

Yield of Practice-Based Depression Screening In VA Primary Care Settings

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BACKGROUND: Many patients who should be treated for depression are missed without effective routine screening in primary care (PC) settings. Yearly depression screening by PC staff is mandated in the VA, yet little is known about the expected yield from such screening when administered on a practice-wide basis.

OBJECTIVE: We characterized the yield of practice-based screening in diverse PC settings, as well as the care needs of those assessed as having depression.

DESIGN: Baseline enrollees in a group randomized trial of implementation of collaborative care for depression.

PARTICIPANTS: Randomly sampled patients with a scheduled PC appointment in ten VA primary care clinics spanning five states.

MEASUREMENTS: PHQ-2 screening followed by the full PHQ-9 for screen positives, with standardized sociodemographic and health status questions.

RESULTS: Practice-based screening of 10,929 patients yielded 20.1% positive screens, 60% of whom were assessed as having probable major depression based on the PHQ-9 (11.8% of all screens) ($n=1,313$). In total, 761 patients with probable major depression completed the baseline assessment. Comorbid mental illnesses (e.g., anxiety, PTSD) were highly prevalent. Medical comorbidities were substantial, including chronic lung disease, pneumonia, diabetes, heart attack, heart failure, cancer and stroke. Nearly one-third of the depressed PC patients reported recent suicidal ideation (based on the PHQ-9). Sexual dysfunction was also common (73.3%), being both longstanding (95.1% with onset >6 months) and frequently undiscussed and untreated (46.7% discussed with any health care provider in past 6 months).

CONCLUSIONS: Practice-wide survey-based depression screening yielded more than twice the positive-screen rate demonstrated through chart-based VA performance measures. The substantial level of comorbid

physical and mental illness among PC patients precludes solo management by either PC or mental health (MH) specialists. PC practice- and provider-level guideline adherence is problematic without systems-level solutions supporting adequate MH assessment, PC treatment and, when needed, appropriate MH referral.

KEYWORDS: depression; screening; primary care; health care delivery; veterans.

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INTRODUCTION

Nationally, depression affects between 16–20 million Americans and remains a major public health problem.¹ Despite its prevalence, depression often remains undetected, under-diagnosed and under-treated.^{2–4} Many depressed patients only contact the healthcare system through primary care (PC).⁴ Fortunately, more efficient procedures for screening for and diagnosing depression and the advent of better-tolerated antidepressants that are safer and easier to prescribe (i.e., less complex dosing regimens) have increased PC providers' ability to manage mild to moderate depression.⁵ Nonetheless, PC-based detection and treatment remain low.⁶ Despite US Preventive Task Force recommendations for practice-based screening of all PC patients, just 21% report actually being screened.^{7,8} Thus, many patients who should be in treatment are missed without effective routine screening, while screening also reveals that many patients who are in treatment are still symptomatic.⁸

Despite treatment advances and widespread acknowledgment of the value of PC-based management of depression, little is known about the potential yield of depression screening guidelines in routine practice settings. What proportion of PC patients actually screen positive and are assessed as having depression? What are depressed PC patients' physical and mental health care needs? What are the implications of these rates and health care needs for practicing PC providers?

Using practice-wide, population-based screening and assessment, we randomly sampled PC patients from ten diverse primary

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care settings from a large multisite randomized trial to discern answers to these questions.

METHODS

Setting

We engaged ten PC clinics in three VA regional networks across five states (Florida, Ohio, South Dakota, Texas, Wisconsin). Participating clinics spanned rural and metropolitan areas, hospital- and community-based outpatient clinics, and teaching and non-teaching programs. Practices ranged in size from 4–13 PC providers and in annual workloads from 3,900–13,000 patients.⁹ Institutional Review Boards at participating VA facilities approved the study.

Study Design and Sample

To characterize the yield of depression screening in routine practice, we used the baseline cohort of patients enrolled in a group randomized controlled trial evaluating practice-level impacts of implementation of collaborative care for depression from 2002–2004.^{10,11} All PC patients who attended a study clinic in the previous 12 months and who had an upcoming appointment were eligible for inclusion regardless of age, gender, race-ethnicity or health status, as depression screening guidelines make no demographic or comorbidity distinctions. We excluded patients whose visits were scheduled for compensation-and-pension exams (i.e., eligibility determination) or for visits without seeing the PC provider (e.g., laboratory tests).

Data Collection and Patient Survey Measures

Participating sites provided contact information for random samples of eligible PC patients to an independent survey research firm (California Survey Research Services, Inc., Van Nuys, CA). Patients were notified of the study by mail 10 days prior to telephone contact using letters from their respective Primary Care Directors or Chiefs of Staff. We included preaddressed refusal postcards and a toll-free number for patients to call for refusal. After 10 days, trained interviewers contacted patients via computer-assisted telephone interviewing (CATI).

We screened patients for depression using the Patient Health Questionnaire-2 (PHQ-2), a two-item depression screener with high sensitivity and specificity for major depressive disorder (MDD).^{12–16} Major depressive disorder (MDD) is characterized by a “combination of symptoms that interfere with a person’s ability to work, sleep, study, eat, and enjoy once-pleasurable activities.”¹⁷ We administered the remaining seven items of the PHQ-9, which cover additional DSM-IV criteria for a major depressive episode, to patients with affirmative responses to one or both PHQ-2 items. The PHQ-9 has high specificity and positive predictive value for MDD, and has been validated for telephone administration.^{18,19} Individuals with aggregated PHQ-9 scores ≥ 10 were considered to have probable major depression, and were then consented, enrolled and interviewed. All measures are based on patient self-report.

We asked about patients’ demographics (age, gender, race, ethnicity, relationship status), socioeconomic status (employment, education, insurance), general health, functional limitations^{20,21} and medical comorbidity.²² We assessed mental health (MH) comorbidities, including post-traumatic stress disorder (PTSD), bipolar disorder, anxiety/panic and alcohol abuse,^{23–26} and depression modifiers (e.g., dysthymia). Tables 1 and 2 provide measurement definitions and details.

Statistical Analysis

We used univariate analyses to describe the yield of depression screening and assessment and the self-reported health status, medical and MH comorbidities and function of PC patients with probable major depression (PHQ-9 ≥ 10). CATI methods resulted in little missing data, precluding the need for data imputation methods (i.e., the majority of variables had 99% valid data, with the exception of sexual dysfunction with 11% missing). We report unadjusted frequencies; use of enrollment weights (by age, sex, race-ethnicity) did not influence study results.

RESULTS

Practice-Based Sample Characteristics and Response Rates

Overall, we received contact information on 28,474 randomly sampled patients with upcoming PC appointments who had had at least one visit in the previous 12 months (Fig. 1). These individuals were predominantly male (95.1%) with a mean age of 66.6 years (± 12.4 , range 21–105). Of those contacted, 10,929 completed the initial screen (73.9%). Of those assessed (PHQ-9 ≥ 10), 761 (58.0%) enrolled and completed the baseline survey.

Prevalence of Depression and Patient Characteristics

Practice-based screening of 10,929 PC patients yielded 20.1% positive PHQ-2 depression screens ($n=2,195$, including positive screens among 73 refusals post-consent-and-screen) across the ten participating PC clinics (Fig. 1). Among PHQ-2 positive screens, 59.8% ($n=1,313$) scored 10 or higher on the PHQ-9 (11.8% of all screens) and were deemed to have probable major depression.²⁷ Of these patients, 761 (58.0%) enrolled in the study, completed the baseline assessment and are the focus of these results. These depressed PC patients (PHQ-9 ≥ 10) were, on average, 60 years old, male, predominantly white and married, with a high school or college education (Table 1). Two-thirds were either disabled or permanently retired. Few lived alone.

We found substantial evidence of dysthymia and chronic major depression (Table 2). For example, 72.8% of depressed

veterans in PC reported experiencing at least one period of 2+ years when they felt depressed or sad most days. Over two-thirds reported a period of 2+ weeks of feeling sad, empty or depressed most of the day nearly every day in the past 12 months. About three-quarters of the patients reported experiencing a similar amount of time suffering anhedonia (i.e., lost interest in work, hobbies and other previously enjoyed activities). Over half reported that their emotional state conferred serious functional impairment in their ability to work and/or take care of themselves or their families for 2+ weeks in the past 12 months. Nearly one-third reported experiencing thoughts of suicide several days out of the previous 2 weeks.

Medical and Mental Health Comorbidities among Depressed Primary Care Patients

Medical and MH comorbidities were substantial (Table 2).

Table 1. Characteristics of Depressed Primary Care Patients with Probable Major Depression (PHQ-9 ≥10) Identified through VA Primary Care Practice-Based Screening

Characteristics	Depressed primary care patients (n=761)
Gender (% male)	94.0%
Age (mean ± SD) (years)	60.4 ± 11.9 years
Race (% white)	85.0%
Marital status	
Married or living as married	60.1%
Divorced or separated	26.1%
Widowed	7.5%
Never married	6.3%
Work Situation	
Working full/part time for pay	17.0%
Unemployed	9.3%
On disability	41.2%
Semi-retired	4.7%
Permanently retired	25.0%
Homemaker/student/volunteer	1.5%
Other	1.3%
Highest level of schooling	
Elementary or junior high school	10.2%
High school (or GED)	39.2%
Associate or vocational school	12.5%
Some college	25.9%
College degree	5.7%
Some postgraduate work or degree	6.5%
Insurance status and reliance on VA	
Have any insurance to cover costs of medical care	63.5%
Health care utilization	
Received care at VA for physical or emotional problems in past 6 months	90.4%
General health status	
Excellent	1.4%
Very good	3.3%
Good	14.9%
Fair	35.7%
Poor	44.7%
Depression symptomatology* (% several days, more than half the days or nearly everyday in the past 2 weeks) (first two items, PHQ-2; full item set, PHQ-9)	
Over the last 2 weeks, how often have you been bothered by:	
Feeling little interest or pleasure in doing things	95.3%

Table 1. (Continued)

Characteristics	Depressed primary care patients (n=761)
Feeling down, depressed or hopeless	97.3%
Trouble falling or staying asleep, or sleeping too much	87.8%
Feeling tired or having little energy	98.6%
Poor appetite or overeating	78.5%
Feeling bad about yourself, or feeling that you are a failure or have let yourself or your family down	77.2%
Trouble concentrating on things, such as reading the newspaper or watching television	78.0%
Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	66.5%
Thoughts that you would be better off dead or of hurting yourself in some way	32.4%
Suicidality protocol completed†	31.0%

*Depression symptomatology was measured using the PHQ-9.¹⁸ The PHQ-2 (two-item screener) asks about frequency of anhedonia (i.e., feeling little interest...) and depressed mood (i.e., feeling down, depressed, hopeless). The remaining seven items comprise the rest of the PHQ-9, which uses the same 4-point scale (not at all, several days, more than half the days, nearly everyday) regarding the past 2 weeks. Higher scores reflect worse symptomatology. PHQ-9 aggregated scores ≥10 reflect probable major depression. Major depressive disorder (MDD) is characterized by a “combination of symptoms that interfere with a person’s ability to work, sleep, study, eat, and enjoy once-pleasurable activities”

†We developed a suicidality protocol, which was triggered among patients who responded to the ninth item of the PHQ-9 on suicidal ideation: “How often have you been bothered by thoughts that you would be better off dead or of hurting yourself in some way?” with answers of “several days,” “more than half the days” or “nearly every day,” and/or divulged thoughts of suicide, self-harm, persistent thoughts of death or harm to others during the course of the interview. Details of the suicide protocol are available elsewhere.¹² (Note: Thirty patients were identified as acutely suicidal during the baseline interview, were connected with mental health services and excluded from the study)¹⁰

Table 2. Physical and Mental Health Comorbidities among Patients with Probable Major Depression (PHQ-9 ≥10) Identified Through VA Primary Care Practice-Based Screening

Characteristics	Depressed primary care patients (n=761)
Medical comorbidity*	
Has a doctor or nurse ever told you that you had any of the following health problems?	
Cancer	17.7%
Pneumonia	36.3%
Heart attack	28.2%
Chronic lung disease, emphysema, asthma or bronchitis	36.9%
Diabetes	34.7%
Stroke	15.3%
Congestive heart failure	18.1%
Current smoker	48.9%
Seattle Index of Comorbidity (SIC)*	7.06 ± 3.32
Mental health comorbidity	
Possible dysthymia and chronic major depression†	

Table 2. (Continued)

Characteristics	Depressed primary care patients (n=761)
Have you ever had a period of 2 years or more in your life when you felt depressed or sad most days, even if you felt OK sometimes?	72.8%
Of those who said yes, Did any period like that ever last 2 years without an interruption of 2 full months when you felt OK?	50.4%
In the past 12 months, have you had 2 weeks or longer when:	
Nearly every day you felt sad, empty or depressed for most of the day	69.5%
You lost interest in most things like work, hobbies and other things you usually enjoyed	77.7%
Your emotional state seriously interfered with your ability to do your job, take care of your house or family, or take care of yourself	56.5%
Alcohol consumption‡	
Last time drank alcohol:	
Past 2 weeks	29.2%
Between 2 weeks and 1 year ago	17.2%
1 or more years ago	49.0%
Never drank	4.9%
Alcohol Use Disorders Identification Test (AUDIT-C) score ^{25,26} (mean ± SD)	2.0±3.1
Posttraumatic stress disorder (PTSD)§	
Reexperiencing: Ever had any experience in your life that was so frightening, horrible or upsetting that you had recurring nightmares about it or continually thought about it when you did not want to	69.4%
Of those who said yes, proportion that had had these thoughts or nightmares in the <i>past month</i>	64.8%
Avoidance: Had any experiences that were so frightening, horrible or upsetting that you repeatedly tried hard not to think about it or repeatedly went out of your way to avoid situations that reminded you of it	65.3%
Of those who said yes, proportion that tried to avoid these situations in the <i>past month</i>	74.1%
Hypervigilance: Ever had a period where you felt constantly on guard, watchful or easily startled because of a frightening, horrible or upsetting experience	57.1%
Of those who said yes, proportion that had this feeling of watchfulness in the <i>past month</i>	75.3%
Emotional numbing: Ever had a period where you felt numb or detached from other people, activities or from your surroundings because of a frightening, horrible or upsetting experience	53.0%
Of those who said yes, proportion with feeling of detachment in <i>past month</i>	77.1%
Bipolar disorder	
Doctor told you had a manic-depressive or bipolar illness	20.6%
Ever taken medications lithium, Depakote, or Tegretol for a depressive illness	17.6%
Anxiety	
Felt anxious much of the time (past 6 months)	63.9%
Had panic attack when suddenly felt intense fear and discomfort (past 6 months)	42.6%
Of those who said yes, had a month or more when they changed everyday activities because of fear of having another panic attack	52.8%

Table 2. (Continued)

Characteristics	Depressed primary care patients (n=761)
Panic attack within the <i>past month</i>	60.9%
Physical and mental function¶	
In past 4 weeks, all or most of the time:	
Accomplished less than you would have liked because of <i>physical health</i>	63.6%
Limited in kinds of work or other activities that you were able to do because of <i>physical health</i>	62.5%
Cut down the amount of time you spent on work or other activities because of <i>emotional problems</i>	43.4%
Accomplished less than you would have liked because of <i>emotional problems</i>	55.6%
Did work or other activities less carefully than usual because of <i>emotional problems</i>	30.6%
Physical or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)	52.9%
Pain interfered with normal work (including both work outside the home and housework) quite a bit-to-extremely	54.2%
Frequency of feeling (all-to-most of the time):	
Very nervous	36.8%
Felt so down in the dumps that nothing could cheer you up	31.9%
Felt calm and peaceful	12.7%
Felt downhearted and depressed	45.0%
Been happy	14.6%
Had a lot of energy	3.8%
Satisfaction with level of daily activity (dissatisfied-to- very dissatisfied)	69.2%
Sexual function	
Current difficulty with how you function sexually or with your sexual activity	73.3%
Among those with difficulty, difficulty first started more than 6 months ago	95.1%
Among those with difficulty, difficulty bothers you moderately to very much	81.4%
Among those with difficulty, ever discussed difficulty with any health care provider within past 6 months in person or by phone	46.7%

*We measured medical comorbidities using the Seattle Index of Comorbidity (SIC), which combines the presence or absence of seven chronic illnesses (listed above), cigarette smoking status and participant age into an aggregated index. The SIC has been shown to predict hospitalization and mortality.²¹

†Dysthymia is characterized by long-term depressive symptoms (2+ years) that is typically less severe than major depressive disorder (MDD) but may still prevent aspects of normal function or well-being; dysthymics may also have 1+ episodes of major depression over their lifetimes.¹⁷

‡We used the Alcohol Use Disorders Identification Test consumption items (AUDIT-C) to evaluate alcohol consumption. Summed scores result in an index where higher scores reflect higher consumption, which predicts poor alcohol-related outcomes, while scores greater than 8 are associated with mortality among male veteran VA outpatients.⁶⁵

§We used the Primary Care PTSD Screen (PC-PTSD) to detect probable PTSD in primary care. The PC-PTSD may be used to generate a summary score (0 to 4) for the presence of each of four PTSD symptoms (reexperiencing, avoidance, hypervigilance and emotional numbing related to past trauma), where scores of 3 and 4 represent positive PTSD screens.²³

|| We used positive responses to two questions (noted above) to identify probable bipolar disorder.²⁴ The medications mentioned (e.g., lithium) may be used as mood stabilizers for bipolar disorder

¶We drew items from the Short-Form 12 Survey (SF-12) of the Medical Outcomes Study's Short Form 36-item survey to assess functional limitations related to physical and emotional health concerns, including pain.^{20,21}

Medical comorbidities. Over one-third of depressed PC patients reported histories of chronic lung disease, pneumonia and diabetes, and about one-quarter reported a history of heart attack. Roughly one in six reported congestive heart failure or a history of cancer or stroke. Eighty percent of patients described their general health as fair or poor. Their prior month's medication volume (6.9 ± 5.5) corroborated their self-reported physical health.

PTSD. Over two-thirds of the sample reported lifetime posttraumatic reexperiencing phenomena (i.e., recurrent nightmares/intrusive thoughts) related to a past traumatic event, with two-thirds of those reporting these experiences in the past month. Similarly, about two-thirds reported posttraumatic avoidance of thoughts or cues related to past traumatic events; about half of these patients reported avoidance behavior in the past month. Nearly 60% reported a period of hypervigilance, with over 40% reporting these experiences in the past month. Slightly over half experienced emotional numbing or a sense of detachment from other people, activities or surroundings, many of whom reported that this symptom had occurred in the past month.

Bipolar disorder. About one in five of the depressed patients in VA PC clinics reported being told they had bipolar disorder by a doctor, with a roughly equivalent and overlapping percentage reporting having taken medications suggestive of bipolar disorder (e.g., lithium).

Anxiety. Nearly two-thirds reported feelings of persistent anxiety in the previous 6 months. Just over 40% reported having experienced a panic attack with sudden intense fear and discomfort, over half of whom reported a month or more during which anticipation of possible future panic attacks changed their daily activities. One quarter of participants reported one or more panic attacks in the past month.

Alcohol consumption. Nearly half of these depressed patients reported drinking in the past year, with one in five reporting drinking approximately 1–2 drinks daily. Almost half of those who reported using alcohol reported occasional-to-daily levels of toxic drinking (i.e., 6+ drinks on one occasion for men, 4+ for women).

MH-related medication use. Over half (55.1%) had been prescribed 1+ medications specifically for their mental or emotional problems. Over a third of patients said their depression medications, specifically, were “a little” to “not at all helpful.”

Physical and Mental Health Function among Depressed Primary Care Patients

Physical and MH functional limitations were common (Table 2). For example, nearly two-thirds of depressed PC patients reported accomplishing less than desired in the past 4 weeks, and limitations in the kinds of work or other activities they were able to do. When asked about limitations related to emotional problems (i.e., feeling depressed or anxious), over half reported accomplishing less than desired, and over 40%

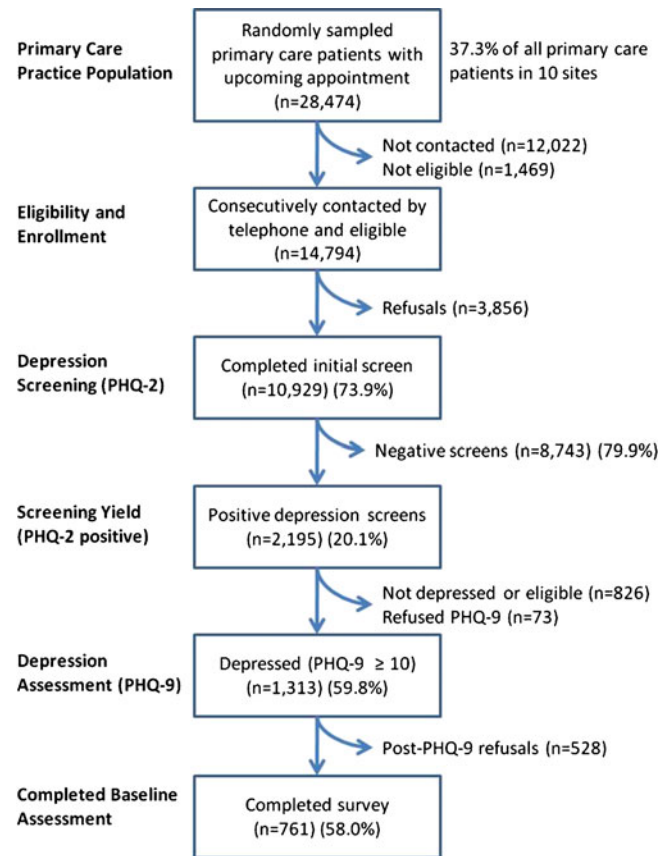


Figure 1. Yield of depression screening in practice-based random sample of primary care clinic visitors

reported reduced time spent on work or other activities as a result of emotional problems. Similarly, over half reported that their physical or emotional problems interfered with their social activities (e.g., visiting friends). Pain was also reportedly responsible for significant interference with work (in and outside the home). Sexual dysfunction was common and longstanding, with nearly half of patients with sexual dysfunction reporting that it was neither discussed with medical providers nor treated.

DISCUSSION

We found that practice-wide depression screening yielded about 20% positive PHQ-2 screens among veterans seen in primary care (PC) and 12% probable major depression (or nearly 60% of positive PHQ-2 screens). Among depressed patients in VA PC settings, we noted highly prevalent comorbid mental illness (e.g., anxiety, PTSD) and substantial chronic disease burden.

Overall, veteran PC patients' rates of depression are higher than those of their civilian counterparts. Nationally, about 6.6% of Americans are depressed in any given year (with a lifetime prevalence of 16.2%).²⁸ These differences may reflect veterans' service-connected disabilities that ensure their entrée to VA health care and may place them at higher risk of depressive symptoms. VA users also have 1–2 more chronic diseases than same-age, same-gender, same race-ethnicity civilians, and chronic disease burden has been linked to greater depression symptomatology.^{29,30} Rates of depression screening and diagnosis in the VA have also continued to increase since the VA mandated annual depression screening in 1998.³¹

The 20% positive-screen rate from practice-based screening is substantially higher than most previously reported VA rates. For example, VA performance measures, which rely on chart reviews of random samples of clinic visitors to determine annual screening yields, reflected 8.8% positive screens in the same year our cohort enrollment began,³² while chart reviews of consecutive PC patients at a single VA yielded 7%.³³ Chart-based assessment of the yield of depression screening among four other VA clinics also demonstrated a 7% positive-screen rate, even when veterans already in mental health or substance abuse treatment were excluded.³⁴ Our use of patient self-report is likely the key distinction, as our positive-screen rate is consistent with another survey-based assessment of VA screening yield (also 20%) in a single site.¹⁶ Our findings point to the importance of systematic, practice-based screening—as recommended by the VA/DoD clinical practice guidelines for depression—to not only identify new cases but to identify patients for whom treatment has been ineffective, who are no longer engaged in treatment or who have relapsed, regardless of whether they have been previously identified.³⁵

The severity of these veterans' depression was substantial. We found evidence of significant chronicity and personal and occupational impairment. Further, while suicide and suicidal ideation are common symptoms of depression, and mood disorders confer increased risk of suicide,^{36,37} we did not anticipate the level of suicidal ideation (over 30%) among routine PC clinic visitors even in the VA. However, other studies have noted comparable levels in non-VA settings (using the PHQ-9).^{38,39} In recognition of higher rates of suicidality among veterans in general, the VA has made suicide prevention a top priority, instituting a national crisis hotline, confidential online chats, outreach and local suicide prevention coordinators. The crisis line has answered more than 400,000 calls and made more than 14,000 lifesaving rescues.⁴⁰ Ensuring that PC providers have the training and organizational support they need to address the severity of their patients' depression is essential, while our results have important implications for PC practices outside the VA system.⁴¹

We also found considerable medical and mental health comorbidities among depressed patients in VA PC settings, rendering most guideline adherence strategies relatively moot in the face of these patients' complex needs. Two-thirds reported comorbid PTSD or symptoms of generalized anxiety or panic disorders, while a significant proportion reported dangerous levels of alcohol consumption. Current guidelines do not address how PC providers ought to assess tradeoffs in how they manage, medicate and/or refer their patients with competing chronic illnesses, both physical and mental health-related.⁴² Given the mental health comorbidities common to PC patients with depression, solo management by PC providers is unlikely to be effective without organizational or system supports that foster integrating mental health specialty input in some efficient way. Even in settings where mental health capacity is reasonably high, patient preferences (including concerns about stigma) and barriers to effective handoffs preclude a mental health-only solution.⁴³ Instead, collaborative care models have demonstrated the value of shared care, where PC providers are supported in the mental health care of their patients through depression care managers who are supervised by mental health providers.^{44,45} In the absence of such care models, evidence suggests that depression remains persistent.⁴⁶

Over one third of the patients who reported being prescribed one or more mental health-related medications reported they

were of limited to no benefit. In the absence of improved medication management, most patients commonly undergo only a single trial of antidepressants, resulting in insurers and health care systems bearing the substantial costs of initiating inadequate depression treatment.⁴⁷ Systems cost-effectiveness also demonstrates the value of the acute phase of depression treatment.⁴⁸ As health plans, health care systems, clinics and providers increasingly adopt depression screening guidelines, it will be essential that systems are simultaneously put into place to ensure adequate monitoring of symptoms between and during visits, to support effective medication management and improved outcomes for depression patients in PC settings.⁴⁹

Although the design of this study does not permit definitive differential psychiatric diagnoses, the potential comorbid mental health conditions are likely to increase the difficulty of treating depression to remission.^{50,51} The prevalence of comorbid PTSD and anxiety, on top of one-third having substantial medical comorbidities such as diabetes, likely obviates the value and effectiveness of a traditional 15–20-min medical appointment. This level of comorbidity is not unique to the VA. Most lifetime (72.1%) and 12-month (78.5%) cases of depression have at least one comorbid CIDI/DSM-IV disorder, with major depressive disorder (MDD) only rarely being primary.⁵² Interestingly, there is little empirical evidence that these types of complexities reduce the propensity of PC physicians to diagnose mental health problems, though depressed patients with comorbid anxiety have longer visit durations, greater depression severity and are more likely to be diagnosed.^{53–55}

What is also clear from this work is that PTSD is virtually a hidden diagnosis in primary care. Previous studies have not usually reported PTSD prevalence among depressed PC patients. Primary care is operating as the “de facto mental health care system...”⁵⁶ It is essential that PC providers be trained to screen their patients for PTSD symptoms, as these patients tend to present with somatic complaints or depression alone, and may avoid discussion of their traumatic experiences.⁵⁷

This study is not without limitations. Our data represent the population of clinic users with probable major depression within the VA. Its generalizability to the general population may therefore be limited, although rates of depression among Americans may be an underestimate due in part to the relative lack of access to mental health care outside the VA. Most comparative literature also derives from chart reviews rather than telephone-based patient self-report, which is itself not a common clinical practice and could affect responses. While trained interviewers were used, they may elicit different responses compared to clinic staff. We also do not have comparison data for veterans with negative screens, though another study reported such comparisons, and found no sociodemographic or comorbidity differences.³² We also did not exclude those already in treatment, which increased our detection rate as both undiagnosed and diagnosed cases were included. However, unless treatment initiation was very recent, we would have expected to see more veterans scoring below the depression threshold score. Our data are also from 2002–2004. Depression care within the VA has evolved significantly in subsequent years, in part as a result of the main trial's findings.¹¹

Given the prevalence of mental health disorders among veterans using the VA health care system, the VA is an exceptional laboratory for implementing and evaluating integrated primary care-mental health care delivery models.⁵⁸ Not surprisingly, the VA is currently engaged in just such a national effort, chiefly through a mix of strategies of co-located mental health care, depression collaborative care arrangements, and/or

referral to a behavioral health laboratory.^{34,59–61} Disease management programs that incorporate models like these, which include evidence-based guidelines, patient/provider education, collaborative care, reminder systems, and monitoring, have been shown to have significant effects on depression severity across multiple randomized trials.⁶² Our findings point to the importance of accelerating the implementation and spread of such models to address the substantial needs of depressed veterans in VA primary care settings, while also highlighting the importance of continual practice-based screening and surveillance. Further, since depression has historically been detected in only about 50% of cases, relying on clinician-documented major depression using chart review is likely to continue to underestimate the needs of depressed patients within or outside the VA.^{63,64} Practice-based screening using patient surveys is an important adjunct to effective case finding, monitoring and quality improvement programs in primary care.

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