

Treatment Process and Outcomes for Managed Care Patients Receiving New Antidepressant Prescriptions From Psychiatrists and Primary Care Physicians

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Background: While many studies describe deficiencies in primary care antidepressant treatment, little research has applied similar standards to psychiatric practice. This study compares baseline characteristics, process of care, and outcomes for managed care patients who received new antidepressant prescriptions from psychiatrists and primary care physicians.

Methods: At a prepaid health plan in Washington State, patients receiving initial antidepressant prescriptions from psychiatrists (n=165) and primary care physicians (n=204) completed a baseline assessment, including the Structured Clinical Interview for DSM-IV depression module, a 20-item depression assessment from the Symptom Checklist-90, and the Medical Outcomes Survey 36-Item Short-Form Health Survey functional status questionnaire. All measures were repeated after 2 and 6 months. Computerized data were used to assess antidepressant refills and follow-up visits over 6 months.

Results: At baseline, psychiatrists' patients reported slightly higher levels of functional impairment and greater prior use of specialty mental health care. During follow-up, psychiatrists' patients made more frequent follow-up visits, and the proportion making 3 or more visits in 90 days was 57% vs 26% for primary care physicians' patients. The proportion receiving antidepressant medication at an adequate dose for 90 days or more was similar (49% vs 48%). The 2 groups showed similar rates of improvement in all measures of symptom severity and functioning.

Conclusions: In this sample, clinical differences between patients treated by psychiatrists and primary care physicians were modest. Shortcomings in depression treatment frequently noted in primary care (inadequate follow-up care and high rates of inadequate antidepressant treatment) were also common in specialty practice. Possible selection bias limits any conclusions about relative effectiveness or cost-effectiveness.

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P RIMARY CARE physicians in the United States account for nearly half of all antidepressant-related visits^{1,2} and 60% or more of first antidepressant prescriptions.³ Restrictions on access to specialty mental health care may further increase the proportion of first-line antidepressant treatment provided in primary care.⁴

Numerous studies raise questions about the quality of antidepressant treatment in primary care clinics, including early medication discontinuation,^{3,5-7} subtherapeutic dosing,³ and inadequate follow-up monitoring.⁵⁻⁹ Surprisingly, few recent studies have applied similar measures to patients treated by psychiatrists.

Two studies conducted during the 1980s compared depression care by primary care physicians and psychiatrists, but neither focused specifically on pharmacotherapy. Sturm and Wells¹⁰ used data

from the Medical Outcomes Study to compare quality and cost of depression treatment in primary care and specialty sectors, concluding that specialty care was more effective but more expensive. This comparison, however, considered overall performance of the 2 systems, including differences in recognition and treatment rates. Scott and Freeman¹¹ found that random assignment of depressed patients to amitriptyline prescribed by psychiatrists did not significantly improve outcomes compared with usual primary care, but the sample size was insufficient to detect moderate differences in outcomes.

Three recent studies used prescription data to examine the duration and dose of antidepressant treatment provided by psychiatrists and primary care physicians. Analyses of health maintenance organization data by Simon et al³ and Katzelnick and colleagues⁶ found that patients receiving initial antidepressant

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PARTICIPANTS AND METHODS

SETTING

The study was conducted between February 1994 and November 1996 at staff-model clinics of the Group Health Cooperative of Puget Sound, a prepaid health plan serving approximately 450 000 members in western Washington State. Most members are covered through employer-purchased plans, but the enrollment includes approximately 45 000 Medicare members and 35 000 members covered by Medicaid or by Washington's Basic Health Plan (a state program for low-income residents). Group Health Cooperative members are similar to Seattle, Wash, area residents, except for a higher educational level and less representation of high-income residents.²³

All mental health and general medical providers are paid by salary, with no individual financial incentives tied to use or referral. Each full-time primary care physician is responsible for a panel of approximately 2200 patients. Six outpatient specialty mental health clinics emphasize short-term individual psychotherapy, pharmacotherapy, and group therapy. Approximate mental health staffing ratios per 100 000 members are 5.5 psychiatrists, 2.5 psychiatric nurse practitioners, 2.5 psychiatric nurses, 2.5 psychologists, and 15 master's-level psychotherapists (ratios similar to other group or staff-model health plans²⁴).

Typical coverage arrangements for outpatient psychotherapy allow 10 to 20 visits per year subject to \$10 to \$20 copayments. Psychiatric visits for medication management are covered at parity with general medical visits (same copayment level and no annual limits).

Patients seeking depression treatment may visit primary care physicians or self-refer to the nearest specialty mental health clinic. On diagnosing depression, primary care physicians may choose to initiate antidepressant treatment or refer for specialty consultation. Patients self-referring to specialty care may request initial treatment by a psychiatrist or a nonprescribing psychotherapist. Nonprescribing therapists may refer patients for psychiatric evaluation. Consequently, patients may receive an initial antidepressant prescription from a psychiatrist following direct self-referral, referral from a primary care physician, or referral from a nonprescribing psychotherapist.

SAMPLE

Computerized pharmacy records were used to identify a random sample of adult health plan members filling new prescriptions for antidepressants from primary care physicians or psychiatrists (with *new* defined as no antidepressant prescription during the past 150 days). Computerized visit data were used to select those with diagnoses of depression (major depressive disorder, dysthymia, or depression not otherwise specified) within 30 days before the index prescription. Computerized records were also used to exclude patients with diagnoses of bipolar disorder or psychotic disorder during the prior 2 years. An invitation letter (including a written description of study procedures) was mailed 3 to 7 days after the index prescription.

We then attempted to contact all eligible patients for a telephone assessment 5 to 10 days later.

ASSESSMENTS

Following a documented oral consent procedure, eligible and consenting patients completed a baseline assessment, including a 20-item depression assessment extracted from the Hopkins Symptom Checklist-90 or the Symptom Checklist-90 (SCL),²⁵ the current depression module of the Structured Clinical Interview for DSM-IV,²⁶ the Medical Outcomes Survey 36-Item Short-Form Health Survey (SF-36),²⁷ questions regarding past depressive episodes and depression treatment, and questions regarding days of restricted activity or missed work because of illness.²⁸ The baseline assessment focused on the 2-week period before the index prescription. Two and 6 months after the index prescription, all participants were contacted for telephone follow-up assessments, including the SCL depression scale (the primary measure of clinical outcome), the SF-36 questionnaire, and questions regarding restricted activity and missed workdays.

Interviewer training included 8 hours of didactic instruction, observation of 5 interviews, performance of 5 or more interviews under observation, and weekly supervision. Previous research documents excellent agreement between telephone and in-person administration of the Structured Clinical Interview for DSM-IV and the SCL.²⁹

MEASURES OF TREATMENT RECEIVED

Computerized information systems were used to examine treatment received during the 6 months before and the 6 months after the index prescription. We examined 2 measures of treatment quality. First, we used previously developed and validated algorithms³⁰ to examine the proportion of patients receiving at least 90 days of continuous antidepressant treatment at a minimally adequate dose (eg, 75 mg of imipramine hydrochloride or 10 mg of fluoxetine hydrochloride).^{31,32} Second, we examined the proportion of patients meeting the NCQA's Health Plan Employer Data and Information Set (HEDIS)³³ criteria for adequate follow-up care (at least 3 visits in 90 days, and at least 1 to a prescribing provider). Pharmacy records for the 6 months before randomization were used to compute the revised chronic disease score, a measure of medical comorbidity and predicted health care use.^{34,35}

DATA ANALYSIS

All analyses classify patients according to source of the initial prescription regardless of subsequent care. Baseline comparisons used mixed-model analysis of variance (including random effects to account for clustering of patients within physicians). Outcome comparisons used mixed-model analysis of covariance (with physician as random effect) to examine change between baseline and follow-up, with 2- and 6-month assessments considered as repeated measures. Outcome comparisons were adjusted for age, sex, chronic disease score, and baseline value of the relevant outcome measure. The threshold for statistical significance was an α level of .05 (2-sided).

prescriptions from psychiatrists were approximately 10% more likely to receive an adequate dose and duration of short-term treatment—but that 40% to 50% of psychiatrists' patients still received inadequate treatment. Using a nationwide sample of pharmacy claims, Fairman et al¹² found that specialty differences in medication adherence and adequacy of dosing disappeared when analyses were limited to patients receiving newer antidepressants. In all 3 of these studies, no data were available regarding clinical differences at baseline or follow-up.

A substantial amount of literature compares the process and outcomes of specialist and generalist care for other major health conditions, including heart disease,¹³⁻¹⁶ diabetes,^{17,18} hypertension,¹⁷ obstructive lung disease,^{19,20} and human immunodeficiency virus infection.²¹ In general, specialists showed greater adherence to expert guidelines.²² When patient outcomes were examined, advantages of specialty care appeared greater for hospital care^{14-16,20} than for outpatient management.¹⁷⁻¹⁹

This report examines baseline characteristics, process of care, and clinical outcomes in cohorts of managed care patients receiving initial antidepressant prescriptions from primary care physicians or psychiatrists. We focus on patients initiating treatment in both settings, rather than examining consequences of nonrecognition or nontreatment. This observational design is an advantage for our first objective (describing baseline characteristics and process of care for patients treated by primary care physicians and psychiatrists under naturalistic conditions) and a disadvantage for our second (comparing outcomes of care for these 2 groups). Outcome comparisons are liable to be biased because of baseline differences, especially differences that cannot be observed or adjusted for.

RESULTS

PARTICIPATION

Of 720 eligible patients, 97 could not be contacted by telephone and 254 declined participation, leaving a final sample of 369 (51% of those eligible and 59% of those contacted). Overall, participation was significantly higher among patients treated by primary care physicians than among those treated by psychiatrists (62% vs 42%; $\chi^2_1 = 26.4$; $P < .001$). Across both groups, participants were similar to nonparticipants in age, sex, and use of general medical or mental health services in the prior 6 months.

Of the 369 patients completing the baseline assessment, 325 (88%) completed the 2-month follow-up and 307 (83%) completed the 6-month follow-up. Follow-up participants and nonparticipants did not differ significantly in age, sex, or severity of depression at baseline. Follow-up participation was similar in the 2 cohorts at 2 months but was slightly higher for patients treated by psychiatrists at 6 months (88% vs 80%; $\chi^2_1 = 4.02$; $P = .04$). Analyses of interview data included all patients participating at each point. All analyses of treatment received (ie, visits made and prescriptions filled) were limited to the 93% of participants enrolled in the health plan throughout follow-up. The probability of disenrollment did not vary between the 2 groups.

Table 1. Baseline Characteristics of Patients Receiving an Initial Antidepressant Prescription From Primary Care Physicians and Psychiatrists*

Characteristic	Patients Initially Treated by Primary Care Physicians (n = 204)	Patients Initially Treated by Psychiatrists (n = 165)	t Statistic (P)†
Age, y	44.8 (14.9)	39.9 (14.1)	2.22 (.03)
Female sex, %	73	54	3.81 (.001)
White, %	89	92	0.25 (.80)
SCL depression score	1.65 (0.77)	1.80 (0.81)	1.85 (.07)
Has major depression by SCID, %	68	72	0.80 (.42)
Reported prior depressive episodes, %	66	71	0.91 (.36)
Restricted activity, d/mo	6.72 (8.46)	7.69 (8.93)	0.82 (.41)
Work missed, d/mo‡	1.84 (3.76)	2.12 (3.64)	0.46 (.64)
SF-36 subscale scores			
Mental health	43.8 (20.9)	40.3 (19.7)	1.62 (.11)
Emotional role	40.1 (40.5)	28.0 (36.8)	2.94 (.004)
Social function	61.2 (30.0)	49.0 (27.5)	3.77 (<.001)
Vitality	29.6 (20.6)	31.1 (19.9)	0.67 (.51)
Health perception	66.2 (21.8)	61.1 (23.3)	1.86 (.06)
Physical function	82.4 (23.7)	75.6 (26.1)	2.54 (.01)
Physical role	68.7 (40.8)	59.1 (42.5)	2.02 (.04)
Bodily pain	71.2 (26.4)	68.4 (27.8)	1.02 (.31)
Underwent prior specialty treatment, %	59	76	3.51 (.001)
Had a prior psychiatric hospitalization, %	9	13	1.05 (.29)
Chronic disease score	1141 (1212)	1050 (1155)	0.71 (.48)

*Data are given as mean (SD) unless otherwise indicated. SCL indicates Symptom Checklist-90; SCID, Structured Clinical Interview for DSM-IV; and SF-36, Medical Outcomes Survey 36-Item Short-Form Health Survey.

†Based on a random-effects linear regression model accounting for clustering of patients with providers. df = 219 for all variables except work missed, for which df = 142.

‡Limited to those working for pay.

BASELINE CHARACTERISTICS

At baseline, patients treated by psychiatrists were younger, more often men, had slightly (but not significantly) higher SCL depression scores, and had significantly lower (more impaired) scores on several subscales of the SF-36 (**Table 1**). As expected, patients treated by psychiatrists more often reported prior use of inpatient and outpatient specialty mental health care. The 2 groups did not differ in severity of comorbid medical illness (as measured by the chronic disease score).

TREATMENT RECEIVED

Psychiatrists' patients made a mean of 2.86 more visits during follow-up (95% confidence interval, 1.78-3.94), but this group also had a higher visit rate before beginning treatment (**Table 2**). After controlling for number of visits in the prior 6 months, the mean difference during the follow-up period was 0.64 visit (95% confidence interval, 0.50-0.78). Visit data also showed modest rates of "crossover" during follow-up: approximately 6% of patients treated by primary care physicians made a medication follow-up visit in the specialty clinic

Table 2. Outpatient Visits Made 6 Months Before and 6 Months After the Initial Antidepressant Prescription*

Type of Outpatient Visit	Patients Initially Treated by Primary Care Physicians (n = 193)				Patients Initially Treated by Psychiatrists (n = 150)			
	Before Treatment		After Treatment		Before Treatment		After Treatment	
	Users, %	Mean (SD)	Users, %	Mean (SD)	Users, %	Mean (SD)	Users, %	Mean (SD)
Mental health specialty visits								
Psychiatrist or psychiatric nurse	1	0.02 (0.16)	6	0.22 (1.31)	81	1.09 (0.94)	67	2.07 (2.32)
Nonprescribing psychotherapist	6	0.10 (0.47)	16	0.41 (1.22)	56	1.45 (2.85)	49	1.89 (3.44)
Primary care visits								
With a depression diagnosis†	94	1.25 (0.79)	63	0.98 (1.32)	37	0.61 (1.07)	24	0.45 (1.04)
No depression diagnosis	65	1.41 (1.55)	59	1.66 (2.00)	66	1.67 (1.91)	67	1.67 (2.07)
Total	96	2.78 (1.91)	81	3.27 (3.21)	99	4.82 (3.93)	94	6.08 (5.62)

*The "before" period includes visits on the day of the index prescription.
 †Any physician diagnosis of depression recorded on the billing form.

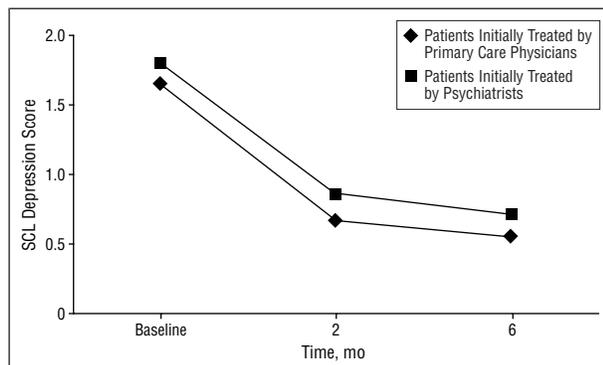


Figure 1. Symptom Checklist–90 (SCL) depression scores over time for patients receiving initial antidepressant prescriptions from psychiatrists (n=165) or primary care physicians (n=204). An SCL depression score of 0.5 or less indicates remission; 0.5 to 1.3, mild depression; and 1.3 to 2.2, moderate depression.

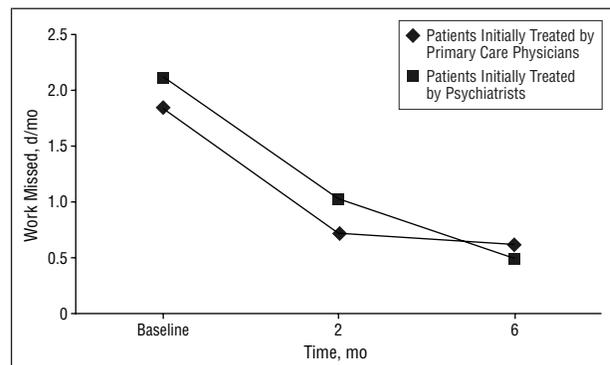


Figure 3. Workdays missed per month over time for patients receiving initial antidepressant prescriptions from psychiatrists (n=119) or primary care physicians (n=139). The sample is limited to those working at each point.

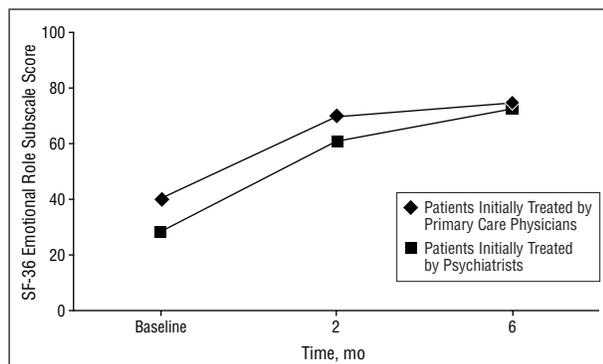


Figure 2. Medical Outcomes Survey 36-Item Short-Form Health Survey (SF-36) emotional role subscale scores over time for patients receiving initial antidepressant prescriptions from psychiatrists (n=165) or primary care physicians (n=204).

and 23% of patients treated initially by psychiatrists made depression-related primary care visits during follow-up. Psychiatrists' patients were significantly more likely to visit nonprescribing psychotherapists before (56% vs 6%; $\chi^2_1=106$; $P<.001$) and after (49% vs 16%; $\chi^2_1=45.1$; $P<.001$) starting antidepressant treatment. The proportion meeting the HEDIS standard for adequate follow-up care was 26% among patients treated by pri-

mary care physicians and 57% among those treated initially by psychiatrists ($\chi^2_1=34.5$; $P<.01$).

The proportion of patients receiving 90 days of adequate pharmacotherapy (see the "Measures of Treatment Received" subsection of the "Participants and Methods" section) was 48% in the primary care group and 49% among patients treated by psychiatrists.

OUTCOMES

Average SCL depression scores showed similar improvement over time in both groups (Figure 1). After adjustment for age, sex, chronic disease score, and baseline SCL score, the 2-month SCL score was slightly higher among psychiatrists' patients (mean difference, 0.14; 95% confidence interval, 0.00-0.27), but no significant difference was seen at 6 months. The proportion of patients reporting a 50% or greater decrease in SCL depression score from baseline to 6-month follow-up was 70% in the primary care group and 62% among patients treated initially by psychiatrists. Scores on the emotional role subscale of the SF-36 (Figure 2) showed the same pattern seen for SCL depression score: similar improvement over time in the primary care and psychiatry groups. Results for the mental health, social functioning, and vitality subscales of the SF-36 showed a similar pattern (details available on request). Analyses of days missed from work due

to illness (**Figure 3**) were limited to those working at each point. As with other measures, the 2 groups showed similar rates of improvement, with no significant difference in adjusted follow-up scores.

COMMENT

We compared cohorts of managed care patients receiving initial antidepressant prescriptions from psychiatrists and primary care physicians. At baseline, patients of psychiatrists were slightly more symptomatic and more impaired. During 6 months of follow-up, only 26% of primary care physicians' patients and 57% of psychiatrists' patients met HEDIS standards for adequate follow-up care. Fewer than half of patients received at least 90 days of pharmacotherapy at a minimally adequate dose. The rate of clinical and functional improvement was similar in the 2 groups.

The most significant limitation of this study is its observational design, including self-selection of patients into primary or specialty care. The 2 cohorts differed on several measured factors (age, sex, treatment history, depression severity, and willingness to participate in research) and probably differed in ways we were unable to measure (eg, treatment preferences and expectations). A truly unbiased comparison of outcomes would require random assignment, but we doubt such a study would prove acceptable to patients or practical to conduct.

We should also acknowledge several other limitations. First, our findings may not generalize to health care systems with different structure, financial incentives, or provider training. Second, we are not able to separate the specific effects of antidepressant treatment from the effects of formal psychotherapy or nonspecific support. Third, our baseline assessment was conducted 1 to 3 weeks after the initiation of treatment (although all baseline measures did focus on the period before the initial prescription). Finally, many patients declined to participate. Our analyses of available data do not suggest significant bias due to nonresponse, but we cannot exclude this possibility.

Baseline differences between the 2 groups were modest in clinical terms. Contrary to expectation, medical comorbidity was not significantly greater among primary care physicians' patients. The modest clinical differences between groups may reflect relatively free access to psychiatric care in this health system. Limits on self-referral might restrict the psychiatric group to the more severely ill patients. We should emphasize that we selected psychiatrists' patients initiating antidepressant treatment, excluding those referred after unsuccessful primary care treatment. A cross-sectional sample of psychiatrists' patients (rather than a cohort of treatment initiators) would reflect the accumulation of more severely ill patients via referral.

Analyses of follow-up visits and prescription refills demonstrate significant shortcomings in the primary care and psychiatry cohorts. We doubt that these findings reflect managed care restrictions in general or the characteristics of this managed care organization. Our findings regarding primary care pharmacotherapy are consistent with recent studies in this setting^{3,5,36} and in

other managed care and fee-for-service settings.^{6,7,12,37} The proportion of primary care physicians' patients in our sample meeting the HEDIS standard for adequate follow-up care (26%) was quite similar to the average of 23% for health plans participating in HEDIS.³⁸ The limited data available regarding pharmacotherapy in specialty practice (from managed care and fee-for-service settings) show similar rates of inadequate treatment.^{3,6,12,39} Furthermore, the specific aspects of care we examine—antidepressant refills and medication follow-up visits—were available without limit and covered at parity with general medical care. The shortcomings we observe would be less concerning if confined to patients with mild or transient depression. Unfortunately, this was not the case in either the primary care or the psychiatry group (details available on request).

While patients treated by psychiatrists were somewhat more severely ill, the intensity and continuity of pharmacotherapy were no greater. High rates of inadequate pharmacotherapy among patients treated by psychiatrists may appear inconsistent with psychiatrists' clinical experience. In fact, we found that psychiatrists' patients receiving inadequate pharmacotherapy were largely invisible in everyday practice: only 29% made any psychiatric visit during the second half of the follow-up period. For most patients receiving inadequate pharmacotherapy, there was no chance for this problem to be detected or corrected.

Patients beginning antidepressant treatment with primary care physicians and psychiatrists showed similar patterns of improvement over time in depressive symptoms, functional impairment, and disability. While most experienced significant improvement, approximately 40% remained at least moderately symptomatic. Our comparison of change in SCL depression scores had sufficient statistical power to detect a difference of 0.15 to 0.20 between the 2 groups (ie, approximately 15% of the change seen in both groups from baseline to follow-up).

The most striking difference between the 2 cohorts was in visits to nonprescribing psychotherapists before and after starting antidepressant treatment. These differences, however, could be used to argue for and against the benefits of specialty treatment. On the one hand, specialty patients could be considered more treatment resistant (more depressive symptoms at baseline despite ongoing psychotherapy). On the other hand, specialty patients showed similar rates of improvement despite much higher rates of combined treatment.

Our data do not support firm conclusions regarding the relative effectiveness or cost-effectiveness of treatment provided by psychiatrists and primary care physicians. Given differences in baseline characteristics and concomitant use of psychotherapy, comparisons of outcomes should be made cautiously. Even if outcome findings are ignored, however, the patterns of medication use and follow-up visits in both groups are concerning. We present these findings to address a significant gap in recent research and to stimulate discussion regarding the need for systematic follow-up care in psychiatric practice.

Shortcomings in primary care depression treatment have been attributed to deficiencies in primary care

physicians' knowledge, skills, or motivation. We observed similar shortcomings among patients treated by psychiatrists (a group presumed to have significantly greater knowledge, skill, and motivation to treat depression). We believe that shortcomings in primary care and psychiatry practice reflect systemic problems⁴⁰ that are unlikely to be overcome by educational approaches alone.⁴¹ In a recent review of research on primary vs specialty care for various chronic medical conditions, Donohoe⁴² reached a similar conclusion: differences between primary care and specialty practice are less important than the gaps in long-term illness management common to all physicians.

After comparing overall performance of the primary care and specialty sectors, Sturm and Wells¹⁰ concluded that quality improvement (rather than a shift from the primary care to the specialty sector) is the most efficient strategy for improving depression treatment at the population level. We reach the same conclusion, but for different reasons. The shortcomings previously observed in primary care were also seen in specialty practice. In both groups of patients, fewer than half received the minimal recommended levels of antidepressant treatment, and 40% to 70% did not receive the minimal recommended levels of follow-up care. These 2 gaps in treatment were associated; patients receiving "inadequate" pharmacotherapy were also less likely to make follow-up visits, where inadequate treatment might be detected and corrected. It appears that shifting primary care physicians' patients to specialists will not adequately address widespread undertreatment of depression.⁴³ Several recent studies^{9,44-46} have demonstrated that organized treatment programs (including systematic monitoring of adherence and patient outcomes and active follow-up) can significantly improve the quality and outcomes of depression treatment in primary care. Our findings suggest that similar monitoring and follow-up programs should be evaluated in specialty practice.

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