Integrating Depression Care With Diabetes Care in Real-World Settings: Lessons From the Robert Wood Johnson Foundation Diabetes Initiative

Daren Anderson, MD; Claire Horton, MD; Mary L. O’Toole, PhD; Carol A. Brownson, MSPH; Patricia Fazzone, DNSc, MPH, RN; and Edwin B. Fisher, PhD

Abstract

Depression is a common comorbidity in diabetic patients and poses challenges for health care providers, patients, and health care systems. This article describes the implementation of unique models of care geared toward treating patients with both illnesses in a coordinated manner in primary care and community settings serving disadvantaged and ethnic minority populations.

Nine community sites used the PHQ-9, a short version of the Patient Health Questionnaire, as a screening tool for depression in all diabetic patients enrolled in the Robert Wood Johnson Foundation Diabetes Initiative. The interventions and protocols developed independently at each Diabetes Initiative site are described. The authors then report aggregate screening data across the nine sites, describe models of treatment developed by the projects, and highlight key emergent themes.

The proportion of diabetic patients in this population with moderate to severe depression ranged from 30 to 70%. The interventions and treatment protocols that emerged included enhancements of primary care, integrated mental health services, group therapy, and approaches emphasizing cultural traditions and mind-body focus.

Patients with diabetes from underserved and ethnic minority populations have high rates of comorbid depression, and this may affect their ability to self-manage diabetes. Addressing depression is an essential part of diabetes care and can be accomplished in a coordinated manner in real-world settings.

Integrating care for diabetes and depression poses challenges for health care providers, patients, and health care systems. Achieving good control of diabetes requires major lifestyle changes and, frequently, adherence to complicated medical regimens. The complexity of these changes can be daunting, and even more so when depression is present.

The burden of comorbid depression on patients with diabetes is profound. The prevalence of depression varies across populations of diabetic adults and has been estimated to be between 18 and 31%; more than double that of patients without diabetes.\(^1\)

Patients with diabetes and depression suffer increased symptoms of diabetes,\(^2,3\) decreased physical functioning,\(^4\) increased health care utilization,\(^5\) worse glycemic control,\(^6,7\) and higher rates of diabetes complications,\(^8\) including coronary heart disease.\(^9\)

Multiple randomized controlled trials have shown that adherence to complex medical regimens and strict lifestyle changes improves metabolic outcomes and prevents long-term complications in patients with diabetes or pre-diabetes.\(^10-14\) To be effective, self-management must allow patients to carry out key behaviors in their daily lives.\(^15\)

Additionally, there is evidence that patients with diabetes and depression have decreased rates of adherence to dietary and medication regimens,\(^16\) suggesting that diabetes management programs must identify and address depression.

Although organizations such as the American Diabetes Association have recommended integrated delivery of behavioral health with diabetes care,
best-practice models for such care remain undefined. There is much in common between state-of-the-art self-management for diabetes and state-of-the-art psychotherapy for depression. But integrating treatment of depression with diabetes care in busy primary care settings presents challenges. Based on experiences through the Robert Wood Johnson Foundation (RWJF) Diabetes Initiative, this article reports on innovative approaches to managing these two illnesses in a coordinated manner in primary care and community settings serving disadvantaged and ethnic minority populations.

CONTEXT
The RWJF Diabetes Initiative was designed to demonstrate sustainable diabetes self-management programs in real-world settings. Through 14 demonstration projects across the country, the initiative focuses on ways to advance diabetes self-management in primary care settings and to improve the network of community support for diabetes care. Six projects were selected to demonstrate that comprehensive models of diabetes self-management can be delivered in primary care settings and can significantly improve patient outcomes. Eight projects were chosen to extend support for diabetes management beyond the clinical setting into the community in recognition that diabetes management takes place throughout the daily settings of individuals’ lives. All sites chosen for the initiative serve patients who are predominantly indigent, medically underserved, and/or from varied cultural and linguistic backgrounds. In addition to a disproportionate burden of diabetes, these populations experience heightened socioeconomic stressors often linked to greater vulnerability to depression.

The RWJF Diabetes Initiative was not initially designed to focus on the relationship between diabetes and depression. However, many initiative sites recognized early on that depression was a significant barrier to self-management in many patients with diabetes. To better promote self-management, 9 of the 14 programs formed a work group to share information and tools and develop coordinated approaches to screening for and treating depression.

PHQ-9 AS A DEPRESSION SCREENING INSTRUMENT
Identifying the presence of depression is among the first steps toward developing a comprehensive management strategy. The PHQ-9 is the self-administered nine-item depression module from the full Patient Health Questionnaire. Extensive analyses of the PHQ-9 provide strong evidence of criterion, construct, and external validity. Each of the nine items is scored from 0 (not at all) to 3 (nearly every day), with the total score (out of a possible 27) defining severity of depression. PHQ-9 scores of 5, 10, 15, and 20 represent the lower limits to mild, moderate, moderately severe, and severe depression. A cutoff score of 10 has an 88% sensitivity and a 93% specificity for correctly identifying patients with major depression and those with no depressive disorder. Pertinent to the present application, the PHQ-9 was developed and found to be useful in busy primary care settings, such as those sites taking part in the initiative. The estimated time needed for clinicians to review a patient’s PHQ-9 score is < 1 minute, making this a useful screening instrument. Its ease of administration and brevity make it feasible for screening on a population basis, even during time-limited clinical encounters. The PHQ-9 was adopted in two ways: used in its entirety as a screening tool for all diabetic patients, or used in a validated, two-stage screening process in which patients are administered the PHQ-9 only if they answer “yes” to either part of a two-question pre-screening subset of the nine-item questionnaire.

Each of the nine sites that used the PHQ-9 developed specific interventions to address the needs of their patients with newly identified depression. Through the workgroup, participating sites shared information and best practices and assisted each other with problem solving. Interventions were then developed to respond to the specific needs of each site’s unique population. The following section reports on the results of screening for depression, approaches to integrating care, types of care provided, and key dimensions of care, such as sensitivity to cultural features of specific groups.

LESSONS LEARNED
Screening Results
Of the nine sites participating in the depression workgroup, all were able to put in place screening for depression with the PHQ-9. They represent a diverse array of patient demographics, locations, and settings, and they vary with regard to the manner in which the PHQ-9 is administered. All have observed rates of depression that are equal to or exceed that reported in the literature. Moderate to severe depression (as defined by a PHQ-9 score of ≥ 10) was found in 30–70% of those screened. The aggregate rate of moderate to severe depression across sites was 31.4% (232 of 739 patients screened).

At sites serving populations with very low literacy levels, the PHQ-9 often could not be self-administered by patients. These sites used various members of the team to administer the questionnaire. Sites using the two-question prescreening subset and sites using nonproviders to screen generally found widespread screening more feasible. Table 1 summarizes screening protocols, results, and treatment approaches.

Treatment Approaches
Sites developed a broad array of interventions and treatment protocols. These included integrated systems of mental health care in the primary care setting, group treatment models, culturally tailored interventions, and psychotherapeutic interventions, including cognitive behavioral therapy and a brief focused therapy program.

Enhancements of primary care.
For many low-income or uninsured patients, the primary care clinic may provide the only available mental health treatment. Although many primary care clinicians are comfortable diagnosing and treating depression, some lack adequate training or may not feel that mental health care falls within the scope of their practice. Realizing this, several grant sites have focused on the expansion and strengthening of mental health treatment in the primary care setting. One approach was to facilitate the identification and referral of depressed patients to their primary care physicians and to provide those primary care providers with more mental health support. For example, medical
assistants at the primary care clinic of the Providence-St. Peter Family Practice Residency in Olympia, Washington, screen all diabetic patients with the depression screening tool. The decision to offer pharmacotherapy for depression and the choice of medication is left to individual providers. An on-site psychiatrist is available for consultation to the primary care providers. Other sites developed similar models.

Integrated mental health services. Several sites have developed innovative programs to provide on-site mental health services integrated into the primary care setting. In some settings, this includes individual counseling ses-

<table>
<thead>
<tr>
<th>Site</th>
<th>Audience</th>
<th>Area Served</th>
<th>Setting</th>
<th>Screener</th>
<th>Score that Triggers Intervention</th>
<th>Proportion Screening Positive for Depression (%)</th>
<th>Types of Intervention*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campesinos, Sin Fronteras, Somerton, Arizona</td>
<td>Hispanic</td>
<td>Town/rural</td>
<td>Community Promotora</td>
<td>≥ 10</td>
<td>25</td>
<td>Promotora facilitated social support (group and individual interaction); presentations from Association of Psychologists in Mexico to support groups; referrals from support groups for individual sessions with these Mexican psychologists</td>
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<tr>
<td>Community Health Center, Middletown, Connecticut</td>
<td>African American, Latino, Polish</td>
<td>Urban Clinic Nurse or certified diabetes educator</td>
<td>≥ 10</td>
<td>Not available</td>
<td>“Warm handoffs” (on-site same-day referrals) to counselor for solution-focused brief therapy; referral to Healthy Coping Skills program</td>
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<td></td>
</tr>
<tr>
<td>Department of Family and Community Health/ Marshall University School of Medicine, Huntington, West Virginia</td>
<td>White, African American</td>
<td>Rural Clinic Any member of team</td>
<td>≥ 10</td>
<td>Not available</td>
<td>Clinic-based support group; “Help Yourself” self-management course; referral to social worker or psychiatrist</td>
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<tr>
<td>Gateway Community Health Center, Inc., Laredo, Texas</td>
<td>Hispanic</td>
<td>Urban Clinic Promotora</td>
<td>&gt; 14</td>
<td>37</td>
<td>Referral to mental health services, including individual intervention with a psychologist, problem-solving therapy, and solution-focused brief therapy; self-management class; close follow-up from primary care provider and enhanced support by promotora for depressed individuals</td>
<td></td>
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<tr>
<td>Holyoke Health Center Inc., Holyoke, Massachusetts</td>
<td>Hispanic</td>
<td>Urban Community Medical assistant, nurse case manager</td>
<td>10–14 (reassess at 1 month) &gt; 14 (intervene)</td>
<td>57</td>
<td>On-site nurse care management and self-management classes, referral to outside behavioral health services</td>
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Table 1. RWJF Diabetes Initiative Projects Screening for Depression
sions with a direct, often same-day referral from the primary care provider to a behavioral health provider. In other sites, group therapy sessions led by a behavioral health provider are offered. Most sites that have developed an integrated system of care emphasized good communication between the primary care provider and the behavioral health provider by including mental health notes in the primary care chart.

At the Community Health Center in Connecticut, the behavioral health providers see patients in the clinical area in immediate proximity to the primary care providers. Patients are managed jointly with close collaboration between the behavioral health providers and the primary care providers. Care is documented in the same medical record to further enhance close communication and coordination of care. Diabetic patients are screened for depression, and those who screen positive are referred to a behavioral health specialist. The specialist provides brief, focused treatment known as solution-focused brief therapy, a behavioral therapy that promotes rapid identification and achievement of goals and enhanced self-efficacy.\(^{20}\) Achieving small goals increases self-efficacy, reduces depression, and empowers the patient to pursue more goals related to self-care. As such, it is an ideal complement to a diabetes program focused on self-management goal setting.

**Group therapy.** La Clinica de la Raza in Oakland, California, screens patients for depression at nutritionist visits or at visits with their primary care provider. Those diagnosed with depression are referred to “Viviendo Bien,” a group therapy session focused on comorbid depression and diabetes. A bilingual group therapist conducts weekly 1.5-hour sessions in Spanish. Sessions generally focus on coping strategies, adherence to antidepressant medications, group sharing, and mind-body health. As needed, the group therapist can refer patients to La Clinica’s mental health system or to an outside provider for more intensive individual therapy. Close coordination with patients’ primary care

<table>
<thead>
<tr>
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<th>Area Served</th>
<th>Setting</th>
<th>Screener</th>
<th>Score that Triggers Intervention</th>
<th>Proportion Screening Positive for Depression (%)</th>
<th>Types of Intervention*</th>
</tr>
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<tr>
<td>La Clinica de la Raza Fruitvale</td>
<td>Hispanic</td>
<td>Urban</td>
<td>Clinic</td>
<td>Provider or certified diabetes educator</td>
<td>≥ 10</td>
<td>47</td>
<td>Group cognitive behavioral therapy–based psychotherapy; psycho-education with focus on mind-body link and relaxation; primary care provider co-management of diabetes and depression</td>
</tr>
<tr>
<td>Health Project, Inc., Oakland,</td>
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<tr>
<td>California</td>
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<tr>
<td>Minneapolis American Indian Center</td>
<td>American</td>
<td>Urban</td>
<td>Community</td>
<td>Nurse or case manager</td>
<td>≥ 10</td>
<td>30</td>
<td>Referral to culturally based “talking circles” and traditional healers; “Living in Balance” self-management class; referral to social worker</td>
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<td>Minneapolis, Minnesota</td>
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<td>Open Door Health Center, Homestead</td>
<td>Hispanic</td>
<td>Town/rural</td>
<td>Clinic</td>
<td>Case manager or community health worker</td>
<td>≥ 10</td>
<td>Not available</td>
<td>On-site weekly diabetes support group/group appointments; outside referral for behavioral health services, including psychological counseling using cognitive behavioral therapy, and for more intensive treatment services</td>
</tr>
<tr>
<td>Florida</td>
<td>Haitian,</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>American</td>
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<tr>
<td>St. Peter Family Medicine Residency</td>
<td>White</td>
<td>Urban</td>
<td>Clinic</td>
<td>Medical assistant</td>
<td>Depends on provider</td>
<td>70</td>
<td>Primary care mental health treatment enhanced by on-site behavioral health interventions and referral psychological consult clinic</td>
</tr>
<tr>
<td>Program, Olympia, Washington</td>
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*All sites included primary care management (either onsite or by referral); table details additional program components.

†At this site, a score of 10–14 triggers a referral to the nurse care manager; a score of > 14 triggers a referral to behavioral health.
providers is achieved by the placement of group therapy progress notes in patients’ primary care charts.

**Incorporating cultural traditions into treatment.** Care that is culturally sensitive and appropriate is vital, especially in the area of mental health, where nuances of language and cultural beliefs can affect a patient’s response to therapy. Several sites have specifically incorporated cultural traditions and beliefs in designing their treatment models.

Promotoras, community members who act as peer coaches promoting health behaviors and often providing extensive social support, are well understood by people of Mexican-American heritage because promotora networks are a common element of health care systems in Mexico. The relationship between the promotora and the patient is often more informal than the provider-patient relationship and involves much more frequent contact. Gateway Community Health Center in Laredo, Texas, has promotoras that play a central role in the management of depression. Gateway’s promotoras have been incorporated into the clinic staff; they teach diabetes self-management classes in the clinic and administer the PHQ-9 twice during the 10-week class series. Patients who screen positive for depression are referred to their primary care provider for further evaluation. After treatment has been initiated, promotoras follow a depression protocol that involves weekly phone contact emphasizing mood improvement, trouble shooting of antidepressant medications, and suicide prevention. Promotoras serve similar functions in other grant sites as well.

A program focusing on Native American populations emphasizes the role of community elders, the use of Native American healers, and “talking circles” as a source of community support. The Full Circle Diabetes Program, a collaboration between the Minneapolis American Indian Center and the Native American Community Clinic in Minneapolis, Minnesota, receives advice and guidance from a community council comprised of elders, community members, Native American agencies, and health professionals. Within the clinic setting, all diabetic patients are screened for depression by a nurse or case manager. Patients with depression may receive medication treatment from a primary care provider and/or counseling with an on-site Native American behavioral health specialist. The specialist incorporates Native American beliefs and traditions into the counseling sessions. In addition to on-site therapy, patients with depression are encouraged to attend bimonthly talking circles held at the Minneapolis American Indian Center. These group discussions are facilitated by a council member and are based on Native American traditions to provide support to patients with health issues, including depression. The clinic also supports patients’ decisions to consult traditional healers, which is considered to be an important, culturally relevant way of treating depression.

**Mind-body focus.** A variety of interventions at different sites focused on the interrelationship between physical and psychological symptoms. At one site, therapy included relaxation sessions and discussions about the interrelationship of physical and psychological symptoms. At the Full Circle Diabetes Program in Minneapolis, the interrelationship of the physical, mental, emotional, and spiritual is honored in the counseling sessions and talking circles. Another site offers clinic-based yoga sessions.

**DISCUSSION**

Faced with significant numbers of patients with a new diagnosis of depression, sites developed a broad array of interventions and treatment protocols discussed above, including enhanced integration of mental health care in the primary care setting, group treatment models, culturally tailored interventions, and psychotherapeutic interventions, including cognitive behavior therapy and solution-focused brief therapy. Across all nine sites, the themes of continuity of care, integrated care, and culturally sensitive care were paramount. Because most sites represent agencies that serve low-income, often uninsured clients, these interventions can be a vital resource to patients for whom mental health services were previously unavailable or difficult to access. Ongoing programs at Diabetes Initiative sites provide models demonstrating that integrated care can be implemented in real-world settings.

With its emphases on collaborative goal setting, active patient participation, and mastery of new skills, self-management might be thought to be beyond the capacity of people with depression. On the other hand, the same approaches from behavior therapy and behavioral medicine on which self-management of chronic disease is based have much in common with cognitive behavioral and problem-solving therapies for depression that have gained recognition alongside pharmacological treatments. Thus, interventions to promote self-management of diabetes might also mitigate the impact of depressive symptoms, or even serve as an effective behavioral treatment for depression.

To guide self-management programs through differences in clinical approaches, patient populations, and settings, the Diabetes Initiative uses a general, ecological model of resources and supports for self-management, based on self-management research in diabetes, as well as general chronic care. This broad model, which includes individualized assessment, collaborative goal setting, skill building, and follow-up and support, appears to apply to depression as well as diabetes.

Within this broad approach, each model for treating depression was developed independently to meet the unique needs of the patient population served. However, several common themes have emerged. First, care for depression needs to be incorporated into care for diabetes to effectively promote self-management in patients with clinically significant depression. The detrimental impact of depression on diabetes self-management is such that making the depression intervention a part of the diabetes self-management program was critical to the success of the self-management program. Beyond this, the commonality that exists between the behavioral treatment of depression and the self-management approach to behavioral change may create a useful synergy with beneficial impacts on both illnesses.

A second theme that emerged is that depression care needs to be integrated with primary care to facilitate communication among all providers and maximize the potential to achieve this synergy. In most cases, this was accomplished by having mental health services provided on site in the prima-
ry care clinic and by having a common medical record that includes medical as well as mental health documentation, including care provided by psychologists, behavioral health specialists, other professionals, and non-professionals.

The third and fourth themes reflect the range of personal, family, and social influences on depression among those with diabetes. Given this range, varied approaches are required. Thus, the third common theme is that depression care needs to be appropriate for the population being served by taking into consideration culture and beliefs. Using existing patterns of care, such as promotoras for Mexican-American patients and talking circles among Native Americans, allowed programs to capitalize on resources that were culturally acceptable to the patients being treated.

The fourth theme is that a range of treatments and assistance was provided, and nonpharmacological treatment for depression was important. It is striking that each of the nine sites provides some variety of psychotherapy, group therapy, or counseling to its patients in addition to medication for depression.

The resourcefulness of real-world, underresourced primary care sites in arranging choices among treatment for depressed patients is striking. Current approaches to clinical research tend to focus attention on identifying the best among competing interventions. Greater attention to the degree to which they are complementary may lead to implementation of varied approaches that will be more congruent with the needs of patients and treatment settings in the real world and more likely to reach large populations, substantial portions of which are underserved.

The complexity of the interaction between diabetes and depression is not fully understood. Nevertheless, real-world programs have responded to an identified need by developing empirically based programs emphasizing screening and a diverse array of treatments to integrate diabetes treatment, self-management, and depression care.

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References


28. Wagner EH, Austin BT, Davis C, Hindmarsh


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