By Ramin Mojtabai and Mark Olfson

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Proportion Of Antidepressants Prescribed Without A Psychiatric Diagnosis Is Growing

Ramin Mojtabai (rmojtaba@jhsph.edu) is an associate professor at the Johns Hopkins Bloomberg School of Public Health, in Baltimore, Maryland.

Mark Olfson is a professor of clinical psychiatry at the College of Physicians and Surgeons of Columbia University and a research psychiatrist at New York State Psychiatric Institute, both in New York City.

ABSTRACT Over the past two decades, the use of antidepressant medications has grown to the point that they are now the third most commonly prescribed class of medications in the United States. Much of this growth has been driven by a substantial increase in antidepressant prescriptions by nonpsychiatrist providers without an accompanying psychiatric diagnosis. Our analysis found that between 1996 and 2007, the proportion of visits at which antidepressants were prescribed but no psychiatric diagnoses were noted increased from 59.5 percent to 72.7 percent. These results do not clearly indicate a rise in inappropriate antidepressant use, but they highlight the need to gain a deeper understanding of the factors driving this national trend and to develop effective policy responses. To the extent that antidepressants are being prescribed for uses not supported by clinical evidence, there may be a need to improve providers' prescribing practices, revamp drug formularies, or vigorously pursue implementation of broad reforms of the health care system that will increase communication between primary care providers and mental health specialists.

Over the past two decades, there has been a marked increase in antidepressant use.[1] Antidepressants are now the third most commonly prescribed medication class in the United States.[2] With annual sales of approximately $10 billion, antidepressants are also one of the most costly medication classes.[3]

Most of the recent increase in antidepressant use is a consequence of the growing number of prescriptions written by physicians who are not psychiatrists.[4] In the United States, nearly four out of every five antidepressant prescriptions are written by such providers.[5] In comparison to patients receiving mental health treatment from specialists, patients who receive mental health care in general medical settings tend to have much less severe psychiatric problems.[6]

The growing use of antidepressants in primary care has raised questions about the appropriateness of their use.[7] In fact, antidepressants have been demonstrated to be clinically effective for only a limited number of psychiatric conditions—major depressive disorder, chronic depression (also known as dysthymic disorder), some anxiety disorders, and a few other well-defined conditions.[8] In one study of privately insured plans, a majority (61.4 percent) of patients for whom antidepressants were prescribed did not receive diagnoses for any psychiatric disorders during the course of a year.[9] In addition, there are concerns about side effects[10] and costs[3] of antidepressant use.

In this article we examine national trends in antidepressant prescribing by physicians in office-based practice who are not psychiatrists. We compare the characteristics of several groups of patients: those who are given prescriptions for antidepressants during office visits where no

psychiatric diagnosis is noted; those who are given such prescriptions during visits where a psychiatric diagnosis is noted; and patients from the same practices who receive neither an antidepressant nor a psychiatric diagnosis. Next, to determine whether antidepressant prescribing for patients without psychiatric diagnoses is related to widely distributed prescribing practices or to a small group of physicians, we aggregate patient visits within individual practices. Finally, we discuss the clinical and policy implications of the observed patterns and trends.

Study Data And Methods

DATA SOURCE AND VISIT SELECTION Our data come from the 1996–2007 National Ambulatory Medical Care Surveys, conducted by the Centers for Disease Control and Prevention.[11] In a national sample of visits by patients to office-based physicians, each physician or a staff member completing the survey provides information about the patient's social, demographic, and clinical characteristics and the medications prescribed at the visit. The survey response rate varied during our study period from 62.9 percent to 77.1 percent (the median was 67.7 percent). The survey design randomly selects a one-week period in each year and solicits a systematic sample of visits from each physician surveyed. We analyzed visits made by patients who were age eighteen or older, excluding visits for which data on one or more variables were missing ($N = 233,144$).

We determined whether antidepressant medication was prescribed based on the provider's use of drug names. The National Ambulatory Medical Care Survey permits providers to record up to six medications per visit. We refer to visits in which antidepressants were prescribed as antidepressant visits.

Providers can record up to three diagnoses for each visit on the survey. We defined mental disorders as *International Classification of Diseases*, Ninth Revision, Clinical Modification (ICD-9-CM) codes 290 through 319. Patients who were diagnosed with one of those codes, or whose main reason for a visit[12] was "mental disorders" were categorized as having a mental disorder diagnosis. Medical diagnoses were also recorded based on ICD-9-CM codes. We analyzed four common general medical disorders—diabetes, heart disease, asthma, and hypertension—because of their substantial economic burden.[13] In addition, we recorded the total number of medical diagnoses for each patient.

The patient's primary source of payment was classified as private insurance, Medicaid, Medicare, self-pay, or "other types," which included workers' compensation, no insurance, and no charge.

We categorized the complaints patients presented to their providers according to "reason for visit" codes.[12] We focused on the category of "symptoms referable to psychological and mental disorders."[12(p12)] These include symptoms related to depression, anxiety, and nervousness; psychosexual symptoms, such as loss of sex drive and impotence; sleep disturbances; and smoking problems, such as smoking too much and inability to stop smoking. Other less common psychological problems were combined into a separate group. We also included symptoms related to tiredness, generally feeling unwell, nonspecific pain (pain that was not referable to a specific body system), headaches, abnormal sensations—such as tingling or burning sensations—and premenstrual symptoms that are sometimes treated with antidepressants.

Other variables used in our analyses included the patient's age, sex, and race and ethnicity; whether or not the patient saw a primary care provider; whether or not the provider was in solo practice; and whether or not the provider was seeing a new patient.

ANALYSIS We examined prevalence and trends in antidepressant visits across the surveys in the study period. We created survey year variables by subtracting 1996 from the year and dividing the result by 11 (so that 1996 was 0 and 2007 was 1). Odds ratios associated with the survey year variable represent changes in the odds of antidepressants' being prescribed from 1996 to 2007.

We conducted two sets of logistic regression analyses, comparing antidepressant visits lacking psychiatric diagnoses to antidepressant visits including psychiatric diagnoses, and to visits lacking both prescriptions for antidepressants and psychiatric diagnoses. Multivariate analyses adjusted the odd ratios for other patient and visit characteristics.

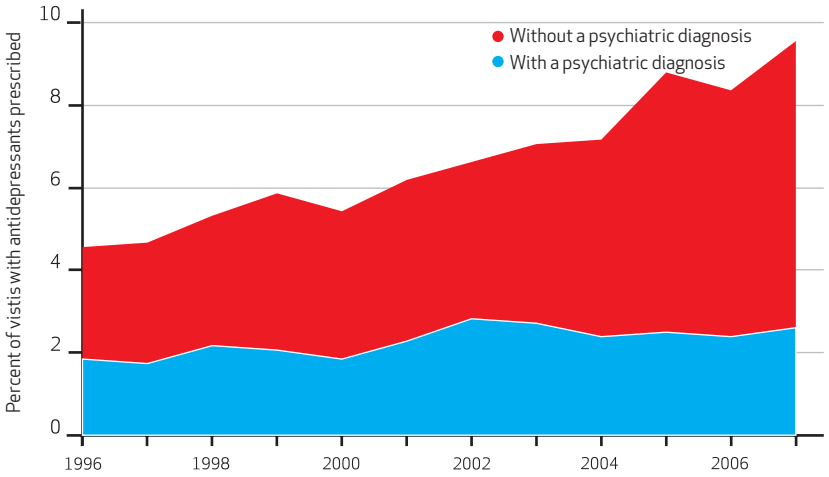
In aggregate analyses across practices, we assessed practice-level trends in antidepressant visits without a psychiatric diagnosis. The National Ambulatory Medical Care Survey data represent annual visits to office-based physicians in the United States.

LIMITATIONS The current analysis has several methodological limitations. First, the survey provides information only about single patient visits. As a result, no information is available on past psychiatric diagnoses or treatments. Second, diagnoses recorded in surveys reflect clinicians' judgments. It is not known whether specialists would make the same diagnoses.

Third, experimental evidence supports the use of some antidepressants to treat neuropathic

EXHIBIT 1

Trends In Prescription Of Antidepressants In Offices Of Providers Other Than Psychiatrists, 1996–2007

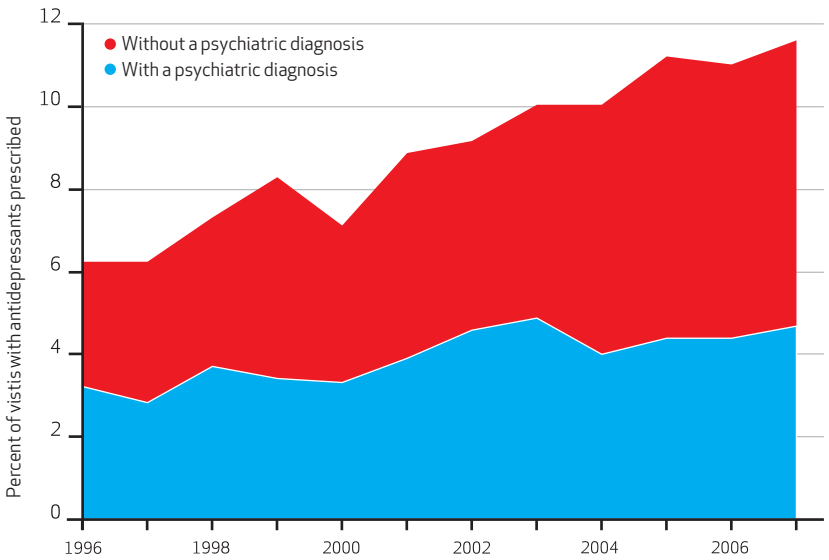


SOURCE Authors' analyses of data from the National Ambulatory Medical Care Survey, 1996–2007 (Note 11 in text).

pain syndromes, which are pain states resulting from damage to the peripheral or central nervous system, such as may occur in diabetes.[14] We classified as antidepressant visits without a psychiatric disorder those visits in which patients received prescriptions for pain syndromes but were not diagnosed with a psychiatric disorder.

EXHIBIT 2

Trends In Prescription Of Antidepressants In Offices Of Primary Care Providers, 1996–2007



SOURCE Authors' analyses of data from the National Ambulatory Medical Care Survey, 1996–2007 (Note 11 in text).

Fourth, the National Ambulatory Medical Care Survey is limited to office-based care. It does not include treatment in other settings, including clinics based in hospitals.

Study Results

PREVALENCE OF ANTIDEPRESSANT PRESCRIPTIONS During the study period, 45.8 percent of the total visits to nonpsychiatrist physicians were to primary care physicians, compared to 54.2 percent to other nonpsychiatrist physicians. However, a significantly larger proportion of visits to primary care physicians (8.7 percent) than to other nonpsychiatrists (1.6 percent) included a psychiatric diagnosis ($p < 0.001$) (data not shown). This pattern is consistent with the traditional role of primary care physicians in delivering basic mental health services.[15] Therefore, in addition to examining trends in visits to all nonpsychiatrist physicians, we separately examined trends in visits to primary care physicians and to other nonpsychiatrist physicians.

Antidepressants were prescribed in 9.3 percent of patients' visits to primary care providers and 3.6 percent of visits to other providers who were not psychiatrists. A minority of visits to primary care providers in which antidepressants were prescribed (44.0 percent) and of visits to other nonpsychiatrist providers in which antidepressants were prescribed (12.8 percent) included a psychiatric diagnosis. In this paper, we refer to such visits as "antidepressant visits."

TIME TRENDS Exhibit 1 reveals a significant increase in antidepressant visits during the study period and shows that the change is chiefly in visits without a psychiatric diagnosis. More specifically, the increase in all antidepressant visits—those with and those without a psychiatric diagnosis—was from 4.1 percent to 8.8 percent of all visits to nonpsychiatrist physicians (odds ratio [OR]: 2.20; $p < 0.001$) (Exhibit 1). Exhibits 2 and 3 show the change for primary care physicians alone (OR: 2.02; $p < 0.001$) and for other nonpsychiatrist providers (OR: 2.88; $p < 0.001$), respectively.

The proportion of antidepressant visits lacking a psychiatric diagnosis increased from 59.5 percent of antidepressant visits in 1996 to 72.7 percent in 2007. The proportion of antidepressant visits without a psychiatric diagnosis increased from 2.5 percent of all visits to nonpsychiatrist providers to 6.4 percent (OR: 2.71; $p < 0.001$) (Exhibit 1). For visits to primary care providers, the increase was from 3.1 percent to 7.1 percent (OR: 2.36; $p < 0.001$) (Exhibit 2); for other nonpsychiatrist providers, it was from 1.9 percent to 5.8 percent (OR: 3.31; $p < 0.001$) (Exhibit 3).

In contrast, antidepressant visits with a psychiatric diagnosis increased only slightly in visits to nonpsychiatrist physicians as a group (OR: 1.44; $p < 0.001$) (Exhibit 1). For primary care providers there was a moderate increase (OR: 1.55; $p < 0.001$) (Exhibit 2); there was no appreciable change for other nonpsychiatrist providers (OR: 1.13; $p = 0.49$) (Exhibit 3).

CHARACTERISTICS OF PATIENTS WITHOUT PSYCHIATRIC DIAGNOSES In comparison to antidepressant visits that included a psychiatric diagnosis, antidepressant visits lacking a psychiatric diagnosis were more likely to be made by patients age fifty or older, and less likely to be made by patients who paid for the visits themselves (see the second-to-last column of Exhibit 4). In comparison with visits in which no antidepressants were prescribed, the last column of Exhibit 4 shows that visits involving antidepressants but no psychiatric diagnosis were less likely to be made by males, members of minority groups, patients who paid themselves, and new patients. Such visits were more likely to be made by patients ages 35–64 and patients with public insurance.

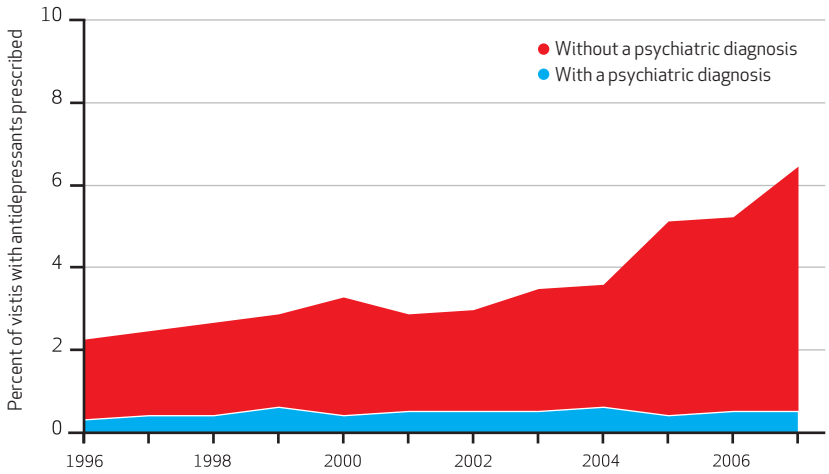
Antidepressant visits that lacked a psychiatric diagnosis tended instead to have indications of general medical illness. In comparison to antidepressant visits with a psychiatric diagnosis, those without such a diagnosis included a greater percentage of patients with diabetes or heart disease, patients with two or more medical conditions, and patients with nonspecific pain or abnormal sensations (Exhibit 5).

Not surprisingly, patients with psychiatric complaints were less likely to have antidepressant visits without a psychiatric diagnosis than visits with one (Exhibit 5). Even in relation to visits without a clinical psychiatric diagnosis or an antidepressant prescription, antidepressant visits lacking a psychiatric diagnosis included patients with a greater number of medical problems. The associations between antidepressant prescriptions and problems such as tiredness, nonspecific pain, smoking problems, headaches, abnormal sensations, and premenstrual tension suggest that antidepressants are being prescribed to treat these medical complaints.

AGGREGATE ANALYSES ACROSS PRACTICES At the practice level, the share of providers who prescribed antidepressants without a concurrent psychiatric diagnosis in any of their sampled visits increased from 30.0 percent in 1996 to 55.4 percent in 2007 (OR: 2.93; $p < 0.001$). Among practices with any antidepressant visits lacking concurrent psychiatric diagnoses, the average number of such visits increased by approximately 36 percent during the study period. Thus, both the number of providers who prescribed antidepressants without a concurrent diagnosis and the proportion of such visits in these practices increased.

EXHIBIT 3

Trends In Prescription Of Antidepressants In Offices Of Other Nonpsychiatrists, 1996–2007



SOURCE Authors' analyses of data from the National Ambulatory Medical Care Survey, 1996–2007 (Note 11 in text).

Prescription patterns were associated with the number of total antidepressant visits in each practice. In practices in which all antidepressant visits were unaccompanied by a psychiatric diagnosis ($n = 2,184$), antidepressants were prescribed in 8.8 percent of visits. In contrast, in practices in which all antidepressant visits included a psychiatric diagnosis ($n = 607$), antidepressants were prescribed in only 6.6 percent of visits ($p < 0.001$).

Discussion

ANTIDEPRESSANT PRESCRIBING WITHOUT PSYCHIATRIC DIAGNOSES Antidepressant prescribing by providers other than psychiatrists has increased substantially in recent years. A large and growing proportion of this antidepressant prescribing is done at medical visits for which a clinical psychiatric diagnosis is not recorded. The underlying reasons for this trend are unclear.

High rates of antidepressant treatment without psychiatric diagnoses have been previously reported in analyses of administrative and billing data.[9] In this context, the absence of psychiatric diagnoses has been attributed to providers' concealing their patients' psychiatric problems to protect them from stigma and from adverse occupational or legal consequences, or to allow them to take advantage of the greater insurance plan benefits that are associated with general

EXHIBIT 4

General Characteristics Of Patients Visiting Offices Of Providers Other Than Psychiatrists, 1996–2007

	Type of visit			Adjusted odds ratios for comparisons of antidepressant visit without psychiatric diagnosis and	
Characteristics	Antidepressant visit without psychiatric diagnosis (*n* = 9,454)	Antidepressant visit with psychiatric diagnosis (*n* = 4,054)	Visit with no antidepressant or psychiatric diagnosis (*n* = 219,636)	Antidepressant visit with psychiatric diagnosis	Visit with no antidepressant or psychiatric diagnosis
SEX					
Female	71.5%	68.5%	61.3%	1.00	1.00
Male	28.5	31.5	38.8	0.91	0.58****
RACE AND ETHNICITY					
Non-Hispanic white	84.6	85.2	78.1	1.00	1.00
Non-Hispanic black	6.9	6.4	9.4	0.99	0.59****
Hispanic	6.3	6.1	8.4	1.28	0.63****
Other	2.3	2.3	4.1	1.00	0.47****
AGE (YEARS)					
18–34	10.8	21.4	19.4	1.00	1.00
35–49	26.9	37.2	23.7	1.05	1.79****
50–64	30.6	23.6	24.3	1.51****	1.86****
65 or more	31.7	17.9	32.6	1.68****	1.04
INSURANCE TYPE					
Private	51.5	59.9	50.9	1.00	1.00
Medicaid	7.6	8.1	5.9	0.80	1.37****
Medicare	30.4	17.3	25.8	1.10	1.49****
Self-pay	2.6	5.9	4.4	0.65***	0.65****
Other[a]	7.9	8.9	12.9	1.19	0.85
RETURNING OR NEW PATIENT					
Returning	90.8	92.9	86.4	1.00	1.00
New	9.3	7.1	13.6	1.01	0.80****

SOURCE Authors' analyses of data from the National Ambulatory Medical Care Survey, 1996–2007 (Note 11 in text). **NOTES** The multivariate analysis adjusted for survey year, medical diagnosis, major reason for visit (chronic problems, new problems, not related to illness), complaints patients presented, physician type (primary care provider or not), and office type (solo practice or not), in addition to variables shown in the table. Not all percentages sum to 100 because of rounding error. Results are expressed as odds ratios—that is, the ratios of two odds, each computed as the probability of an event happening over the probability of that event not happening in each group. An odds ratio of less than 1 implies that the event is less likely in the first group than in the second group. An odds ratio of greater than 1 implies that the event is more likely in the first group. For example, the odds ratio of 0.91 for male implies that after adjusting for variables, the ratio of the odds of having an antidepressant visit without a psychiatric diagnosis as compared to an antidepressant visit with a psychiatric diagnosis is 0.91 for males compared to females. [a]Includes workers' compensation, no insurance, and no charge. ***$p < 0.01$ ****$p < 0.001$

medical—as opposed to mental health—treatment.[16] The identities of providers and patients in the National Ambulatory Medical Care Survey are protected, however, which means that providers have little motivation to deliberately withhold psychiatric diagnoses. Furthermore, it is unlikely that the temporal trends observed in this study can be explained by changes in stigma or reimbursement policies over time. Population surveys that involve structured psychiatric interviews support the opinion that a large proportion of patients who receive antidepressants do not carry a psychiatric diagnosis.[17] This pattern raises the concern that some people are receiving antidepressants to treat conditions for which there is little evidence of antidepressant efficacy.

▶ **MILD PSYCHIATRIC DISORDERS:** Compared to patients with psychiatric disorders who receive antidepressants, patients without psychiatric diagnoses who nonetheless are treated with antidepressants are typically older and appear to have relatively inconspicuous psychiatric problems as well as persistent general medical conditions such as diabetes and heart disease (Exhibits 4 and 5), which are associated with increased risk of depression.[18,19] Many of these patients may have less prominent, milder forms of common mood and anxiety disorders that do not fully meet the criteria for a psychiatric disorder. Although such problems are often not the primary reason for a medical visit, a patient's complaints about them may nevertheless prompt a provider to prescribe an antidepressant. However, meta-analyses of randomized clinical trials using placebos demonstrate that antidepressants have little or no therapeutic

EXHIBIT 5

Clinical Characteristics Of Patients Visiting Offices Of Providers Other Than Psychiatrists, 1996–2007

	Type of visit			Adjusted odds ratios for comparisons of antidepressant visit without psychiatric diagnosis and	
Characteristics	Antidepressant visit without psychiatric diagnosis (*n* = 9,454)	Antidepressant visit with psychiatric diagnosis (*n* = 4,054)	Visit with no antidepressant or psychiatric diagnosis (*n* = 219,636)	Antidepressant visit with psychiatric diagnosis	Visit with no antidepressant or psychiatric diagnosis
MEDICAL DIAGNOSIS					
Hypertension	16.5%	14.5%	11.1%	0.94	1.07
Diabetes	9.5	3.9	6.1	1.84****	1.22
Heart disease	4.4	1.6	3.0	1.92**	1.32
Asthma	2.1	2.1	1.7	0.96	0.99
NUMBER OF MEDICAL DIAGNOSES					
0 or 1	33.4	56.3	50.7	1.00	1.00
2 or more	66.6	43.7	49.3	1.84****	1.61****
PATIENT'S COMPLAINT					
Depression	2.1	26.8	0.1	0.08****	10.86****
Anxiety, nervousness	1.8	14.7	0.3	0.16****	4.50****
Psychosexual disorder	0.2[a]	1.0	0.1	0.09****	1.54
Sleep disturbance	2.9	5.6	0.6	0.73	3.76****
Other psychiatric problems	0.4	4.1	0.1	0.13****	2.35***
Smoking problem	0.3[a]	1.5	< 0.1	0.25****	8.02****
Feeling tired	3.3	4.4	1.3	0.72[e]	1.79****
Feeling generally unwell	0.8	0.9	0.4	0.63	1.17
Nonspecific pain	2.9	1.4	1.8	1.77***	1.44****
Migraine headaches	1.0	0.7	0.2	1.61	3.18****
Other headaches	4.9	4.6	1.9	1.06	2.50****
Abnormal sensations	1.8	0.7	1.0	1.90**	1.75****
Premenstrual tension	0.2[a]	0.2[b]	< 0.1	1.38	15.11****
Any psychiatric problems[b]	6.8	43.9	1.2	—[d]	—[d]
Any other problems[c]	14.3	13.6	6.4	—[d]	—[d]
None of the above	79.8	47.2	92.6	—[d]	—[d]

SOURCE Authors' analyses of data from the National Ambulatory Medical Care Survey, 1996–2007 (Note 11 in text). **NOTES** The multivariate analysis adjusted for survey year; patient's sex, race and ethnicity, age, and insurance type; type of patient (new or not); major reason for visit (chronic problem, new problem, not related to illness); physician type (primary care provider or not); and office type (solo practice or not), in addition to variables shown in the table. Results are expressed as odds ratios (see the explanation in notes to Exhibit 4). [a]Prevalence estimates are based on small sample sizes ($n < 30$) and should be interpreted cautiously. [b]Includes depression, anxiety and nervousness, psychosexual disorders, sleep disturbances, and other psychiatric problems. [c]Includes feeling tired, feeling generally unwell, nonspecific pain, smoking problems, migraine and other headaches, abnormal sensations, and premenstrual tension. [d]Not included in multivariate regression model because of collinearity with individual complaints. **$p < 0.05$ ***$p < 0.01$ ****$p < 0.001$

effect on these milder conditions.[8,20]

The growth in prescription of antidepressants for patients without a clinical psychiatric diagnosis has coincided with changes in public attitudes toward psychiatric medications.[21] Americans are increasingly receptive to the idea of antidepressant use for less severe conditions. Many people view psychiatric medications as enhancers of personal and social well-being, providing benefits that are well beyond these medications' clinically approved uses.

▶ **INCOMPLETE RECORDS:** Incomplete documentation of mental health treatment in nonspecialty settings may account for some missing psychiatric diagnoses. If patients have been receiving antidepressants for an extended period of time and are currently experiencing few symptoms—which can happen in maintenance-phase treatment of depression or anxiety disorders—some primary care physicians may refill antidepressant prescriptions without coding the psychiatric diagnoses at each visit. This is particularly likely to be the case if the visit is focused on general medical concerns. In this regard, it is important to note that the National Ambulatory Medical Care Survey captures diagnoses only at the current visit, not those from previous visits.

Problems with transferring clinical information between mental health specialists and general medical providers may also contribute to missing psychiatric diagnoses in surveys of patients treated with antidepressants by primary care providers.[22] In some clinical contexts, problems with communication between general

medical providers and specialists are frequent.[23] Many referrals—for example, either to or from specialists—do not include adequate transfer information such as patient background information or reason for referral.[24] In one study, 70 percent of psychiatrists rated the background information they usually received from primary care providers as either fair or poor.[25]

POLICY IMPLICATIONS We do not yet have proof that inappropriate use of antidepressants is increasing, but the change in prescribing trends is worrisome. The trends suggest that some primary care physicians overestimate the effectiveness of antidepressant medications in treating mild conditions, and that insufficient communication is occurring between primary care physicians and psychiatrists. In order to develop and implement an appropriate policy response, we first need to gain a deeper understanding of the relative contributions of the various factors that are causing more frequent prescriptions of antidepressants without psychiatric diagnoses.

▶ **ADDITIONAL EDUCATION FOR PROVIDERS:** To the extent that antidepressants are being prescribed for uses that are not supported by clinical evidence, we need to improve providers' prescribing practices. For example, providers could receive additional education on how to recognize mental disorders[26] and what the evidence shows about the long-term benefits of antidepressants[27] and the limits of their efficacy. This could also help providers identify the large number of patients who meet the clinical criteria for depressive or anxiety disorders but currently do not receive any treatment for them.[7]

▶ **CHANGES IN DRUG FORMULARIES:** Reforming insurers' drug formularies is another potential means of reining in possibly inappropriate antidepressant prescribing.[28] For example, tiers of cost sharing for drugs might be categorized by psychiatric condition rather than by drug. Under such a policy, patients whose providers prescribed antidepressants for recognized clinical indications would have lower cost sharing, compared to patients who received antidepressants for clinical indications for which there is little or no evidence of the medications' efficacy.

Research would need to assess whether the expected benefits of such reforms—which might also reduce the undercoding of psychiatric disorders—would outweigh the added complexity of pharmacy benefit management, including claims adjudication, under such a system. Such changes would not prevent providers from manipulating the rules to benefit patients by exaggerating the severity of their condition or not reporting the true condition for which the medication was prescribed.[29] They might also lead to undertreating patients who would benefit from antidepressants, but who reject a psychiatric diagnosis out of concerns about stigma and other possible repercussions.[30]

Antidepressant use is becoming concentrated among people with less severe and poorly defined mental health conditions.

▶ **REDUCING THE FRAGMENTATION OF CARE:** Beyond programmatic and policy responses aimed at improving the delivery of mental health services, broader changes in the health care environment may offer opportunities to improve the integration of mental health and general medical care. The Affordable Care Act of 2010 provides Medicaid programs with an option that temporarily increases the federal match rate up to 90 percent for health home services. These new provider arrangements involve shared responsibility for coordinating and providing access to the full spectrum of primary care, mental health, and long-term services. Medicaid beneficiaries who have two chronic conditions, who have one chronic condition and are at risk for a second, or who have a serious and persistent mental health condition are eligible for the health home service option.

The Affordable Care Act's provisions for accountable care organizations also encourage greater collaboration among providers. Accountable care organizations are new multidisciplinary networks that will share responsibility for providing comprehensive health care for Medicare beneficiaries. If properly structured, these organizations might improve the quality of mental health care in general medical settings. For example, an impressive body of research supports the value of collaborative care models that involve mental health specialists in the primary care management of major depressive disorder in adults.[31]

The Health Information Technology for Economic and Clinical Health (HITECH) provisions of the American Recovery and Reinvestment Act of 2009 provide additional opportunities to re-

duce fragmentation of health care delivery. The provisions offer new incentives to Medicare and Medicaid providers who demonstrate "meaningful use" of electronic health record systems. Technology of this sort has the potential to increase communication between mental health specialists and other providers.[32]

CONCLUSION With nonspecialists playing a growing role in the pharmacological treatment of common mental disorders, practice patterns of these providers are becoming increasingly relevant for mental health policy. In general medical practice, antidepressant use appears to be becoming concentrated among people with less severe and poorly defined mental health conditions. Prescribing antidepressants without a psychiatric diagnosis is especially common in medical practices that prescribe the medications to a larger percentage of their patients. Yet paradoxically, a large proportion of patients with common mental disorders do not receive needed treatment because their primary care providers do not detect their conditions.

The widening misalignment between diagnosis and treatment suggests the need for a deeper inquiry. Depending on the results of those investigations, various policy options might prove fruitful. They range from clinical efforts to ensure that patients receive the most appropriate treatments to the implementation of broad reforms of the health care system that will increase communication between primary care providers and mental health specialists. ■

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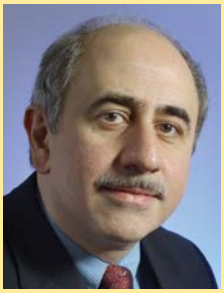
ABOUT THE AUTHORS: RAMIN MOJTABAI & MARK OLFSON



Ramin Mojtabai is an associate professor at the Johns Hopkins Bloomberg School of Public Health.

In this month's *Health Affairs*, Ramin Mojtabai and Mark Olfson report on their study examining trends in primary care physicians' prescribing of antidepressants from 1996 to 2007. Overall, they found a substantial increase in these prescriptions by nonpsychiatrist providers without an accompanying psychiatric diagnosis. Their findings, they say, underline the need to better understand how and why antidepressants are being so widely prescribed for patients by these providers in these settings.

The authors share a "keen interest in understanding patterns and trends in mental health treatments in general medical settings, where the bulk of mental health care occurs," says Mojtabai. Their paper grew out of their continuing interest in charting antidepressant use in primary care as a means of improving the treatment of mental illness by primary care doctors.

Mojtabai is an associate professor at the Johns Hopkins Bloomberg School of Public Health and holds a joint appointment in the Department of Psychiatry and Behavioral Sciences at the Johns Hopkins School of Medicine. He has charted key trends in the delivery of mental health services, including the recent rise in concurrent use of multiple psychiatric medications and the declining role of psychotherapy in psychiatric practice in the United States.

Mojtabai has a medical degree from Tehran University of Medical Sciences, in Iran, and a doctoral degree in clinical psychology from the University of Tulsa. He has completed residency training in psychiatry at Roozbeh Hospital in Tehran and Beth Israel Hospital in New York City and a postdoctoral research fellowship at Columbia University.

Mark Olfson is a professor of clinical psychiatry at Columbia University.

Olfson is a professor of clinical psychiatry at Columbia University and a mental health services researcher and research psychiatrist at the New York State Psychiatric Institute. His research focuses on patterns and trends in the use of mental health services and quality of care, with an emphasis on the treatment of patients with depression and other severe mental disorders. He also directs federally funded research studies on the safety and effectiveness of antipsychotics, antidepressants, and stimulants in the treatment of common mental disorders in adults and children.

Olfson has a medical degree from Northwestern University, completed a psychiatric residency at Yale University School of Medicine, and has held a National Institutes of Health postdoctoral research fellowship in mental health services research in a joint program at Princeton and Rutgers Universities.