone	0	0	0	0	0	0
olanz/fluoxetine	0	0	0	0	0	0
phenelzine	0	0	0	0	0	0
protriptyline	0	0	0	0	0	0
selegiline	0	0	0	0	0	0
tranylcypromine	0	0	0	0	0	0
trimipramine	0	0	0	0	0	0
vortioxetine	0	0	0	0	0	0

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