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How Much Does Quality Mental Health Care Profit Employers?

Alan M. Langlieb, MD, MPH, MBA
Jeffrey P. Kahn, MD

Learning Objectives

- Explain the prevalence of anxiety and depressive disorders at the workplace, their economic and social costs, and their effects on productivity and functioning at work.
- Recall the wider consequences of anxiety and depression at the workplace, beyond the affected individual, and the adverse effects of *not* offering quality mental health care.
- Comment on employees' access to mental health care, who should provide this care, and whether the cost of providing high-quality care is warranted by subsequent increases in productivity.

Abstract

Objective: *Employers provide most American mental health benefits and are increasingly cost conscious. However, commonplace anxiety and depressive disorders have enormous economic and workplace performance costs.* ***Methods:*** *We performed multiple literature searches on several areas of pertinent research (and on key articles) covering the past 5 years.* ***Results:*** *Substantial research exists about anxiety and depression costs, such as performance and productivity, absenteeism, presenteeism, disability, physical disability exacerbation, mental health treatment, increased medical care costs, exacerbating of physical illness, and studies of mental health care limitations and cost-offset. Research addressing the potential value of higher quality mental health care is limited.* ***Conclusions:*** *Commonplace anxiety and depressive disorders are costly in the workplace. Employers and researchers remain largely unaware of the value of quality care and psychiatric skills. Effective solutions involve the increased use of psychiatric skills and appropriate treatment.* (J Occup Environ Med. *2005;47:1099–1109*)

Employers are a fundamental component of our health care system. They provide health care benefits to more than 175 million workers and their family members[1] and are "increasingly assuming the role of de facto health policy makers in the United States."[2] Many employers are focusing their attention on the cost of illness and on related expenditures of disability and lost productive time as a means controlling business costs. Moreover, many employers of the new information/technology economy are aware of new health research that has heightened focus on the impact of anxiety and depressive disorders on performance. It is not that these syndromes are new. Rather, research, improved treatment options, and a gradual lessening of the stigma associated with mental illness have created an environment in which their importance to the employer community is more apparent.

With this awareness comes more questions: How many employees in a given company suffer from depression? How can a company ensure that employees are working in an optimal work environment?[3] What is the impact of anxiety and depressive disorders on other physical illnesses? How can a company ensure that employees are receiving the best treatment? How much does quality mental health treatment cost, and how can we measure its success? In view of these concerns, this article provides both the business and academic communities with an overview of recent research and current thinking. To provide the best health care services to their employees

From the Johns Hopkins School of Medicine, Baltimore, Maryland (Dr Langlieb); WorkPsych Associates, New York, New York (Dr Kahn); and Weill Medical College of Cornell University, New York, New York (Dr Kahn).

Address correspondence to: Alan M. Langlieb, MD, MPH, MBA, The Johns Hopkins School of Medicine, 600 N. Wolfe Street, Meyer 4-181, Baltimore, MD 21287. E-mail: alanglie@jhmi.edu

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while watching their own economic bottom line, employers need to understand: (1) the prevalence of anxiety and depressive disorders in the workplace; (2) the social and economic costs that result from anxiety and depressive disorders; and (3) how quality mental health care can help reduce the social and economic burdens resulting from these diseases.

Although not the focus here, substance use issues also are an important concern in the workplace. Furthermore, chemicals such as cocaine, amphetamines, marijuana, or excessive alcohol often are used as self-medication for anxiety or depression and in turn may increase the severity of those disorders. Substance use disorders and their serious effects in the workplace and on health care costs will be the subject of a future article.

Anxiety and Depressive Disorders are Highly Prevalent in Our Society

Employers need to be increasingly aware of the prevalence of anxiety and depressive disorders in our workforce and in our country. The National Institute of Mental Health estimates that 1 in every 20 American adults will be depressed in any given year.[4] The World Health Organization predicts that major depression will be the second leading cause of disability by the year 2020.[4] Moreover, a recent study of more than 9000 persons from the National Comorbidity Survey Replication estimated that approximately half of Americans will meet the criteria for a DSM-IV disorder sometime in their life.[5]

Depression has been estimated to affect 18.8 million Americans each year[6] and to afflict 10% to 25% of American women and 5% to 12% of American men in their lifetime.[5] Depression can affect anyone, from the highest level executive to the lowest-paid laborer. Employees suffering with depression, anxiety, or substance use disorders are often highly trained, highly skilled, potentially productive, experienced, and valued members of the workforce. However, depression seems to strike women twice as often as men and is more frequent in individuals younger than 45, economically challenged people, and separated or divorced individuals.[7]

Anxiety disorders have been estimated to affect 29% of Americans in their lifetime.[5] Like depression, anxiety disorders cut across strata of ethnicity, education, income, and marital status. However, like depression, anxiety disorders seem to concentrate in the young, the poorly educated, the unmarried, the childless and women, although it may be that men are less likely to show outward signs, even when suffering from an anxiety disorder.[8]

The Social and Economic Costs of Anxiety and Depressive Disorders

Anxiety and depressive disorders (which often go hand-in-hand) create tremendous social and economic burdens on our society. In terms of quality of life, anxiety and depressive disorders can be as debilitating as any major chronic illness (ie, causing both physical and mental distress, fatigue, and helplessness).[8,9] The comorbidity of depression with anxiety or medical illness further compounds the problem.[10–12] Others have ranked depression as the third-leading cause of loss as measured in quality-adjusted life years (QALYs), ranking below arthritis and heart disease but above chronic lung disease, diabetes, stroke, and cancers.[13,14]

Economic Burdens of Anxiety and Depression

From an economic perspective, the annual cost of anxiety and depressive disorders in the United States is quite large. It has been estimated that the United States spends $83.1 billion (in 2000) for costs associated with depression and $63.1 billion per year (in 1998) for costs associated with anxiety disorders.[15,16] Such costs include not only direct health care costs, but also "indirect" costs stemming from suicide, increased medical morbidity, reduced adherence to outpatient treatment leading to relapse and hospitalization, lost wages caused by missed work, and decreased workplace productivity.[17]

With respect to direct costs, a 1998 study of more than 46,000 employees by the Health Enhancement Research Organization (HERO) estimated that each employee with depression generated $3189 annually in health care costs compared with $1679 annually for nondepressed employees. If the depressed employees also were under high stress, then the cost skyrocketed: 147% more was spent on health care costs for these individuals than on those with depression alone.[18]

Do Comorbid Anxiety or Depression Worsen Physical Illness Impairment and Outcome?

If an individual has anxiety or depression plus a physical illness, the anxiety and depression are more predictive of functional impairment over time than is the severity of the physical illness. As an example, it was found that the symptoms of anxiety and depressive disorders at the initial diagnosis of coronary artery disease were more correlated with functional impairment at both 1- and 5-year follow-ups than was any physiological measure.[19,20] In another study of cardiac patients, researchers discovered that depression significantly increased the cardiac rehospitalization rate in these patients.[21] Moreover, in a recent study examining the association between disability status and individuals diagnosed with multiple sclerosis, the researchers found that the impairment associated with physical functioning was a more useful disability predictor among those patients who

also had symptoms of anxiety or depression.[22] The researchers suggested that a possible explanation may be that anxiety and depression impede coping with physical limitations and therefore diminish the patient's ability to maintain their subsequent quality of life.

Depression also has been demonstrated to negatively impact the physical illness outcomes in patients with yet other chronic illnesses. For example, in diabetic patients, depression is associated with poor glycemic control, increased risk for diabetic complications, functional disability, and higher overall health care costs.[23,24] With respect to heart disease, the mortality rate of depressed patients after experiencing a cardiac event, such as a heart attack, is anywhere from double to quadruple that of nondepressed patients.[25–30]

Finally, individuals with depression and a physical illness have a lower quality of life than those with a physical illness alone. For example, epileptic patients who also were depressed reported worse seizure severity and distress about the seizures than people without depression. The difference reflected the patients' perception of the seizure rather than actual documentable severity.[31] Angina patients with a history of depression also were significantly more likely to have more frequent angina attacks and worse health status, even after adjusting for cardiac and noncardiac variables.[32] Depression is still a significant compounder, even when it seems to be precipitated by the physical illness itself.

High Medical Utilization Can Be Caused by Anxiety and Depression

Studies have shown that patients with anxiety and/or depression and a physical illness have significantly higher health care costs than those with the physical illness alone.[33,34] In one study of 15,153 employees of a major US corporation, it was discovered that employees with depression and a medical condition (diabetes, heart disease, hypertension, or back problems) spent 1.7 times more health care dollars than those with the medical condition alone.[2]

Using data from a large (n = 77,183) national sample, Druss and Rosenheck found that individuals with self-reported major depression had mean health care costs that were $2907 higher than costs for individuals without this condition (any reported depressive symptoms were enough to cause $1576 higher costs). However, only 14.3% of visits made by these individuals were to specialty mental health professionals (eg, psychiatrists, psychologists, social workers).[35]

Another study examined a sample of general medical, high-utilizing patients in a primary health care clinic (patients who made an average of 15 visits and 15 telephone calls to a clinic over the course of a year). It was estimated that 83.5% of these high utilizers had suffered from a psychiatric condition at some time in their lives that had not been properly diagnosed and treated. The following DSM-III-R disorders were most common: major depression (23.5%), dysthymic disorder (16.8%), generalized anxiety disorder (21.8%), and somatization disorder (20.2%). Two thirds had a lifetime history of major depression. Follow-up clinical examinations in this study resulted in an improved diagnostic assessment for 40% of examined patients and a revised treatment plan for 67%.[36] Yet another study compared high primary care utilizers to moderate utilizers and found that the high utilizers had a high prevalence of anxiety in particular.[37] Moreover, in a study that focused on 300 new neurological patients, it was discovered that almost half met criteria for anxiety or depression.[38]

Luber et al., in their study of 15,186 general internal medicine patients over the course of 1 year, found that those patients who were diagnosed with depression (4.7%) had significantly higher outpatient charges ($1324 vs. $701); higher total charges ($2808 vs. $1891); and longer length of stay when hospitalized (14.1 vs. 9.5 days) compared with their nondepressed general medical counterparts. This finding, of higher resource utilization of all types for persons with depression, was notable even after controlling for the fact that these individuals had more medical illnesses (including chronic pain) associated with their depression.[39]

Half of all visits to primary care doctors are a result of patient symptoms unexplained by a physical illness but often associated with an anxiety disorder, including chest pain, dyspnea, tachycardia, dizziness, and abdominal discomfort.[40] Not surprisingly, these individuals undergo unnecessary and expensive testing to find the cause—frequently believed to be heart disease, inflammatory bowel disorder, asthma, or headaches—only to find that these tests return without significant findings. For example, between 20% and 30% of patients who undergo coronary arteriography for chest pain are found to have normal coronary arteries.[41] The risks associated with this procedure and the expense (on the order of $2500) are not insignificant and ultimately, 33% to 43% of these patients later prove to have panic disorder, not heart disease. So, some researchers think that psychiatric screening should be done early, rather than being the diagnostic procedure of last resort.[42,43] The diagnosis should be based on positive psychiatric criteria rather than simply exclusion of other possibilities. Indeed, even after extensive medical evaluation, panic disorder is typically neither diagnosed nor treated.[44]

Importantly, merely moderate levels of anxiety and depression can substantially effect work performance and health care costs.[45,46] Indeed, functional disability (and related costs) associated with even subsyndromal conditions is essentially similar to that of persons who meet the full technical diagnostic

criteria of major depressive or panic disorder. Subsyndromal patients (ie, with limited depressive symptoms or rare panic attacks) are actually a far more prevalent group.[11,47]

Co-Morbid Anxiety or Depression Also Can Increase Physical Illness Disability Risk

With respect to disability costs, Muchmore et al[48] studied the additional employer costs associated with arthritis and joint disorders (eg, absence, disability, diminished productivity, workers' compensation) when the patient was also depressed. Associated depression increased the odds of a long-term disability claim by 2.23 times, and was the leading predictor of worker's compensation, increasing the odds of a worker's compensation claim by 1.45 times. Additionally, in a study by Kouzis and Eaton, using data from the multisite Epidemiologic Catchment Area (ECA) survey, they examined respondents who were not receiving disability benefits at baseline but who were later receiving them at 1-year follow-up. The effects of six psychiatric disorders—major depressive disorder, panic disorder, alcohol abuse or dependence, phobic disorder, obsessive-compulsive disorder, and schizophrenia—on the risk of starting payments were examined. Among the 11,981 people interviewed at 1 year, 261 had begun to receive payments that year, a rate of 2.2%. Those follow-up respondents with panic disorder had the largest relative risk of starting payments; they were five times more likely (OR = 5.2) to start payments than those without this disorder.[49]

Anxiety and Depressive Disorders Negatively Affect Worker Productivity

Mental disorders not only generate high health care costs but also cause substantial indirect costs related to decreased work productivity (unemployment, absenteeism, short-term disability, or lack of productivity on the job.) Depression is one of the top five issues associated with work loss and a decrease in productivity at work.[50,51] It has been estimated that United States employers spend $33 billion per year due to such work and productivity loss as a result of depression.[52]

Lost Work Time

Traditionally, the main measurement of decreased productivity has been lost workdays. In a study using data from two large community surveys, it was estimated that depression was associated with a 2.5-fold increase in probability of missing work because of illness and a 50% increase in time lost from work.[53,54] What impact does quality treatment have on this statistic? A Canadian study showed that early and proper treatment of depression was associated with a marked reduction in disability leave time.[55] Claxton et al[56] demonstrated that absenteeism increased before antidepressant initiation, and then decreased after treatment began.

A recent national comorbidity study documented the effect of anxiety and/or depression along with a chronic physical disorder on employee role impairment at work (ie, sick days, work cutback days.) The chronic physical disorders studied were hypertension, arthritis, asthma, and ulcers. The researchers found that all of the individuals with a physical *and* a comorbid mental disorder had significantly higher role impairments that the individuals with physical ailments alone. For example, individuals with hypertension and a mental disorder had 3.0 days of role impairment per month whereas individuals with hypertension alone had 0.4 days of role impairment. Individuals with arthritis and a mental disorder had 3.4 days/month of role impairment while individuals with arthritis alone had no role impairment days.[57] The results were similar for asthma and ulcers. Here, too, comorbid psychiatric disorders were a strong predictor of increased disability duration and physical illness severity.

Finally, mental disorders have been associated with a higher employee attrition rate. In one study examining the attrition rate of US military personnel who were diagnosed with mental illness, the researchers found that 47% of those hospitalized for the first time for a mental disorder left military service within 6 months as compared to only 12% of those hospitalized for any of the other 15 disease categories.[58] These studies clearly demonstrate that individuals with anxiety and/or depressive disorders work less hours than their counterparts without such diseases.[59]

Presenteeism

"Presenteeism" is a major source of recent concern within the business community.[60] The term denotes "when an employee goes to work sick but cannot work at full capacity."[61] Several recent studies have focused on the impact of depression on an employee's ability to function at work. Research from Brouwer et al[62] has found that this situation can occur both before *and* after a leave of absence from work. Burton et al looked at questionnaire data from 16,651 employees of a large financial services corporation and found that depression was highly associated with work limitations in time management, interpersonal/mental functioning, and overall output.[63] In another study, in which 6239 employees of three corporations completed surveys on health and satisfaction with health care, it was concluded that the odds of decreased effectiveness at work were seven times as high for employees with depressive symptoms compared to those without such symptoms.[64] In another large recent study, which focused on a sample of 3351 individuals taken from a national survey of 30,523 US individuals, it was concluded that workers with depression reported 5.6 hours/week of lost productive time compared to

1.5 hours/week for nondepressed individuals. Moreover, 82.1% of the lost productive time was explained by reduced performance while at work, rather than by absence.[65]

Goetzel et al[66] analyzed data from a large medical/absence database and published productivity surveys and found, based on average impairment and prevalence estimates, the overall economic burden of illness was highest for hypertension ($392 per eligible employee per year), heart disease ($368), depression and other mental illnesses ($348), and arthritis ($327). Presenteeism costs for psychiatric illness were higher than those for physical illnesses in most cases, and represented 18% to 60% of all costs for the 10 conditions studied. Importantly, this study did not account for the contribution of anxiety and depression to the costs of physical illnesses. In light of other research, it is thus reasonable to expect that much of the physical illness cost was also due to effects of anxiety and depression.

As one researcher says, these presenteeism findings suggest that when an employee has a mental illness, employers are hit twice—first by low productivity of the employee at work and second when the worker leaves. Moreover, such research has even suggested that an employer could be hit with yet a third cost, when other workers start to compensate for the affected worker's low productivity.[59]

Anxiety and Depression Have Workplace Consequences Beyond the Affected Individual

The effects of anxiety and depressive disorders ripple beyond the affected individual. Employees who are depressed at work have been shown to lower the morale of their coworkers, resulting in higher turnover and general discontent.[67] In one survey of 146 employees, depression was ranked as the number one disease affecting employee health and productivity for having the most negative impact on the workplace community, yet this should be an easily remedied problem.[68]

Why do Employers Not Recognize the Cost of Not Having Quality Mental Health Care?

So the next obvious question is why do some employers not "see" the impact of employees with depression in their company? How are these costs skating right by them? There are several reasons[69]: (1) depression and other mental disorders often lie beneath the surface and escape detection; (2) fragmented benefit programs produce disjointed data because mental health care is often "carved out" from general health insurance, and many employers fail to quantify the problem; (3) human resource managers and line supervisors are not trained to deal with and recognize mental illnesses; (4) high-quality psychiatric and mental health care resources are often not available; (5) there is concern about the value of the modest quality mental health care commonly utilized; (6) there is a notion that mental health care causes disability.

Untreated Anxiety and Depression Increase Other Medical Care Utilization and Cost

Even after understanding the indirect costs associated with untreated or inadequately treated anxiety and depressive disorders, many employers may still be tempted to push mental health care to the side, on the basis of concern over increasing health care dollars. However, as explained below, this plan of action may backfire and paradoxically increase their health care spending. This happens because individuals with mental disorders tend to use health services more than patients without such disorders (estimated at 5 to 10 times).[70] Importantly, patients with anxiety and depressive disorders tend to complain about somatic rather than emotional symptoms of anxiety and/or depression and consequently often get treated only for "physical symptoms" rather than the emotional syndromes.[12] As a result, these distressed patients can have high direct health care costs, largely due to an increased use of medications for other illnesses;[71,72] this pattern is reversed in correctly treated subjects.[73,74] Patients who are at least aware of their emotional symptoms may show less overutilization of medical care.[75]

In a Collaborative Study done by World Health Organization (WHO), 69% of patients with depression reported physical symptoms only, whereas 11% denied emotional symptoms even on direct questioning.[76] Likewise, in another study, it was found that only 5% of patients with social anxiety disorder visited their primary care physician to report emotional problems.[77] This finding has been repeated in a recent study of inpatients in a hospital in Denmark (all health care in Denmark is government funded, so the ability of patients to pay for health services should have no impact on use).[70] The study found that patients with anxiety and/or depression had about a threefold increase in the use of non-psychiatric inpatient and outpatient services.

Thus, for many individuals the increase in health care costs associated with anxiety or depression is not caused by costs of anxiety or depression treatment alone. Costs attributed to anxiety or depression treatment (medication, primary care visits with depression diagnosis) account for only 5% to 10% of the observed increase in overall health care costs.[9] The primary impact of depression on health service utilization is not on resources directed to depression treatment, but on general medical services.

Do Cost Savings Outweigh the Treatment Cost of Anxiety and Depression?

Even after understanding the impact of anxiety and depressive disorders both directly on health care

costs and indirectly on productivity, a question still remains "Do the savings from treating employees' psychiatric problems outweigh the costs?" As noted earlier, the cost of depression to our society is quite significant. But the total direct costs of treatment for depressive disorders in 2000 was only 26.1 billion dollars, whereas workplace costs was $51.5 billion.[15]

Research has demonstrated that treatment leads to improvement in work productivity and reduction in utilization and costs of general medical services.[46] For example, in a study of 290 primary care patients treated for depression, after 1 year of treatment, the treated individuals were 25% more likely to find or maintain paid employment than their untreated counterparts. Moreover, the treated individuals' days of missed work because of illness were only one-third as great when compared with those with persistent depression. The same study also discovered that for those achieving remission of depressive symptoms, total health service costs were approximately one-third as great as costs for those with persistent depression.[14] In other studies examining the reduction of health care costs, the decrease in health care utilization of nonpsychiatric services following mental health treatment ranges from a 5% decrease in outpatient visits to an 85% decrease in hospital days.[78]

If one looks at bottom line numbers, recent research has suggested that depression treatment pays for itself in terms of savings in lost earnings. A study by Zhang et al,[79] using data from residents in Arkansas with recent symptoms of depression, compared the costs of lost earnings (measured by lost workdays multiplied by the subjects' wage rates) with the cost of treatment for depression using charges abstracted from provider and insurance records. The study concluded that the cost of depression treatment was fully offset by just the savings from reduction in workdays. The researchers noted that the result was quite conservative because it did not take into account increased productivity at work or increase in quality of life (nor the reduction in other medical costs). Similarly, a recent study examined the relationship between patients beginning antidepressant treatment and changes in probability of paid work, time missed from work due to illness, and overall health care costs. Recovery from depression was associated with significant increases in probability of paid employment and reductions in time lost from work due to illness.[14]

Another study took the treatment of depression one step further. In this study, the researchers modeled the costs and benefits of an intervention program to assess and treat depressive symptoms in long-term disability claimants with (nonpsychiatric) medical illness. With respect to claimants with medical illnesses for which the claim-duration typically exceeds 1 year (rheumatoid arthritis, diabetes, multiple sclerosis or stroke), the study concluded that it was feasible for savings to fully offset the costs of an intervention program.[80] Based on conservative estimates, they found that if 2500 claimants were screened, and as few as 10 claimants ultimately returned to work, the program could have a net benefit (ie, offset the cost of the comprehensive program for the assessment of depressive symptoms in all claimants and intensive treatment for those that needed it).

With respect to panic disorder, one of the leading studies assessing the health care utilization costs before and after treatment concluded that treatment resulted in a 94% reduction in health care utilization for non-psychiatric services (also known as the "offset effect"). More specifically, the researchers found that the number of visits of all the 61 subjects to general practitioners and specialists (other than psychiatrists) was markedly reduced from 313 in the year before treatment to just 15 visits in the year after treatment.[81]

Without proper diagnosis and treatment of anxiety and depressive disorders (ie, quality care), the studies highlighted above demonstrate that these patients can easily become high-utilizers of nonpsychiatric services, such as outpatient medical clinics, inpatient medical beds, and the emergency room.[82] If the diagnosis is incorrect or incomplete, they may receive unnecessary medicines, and even surgery that will prove ineffective and possibly harmful. Such medical misadventures can raise financial costs, prolong illness, and increase time spent in suboptimal levels of function at home and at work.

Quality Mental Health Care Issues

Given the serious impact that anxiety and depressive disorders have on health care costs and on workers' productivity, many researchers and policy experts focusing on this issue suggest employers should develop effective quality programs to address improvements in three domains–access, evaluation, and treatment.[18,83–85] Although the data collectively suggest that mental health care can profoundly benefit employees and employers, it is widely acknowledged that the quality of such care is highly variable and many individuals probably do not receive optimal care. One study reported that HMO patients with a depression diagnosis had a nearly 2-fold increase in annual health care costs ($4245 vs. 2371), but that primary care diagnosis (even with some treatment) does not adequately reduce utilization differences.[86] Even specialty psychiatric consultation within an HMO had limited additional benefit when that specialty care was itself substandard.[87] If optimal care were more widely available, it is reasonable to expect that there would be substantial benefits to employers and employees.[88,89]

Access to Care

For the individual, employers can use a number of programs to enhance an employee's accessibility to depression management and ultimately to job reintegration.[90] Perhaps one of the most helpful and efficient ways is to educate managers to understand the signs of anxiety/depression disorders and to improve their skills in approaching employees. Courses and books can also help managers realize that effective help is available, what to expect, and how to manage in the interim.[85] Other programs can include informational brochures and intranet content, and self-rating tools to assist employees in recognizing and identifying their own distress.[91] At the organizational level, employers can use indicators such as absenteeism rates in a particular unit/department as a measure of the "health of the work environment" and may use this data to implement wellness programs and other strategic initiatives to enhance employee resilience.

Diagnostic Evaluation

Quality mental health care programs should have the individual's initial clinical contact occur with an optimally trained clinician in a timely manner. Without such an encounter, problems too often are not appropriately diagnosed at the outset, and the diagnosis usually is not corrected later. Borrowing an axiom from the business model, "it pays to get it right the first time." Most importantly, the initial evaluation needs to identify specific personal, family and work problems, specific anxiety and depressive disorders, and other psychiatric conditions. It is also important to detect non-psychiatric disorders that present confusing symptoms. Thyroid disorders and other medical illnesses, for example, can often cause symptoms that masquerade as either an anxiety or depressive disorder. Without a careful and thorough psychiatric evaluation, the physical illness can be overlooked, thus increasing health care costs and risks, while leaving the patient's distress unremedied. As noted earlier, a misdiagnosis of physical illness instead of emotional distress is even more common. Proper evaluation requires both general medical and specific mental health skills. As further illustration of this point, in a survey of 1636 individual with a probable 12-month anxiety or depressive disorder, only 19% of those visiting primary care providers received appropriate treatment whereas 90% of those visiting mental health specialists received appropriate treatment.[92] In both settings, though, appropriate treatment was quite modestly defined.

Some possible explanations for this dramatic difference in quality of care compared with physical illnesses are that psychiatric disorders continue to be stigmatized[93]; people are cautious about what they reveal and are commonly unable to pinpoint the nature of the emotional issues actually bothering them. One small-but-important study points out that patients are not always good judges of the technical quality of the care they are receiving. The authors conclude that patient (employee) satisfaction is not a proxy for quality of care and thus employers need other measures in that regard.[94]

Another explanation is that primary care physicians may lack necessary training and experience in evaluating psychiatric disorders and thus are less likely to include them in their differential diagnosis. Even when they do recognize the psychiatric illness, they may fail to address it effectively. A study by Rost et al found that 50% of primary care physicians reported, over a 2-week period, that they deliberately gave a physical illness misdiagnosis to one or more patients when they had recognized criteria for major depression. Among the most common reasons were: uncertainty about the diagnosis, and reimbursement problems for mental health services.[95]

A psychiatrist who is trained in understanding personal, family and workplace issues, psychiatric diagnosis, psychotherapy, medication, and medical problems is in an optimal position to recognize the underlying problems and create a differential diagnosis at the outset, and then to arrange for appropriate treatment and follow-up. Once a thorough evaluation is completed, there are a variety of highly qualified providers for various mental health treatments. Yet, efforts at increasing access to psychiatric skills though Employee Assistance Programs (EAPs) and managed mental health care have met with little success.[96]

Treatment

As noted previously, mental disorders can be treated successfully, which results in better quality of life and increased productivity in the workplace. A word of caution is necessary about who is providing such care and how. Individuals who received treatment from their primary care physicians and who also had a psychiatrist counseling them had less disability, increased work productivity and improved quality of life compared with those who received treatment solely by a primary care provider. Subjects in both treatment groups received antidepressant drugs, but the psychiatrically augmented intervention treatment included patient education, adjustment of psychotherapy and proactive monitoring of outcomes.[97] Dewan calculated the relative cost of integrated pharmacotherapy and psychotherapy provided by a psychiatrist compared with treatment divided between a prescribing psychiatrist and a non-medical psychotherapist, and found that the integrated treatment was less costly.[98] Von Korff et al studied a large HMO randomized sample of primary care patients starting antidepressant therapy and found the use of non-physician mental health professionals as part of a relapse prevention intervention may be less effective for

improving disability outcomes than the psychiatric consultant model.[99]

Importantly, medication and psychotherapy cannot replace each other, but each will complement and enhance the other. Both generally are needed to effectively treat more severe anxiety and depressive conditions.[100] Most primary care physicians who treat these disorders themselves do not practice talk therapy, and most mental health clinicians (other than psychiatrists) cannot prescribe medication. When two professionals are both treating the same patient, relevant communication and close coordination are essential but difficult.[101]

A study by Goldman et al[102] was designed to "demystify" those aspects of specialty outpatient mental health care which are often hardest to quantify (eg, impact of psychotherapy, appropriate and timely use of medications etc.) to measure their impact on quality care. They collected 4 years of data from an enhanced care management program (n = 17,752), and the results highlighted the favorable impact of such enhancement on prescribing errors, therapist switching, and shorter treatment episodes.

But what about the costs? Isn't it more expensive to have more diagnoses by psychiatrists and more treatment by mental health specialists? The answer depends partly on whether one looks beyond the immediate expense. It might appear that immediate, direct health care costs will be lower if depression treatment is provided by a generalist. However, this overlooks the major effects of missed diagnoses, misdiagnosis, and failure to provide comprehensive treatment. Moreover, because approximately only $1 of every $4 of the total costs of depression is for treatment costs, the other indirect costs, including lost workdays, earnings and productivity paint a much bigger picture.[17] In one study examining the earnings-change for depressed individuals, the researchers found that depression treatment provided by mental health specialists, albeit more costly than treatment provided by a generalist, more than paid for itself. When measured just in regained earnings; depression treatment actually provided a net annual profit of $877 per patient.[79] This conclusion is conservative because it did not include the increased productivity from work performance, which is estimated to be even greater than from lost workdays. Thus, although routine care by generalists may cost less, the treatment many not be effective enough and actually may cost more in indirect dollars.

Much more research is needed, and it is worth noting some deficiencies of the literature. There is little or no research comparing the effectiveness of different mental health disciplines. When one Fortune 50 corporation attempted to conduct such a study, they were not able to gain sufficient cooperation from their consultants and mental health care insurance companies. (Alan McLean, personal communication, 1992) At the same time, there is only limited research formally comparing the effectiveness of higher quality to lesser quality mental health care models.

Summary

There is no question that anxiety, depressive, and other mental disorders are costly illnesses. Employers, as a central part of our health care system, need to understand the direct and indirect health care costs associated with them. After examining these expenses, some employers' instinctive reaction may be to cut back or eliminate mental health care coverage altogether. However, as this report describes, this is not the solution. If employers focus on the indirect costs of depression to its workforce, the results are staggering. Employees with anxiety and depressive disorders work less hours, are more likely to end up on disability, and are less productive than their counterpart employees. When anxiety and/or depression complicate other medical conditions, the effect is even more profound. Further, anxiety and depressive disorders seem to have a ripple effect in the work setting, creating low morale among coworkers and a higher turnover rate, increasing risk of critical incidents in certain job situations, not to mention the negative impact for the patient's family, relationships, and quality of life.

Anxiety and depression cannot be ignored. The best solution is quality mental health care. It has been shown that if an individual with anxiety and/or depression, for example, is not put on the "right" treatment path early on, they commonly do not get there. However, if individuals receive quality treatment (especially including specialized psychiatric evaluation), such individuals have less disability, greater work productivity and improved quality of life compared with those who received treatment solely by a primary care provider. Quality treatment might be more expensive in the short term, but the long term benefits clearly outweigh the initial treatment costs. The old adage "that you get what you pay for" applies here.

But, despite the available research, there is great reluctance to take ownership of the need for better quality mental health treatment. Schoenbaum et al[103] studied this effect recently in the Pittsburgh area and provided the following grim conclusion: "There is currently little demand among purchasers for improving depression care and little interest among insurers and providers for improving care in the absence of purchaser demand. Even stakeholders who identified depression as an important problem could not come to a consensus about who should be responsible for addressing the problem. Employers reported that they look mostly to their vendors to initiate quality improvement efforts, whereas insurers reported that such improvement efforts were more likely to occur if they were initiated by employers who purchase their health plans; providers, in turn, reported feeling powerless to

initiate change." Realization of the full employer and employee benefits of quality mental health care will require thoughtful reworking of health benefits in general, and of mental health service delivery in particular.

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The Mental Health and Productivity in the Workplace e-mail discussion group (www.WorkPsychCorp.com) is a Listserv forum for discussion of this topic. Resources for employers are available at the web site of the APA-related National Partnership for Workplace Mental Health, (www.WorkplaceMentalHealth.org).

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References

1. Fronstin P, Werntz R. The Business Case for Investing in Employee Health: A Review of the Literature and Employer Self-Assessments. Employee Benefit Research Institute; 2004 Mar. Report No. 267.
2. Druss BG, Rosenheck RA, Sledge WH. Health and disability costs of depressive illness in a major U.S. corporation. *Am J Psychiatry*. 2000;157:1274–1278.
3. Kivimaki M, Virtanen M, Vartia M, Elovainio M, Vahtera J, Keltikangas-Jarvinen L. Workplace bullying and the risk of cardiovascular disease and depression. *Occup Environ Med*. 2003;60:779–783.
4. Depression can break your heart. *NIMH* 2001. Available at: www.nimh.nih.gov/publicat/heartbreak.cfm#5; Internet; accessed July 7, 2005.
5. Kessler RC, Berglund P, Demler O, Jin R, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62:593–602.
6. Depression. *NIMH* 2004. Available at: http://www.nimh.nih.gov/publicat/depression.cfm; Internet; accessed July 7, 2005.
7. Pincus HA, Pettit AR. The societal costs of chronic major depression. *J Clin Psychiatry*. 2001;62(Suppl 6):5–9.
8. Lepine JP. The epidemiology of anxiety disorders: prevalence and societal costs. *J Clin Psychiatry*. 2002;63(Suppl 14):4–8.
9. Simon GE. Social and economic burden of mood disorders. *Biol Psychiatry*. 2003;54:208–215.
10. Spitzer RL, Kroenke K, Linzer M, et al. Health-related quality of life in primary care patients with mental disorders. Results from the PRIME-MD 1000 Study. *JAMA*. 1995;274:1511–1517.
11. Wells KB, Stewart A, Hays RD, et al. The functioning and well-being of depressed patients, results from the Medical Outcomes Study. *JAMA*. 1989;262:914–919.
12. Lecrubier Y. The burden of depression and anxiety in general medicine. *J Clin Psychiatry*. 2001;62(Suppl 8):4–9.
13. Unutzer J, Patrick DL, Simon G, et al. Depressive symptoms and the cost of health services in HMO patients aged 65 years and older. A 4-year prospective study. *JAMA*. 1997;277:1618–1623.
14. Simon GE, Revicki D, Heiligenstein J, et al. Recovery from depression, work productivity, and health care costs among primary care patients. *Gen Hosp Psychiatry*. 2000;22:153–162.
15. Greenberg PE, Kessler RC, Birnbaum HG, et al. The economic burden of depression in the United States: how did it change between 1990 and 2000? *J Clin Psychiatry*. 2003;64:1465–1475.
16. Greenberg PE, Sisitsky T, Kessler RC, et al. The economic burden of anxiety disorders in the 1990s. *J Clin Psychiatry*. 1999;60:427–435.
17. Greenberg PE, Stiglin LE, Finkelstein SN, Berndt ER. The economic burden of depression in 1990. *J Clin Psychiatry*. 1993;54:405–418.
18. Goetzel RZ, Ozminkowski RJ, Sederer LI, Mark TL. The business case for quality mental health services: why employers should care about the mental health and well-being of their employees. *J Occup Environ Med*. 2002;44:320–330.
19. Sullivan MD, LaCroix AZ, Baum C, Grothaus LC, Katon WJ. Functional status in coronary artery disease: a one-year prospective study of the role of anxiety and depression. *Am J Med*. 1997;103:348–356.
20. Sullivan MD, LaCroix AZ, Spertus JA, Hecht J. Five-year prospective study of the effects of anxiety and depression in patients with coronary artery disease. *Am J Cardiol*. 2000;86:1135–118, A6, A9.
21. Allison TG, Williams DE, Miller TD, et al. Medical and economic costs of psychologic distress in patients with coronary artery disease. *Mayo Clin Proc*. 1995;70:734–742.
22. Janssens AC, van Doorn PA, de Boer JB, et al. Anxiety and depression influence the relation between disability status and quality of life in multiple sclerosis. *Mult Scler*. 2003;9:397–403.
23. Lustman PJ, Griffith LS, Clouse RE. Depression in adults with diabetes. *Semin Clin Neuropsychiatry*. 1997;2:15–23.
24. Egede LE. Diabetes, major depression, and functional disability among U.S. adults. *Diabetes Care*. 2004;27:421–428.
25. Frasure-Smith N, Lesperance F, Talajic M. Depression following myocardial infarction. Impact on 6-month survival. *JAMA*. 1993;270:1819–1825.
26. Barefoot JC, Helms MJ, Mark DB, et al. Depression and long-term mortality risk in patients with coronary artery disease. *Am J Cardiol*. 1996;78:613–617.
27. Kaufmann MW, Fitzgibbons JP, Sussman EJ, et al. Relation between myocardial infarction, depression, hostility, and death. *Am Heart J*. 1999;138:549–554.
28. Jiang W, Babyak M, Krantz DS, et al. Mental stress–induced myocardial ischemia and cardiac events. *JAMA*. 1996;275:1651–1656.
29. Lesperance F, Frasure-Smith N, Talajic M, Bourassa MG. Five-year risk of cardiac mortality in relation to initial severity and one-year changes in depression symptoms after myocardial infarction. *Circulation*. 2002;105:1049–1053.
30. Penninx BW, Beekman AT, Honig A, et al. Depression and cardiac mortality: results from a community-based longitudinal study. *Arch Gen Psychiatry*. 2001;58:221–227.
31. Cramer JA, Blum D, Reed M, Fanning K. The influence of comorbid depression on seizure severity. *Epilepsia*. 2003;44:1578–1584.
32. Rumsfeld JS, Magid DJ, Plomondon ME, et al. History of depression, angina, and quality of life after acute coronary syndromes. *Am Heart J*. 2003;145:493–499.
33. Stewart WF, Ricci JA, Chee E, Morganstein D. Lost productive work time costs from health conditions in the United States: results from the American Productivity Audit. *J Occup Environ Med*. 2003;45:1234–1246.
34. Katon WJ. Clinical and health services relationships between major depression, depressive symptoms, and general med-

ical illness. *Biol Psychiatry*. 2003;54: 216–226.
35. Druss BG, Rosenheck RA. Patterns of health care costs associated with depression and substance abuse in a national sample. *Psychiatr Serv*. 1999;50:214–218.
36. Katon W, Von KM, Lin E, et al. Distressed high utilizers of medical care. DSM-III-R diagnoses and treatment needs. *Gen Hosp Psychiatry*. 1990;12: 355–362.
37. Ford JD, Trestman RL, Steinberg K, Tennen H, Allen S. Prospective association of anxiety, depressive, and addictive disorders with high utilization of primary, specialty and emergency medical care. *Soc Sci Med*. 2004;58:2145–2148.
38. Carson AJ, Ringbauer B, MacKenzie L, Warlow C, Sharpe M. Neurological disease, emotional disorder, and disability: they are related: a study of 300 consecutive new referrals to a neurology outpatient department. *J Neurol Neurosurg Psychiatry*. 2000;68:202–206.
39. Luber MP, Hollenberg JP, Williams-Russo P, et al. Diagnosis, treatment, comorbidity, and resource utilization of depressed patients in a general medical practice. *Int J Psychiatry Med*. 2000;30: 1–13.
40. Kroenke K, Mangelsdorff AD. Common symptoms in ambulatory care: incidence, evaluation, therapy, and outcome. *Am J Med*. 1989;86:262–266.
41. Mukerji V, Beitman BD, Alpert MA. Chest pain and angiographically normal coronary arteries. Implications for treatment. *Tex Heart Inst J*. 1993;20:170–179.
42. Katon W. Panic disorder: relationship to high medical utilization, unexplained physical symptoms, and medical costs. *J Clin Psychiatry*. 1996;57(Suppl 10): 11–18.
43. Wu LR, Parkerson GR Jr., Doraiswamy PM. Health perception, pain, and disability as correlates of anxiety and depression symptoms in primary care patients. *J Am Board Fam Pract*. 2002; 15:183–190.
44. Barsky AJ, Delamater BA, Orav JE. Panic disorder patients and their medical care. *Psychosomatics*. 1999;40:50–56.
45. Dewa CS, Rochefort DA, Rogers J, Goering P. Left behind by reform: the case for improving primary care and mental health system services for people with moderate mental illness. *Appl Health Econ Health Policy*. 2003;2: 43–54.
46. Wang PS, Simon G, Kessler RC. The economic burden of depression and the cost-effectiveness of treatment. *Int J Methods Psychiatr Res*. 2003;12: 22–33.
47. Katon W, Hollifield M, Chapman T, Mannuzza S, Ballenger J, Fyer A. Infrequent panic attacks: psychiatric comorbidity, personality characteristics and functional disability. *J Psychiatr Res*. 1995;29:121–131.
48. Muchmore L, Lynch WD, Gardner HH, Williamson T, Burke T. Prevalence of arthritis and associated joint disorders in an employed population and the associated healthcare, sick leave, disability, and workers' compensation benefits cost and productivity loss of employers. *J Occup Environ Med*. 2003;45: 369–378.
49. Kouzis AC, Eaton WW. Psychopathology and the initiation of disability payments. *Psychiatr Serv*. 2000;51: 908–913.
50. Rossi AS. *Caring and Doing gor Others: Social Responsibility in the Domains of Family, Work, and Community.* Chicago, IL: University of Chicago Press; 2001.
51. Kessler RC, Greenberg PE, Mickelson KD, Meneades LM, Wang PS. The effects of chronic medical conditions on work loss and work cutback. *J Occup Environ Med*. 2001;43:218–225.
52. Greenberg PE, Kessler RC, Nells TL, Finkelstein SN, Berndt ER. Depression in the workplace: an economic perspective. In: Feighner JP, Boyer WF, eds. *Selective Serotonin Re-uptake Inhibitors: Advances in Basic Research and Clinical Practice.* New York: Wiley & Sons; 1996:327–363.
53. Kessler RC, Barber C, Birnbaum HG, et al. Depression in the workplace: effects on short-term disability. *Health Aff (Millwood)*. 1999;18:163–171.
54. Marcus SC, Olfson M, Pincus HA, Shear MK, Zarin DA. Self-reported anxiety, general medical conditions, and disability bed days. *Am J Psychiatry*. 1997;154:1766–1768, December.
55. Dewa CS, Hoch JS, Lin E, Paterson M, Goering P. Pattern of antidepressant use and duration of depression-related absence from work. *Br J Psychiatry*. 2003; 183:507–513.
56. Claxton AJ, Chawla AJ, Kennedy S. Absenteeism among employees treated for depression. *J Occup Environ Med*. 1999;41:605–611.
57. Kessler RC, Ormel J, Demler O, Stang PE. Comorbid mental disorders account for the role impairment of commonly occurring chronic physical disorders: results from the National Comorbidity Survey. *J Occup Environ Med*. 2003;45: 1257–1266.
58. Hoge CW, Lesikar SE, Guevara R, et al. Mental disorders among U.S. military personnel in the 1990s: association with high levels of health care utilization and early military attrition. *Am J Psychiatry*. 2002;159:1576–1583.
59. Dewa CS, Lin E. Chronic physical illness, psychiatric disorder and disability in the workplace. *Soc Sci Med*. 2000;51: 41–50.
60. Hemp P. Presenteeism at work—but out of it. *Harvard Bus Rev*. 2004;82:49–58.
61. Lerner D, Adler DA, Chang H, et al. The clinical and occupational correlates of work productivity loss among employed patients with depression. *J Occup Environ Med.* 2004;46(6 Suppl): S46–S55.
62. Brouwer WB, van Exel NJ, Koopmanschap MA, Rutten FF. Productivity costs before and after absence from work: as important as common? *Health Policy*. 2002;61:173–187.
63. Burton WN, Pransky G, Conti DJ, Chen CY, Edington DW. The association of medical conditions and presenteeism. *J Occup Environ Med.* 2004;46(6 Suppl): S38–S45.
64. Druss BG, Marcus SC, Olfson M, Tanielian T, Elinson L, Pincus HA. Comparing the national economic burden of five chronic conditions. *Health Aff (Millwood)*. 2001;20:233–241.
65. Stewart WF, Ricci JA, Chee E, Hahn SR, Morganstein D. Cost of lost productive work time among US workers with depression. *JAMA*. 2003;289:3135–3144.
66. Goetzel RZ, Long SR, Ozminkowski RJ, Hawkins K, Wang S, Lynch W. Health, absence, disability, and presenteeism cost estimates of certain physical and mental health conditions affecting U.S. employers. *J Occup Environ Med*. 2004;46:398–412.
67. Putnam K, McKibbin L. Managing workplace depression: an untapped opportunity for occupational health professionals. *AAOHN J*. 2004;52:122–129.
68. Riotto M. Depression in the workplace: negative effects, perspective on drug costs and benefit solutions. *Benefits Q*. 2001;17:37–48.
69. Marlowe JF. Depression's surprising toll on worker productivity. *Empl Benefits J*. 2002;27:16–21.
70. Hansen MS, Fink P, Frydenberg M, Oxhoj ML. Use of health services, mental illness, and self-rated disability and health in medical inpatients. *Psychosom Med*. 2002;64:668–675.
71. Von Korff M, Katon W, Bush T, et al.

Treatment costs, cost offset, and cost-effectiveness of collaborative management of depression. *Psychosom Med*. 1998;60:143–149.
72. Rosenheck RA, Druss B, Stolar M, Leslie D, Sledge W. Effect of declining mental health service use on employees of a large corporation. *Health Aff (Millwood)*. 1999;18:193–203.
73. Carta MG, Hardoy MC, Kovess V, Dell'Osso L, Carpiniello B. Could health care costs for depression be decreased if the disorder were correctly diagnosed and treated? *Soc Psychiatry Psychiatr Epidemiol*. 2003;38:490–492.
74. Katzelnick DJ, Kobak KA, Greist JH, Jefferson JW, Henk HJ. Effect of primary care treatment of depression on service use by patients with high medical expenditures. *Psychiatr Serv*. 1997; 48:59–64.
75. Carbone LA, Barsky AJ, Orav EJ, et al. Psychiatric symptoms and medical utilization in primary care patients. *Psychosomatics*. 2000;41:512–518.
76. Simon GE, VonKorff M, Piccinelli M, Fullerton C, Ormel J. An international study of the relation between somatic symptoms and depression. *N Engl J Med*. 1999;341:1329–1335.
77. Weiller E, Bisserbe JC, Boyer P, Lepine JP, Lecrubier Y. Social phobia in general health care: an unrecognised undertreated disabling disorder. *Br J Psychiatry*. 1996;168:169–174.
78. Hankin JR, Kessler LG, Goldberg ID, Steinwachs DM, Starfield BH. A longitudinal study of offset in the use of nonpsychiatric services following specialized mental health care. *Med Care*. 1983;21:1099–1110.
79. Zhang M, Rost KM, Fortney JC. Earnings changes for depressed individuals treated by mental health specialists. *Am J Psychiatry*. 1999;156:108–114.
80. Leon AC, Walkup JT, Portera L. Assessment and treatment of depression in disability claimants: a cost-benefit simulation study. *J Nerv Ment Dis*. 2002; 190:3–9.
81. Salvador-Carulla L, Segui J, Fernandez-Cano P, Canet J. Costs and offset effect in panic disorders. *Br J Psychiatry Suppl.* 1995;23–28.
82. Huffman JC, Pollack MH, Stern TA. Panic disorders and chest pain: mechanisms, morbidity, and managment. Primary care companion. *J Clin Psychiatry*. 2002;4:54–62.
83. Conti DJ, Burton WN. The cost of depression in the workplace. *Behav Healthc Tomorrow*. 1995;4:25–27.
84. Simon GE, Barber C, Birnbaum HG, et al. Depression and work productivity: the comparative costs of treatment versus nontreatment. *J Occup Environ Med*. 2001;43:2–9.
85. Kahn JP, Langlieb AM. *Mental Health and Productivity in the Workplace: A Handbook for Organizations and Clinicians.* San Francisco: Jossey-Bass; 2003.
86. Simon GE, VonKorff M, Barlow W. Health care costs of primary care patients with recognized depression. *Arch Gen Psychiatry*. 1995;52:850–856.
87. Simon GE, Von KM, Rutter CM, Peterson DA. Treatment process and outcomes for managed care patients receiving new antidepressant prescriptions from psychiatrists and primary care physicians. *Arch Gen Psychiatry*. 2001;58:395–401.
88. Goldman W, McCulloch J, Cuffel B, Zarin DA, Suarez A, Burns BJ. Outpatient utilization patterns of integrated and split psychotherapy and pharmacotherapy for depression. *Psychiatr Serv*. 1998;49:477–482.
89. Charbonneau A, Rosen AK, Ash AS, et al. Measuring the quality of depression care in a large integrated health system. *Med Care*. 2003;41:669–680.
90. Lerner D, Adler DA, Chang H, et al. Unemployment, job retention, and productivity loss among employees with depression. *Psychiatr Serv*. 2004;55: 1371–1378.
91. Houston TK, Cooper LA, Vu HT, Kahn J, Toser J, Ford DE. Screening the public for depression through the Internet. *Psychiatr Serv*. 2001;52:362–367.
92. Young AS, Klap R, Sherbourne CD, Wells KB. The quality of care for depressive and anxiety disorders in the United States. *Arch Gen Psychiatry*. 2001;58:55–61.
93. Link BG, Phelan JC, Bresnahan M, Stueve A, Pescosolido BA. Public conceptions of mental illness: labels, causes, dangerousness, and social distance. *Am J Public Health*. 1999;89: 1328–1333.
94. Edlund MJ, Young AS, Kung FY, Sherbourne CD, Wells KB. Does satisfaction reflect the technical quality of mental health care? *Health Serv Res*. 2003;38:631–645.
95. Rost K, Smith R, Matthews DB, Guise B. The deliberate misdiagnosis of major depression in primary care. *Arch Fam Med*. 1994;3:333–337.
96. Kahn JP, Aidinoff S. Occupational psychiatry and the Employee Assistance Program. In: Oher J, ed. *The Employee Assistance Handbook.* New York: John Wiley & Sons; 1999.
97. Lin EH, VonKorff M, Russo J, et al. Can depression treatment in primary care reduce disability? A stepped care approach. *Arch Fam Med*. 2000;9: 1052–1058.
98. Dewan M. Are psychiatrists cost-effective? An analysis of integrated versus split treatment. *Am J Psychiatry*. 1999;156:324–326.
99. Von Korff M, Katon W, Rutter C, et al. Effect on disability outcomes of a depression relapse prevention program. *Psychosom Med*. 2003;65:938–943.
100. Thase R. Conceptual and theoretical basis for integrating psychotherapy and pharmacotherapy. In: Beitman BD, Blinder B, Thase M, Riba M, Safer D, eds. *Integrating Psychotherapy and Pharmacotherapy: Dissolving the Mind–Brain Barrier.* New York: Norton; 2003:111–139.
101. Riba M, Balon R. The challenges of split treatment. In: Beitman BD, Blinder B, Thase M, Riba M, Safer D, eds. *Integrating Psychotherapy and Pharmacotherapy: Dissolving the Mind-Brain Barrier.* New York: Norton; 2003:141–160.
102. Goldman W, McCulloch J, Cuffel B. A four-year study of enhancing outpatient psychotherapy in managed care. *Psychiatr Serv*. 2003;54:41–49.
103. Schoenbaum M, Kelleher K, Lave JR, Green S, Keyser D, Pincus H. Exploratory evidence on the market for effective depression care in Pittsburgh. *Psychiatr Serv*. 2004;55:392–395.