

# Effectiveness of an Intervention To Improve Primary Care Provider Recognition of Depression

## ORIGINAL ARTICLE

**STEVEN K. DOBSCHA, MD**

*Behavior Health and Clinical  
Neurosciences Division*

**MARTHA S. GERRITY, MD,  
MPH, PhD**

*Division of Hospital and Specialty  
Medicine  
Portland Veterans Affairs Medical  
Center*

**MARK F. WARD, PhD**

*Behavior Health and Clinical  
Neurosciences Division*

*Portland, Ore*

*Eff Clin Pract. 2001;4:163-171.*

**CONTEXT.** Depression remains underrecognized and undertreated by primary care providers. While systematic screening has the potential to improve recognition, providers may overlook screening results because of barriers to accessing the information and the need to address multiple health care issues.

**OBJECTIVE.** To determine whether limited follow-up of positive findings on depression screening improves provider recognition and initial management of depression.

**DESIGN.** Before–after study.

**PATIENTS.** Consecutive patients with positive findings on depression screening in a Veterans Affairs primary care clinic in Oregon during the 3 months before ( $n = 160$ ) and the 3 months after ( $n = 97$ ) the intervention began.

**INTERVENTION.** Patients with positive findings on depression screening completed a self-administered questionnaire (Patient Health Questionnaire), which they turned in to their provider. A mental health nurse subsequently reviewed the records of patients who completed questionnaires and contacted providers when depression was not mentioned in the visit note.

**OUTCOME MEASURES.** Documentation of depression or suicidal ideation and actions taken for depression (prescription of antidepressant medication, mental health referral, watchful waiting) at the clinic visit.

**RESULTS.** The mental health nurse received questionnaires for only 39 (40%) post-intervention patients. Documentation of depression symptoms (72% vs. 48%;  $P < 0.001$ ) and suicidal ideation (36% vs. 14%;  $P < 0.001$ ) significantly improved in the postintervention group compared with the preintervention group. Postintervention patients were also more likely to begin receiving antidepressants (23% vs. 12%;  $P < 0.05$ ) and to be referred for mental health services (28% vs. 9%;  $P < 0.001$ ).

**CONCLUSION.** A limited intervention can improve provider recognition and initial management of depression in a Veterans Affairs primary care setting.

Depression is a common problem in the veteran patient population; nearly one third of patients have elevated scores on depression screening measures.<sup>1</sup> When depression is treated, therapy usually occurs in the primary care setting.<sup>2</sup> Unfortunately, depression is often underrecognized and undertreated by primary care providers.<sup>3</sup> To improve recognition and treatment of depression by these providers, many institutions are beginning to implement screening programs in clinical settings.<sup>4,5</sup> However, studies of screening interventions have shown mixed results in improving the detection and treatment of depression.<sup>5-7</sup>

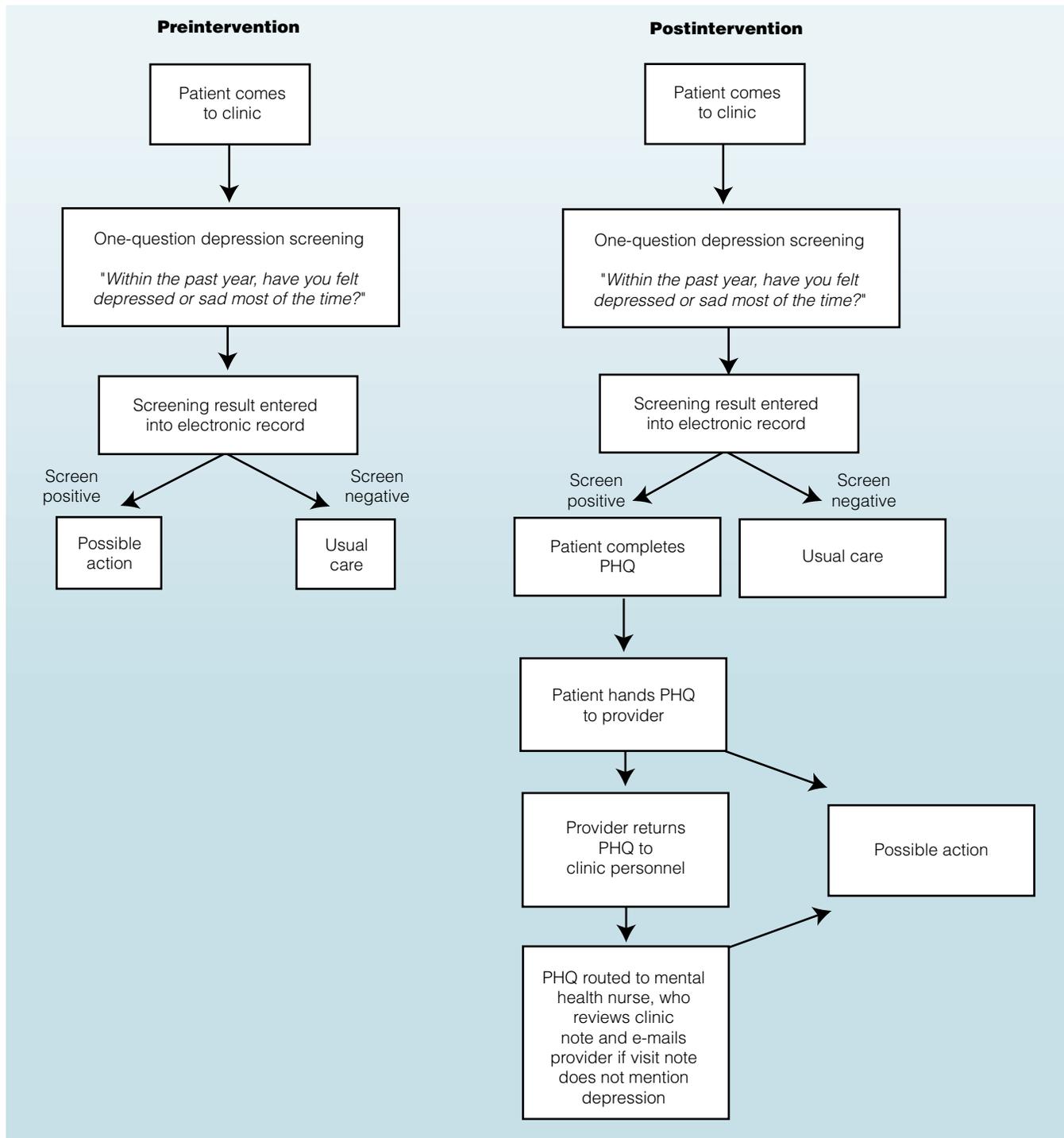
*Edited by Lisa M. Schwartz,  
MD, MS*

*This paper is available at [ecp.acponline.org](http://ecp.acponline.org)*

The barriers to using depression screening information in primary care settings may explain these mixed results. First, the screening information is not immediately accessible, and as a result providers must often actively search the patient's record for this information. Next, providers are under substantial pressure to address multiple and competing health care issues, and they may place a lower priority on depression screening informa-

tion than on other clinical activities.<sup>8,9</sup> Even if providers recognize positive findings on depression screening, they may not have the knowledge, skills, or confidence necessary to act on this information.<sup>10</sup> Finally, even when providers do assess patients for depression and suicidal ideation, they may not always document their actions.

At the Portland Veterans Affairs Medical Center in Portland, Oregon, primary care patients are screened



**FIGURE 1. Study design.** PHQ = Patient Health Questionnaire.

annually for depression and other health maintenance items (e.g., hyperlipidemia, vaccination status, and obesity). Before patient appointments, clinic nurses administer a brief screening test for these conditions and record the results in electronic progress notes. Ideally, primary care providers then review these notes to determine which health maintenance issues need to be addressed. We initiated a study to determine whether documentation, initial recognition, and management of depression could be improved by following positive findings on depression screening with the self-administered Primary Care Evaluation of Mental Disorders Patient Health Questionnaire-Depressive Disorders (PHQ)<sup>11</sup> and medical record review by a mental health nurse.

## Methods

### Design

To evaluate the impact of our new follow-up strategy for positive findings on depression screening, we compared the medical records of the 160 patients with positive findings in a 3-month period before the intervention (October to December 1999) with records of the 97 patients with positive findings in the first 3 months after the intervention began (May to July 2000). The intervention began in February 2000. We chose these 3-month intervals to avoid the period when staff were being trained in the intervention (January 2000) and a 6-week period when the mental health nurse was on leave (March to April 2000). We identified patients by using a database of electronic records.

### Setting and Study Sample

The study was done in a primary care clinic of the Portland Veterans Affairs Medical Center, which cares for about 15,000 patients. The staff consists of 32 general internists (including fellows), 5 nurse practitioners, 1 physician assistant, and 46 internal medicine residents on various rotations. Approximately half of the providers are women, and half spend 4 or more half-days seeing patients in the clinic. Providers can refer patients to an on-site multidisciplinary mental health team for assistance in treating patients with depression.

### Depression Screening

Figure 1 illustrates the depression screening process before and after the intervention.

#### Preintervention

A nurse screens patients for depression when they come to the clinic for their usual appointments. The initial display of each patient's electronic record is a reminder

section indicating health maintenance items due to be reviewed. When depression screening is due, patients are first asked if they have been treated for depression in the past year. Patients who report that they have been receiving treatment are excluded from further depression screening.

The depression screening instrument originally consisted of two questions on sadness and anhedonia.<sup>4</sup> During the study, the instrument was changed to a one-item instrument asking patients whether they felt depressed or sad most of the time during the past year. From a review of 9030 patients who were screened for depression in all clinics of the medical center between 1999 and 2000, we determined that the rate of positive response (8%) to the two types of screening did not significantly differ. The nurse subsequently entered the screening result into the electronic record. The process of administering and documenting results of the screen did not change during the study period.

#### Intervention

A mental health clinical nurse specialist served as the intervention nurse. She met with the nurse manager and nursing teams of the primary care clinic to discuss the intervention and train the nurses in administering the PHQ (Appendix). This nine-item questionnaire was derived from the criteria for major depression from *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition. Each item is rated on a scale of 0 (not at all) to 3 (nearly every day), and scale scores range from 0 to 27; higher scores indicate greater symptom severity. Spitzer and colleagues<sup>11</sup> reported that the instrument had good diagnostic validity, with a sensitivity of 73% and specificity of 98% compared with a Structured Clinical Interview administered by a mental health clinician. Kroenke and coworkers<sup>12</sup> showed that sensitivity can be improved (to 88%) with some decrease in specificity (to 88%) by using a score of 10 as the diagnostic cutpoint.

During the intervention, if patients screened positive for depression, the nurse gave them a blue-shaded PHQ to complete while waiting for their primary care provider (Figure 1). Patients were instructed to hand the completed questionnaires to providers during their visits. Providers were educated about the protocol at weekly staff meetings and were asked to review PHQ forms. Although they were given scoring information, they did not receive specific directives about what to do with the information. Providers were asked to return PHQ forms with other paperwork after visits so the forms could be reviewed by the mental health nurse.

The mental health nurse scored the PHQs and reviewed providers' electronic progress notes to determine whether the provider had addressed depression

**TABLE 1**  
**Patient and Provider Characteristics\***

| CHARACTERISTIC  | PREINTERVENTION GROUP | POSTINTERVENTION GROUP |                                       |
|---|-----------------------|------------------------|---------------------------------------|
|   |                       | TOTAL                  | PATIENTS FOR WHOM PHQS WERE RECEIVED† |
| Patients, <i>n</i>  | 160                   | 97                     | 39                                    |
| Mean age ± SD, yr   | 63.7 ± 14.0           | 59.0 ± 13.8            | 56.2 ± 11.4                           |
| Men   | 93%                   | 92%                    | 95%                                   |
| Mean PHQ score ± SD   | NA                    | NA                     | 14.4 ± 5.9                            |
| Patients who met Spitzer and colleagues <sup>11</sup> PHQ criteria for depression diagnosis | NA                    | NA                     | 56%                                   |
| Patients with PHQ score ≥ 10  | NA                    | NA                     | 77%                                   |
| Providers, <i>n</i>   | 35                    | 32                     | 17                                    |
| Staff physicians  | 71%                   | 66%                    | 71%                                   |
| Residents or fellows  | 14%                   | 22%                    | 18%                                   |
| Nurse practitioners or physician's assistants   | 14%                   | 13%                    | 12%                                   |

\*PHQ = Patient Health Questionnaire.

†PHQ forms were received by the mental health nurse for 39 (40%) of all patients in the postintervention group.

and whether they had taken reasonable actions. If a provider documented discussion of depression symptoms and acted accordingly, the nurse took no further action. If there was no documentation and the PHQ score was 10 or greater,<sup>12</sup> the nurse contacted the provider to discuss the case and determine whether additional documentation or further clinical action was needed. If there was no documentation, the PHQ score was less than 10, and there was no suicidal ideation, the nurse entered a note describing PHQ results into the record. This note was forwarded to the provider through e-mail.

### Outcome Measures

We examined the record of each preintervention and postintervention patient to confirm that the patient had a positive finding on depression screening and had not received active treatment for depression in the preceding 12 months. We then determined whether the primary care provider documented the following information: the positive depression screening results or responses to specific questions about depression, exploration for suicidal ideation, and a plan of action. We developed three categories of plans of action: antidepressant prescribed by primary care provider, mental health referral, and watchful waiting (no immediate action was indicated because, for example, the patient was not considered depressed). To assess implementation of the intervention, we also evaluated the frequency with which the

mental health nurse received PHQ forms and the frequency and type of additional action taken by the nurse.

### Statistical Analysis

We used chi-square analysis to compare preintervention and postintervention patients. For our primary analysis, we compared all preintervention patients with all postintervention patients. Because the mental health nurse did not receive PHQ forms for some postintervention patients, we also performed a secondary implementation analysis. In this analysis, we compared outcomes for patients who definitely received the intervention (i.e., the nurse received PHQ forms) with outcomes for patients who may not have received the intervention (i.e., the nurse did not receive PHQ forms) and with outcomes of the preintervention group.

## Results

### Characteristics

The preintervention and postintervention groups did not differ in important ways, nor did the primary care providers of the patients in the two groups (Table 1). The preintervention group included more patients because the Portland Veterans Affairs Medical Center initiated system-wide annual depression screening in mid-1999 along with implementation of an electronic medical record system.<sup>13</sup> Thus, fewer patients were flagged for annual screening during the postinterven-

tion period (May to July 2000). Among patients whose PHQs were received by the mental health nurse, 77% had scores of 10 or greater<sup>12</sup> and 56% met Spitzer and colleagues' criteria for diagnosis of major depression.<sup>11</sup>

### Intervention Process

Ninety-seven postintervention patients had positive findings on depression screening. The mental health nurse received PHQ forms for 39 (40%) of these patients. We could not determine the specific reasons for this rate. We suspect that many patients did not receive PHQ forms, because several providers reported not seeing the forms during visits. However, primary care providers may have kept or discarded some questionnaires or may not have routed them to the nurse.

Providers documented discussion of depression symptoms and took some type of action (including deciding that no further action was indicated) for 36 (92%) of the patients for whom we received PHQ forms. The mental health nurse needed to contact providers in only three cases. In one case, the provider had addressed depression during the visit but had not documented it. In another, the provider had not seen the PHQ form. Soon after discussion with the nurse, he arranged to see the patient again. In the third case, the provider had not documented addressing depression, but the PHQ score was

only 6 and no suicidal ideation was noted. Per our intervention protocol, the nurse entered a brief note in the medical record and forwarded the note to the provider.

The intervention had additional effects. Some providers began to use the PHQ form to track depression severity in patients who had not been screened or who were already being treated for depression. On two occasions, mental health consultation had been requested, but consultation forms had been lost. When the PHQ forms triggered a review by the mental health nurse, it was discovered that consultations were desired.

### Preintervention versus Postintervention Groups

In the preintervention group, primary care providers documented addressing depression symptoms in 48% of cases and suicidal ideation in 14% of cases (Table 2). Twelve percent of preintervention patients began receiving antidepressants, and 9% were referred to mental health services.

Although the mental health nurse received PHQ forms for only 40% of postintervention patients, the intervention significantly affected the frequency with which providers documented depression (72% of the postintervention group vs. 48% of the preintervention group;  $P < 0.001$ ) and suicidal ideation (36% vs. 14%;  $P < 0.001$ ). Figure 2 shows that the intervention also

**TABLE 2**  
**Documentation and Actions Taken by Primary Care Providers for Patients with Positive Findings on Depression Screening\***

| OUTCOME MEASURE                           | PREINTERVENTION GROUP<br>(n = 160) | POSTINTERVENTION GROUP |                           |                               |
|---|------------------------------------|------------------------|---------------------------|-------------------------------|
|   |                                    | TOTAL<br>(n = 97)      | IMPLEMENTATION SUBGROUPS  |                               |
|   |                                    |                        | PHQS RECEIVED<br>(n = 39) | PHQS NOT RECEIVED<br>(n = 58) |
| <b>Documentation of problem</b>           |                                    |                        |                           |                               |
| Depression                                | 48%                                | 72% <sup>†</sup>       | 92% <sup>†</sup>          | 55%                           |
| Suicidal ideation                         | 14%                                | 36% <sup>†</sup>       | 67% <sup>†</sup>          | 16%                           |
| <b>Treatment plan</b>                     |                                    |                        |                           |                               |
| Any action taken <sup>‡</sup>             | 44%                                | 72% <sup>†</sup>       | 92% <sup>†</sup>          | 57%                           |
| Medication started                        | 12%                                | 23% <sup>†</sup>       | 41% <sup>†</sup>          | 10%                           |
| Mental health referral                    | 9%                                 | 28% <sup>†</sup>       | 39% <sup>†</sup>          | 19% <sup>†</sup>              |
| No action necessary<br>(watchful waiting) | 25%                                | 28%                    | 26%                       | 29%                           |

\*PHQ = Patient Health Questionnaire.

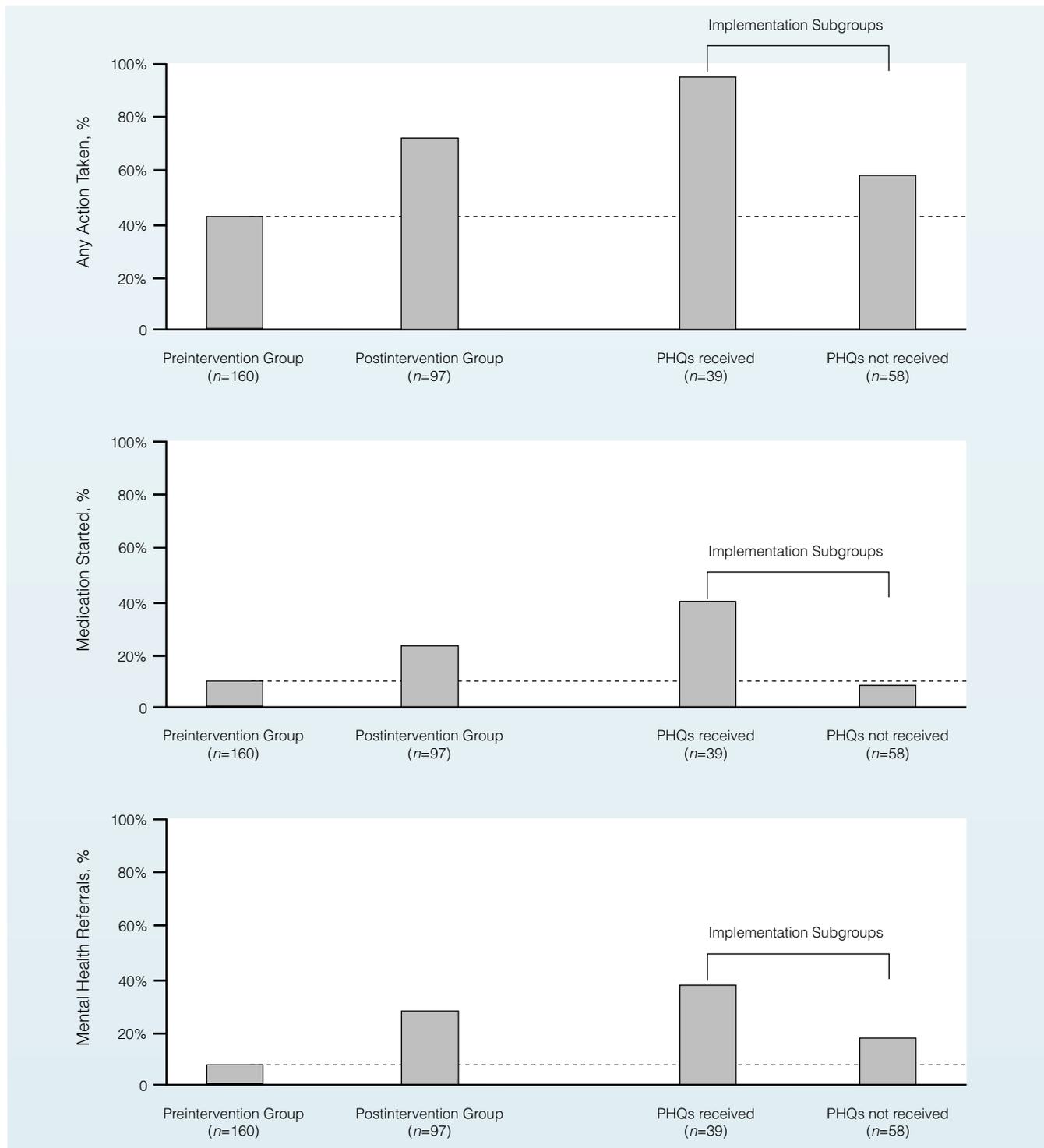
<sup>†</sup> $P < 0.05$ . All P values were derived from chi-square comparisons between postintervention and preintervention values.

<sup>‡</sup>Explicit provider decision not to initiate treatment (i.e., watchful waiting) is considered a type of action.

improved the rate with which providers took any initial action (72% vs. 44%;  $P < 0.001$ ) and that it affected specific actions taken: The intervention doubled the proportion of patients starting antidepressants (23% vs. 12%;  $P = 0.03$ ) and tripled the rate of mental health referrals (28% vs. 9%;  $P < 0.001$ ).

### Implementation Analysis

In the postintervention group, we compared the subgroup of 39 patients in whom the intervention was successfully implemented (i.e., the nurse received PHQs) with the subgroup in which the intervention was not successfully implemented (i.e., the nurse did not receive



**FIGURE 2. Comparison of preintervention and postintervention groups.** Dotted line = baseline. PHQ = Patient Health Questionnaire.

PHQs). **Table 2** shows that the subgroup of patients who received the intervention had higher rates of documentation of depression (92% vs. 55%;  $P < 0.001$ ) and suicidal ideation (67% vs. 16%;  $P < 0.001$ ) than the other subgroup. **Figure 2** reports the results of the implementation analysis for three outcomes. The subgroup whose PHQs were received had higher rates of action taken than the group whose PHQs were not received: any action (92% vs. 57%;  $P < 0.001$ ), medications started (41% vs. 10%;  $P < 0.001$ ), and mental health referral (39% vs. 19%;  $P = 0.03$ ).

When we compared patients whose PHQs were not received with the preintervention group, we found that these two groups had very similar rates of documentation and actions taken. With the exception of mental health referral (19% vs. 9%;  $P = 0.04$ ), rates of documentation or actions taken did not differ significantly between these groups.

## Discussion

Our results suggest that a limited change in the follow-up strategy for patients with positive findings on depression screening can improve provider recognition and initial management of depression in a Veterans Affairs primary care setting. Although the intervention was implemented in fewer than half of the patients, post-intervention patients were more likely to begin receiving antidepressants and to be referred for mental health services than preintervention patients. Furthermore, the intervention was not very work intensive for the mental health nurse, who rarely intervened beyond reviewing electronic patient records.

Computerization of medical records has the potential to improve communications and decrease error.<sup>14</sup> However, our preintervention data suggest that simply providing computer access to depression screening information is often insufficient to trigger provider assessment. Many potential cases of depression may be missed. Because the mental health nurse rarely intervened, the most important aspect of our intervention was the “low-tech” blue paper PHQ form. We believe that use of this form drew the provider’s attention to depressive symptoms and facilitated an active discussion of these symptoms between patient and provider. Since patients and providers are often reluctant to discuss depression,<sup>10</sup> the process of completing and reviewing PHQ questionnaires may have made it easier for this discussion to occur.

Our study has several limitations. First, our before–after study design raises concerns that the recognition and treatment of depression improved because of secular trends rather than the intervention.

Specifically, the increased attention to depression in the Veterans Affairs clinic may have changed behaviors independently of the intervention. In addition, simply teaching providers and nursing staff about the intervention may have raised their awareness of depression. To address the concern about secular trends, we conducted an implementation analysis. We considered the 58 patients for whom PHQs were not received to be a concurrent control group. If secular trends were responsible for our findings, we would expect to find that our results would be the same regardless of whether the PHQ was received. Instead, we observed that patients for whom the PHQ was received were much more likely to have depression documented or treated than were patients for whom the PHQ was not received. The fact that outcomes in the group for which no PHQ was received were very similar to those in the preintervention group also argues against an important role for secular trends. The only outcome measure that significantly increased was mental health referrals (9% vs. 19%), an increase smaller than the change observed in the group for which PHQs were received (9% vs. 39%).

Next, the rate at which the intervention was implemented was low (40%) but not unexpected. Although the intervention involved only limited changes in clinic procedure, administration of the intervention required active participation of many people, including nurses, clinic facilitators, primary care providers, and patients. Our implementation analysis suggests that if more patients had received the intervention, the impact would have been greater. Finally, we did not measure the impact of the intervention on patient outcomes (e.g., depression severity). Although the intervention increased rates of provider initiation of treatment and referral to mental health services, previous studies of screening and feedback interventions have shown inconsistent and often limited effects on patient outcomes.<sup>6,7</sup> Further studies are needed to determine the effects of the intervention on patient outcomes.

Despite a relatively low rate of implementation, this limited practical intervention was associated with significantly improved documentation of depression and suicidal ideation and initiation of treatment. Patients in the postintervention group were more likely to be referred to mental health services or to begin receiving antidepressants. Further work must be done to understand the problems with implementing the intervention and to determine whether improvements in provider recognition and initiation of treatment improve patient outcome.

## Take-Home Points

- Providers may overlook information on depression screening because of multiple barriers.
- We developed and evaluated a limited intervention to improve provider response to depression screening information in a Veterans Affairs primary care clinic.
- The intervention consisted of administering a follow-up questionnaire to patients who had positive findings on depression screening; patients then handed these questionnaires to providers, which were subsequently reviewed by a mental health nurse.
- Despite a low rate of adherence with the intervention (40%), postintervention patients were more likely to be referred for mental health services (28% vs. 9%) and to begin receiving antidepressants (23% vs. 12%).
- A simple intervention can improve provider performance in identifying and managing depression.

### References

1. Hankin CS, Spiro A 3rd, Miller DR, Kazis L. Mental disorders and mental health treatment among U.S. Department of Veterans Affairs outpatients: the Veterans Health Study. *Am J Psychiatry*. 1999;156:1924-30.
2. Regier DA, Narrow WE, Rae DS, Manderscheid RW, Locke BZ, Goodwin FK. The de facto US mental and addictive disorders service system. Epidemiologic catchment area prospective 1-year prevalence rates of disorders and services. *Arch Gen Psychiatry*. 1993;50:85-94.
3. Simon GE, VonKorff M. Recognition, management, and outcomes of depression in primary care. *Arch Fam Med*. 1995;4:99-105.
4. Whooley MA, Avins AL, Miranda J, Browner WS. Case-finding instruments for depression. Two questions are as good as many. *J Gen Intern Med*. 1997;12:439-45.

5. Rollman BL, Hanusa BH, Gilbert T, Lowe HJ, Kapoor WN, Schulberg HC. The electronic medical record. *Arch Intern Med*. 2001;161:189-97.
6. Katon W, Gonzales J. A review of randomized trials of psychiatric consultation-liaison studies in primary care. *Psychosomatics*. 1994;35:268-78.
7. Kroenke K, Taylor-Vaisey A, Dietrich AJ, Oxman TE. Interventions to improve provider diagnosis and treatment of mental disorders in primary care. A critical review of the literature. *Psychosomatics*. 2000;41:39-52.
8. Rost K, Nutting P, Smith J, Coyne JC, Cooper-Patrick L, Rubenstein L. The role of competing demands in the treatment provided primary care patients with major depression. *Arch Fam Med*. 2000;9:150-4.
9. Jaen CR, Stange KC, Nutting PA. Competing demands of primary care: a model for the delivery of clinical preventive services. *Journal of Family Practice*. 1994;38:166-71.
10. Cole SA, Christensen JF, Raju MA, Feldman MD. Depression. In: Feldman MD, Christensen JF, eds. *Behavioral Medicine in Primary Care*. Stamford: Appleton & Lange; 1997:177-92.
11. Spitzer RL, Kroenke K, Williams JB. Validation and utility of a self-report version of PRIME-MD: the PHQ primary care study. *Primary Care Evaluation of Mental Disorders. Patient Health Questionnaire*. *JAMA*. 1999;282:1737-44.
12. Kroenke K, Spitzer RL, Williams JB. A new measure of depression severity: the PHQ-9. *J Gen Intern Med*. 2000(Suppl);15:78.
13. Kolodner RM. *Computerizing Large Integrated Health Networks: The VA Success*. New York: Springer-Verlag; 1997.
14. Leape LL. Error in medicine. *JAMA*. 1994;272:1851-7.

### Acknowledgment

The authors thank Nancy Hedrick, Leanne Snodgrass, and Carol Mackley for assistance in obtaining data, and Peggy McComb, RN, CNS, for assistance in developing and administering the intervention.

### Correspondence

Steven K. Dobscha, MD, Portland Veterans Affairs Medical Center, PO Box 1034 (P31DMH), Portland, OR 97207; telephone: 503-220-8262, extension 56444; fax: 503-721-1053; email: dobschas@ohsu.edu.

## APPENDIX

### Patient Health Questionnaire (9-item)\*

Name \_\_\_\_\_ Date \_\_\_\_\_

Over the last 2 weeks, how often have you been bothered by any of the following problems?

|  | Not at all | Several days | More than half the days | Nearly every day |
|--|------------|--------------|-------------------------|------------------|
| 1. Little interest or pleasure in doing things . . . . .   | 0          | 1            | 2                       | 3                |
| 2. Feeling down, depressed, or hopeless . . . . .  | 0          | 1            | 2                       | 3                |
| 3. Trouble falling or staying asleep, or sleeping too much . . .   | 0          | 1            | 2                       | 3                |
| 4. Feeling tired or having little energy . . . . .   | 0          | 1            | 2                       | 3                |
| 5. Poor appetite or overeating . . . . .   | 0          | 1            | 2                       | 3                |
| 6. Feeling bad about yourself — or that you are a failure<br>or have let yourself or your family down . . . . .  | 0          | 1            | 2                       | 3                |
| 7. Trouble concentrating on things, such as reading the<br>newspaper or watching television . . . . .  | 0          | 1            | 2                       | 3                |
| 8. Moving or speaking so slowly that other people could<br>have noticed? Or the opposite — being so fidgety or<br>restless that you have been moving around a lot more<br>than usual . . . . . | 0          | 1            | 2                       | 3                |
| 9. Thoughts that you would be better off dead or of hurting<br>yourself in some way . . . . .  | 0          | 1            | 2                       | 3                |

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all                      Somewhat difficult                      Very difficult                      Extremely difficult

### Scoring Instructions

PHQ score is the sum of responses for questions 1 through 9.

### Interpreting the Scores

Depression severity levels according to PHQ scores are:

0–4 = no or minimal symptoms

5–9 = minor symptoms

10–14 = moderate symptoms

15–19 = moderate to severe symptoms

20 or more = severe symptoms

### Previously used criteria for diagnosing depression:

1. Depression diagnosis = symptom frequency of “more than half of the day” or “nearly every day” for:

A. Question 1 or 2

And

B. 5 or more of questions 3–9 (question 9 counts if ≥ several days (1))

This criteria has a sensitivity of 73% and specificity of 98%

2. ≥ 10 PHQ score has a sensitivity of 88% and specificity of 88%

\*The Patient Health Questionnaire (PHQ) was developed by Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues. For research information, contact Dr. Spitzer at rls8@columbia.edu. PRIME-MD is a trademark of Pfizer, Inc. Copyright 1999 Pfizer, Inc. All rights reserved.