# The Clinical and Financial Burden of Mood Disorders Cost and Outcome

Richard C. W. Hall, M.D.
Medical Director, Psychiatric Programs
Florida Hospital
Center for Psychiatry Clinical Professor of Psychiatry University of Florida, Gainesville

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One-third of Americans suffer from some form of mental or addictive disorder, yet most mentally ill Americans receive no active treatment.(1) These mental and addictive disorders cost our society 273.3 billion dollars in 1985. Of this, 43.7 billion dollars accrued from lost earnings due to premature death. Treatment related costs of mental illness totalled 65.6 billion, while the costs incurred by other social agencies, such as law enforcement, courts, fire departments, shelters etc., for the care of the mentally ill, represented an additional 65.6 billion.

The costs to society for lost or reduced productivity totalled another 98.4 billion dollars.(2) Mood disorders in aggregate were the most expensive mental illness. In 1992, most psychiatric hospital admissions were due to depression, with affective disordered patients representing 45% of all admissions to private psychiatric hospitals.(3)

In spite of enormous costs, government data suggests that current treatment is both humane and effective. A recent study by the National Institute of Mental Health showed psychiatric treatment for affective disorders to be highly efficacious. Six month treatment success rates for bipolar disorder reached 80% while six month remission rates for major depression reached 65%.(4)

If we can treat these conditions so effectively, why are our health care costs for the treatment of mood disorders so high and what can we learn from current research about how we can improve outcome and reduce costs? The remainder of this article will attempt to address these topics.

**WHO DEVELOPS AFFECTIVE DISORDER?**

As Klerman and Weissman(5) point out, depression is a chronic disorder that is recurrent in nature; impairing the patient, his family and his employer. Data from the epidemiologic catchment area survey suggests that in 1990, 11 million Americans were clinically depressed. Of these, 7.8 million were women and 3.2 million were men. Five million patients suffered from a major depression, while 1.8 million developed a bipolar disorder, and 4.1 million experienced dysthymia.(6)

**WHY ARE COSTS SO HIGH? - MISDIAGNOSIS AND DELAYED OR INADEQUATE TREATMENT**

Depressive disorders, when they occur are under diagnosed and under treated. Wells et al(7) have shown that the inadequate diagnosis and treatment of depression are responsible for most of the costs of these disorders. Fifty to 60% of patients who present with significant depression are inaccurately diagnosed.(8) Recent data suggests that only one in three people with a significant depression seeks specific treatment for their condition.(9) Most don't define themselves as depressed when they see a health care provider. This is in part because they feel hopeless, are unwilling to accept a diagnosis of depressive disorder, and are fearful of stigmatization and the loss of their job. Many physicians are also reluctant to diagnose patients as depressed.(10) Eisenberg(11) in a recent review correctly noted that depression is frequently unrecognized by primary care

physicians who most often focus their diagnosis and treatment efforts on the patient's accompanying physical symptoms; most commonly fatigue, weight loss, headache, GI disorders, pains and sleep disorders - rather than on the depression which causes them. Reiger(9) noted that of the 2/3 of depressed patients who did not specifically refer themselves for depression, 80% were seen for other physical complaints, and of these patients, only one in eight was correctly diagnosed by their primary care provider as suffering from a depressive illness. Significant depression often remained undiagnosed for years.(12)

Wells and colleagues have shown that depressed medically ill patients have significantly more bodily pain and functional impairment than do chronic suffers of medical conditions who have no depressive symptoms. They note that depression is as physically and mentally disabling as the most severe chronic medical disorders. Only advanced coronary artery disease produced more bed disability days than depression, while only arthritis caused more chronic pain. Depression is more disabling than diabetes, hypertension, arthritis, gastrointestinal or back disorders in terms of reducing a patient's level of physical functioning and interfering with their ability to work, to care for home and family and to function socially.(13)

The economic burden of depression has increased disproportionately in the United States during the last 15 years. Stoudemire's(14) excellent study of the economic impact of the 1980 Epidemiological Mental Health data was the first systematic analysis of the cost of major depressive illness. In terms of 1980 dollars, Stoudemire showed that the annual direct cost of treating depression was two billion dollars with an annual mortality cost of four billion dollars and amorbidity cost due to lost productivity of 10 billion dollars. Depression thus cost our society a total of 16 billion dollars in 1980.(14) By 1990, Greenberg et al(15) estimated the cost of depression to be 44 billion dollars, with the direct costs of medical, psychiatric and pharmacological care approaching 12.4 billion dollars, close to the total amount depression cost our society in 1980. The mortality costs of depression by 1990 had grown to 7.5 billion dollars while morbidity costs reached 23.8 billion.(15) Noteworthy in Greenberg's review of the literature was the relatively low cost of antidepressant medications at 890 million dollars and the low total cost for all pharmacological treatment for affective disorders which he estimated at one billion one hundred and seventy five million dollars. Greenberg's analysis considered the cost for all types of mood disorders including major depression, bipolar disorder and dysthymia. His study did not include the comorbid effects that depression had on medical illness or its effect on extending med/surg hospital days. Neither did he take into account such factors as the diminution in the quality of a patient's life or the out of pocket costs incurred by the families of depressed patients to pay for services such as child care.

Saravay and Lavin(16) in a review of 26 outcome studies which evaluated the effects of psychiatric comorbidity on length of hospital stay concluded that depression was one of three significant variables that contributed to prolonged hospital stays and to a greater utilization of hospitals and other health resources post discharge. Verbosky and colleagues(17) in a retrospective study of mean length of hospital stay for patients with a secondary diagnosis of depression who were treated with antidepressants vs those who

were not so treated showed that the non-antidepressant treated group had an average length of stay of 45.6 days as compared to a length of stay of 13.8 days for those patients treated with antidepressants and 10 days for non-depressed controls with similar medical conditions. Thus, patients whose depression was recognized early and appropriately treated during a hospitalization spent 31.8 fewer days in hospital. Based on the 1988 Medicare rate average of $800 a day, early treatment of depression could provide an expected savings of over $25,000 per admission. Broadhead et al(18) showed that during a one year follow up period, depressed patients accumulated five times more disability days than did non-depressed patients. Wells et al(12) showed that depressed patients spent more days in bed than patients with other chronic illnesses including arthritis, back pain, diabetes and hypertension.

Several investigators(17,19-22) have shown that depression increases medical utilization for a variety of somatic complaints, the most common being weakness, lethargy, headaches, backaches, insomnia and gastrointestinal disorders. These complaints often produce unnecessary: hospitalizations, physician visits, diagnostic tests, and prescriptions for analgesics, anxiolytics, sedatives and gastrointestinal medications. These studies also show that patients with undiagnosed and untreated affective disorders use HMO physical health services three times more than non-depressed health plan enrollees. They use emergency services three to four times as often and call about health problems and for medication changes four to five times more often than non-depressed enrollees. Thus untreated or inadequately treated depressed patients increase non-psychiatric health care costs. It is most often the chronically depressed patient, not the chronically medically ill patient, who has the thickest HMO chart.

**SUICIDE**

In 1990, 15,000 men and 3,400 women who were diagnosed with an affective disorder committed suicide. It is estimated that the number of deaths by suicide, not so reported, is 10 times higher than that reported suggesting that as many as 184,000 depressed patients committed suicide in the United States in that year. Several studies have suggested that between 40 to 70% of all suicide victims suffer from a major depressive disorder.(23) It is estimated that total lifetime earnings lost to the U.S. economy due to suicide in 1990 represented 7.5 billion dollars.

**DEPRESSION IN THE WORKPLACE**

7.8 Million of the 11 million Americans who suffer from depression are found in the work force.(24) In 1990, 200 million days were lost from productive work due to depression. Of these, 70% were lost by women. Reduced productivity and days lost to work cost employers 11.7 billion dollars in 1990.(15) In addition, patients who experience clinical depression have an average reduction in total earnings of 25%.(25) Recent EAP studies have shown that during any calendaryear, 13% of employees will experience a clinically significant depression which necessitates time off work.

The effects of depression on workers include a devastating loss of self esteem and confidence and an inability to make decisions which often leads to unsatisfactory

performance evaluations that may result in either dismissal and/or adversarial relations between employer and employee.

Depressed patients experience costly declines in productivity, an increased accident rate both on and off the job, and an increased rate of disability claims. Job loss may precipitate suicide or homicide.

**TREATMENT IMPLICATIONS**

Managed care has altered the way one conceptualizes treating mental illness. Increasingly, there is pressure to refer patients with psychiatric disorders to the lowest level of provider who can address their needs and to treat them in the least restrictive, most cost sensitive environment. Multiple barriers, which often make no clinical sense, have been created to limit access to psychiatrists and psychiatric inpatient care. For example, the State of Florida PRO criteria for hospital admission for a patient with major affective disorder requires that a patient have a specific suicide plan. If a patient presents with a serious depression with vegetative symptoms, intermittent panic attacks, suicidal ideation, a history of past suicide attempts and a concurrent medical illness about which he/she is ruminating, that patients' admission would in all likelihood be disallowed by the PRO because the patient wasn't sure exactly how and when they would commit suicide! If the patient were admitted and had not shown a dramatic improvement within 14 days, the PRO might deny any further payment and suggest that the patient be discharged from the hospital as a "failure to respond." The uncoupling of admission and discharge criteria from scientific data in an attempt to constrain cost, places patients and clinicians at significant risk. Several recent studies have shed considerable new light on how we might appropriately approach depressive illness and still constrain cost.

Keller et al(26) in a five year, five university, prospective follow up study of 431 depressed patients showed that these patients had a high rate of chronicity, with 12% not recovering by the end of five years. Most of the patients who did recover did so in the first six months of the study. These investigators showed that the severity of the patient's initial symptoms predicted recovery, with less impaired patients recovering sooner. They also noted that many of the patients who did not recover continued in a state of chronic dysthymia. They also suggested that dysthymia is a significant predictor for recurrence of major depression.

Fawcett(27) has shown that patients with major affective disorder and concurrent panic attacks are at high risk for suicide. These patients must have access to their physicians and cannot be locked out of stabilizing hospital treatment by arbitrary admission criteria.

Kupfer et al(28) in reviewing the NIMH depression study commented on the chronic course of major depressive illnesses and noted that these conditions hadboth a high relapse and a high recurrence rate. They felt that the 16 week treatment paradigm for treatment of acute major depression is insufficient to maintain long term recovery and suggested that these patients required skillful, long term, ongoing follow up and active pharmacological treatment. They showed that the average time from the onset of a major

depression to recovery was between 25 to 37 weeks, not the two to 14 weeks defined by many PRO and managed care protocols.(29)

**TREATMENT REDUCES COST**

Baldessarini(30) has shown that successful treatment of affective disorders significantly reduces the cost of these conditions. He documents that adequate antidepressive treatment is effective in at least 65 to 80% of patients and that the return of these patients to normal functioning saves the considerable costs associated with untreated depression. The early and proper diagnosis and treatment of depression produces considerable savings to the health care delivery system by reducing unnecessary physician's visits, diagnostic tests, prescriptions, psychiatric hospitalization and extended medical/surgical hospitalizations.

**EARLY DIAGNOSIS AND TREATMENT REDUCES MORBIDITY**

Kupfer et al(28) studied a group of 45 patients with recurrent major depression who were treated with combined pharmacotherapy and psychotherapy in a similar fashion for two consecutive episodes. These patients showed a comparable mean time to initial stabilization of between 11 to 12 weeks with the episode continuing for seven to eight months. Early intervention at the onset offirst symptoms during the second episode significantly shortened the overall length of the depressive episode by approximately four to five months. These investigators clearly demonstrated that early aggressive treatment can alter the natural course of a particular episode of major depression. With early intervention, they were able to stabilize patients in between three to three and one half months as compared to eight to 10 months once a patient's depression had become established.

Keller(26) showed that 50% of depressed patients recovered in less than 12 weeks with adequate treatment. Eighty five percent of the patients who recovered by 12 months after entry into treatment did so in the first four months.

Kupfer(29) showed a total cumulative recovery for patients with major depression at four months of 63%. He also demonstrated that immediate treatment at the time of first symptom recurrence significantly shortened the overall length of the second depressive episode by an average of 16 weeks.

The implications of this work are profound, suggesting that physicians need to follow their patients closely and at the first sign of relapse again begin an aggressive treatment regimen. Depressed patients need to have immediate and open access to their treating physicians without having to go through intermediary gate keepers or councilors. Early intervention shortens recurrent bouts of major depression by four to five months and significantly reduces both cost and human suffering. Isacsson, et al(31) studied 283 patients who committed suicide. Of that number they were able to obtain blood for toxicology in 247 cases (87%). Only 8% of the total sample (19 patients) had antidepressants in their blood. Only 12% of suicide victims diagnosed as suffering from major or atypical depression had antidepressants identified in their blood. Lethal blood levels of antidepressants were found in 4% of all the suicide victims. In most of these incidences, multiple other substances were also present. Most patients who suicided by

multiple drug overdose were diagnosed as having comorbid depression and substance abuse. More than 50% of the patients who committed suicide were seen by a physician within 90 days prior to the time of their suicide and had clear symptoms of major affective disorder. Of these, only half received any treatment with antidepressants. Of the patients who were treated with antidepressants at the point of their last contact, only one-third had antidepressants in their blood at the time of their suicide.

This study suggests that when a diagnosis of major depression is made, that patients should be treated more aggressively with antidepressants rather than having these medications withheld for fear of suicide. It demonstrates that immediate intervention, frequent appointments and careful blood level monitoring are essential and that patients should continue in intensive therapy until their depression has stabilized.

Frank et al(32) in a three year study found that patients who had serious recurrent depression required long term maintenance treatment. These patients did best when prescribed medications in higher than usual maintenance dosages. They benefited most from medication treatment and a lower than expected number of interpersonal psychotherapy visits. Optimal improvement occurred when patients were treated with 200mg/day of imipramine and were seen once monthly by their treating psychiatrist. All of the above studies force reconsideration of:

(1) our current practice of decreasing medication dosage over the long term for seriously depressed patients, particularly those who have a history of recurrence or relapse;

(2) reliance on time limited follow up and brief non-medical psychotherapy for these patients and

(3) reliance on gate keepers who restrict access to the patient's psychiatrist for medical and psychotherapeutic management of these chronically depressed patients.

**CONCLUSION**

Depression is a major national public health concern costing our society more than 44 billion dollars a year. It represents one of America's 10 most costly diseases. Major affective disorder must be regarded as an episodic, recurring, relapsing chronic disease that requires access to a physician for ongoing psychotherapy and medication maintenance. Recent studies have shown that treatment is cost efficient, humane and highly effective when planned for the long term. Short term treatment strategies which restrict access to physicians andprovide low level, short duration (i.e., six months or less) pharmacologic maintenance are not our most effective treatment strategies. Brief treatment strategies directed only at acute episodes are insufficient and often ineffective,

resulting in chronic impairment, decreased work and social performance, increased costs, lost productivity and increased human suffering. Adequate early treatment has been shown to save lives, reduce suffering, enhance work performance and reduce the long term sequelae of these illnesses. Brief, repetitive interventions in the mildly ill are effective in preventing progression to severe incapacitation and alter the duration and severity of the patients' symptoms.

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