The Treatment of Depression with Co-Morbid Alcohol and/or Drug Disorders

A white paper on screening, diagnosis, and treatment of co-occurring major depressive disorder and substance use disorders with public policy recommendations

Michael D. Campos, Ph.D.
UCLA Integrated Substance Abuse Programs
1640 S. Sepulveda Blvd., Suite 200
Los Angeles, CA 90025
Phone: 310.825.6427
Fax: 310.825.0301
E-mail: camposm@ucla.edu

I. Introduction

The prevalence of major depressive disorder (MDD) in the general population is the highest of any mental disorder. Data on disease burden from the World Health Organization (Üstün, Ayuso-Mateos, Chatterji, Mathers & Murray, 2004) place depression as the fourth leading cause of disease burden in the world. In the United States, depression is the 10th leading cause of disability among men and 2nd leading cause of disability among women (McKenna, Michaud, Murray & Marks, 2005). A 2003 estimate of the cost of lost productive work time among United States workers with major depressive disorder (MDD) was 44 billion per year, which did not include labor costs associated with long- or short-term disability (Stewart, Ricci, Chee, Hahn & Morganstein, 2003). Thus, major depression is a significant public health and economic concern.

A number of studies have been conducted to assess the prevalence and comorbidities of both major depressive disorder (MDD) and substance use disorders (SUD) (e.g., Epidemiologic Catchement Area [ECA], Regeir, Farmer, Roe, Locke, Keith, Judd, et al., 1990; National Longitudinal Alcohol Epidemiologic Survey [NLAES], Grant & Harford, 1995; National Comorbidity Survey [NCS], Kessler, McGonagle, Zhao, et al., 1994). Some of the earlier studies (e.g., ECA, NCS) on the epidemiology of MDD have been criticized on methodological grounds; however, a fairly recent study, the National Comorbidity Survey – Replication (NCS-R; Kessler, Berglund, Demler, et al., 2003), cited in this brief review of the epidemiology of MDD added methodological refinements to control for criticisms directed at earlier studies including confirmation of MDD diagnoses made by lay-interviewers using structured clinical interviews. Other key data presented in this review of epidemiology come from the National Epidemiologic Survey on Alcohol and

Related Conditions (NESARC; Grant, Stinson, Dawson, Chou, et al., 2004). These data provide detailed information on the co-occurrence of MDD and SUD in the general population, and among treatment seeking individuals.

Data from the NCS-R (Kessler, Berglund, Demler, et al., 2003) indicate that the lifetime prevalence of MDD among United States adults is 16.2% (±1.1%) and past year prevalence is 6.6% (±0.7%). Of the 12-month cases identified, 10.4% were mild, 38.6% were moderate, 38% were severe, and 12.9% were very severe. Mean episode duration was 16 weeks and over half of all individuals reporting 12-month MDD reported seeking treatment, but treatment was adequate in only 21.7% (±3.6%) of cases. Kessler and colleagues (2003) also examine comorbidity of other Axis I disorders, including SUDs, and found that approximately one quarter of individuals with lifetime MDD also met criteria for a lifetime SUD, over one quarter of individuals with 12-month MDD also met criteria for lifetime SUD, and 8.5% of 12-month cases of MDD were concurrent with 12-month SUD. Relative to other comorbid conditions, MDD more frequently occurred prior to the onset of a SUD; however, more than half of MDDs occurred after the onset of a SUD.

Grant and colleagues (Grant et al., 2004) examined data from the NESARC data set and found a 12-month prevalence rate of MDD (excluding substance induced depression) of 7.06%. Approximately 15% of respondents meeting criteria for SUD in the past 12 months also met criteria for MDD, as compared to a prevalence rate of 6.3% for MDD among those not meeting criteria for a SUD in the past 12 months. Further, Grant and colleagues found that a diagnosis of MDD increased the odds of any substance use disorder 2.5 times relative to no diagnosis of MDD. In general, MDD was associated with more severe substance disorders as the odds ratios were higher for substance dependence diagnoses than they were for substance abuse disorders. Specifically, MDD increased the

odds of an alcohol abuse diagnosis 1.2 times, but MDD increased the odds of alcohol dependence 3.7 times. Similarly, MDD increased the odds for any drug abuse diagnosis 2.5 times and 9.0 times for any drug dependence disorder. Among those seeking treatment with a diagnosis of an alcohol disorder, approximately 1/3 (32.75%) had a diagnosis of MDD. Among those seeking treatment with a diagnosis of any drug disorder, approximately 44% had a diagnosis of MDD. Among individuals with a MDD diagnosis seeking treatment, 16.8% had a co-occurring alcohol use disorder and 7.54% had a co-occurring drug use disorder.

With regards to demographics, relative to those with only MDD, those with MDD and SUD are more likely to be male: in one study cited in Davis et al (2008) 40% of males and 23.2% of females with MDD reported co-occurring SUD. Other demographic characteristics associated with co-occurring MDD and SUD included being younger, divorced or never married, and not of Hispanic origin, and being more functionally impaired. No differences with regards to treatment setting, race, employment status, or years of education were found in this study.

Research into the genetic influences in alcohol dependence, as summarized in Mayfield et al. (2008), has indicated that there are strong association between genes and alcohol disorders. These authors note that "First, there is a fourfold enhanced alcohol dependence risk in relatives of alcoholics; second, identical twins of alcohol dependent subjects carry a higher risk for this disorder than do fraternal twins or full siblings; and third, the adopted children of alcoholics have the same fourfold enhanced risk for this disorder as do offspring raised by their alcohol-dependent parent (Mayfield et al., 2008, pp. 275-276). Estimates of the heritability of alcohol dependence derived from family and twin studies suggest that somewhere between 40% and 60% of the risk for this disorder is attributable to genes (Prescott & Kendler, 1999; Schuckit et al., 2001).

Some data indicate that there may be shared genetic risk for both MDD and SUD. In the Sequenced Treatment Alternatives to Relieve Depression (STAR*D; Davis, Rush, Wisniewski, et al., 2005) study, nearly half (46%) of individuals with depression had a positive family history for alcohol use disorders. Rather than one single gene influencing the development of MDD or SUD, it is more likely that the interplay of many genes results in risk for MDD and/or SUD.

However large the contribution of genetic factors to the risk for alcohol dependence, it is important to note that there remains a significant portion of risk attributable to environmental factors. MDD and SUD are biopsychosocial disorders that are a function of both genetic contributions and environmental factors. The general diathesis stress models should be kept in mind when conceptualizing MDD and SUD. That is, genetic contributions to the disorder may result in increased risk for a disorder; however, environmental stressors may be necessary for the disorder(s) to manifest themselves in an individual. In some cases a preponderance of environmental factors may result in the development of either MDD or SUD disorders in an individual with a relatively lower genetic loading for the disorders, or high genetic loading for a disorder may result in the development of MDD or SUD with relatively fewer environmental factors than might be seen in other cases.

In summary, epidemiologic data indicate that MDD impacts a significant minority of individuals in the United States general population. Further, having a MDD is associated with increased risk for SUDs, in particular substance dependence. These data also indicate that among individuals seeking treatment the rates of co-occurring SUD and MDD depression are notably higher than among the general public. Those at highest risk for co-occurring MDD and SUD are likely male, younger, unmarried, and White. Genetic factors may result in

higher risk for MDD and SUD; however, environmental factors play an interactive role with genotypes, resulting in the manifestation of MDD and SUD.

II. Screening, Assessment, and Diagnosis

Screening can be the first step in identifying MDD and SUD and referring to appropriate treatment services. Screening instruments for MDD and SUD do not produce diagnoses, rather they suggest the need for more formal assessment of mood symptoms and substance use problems to determine if the indicators of potential problems identified through screening are part of clinical syndromes. Screening efforts may help to identify individuals for referral for treatment by mental health specialists. Le & Boyd (2006) suggest that adolescents who have high depressive symptoms or a previous history of depression, are the offspring of depressed parents, have a history of being maltreated, and have been exposed to parental conflict should be screened for MDD. Adult risk factors include low socioeconomic status, being unmarried, female gender, and living in poverty. Primary care settings are one location in which screening for MDD and SUD may be accomplished; however, it is unclear if such screening beneficial impacts the treatment of MDD in primary care settings (Gilbody, House & Sheldon, 2001; Gilbody, Whitty, Grimshaw & Thomas, 2003). In addition to adolescents and adults in primary care settings with risk factors, certain other high risk groups should be screened for MDD and SUD such as older adults, women who are pregnant or who have just given birth, criminal justice involved individuals. Because of the high rate of comorbidity for MDD and SUD, individuals meeting criteria for either disorder should be screened for the presence of the other disorder. A number of good screening instruments are available for the screening of both MDD and SUD. For a review of screening measures for MDD see Coyne,

Thompson, Palmer, Kagee & Maunsell et al (2000). Newman (2008) suggests the use of the Alcohol Use Disorders Test (AUDIT; Saunders, Aasland, Babor, De La Fuente & Grant, 1993) or the Dartmouth Assessment of Lifestyle Instrument (DALI; Rosenberg, Drake, Wolford, Mueser, Oxman, Vidaver, et al., 1998) for screening and assessment of SUD with co-occurring MDD.

DSM-IV-TR Criteria for Major Depressive Disorder

A. Five (or more) of the following symptoms present during the same 2-week period representing a significant change from previous functioning with at least one of the symptoms being either (1) depressed mood or (2) loss of interest or pleasure.

(1) depressed mood most of the day nearly every day
(2) markedly diminished interest or pleasure in all, or most all, activities for most of the day nearly every day
(3) significant weight loss when not dieting or weight gain of more than 5% of body weight in a month, or decreased appetite
(4) insomnia or hypersomnia nearly every day
(5) psychomotor retardation or agitation nearly every day
(6) fatigue or loss of energy nearly every day
(7) feelings of worthlessness or excessive or inappropriate guilt
(8) diminished ability to think or concentrate, or indecisiveness, nearly every day
(9) recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

B. The symptoms do not meet criteria for a mixed episode.
C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
D. The symptoms are not due to the direct physiological effects of a substance or a general medical condition.
E. The symptoms are not better accounted for by bereavement.

Individuals presenting for treatment or screening positive for MDD or SUD should be carefully assessed and this assessment should include detailed psychosocial history including the temporal sequencing of MDD and SUD, risk for suicidality, medical problems, and the functional analysis of substance use. Instruments such as the SCID-IV (First, Spitzer, Gibbon & Williams, 1996) can aid in obtaining diagnoses and provide detailed information on substance use history. The advantage to such structured clinical interviews is that they ensure the consistency of assessment, apply rule outs and differential diagnosis for disorders, can establish the temporal relationship between SUD and MDD, and ensure the comprehensiveness of assessment. More thorough assessment of

suicidal ideation/intent is necessary should these items be endorsed in the SCID and clinical judgement and actuarial measures should be employed to determine the overall risk for suicide in individuals with MDD and SUD.

Diagnosis of SUD and MDD are facilitated by the criteria outlined in the DSM-IV-TR. Presented in Table 1 are the criteria for a major depressive episode as defined by the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision (DSM-IV-TR; APA, 2000). As evident in the DSM-IV-TR criteria, depressive episodes are characterized by a cluster of emotional, cognitive, and somatic symptoms. Individuals experiencing a depressive episode meet at least 5 of symptoms listed under Criteria A, with the requirement that one of the five symptoms reported must be depressed mood or loss of interest or pleasure in most or all activities. In addition, the cluster of 5 symptoms must all be concurrent and have been present for at least 2 weeks. One should note that the criteria presented in Table 1 are for a depressive episode, rather than for major depressive disorder. This is because defining the occurrence of a major depressive episode is the first stage in a differential diagnosis of the mood disorders. Other disorders which must be ruled out include the bipolar spectrum disorders (bipolar I & II) and schizophrenia spectrum disorders.

DSM-IV-TR criteria for substance dependence involve physiological, cognitive, behavioral, and interpersonal symptoms (see Table 2). Physiological symptoms may include tolerance or withdrawal. The presence of tolerance or withdrawal symptoms indicated physiological dependence and care should be taken when treating individuals with evidence of tolerance or withdrawal in that some substances require medical management of detoxification to avoid serious consequences which may include death (e.g., in the case of severe alcohol dependence).

DSM-IV-TR Criteria for Substance Dependence

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

(1) Tolerance, as defined by either of the following:
a. a need for markedly increased amounts of the substance to achieve intoxication or desired effect.
b. markedly diminished effect with continued use of the same amount of substance.

(2) Withdrawal, as manifested by either of the following:
a. the characteristic withdrawal syndrome for the substance.
b. the same or related substance is taken to relieve or avoid withdrawal symptoms.

(3) The substance is often taken in larger amounts or over a longer period than was intended.

(4) Persistent desire or unsuccessful attempts to cut down or control substance use.

(5) A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.

(6) Important social, occupational, or recreational activities are given up or reduced because of substance use.

(7) The substance use is continued despite knowledge of having persistent or recurrent physical or psychological problems caused or exacerbated by the substance.

III. Depression and Substance Abuse

Davis et al. (2008) presents information on the nature of symptoms seen in MDD with co-occurring SUD. Relative to those with only MDD, those with MDD and SUD had an earlier age of onset of depression, greater depressive symptomatology, more frequent concurrent anxiety disorders and greater functional impairment. Co-morbid patients were more likely to endorse OCD symptoms, panic disorder, social phobia, and PTSD. Those with MDD and SUD

had greater mood variation and negative self-outlook than those without SUD. Also the SUD group reported more hypersomnia, anxious mood, and suicidal ideation than the MDD alone group. Co-occurring mental illness and substance abuse may increase the risk for violence. Individuals with co-occurring MDD and SUD were at higher risk for suicide had less education, an earlier age of onset of MDD, greater length of illness, and more depressive episodes. Further, MDD and SUD is associated with increased risk of suicide and greater psychiatric comorbidity.

MDD impacts the treatment of substance use disorders. For example, data on the impact of depression, as measured using the Beck Depression Inventory (BDI) on in-treatment alcohol use from the active treatment phase of Project MATCH (the first three months) suggest that depression at treatment entry is associated with both drinks per drinking day (DDD), and percent days abstinent (PDA) during month 1 of treatment, but not during months 2 and 3; further, month 2 DDD and PDA were associated with BDI depression score at month 3 (Conner, Sorensen, & Leonard, 2005). In short, depression is associated with heavier drinking early in treatment and heavier drinking earlier in treatment is associated with later in-treatment depression.

Compton, Cottler, & Jacobs et al. (2003), using a primarily cocaine dependent sample derived from the Substance Use and Risk of AIDS Study that targeted individuals entering drug treatment in St. Louis who were at high risk for HIV, examined the impact of lifetime MDD on drug treatment outcomes at 1-year follow-up among 425 individuals with dependence on at least one substance at intake. Outcomes assessed (derived using the National Institute of Mental Health Diagnostic Interview Schedule, version III-R) included the number of illicit drugs used, the number of drug dependence criteria met, and the number of drug dependence diagnoses. Findings indicated significantly higher substance

use rates for individuals with MDD relative to individuals without MDD. Specifically, at 1-year follow-up, the mean number of substances used was 2.0, the mean number of substances dependence criteria met for any substance was 4.2, and the mean number of substance dependence diagnoses was 0.9. This compares to respective rates of 1.4, 3.1, and 0.6 for individuals without a co-occurring diagnosis of MDD. In multivariate analyses conducted separately for men and women that controlled for age and race, co-morbid MDD was a significant predictor of number of illicit drugs used among men but not among women, was a significant predictor of the number of drug dependence diagnoses among men but not among women. Among treatment seeking individuals with a lifetime history of MDD, substance disorders may be more severe as characterized by higher incidence of poly-substance use, more dependence symptoms, and more poly-substance dependence relative to individuals entering drug treatment without a history of MDD (Castel, Rush, Urbanoski & Toneatto, 2006).

IIII. Treatment

Treatment planning for MDD and SUD begins with quality assessment. From the assessment data one can formulate a plan for addressing both the mood disorder and the substance disorder simultaneously as this has been shown to be a promising approach to the treatment of co-occurring MDD and SUD (Hesse, 2009). Treatment planning should include interventions to address both substance use (e.g., relapse prevention) and mood symptoms, and should detail the interplay between mood states and substance use. Behavioral and pharmacological interventions can be effective in treating the complex of symptoms in comorbid MDD and SUD.

Carroll (2004) reviews the evidence for behavioral interventions for co-occurring substance use and mood disorders. She notes that the evidence supports three types of behavioral therapies: motivational interviewing (MI; Miller, 2000; Miller & Rollnick, 1991); cognitive behavioral therapy (CBT; Carroll, 1996); and contingency management (CM; Higgins & Silverman, 1999).

MI is based in the trans-theoretical model of change (Prochaska, DiClemente & Norcross, 1992) which holds that individuals progress through 5 stages during the process of changing behavior. The first stage is precontemplation. At this point an individual is unaware of a problem and any need to change. The second stage is contemplation. During this stage an individual is beginning to see the potential need for change, but may be characterized by ambivalence towards change. The third stage is determination. In the determination stage the individual has recognized the need for change and has begun preparations for action towards change. The fourth stage is the action stage. In the action stage, the individual takes active steps towards behavior change, employing new behavioral strategies and accessing resources to help change. The fifth stage is the maintenance stage. This stage involves working to sustain behavior change that has been achieved. One should note that individuals may move in and out of these stages in no particular order and may revert to prior stages after initial behavior change. MI seeks to work to move clients along the stages of change by impacting motivation for change. Thus, MI views motivation for change as a malleable construct and not a stable trait. Key techniques in MI include using open ended questions, affirming client statements, reflecting client statements, and summarizing. The goal of these techniques is to elicit change statements from the client and to increase intrinsic motivation for change by working with change-related ambivalence.

CBT interventions can be targeted at substance behavior, at MDD or both. CBT interventions for SUDs target internal and external triggers for substance use, provide cognitive and behavioral techniques for dealing with high-substance-use-risk situations involving triggers, and encourage planning in advance for high-risk situations. Thus, the goal of CBT interventions for substance use is to interrupt the chain of automatic behaviors resulting in substance use, thereby reducing substance use. CBT interventions for MDD are based in the cognitive model of depression and seek to reduce or modify automatic, distorted or maladaptive thoughts that are believed to be at the heart of depression. Carroll (2004) notes at least 9 studies supporting the effectiveness of CBT for affective disorders and at least two studies indicate that CBT is effective among individuals with SUD who are also clinically depressed (Carroll, Rounsaville, Nich, Gordon, Wirtz & Gawin, 1994; Maude-Griffin, Hohenstein, Humfleet, Reilly, Tusel & Hall, 1998).

Newman (2008, pp. 239) cites four general client-related considerations in adapting CBT to the treatment of co-occurring MDD and SUD: (1) aversion to admitting, discussing, or otherwise ameliorating the substance abuse problems, (2) markedly reduced ability to utilize the psychological skills learned in session when he/she is chemically impaired outside the session, (3) maladaptive belief that alcohol and other drugs are effective and necessary palliatives for his/her depression, and (4) misuse of 12-step principles to counteract some the tenets of CBT. Therapists must be aware of these and other considerations when planning CBT-based interventions for co-occurring MDD and SUD. Clients who are averse to addressing substance-related problems may terminate therapy early. Clients who may show the ability to understand and employ cognitive and behavioral skills taught in CBT therapy to address depressive symptoms when sober may not do so when intoxicated. Further, clients may be invested in maintaining

substance use because it provides temporary relief from depressive symptoms despite resulting in long-term exacerbation of these symptoms. Finally, abstinence oriented approaches to substance use disorders are counter to harm reduction interventions often employed in CBT for SUD and may make an individual more susceptible to full blown relapse after any substance use.

CM approaches have been found to be effective in reducing substance use. CM involves the systematic delivery of rewards, or less frequently, punishment, contingent upon substance use behavior. Typically, urine testing is used to monitor substance use in the CM approach and often and escalating scale with resets is used. Escalating scales involve the delivery of increasing rewards (e.g., $5, $10, $15) with each substance negative urine test. A reset occurs upon the delivery of a substance-positive urine test and the lowest reward value is delivered upon the next substance free urine test. CM approaches to treating SUD should be employed as part of a package of psychosocial interventions that address the cognitive, affective, and social consequences of MDD and SUD. Despite evidence for the effectiveness of CM in treating SUD, the costs associated with implementing a CM program may be prohibitive for some treatment providers.

In addition to behavioral interventions for MDD and SUD, pharmacotherapy approaches may be employed. A meta-analytic review of the literature on the pharmacological treatment of co-occurring MDD and SUD indicated a modest effect for antidepressant medication on depression; however, studies with psychosocial interventions that may have had some antidepressant effects demonstrated smaller effect sizes for antidepressants and larger placebo responses (Nunes & Levin, 2003). At least one author suggests that antidepressant therapy can be helpful in reducing depressive symptoms and substance use among individuals with co-occurring MDD and SUD, particularly

for those with alcohol related SUD, and that medication/substance interactions may be of minimal concern when treating adults (Ostacher, 2007). Pettinati (2004) suggests that the majority of studies support the use of pharmacological agents in the treatment of co-occurring MDD and AUD. This author qualifies this suggestion in that it may be necessary to employ higher doses of antidepressants due to the elevated hepatic enzyme levels which may reduce blood levels of antidepressants to an ineffective level. In addition, she states that the primary effect of antidepressants is on mood rather than alcohol use. That is, reductions in depressive symptoms have been recorded, but studies do not support the reduction of drinking among individuals with MDD and AUD treated with antidepressants. Although beyond the scope of this paper, psychiatrists and physicians treating co-occurring MDD and SUD should be aware of the metabolic impacts of substances of abuse on the P450 enzyme system involved in the metabolization of many anti-depressant drugs and the findings related to genetic differences present in some individuals with SUD that may render anti-depressant drugs less effective. In both cases, higher drug doses may be necessary to achieve a therapeutic effect.

V. Ethnicity and Culture in MDD and SUD

Givens, Houston, Van Voorhees et al. (2007) notes that despite similar prevalence of MDD among various ethnicities, ethnic minorities are less likely to get treatment for MDD, are more likely to experience delays in receiving treatment, and are less likely to turn to the mental health treatment system for services. In an effort to identify potential reasons for these disparities, these authors examined preference for treatment modality for MDD, ethnic differences in attitudes towards depression, perceptions of stigma, and preferences for

provider characteristics. Findings from this study indicated that: (1) some ethnic groups (Native Americans, Whites) preferred medication over counseling, whereas some ethnic groups preferred the reverse (African American, Asian, Hispanic); (2) ethnic minorities were less likely to attribute depression to biological causes and were less likely to feel the medications were effective for treating depression; (3) Asians reported the highest levels of stigma associated with mental illness; (4) African Americans and Hispanics were more likely to prefer a provider of the same gender; (5) African Americans were the only group to prefer a provider of the same ethnicity.

VI. Policy Initiatives

One primary problem confronting individuals providing services to those with co-occurring mental health and substance-related disorders is the lack of integration of the treatment system. Mental health providers most often operate under different funding streams and under different administrative agencies. Federal level initiatives have been implemented in an effort to increase the integration and coordination of the two treatment systems. In 2003 the Substance Abuse and Mental Health Services Administration (SAHMSA) developed an initiative know as the Co-Occurring State Incentive Grant (COSIG) to encourage states to improve service delivery for individuals with mental health and substance abuse disorders. The key objective for COSIG was to encourage states to 'develop innovative approaches that would increase their capacities to provide accessible, effective, comprehensive, coordinated, and evidence-based services to persons with co-occurring disorders' (Dausey, Pincus, Herrell & Rickards, 2007, pp.903). The original grantees under COSIG were Alaska, Arkansas, Hawaii, Louisiana, Missouri, Pennsylvania, and Texas. An evaluation conducted by the

RAND Corporation found that states that based their co-occurring disorders treatment system implementation timelines on knowledge derived from previous work on co-occurring disorders initiatives were more likely to meet expected implementation milestones; whereas, those states that employed a 'best guess' approach to planning systems change were less likely to achieve their goals on schedule.

Elements of successful state programs were careful planning based on previous experience, anticipation of and planning around bureaucratic barriers, and parsimony in the creation of committees and teams to design and implement system changes. States that experienced fewer bureaucratic challenges (e.g, cumbersome paperwork, complicated hiring processes, and challenges with administrative and financial departments) early in the process were more likely to meet project deadlines.

VII. Recommendations

Based on the review of key issues in the treatment of co-occurring MDD and SUD presented above, the following recommendations are made in the areas of treatment, staff competencies, best practices, and state and local level public policy:

Treatment

1. The complexity and difficulty of problems faced by individuals with co-occurring disorders should be reflected in the treatment of MDD and SUD. Multidisciplinary treatment teams that utilize a wide range of treatment resources including psychiatrists, psychologists, substance abuse treatment professionals and social workers are recommended.

Ideally the services offered by the treatment teams should be co-located to reduce difficulties associated with accessing these services.

2. Treatment planning should include special attention to the risk for suicide among individuals with co-occurring MDD and SUD. MDD alone carries an increased risk for suicide attempts and completion. For those who have a SUD disorder and MDD the risk for suicide is even more elevated.
3. Currently empirical evidence exists which supports the use of MI, CBT, and CM in the treatment of co-occurring MDD and SUD. Interventions included in the treatment planning process should be based in one of these empirically supported treatments, but should be tailored to address the needs of specific clients.

Staff Competencies

1. Given the recommendation above that empirically supported treatments should be incorporated into treatment planning, there is a need to train staff to minimal levels of competency in MI, CBT, and CM interventions.
2. Continued cross training for staff in both mental health issues and substance abuse treatment issues is necessary. Such training will help to foster cross-profession communication and facilitate collaboration among multidisciplinary treatment teams.

Best Practices

1. Integrated interventions have shown promise for the treatment of co-occurring MDD and SUD. Identification of empirically supported, integrated treatments is necessary and implementation of these treatments should be monitored to ensure program fidelity. In addition, the incorporation of an evaluation component into newly developed

programs or existing programs is necessary to provide quality assurance for consumers, identify the need for program modifications, and support continued funding of effective programs.

2. Planning and implementing a new co-occurring disorders program should take into account the lessons learned from previous attempts at establishing such programs. Specifically, these lessons have been to anticipate and plan for administrative and bureaucratic barriers, parsimony in the creation of committees overseeing programs, and basing timelines and program planning on real-world previous experience.

Policy Recommendations

1. Research has indicated that for those seeking treatment, comorbidity should be expected. Public policy must take this reality into account in establishing training criteria for mental health and substance abuse treatment providers, the design and development of social service programs, and the administration of funding streams supporting such services. This requires systems change and policy makers are referred to Curie, Minkoff, Hutchings & Cline (2005) for a discussion of systems change strategies.
2. Formal state criteria for certification as a COD provider should be promulgated that are based on program components and specific interventions that have empirical support in the treatment of COD.
3. Contracting for COD services with treatment providers should be based on demonstrated competency in delivering empirically validated treatment for COD and delivery of such services should be validated by systematic evaluation of programs receiving state funding.

References

American Psychiatric Association. (2000). Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision. Washington, DC: Author.

Anthony, J. C., Warner, L. A. & Kessler, R. C. (1997). Comparitive epidemiology of dependence on tobacco, alcohol, controlled substances, and inhalants: Basic findings from the National Comorbidity Survey. In G. A. Marlatt & G. R. VandenBos (Eds.) Addictive Behavoirs: Readings on Etiology, Prevention, and Treatment. Washington, D.C.: American Psychological Association.

Carroll, K. M. (1996). Relapse prevention as a psychosocial treatment approach: A review of controlled clinical trials. Experimental Clinical Psychopharmacology, 4, 46-54.

Carroll, K. M. (2004). Behavioral therapies for co-occurring substance use and mood disorders. Biological Psychiatry, 56, 778-784.

Carroll, K. M., Rounsaville, B. J., Nich, C., Gordon, L. T., Wirtz, P. W. & Gawin, F. H. (1994). Psychotherapy and pharmacotherapy for ambulatory cocaine abusers: Delayed emergence of psychotherapy effects. Archives of General Psychiatry, 51, 989-997.

Castel, S., Rush, B., Urbanoski, K., & Toneatto, T. (2006). Overlap of clusters of psychiatric symptoms among clients of a comprehensive addiction treatment service. Psychology of Addictive Behaviors, 30(1), 28-35.

Compton, W. M., Cottler, L. B., Jacobs, J. L., Ben-Abdallah, A., & Spitznagel, E. L.

(2003). The role of psychiatric disorders in predicting drug dependence treatment outcomes. American Journal of Psychiatry, 160(5), 890-895.

Conner, K. R., Sorensen, S., & Leonard, K. (2005). Initial depression and subsequent drinking during alcoholism treatment. Journal of Studies on Alcohol, 66, 401-406.

Coyne, J. C., Thompson, R., Palmer, S., Kagee, A. & Maunsell, E. (2000). Should we screen for depression? Caveats and potential pitfalls. Applied and Preventive Psychology, 9(2), 101-121.

Curie, C. G., Minkoff, K., Hutchings, G. P., Cline, C. A. (2005). Strategic implementation of systems change for individuals with mental health and substance use disorders. Journal of Dual Diagnosis, 1(4), 75-96.

Dausey, D. J., Pincus, H. A., Herrell, J. M. & Rickards, L. (2007). States' early experience in improving systems-level care for persons with co-occurring disorders. Psychiatric Services, 58(7), 903-905.

Davis, L. L., Rush, J. A., Wisniewski, S. R., Rice, K., Cassano, P., Jewell, M. E., Biggs, M. M., Shores-Wilson, K. et al. (2005). Substance use disorder comorbidity in major depressive disorder: an exploratory analysis of the Sequenced Treatment Alternatives to Relieve Depression cohort. Comprehensive Psychiatry, 46, 81-89.

Davis, L., Uezato, A., Newell, J. M., & Frazier, E. (2008). Major depression and comorbid substance use disorders. Current Opinion in Psychiatry, 21, 14-18.

First, M. B., Spitzer, R. L., Gibbon, M. & Williams, J. B. W. (1996). Structured Clinical

Interview for DSM-IV Axis I Disorders, Clinician Version (SCID-CV). Washington, D.C.: American Psychiatric Press.

Gilbody, S. M., House, A. O., Sheldon, T. A. (2001). Routinely administered questionnaires for depression and anxiety: Systematic review. British Medical Journal, 322, 406-409.

Gilbody, S. M., Whitty, P. M., Grimshaw, J. M. & Thomas, R. E. (2003). Improving the detection and management of depression in primary care. Quality and Safety in Health Care, 12(2), 149-155.

Givens, J. L., Houston, T. K, Van Voorhees, B. W., Ford, D. E. & Cooper, L. A. (2007). Ethnicity and preference for depression treatment. General Hospital Psychiatry, 29, 182-191.

Grant, B. F. & Harford, T. C. (1995). Comorbidity between DSM-IV alcohol use disorders and major depression: Results of a national survey. Drug and Alcohol Dependence, 39, 197-206.

Grant, B. F., Stinson, F. S., Dawson, D. A., Chou, S. P., Dufour, M. C., Compton, W., Pickering, R. P. & Kaplan, K. (2004). Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. Archives of General Psychiatry, 61, 807-816.

Hesse, M. (2009). Integrated psychological treatment for substance use and co-morbid anxiety or depression vs. treatment for substance use alone: A systematic review of the published literature. BMC Psychiatry, 9(6), 1-8.

Higgins, S. T. & Silverman, K. (1999). Motivating Behavior Change Among Illicit Drug Abusers. Washington, DC: American Psychological Association.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., Rush, A. J., Walters, E. E. & Wang, P. S. (2003). The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). Journal of the American Medical Assocaition, 289(23), 3095-3105.

Kessler, R. C., McGonagle, K. A., Zhao, S., et al. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Archives of General Psychiatry, 51, 8-19.

Le, H. N. & Boyd, R. C. (2006). Prevention of major depression: Early detection and early intervention in the general population. Clinical Neuropsychiatry, 3(1), 6-22.

Mayfield, R. D., Harris, R. A. & Schuckit, M. A. (2008). Genetic factors influencing alcohol dependence. British Journal of Pharmacology, 154, 275-287.

Maude-Griffin, P. M., Hohenstein, J. M., Humfleet, G. L., Reilly, P. M., Tusel, D. J. & Hall, S. M. (1998). Superior efficacy of cognitive-behavioral therapy for urban crack cocaine abusers: Main and matching effects. Journal of Consulting and Clinical Psychology, 66(5), 832-837.

McKenna, M. T., Michaud, C. M., Murray, C. J. L. & Marks, J. S. (2005). Assessing the

burden of disease in the United States using disability-adjusted life years. American Journal of Preventive Medicine, 28(5), 415-423.

Miller, W. R. (2000). Rediscovering fire: Small interventions, large effects. Psychology of Addictive Behaviors, 14, 6-18.

Miller, W. R. & Rollnick, S. (1991). Motivational Interviewing: Preparing People to Change Addictive Behavior. New York: Guilford Press.

Newman, C. F. (2008). Substance use disorders. In M. A. Wishman (Ed.), Adapting Cognitive Therapy for Depression. New York: Guilford Press.

Nunes, E. V. & Levin, F. R. (2003). Treatment of depression in patients with alcohol or other drug dependence: A meta-analysis. Journal of the American Medical Association, 291(15), 1887-1896.

Ostacher, M. J. (2007). Comorbid alcohol and substance abuse dependence in depression: Impact on the outcome of antidepressant treatment. Psychiatric Clinics of North America, 30, 69-76.

Pettinati, H. M. (2004). Antidepressant treatment of co-occurring depression and alcohol dependence. Biological Psychiatry, 56, 785-792.

Prescott, C. A. & Kendler, K. S. (1999). Genetic and environmental contributions to alcohol abuse and dependence in a population-based sample of male twins. American Journal of Psychiatry, 156, 34-40.

Prochaska, J. O., DiClemente, C. C. & Norcross, J. C. (1992). In search of how people change: Applications to addictive behavior. American Psychologist, 47, 1102-1114.

Regier, D. A., Framer, M. E., Roe, D. S., Locke, B. Z., Keith, S. J., Judd, L. L., et al. (1990). Comorbidity of mental disorders with alcohol and other drug abuse: Results from the epidemiologic catchment area (ECA) study. Journal of the American Medical Association, 264, 2511-8.

Rosenberg, S. D., Drake, R. E., Wolford, G. L., Mueser, K. T., Oxman, T. E., Vidaver, R. M., et al. (1998). The Dartmouth Assessment of Lifestyle Instrument (DALI): A substance use disorders screen for people with severe mental illness. American Journal of Psychiatry, 155, 232-238.

Saunders, J. B., Aasland, O. G., Babor, T. F., De La Fuente, J. R. & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Tests (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption II. Addiction, 88, 791-804.

Schuckit, M. A., Edenberg, H. J., Kalmijn, J., Flury, L., Smith, T. L., Reich, T. et al. (2001). A genome-wide search for genes that relate to a low level of response to alcohol. Alcohol Clinical and Experimental Research, 25, 323-329.

Stewart, W. F., Ricci, J. A., Chee, E., Hahn, S. R., Morganstein, D. (2003). Lost productive work time among US workers with depression. Journal of the American Medical Association, 289(23), 3135-3144.

Tiet, Q. Q. & Mausbach, B. (2007). Treatments for patients with dual diagnosis: A review. Alcoholism: Clinical and Experimental Research, 31(4), 513-536.

Üstün, T. B., Ayuso-Mateos, J. L., Chatterji, S., Mathers, C., & Murray, C. J. L. (2004). Global burden of depressive disorders in the year 2000. British Journal of Psychiatry, 184, 386-392.