Trends in Office-Based Mental Health Care Provided by Psychiatrists and Primary Care Physicians

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ABSTRACT

Objective: To assess recent national trends in mental health care provided by office-based psychiatrists and primary care physicians.

Method: Trends in mental health–related visits to psychiatrists and primary care physicians are evaluated with the 1995–2010 National Ambulatory Medical Care Surveys. Rates and percentages of visits with mental health complaints, mental disorder diagnoses, psychotropic medications, and psychotherapy or mental health counseling were calculated for 1995–1998, 1999–2002, 2003–2006, and 2007–2010 by dividing the number of visits of a given type by intercensal population estimates.

Results: Between 1995–1998 and 2007–2010, a significant increase occurred in the rate per 100 population of primary care visits with mental health complaints (5.96 to 8.49) (OR = 0.45; 95% CI, 0.33–0.62, mental disorders (8.75 to 13.23) (OR = 1.40; 95% CI, 1.26–1.56), and psychotropic medications (11.08 to 26.74) (OR=3.43; 95% CI, 2.16–2.71). Significant corresponding increases occurred in psychiatrist visits with psychotropic medications (5.28 to 7.85) (OR = 2.25; 95% CI, 1.49–3.41), but not mental disorders (7.60 to 8.95) (OR = 0.87; 95% CI, 0.34–2.23), and the rate with mental health complaints significantly declined (5.87 to 5.20) (OR = 0.45; 95% CI, 0.33–0.62). During this period, the percentages of visits to primary care physicians that included prescriptions for antidepressants (interaction $P = .0001$), antipsychotics (interaction $P = .03$), and anxiolytics/hypnotics (interaction $P = .0009$) increased significantly faster than the corresponding percentages of visits to psychiatrists. A similar pattern occurred for visits that resulted in a bipolar disorder diagnosis (interaction $P = .01$).

Conclusions: In recent years, office-based primary care physicians have significantly increased their involvement in providing mental health care. These trends underscore the importance of collaboration between primary care physicians and psychiatrists to help ensure provision of high quality outpatient mental health care.

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Controversy surrounds the optimal mix of outpatient mental health services. While some argue that most mental health care should be provided in general medical settings with only selective use of specialty mental health care for the most severely ill patients,[1] others advocate for a more expansive role for mental health specialists.[2] In the United States, primary care physicians provide a substantial proportion of outpatient mental health care.[3,4] Between 1985 and 1994, however, psychotropic medication prescriptions written by psychiatrists increased faster than those by primary care physicians.[5] Yet between 1990–1992 and 2001–2003, the overall trend appeared to reverse.[6] Little is known regarding recent trends in the respective roles of primary care physicians and psychiatrists in providing office-based mental health care.

Primary care physicians and psychiatrists in the United States provide distinct but overlapping mental health services, with the former treating a larger share of individuals with less severe mental disorders. As compared with psychiatric care, mental health treatment in primary care settings tends to be delivered through shorter episodes of care and is less likely to be consistent with practice guidelines.[7] While differences in mental health treatment patterns can be partially explained by differences in patient characteristics,[8] primary care physicians tend to provide less intensive mental health care than that provided by psychiatrists to ostensibly similar patients.[2,9]

Several factors may influence the extent to which primary care physicians provide outpatient mental health care. Local shortages of mental health professionals,[10] greater primary care practitioner knowledge of mental health problems[11] and willingness to prescribe psychotropic medications,[12] and limitations in mental health insurance benefits[13] all tend to increase the involvement of primary care physicians in delivering outpatient mental health care. An understanding of recent trends in the involvement of primary care physicians in providing outpatient mental health care can help target their training in managing defined patient populations. Clarification of these trends can also reveal patient groups who might benefit most from increased clinical collaboration between primary care physicians and psychiatrists.

We describe recent trends in the roles of primary care physicians and psychiatrists in delivering office-based mental health care in the United States. We examine secular trends in mental health visits provided by the 2 physician groups.

METHOD

Data were drawn from the National Ambulatory Medical Care Survey (NAMCS).[14] The NAMCS samples a nationally representative group of visits to physicians in office-based practice. Contiguous survey years were combined to derive more stable estimates (1995–1998, 1999–2002, 2003–2006, and 2007–2010). For each visit, the treating physician or member of the physician's staff provided

Table 1. Mental Disorder Diagnosis Groups by *ICD-9* Codes[a]

Mental Disorder Group	*ICD-9* Codes
Mood	293.83, 296, 298.0, 300.4, 301.1, 311, or 313.1
Depression	296.2, 296.3, 296.82, 298.0, 300.4, or 311
Bipolar	296.0, 296.1, 296.4, 296.5, 296.6, 296.7, 296.80, 296.81, 296.89, or 301.13
Anxiety	293.84, 300.0, 300.2, 300.3, 308.3, 309.21, 309.81
Disruptive behavior disorder	309.3, 312.0–312.4, 312.8–312.9, 313.81, or 314
Substance use disorders	291–292, 303–305
Schizophrenia	295
Other mental disorders	290–319, not specified above

[a]Mental disorder groups are based on diagnoses from the National Ambulatory Medical Care Survey. As applied to visits, the groups are not mutually exclusive.

Clinical Points

- Between 1995 and 2010, an increasing percentage of office-based primary care visits resulted in the diagnosis of bipolar, depression, anxiety, and disruptive behavior disorder diagnoses.
- During this period, there were also increases in the percentages of primary care visits that included prescriptions for antidepressants, antipsychotics, mood stabilizers, anxiolytics/hypnotics, and medications for attention-deficit/hyperactivity disorder.
- These national trends highlight the importance of effective collaboration between primary care physicians and mental health specialists.

information about the patient's sociodemographic and clinical characteristics.

Physician Specialty

On the basis of physician specialty, visits were first grouped into those to psychiatrists and primary care physicians (pediatricians, internists, family practice, and general practice).

Indicators of Mental Health Care

The 4 indicators of mental health care were patient-reported reason for visit related to a mental disorder,[15] physician-assigned clinical diagnosis of a mental disorder, psychotropic medication prescription, and provision of psychotherapy or mental health counseling.

Diagnoses were made according to the *International Classification of Diseases, Ninth Revision, Clinical Modification*. Visits were grouped by the presence of a mood, depression, bipolar, anxiety, disruptive behavior, substance use, schizophrenia, and other mental disorder diagnosis (Table 1). A comorbid mental disorder diagnosis variable indexed the presence of 2 or 3 mental disorder diagnoses within a single visit.

Visits in which psychotropic medications were either supplied or prescribed were classified as antidepressants; antipsychotics; stimulants and other medications to treat attention-deficit/hyperactivity disorder (ADHD) (atomoxetine, guanfacine, and clonidine); anxiolytics, which also included hypnotics; and mood stabilizers. Antipsychotics included first- and second-generation antipsychotics. Anxiolytics included benzodiazepines and nonbenzodiazepine sedatives and anxiolytics. Mood stabilizers included lithium, carbamazepine, divalproex/valproate/valproic acid, and lamotrigine.

Analyses

The study period was partitioned into 4 periods: 1995–1998, 1999–2002, 2003–2006, and 2007–2010. For each of the 4 mental health indicators, the mean annual number of national visits within each 4-year period was first estimated by dividing the total weighted number of visits in each period by 4. The rate of visits per 100 population was then derived by dividing the mean annual number of national visits by the intercensal population estimate[16] for the 4-year period and multiplying the resulting number of visits by 100. Annual rates of visits per 100 population with associated 95% confidence intervals (CIs) for each period were derived separately for each specialty group for reason related to a mental disorder, mental disorder diagnosis, psychotropic medication, and psychotherapy/mental health counseling visits (Table 2). Among visits to each physician group, we calculated the percentage that resulted in each mental disorder (Table 3) and a prescription of each class of psychotropic medication (Table 4). We then calculated among visits to each primary care specialty the percentage of visits that resulted in each mental health indicator (Table 5).

Logistic regression models were used to assess time trends in the probability of visits with the mental health care indicators. A study period variable was defined that spanned each of the 4-year periods. The odds ratio associated with this study period variable estimates the change in odds of the mental health indicator from the first (1995–1998) to the last (2007–2010) 4-year period. Separate regressions were constructed for each level of visit characteristic of interest. An interaction term was added to many of the regressions to assess whether trends in the mental health indicators significantly differed across visits to psychiatrists and primary care physicians. The *P* values associated with these interaction terms are presented in each table.

Analyses were adjusted for visit weights, clustering, and stratification of data by using design elements provided by the National Center for Health Statistics. When adjusted, survey data represent annual visits to US office-based physicians.[14] Analyses were conducted using SUDAAN software (RTI International, Research Triangle Park, North Carolina); all analyses were 2-sided and α was set at .05. Population-based estimates without overlapping 95% CIs are conservatively considered to be significantly different from one another.

RESULTS

Mental Health Care by Psychiatrists and Primary Care Physicians

During the period from 1995–1998 to 2007–2010, there was a significant increase in visits to primary care

Table 2. Trends in Office-Based Visits to Psychiatrists and Primary Care Physicians With Reasons for Visit Referable to Mental Disorders, Mental Disorder Diagnoses, Psychotropic Medications, and Psychotherapy, United States 1995–2010[a]

Characteristic	1995–1998, Visits per 100 Population (95% CI)	1999–2002, Visits per 100 Population (95% CI)	2003–2006, Visits per 100 Population (95% CI)	2007–2010, Visits per 100 Population (95% CI)	Odds Ratio (95% CI)[b]	*P* Interaction[c]
Any reason for visit related to a mental disorder						< .0001
Psychiatrists	5.87 (4.87–6.87)	6.14 (5.06–7.21)	6.46 (5.38–7.53)	5.20 (4.24–6.16)	0.45 (0.33–0.62)	
Primary care physicians	5.96 (5.17–6.75)	7.18 (6.06–8.30)	7.63 (6.26–9.01)	8.49 (6.99–10.00)	1.28 (1.13–1.44)	
Any mental disorder diagnosis						.32
Psychiatrists	7.60 (6.42–8.79)	8.54 (7.14–9.93)	9.22 (7.75–10.68)	8.95 (7.36–10.54)	0.87 (0.34–2.23)	
Primary care physicians	8.75 (7.64–9.87)	10.39 (8.70–12.07)	12.20 (10.01–14.39)	13.23 (10.81–15.66)	1.40 (1.26–1.56)	
Any psychotropic medication						.74
Psychiatrists	5.28 (4.46–6.11)	6.84 (5.65–8.02)	7.27 (6.00–8.53)	7.85 (6.37–9.33)	2.25 (1.49–3.41)	
Primary care physicians	11.08 (9.50–12.66)	14.91 (12.51–17.32)	18.91 (15.44–22.39)	26.74 (21.84–31.65)	2.42 (2.16–2.71)	
Psychotherapy/mental health counseling						.87
Psychiatrists	4.81 (4.15–5.47)	4.90 (3.98–5.82)	5.95 (5.02–6.87)	6.17 (4.96–7.38)	1.35 (0.91–2.02)	
Primary care physicians	1.23 (0.77–1.69)	1.23 (0.73–1.74)	1.92 (1.45–2.40)	1.59 (1.19–1.98)	1.29 (0.87–1.92)	

[a]Data from the National Ambulatory Medical Care Survey. Primary care physicians include internal medicine, family practice, general practice, and pediatrics. Visits per 100 population for each 4-year period were derived by dividing the annualized estimated number of national visits of each type during each 4-year period by the intercensal population estimate on January 1, 1997, 2001, 2005, and 2009, respectively, and multiplying by 100. [b]Odds ratios were derived from logistic regressions in which study period was the independent variable and mental health visit type was the dependent variable. [c]The *P* values are from interaction terms of crossing physician specialty by study period.

physicians for mental health reasons and a decline in such visits to psychiatrists. Visits including a mental disorder diagnosis also increased during this period to primary care physicians, although they were little changed to psychiatrists. Psychotropic medication visits also significantly increased to both physician groups. The increase for primary care physicians from the first to last 4-year period was particularly notable for psychotropic medications (11.08 vs 26.74 visits per 100 persons). There was no significant trend in per capita visits to psychiatrists or primary care physicians in which psychotherapy or mental health counseling was provided (Table 2). In 2007–2010, a significantly greater number of primary care than psychiatrist visits included a mental health–related reason, a mental disorder diagnoses, or a psychotropic medication, but the reverse was true of psychotherapy/mental health counseling visits.

Mental Disorder Diagnoses and Visit Duration

Over the period from 1995–1998 to 2007–2010, a substantially greater percentage of visits to psychiatrists than to primary care physicians resulted in a mental disorder diagnosis. During the study period, the percentage of visits to primary care physicians that included a depression diagnosis significantly increased, but it significantly declined to psychiatrists. By contrast, the percentage of primary care and psychiatrist visits with an anxiety, disruptive behavior, and bipolar disorder diagnoses as well as those with 2 or more mental disorders significantly increased. The increase in the percentage of primary care visits resulting in a bipolar diagnosis was significantly faster than the corresponding increase in the percentage of such psychiatrist visits (Table 3). In separate analyses, the percentage of visits to psychiatrists that resulted in an ADHD diagnosis increased from 6.23% (1995–1998) to 15.83% (2007–2010) (OR = 2.51; 95% CI, 1.86–3.39), and the percentage to primary care physicians increased from 0.49% (1995–1998) to 1.30% (2007–2010) (OR = 2.61; 95% CI, 2.02–3.38) (data not shown).

In a post hoc analysis, the mean duration of visits with mental disorder diagnoses to psychiatrists declined from 35.4 minutes (1995–1998) to 31.6 minutes (2007–2010) ($\beta = -4.72$, $P = .07$), while the corresponding duration of primary care visits with mental disorders slightly increased from 19.3 minutes (1995–1998) to 20.6 minutes (2007–2010) ($\beta = 1.97$, $P = .002$) (interaction $P = .01$).

Psychotropic Medications

Significant increases occurred from 1995–1998 to 2007–2010 in the percentages of visits to psychiatrists and primary care physicians that included a prescription for each class of psychotropic medication. The increase in the percentage of visits to primary care physicians that included antidepressants, antipsychotics, and anxiolytics/hypnotics significantly exceeded the corresponding increase to psychiatrists. Mood stabilizers increased in approximately parallel fashion to both physician groups (Table 4).

Primary Care Physicians

There were significant increases between 1995–1998 and 2007–2010 in the percentage of visits to pediatricians, internists, and general or family practitioners that resulted in a mental disorder diagnosis and in a prescription for a psychotropic medication. The percentage of pediatrician visits that included a mental disorder diagnosis increased significantly faster than the corresponding percentages of other primary care physician visits. The percentage of visits to pediatricians and general or family practitioners that involved reasons related to mental disorders also significantly increased. No significant changes occurred in the percentage

Table 3. Trends in the Percentage of Office-Based Visits to Psychiatrists and to Primary Care Physicians With Selected Mental Disorder Diagnoses, United States 1995–2010[a]

Mental Disorder	1995–1998, %	1999–2002, %	2003–2006, %	2007–2010, %	Odds Ratio (95% CI)[b]	*P* Interaction[c]
Depression						.0001
Psychiatrists	48.17	48.86	43.96	41.42	0.73 (0.59–0.91)	
Primary care physicians	2.27	2.77	2.90	2.85	1.23 (1.06–1.42)	
Bipolar disorder						.01
Psychiatrists	8.98	11.60	15.26	17.16	2.09 (1.68–2.60)	
Primary care physicians	0.07	0.14	0.19	0.33	4.23 (2.72–6.56)	
Anxiety disorders						.64
Psychiatrists	19.76	24.87	26.15	26.95	1.43 (1.16–1.77)	
Primary care physicians	1.54	1.55	1.84	2.24	1.52 (1.29–1.79)	
Disruptive behavior disorders						.42
Psychiatrists	7.77	12.51	16.51	17.02	2.23 (1.67–2.98)	
Primary care physicians	0.51	0.78	1.07	1.37	2.58 (2.00–3.33)	
Schizophrenia						.19
Psychiatrists	7.78	6.97	6.01	6.54	0.81 (0.56–1.17)	
Primary care physicians	0.07	0.06	0.05	0.10	1.33 (0.69–2.58)	
Substance use disorders						.55
Psychiatrists	9.73	4.85	4.81	7.40	0.76 (0.24–2.37)	
Primary care physicians	0.78	0.64	0.66	0.82	1.09 (0.80–1.49)	
Other mental disorders						.15
Psychiatrists	20.01	18.21	19.42	18.31	0.93 (0.72–1.21)	
Primary care physicians	0.99	1.22	1.35	1.16	1.16 (0.99–1.37)	
Two or more mental disorders						.16
Psychiatrists	27.03	30.75	35.09	37.19	1.61 (1.22–2.11)	
Primary care physicians	0.42	0.58	0.67	0.93	2.15 (1.53–3.03)	

[a]Data are from the National Ambulatory Medical Care Survey. Primary care physicians include internal medicine, family practice, general practice, and pediatrics. [b]Odds ratios were derived from logistic regressions in which study period was the independent variable and mental health visit type was the dependent variable. [c]The *P* values are from interaction terms of crossing physician specialty by study period.

Table 4. Trends in the Percentage of Office-Based Visits to Psychiatrists and to Primary Care Physicians With Selected Psychotropic Medications, United States 1995–2010[a]

Psychotropic Medication	1995–1998, %	1999–2002, %	2003–2006, %	2007–2010, %	Odds Ratio (95% CI)[b]	*P* Interaction[c]
Antidepressants						.0001
Psychiatrists	49.53	57.56	51.85	58.66	1.29 (1.00–1.67)	
Primary care physicians	4.33	6.07	7.21	9.37	2.20 (1.96–2.47)	
Antipsychotics						.03
Psychiatrists	15.52	19.88	22.86	29.46	2.22 (1.73–2.86)	
Primary care physicians	0.30	0.44	0.68	1.00	3.40 (2.58–4.48)	
Mood stabilizers						.79
Psychiatrists	10.56	11.96	12.16	14.65	1.42 (1.13–1.79)	
Primary care physicians	0.37	0.52	0.47	0.61	1.49 (1.15–1.92)	
Anxiolytics/hypnotics						.0009
Psychiatrists	22.99	23.49	29.10	31.28	1.61 (1.27–2.04)	
Primary care physicians	3.06	3.62	4.71	7.17	2.58 (2.18–3.05)	
ADHD medications[d]						.05
Psychiatrists	4.77	7.29	8.49	17.29	4.29 (3.05–6.03)	
Primary care physicians	0.48	0.50	0.95	2.18	6.24 (4.82–8.07)	

[a]Data from the National Ambulatory Medical Care Survey. Primary care physicians include internal medicine, family practice, general practice, and pediatrics. [b]Odds ratios were derived from logistic regressions in which study period was the independent variable and mental health visit type was the dependent variable. [c]The *P* values are from interaction terms of crossing physician specialty by study period. [d]Includes stimulants, atomoxetine, guanfacine, and clonidine.
Abbreviation: ADHD = attention-deficit/hyperactivity disorder.

of visits to the 3 primary care physician groups that included psychotherapy (Table 5).

DISCUSSION

Mental health care is becoming an increasingly important component of office-based primary care. Primary care physicians are providing an increasing number of visits to patients who present with mental health complaints and who receive psychotropic medication prescriptions and mental disorder diagnoses. Growing involvement of primary care physicians in office-based mental health care extends beyond depression, anxiety, antidepressants, and anxiolytics to include bipolar disorder, antipsychotics, and mood stabilizers. While there were also indications of increased mental health provision by psychiatrists, especially in the prescription of psychotropic medications, the overall trends run counter to the broader trend toward specialization and subspecialization of US medical care[17] and suggest

Table 5. Trends in the Percentage of Office-Based Visits to Psychiatrists and to Primary Care Physicians With Selected Mental Disorder Diagnoses and Psychotropic Medications, United States 1995–2010[a]

Characteristic	1995–1998, %	1999–2002, %	2003–2006, %	2007–2010, %	Odds Ratio (95% CI)[b]	*P* Interactions[c]
Any reason for visit related to a mental disorder						
Pediatrics	2.65	3.16	3.66	3.73	1.41 (1.10–1.81)	Reference
Internal medicine	4.54	5.29	4.84	5.74	1.21 (0.98–1.50)	.36
General/family practice	4.31	4.89	5.18	5.60	1.30 (1.11–1.53)	.58
Any mental disorder diagnosis						
Pediatrics	2.30	3.18	4.21	4.52	1.95 (1.50–2.54)	Reference
Internal medicine	6.67	7.46	7.99	8.30	1.26 (1.04–1.51)	.008
General/family practice	7.10	7.92	8.99	9.87	1.44 (1.25–1.65)	.04
Any psychotropic medicine						
Pediatrics	1.39	2.03	2.86	4.21	3.12 (2.20–4.42)	Reference
Internal medicine	9.73	12.67	15.29	21.65	2.55 (2.15–3.02)	.32
General/family practice	8.94	11.32	13.96	19.53	2.49 (2.17–2.85)	.24
Psychotherapy/mental health counseling						
Pediatrics	0.38	0.28	0.78	0.48	1.61 (0.93–2.80)	Reference
Internal medicine	0.74	1.53	1.45	0.81	0.97 (0.60–1.57)	.16
General/family practice	1.09	0.55	1.22	1.34	1.54 (0.80–2.95)	.92

[a]Data are from the National Ambulatory Medical Care Survey. [b]Odds ratios were derived from logistic regressions in which study period was the independent variable and mental health visit type was the dependent variable. [c]The *P* values are from interaction terms of crossing physician specialty by study period with pediatrics as the reference group.

that primary care physicians are managing more severe and complex mental health problems. These clinical roles are placing new clinical pressures on office-based primary care physicians.

Changes in the physician workforce may help account for the increase in office-based mental health care by primary care physicians in relation to psychiatrists. Between 1995 and 2010, there was a 40.6% increase in US office-based primary care physicians but only a 14.6% increase in psychiatrists.[18,19] Starting in the early 1990s, the influential Council on Graduate Medical Education issued a series of reports recommending larger numbers of new physicians enter primary care.[20] Growth in psychiatry may have been tempered by declining interest in psychiatry among medical students,[21] competition from other mental health professions,[22] and more favorable economic opportunities in other medical specialties.[23] Over the next several years, growth in the supply of primary care physicians is expected to be nearly twice as fast as that of psychiatrists.[24]

Rapid increases were evident in psychotropic medication treatment by both physician groups. During the study period, many psychotropic medications were approved by US Food and Drug Administration,[25] and several widely prescribed psychotropic medications diffused from specialist to generalist practice. The public also became more accepting of psychotropic medications,[26] and practice guidelines endorsed pharmacologic treatment of common psychiatric disorders.

Growth in the percentage of primary care visits that included antidepressants, anxiolytics/hypnotics, and antipsychotics occurred faster than growth in corresponding percentage of visits to psychiatrists. Many primary care physicians report being comfortable prescribing antidepressants and anxiolytic/hypnotics.[27] Increased prescription of antidepressants by primary care physicians may have been related to low prevailing rates of mental health treatment for common mood and anxiety disorders in the general population,[6] a broadening of clinical indications for antidepressants to include several anxiety disorders and chronic pain conditions that commonly present to primary care,[28] and a diffusion of antidepressants from patients with more severe to less serious psychiatric conditions.[29]

Growth in the percentage of primary care visits that included an antidepressant, antipsychotic, or anxiolytic/hypnotic prescriptions significantly exceeded the corresponding increase in the percentage of psychiatrist visits that included these medications. This pattern of anxiolytics/hypnotic prescribing is consistent with a previous national prescription audit of benzodiazepines for anxiety disorders.[30] It is also consistent with a prior report of increased sedative/hypnotic prescriptions in office-based practice for complaints related to sleeplessness (1993–2007).[31] An increasing percentage of visits including anxiolytic/hypnotic prescriptions underscores the importance of determining the extent to which use is long-term, where benefits are less well established and risks associated with medication discontinuation may be increased.

From 1995–1998 to 2007–2010, the percentage of visits to primary care physicians with antipsychotic prescriptions increased significantly more rapidly than the corresponding percentage to psychiatrists. As primary care physicians assume a more prominent role in treating patients with antipsychotic medications, these physicians and patients will need greater access to psychiatrists who have relevant psychopharmacologic expertise.[32] Significant increases were also evident among both physician groups in the treatment of ADHD. The increase in the rate of primary care visits with anti-ADHD medications was concentrated between 2003 and 2010. During this period, evidence-based guidelines for treating young people with ADHD in primary care settings were developed and disseminated. In addition, the US Food and Drug Administration first approved mixed salts of amphetamine in 2004 to treat adult ADHD, followed by dexmethylphenidate (2005), lisdexamfetamine (2008), and osmotic-release oral system methylphenidate (2008).[33]

A previous evaluation[34] of national trends in stimulant medication use (1996–2008) in young people reported an increase in stimulant treatment among adolescents but not children.

Office-based primary care physicians have significantly increased their involvement in treating patients with depression, anxiety, disruptive behavior, and bipolar disorders. Practice guidelines and model programs in primary care have been developed to treat depression and several anxiety disorders in adults and disruptive disorders in children. Because bipolar disorder often involves a complex and volatile array of symptoms,[35] substantial functional impairment, and a persistent course, these patients have been traditionally treated in specialty mental health settings.[3] Many primary care physicians are not comfortable with treating patients with bipolar disorder,[36] and it is difficult to achieve optimal mental health care for bipolar patients in primary care.[7] The increasing percentage of primary care visits diagnosed with bipolar disorder underscores the need to fortify referral mechanisms to psychiatrists to manage patients with complex psychiatric disorders.

The recent increase in volume of mental health treatment delivered in primary care coupled with increased demands related to the *Patient Protection and Affordable Care Act* raises several considerations. First, primary care visits are still shorter than psychiatrist visits, and the time allotted to mental health care is even more constrained in a primary care visit where competing demands of acute and chronic medical conditions are the rule rather than the exception.[37] Second, financial disincentives for providing mental health services in primary care include mental health carve-ins and carve-outs, public payer policies that deny a physical and mental health billing code on the same day, and the inability to pay for nurse care manager services with fee-for-service billing codes.[38] Third, most treatment in primary care is likely to continue to be psychotropic medications since few primary care physicians have the time, training, or reimbursement mechanisms to deliver psychotherapy or counseling. These considerations support models of care that selectively use specialty mental health care for the most severely ill and difficult to manage patients.

These analyses have several limitations. First, because diagnoses are based on the independent judgment of the treating physicians, rather than research diagnostic interviews, changes in diagnostic practices rather than changes in true differences in patient characteristics[39] may contribute to the observed diagnostic trends. Second, information is not available concerning psychotropic medication dosage, which medications are intended to treat which disorders, and mental health services provided by nonphysician health care professionals, including psychologists, social workers, nurse practitioners, and others. Finally, the sample is restricted to physician visits in office-based and community health center practices and therefore does not capture visits to community mental health centers, hospital outpatient clinics, emergency departments, and various other outpatient settings.

Over the last several years, the volume of office-based mental health care visits by primary care physicians has increased more quickly than visits to psychiatrists. Growth in primary care mental health treatment, which extended across all classes of psychotropic medications and several diagnostic groups, places new strains on the competencies of primary care practitioners to deliver effective mental health care. With the impending expansion in insurance coverage that will occur as a result of the *Patient Protection and Affordable Care Act*, it will be critically important to implement effective models of collaboration between primary care physicians and mental health specialists to ensure that patients with serious psychiatric disorders receive high quality care.

Drug names: atomoxetine (Strattera), carbamazepine (Carbatrol, Equetro, and others), clonidine (Catapres, Duraclon, and others), divalproex (Depakote and others), guanfacine (Intuniv, Tenex, and others), lamotrigine (Lamictal and others), lisdexamfetamine (Vyvanse), lithium (Lithobid and others), methylphenidate (Focalin, Daytrana, and others), valproic acid (Depakene and others).

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Author contributions: Dr Wang had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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