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# A method that dramatically improves patient adherence to depression treatment

Use of a flow sheet, coupled with patient education and diligent follow-up, improves medication adherence

## Practice recommendations

- Discuss with patients the need to continue medication for the prescribed period, to help ensure treatment success.
- Be open about possible side effects of the drug you prescribe, and assure the patient that a change in medication can be made if the initial choice proves intolerable.
- Consider using a treatment flow sheet as a means of tracking the patient's course and as a prompt for regular communication with the patient.

## Abstract

This study focused on increasing patient adherence to a prescribed medical regimen for depression or depressive symptoms. The goal was to demonstrate that a depression flow sheet supported by physician instruction, patient education, and diligent follow-up could enable depressed patients to better adhere to treatment. The study documented reduction in depression severity over time. In addition to depression data, sample characteristics of comorbid disorders were obtained.

**Methods** Patients tentatively diagnosed with depression were asked to complete a self-administered 9-item diagnostic survey (PHQ-9) to confirm the severity of depres-

sive symptoms. Physicians in the practice then implemented a flow sheet to record pertinent data including comorbidities. All data were kept in patients' medical charts. A second PHQ-9 survey was completed by patients after at least 4 weeks. A total of 103 subjects was analyzed during 2003–2004. Subsequently, patient charts were systematically audited throughout the study period to record adherence, reasons for nonadherence (if any), PHQ-9 survey results, and comorbidities.

**Results** Patient adherence improved to a significantly greater extent among patients in our study compared with existing national research data on depression.

**Conclusions** Use of a flow sheet, coupled with patient education and diligent follow-up, dramatically improved the rate of medication adherence in patients who initially presented with depressive symptoms—with or without comorbidities. A clinician or small group can adapt the PHQ-9 materials with modest effort and positively impact the care of their patients, including adherence to medication regimens.

**E**ven when depression is properly diagnosed and treatment is prescribed, the rate of patient adherence to regimens can drop to as low as 33% within the first 3 months of therapy<sup>1</sup>—far

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**FIGURE 1**

### Depression Management Flow Sheet

Patient Name \_\_\_\_\_ Chart # \_\_\_\_\_ DOB \_\_\_\_\_  
 Male \_\_\_ Female \_\_\_ Race \_\_\_\_\_ Date of Depression Onset \_\_\_\_\_

**Last 5 year Comorbidity(ies) (circle):** Anxiety    Migraine    Fibromyalgia    Chronic Pain  
 Myofascial Pain Syndrome    TMJ    Dysmenorrhea    IBS    Panic  
 Other \_\_\_\_\_

**Directions:** Date column and place your initials in appropriate column when "Done."  
 List current antidepressants on form (attached).

|   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Date:   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Depression screen score (see PHQ-9, attached)   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rule out medical causes, drugs, and/or psychiatric causes (see attached)                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Considering referral for psychotherapy or actual referral (please indicate)                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Patient education given (attached)  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Acute phase drug treatment started (6-12 wks): (see reverse side)                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Repeat PHQ-9 (attached) at 4 weeks, and assess medication side effects and adherence              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Days of school, work or number of social activities missed since last visit because of depression |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Therapy adjusted, augmented, or changed   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Continuation phase drug treatment started (duration: 4-9 mo)                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Evaluate for maintenance phase drug treatment (duration: 1+ yrs)                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Referral to psychiatrist  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

FIGURE 2

## Major depression reference guide

## Comorbid disorders

Anxiety  
 Temporomandibular joint disorder  
 Migraine  
 Dysmenorrhea  
 Fibromyalgia  
 Irritable bowel syndrome  
 Chronic pain  
 Panic  
 Myofascial pain syndrome  
 Other\_\_\_\_\_

## Medical causes of depression by history, physical exam and tests

Thyroid disease  
 Diabetes  
 Infection (eg, AIDS, hepatitis)  
 Neurologic (eg, multiple sclerosis, Parkinson's disease, epilepsy, stroke)  
 Metabolic (eg, uremia, hypercalcemia)  
 Cancer (eg, pancreas, lung, brain)

## Drugs that can cause depressions by taking a medication history

Antihypertensives (eg, propranolol, reserpine)  
 Hormones (eg, cortisone, contraceptives, estrogen)  
 Anti-Parkinson (eg, levodopa)  
 Anti-anxiety (eg, diazepam)  
 Interferon, Accutane  
 Alcohol  
 Seizure medications (eg, barbiturates)

## Other psychiatric causes of symptoms

Bipolar disorder  
 Substance abuse  
 Panic disorder  
 Eating disorder  
 Personality disorder (antisocial behavior)  
 Bereavement  
 Attention deficit/hyperactivity disorder  
 Social phobia

## Consider patient noncompliance with recommendations in overall treatment strategy

## Consider insurance plan issues with treatment strategy

short of the universally recommended 4 to 9 months of treatment (see **Minimum duration of treatment**). The rate is even lower when lifestyle and other more behaviorally demanding regimens are instituted.<sup>9</sup>

This study demonstrated that use of a management flow sheet, in conjunction with suitable instructions to physicians and education of patients, overcame the usual causes of discontinuance and enabled far more patients to adhere to a prescribed medical regimen than is reported by other current research, ultimately alleviating depressive symptoms regardless of cause.

## Methods

### Setting

The study was conducted during 2003 to 2004 in a private suburban/urban family medicine group in the Midwestern United States. Fifteen family physicians practice in the group, which cares for about 55,000 patients, most of whom are insured.

### Subjects

One-hundred three patients at the clinic were newly diagnosed with varying degrees of depression by 3 doctors in the practice. All were included in the study.

Diagnoses were confirmed by patient history, physical examination, interview, and responses to a 9-item diagnostic survey (Patient Health Questionnaire [PHQ-9]—**APPENDIX 1**, available online at [www.jfponline.com](http://www.jfponline.com), and in our February 2003 issue [*J Fam Pract* 2003; 52:126]). The survey has a sensitivity of 73% and a specificity of 98% when compared with a Structured Clinical Interview administered by a mental health clinician.<sup>10,11</sup>

No exclusion criteria were applied. Subjects were included regardless of age, gender, race, severity of depression, associated medical conditions, or insurance status. No patients refused to participate. However, of the 103 enrolled patients, 1 was later imprisoned, 2 died, and 3 transferred from the practice. Of the remaining 97, 36 were identified too late in the study to meet the 9-month protocol at the time of

final analysis. Therefore, though their comorbidity and depression level data are included in this research, final conclusions relative to “measurement of adherence” were not.

The database for this study, therefore, is 97 subjects for whom data were secured, and 61 for whom adherence or non-adherence was measured. The practice continues to monitor all enrolled patients, and other enrollees for the purposes described in this project.

### Experimental design

The point of this study was to determine whether a flow sheet (**FIGURE 1**) incorporating a checklist for comorbid disorders, a medication reference guide, and a major depression reference guide (**FIGURE 2**),<sup>12</sup> combined with patient education, would improve patient adherence with a pharmacologic regimen and reduce or eliminate depression symptoms without a subsequent relapse.

Doctors in the practice were informed of the project and educated by the author regarding its purpose, protocol, intended outcomes, and methodology.

Though a substantial number of illnesses could be considered comorbid with depression, it would be unrealistic and unwieldy to include them all. Nine conditions were included as sample characteristics, for 2 reasons. First, experience has shown that these particular comorbidities are prevalent among patients presenting to the family physicians. Second, a set of symptoms associated with each of these selected comorbidities often overlaps those of depression, and may therefore cloud the final diagnosis. The prevalence of diagnosed and documented comorbidities, which may interfere with a diagnosis of depression, is summarized in **TABLE 1**.

All patients who were thought to be depressed or who exhibited depressive symptoms were asked to complete a PHQ-9. None declined. All were educated by the attending physician during the initial office appointment, and given informational material to explain the disease and the

**TABLE 1**

### Comorbidity summary of depression patients (n=91)

| CONDITION                        | N (%)    |
|----------------------------------|----------|
| Anxiety                          | 49 (54%) |
| Temporomandibular joint disorder | 22 (24%) |
| Migraine                         | 44 (48%) |
| Dysmenorrhea                     | 25 (27%) |
| Fibromyalgia                     | 11 (12%) |
| Irritable bowel syndrome         | 29 (32%) |
| Chronic pain                     | 17 (19%) |
| Panic                            | 14 (15%) |
| Myofascial pain syndrome         | 5 (5%)   |

### Minimum duration of treatment

To prevent relapse, the National Institute of Mental Health, the Agency for Health Care Policy and Research, and the American Psychiatric Association consistently recommend continual treatment with antidepressants for at least 4 to 9 months after depression symptoms resolve<sup>2-5</sup>—a period of time considered crucial in obtaining a successful clinical outcome.<sup>6</sup> Other guidelines establish 9 months as the minimum for a treatment regimen.<sup>7</sup> Those high risk patients whose depression is recurrent, or whose symptoms are slow to resolve, or are refractory to traditional treatment regimens, may require more than 2 years of long-term maintenance therapy.<sup>8</sup>

necessity of adhering to a prescribed regimen for a period of no less than 9 months. A flow sheet, containing information relative to office calls, follow-up PHQ-9s, and other summaries of medication, comorbidities, and treatment regimens was inserted into their respective charts.

Following the initial appointment, patients were encouraged to schedule other visits at 4 weeks, within 4 to 9 months, and at one year. During these follow-up appointments, physicians stressed the need for continuing medication for no less than 9 months. Every patient who did

TABLE 2

## Distribution of PHQ-9 scores

| INITIAL PHQ-9 SCORE     | % PATIENTS WITH SCORE         |                              |
|-------------------------|-------------------------------|------------------------------|
|                         | AT BASELINE (N=99)            | AT FOLLOW-UP (N=71)          |
| 1-4                     | 1%                            | 39%                          |
| 5-9                     | 19%                           | 21%                          |
| 10-14                   | 34%                           | 23%                          |
| 15-19                   | 30%                           | 10%                          |
| 20-27                   | 16%                           | 7%                           |
| Mean score ( $\pm$ SD): | 14.2 $\pm$ 5.1 ( $P < .001$ ) | 8.3 $\pm$ 6.2 ( $P < .001$ ) |

TABLE 3

## Reasons for discontinuing medications

|   |
|---|
| Drug-related adverse effects  |
| Short-term relief from depression, or, conversely, the lack of relief                                 |
| Reluctance to take pills  |
| Depression itself as a factor for nonadherence to medical treatment                                   |
| Lack of physician/patient communication   |
| Social stigma   |
| Poor commitment to treatment  |
| Lack of patient education   |
| Spousal separation, death of a spouse, or divorce   |
| Lack of social support  |
| Complexity and behavioral demands of concurrent restrictions such as weight loss or smoking cessation |
| Exacerbation of a comorbid condition  |

not return for a follow-up appointment after 6 months, as indicated by a systematic chart review, was contacted by phone by a registered nurse employed by the practice. All of these patients subsequently scheduled an appointment, confirmed they were still following the regimen, or informed the nurse that they had discontinued their medication(s).

## Data collection and analysis

Periodically throughout the study period of 1½ years, patient charts were audited to collect data on demographics and comorbidities, to quantify the number of patients adhering to prescribed medications for a minimum 9 months, and to compile results of the 2 PHQ-9 surveys. These data were then contrasted with existing clinical research data to demonstrate that the procedure significantly improved patient adherence to a prescribed regimen.

## Results

Data from this study indicate that 61 of the 103 patients enrolled in the study completed at least 9 months' follow-up. Based on patients' verbal input, a second PHQ-9, notations in charts, subsequent appointments, phone follow-ups, and chart medication reviews, 40 of these 61 patients (66%) adhered to prescribed daily drug therapy for depression for at least 9 months—double the 33% adherence rate described in clinical literature.<sup>1</sup>

Seventy-one (78%) of the patients followed in this study had 1 or more significant comorbid illnesses; 54 (76%) had 2 or more. The most common comorbidities included anxiety, migraine, and irritable bowel syndrome, with rates of 54%, 48%, and 32%, respectively (TABLE 1).

TABLE 2 summarizes the comparison of initial and follow-up PHQ-9 data after medication was begun and after an interval of at least 4 weeks. Based on the initial PHQ-9 score, 80% of patients presented with moderate, moderate-severe, or severe depressive symptoms. The average initial PHQ-9 score was 14.2  $\pm$  5.1 (SD).

On follow-up, only 40% of patients were documented to have the same range of severity of symptoms. The average follow-up PHQ-9 score was 8.3  $\pm$  6.2 (SD) ( $P < .001$ ) vs initial score. Thirty-six of these 40 patients (90%) remained on their initially prescribed medications.

## ■ Discussion

Patients discontinue their medications many reasons (TABLE 3).<sup>1,6,13-16</sup> These obstacles to drug therapy often result in therapeutic failure. Given we now have better-tolerated medications, nonadherence may result more from poor patient commitment to treatment than from adverse drug effects.<sup>14</sup>

**Communicate with patients.** The literature also provides insight into persuasions likely to increase patient compliance. TABLE 4 lists indicative factors.<sup>1,6,9,17</sup>

Explicit communication with patients regarding the expected duration of antidepressant therapy may reduce premature discontinuation of medication use.<sup>17</sup>

Better communication between patients and physicians about antidepressant treatment, both before and during treatment, may promote adherence.<sup>1</sup>

Another study showed that a strong alliance between physicians and patients that involves discussions about adverse drug effects may alleviate patients' concerns and help them continue treatment.<sup>1</sup>

Moreover, intolerance to one antidepressant is not necessarily indicative of intolerance to another, even within the same drug class. Therefore, patients who respond poorly to one drug or who experience adverse effects may benefit by switching to another antidepressant medication.<sup>1</sup> This medication shift, however, necessitates good communication between patients and clinicians about treatment experiences.<sup>1</sup>

**Adherence can be improved.** This study showed that patient adherence to a prescribed medical regimen significantly improved over the life of the study. The 9-month medication adherence rate of 66% dramatically exceeds the 33% rate chronicled in the literature. Over time, the use of the process outlined was associated with significant reductions in the severity of depressive symptoms.

**A few caveats.** One limitation of this study is its small number of subjects, and the deficiency of data for subjects who had died, transferred out of the practice, or were otherwise lost to contact.

**TABLE 4**

### Factors conducive to regimen compliance

Good physician/patient communication

A strong treatment alliance between patients and clinicians, and discussions about adverse effects throughout treatment

A full disclosure of the need for the patient to continue medications for the expected duration of antidepressant therapy—in other words, taking antidepressants chronically to prevent future recurrence

Keeping the regimen as simple as possible—patients who participate in concurrent non-drug therapy are less likely to discontinue the antidepressant

Frequent physician-patient contact

Prior use of antidepressants may reduce the discontinuance of medication, probably because of a recurrent episode of depression

Switching medication has been related to a favorable outcome

The lack of a control group is also acknowledged. However, comparisons were made between this study and the adherence rates documented in other studies.

Though the PHQ-9 diagnostic tool is reliable and valid, it is self-administered. Likewise, data collection—ie, whether they discontinued medications, and, if so, for what reason—depended on patients' responses.

Even though the project stressed patient adherence, the use of the flow sheet may very well have contributed to increased physician awareness and physician education, which therefore, in itself, may have resulted in improved patient compliance.

The results of this project can be generalized only to practices similar to its setting. Other practices with different methods or types of information systems may not achieve the same results when using a flow sheet. Further research in a wider area using a larger number of subjects with broader demographics is necessary to corroborate these findings. ■

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#### FAST TRACK

**Adherence of 66% in this study exceeded the 33% in the literature**

# THE JOURNAL OF FAMILY PRACTICE

## Evidence-based medicine ratings

THE JOURNAL OF FAMILY PRACTICE uses a simplified rating system called the Strength of Recommendation Taxonomy (SORT). More detailed information can be found in the February 2003 issue, "Simplifying the language of patient care," pages 111–120.

**Strength of Recommendation (SOR)** ratings are given for key recommendations for readers. SORs should be based on the highest-quality evidence available.

- A Recommendation based on consistent and good-quality patient-oriented evidence.
- B Recommendation based on inconsistent or limited-quality patient-oriented evidence.
- C Recommendation based on consensus, usual practice, opinion, disease-oriented evidence, or case series for studies of diagnosis, treatment, prevention, or screening

**Levels of evidence** determine whether a study measuring patient-oriented outcomes is of good or limited quality, and whether the results are consistent or inconsistent between studies.

### STUDY QUALITY

1—Good-quality, patient-oriented evidence (eg, validated clinical decision rules, systematic reviews and meta-analyses of randomized controlled trials [RCTs] with consistent results, high-quality RCTs, or diagnostic cohort studies)

2—Lower-quality patient-oriented evidence (eg, unvalidated clinical decision rules, lower-quality clinical trials, retrospective cohort studies, case control studies, case series)

3—Other evidence (eg, consensus guidelines, usual practice, opinion, case series for studies of diagnosis, treatment, prevention, or screening)

### Consistency across studies

**Consistent**—Most studies found similar or at least coherent conclusions (coherence means that differences are explainable); *or* If high-quality and up-to-date systematic reviews or meta-analyses exist, they support the recommendation

**Inconsistent**—Considerable variation among study findings and lack of coherence; *or* If high-quality and up-to-date systematic reviews or meta-analyses exist, they do not find consistent evidence in favor of the recommendation

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