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Mental Health Treatment in the Primary Care Setting: Patterns and Pathways

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The redesign of primary care through the patient-centered medical home offers an opportunity to assess the role of primary care in treating mental health relative to the rest of the health care system. Better understanding the patterns of care between primary care and mental health providers helps guide necessary policy changes. This article reports the findings from 109,593 respondents to the 2002–2009 Medical Expenditure Panel Surveys (MEPS). We examined the extent to which persons with poor mental health visited primary care providers, and distinguished among 4 patterns of care: (a) mental health only, (b) primary care only, (c) dual care (both mental health and primary care) and (d) other provider combinations. Our findings indicate that poor mental health and specific mental health conditions remain prevalent in primary care. An increased focus on patient-centered care requires greater integration of primary and mental health care to reduce fragmentation of care and disparities in health outcomes.

Keywords: health policy, integrated care, mental health, patient-centered medical home, primary care

An estimated 30% of the adult population has a mental health disorder within any 12-month period (Kessler, Berglund, et al., 2005; Kessler, Demler, et al., 2005; Wang et al., 2005); most will be diagnosed, treated, and managed in primary care (deGruy, 1996; Regier et al., 1993). Additionally, the numbers of persons with mental health disorders who are being treated in the general medical sector continue to rise (Wang et

al., 2005). Findings also suggest that many health care consumers, including a majority of those with mood or anxiety disorders, obtain treatment solely from a primary care physician (Norquist & Regier, 1996; Wang et al., 2006).

The prevalence of mental health conditions in primary care provides ample opportunities for mental health assessment and treatment; however, empirical findings suggest primary care does not adequately address these needs (Blount, 2003; McAlpine & Mechanic, 2000; Wang et al., 2005). More than 33 million persons use health care services for mental illness or substance abuse problems (Institute of Medicine, 2006). However, only 41.1% of 5692 U.S. health care patients aged 18 years and older with a mental illness condition received treatment within the past 12 months (Wang et al., 2005). This may be attributable in part to the prevalence of more complex patients who present with mental health diagnoses that are often comorbid with medical conditions (Ani et al.,

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2009; Luber et al., 2000; Merikangas et al., 2007; Noël et al., 2004; Yates et al., 2004).

Improving Mental Health Care Delivery via the Patient-Centered Medical Home

The recently enacted Patient Protection and Affordable Care Act (PPACA) intends to meet the health care needs of millions of new patients, including those who may present to primary care with a mental health condition (Burke et al., 2013; Doherty, 2010; B. F. Miller, Talen, & Patel, 2013). Our nation's current health care redesign requires that we address the inefficiencies of treating physical and mental health separately (deGruy, 1996; deGruy & Etz, 2010). With a growing recognition of the burden of mental health conditions on primary care, and an effort to increase the primary care providers' role in diagnosing, treating, and managing depression and other mental health conditions comorbid with medical problems, integrating care is a viable solution (Ani et al., 2009; Cassano & Fava, 2002; B. F. Miller, Teevan, Phillips, Pettersson, & Bazemore, 2011; R. L. Phillips, Jr., Miller, Pettersson, & Teevan, 2011).

Purpose of the Present Study

Prior findings suggest mental health needs are addressed primarily in primary care: however, the current study specifically examines where and how frequently patients seek these services, including primary care only (PC only), mental health settings only (MH only), and both primary care and mental health care settings (dual care). We also sought to provide evidence of the U.S. prevalence and severity of mental health diagnoses (e.g., depressive, schizophrenic and affective disorders), where patients with these diagnoses are receiving their care, and who is providing the care. To this end, we present the following study aims:

Aim 1: How many adults with self-reported poor mental health receive care from PC only, MH only, or dual care? How frequently do these patients utilize medical and mental health care?

Aim 2: How many adults treated for a mental health condition receive care from PC only, MH only, or dual care?

Aim 3: What factors are associated with treatment by a primary care provider (PC only) in contrast to a mental health provider (MH only)?

Aim 4: Of those who have a mental health condition and who obtain care from any of the three groups (PC only, MH only, or dual care), how prevalent is minimally adequate care (two or more visits in one year)?

Method

The Agency for Health care Research and Quality (AHRQ) Medical Expenditure Panel Survey (MEPS; <http://www.meps.ahrq.gov/mepsweb/>) provides estimates of health services utilization, medical expenditures, and sources of payment for the civilian and resident U.S. population (S. B. Cohen, 1997). MEPS captures lower-income and minority group health care consumers but does not include the homeless or individuals who may be residing in psychiatric hospitals or correctional institutions (J. W. Cohen, Cohen, & Banthin, 2009). We limited our sample to adults aged 18 years and older.

The MEPS includes three components: household, medical provider, and insurance data (J. W. Cohen, Cohen, & Banthin, 2009). For the purpose of this study, we only use the household component. Self-reported demographics, health insurance, and physical and mental health information were collected via computer-assisted in-person interviews and participants were recruited from the previous year's National Health Interview Survey. Demographic characteristics were obtained from the consolidated files that are sorted by year. Information about visits, including diagnoses and physician specialty, are from the "Office-based" and "Outpatient" sections of the MEPS Medical Event Files (J. W. Cohen, Cohen, & Banthin, 2009).

Our sample consists of 109,593 adults who account for 184,636 person-year observations, thus, the overlapping panel design. That is, most respondents provide data for two consecutive years. As discussed in the Statistical Analysis section, MEPS is designed to allow such a pooling of the data across years. We used eight years of pooled MEPS data from 2002 through 2009. We included data starting from 2002 because MEPS began reporting information about provider specialty, the type of provider that are providing respondents' care, and the frequency of these visits.

Measures

Mental health. Adult household member survey respondents completed self-administered questionnaires regarding physical and mental health status and outcomes. The primary respondent was asked to report the mental health status of other household members, meaning that 40% of respondent reports described a household member that was not present at the interview.

We measured mental health with the mental component score (MCS) of the Short Form – 12 (SF-12). The MCS shows good construct validity as it correlates strongly with the other multitem, standardized mental health measures ($r = .69$; Fleishman & Zuvekas, 2007). Established scoring guidelines for the MCS are standardized to have a mean of 50 and a standard deviation of 10 (Ware, Kosinski, & Keller, 1996). Two large epidemiological studies examining mental health diagnoses and disability found that those with moderate to severe mental illness diagnoses fell between MCS scores of 30 to 39 and below 30, respectively (Gill, Butterworth, Rodgers, & Mackinnon, 2007; Sander-son & Andrews, 2002). For this reason, we defined a person with poor mental health in the current study to have a score less than 35 because this is an estimated 1.5 standard deviations below the mean MCS score (Gill, Butterworth, Rodgers, & Mackinnon, 2007; Sanderson & Andrews, 2002).

Physical health and comorbidity. Two variables are used that relate to physical health both as a measure of comorbidity of mental and physical health conditions. The first is a standardized physical component score (PCS) of the SF-12 described above. We defined poor physical health as a score below 35. The second indicator is participants' self-reported treatment for a physical health problem during the course of one year.

Mental health visits. We obtained mental health visit information from the respondent who indicated that the provider addressed mental health concerns at that visit. Specifically, trained coders then classified these self-reported mental health conditions using the *International Classification of Diseases, Version 9* (ICD-9) codes between 290 and 315 as well as the codes 797 ("senility without psychosis") and V40 ("mental/behavioral problem"). We categorized

these codes into the following reported mental health conditions: depression, anxiety disorder (labeled 'neurotic'), schizophrenic disorder, affective disorder, acute stress, and adjustment reaction. For each individual we created a summary of the total number of mental health visits in a year.

Minimally adequate care. We used Wang et al.'s (2006) definition of minimally adequate care: two or more visits for a mental health diagnosis during the course of one year.

Provider specialty. Respondents who had office visits were asked to identify the type and specialty of their provider for each visit (e.g., nurse, psychologist, primary care physician). (For a complete list, please refer to http://meps.ahrq.gov/mepsweb/data_stats/download_data/pufs/h110g/h110gcb.pdf.)

For this study, we made four groups of patients based on care setting, as follows:

Primary care only (PC only). All office-based care in the course of one year was obtained from a primary care physician (internal medicine, general practice and family medicine);

Mental health only (MH only). All office-based care was obtained from mental health professionals (specifically, psychologists, social workers and psychiatrists as identified in MEPS);

Both mental health and physical health visits (Dual care). Care was rendered from a combination of primary care and mental health providers as defined above; and

Other providers. Care was exclusively from other types of providers, including nonprimary care physicians, chiropractors, technicians, advanced practice nurses/nurses, and physician assistants. If a patient saw both a physician and a nonphysician, the visit is classified a visit to a physician.

Covariates. We also examined differences in primary care and mental health visits by gender, health insurance coverage, race/ethnicity, age, region, metropolitan location, years of schooling, and poverty level (the ratio of household income to poverty threshold).

Statistical Analysis

The MEPS has a complex multistage sample design that uses stratification, cluster sampling, and oversampling. Therefore, by design, many

persons are in the sample for two consecutive years. All analyses were done using the survey (svy) commands in STATA 11.1, which take into account this design as well as data pooling across years. STATA uses linearization-based variance estimators, which are appropriate for the design variables provided with the MEPS data. We also used primary sampling unit and stratum variables provided by MEPS for purposes of pooling data across years to correct for the dependence among observations from the same geographic area and to obtain data from most respondents for two consecutive years (Agency for Healthcare Research & Quality, 2011). Estimates were provided for the full population of adults as well as for the subset of respondents reporting fair or poor mental health. Statistical significance was determined using an adjusted Wald test (Graubard, Korn, & Midthune, 1997). Differences in patient characteristics across type of care obtained were assessed using chi-square or ANOVA statistics. Multinomial logistic regression was used to examine which factors are associated with obtaining different combinations of care (PC only, MH only, "Other" settings, or both PC and MH [defined herein as dual care]).

Results

Analysis results for Aim 1 show the importance of primary care for persons with poor mental health. Table 1 reports the distribution of adults who made at least one medical visit, whether for general health or mental health care to different types of providers. Overall, in this

sample of 184,636 separate visit observations, 8.1% of patients reported MCS scores below 35, indicating defined poor mental health. For this group, one half (49.5%) obtained care from only a primary care physician 5.0% obtained care from only a mental health provider and just 13.6% received care from both mental health and primary care providers. Also, approximately one third (28.6%) of adults with better mental health did not report any health visits compared with 17.7% of adults with poor mental health.

Our second aim concerns the extent to which adults being treated for a reported mental health condition obtained shared care from primary care, mental health providers, or both (see Table 2). Among adults who reported having a mental health visit, 35.4% ($n = 3979$) saw only their primary care provider, 43.7% ($n = 4938$) saw a mental health provider exclusively, 8.5% ($n = 960$) saw both (dual care), and 12.5% ($n = 1411$) saw a different type of provider. Lastly, in our sample of 184,636 separate visit observations, results indicate that 93.9% of patients ($n = 173,348$) had no mental health visit.

With respect to our third aim, we examined characteristics of adults with mental health diagnoses across different types of provider combinations, using bivariate results (see Table 2) and multivariate logistic models (see Table 3). Depression was the most common mental health condition for all types of care, followed by anxiety disorders. Adults with acute stress were relatively less likely to see just mental health providers; by contrast, those with affective or schizophrenic disorders or adjustment reactions were much less likely to see only a primary care physician. There are no substantial differences between patients who obtained care exclusively from either primary care or mental health providers in two areas: the likelihood of having insurance or in ethnicity. Patients who obtained care solely from primary care providers tended to be female, of lower income, have less schooling, and were older than persons who obtained care solely from mental health providers. Those living in metropolitan areas and in the Northeast were more likely to see only a mental health provider. Adults in the South and in rural areas were more likely to see only a primary care physician for their mental health conditions.

Table 1
Distribution of Annual Visit Pattern and Self-Reported Mental Health Rating

Visit pattern	SF-12, MCS ^a	
	≥35 (Better) % (n)	<35(Poor) % (n)
Primary care only	49.8 (84,512)	49.5 (7392)
Mental health only	1.0 (1697)	5.0 (747)
Mental health and primary care	2.2 (3734)	13.6 (2031)
Other combinations	18.5 (31,395)	14.1 (2106)
No visit	28.6 (48,535)	17.7 (2643)
Person-year observations	169,703	14,933
Weighted percent	91.9	8.1

^a Short Form-12, Mental Component Score.

Table 2
Patients' Mental Health Severity and Descriptives by Visit Pattern

Independent variables	PC only (n = 3979) %	MH only (n = 4938) %	PC + MH (n = 960) %	Other (n = 1411) %	No MH visit (n = 173,348) %
SF-12 Mental Component Score					
Better (≥ 35)	73.3	65.9	56.2	76.4	94.4
Poor (<35)	26.7	34.1	43.8	23.6	5.6
SF-12 Physical Component Score					
Better (≥ 35)	78.1	80.2	77.7	82.8	89.7
Poor (<35)	21.9	19.8	22.3	17.2	10.3
Reported mental health condition					
Depression	53.1	54.9	62.9	37.1	0.0
Anxiety (neurotic) disorder	28.0	33.3	36.1	25.8	0.4
Schizophrenic disorder	0.5	5.8	4.6	0.7	0.0
Affective disorder	2.4	16.0	11.2	3.9	0.0
Acute stress	11.6	7.1	10.1	22.8	0.0
Adjustment reaction	1.6	5.8	6.2	3.0	0.0
Poverty: Income/needs ratio					
<100%	15.3	19.7	18.7	14.8	10.7
100–125%	5.3	5.4	5.3	5.5	4.1
126–200%	15.0	12.6	11.8	12.4	13.2
201–400%	32.5	24.7	29.4	30.2	30.9
>400%	31.9	37.5	34.9	37.2	41.1
Insurance status					
Insured	91.5	92.0	92.5	89.5	85.1
Uninsured	8.5	8.0	7.5	10.5	14.9
Years of schooling					
<12	22.8	17.7	16.5	18.0	19.9
12	32.7	25.5	30.2	28.7	31.6
>12	43.9	56.4	52.7	53.0	48.5
Race and ethnicity					
Non-Hispanic, White	78.3	78.8	79.2	79.5	68.6
Non-Hispanic, Black	7.3	8.4	7.6	6.6	11.5
Non-Hispanic, other	4.9	4.0	5.2	4.7	6.6
Hispanic	9.6	8.7	8.0	9.2	13.3
Age					
18–45	44.8	53.2	50.5	50.3	52.7
46–64	33.5	39.0	40.2	36.5	30.2
65+	21.7	7.8	9.4	13.1	17.1
Gender					
Male	32.2	37.4	38.1	30.2	49.2
Female	67.8	62.6	61.9	69.8	50.8
Region					
Northeast	17.3	22.4	22.9	16.8	18.5
Midwest	22.1	23.5	24.2	22.6	21.9
South	36.0	31.3	29.2	29.9	36.0
West	23.4	21.9	23.5	29.6	22.5
Urbanicity					
Non-metropolitan	19.1	12.8	14.0	19.6	17.0
Metropolitan	80.9	87.2	86.0	80.4	83.0

Results of the corresponding multinomial logistic regression (see Table 3) show that adults with poor mental health (as measured by a low SF-12 MCS scores) were less likely to see only primary care providers (OR: 0.65, $p < .01$) and

more likely to have dual care than mental health care only (OR: 1.54, $p < .01$). Physical health (PCS) scores are not significantly associated with sector of care. However, adults with comorbid general health and mental health prob-

Table 3
Determinants of Visit Pattern for Patients With Mental Health Diagnoses, Multinomial Logit Results

Independent variables	Primary care only (vs. Mental health care only)		Primary care + Mental health (vs. Mental health care only)	
	OR	95% CI	OR	95% CI
Poor SF-12 MCS (<35)	0.65**	[0.57–0.74]	1.54**	[1.27–1.87]
Poor SF-12 PCS (<35)	0.88	[0.76–1.01]	0.93	[0.75–1.16]
Other physical condition	0.83*	[0.69–0.99]	0.97	[0.73–1.29]
Schooling				
0–11 years	0.94	[0.80–1.10]	0.76*	[0.59–1.00]
12 years	Reference	—	Reference	—
13+ years	0.58**	[0.50–0.67]	0.82	[0.66–1.02]
Region				
South	Reference	—	Reference	—
Northeast	0.69**	[0.57–0.82]	1.19	[0.91–1.56]
Midwest	0.83*	[0.71–0.98]	1.10	[0.85–1.43]
West	0.94	[0.79–1.11]	1.15	[0.89–1.50]
MSA (vs. non-MSA)	0.65**	[0.55–0.75]	0.84	[0.55–0.75]
Ethnicity				
NH, White	Reference	—	Reference	—
NH, Black	0.89	[0.74–1.08]	0.91	[0.74–1.08]
NH, other	1.21	[0.91–1.60]	1.19	[0.78–1.83]
Hispanic	1.12	[0.94–1.35]	0.92	[0.69–1.23]
Female gender	1.26**	[1.11–1.44]	0.97	[0.80–1.18]
Age				
18–45	0.29**	[0.23–0.35]	0.70*	[0.50–0.98]
46–64	0.32**	[0.26–0.39]	0.83	[0.26–0.39]
65+	Reference	—	Reference	—
Uninsured	1.12	[0.90–1.40]	0.97	[0.68–1.38]

Note. The sample is restricted to adults with a reported mental health condition treated solely in the primary care sector ($n = 3979$), solely in the mental health sector ($n = 4938$), and in both the primary care and mental health sector ($n = 960$). MSA = Metropolitan Statistical Area; NH = Non-Hispanic.

* $p < .05$. ** $p < .01$.

lems were less likely to obtain care from the primary care sector only (OR: 0.83, $p < .05$). Persons 65 and older were more likely than younger persons to obtain mental health treatment exclusively in primary care than in the mental health sector. People living in the Northeast (OR: 0.69, $p < .01$), the Midwest, (OR: 0.83, $p < .05$), and in metropolitan areas (OR: 0.65, $p < .01$) were the least likely to obtain mental health care exclusively in the primary care sector. There are no significant changes in utilization patterns by year between 2002 and 2009.

Finally, we examine the prevalence of minimally adequate mental health treatment in primary care (Aim 4; Table 4). As stated previously, this is operationalized as two or more visits for a mental health diagnosis during the course of one year because of precedence set in previous research (Wang et al., 2006). Most persons (52.6%) who obtained mental health

care from only a primary care physician had just one visit compared with 16.9% of those who obtained care only from mental health providers. Just 0.5% of patients cared for exclusively by primary care physicians had 21 or more visits compared with 13.2% for those cared for exclusively by mental health providers and 16.5% for those who obtained care from both primary care and mental health providers. Adults with poorer mental health, as measured with the SF-12, had generally similar results as adults with a mental health visit, that is, 41.2% had a single visit if they saw a primary care physician (see Table 4).

Several limitations should be considered in interpreting these findings. First, the MEPS is limited to the civilian, noninstitutionalized population and does not include the homeless and institutionalized persons, or children or adolescents under the age of 18. Also, the survey relies

Table 4
Annual Number of Mental Health Visits by Visit Pattern

Visit number in calendar year	PC only (n = 3979) %	MH only (n = 4938) %	PC + MH (n = 960) %	Other combination (n = 1411) %
All persons with mental health visit				
1	52.6	16.9	0.0	48.8
2-5	39.0	36.6	32.0	33.1
6-10	5.9	17.8	28.0	9.4
11-20	1.9	15.5	23.5	5.7
21+	0.5	13.2	16.5	>2.9
	PC only (n = 1153) %	MH only (n = 1837) %	PC + MH (n = 452) %	Other combination (n = 364) %
Persons with poor mental health (MCS ^a < 35) with a mental health visit				
1	41.2	12.7	0.0	47.3
2-5	45.3	32.6	28.4	34.0
6-10	8.5	17.7	26.8	10.3
11-20	4.0	19.8	25.8	5.4
21+	1.0	17.2	19.0	3.0

^a Mental Component Score of the Short Form-12.

on self-reports of mental health, visit frequency, and provider details, and this may underestimate true prevalence rates or misrepresent this data, either because survey respondents may not know that they have a particular condition or because they are reluctant to provide such information. A notable limitation includes using a collateral respondent (identified as the primary respondent in the survey) to relay physical and mental health information regarding one or more nonparticipating family members in 40% of cases.

There are documented limitations to working with large secondary data sets: the large sample size may falsely inflate statistical significance, discrepancies may exist in coding diagnoses and characterizations of participants, and groups of participants may be inadvertently excluded as a result of recruitment and collection techniques (Huston & Naylor, 1996). We also limited our definition of poor mental health to those with a MCS score of 35 or below: this may have over or underestimated true mental health severity rates. The survey also relies on professional coders to apply ICD-9 codes to described conditions which may reduce reliability. For these reasons, we supplemented the study with measures of mental health status (MCS and self-report of mental health diagnosis). Because visits that included encounters

with both a physician and nonphysician are categorized as only a physician visits, the MEPS understates the extent of care provided by nonphysicians. Lastly, MEPS does not indicate whether or not the mental health provider was located at the primary care office or in another office, which may influence patient adherence to follow-up.

Discussion

Consistent with previous studies (Norquist & Regier, 1996; Wang et al., 2006), the majority of patients with mental health conditions continue to be treated solely in the primary care setting. Compared with persons with poor mental health, persons with better mental health are more likely to report no visit to a provider (Tables 1 and 2). Although those with poor mental health attend more mental health visits than those with better mental health, not attaining minimally adequate mental health services, especially by the more seriously mentally ill, indicates that those who need it most are not accessing these services. The reliance on primary care is also important for persons with relatively less serious mental health conditions, older patients, and adults living in rural areas (Wang et al., 2005).

Although there is increasing evidence of collaboration between primary care and mental health, segregation of the two currently remains the most prevalent model (Cunningham, 2009; Institute of Medicine, 2006). As our data suggest, persons seeking treatment for mental health conditions often do not combine care from primary care and mental health providers. Integrating mental health professionals into primary care could reach a significant portion of the population with mental health needs and further the ability for behavioral health and primary care providers to collaborate.

Current opportunity within health care policy encourages a new dialogue about redesigning a system to meet the patients' comprehensive health care needs. However, providing better mental health care in primary care cannot fall solely within primary care providers' scope of responsibility. As previous authors have shown, primary care providers do not have adequate time to address even the most essential preventative measures (Yarnall, Pollak, Ostbye, Krause, & Michener, 2003). An additional and notable constraint includes the added time required to address the unique and, at times, urgent needs of patients who have a comorbid mental health diagnosis (R. L. Phillips, Jr., Miller, Petterson, & Teevan, 2011). Our analyses suggest only 13.6% of adults with poor mental health receive dual care for their mental health condition. This highlights the opportunity to advocate and implement health policy that offers provider education and training to promote better collaboration to improve integrated care services. In addition to a lack of coordinated care across settings, there is also a surprising level of single visits to primary care for mental health conditions. Further study is needed to understand whether these single visits are a further reflection of poor ability to offer and execute dual care, a legacy of unsupportive health care payment policy of collaborative care, patient preference, poor care on the part of primary care providers, or all four (B. F. Miller, Kessler, Peek, & Kallenberg, 2011).

Although these data are limited to the patterns of health care utilization among these populations, our findings and others' suggest that health care system constraints reduce opportunities for comprehensive care and integration of mental health providers into primary care (Kathol, Butler, McAlpine, & Kane, 2010;

Kwan & Nease, 2013). This study further quantifies the chasm studied by the Institute of Medicine as well as dozens of others studies that mental health and primary care are inseparable (Butler et al., 2008; deGruy, 1996; Institute of Medicine, 2006; Kwan & Nease, 2013). Further, the fact that few individuals with mental health are seen in a shared capacity should heighten the concern about the inadequacies of care provided to people with mental health conditions in the United States.

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