

**CO-OCCURRING SUBSTANCE USE AND
MENTAL DISORDERS:
AN ANNOTATED BIBLIOGRAPHY**

August 2003

**CO-OCCURRING SUBSTANCE USE AND
MENTAL DISORDERS:
AN ANNOTATED BIBLIOGRAPHY**

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FOREWORD

The Center for Substance Abuse Treatment (CSAT), Office of Evaluation, Scientific Analysis, and Synthesis (OESAS), established the original National Evaluation Data Services

(NEDS) contract (No. 270-97-7016) in 1997 to support the CSAT mission by increasing knowledge of the effectiveness of substance abuse treatment and promoting access to treatment

evaluation and analysis data and findings. NEDS furnished that support by supplying data management, scientific analysis, and technical support services.

In 2000, through a new contract (Contract No. 270-00-7078), OESAS both continued and expanded the scope of NEDS in three major areas: treatment data infrastructure, secondary analysis of treatment data including Government Performance and Results Act support, and Web-based treatment data tools for states. NEDS is designed to give the Center the capability to strategically target, acquire and access existing data from CSAT and the other data sources, to generate new treatment information over time through analyses of the data acquired, and to provide access to this new treatment information to diverse audiences through multiple product

lines and avenues. All of these activities are aided throughout by the active participation of a preeminent panel of experts representing diverse constituencies from the field of substance abuse treatment.

This bibliography is intended to provide substance abuse treatment providers, policymakers, and researchers/evaluators with a summary of the literature and data sets available

on the subject of co-occurring substance use and mental disorders. This document catalogues the

types of studies, populations, systems of care, primary substances abused, psychiatric diagnoses, and treatment outcomes discussed in the literature on co-occurring substance use and mental disorders. Also included are a description of each data set identified and an annotated bibliography of the available literature.

Patrick J. Coleman

Project Director

National Evaluation Data Services (NEDS)

ACKNOWLEDGMENTS

We wish to acknowledge our reliance upon the overall guidance and direction of Ron Smith, the Government Project Officer for the NEDS contract. Caliber Associates is the prime contractor for NEDS in partnership with DeltaMetrics, The Lewin Group, the National Association of State Alcohol and Drug Abuse Directors (NASADAD), the National Development and Research Institutes (NDRI), the National Opinion Research Center (NORC), Science Applications International Corporation (SAIC), and UCLA Integrated Substance Abuse Programs (ISAP).

We wish to acknowledge Bruce C. Rounsaville, MD, Director, Veterans' Administration, Connecticut-Massachusetts Mental Illness Research Education and Clinical Center, for valuable and insightful comments on an earlier draft of this paper. Thanks are also due to Substance Abuse and Mental Health Services Administration (SAMHSA) staff members who reviewed and commented on an earlier draft of this paper. We would like to thank Kathy Feidler for her assistance in preparing the information on available data sources, and Sandra Pertica, Sharyn Berg, and Beverly Hitchins for editing and review of the final document.

ABSTRACT

The recognition of high rates of co-occurring substance use and mental disorders in the general population and in treatment settings has resulted in numerous investigations to enhance

the identification of individuals with co-occurring disorders, to describe and identify salient characteristics of those individuals, and to develop effective treatment approaches. The importance of the public health problem of co-occurring disorders has also been addressed in a recent federal report to Congress by the Substance Abuse and Mental Health Services Administration and in a recently revised Treatment Improvement Protocol by the Center for Substance Abuse Treatment. This annotated bibliography is intended to provide clinicians, policymakers, and researchers/evaluators with a compilation of the most recent relevant empirical research on co-occurring disorders. A search of the peer-reviewed literature pertaining

to co-occurring disorders published between 1997 and 2003 was conducted. Priority was given to recent empirical studies of adults in the United States. The annotated bibliography also includes some landmark peer-reviewed articles published before 1997 as well as a selection of government documents, professional organization documents, and other relevant documents available in the last decade. This bibliography provides a summary of the literature on several major dimensions: type of study and scientific rigor, specific populations, systems of care, treatment modalities, primary substances abused, psychiatric diagnoses, treatment outcomes, treatment costs and medication studies, and data sources. The summary both characterizes the literature and helps to identify knowledge gaps in the field. In addition, the bibliography provides a review of relevant data resources, and hundreds of annotated citations.

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

For this bibliography and its companion document, *Co-occurring Substance Use and Mental Disorders: A Literature Review* (Cacciola & Dugosh, 2003), approximately 300 articles published in peer-reviewed journals between 1997 and 2003 were selected and reviewed for their contribution to the understanding of co-occurring substance use and mental disorders. Earlier landmark articles published before 1997, relevant government documents, and other non-peer-reviewed

documents addressing this important health-care problem complement this body of literature and are annotated herein. In addition, data resources containing information on cooccurring

substance use and mental disorders are identified and described.

1. INTRODUCTION

The extensive prevalence of co-occurring substance use and mental disorders in the general population and in substance abuse treatment, mental health treatment, and, to a lesser extent, criminal justice system populations is well documented. In recognition of the high rates of co-occurring disorders, numerous investigations have been conducted with the objectives of facilitating the identification of individuals who suffer from co-occurring disorders in whatever setting they may present, describing and identifying salient characteristics and meaningful subtypes of such individuals, and developing effective treatment approaches for individuals who

have various combinations of co-occurring substance use and mental disorders. Additionally,

the high priority given to addressing the important public health problem of co-occurring disorders is evidenced by the recent *Report to Congress on the Treatment and Prevention of Co-occurring Substance Abuse and Mental Disorders* (SAMHSA, 2002) and the recent major revision of the Treatment Improvement Protocol (TIP), *Substance Abuse Treatment and Co-occurring Disorders* (CSAT, in press). These documents integrate and further elaborate upon a recently proposed four-quadrant model of individuals and their service needs based both on substance use and mental health symptom severity as well as the systems of care in which these individuals typically present (NASADAD & NASMHPD, 2000, 1999). Nonetheless, a comprehensive compilation of the recent empirical literature and available data sources relevant to co-occurring disorders does not exist. This annotated bibliography is intended to provide clinicians, policymakers, and researchers/evaluators with such a compilation pertaining to the identification, prevalence, characterization, and treatment of individuals with co-occurring disorders.

2. APPROACH

For this bibliography, four electronic databases were used in a comprehensive search of the literature on co-occurring disorders published between 1972 and 2003. In addition, several newly developed government documents were reviewed for relevant references. In the selection of relevant articles, priority was given to recent empirical studies examining adult populations and published in the United States. The majority of the articles selected for inclusion in the bibliography were published in peer-reviewed journals from 1997 to 2003 (n=290). This body of peer-reviewed literature is summarized on several dimensions, including study type, population characteristics, systems of care, treatment modality, substance of abuse, psychiatric diagnosis, outcomes, and data source. Other literature is annotated to serve as a foundation for the bibliography and to complement its primary focus on peer-reviewed articles published from 1997 to 2003. Specifically, the annotated bibliography also includes 38 landmark peer-reviewed articles published before 1997 as well as a selection of government documents, professional organization documents, and other relevant documents available in the last decade.

3. SUMMARY OF THE LITERATURE

The literature was characterized along several major dimensions: type of study and scientific rigor, specific populations, systems of care, treatment modalities, primary substances abused, psychiatric diagnoses, treatment outcomes, treatment costs and medication studies, and data sources. This overview reveals considerable breadth and diversity in the research. It also identifies a number of gaps and suggests directions for future work to improve the understanding of co-occurring disorders.

Types of Studies. In regard to the scientific rigor of the studies of co-occurring substance use and mental disorders, randomized treatment outcomes studies were relatively

scarce. The relatively large number of non-randomized clinical trials may yield operationalized approaches that can now be evaluated more rigorously.

Specific Populations. Fewer than half of the empirical studies reported main findings by gender. Studies that report specific findings for men and for women are needed. Special populations, including young adults, senior citizens, and HIV+ individuals were the focus in only a handful of studies, and homeless individuals were under-examined. More work to understand the characteristics, needs, and appropriate treatment approaches for these populations is warranted. Race and ethnicity were not specifically categorized because most studies were reasonably diverse and most results were not reported by race/ethnicity. There were, however, several studies that did focus on specific racial or ethnic subgroups.

Systems of Care. The number of studies conducted in substance abuse, mental health, and integrated treatment programs or systems is relatively extensive compared to the number of studies in the in the criminal justice, primary medical care, and homeless shelter systems. The relative scarcity of studies in these latter three areas may be considered a gap requiring further work.

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Treatment Modalities, Settings, and Levels of Care. The major modalities as categorized, i.e., outpatient, outpatient opiate replacement, residential, inpatient, jail/prison, and multiple modalities were generally well represented with one exception. Relatively few studies (n = 6) were conducted in jail/prison.

Primary Substances of Abuse. Regarding substance(s) of abuse, generic inclusion criteria (i.e., alcohol and or other drug use) were generally applied for the samples in the studies. Approximately 15 percent of the studies addressed alcohol only. Other than opiates and cocaine, there was a lack of literature focusing on samples with specific substances (or combinations of substances) of abuse.

Psychiatric Diagnoses. The literature addressed a wide range of non-substance use psychiatric diagnoses. Schizophrenia and other psychotic disorders comprised the most frequent single category. The combinations of various types of mood disorders and anxiety disorders were represented more frequently than were other groups of psychiatric disorders. Other than posttraumatic stress disorder (PTSD), specific anxiety disorders were generally not reported. The full range of personality disorders was relatively under-represented, with antisocial personality disorder perhaps receiving undue attention relative to personality disorders overall. If co-occurring disorders are to be assessed comprehensively, the entire range of personality disorders requires more attention. Suicidal/violent behavior, gambling, and eating disorders received little attention.

Treatment Outcomes. About half of the selected literature reported outcome studies. In outcomes studies, substance use, mental health, and treatment progress were generally well documented, but comprehensive multidimensional outcomes such as employment status, legal/criminal involvement, family functioning were not routinely obtained.

Treatment Costs and Medication Studies. There was a conspicuous lack of information on costs associated with co-occurring disorders. There were also few studies of medication use for clients with co-occurring disorders. Both of these areas would benefit from further research.

Data Sources. Nearly half of the empirical studies used self-report data in combination with some other data source typically information from clinical records. To the extent that it is possible to use multiple data sources, doing so can only enhance the validity and utility of research results.

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4. SUMMARY OF THE DATA RESOURCES

Seventeen publicly available data resources were identified for this bibliography. Each contains individual-level data on substance abuse and mental health. Some data sets focus more heavily on substance abuse, while others focus more on mental health. Types of substance abuse

data included diagnosis, use patterns, and service utilization. Mental health data included diagnosis and prevalence. Many data sets collect data specifically on depression.

5. ANNOTATED BIBLIOGRAPHY

The annotated bibliography contains abstracts of 290 peer-reviewed articles (1997-2003), plus abstracts of landmark articles (1972-1996) and government, professional association, and other relevant documents (1993-2003) that address the issues associated with co-occurring substance use and mental disorders. Substantive findings from these studies have been summarized and integrated in this bibliography's companion document, *Co-occurring Substance*

Use and Mental Disorders: A Literature Review (Cacciola & Dugosh, 2003).

I. INTRODUCTION

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I. INTRODUCTION

Co-occurring disorders, as they are addressed in this bibliography, are defined as those in which an individual has a least one mental disorder in addition to an alcohol or drug use disorder

(Center for Substance Abuse Treatment, in press). In recent years, these disorders have received increasing attention. Their extensive prevalence in the general population and in substance abuse

treatment, mental health treatment, and criminal justice populations has been well documented.

In recognition of the high rates of co-occurring disorders, numerous investigations have been conducted with the objectives of facilitating the identification of individuals who suffer from cooccurring

disorders in whatever setting they may present, describing and identifying salient characteristics and meaningful subtypes of such individuals, and developing effective treatment

approaches for individuals who have various combinations of co-occurring substance use and mental disorders.

At the national level, the high priority given to addressing the important public health problem of co-occurring disorders is evidenced by the recent *Report to Congress on the Treatment and Prevention of Co-occurring Substance Abuse and Mental Disorders* (SAMHSA, 2002) and the recent major revision of the Treatment Improvement Protocol (TIP), *Substance Abuse Treatment and Co-occurring Disorders* (CSAT, in press). Additionally, at the State level, the National Association of State Alcohol and Drug Abuse Directors (NASADAD) and the

National Association of State Mental Health Program Directors (NASMHPD) have worked collaboratively in recent years with the goal of addressing more effectively the needs of individuals in the substance abuse treatment and mental health systems, or in integrated systems,

who have co-occurring disorders (NASADAD & NASMHPD, 2000, 1999). In concert, these two organizations have proposed a four-quadrant model of individuals and their service needs based both on substance use and mental health symptom severity as well as the systems of care in which these individuals typically present. The model, when applied to the universe of individuals in need of substance abuse and/or mental health treatment, provides a framework for

conceptualizing appropriate need and level of integration of substance abuse and mental health

services. The four-quadrant model has been incorporated into the *Substance Abuse Treatment and Co-occurring Disorders* TIP (CSAT, in press) and included in the *Report to Congress on the Treatment and Prevention of Co-occurring Substance Abuse and Mental Disorders* (SAMHSA, 2002).

Introduction

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1. PURPOSE AND SCOPE OF THE BIBLIOGRAPHY

This annotated bibliography is intended to provide substance abuse treatment providers, policymakers, and researchers/evaluators with a compilation of the most recent information on

the methods of identifying and estimating prevalence rates; the descriptive characteristics of individuals who have co-occurring disorders, including the course of the disorders; and empirical

findings of various approaches and interventions developed and implemented to treat individuals

who have co-occurring disorders.

Over at least the past 30 years, a large body of literature has been published on various issues related to co-occurring disorders. This literature includes theoretical conceptualizations; physiological and genetic explanations; surveys conducted across many levels, from the service delivery unit (SDU) to the multinational level; and treatment literature, including individual case reports, clinical randomized trials, and studies of system-level reorganization and allocation of services and resources. This array of relevant topics and the abundance of previous literature reviews dictated limits on the scope of this bibliography.

To make the bibliography manageable and useful for its intended audiences, and to minimize duplication, several foci were selected. Primacy was given to adults. This is not to imply that co-occurring disorders are not prevalent or relevant in youth. Rather, the issues in adults and youths who have co-occurring disorders are not identical, and adequately addressing the issues of co-occurring disorders in youth requires a separate effort. [Note: Because a comprehensive annotation of the adolescent literature was beyond the scope of this bibliography,

only a selection of recent, representative, and important adolescent studies were included in order to provide a sample of the work done with this population.] Because numerous recent reviews have addressed multiple aspects of co-occurring severe mental illness and substance use,

empirical studies whose disorders were limited to serious mental illness, although well represented, were somewhat more selectively included in this bibliography. Additionally, recent empirical literature comprises the majority of the citations. Recency is important for at least two

reasons. First, the literature going back 30 years to the time when specified and operationalized diagnostic criteria began to be employed is too extensive to include comprehensively. Second, and as important, the changing patterns of substance use and mental health problems of individuals over the years and changes in the treatment systems render older literature less relevant. A review of the literature yields no lack of opinions, commentaries, and reviews of issues concerning individuals with co-occurring disorders. To offer audiences the primary sources they need to evaluate the research critically and to arrive at conclusions that are based on

direct results, a focus on the empirical literature is necessary.

Introduction

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Given the extent of the literature and the considerations described above to maximize the usefulness of this bibliography, the annotated bibliography in Chapter V is organized in three sections. The first section includes peer-reviewed publications dating from 1997 to 2003. These selections constitute the bulk of the citations and are the basis for the summary of the available literature presented in Chapter III. Although not included in the formal summary, peer-reviewed

landmark articles from 1972 to 1996 are presented in the second section of the annotated bibliography. These articles provide the reader with important work that provided the foundation

for the more recent research. Finally, the Federal government, other governmental entities, and professional organizations have made considerable contributions in the area of co-occurring disorders, especially over the past 10 years. To supplement the important work on co-occurring disorders disseminated through peer-reviewed publications, government, professional association, and other relevant documents released in the past ten years (1993 to 2003) have been

annotated in the final section of Chapter V.

2. ORGANIZATION OF THE BIBLIOGRAPHY

This chapter has provided an overview of the bibliography and the scope of the selected literature. Chapter II describes the approach used to identify the citations and data sources included in this bibliography. Chapter III includes a brief summary of the available literature. Chapter IV presents available data sources relevant to the study of individuals who have cooccurring

substance use and mental disorders. Chapter V, the annotated bibliography, contains 290 abstracts of the compiled peer-reviewed literature from 1997 to 2003, plus abstracts of earlier landmark articles (1972-1996) as well as government, professional association, and other relevant documents (1993-2003).

II. APPROACH

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II. APPROACH

This bibliography is intended to present recent evidence-based literature pertaining to cooccurring

substance use and mental disorders. In particular, it focuses on the prevalence of cooccurring disorders, characteristics of clients who have co-occurring disorders, and treatment approaches and outcomes for this group of clients. In addition, this bibliography identifies data resources related to co-occurring disorders that may be useful for gathering further information

and conducting future secondary analyses. This chapter describes the process through which relevant literature and data resources were identified.

1. IDENTIFICATION OF RELEVANT LITERATURE

Key words relating to substance abuse, psychiatric disorders, and co-occurring disorders were selected:

Substance abuse key words: substance abuse, substance dependence, alcohol abuse, alcohol dependence, drug abuse, drug dependence, substance-related disorder(s), alcohol-related disorder(s), addiction, and alcoholism

Psychiatric disorder key words: psychopathology and mental disorder(s)

Co-occurring disorders key words: dual diagnosis, dual disorders, mentally ill chemical abuser(s), and mentally ill substance abuser(s).

All possible pairs of substance abuse and psychiatric disorder keywords were combined in the search, and each co-occurring disorders keyword was searched independently.

The literature search was conducted using four electronic databases (i.e., Medline, PsycINFO, Sociological Abstracts, and Criminal Justice Abstracts), spanning the years 1972 to 2003, including references entered into the databases as of December 2002. This search identified more than 10,000 references, one-fourth of which were published during the last six years. Upon review of the references identified, it was determined that several important articles

were not included in the database search results. For this reason, a second PsycINFO search was conducted in which substance abuse was entered as an "exploded" term and mental illness was entered as a "focused" term. This search also spanned 1972 to 2003. It yielded over 1,300 references, with a substantial percentage from the past six years. To a great extent, references identified in this search did not duplicate those identified through the first search. A third PsycINFO search using the "exploded" term substance abuse and the "focused" term personality disorders was conducted for the years 1997-2003. The results from all of these searches were combined.

Approach

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The titles and abstracts generated from these searches were then reviewed. Because recency has perhaps the most value to inform current practice, and because the database searches

identified an enormous number of references, the literature selection effort focused primarily on

identifying empirical literature about adults that was published in the United States in the past six

years (1997-2003). Recent articles judged as making an important contribution to the field were also included. Similarly, seminal works published prior to 1997 were included. To the extent that their content overlapped, references attributed to the same research group were not duplicated: a representative article(s) from the research group was selected. Controlled, randomized studies as well as studies with adequate sample sizes were given priority over other

studies.

Several newly released documents and documents near completion that have particular relevance to co-occurring disorders became available during the conduct of this search. Such documents include *Report to Congress on the Treatment and Prevention of Co-occurring Substance Abuse and Mental Disorders* (SAMHSA, 2002) and the recent major revision of the Treatment Improvement Protocol (TIP), *Substance Abuse Treatment and Co-occurring Disorders* (CSAT, in press). These documents plus two additional CSAT-sponsored reports—*Cost Effectiveness and Cost Benefit Analysis of Substance Abuse Treatment: An Annotated Bibliography* (Harwood, Malhotra, Villarivera, Liu, Chong, & Gilani, 2002) and *Use of Medication in Treating Persons with Substance Abuse and Co-occurring Disorders: Literature Review* (in progress)—were reviewed for relevant references to include in the bibliography. The above sources and approach were used to select 290 references from 1997-2003 for inclusion in the annotated bibliography. These references are summarized in Chapter III. The annotated bibliography also includes 38 landmark articles that pre-date 1997 and documents from governmental entities and professional associations (1993-2003).

To characterize this literature and identify where a lot of work has been done and where significant gaps exist, the following key characteristics were extracted from each document:

- Type of study

- Population

- Sample size

- System of care (e.g., substance abuse treatment, mental health, criminal justice)

- Treatment modality/level/setting (e.g., outpatient, residential, jail/prison)

- Substance of abuse

- Psychiatric diagnosis

- Cost of treatment

- Medication

Approach

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- Outcomes

- Data source.

A detailed coding process was developed to enhance the accuracy and consistency of this characterization of the literature. To ensure similar approaches, multiple reviewers coded the first 10 articles in a consensus fashion. Articles were then divided for coding among four psychologists, who discussed questionable codings as necessary to arrive at a consensus. The descriptive codes developed to categorize each study according to the key characteristics are presented later in Chapter IV.

2. IDENTIFICATION OF RELEVANT DATA SOURCES

Along with literature on co-occurring disorders, data sets containing information on mental health and substance abuse were sought out. To be selected, data sets had to meet certain

criteria. They had to be available to the public, collect data from 1990 forward, and contain individual-level information on substance use and mental disorders.

The logical source for such data resources was the Substance Abuse and Mental Health Data Archive (SAMHDA), maintained by the University of Michigan. The University of Michigan also maintains the Inter-University Consortium for Political and Social Research (ICPSR), which is another archive of social science data for researchers. These two Web sites

provided the majority of relevant data resources. The following key words were used in this search: drug, alcohol, substance abuse, mental health, dual diagnosis, and co-morbidity. Seventeen data resources were identified. While all of the resources contain data collected from 1990 forward, some also include waves of data collected prior to 1990. With one exception, all data sets are available at no cost. The types of substance abuse and mental health data captured in each data source vary. Diagnosis, use patterns, and service utilization are examples of substance abuse data. Mental health data include diagnosis and prevalence. Much of the mental health data focuses on depression.

III. SUMMARY OF THE AVAILABLE LITERATURE

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III. SUMMARY OF THE AVAILABLE LITERATURE

The studies that comprise the focus of this bibliography and similarly constitute the core of its companion document, *Co-occurring Substance Use and Mental Disorders: A Literature Review* (Cacciola & Dugosh, 2003), were published in peer-reviewed journals between 1997 and 2003 (n=290 articles). This chapter of the bibliography describes characteristics of the studies, gaps in the literature, and the classification of the 290 selected articles by study characteristics. Details on the coding and classification of the literature are presented with exhibits at the end of this chapter.

1. CHARACTERISTICS OF STUDIES ON CO-OCCURRING DISORDERS

The literature was examined and summarized according to the following study characteristics:

- Type of study
- Populations sampled
- Systems of care (e.g., treatment, mental health, criminal justice)
- Treatment modality, setting, or level of care (e.g., outpatient, residential, jail/prison)
- Primary substance of abuse
- Psychiatric diagnosis
- Cost of treatment
- Medications
- Outcomes.

The source of the data used in each study was identified as "Interview" (i.e., client self-report, or clinical interview) or "Administrative" (e.g., clinical or administrative records, urine toxicology results, collateral/informant reports) data.

The distribution of peer-reviewed publications selected and identified for inclusion in the bibliography was fairly consistent over the most recent 6- to 7- year period (see Exhibit III-1). It is to be expected that 2002 and 2003 would have fewer publications, because of the lag in time between when articles are published and when they are entered into electronic databases. To keep the number of recent citations manageable (<300), and because it was the year most temporally distant, 1997 was slightly under-represented.

Summary of the Available Literature

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EXHIBIT III-1

CITATIONS BY YEAR OF PUBLICATION

Year Number of Citations

Percent of Citations

(n=290)

1997 42 14%

1998 63 22%

1999 57 20%

2000 55 19%

2001 48 17%

2002 24 8%

2003 1 <1%

The literature summarized in this chapter encompasses 265 empirical studies and 25 literature reviews. A caveat concerning this summary of the literature is that the empirical studies do not represent unique samples. Multiple articles were often published on the same sample. The articles may have addressed different aspects, used different analytic approaches, used subsamples, reported on different outcomes, etc. When looked at in this way, the discussion in this chapter may be considered to over-represent the amount of recent empirical work done in the area of co-occurring disorders.

1.1 Type of Study

The general issues addressed, and the scientific rigor of the studies reported in the literature on co-occurring disorders are indicated by type of study. Six categories broadly describe the methodology and/or research issues(s) addressed:

Literature reviews: reviews of previous findings without empirical data analyses and results, regardless of the foci (e.g., prevalence, treatment approaches, outcomes)

Prevalence or descriptive studies: empirical studies that report rates and/or correlates of co-occurring disorders in a variety of participant samples

Naturalistic outcome studies: single group studies that assess participant status following a defined index time point or event

Comparative outcome studies: non-randomized studies that assess defined groups of participants on the basis of, for example, diagnoses or interventions, following an index time point

Randomized outcome studies: studies that involve some type of random assignment to different interventions

Summary of the Available Literature

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Methodological studies: empirical studies on issues such as assessment of cooccurring disorders, categorization of disorders, and development of treatment interventions.

To provide a more informative summary of the recent literature, certain conventions were adopted

in classifying the type of study. Specifically, literature reviews were counted solely as literature reviews. Also, naturalistic, comparative, and randomized outcome studies were considered mutually exclusive from each other and from other types of studies. Although these different types of outcomes studies often address the prevalence and correlates of co-occurring disorders and may address methodological issues, their primary value is in their report of outcomes. Finally, studies that addressed both prevalence/descriptive issues and methodological issues were

included in both categories. Therefore the categories were not entirely mutually exclusive. The characterization of the literature by the six types of studies is shown in Exhibit III-2.

EXHIBIT III-2

CITATIONS BY TYPE OF STUDY

Type of Study

Number of

Citations

Percent of Peerreviewed

Citations

(n=290)

Percent of Empirical

Studies*

(n=265)

Prevalence/descriptive study (P/D) 126 43% 48%

Naturalistic outcomes study (N) 45 16% 17%

Naturalistic outcomes study with

comparison group (NC) 51 18% 19%

Randomized clinical trial (R) 35 12% 13%

Methodological study (M) 44 15% 17%

Literature review (L) 25 9%

* Because some studies fit into more than one category, percentages can exceed 100.

The large number/percent of prevalence and descriptive studies is noteworthy. Since at least the early 1980s, rigorous studies have been conducted that document the prevalence and correlates of co-occurring disorders in a variety of samples. Clearly, this type of research needs periodic updating, but the finding that nearly half of recent empirical work is largely descriptive may indicate an over-emphasis in this area. Outcome studies of one sort or another (i.e., naturalistic studies with and without a comparison group, randomized clinical trials) made up a fair percentage of the investigations recently conducted. The smallest number of studies (a little over 10%) was randomized clinical trials, which are the gold standard to evaluate treatment interventions. Comparable numbers of studies were conducted with a diagnostic or intervention

comparison group and without such a defined comparison group. Methodological studies comprised around 15 percent of the sample of studies. Most often, they involved assessment and diagnostic issues. By design, literature reviews comprised the smallest percentage of the studies.

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1.2 Specific Populations Studied

The specific populations included in the empirical studies of co-occurring disorders are shown in Exhibit III-3. More specific information about the strategies used in coding population samples is provided later in this chapter.

The majority of studies did not report their main findings by gender, nonetheless, gender represented the largest specific population studied. About one-third of the studies included a breakdown of main findings by gender. In addition, relatively few studies included only men (9%) or women (3%). Many of the studies that did not report results by gender either included too few women to permit meaningful analyses of their data separately, or had too few participants overall to conduct subgroup analyses. Larger studies were conducted that seemingly

could have conducted separate analyses for men and women, but did not.

The homeless, veteran, and community populations were each represented in approximately 10 percent of the empirical studies. By design, adolescents were represented in a relatively small proportion of the studies (6%). Some important groups that are the focus of

attention in this bibliography on co-occurring disorders—individuals with HIV, the elderly, and young adults—were represented in 3 percent or less of the studies. [Note: Race and ethnicity were not specifically categorized because most studies were reasonably diverse and most results

were not reported by race/ethnicity. There were, however, several studies that did focus on specific racial or ethnic subgroups.]

EXHIBIT III-3

CITATIONS BY POPULATIONS SAMPLED

Population Sample Number of Citations

Percent of Citations*

(n=265)

Homeless (H) 28 11%

Community (C) 24 9%

Veteran (V) 24 9%

Adolescent (A) 17 6%

HIV/AIDS (HIV) 8 3%

Elderly (E) 3 1%

Young adult (YA) 3 1%

Results not reported by gender (N) 140 54%

Results reported separately for each gender (M/F) 86 32%

Male only (M) 23 9%

Female only (F) 7 3%

* Because studies may have multiple codes, total percentages exceed 100.

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1.3 Systems of Care for Individuals With Co-occurring Disorders

The system of care in which clients were treated or from which they were drawn is an important dimension on which to catalog the studies. The systems of care identified in the literature selected for inclusion in this bibliography included:

Integrated systems

Substance abuse treatment system (public or private facilities)

Mental health system (public or private facilities)

Criminal justice system (whatever the jurisdiction or level of supervision/restriction)

Medical system (including outpatient, emergency or inpatient sites)

Homeless shelter system.

More specific information about the strategies used in coding the systems of care is provided later in this chapter.

The defining characteristic of an integrated system is the determined and coordinated plan to provide both substance abuse and mental health services as necessary. Integrated systems can be fully integrated units, such as dual diagnosis units, or integrated models of care even if within a particular system of care. Sometimes integrated care was provided within a specified system of care. Studies of these cases are described as utilizing both systems of care. The predominant systems of care in which clients were treated or from which they were drawn, in descending order, were substance abuse treatment (38%), integrated treatment (25%), and mental health treatment (21%) (see Exhibit III-4). Other systems, such as criminal justice, medical, and homeless shelters, were the sole treatment or referral sources for relatively few studies (5% or less). These systems were represented slightly more than these figures indicate, insofar as they were included in the integrated or multiple systems of care categories. Nearly 8

percent of the studies involved clients from multiple systems of care.

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EXHIBIT III-4

CITATIONS BY SYSTEM OF CARE

System of Care Number of Citations

Percent of Citations

(n=241)

Integrated (IN) 61 25%

Substance abuse (SA) 92 38%

Mental health (MH) 50 21%

Criminal justice (CJ) 12 5%

Medical (MD) 4 2%

Homeless shelter (H) 3 1%

Multiple, non-integrated systems of care (X) 19 8%

Note: Because studies comprised solely of community participants were not relevant to the classification of studies by system of care, community studies (n=24) were excluded from the calculation of percentages (as were the 25 literature reviews, because they summarize the empirical studies).

1.4 Modality, Setting, or Level of Care

The modality, setting, or level of care from which the samples were drawn or in which they were treated is another important study descriptor. The categories included:

Outpatient (all intensities of outpatient treatment except opiate replacement therapy)

Outpatient opiate replacement therapy (typically methadone maintenance)

Residential/therapeutic community treatment

Hospital-based inpatient treatment

Jail or in prison

Unspecified/unknown.

When specified, the distinctions regarding modality, setting, or level of care were generally clear, with the exception of residential and inpatient treatment which were not always easy to discriminate (e.g., the terms were occasionally used interchangeably within an article). For summarization purposes, studies with samples drawn from or treated in multiple modalities were

grouped into a separate category. In some of these studies, the overall sample was drawn from multiple modalities, or there were comparisons of samples from more than one modality.

The characterization of the empirical studies by modality is depicted in Exhibit III-5.

The majority of studies (about one-third) were based on outpatient treatment populations.

About

one-quarter was based on inpatient populations. Residential or therapeutic communities were represented in less than 10 percent of the studies. The relative lack of studies in jail or prison (2%) is noteworthy, as is the proportion of studies in which modality, setting or level of care, an important descriptor, was not specified (7%).

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EXHIBIT III-5

CITATIONS BY MODALITY

Modality

Number of

Citations

Percent of Citations (n=241)

Outpatient (O) 75 31%

Opiate replacement therapy-outpatient (OM) 17 7%

Residential/therapeutic community (R) 22 9%

Inpatient (I) 63 26%

Jail/Prison (J) 6 2%

Multiple modalities (Y) 41 17%

Unspecified/unknown (U) 17 7%

Note: Because studies comprised solely of community participants were not relevant to the classification of studies by modality, setting, or level of care, community studies (n=24) were excluded from the calculation of percentages (as were the 25 literature reviews, because they summarize empirical studies).

1.5 Primary Substance of Abuse

Each study was examined to identify the substance(s) of abuse required for inclusion in the study. Studies that did not so specify were examined to identify the substance(s) of abuse that were the primary focus of the study. Because studies may have addressed the use of multiple substances, the following six categories were developed to summarize the primary substance of abuse included in the empirical studies:

Alcohol only

Drugs without alcohol and without further specification of the type of drug

Alcohol and drugs (general/unspecified), or alcohol and any other type of drug (cocaine, opiates, amphetamines, marijuana, hallucinogens, inhalants, sedatives)

Cocaine

Opiates

Any other specified substance (i.e., amphetamine, marijuana, hallucinogens/PCP, inhalants, or sedatives).

The last three categories pertained to specific substances of abuse and were used regardless of any other designations given to a study. Cocaine and opiates were the only specific drugs that

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studies included with noteworthy frequency. More specific information about the strategies used

in coding primary substances is provided later in this chapter.

The distribution of the literature by primary substance of abuse is shown in Exhibit III-6.

A large majority, nearly 70 percent of the studies, focused generally on individuals with alcohol and/or drug use. In terms of specific individual substances of abuse, alcohol, cocaine, and opiates were the only three substances that were represented in more than 20 studies. Since polydrug use has become more common, these numbers may roughly reflect clinical and epidemiological reality.

EXHIBIT III-6

CITATIONS BY SUBSTANCE OF ABUSE

Modality Number of Citations

Percent of Citations*

(n=265)

Alcohol only (A) 37 14%

Drug only (A) 10 4%

Alcohol and drug (A/D) 183 69%

Any cocaine (C) 30 11%

Any opiate (O) 22.8%

Any other specific drug (Z) 4.2%

* Because studies may have multiple codes, total percentages exceed 100.

1.6 Primary Psychiatric Diagnoses

Studies were characterized by the psychiatric diagnoses that were the focus of the study or by the most frequent disorders that described the sample. More specific information about the

strategies used in coding psychiatric diagnoses is provided later in this chapter.

The distribution of major diagnostic categories across the selected empirical studies in Exhibit III-7 indicates that most are generally well represented in the recent empirical literature on co-occurring disorders. The two most frequently reported diagnoses were major depression (44%) and psychotic disorders (39%). Together, these proportions reflect appropriate attention to these disorders, since major depression has often been found to be among the most frequently

occurring Axis I diagnoses in clients in the substance abuse treatment system, and psychotic disorders are among the most frequently occurring Axis I diagnoses in clients in the public mental health system. Bipolar and other mood disorders, as well as posttraumatic stress disorder

and other anxiety disorders, also received considerable attention and are prominent co-occurring

disorders in individuals who have substance use disorders. Few studies reported findings for

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specific anxiety diagnoses other than PTSD, and most that addressed anxiety disorders were therefore included in the other/unspecified anxiety disorder category. With regard to personality disorders, antisocial personality disorder has clearly received the most attention. Borderline personality disorder and the aggregate category of other/unspecified personality disorders have received considerably less attention in the empirical

research. Attention deficit hyperactivity disorder and conduct disorder were reported in approximately 10 percent of the studies. Both of these diagnoses were addressed in a substantial proportion of the research on adolescents. Gambling, eating disorders, and suicidal/violent behavior are often considered to have meaningful associations with substance abuse, but they were addressed in less than 5 percent of the empirical studies.

Psychiatric severity, although not a disorder *per se*, has proved to be a valuable construct in gauging psychopathology in the substance abuse treatment field and was addressed in nearly 10 percent of the empirical studies. That 17 percent of the empirical studies were coded as other or unspecified psychiatric diagnoses does not necessarily indicate a lack of diagnostic precision in the studies; typically, this designation followed a specific designation of the more frequent diagnoses in a sample.

EXHIBIT III-7

CITATIONS BY PSYCHIATRIC DIAGNOSIS

Psychiatric Diagnosis

Number of

Citations

Percent of Citations*

(n=265)

Schizophrenia, schizoaffective, other psychotic disorder (PTC) 104 39%
 Major depression (D) 118 44%
 Bipolar disorder (BI) 69 26%
 Other mood disorders (OM) 89 34%
 Post-traumatic stress disorder (PTS) 36 14%
 Other anxiety disorders (OA) 59 22%
 Antisocial personality disorder (APD) 67 25%
 Borderline personality disorder (BPD) 23 9%
 Other/unspecified personality disorder (OPD) 38 14%
 Attention deficit hyperactivity disorder (ADH) 19 7%
 Conduct disorder (CD) 27 10%
 Suicidal/violent behavior (SV) 8 3%
 Gambling (G) 7 3%
 Eating disorder (ED) 6 2%
 Psychiatric severity (PS) 25 9%
 Other/unspecified psychiatric diagnosis (O) 45 17%

* Because multiple diagnoses may be reported in the same study, these percentages may exceed 100.

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1.7 Costs of Treating Individuals Who Have Co-occurring Disorders

Cost studies were defined as those that reported costs, cost effectiveness, or cost benefit of treatment. Very few cost studies (which comprised less than 5 % of the empirical studies) were found in the literature of the past five years, as shown in Exhibit III-8.

EXHIBIT III-8

CITATIONS BY COST FOCUS

Focus

Number of

Citations

Percent of Citations

(n=265)

Focused on costs of treatment 11 4%

Did not focus on costs of treatment 254 96%

1.8 Medication Studies

Medication studies were those that reported results on the use, effectiveness/efficacy, or side effects of medication. Such studies were typically medication trials, but sometimes medication effects were secondary findings that were reported as part of a study's overall results.

Because there is an ongoing CSAT-sponsored review of medication studies of clients with cooccurring

disorders [*Use of Medication in Treating Persons with Substance Abuse and Cooccurring Disorders: Literature Review* (in progress)], the review of the literature conducted in

compiling this bibliography was selective in including medication studies. In addition to a few recent literature reviews on medication studies (not included in Exhibit III-9), this search of the empirical literature focused on randomized controlled trials (and tried to be exhaustive in this regard). This selectivity accounts for the relatively small number of citations (a little over 10% of the total) that address the use of medications in the treatment of co-occurring substance use and mental disorders.

EXHIBIT III-9

CITATIONS BY MEDICATION FOCUS

**Focus
Number of
Citations
Percent of
Citations
(n=265)**

Focused on medication effectiveness/efficacy or side effects 29 11%

Did not focus on medication effectiveness/efficacy or side effects 236 89%

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1.9 Treatment Outcomes

To capture the major domains of outcomes relevant to individuals with co-occurring disorders, outcomes were examined in a multidimensional manner. Outcomes included any post admission/baseline evaluation of the sample. Seven outcome domains parallel to those included in the Addiction Severity Index (McLellan et al., 1980, 1985, 1992) and widely accepted in the field were considered. These domains are alcohol use/problems, drug use/problems, psychological symptom severity or mental health status, employment/financial support, or in the

case of adolescents, educational status, criminal justice system involvement or illegal activity, interpersonal family/social problems, and medical or physical problems including medication side effects.

Because alcohol and drug use/problems were not always reported separately, sometimes a more global substance use/problems designation was all that was possible in characterizing a study. Reporting of treatment progress was also noted, including reports of treatment attendance,

compliance, completion, and type of discharge. Finally, to address other areas relevant to personal well-being and public safety, HIV risk behaviors and housing status were also included as outcomes. The number of studies reporting each outcome was calculated, and these frequencies, along with the percentage of empirical studies (n = 265), are shown in Exhibit III-10.

EXHIBIT III-10

CITATIONS BY TYPE OF OUTCOME

**Type of Outcome
Number of
Citations
Percent of Citations*
(n=265)**

Alcohol use (A) 58 22%

Drug use (D) 59 22%

Substance use – A/D not distinguished (S) 29 11%

Mental health (MH) 88 33%

Medical (M) 26 10%

Criminal involvement (CI) 28 11%

Employment (E) 25 9%

Interpersonal (family/social) (I) 35 13%

Housing outcomes (H) 13 5%

Treatment progress (TC) 86 32%

HIV/AIDS risk behaviors (R) 6 2%

* Because multiple outcomes were frequently reported in the same study, these percentages may exceed 100.

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The most frequently measured outcomes were some form of substance use/problem status, mental health status, and aspects of treatment progress. Roughly 10 percent of the studies

addressed a number of other outcomes, including medical status, criminal justice involvement/illegal activity, employment problems, and interpersonal problems. Two outcomes, HIV risk behavior and housing, were each assessed in less than 5 percent of the studies.

Although these percentages could conceivably be doubled, considering that only 131 of the 265 studies measured outcomes, comprehensive multidimensional outcomes assessment seems to be

the exception, not the rule.

1.10 Data Sources

Data sources for each study were classified according to whether the data were based on:

a) respondent reports via interviews or questionnaires, designated as "Interview (I)" data; or b) other sources, designated as "Administrative (A)" data, such as administrative databases (e.g., including attendance logs, discharge logs, arrest records), collateral reports, urine toxicology results. Data source was documented for the 265 empirical studies, as summarized in Exhibit III-11.

EXHIBIT III-11

CITATIONS BY DATA SOURCE

Data source

Number of

Citations

Percent of Citations

(n=265)

Administrative (A) 50 19%

Interview (I) 99 37%

Administrative and Interview (A, I) 116 44%

The largest percentage (44%) of the empirical studies used multiple data sources to assess individuals. Individual report data (whether processed through an interviewer/clinician or collected via direct self-report) was the sole source of data in nearly 100 (37%) of the empirical studies, and administrative data the sole source in 50 (19%). Thus, the majority of the studies relied on a single source of data.

2. GAPS IN THE LITERATURE

The landscape of the literature in regard to areas that are well developed and areas that have received less attention presents a fair amount of diversity and considerable breadth for the

selected study descriptors. Nonetheless, a number of gaps and suggested directions or improvements in the research can be identified.

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With regard to type of study and the scientific rigor of the research on co-occurring disorders, the most conspicuous shortcoming is the relative scarcity of randomized treatment outcomes studies. This is true for psychosocial, medication, and combined treatments. The relatively large number of nonrandomized trials, either with or without diagnostic comparison

groups or different interventions, should by now yield operationalized treatment approaches that

are ready to be evaluated with more rigorous randomized trials.

The distribution of specific populations represented in the empirical research reveals a number of issues deserving comment. First, more than half of the empirical studies did not report main findings by gender, typically because of small sample size overall, or small numbers of female participants. There is a need for studies to report specific findings for men and women, since there is ample evidence that the combination of co-occurring disorders and other important individual characteristics varies by gender. Controlling for gender in the analyses, as was done in a number of studies, is not nearly as informative as conducting analyses that elucidate possible gender differences. With regard to special populations, young adults, senior citizens, and HIV+ individuals were the focus in only a handful of studies of co-occurring disorders. More attention here is warranted. Additionally, homeless samples were examined in only about 10 percent of the empirical studies. More work toward understanding the composition and needs of, and appropriate treatment approaches for, this particularly vulnerable

population is also warranted.

The distribution of studies within the substance abuse, mental health, and integrated treatment programs or systems of care appears to be fairly balanced. Additionally, a number of informative studies include multiple (non-integrated) systems of care. The major gaps with regard to systems of care are for clients with co-occurring disorders who are in the criminal justice system, in primary medical care, and in homeless shelters. Five percent or less of the studies focused on clients within in these systems.

The major treatment modalities were for the most part well represented in the literature.

The one glaring exception was that only six studies were conducted in jails or prisons. More work in these settings is needed. That 7 percent of the empirical studies of treatment samples did

not clearly report modality, setting or level of care is problematic. The information value of any study can be enhanced by the inclusion of this important descriptor.

Regarding primary substance(s) of abuse, the majority of studies applied generic inclusion criteria, that is, alcohol and/or other drug use. Approximately 15 percent of the studies addressed alcohol only, which is reasonable since alcohol as the sole substance of abuse is common. Opiates and cocaine were the major substances that defined samples, each in roughly

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10 percent of the studies. A gap seems to be a focus on some individual substances (or combinations of substances), such as marijuana, stimulants (other than cocaine), and club drugs,

alone or in combination with alcohol.

A wide range of psychiatric (non-substance-use) diagnoses is covered in the review of the literature on co-occurring disorders. Schizophrenia and other psychotic disorders comprised the

single most frequent category of diagnoses. However, the combinations of various types of mood disorders and anxiety disorders (including PTSD) were represented more frequently. More information about specific anxiety disorders would be valuable. The whole range of personality disorders was relatively under-represented, given the reported prevalence of

personality disorders in clients in both the substance abuse and the mental health treatment systems. Antisocial personality disorder has perhaps received undue attention relative to other personality disorders or to personality disorders in general. To assess co-occurring disorders comprehensively, it appears that the full range of personality disorders needs to receive more attention. Finally, three psychiatric problems that received very little attention were suicidal/violent behavior, gambling, and eating disorders.

A conspicuous lack of empirical research was found in the areas of cost studies (4%) and medication studies (11%). Harwood and colleagues (2002), in their recent annotated bibliography on costs of substance abuse treatment, have also noted the dearth of cost studies in

the treatment of individuals with co-occurring disorders. Medication studies were intentionally under-represented in this review because they are the focus of a contemporaneous CSAT-sponsored

effort [*Use of Medication in Treating Persons with Substance Abuse and Cooccurring Disorders: Literature Review* (in progress)]. Nevertheless, relatively few recent randomized, double-blind medication studies were identified and indicate a lack of such research

in this area as well.

Substance use (alcohol and/or drug use), mental health, and treatment progress were the outcomes most frequently reported. There is, however, a relative lack of information on several outcome domains relevant to the often multi-problem population of clients with co-occurring disorders. More specifically, roughly 10 percent of the empirical studies (approximately 20 to 25% of the outcome studies) evaluated outcomes related to medical status (and many of these concerned medication side effects), criminal justice system involvement or illegal activity, employment, and interpersonal relationships. Few of the studies reported outcomes related to housing or to HIV risk behaviors. All of these areas are potentially problematic for clients who have co-occurring disorders, and comprehensive outcome evaluations would clearly provide needed information for substance abuse treatment providers, policymakers, and researchers/evaluators.

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Nearly half of the studies utilize client self-report data in combination with another data source; this means more than half of the studies utilize only one of the two major classes of data.

The use of multiple data sources can enhance the validity and utility of results.

3. CLASSIFICATION OF LITERATURE BY STUDY CHARACTERISTICS

The coding scheme and the definitional details of the coding which were developed to characterize the studies are shown in Exhibit III-12. These domains and their related codes are used to describe the recent science-based literature on co-occurring disorders.

EXHIBIT III-12

CODING SCHEME FOR INDIVIDUAL STUDY CHARACTERISTICS

Study Characteristic/Definition Key to Coding of Study Characteristic

Type of Study:

Primary type of study; some studies may be of more than one type and the primary study type is listed first, followed by the other study types.

D: Descriptive Study

L: Literature Review
NC: Naturalistic Outcomes Study-with comparison
diagnostic or intervention group(s)
N: Naturalistic Outcomes Study-single group
R: Randomized Clinical Trial
P: Prevalence Study
M: Methodological Study

Populations Sampled:

Samples for which specific findings were reported; multiple listings are possible as appropriate. The descriptors that characterize the entire sample are listed first. When multiple codes characterize the entire sample, these codes precede the gender codings.

A: Adolescents (<18)
YA: Young Adults (18-21)
V: Veterans
C: Community Sample
H: Homeless
HIV: HIV+
E: Elderly
F: Female population
M: Male population
N: Not reported by gender

Sample Size:

Baseline sample size refers to the number of individuals included in the investigation. Follow-up sample size refers to the largest number of individuals included at any postadmission follow-up time point.

Baseline sample size (line 1)
Follow-up sample size (line 2)

System of Care:

System from which the sample was drawn or within which the clients were treated. Multiple codes are possible.

SA: Substance Abuse
MH: Mental Health
IN: Integrated SA/MH
CJ: Criminal Justice
MD: Medical
H: Homeless Shelter System

Modality, Setting, or Level of Care:

Index treatment modality from which the sample was drawn or treated. Outpatient refers to any outpatient services (e.g., standard OP, intensive OP, case management) other than opiate replacement therapy, which is coded as OM. Multiple codes are possible.

O: Outpatient
OM: Opiate Replacement Therapy-Outpatient
R: Residential/Therapeutic Community
I: Inpatient
C: Controlled Environment-Unspecified
J: Jail/Prison
U: Unknown

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EXHIBIT III-12 (CONT.)

CODING SCHEME FOR INDIVIDUAL STUDY CHARACTERISTICS

Study Characteristic/Definition Key to Coding Study Characteristic

Substance of Abuse:

Substance(s) that was designated as an inclusion criterion or that was the primary focus of study.

A: Alcohol

AM: Amphetamines

C: Cocaine

M: Marijuana

H: Hallucinogens/PCP

I: Inhalants

O: Opiates

S: Sedatives

D: Drugs general/unspecified (not alcohol)

Psychiatric Diagnosis:

Diagnoses represented in the sample, i.e., were most prevalent in the sample, constituted a focus of the study, or for which results were reported.

PTC: Schizophrenia, schizoaffective, other psychotic

BI: Bipolar disorder

D: Major depression

PTS: Posttraumatic stress disorder

OA: Other/unspecified anxiety disorder

ADH: Attention deficit hyperactivity disorder

CD: Conduct disorder

ED: Eating disorder

G: Gambling

OM: Other/unspecified mood disorder

PS: Psychiatric severity

APD: Antisocial personality disorder

BPD: Borderline personality disorder

OPD: Other/unspecified personality disorder

SV: Suicidal/violent

O: Other/unspecified psychiatric diagnosis

Cost:

Study addresses costs of treatment for clients with cooccurring disorders.

Y: Yes

N: No

Medication:

Results on the use of medication are reported in the study.

Y: Yes

N: No

Outcomes:

Domains assessed in studies that had a follow-up component.

A: Alcohol

D: Drugs

S: Substance use (A/D not distinguished)

MH: Mental health

CI: Criminal involvement

E: Employment

I: Interpersonal (family/social)

M: Medical

TC: Treatment progress (e.g., completion, attendance, retention)

R: HIV risk behavior

H: Housing outcomes

Data Source I: Interview/self-report

A: Administrative/clinical records, other sources

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The results of coding the 290 peer-reviewed articles published between 1997 and 2003 are displayed in Exhibit III-13 at the end of this chapter. More specific information about the coding strategies used in coding population samples, systems of care, primary substances, and psychiatric diagnoses is provided below.

Coding Population Samples. The individual studies may have included multiple samples, and a few conventions were adopted in order to summarize the results with somewhat

more precision. The following coding strategy was used to characterize the types of samples included in the 265 empirical studies (i.e., excluding the literature reviews). A non-client sample designed to represent a general community population was coded as C. When C is the first designation in Exhibit III-13, it indicates that the sample was entirely a community sample and not designed to represent a treated sample. When C is not presented first, it indicates that a community sample was included in the overall study and was either a comparison group, a subset

of a larger group, or most typically, in the case of literature reviews, one of many samples studied. A somewhat similar strategy was employed with samples of veterans. That is, when V is the first code, the entire sample was veterans treated within the Veteran's Administration healthcare system. When V is not first, it indicates that veterans were a subset of the larger sample or a comparison group. The homeless, HIV+ individuals, adolescents (typically younger than 18), young adults (generally ages 18 through 21), and the elderly (generally 65 years or older) were noted in the coding of studies as relevant populations if one or more samples were specifically included and reported on in the study. Finally, gender was coded in the following four categories: only males were included, only females were included, males and females were both included and meaningful results were reported by gender, and males and females were included but results were not reported by gender.

Coding Systems of Care. For the purposes of summarizing the systems of care represented in these studies, if a study was coded as having integrated systems of care, that was given precedence in the calculation of percentages (and the other system was disregarded, however, both systems were noted on the individual study summary log). Additionally, another category of care (coded X) was created for studies in which clients were drawn from or treated in

multiple (yet unintegrated) systems of care. These studies could indicate, for example, simply that the overall sample was drawn from multiple systems or that there was a comparison of samples among systems.

Coding Primary Substances. Studies in which the primary substance was alcohol were coded as A, and studies in which the primary substance was drugs, without further specification,

were coded as D. Studies that had no inclusion criteria specifying a particular substance of abuse

were coded as A, D (i.e., both alcohol and drugs). Additionally, on the individual study summary sheet, if a study's inclusion criteria specified a particular drug or if a study focused on

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a certain drug, substance of abuse was coded to reflect that drug; cocaine (C), opiates (O), amphetamine (AM), marijuana (M), hallucinogens/PCP (H), inhalants (I), or sedatives (S).

Coding Psychiatric Diagnoses. If a particular diagnosis was the focus of the study, its code was listed first. With this exception, codes were generally ordered according to the proportion of individuals within the sample who had a particular diagnosis, with higher percentages listed first. It should be noted that a study's psychiatric diagnostic code was psychiatric severity (PS) if general psychiatric distress was a proxy for a formal diagnosis or a key sample descriptor in the study (e.g., Addiction Severity Index psychiatric composite score). A designation of antisocial personality disorder (APD) reflected either a diagnosis of antisocial personality disorder or a score on measures of psychopathy or sociopathy. Finally, studies were coded as SV if they measured suicidal thoughts/attempts or violent behaviors.

This chapter concludes with a matrix, Exhibit III-13, which readers may use to crossreference descriptors of interest. In this way, it is possible to identify more specific sorts of studies. For example, randomized studies of integrated treatment or outcomes studies that report

findings for women can be selected. The matrix yields a multitude of possibilities when used in this way.

EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Abbott, Moore, et al. 1998 NC N 227 ? SA OM O D, OM, OA, APD, OPD N N R I

Albanese, Clodfelter, et al. 2000 N M 20 20 SA I A, D BI N Y MH, TC, M, S I, A

Alpert, Fava, et al. 1999 D, P N 38I MH O A, D D, OA, ED N N --- I

Alterman, McDermott, et al. 1998 M, D,

P M, VA 252 SA OM O APD, PS, OPD N N --- I, A

Alterman, Rutherford, et al. 1998 NC VA, M 193 193 SA OM O APD, CD N N D, A, MH, CI,

E, I, M, TC I, A

Appleby, Dyson, et al. 1997 M, D M, F 100 MH I A, D PTC, O N N --- I, A

Appleby, Dyson, et al. 1997 NC N 375 373 MH I A, D PTC, OM N N TC I, A

Appleby, Luchins, et al. 2001 NC M, F 120 120 MH I A, D PTC, O N N TC I, A

Armstrong & Castello 2002 L, P,
D A, C, M, F --- A, D CD, O, D N N ---
Arnold, Stewart, et al. 2001 N M, F 82 82 CJ R A, D BI, D N N TC I, A
Avants, Margolin, et al. 1998 R M, F 307 307 SA OM O OA, PS, APD Y N D, MH, I, TC, R I, A
Ball, Rounsaville, et al. 2001 M N 182 131 SA I A, D OPD, APD, BPD, D, OM, BI N N --- I
Bebout, Drake, et al. 1997 N H, N 158 122 IN R A, D PTC, OM N N H, A, S, MH, I I, A
Belenko, Lang, et al. 2003 P, D M, F 280 CJ R, J D PS N N --- I
Bellavia & Toro 1999 M, D H, C, N 144 HS O A, D D, OM, PTC N N --- I
Biederman, Wilens, et al. 1998 D, P M, F, C 507 MH U A, D ADH, CD, APD, D, BI O A N N --- I
Bing, Burnam, et al. 2001 D, P HIV, N 2864 MD O A, D D, OM N N --- I
Blixen, McDougall, et al. 1997 D N, E 101 MH I A, D D, O N Y --- A
Bogenschutz & Akin 2000 D, M M, F 81 IN O A, D PTC, BI, OPD N N TC I, A
Bogenschutz & Siegfried 1998 D M, F 57 MH O, I A, D PTC, OM N N --- A
Boles & Johnson 2001 D M, F 42 MH U A, D O N N --- I
Borges, Walters, et al. 2000 P, D C, M, F 8098 --- A, D SV N N --- I
Brady, Dansky, et al. 1998 D M, F 33 SA O C PTS, D, OA, BI, OPD N N --- I
Brady, Dansky, et al. 2001 R N 39 15 IN O C PTS N N A, D, MH, I, M,
E, CI, TC I, A
Brems, Namynuiik, et al. 1999 D W, A 192 SA R A, D O N N --- I
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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Brook, Brook, et al. 2002 N C, A, N 975 736 --- A, D D N N MH, A, D I
Brook, Cohen, et al. 1998 N C, A, N 975 776 --- A, D CD, ADH, OA, D, OM N N D, A, MH I
Broome, Flynn, et al. 1999 N N 5269 5269 SA R, O, OM D O N N TC I, A
Brooner, King, et al. 1997 P, D M, F 716 SA OM O D, OM, OA, APD, BPD, OPD N N --- I
Brown, Melchior, et al. 1999 N H, F, HIV 577 311 SA R A, D PTC, BI, BPD N N TC, S, E, H I, A
Brown, Stout, et al. 1998 D N 42 SA I A, D PTS N N --- I
Brown, Stout, et al. 1999 D, P M, F 95 SA I A, D PTS, D, OA, OPD Y N --- I, A
Brunette, Drake, et al. 2001 NC N 84 82 MH RA, D PTC N N S, H, MH, CI,
TC I, A
Bucholz, Hesselbrock, et al. 2000 D, P,
M M, F, C 6322 SA U A APD, CD N N --- I
Bulik, Sullivan, et al. 1997 D F 114 MH O A ED, D, OM, O, OA N N MH, I I
Cacciola, Alterman, et al. 2001 L, P,
D, M M, F --- SA, MH --- A, D D, OM, BI, PTS, OA, APD, BPD,
OPD, PTC N Y D, A, MH, I, CI,
R, TC, M, E ---
Cacciola, Alterman, et al. 2001 NC N, V 310 278 SA OM O D, PTS, OM, OA, APD, BPD,

OPD N Y D, A, MH, CI,
 E, I, M, TC I, A
 Cacciola, Rutherford, et al. 1998 M, P N, V 258 219 SA OM O APD, BPD, OPD N N --- I
 Carey, Carey, et al. 2002 N N 30 30 MH O A, D PTC, BI N N A, S, TC I, A
 Carey, Cocco, et al. 1997 M N 97 MH O A, D PTC, BI, O N N --- I
 Carey & Correia 1998 L, M --- MH, SA --- A, D PTC, O N N ---
 Carey, Purine, et al. 2002 D, M N 84 MH O A, D PTC, D, BI N N --- I
 Carpenter & Hasin 1999 D C, N 962 777 --- A OM N N --- I
 Carroll & McGinley 1998 NC M, F 438 226 SA R A, D O N N MH I
 Cecero, Ball, et al. 1999 NC N 370 ? SA O, I A, D APD, D, OPD, BPD N N A, D, MH, I, E,
 CI, M, TC I, A
 Chilcoat & Breslau 1998a NC C, N 1007 979 --- D PTS N N D, MH I
 Chilcoat & Breslau 1998b NC C, N 1007 979 --- D PTS N N D, MH I
 Chutuape, Brooner, et al. 1997 NC M, F 231 SA OM O, S OA, OPD, BPD, APD, OM N N D I, A
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CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Clark 2001 R N 223 203 MH, (IN) O A, D PTC, BI Y N S, I I, A
 Clark, Kirisci, et al. 1998 D, P M, A, C 262 SA, C J U A, D CD, ADH, D N N --- I
 Clark, Mason, et al. 2001 D, P M, F 150 SA OM O PTS, D, OM, SV N N --- I
 Clark, Ricketts, et al. 1999 R M, F 223 203 MH, (IN) O A, D PTC, BI Y N CI A
 Clark, Xie, et al. 2001 N N 193 MH, (IN) U A, D PTC, BI N N TC, I I
 Clure, Brady, et al. 1999 P, D N 136 SA I C, A ADH, CD, APD N N --- I
 Coffey, Saladin, et al. 2002 D, M M, F 75 SA I, O A, C PTS N N A, D I, A
 Compton, Cottler, et al. 1998 NC M, F, C 351 333 SA O CAPD N N R, D I, A
 Compton, Cottler, et al. 2000a P, D M, F 425 SA O, OM, I, R D APD, OA, D, OM N N --- I
 Compton, Cottler, et al. 2000b M, P M, F 425 SA O, OM, I, R D APD, OA, D, OM N N --- I
 Copeland & Sorensen 2001 NC N 345 SA O C,
 AM D, BI, OA, PTC, SV N N D, TC A
 Cornelius, Salloum, et al. 1997 R N 51 51 MH I A D N Y MH, A, TC I, A
 Cornelius, Salloum, et al. 2000 R N 51 31 MH I A D N Y MH, A I
 Cornelius, Salloum, et al. 1998 R N 51 51 MH I A, C D N Y MH, A, D I
 Costello, Erkanli, et al. 1999 D, P C, A, M, F 1420 --- A, D ADH, CD, OM, O N N --- I
 Costello, Farmer, et al. 1997 D, P C, A, M, F 1256 --- A, D ADH, CD, OM, O N N --- I
 Crits-Christoph, Siqueland,
 et al. 1999 R N 487 459 SA O C PS, APD N N D, TC I, A
 Cunningham-Williams,
 Cottler, et al. 1998 P, D C, N 2954 --- A, D G, APD, O N N --- I
 Daley & Zuckoff 1998 N N 130 IN I, O A, D OM, OA, OPD, PTC N N TC A

Daley, Salloum, et al. 1998 NC N 23 23 IN O C D, OM N Y TC, MH I, A
 Dansky & Brady 1997 M N 154 SA I A, D PTS N N --- I, A
 De Leon, Sacks, et al. 1999 D H, N 342 MH, HS I A, D PTC, D, OM N N --- I
 De Leon, Sacks, et al. 2000 NC H, N 342 281 MH, HS I A, D PTC, D N N A, D, CI, R,
 MH, E I, A
 Devanand 2002 L, D,
 P E, N --- --- A D, OA, OPD N Y MH ---
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CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Dickey, Normand, et al. 2002 P, D N 26,332 MH, MD U A, D PTC, BI N N --- A
 DiNitto, Webb, et al. 2001 N N 97 81 IN I A, D D, OM, PTC N N TC, A, D, MH,
 CI, D, I, M I, A
 DiNitto, Webb, et al. 2002a N M, F 97 68 SA I A, D D, OM N N M, E, CI, A, D,
 I, TC, MH I, A
 DiNitto, Webb, et al. 2002b R N 97 83 SA, (IN) I A, D OM, D, PTC, BI N N A, D, TC, CI,
 MH, M, I I, A
 Dixit & Crum 2000 N C, F 1,383 --- --- A OM, OA N N A I
 Dixon, McNary, et al. 1997 NC N 273 168 MH, SA I A, D O, PTC N N A, D, MH, TC I, A
 Dixon, McNary, et al. 1998 NC M, F 268 198 MH I A, D O N N A, D, TC I, A
 Donovan & Nunes 1998 L N --- --- A, D BI, OM N Y --- ---
 Drake, Essock, et al. 2001 L --- --- MH, (IN) --- A, D O N N --- ---
 Drake, McHugo, et al. 1998 R N 223 203 MH, (IN) R A, D PTC, BI N N A, D, H, MH, I I, A
 Drake, Mercer-McFadden, et
 al. 1998 L N --- IN I, R A, D PTC, OM N N S, MH, H, I, CI,
 TC, M I, A
 Drake, Wallach, et al. 2002 L N --- MH, IN --- A, D PTC, O N Y --- ---
 Drake, Xie, et al. 2000 NC N 151 151 MH O A, D PTC N Y MH, D, A I, A
 Drake, Yovetich, et al. 1997 NC H, N 217 187 MH, (IN) O A, D PTC, BI, D N N H, A, D, CI, M,
 MH, I I
 Drebing, Fleitas, et al. 2002 N V, N 25,480 MD O A, D PTC, PTS, BI, OM N N E A
 DuPont 1997 L, D,
 P --- --- --- A, D OA N Y --- ---
 Eden, Peters, et al. 1997 D N --- CJ J A, D D, PTC, BI N N --- I
 Embry, Vander Stoep, et al. 2000 N A, H, M, F 86 83 MH R A, D PTC, OM, CD, ADH, OPD N N H I, A
 Epstein, Labouvie, et al. 2002 D, M M, F, VA 342 SA I, O A APD, O N N --- I, A
 French, Sacks, et al. 1999 NC H, N 342 281 H, MH, (IN) R A, D PTC, D Y N A, D, CI, R,
 MH, E, TC I, A
 Galenter, Dermatis, et al. 1998 N H, N 387 340 SA O C PTC, OM, OPD, O N Y D, TC I, A

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CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Gomez, Primm, et al. 2000 D N 25 M H, (I N) O A, D D, B I, O M, P T C N N --- I, A
Gonzalez & Rosenheck 2002 NC H, N 5,432 4,415 I N O A, D D, P T C, B I, O A, P T S N N M H, A, D, H, I,
E, C I I
Goodman, Salyers, et al. 2001 P, D M, F 782 M H I, O A, D P T C, B I, D N N --- I
Grant & Hasin 1999 D C, M, F 18,352 --- A D, S V N N --- I
Grella, Hser, et al. 2001 NC A 1,734 992 S A R, O, I A, D C D, D, A D H N N D, A, M H, I, C I,
E I, A
Grilo, Martino, et al. 1997 D Y A, A I I 7 M H I A, D D, O M, P T C, O A, E D, B P D, A P D,
O P D N N --- I
Hall, Carriero, et al. 2000 NC M, F 313 S A O C, O G, A P D, O A, D, P T S N N D, T C I, A
Harris & Koepsell 1998 NC N 254 254 C J J A, D P T C N N C I A
Hasin, Liu, et al. 2002 NC N 279 250 I N I C, O,
A D N N S, M H I
Hasin, Trautman, et al. 1998 M N, C 184 M H, S A U A, C,
O D N N --- I
Havassy & Arns 1998 D N, H 160 M H I A, D P T C, B I, D N N --- I, A
Havassy, Shopshire, et al. 2000 R N 268 M H, (I N) I D P T C, B I, D N N M H, I, S, T C I, A
Herman, BootsMiller, et al. 1997 R N 485 427 I N, M H I A, D P T C, O M, O, O P D N N T C, S, M H I
Herman, Frank, et al. 2000 R M, F 485 429 I N, M H I A, D P T C, O M, O N N A, T C, M H, I, S I
Hernandez-Avila, Burleson,
et al. 2000 N N 370 276 S A O, I A, D A P D, B P D, O P D N N C I I
Hesselbrock, Segal, et al. 2000 D, P M, F 200 S A I A C D, A P D, D N N --- I
Hien, Zimberg, et al. 1997 D, P N 130 S A, M H O, O M A, D D, P T C, O N N --- I
Ho, Tsuang, et al. 1999 M V 179 I N O A, D P T C N N T C, D, M H A
Hoff & Rosenheck 1998 NC V, M, F 67,814 M H O, I A, D P T C, B I, P T S, D, O Y N T C, M H, S, M A
Hoff, Beam-Goulet, et al. 1997 D, P V, H I V, N,
C I I, 645 S A, M H, M D I, O A, D P T S, O N N --- I
Holdcraft, Iacono, et al. 1998 D C, M 248 --- A A P D, D, O N N --- I
Holroyd & Duryee 1997 D E, M, F 140 M H O A, D D, O, B I N Y --- I
Hubbard, Craddock, et al. 1997 N N 4,229 2,966 S A O M, R, O, I A, D S V N N M H I
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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author
Year
Type of Study
Population
Sample Size
System of
Care
Modality
Substance of
Abuse
Psychiatric Diagnosis
Cost
Medication
Outcomes
Data Source

Humphreys & Weisner 2000 M, P M, F 593 SA I, R, O A, D PS N N --- I
Hunt, Bergen, et al. 2002 N M, F 99 99 MH I A, D PTC N Y TC, MH A
Hunter, Powell, et al. 2000 N V, M 360 255 SA I A APD, PS N N A I
Humphreys & Rosenheck 1998 NC H, V, N 565 410 IN U A PS N N H, A, D, TC,
MH, E I
Jacobson, Southwick, et al. 2001 L, D,
P
M, F, A,
V, C --- SA I, RA, D PTS N N ---
Jaffe, Comtois, et al. 1998 D N 330 IN, SA O, OM O PTC, BI, OM, O N N --- I, A
Jerrell & Wilson 1997 R N 132 132 MH O, C A, D PTC Y N S, MH, I I
Jerrell & Ridgely 1999 R, M M, F 132 132 MH O, C A, D PTC Y N MH, I I, A
Jerrell, Wilson, et al. 2000 N N 98 98 IN O, C A, D PTC, BI, D Y N S, MH, I, E I
Jordan, Davidson, et al. 2002 N N 485 351 MH I A, D PTC N N TC I
Jordan, Federman, et al. 2002 D F, C 916 CJ J A, D OM, APD, BPD N N --- I
Kadden, Litt, et al. 2001 NC,
M N 260 SA U A PS, PTC N N A I
Kalechstein, Newton, et al. 2000 D, P M, F, HIV 1,580 CJ J A, D OM, SV N N --- I, A
Kandel, Huang, et al. 2001 D, P C, N 39,994 --- A, D D, OA N N --- I
Kandel, Johnson, et al. 1997 P, D C, A, M, F 1,285 --- A, D OM, OA, CD, ADH, O N N --- I
Kandel, Johnson, et al. 1999 P, D C, A, N 401 --- A, D OM, OA, CD, ADH, O N N --- I
Kaspro, Rosenheck, et al. 1999 NC V, H 1,495 SA, IN RA, D OM, PTS, PTC, PS N N TC, H, E, A, D I, A
Kay, Altshuler, et al. 1999 M, P V, N 61 MH O A BI, OPD N N --- I, A
Kelley & Petry 2000 D M, C 91 SA U A, C,
O APD N N --- I, A
Kessler, Berglund, et al. 2001 D, P C, N 5,877 --- A, D OA, BI, D, PTC N N --- I
Kessler, Crum, et al. 1997 D, P C, M, F 8,098 --- A, D OA, CD, D, OM, PTS, BI, APD N N --- I
Kilpatrick, Axierno, et al. 2000 P, D C, A, M, F 4,023 --- A, D PTS N N --- I
King, Brooner, et al. 1999 NC M, F 125 SA OM O ADH, APD, BPD, OPD, D, OM,
OA, BI N N A, D, TC I, A

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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author
Year
Type of Study
Population
Sample Size
System of

Care
Modality
Substance of
Abuse
Psychiatric Diagnosis
Cost
Medication
Outcomes
Data Source

King, Kidorf, et al. 2000 NC N 109 69 SA OM O APD, D, OA, OPD N N R, D, A, MH, E,
I, CI, MI, A
King, Kidorf, et al. 2001 NC N 518 513 SA OMA, D APD, O N Y TC, D I, A
Koegel, Sullivan, et al. 1999 D, P C, H 1,563 --- A, D PTC, BI, D, O N N --- I
Krakow, Galanter, et al. 1998 D M, F, H,
HIV 147 IN I A, D PTC, BI, D N N --- I, A
Kuhn & Culhane 1998 D, P,
MH, N 80,160 HS O A, D O N N --- A
Langenbacher, Bavly, et al. 2001 P, D M, F 372 SA U A, D G, CD, APD N N --- I
Lapham, Smith, et al. 2001 D, P M, F 1,105 C J O A, D D, PTS N N --- I, A
Latimer, Newcomb, et al. 2000 N A, M, F 225 169 SA O, R A, D PS N N S, MH, I, TC I, A
Latimer, Stone, et al. 2002 D A, M, F 135 MH, CJ, SA O, U A, D ADH, CD, OM, D N N --- I, A
Laudet, Magura, et al. 2000 DN 310 IN O A, D PTC, BI, D N N --- I
Leal, Galanter, et al. 1999 D H, N 147 IN I C, A PTC, BI, OM N N --- I
Leon, Lyons, et al. 1998 NC M, F 163 MH I A, D PTC, OM, OA N N TC, MH I, A
Leslie & Rosenheck 1999 P, D V, N 55,684 MH, SA I A, D PTC, D, BI, OM, O Y N --- A
Levin, Evans, et al. 1998 P, D F, M 281 SA O, R C ADH, CD, APD N N --- I
Linehan, Schmidt, et al. 1999 R F 2,818 IN, MH O A, D BPD, D, OM, OA, PTS N N A, D, M, MH,
TC I, A
Link, Struening, et al. 1997 N M 84 84 SA, MH, MD,
CJ, HS RA, D PTC, BI, D N N SA, MH I
Little 2001 L, D --- MH, SA --- A, D O N N ---
Lydiard 2001 L, P,
D C, A --- --- A, D OA, D, SV N N MH ---
Magura, Kang, et al. 1998 D M, F 212 SA OM O, C D, OA, PTS, OM, BI, ED, APD,
O N N --- I
Magura, Laudet, et al. 2002 N N 310 277 IN O A, D PTC, BI, D, O N Y TC, MH, S, M,
S, H I
Mannuzza & Klein 2000 L YA, M, F,
C --- --- A, D ADH, APD N N MH, I, CI, E, D,
S I, A

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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author
Year
Type of Study
Population
Sample Size
System of
Care
Modality
Substance of
Abuse
Psychiatric Diagnosis
Cost

Medication**Outcomes****Data Source**

Mason, Kocsis, et al. 1998 D N 75 SA OM O OA, APD, OM, D, PS N N --- I
Maxwell, Shinderman 2000 N N 72 72 MH O A D, PTC, BI N Y A, TC, MA, I
Maynard & Cox 1998 P, D N ~300,000 MH, SA I A, D OM, PTC, O Y N --- A
McDowell, Levin, et al. 2000 N N 13 SA O C D N Y MH, D, M, TC I, A
McGeary, French, et al. 2000 NC H, N 342 218 MH, HS, (IN) R A, D PTC, D Y N TC, MH, S, M I, A
McGrath, Nunes, et al. 2000 L M, F --- SA, MH --- A D, OM N Y MH, A ---
McHugo, Drake, et al. 1999 NC,
M N 109 IN O A, D PTC, BI N N A, D, H, MH,
TC, I, I, A
McKay, Alterman, et al. 2000 RV, M 127 127 SA O C APD, D N N D, A, MH, CI,
E, I, M, TC I, A
McKay, Pettinati, et al. 2002 R V, M 132 132 SA O C D, OM N N A, D, MH, TC I, A
McKinnon, Cournos, et al. 1998 P HIV, N 2,873 MH I A, D O+I213 N N --- A
McLellan, Grissom, et al. 1997 R N 130 111 SA O, I A, D PS N N D, A, MH, CI,
E, I, M, TC I, A
McNamara, Schumacher, et
al. 2001 R H, N 128 H, (IN) O D, A D, OM, PTS, OA, O N N D, A, MH, CI,
E, I, M, H, TC I, A
Meisler, Blankertz, et al. 1997 NC,
M H, N 114 MH, H, CJ,
(IN) O A, D PTC, BI, D, BPD, OPD N N S, H, E, MH,
CI, TC I, A
Meissen, Powell, et al. 1999 D --- 125 SA O A, D --- N N --- I
Mercer-McFadden, Drake, et
al. 1997 N N 1,157 IN O, R A, D PTC, BI, OM N N TC, S, MH I, A
Merikangas, Mehta, et al. 1998 P, D C, N ~300,000 --- A, D OM, OA, APD, CD N N --- I
Messina, Wish, et al. 1999 R, M F, M 412 380 SA R A, D APD, O N N TC, A, D, CI I A
Mierlak, Galanter, et al. 1998 N H, M 189 IN R A, D PTC, OM N N TC I, A
Milby, Schumacher, et al. 2000 R H, N 110 84 MD, SA, HS,
(IN) O C OM, OA, O N N S, H, E, TC I, A
Moggi, Ouimette et al. 1999 N V, M 1,268 981 SA I A, D OPD, PTC N N I, TC, MH, S I, A
Moos, Finnney, et al. 2000 NC V, N 34,251 21,036 SA, MH, M O, I A, D OM, OA, PTC, OPD N N S, MH, I, CI, E,
TC I, A
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EXHIBIT III-13**CHARACTERISTICS OF INDIVIDUAL ARTICLES****Author****Year****Type of Study****Population****Sample Size****System of****Care****Modality****Substance of****Abuse****Psychiatric Diagnosis****Cost****Medication****Outcomes****Data Source**

Morgenstern, Langenbucher,

et al. 1997 P, D,
M M, F, V 366 SA I, R, O A APD, BPD, OPD, O N N --- I
Mowbray, Ribisl, et al. 1997 D N 486 MH I A, D PTC, OM, OPD, O N N --- I
Mueser, Drake, et al. 1998 L N --- --- A, D PTC, BI, ASP, OM N N D, A, MH ---
Mueser, Essock, et al. 2001 D M, F, H 391 MH, (IN) O A, D PTC, BI N N --- I
Mueser, Kavanagh, et al. 2001 L N --- --- A PTC, D, OM, OA, APD N N ---
Mueser, Rosenberg, et al. 1999 D N 293 MH I A, D APD, CD, PTC, D, BI N N --- I
Murray, Anthenelli, et al. 2000 D V, M 104 SA I A APD N N --- I
Myers, Stewart, et al. 1998 NC YA, M, F 157 137 SA I A, D CD, APD N N A, D, E, I, MH,
CI, TC? I, A
Najavits, Gastfriend, et al. 1998 P, D M, F 122 SA O C PTS, O, OPD, PS N N --- I, A
Nishith, Mueser, et al. 1997 N N 88 88 CJ O A, D OM, OA, O, APD, PS N N MH, S, TC I, A
Nunes, Quitkin, et al. 1998 RN 137 84 SA OM O D, OM N Y MH, D, TC I, A
Nuttbrock, Ng-Mak, et al. 1997 R H, M 694 694 IN RA, D PTC, D, BI, OM N N TC A
Nuttbrock & Rahav 1998 R H, M 694 290 IN RA, D PTC, D, BI, OM N N TC, A, D, MH I, A
Nuttbrock, Rahav, et al. 1997 N N 320 IN RA, D PTC, D, OA N N MH I, A
Ouimette, Ahrens, et al. 1998 NC V, M 1,857 1,630 SA I A, D PTS, OM, PTC, OA, O, OPD N Y S, MH, TC I, A
Ouimette, Brown, et al. 1998 L F, M --- SA, MH, IN --- A, D PTS Y Y S, MH ---
Ouimette, Finney, et al. 1999 NC V, M 1,857 1,480 SA I A, D PTS, O N N A, D, MH, I, E,
CI, A
Ouimette, Gima, et al. 1999 NC V, N 3,018 3,018 MH I A, D PTC, OA, OM, BPD, OPD N N S, MH, CI, E,
TC I, A
Parks, Hesselbrock, et al. 2001 D, P M, F 469 SA R A, D CD, APD, D, OA N N --- I
Pelissier & O'Neil 2000 P, D M, F 789 CJ, SA J, R, O A, D D, OM, APD N N MH, S I
Penick, Nickel, et al. 1999 M,
NC V, M 360 319 SA, MH I A PS, OM, OA, APD N N A, D, CI, A
Penn & Brooks 2000 N N 112 SA I, C A, D O N N ? I
Petrakis, Carroll, et al. 1998 RN 44 44 SA OM O D, OM N Y MH, D, TC I, A
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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Petry 2000 D N, C 103 SA O A, C,

O G, PS N N --- I, A

Petry 2001 D M, C 111 SA O A, D G N N I, A

Petry & Bickel 1999 N N 114 114 SA OM O PS N N TC I, A

Pettinati, Rukstalis, et al. 2000 D M, F 196 196 SA O A D N N --- I

Pettinati, Volpecilli, et al. 2000 R M, F 100 100 SA O A PS, CD, OM N Y A, TC I, A

Pettinati, Volpecilli, et al. 2001 R M, F 100 100 SA O A D, OM N Y A, MH, TC I, A

Poling, Rounsaville, et al. 1999 M, D N 370 SA U A, D OPD N N --- I

Potenza, Steinberg, et al. 2001 D M, F 562 MH O A, D G N N --- I
 Prigerson, Desai, et al. 2001 P,
 NC, D V, N, E 91,752 MH, SA I, O A, D PTC, PTS, OM, BI N N TC, S, MH, M A
 Primm, Gomez, et al. 2000 D M, F 129 SA, IN O A, D OM, PTC N N --- I, A
 Pristach, Smith 1999 D M, F 60 MH I A PTC, OM, OPD N N --- I
 Project MATCH 1997a R M, F, V 1,726 >1,553 SA O A PS, APD N N A I, A
 Project MATCH 1997b R M, F, V 1,726 >1,553 SA O A O, APD N N A I, A
 RachBeisel, Dixon, et al. 1999 NC N 264 134 IN I A, D PTC, OM, N N MH I
 Rachbeisel, Scott, et al. 1999 L, P,
 M M, F --- MH, IN --- A, D D, PTC, SV Y Y A, D, MH, S ---
 Rahav, Nuttbrock, et al. 1998 D M, H, HIV 315 IN R A, D PTC, OM N N --- I
 Raimo, Smith, et al. 2000 D, P N, C 3,882 SA I, O
 A,
 AM,
 C
 CD, APD, D N N --- I
 Randall, Johnson, et al. 2001 R N 18 15 SA O A O A N Y MH, I, A, M,
 TC I, A
 Randall, Thomas, et al. 2001 R N 93 SA, IN O A O A, OM N N TC, A, MH I, A
 Ries, Demirsoy, et al. 2001 M,
 NC N 1,951 1,951 MH I A, D OM, PTC N N MH, TC I, A
 Ries, Dyck, et al. 2002 N, M N 43 43 IN O A, D PTC, D, BI N N A, D I, A
 Ries, Jaffe, et al. 1999 N, M N 330 75 IN O A, D PTC, BI, O N N MH, S, TC I, A
 Ries, Russo, et al. 2000 NC N 608 608 IN I A, D PTC N N MH, TC I, A
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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Roberts 2000 L, M --- --- --- A, D PTC, D, OM, OA, PS, SV N N --- ---
 Rosenberg, Trumbetta, et al. 2001 P, D N 275 MH O, I A, D PTC, BI, D, PTS N N --- I
 Rounsaville, Kranzler, et al. 1998 M, P,
 D M, F 370 SA I, O A, D APD, BPD, OPD, D, OM, PS N N --- I
 Roy-Byrne, Pages, et al. 2000 R N 64 64 IN O A D N Y MH, A, D, TC,
 M I, A
 Rutherford, Cacciola, et al. 1999 M, P,
 D F 137 SA U CAPD N N --- I
 Sacks, Sacks, et al. 1999 L --- --- IN R A, D O Y N A, D, MH, H, I,
 CI, E ---
 Salloum, Cornelius, et al. 1998 N N 18 14 IN O A D N Y MH, A, M I
 Salloum, Moss, et al. 1998 D M, F 67 IN I A, D D N N --- I

Saxon, Davis, et al. 2001 D V, N 129 C J A, D P T S, D, O A, S V N N --- I
 Scheidt & Windle 1997 D M, F 802 S A I A A P D, D, O A N N --- I
 Schmitz, Averill, et al. 2001 R N 68 S A O C D, A P D, B P D N Y D, M H, M, T C I, A
 Schmitz, Stotts, et al. 2000 D N 151 S A O C D N N A, D, M H I
 Schubiner, Tzelepis, et al 2000 D, P M, F 201 S A I A, D A D H, C D, D N N --- I
 Schuckit, Tipp, et al. 1997 M, P,
 D M, F, C 2 945 S A U A D, A P D N N --- I, A
 Sekerka, Goldsmith, et al. 1999 N V, N 557 557 I N U A, D O M, B I, P T C N N M, M H, T C A
 Sengupta, Drake, et al. 1998 L, D N, C --- M H O, C A, D P T C, B I N N E A
 Sherbourn, Hays, et al. 2000 P, D H I V, N 2,864 M D O A, D D, O M N N --- I
 Sinha & Rounsaville 2002 L M, F --- S A, M H -- A, D D, O M, P T S, A P D N N ---
 Skinstad & Swain 2001 D M 125 S A I A, D O A, D, B I, P T C, A P D, O P D N N --- I
 Skodol, Oldham, et al. 1999 P, D N 200 M H O, I A, D B P D, O P D N N --- I
 Sloan & Rowe 1998 N, M V, N 118 118 I N O A, D D, P T S, B I N N T C, D, M I, A
 Sloan, Kivlahan, et al. 2000 M, P V, N 373 S A U A, D B I N N --- I, A
 Smith, Sawyer, et al. 2002 D, P M, F 7,542 C J I, O A, D P T C, O M N N --- I, A
 Solhkah, Wilens, et al. 1998 L A --- --- A, D A D H, C D, D, B I N Y A, D, M H ---
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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Strakowski, Sax, et al. 1998 N C M, F 77 66 M H I A, D B I, P T S, O A N N M H, A, D, T C I, A
 Swanson, Pantalon, et al. 1999 M, R N 121 M H I A, D P T C, O M, N N T C I
 Swartz & Lurigio 1999 D M 204 C J O A, D G, D, P T S, O A N N --- I, A
 Swartz, Lurigio, et al. 2000 N N 276 204 S A U A, D A P D, D N N D, M H I, A
 Swartz, Swanson et al. 1998 D, P M, F 331 M H I A, D P T C, B I N Y --- I, A
 Swift 1999 L N --- --- A D, O A, P T C N Y A, M H I
 Taylor, Galanter, et al. 1997 N M 183 I N R A, D P T C, O M N N T C, I I, A
 Teitelbaum & Carey 2000 M N, C 135 M H O A P T C N N --- I
 Thomas, Melchert, et al. 1999 N C M, F 252 104 S A I A, D A P D, B P D, O P D N N S I
 Thomas, Thevos, et al. 1999 D M, F 794 S A O A O A, D, A P D, P S N N --- I
 Tidey, Mehl-Madrona, et al. 1998 N C N 185 123 S A O C P S N N M, C I, E, D, A,
 M H, I, T C I, A
 Triffleman, Carroll, et al. 1999 M N --- I N O A, D P T S N N --- I
 Tsuang, Ho, et al. 1997 N V, N --- I N I, O A, D P T C N N T C A
 Turner & Gil 2002 D, P C, Y A, F,
 M 1,803 --- --- A, D C D, D, A P D, P T S, O A, A D H N N --- I
 Unger, Kepke, et al. 1997 P H, A, Y A,
 C M, F 432 H O A, D A D H, S V, O M N N --- I
 Van Horn & Blux 2001 M, D N --- I N I A, D D, P T C, B I N N --- I

Van Horn & Frank 1998 P, D N 339 SA I A, D APD, BPD, OPD, OM, OA N N --- I
 Velasquez, Crouch, et al. 2000 D H, N 100 HS, (IN) O A, D PS N N --- I
 Velazquez, Carbonari, et al. 1999 D N 132 IN O A PS N N --- I
 Verheul, Kranzler, et al. 2000a NC,
 M N 370 276 SA I, O A, D OPD, OA, OM N N MH, A, D I
 Verheul, Kranzler, et al. 2000b D, P,
 M N 370 SA I, O A, D D, OM, OA, APD, BPD, OPD N N --- I
 Vogel, Knight, et al. 1998 D N 60 IN O D PTC, D, BI N Y --- I
 Volavka 1999 N N 331 299 MH I A, D PTC N Y MH, I I, A
 Wasserman, Havassy 1997 D M, F 450 SA O, I C PTS, APD, D, OA, OM, BI, ED N N --- I
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EXHIBIT III-13

CHARACTERISTICS OF INDIVIDUAL ARTICLES

Author

Year

Type of Study

Population

Sample Size

System of

Care

Modality

Substance of

Abuse

Psychiatric Diagnosis

Cost

Medication

Outcomes

Data Source

Watkins, Burnam, et al. 2001 P, D C, M, F 9,585 --- D D, BI, PTC N N --- I
 Weiner, Abraham, et al. 2001 P, D A, M, F 771 MH RA, D PS N N --- A
 White, Ackerman, et al. 2001 D, P M 115 CJ J A APD, OA N N --- I
 Wilens, Biderman, et al. 1998 D M, F, C 201 MH O A, D ADH, CD, APD, D, OA N N --- I
 Windle 1999 D, P,
 M M, F 802 740 SA I A APD, D, OA, PTC N N --- I
 Wingerson & Ries 1999 M, D N --- IN O A, D PTC N N --- I, A
 Wise, Cuffe, et al. 2001 N A, M, F 91 SA RA, D CD, D, ADH, OM, BI N Y TC I, A
 Wiseman, Sunday, et al 1999 D F 218 MH I, O A, D ED, BI, D, OM, OA, BPD, APD,
 OPD N N --- I
 Wolford, Rosenberg, et al. 1999 MN 320 MH I A, M,
 C PTC, BI, D N N --- I, A
 Wu, Kouzis, et al. 1999 D, P C, M, F 5,393 --- A D, PTS, BI, OM, OA, PTC N N --- I
 Zanis, McLellan, et al. 1997 MN 62 MH, IN O A, D PTC, BI, D N N --- I, A
 Zlotnick, Zimmerman, et al. 2001 D M, F 138 MD O A, D PTS, OM, OA, BPD, APD, ADH N N --- I
 Zweben 2000 L --- IN, MH, SA,
 CJ --- A, D O N N ---

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IV. OVERVIEW OF DATA RESOURCES

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IV. OVERVIEW OF DATA RESOURCES

This section describes the various publicly available data sets containing information on both substance abuse and mental health issues. These data sets are divided into three categories:

substance abuse, health, and other. With one exception, all of the data sets are available at no cost.

The three exhibits presented on the following pages contain information on each data set, including the years of public use data that are available, the sample size, examples of relevant types of data for both substance abuse and mental health, and how to access each data set. A brief description of each data set follows each exhibit.

1. SUBSTANCE ABUSE DATA SETS

Eight publicly available substance abuse data sets that also contain mental health data are described in Exhibit IV-1. Some data sets, such as the National Household Survey on Drug Abuse (NHSDA), are ongoing data collection efforts, while others such as the Drug Abuse Treatment Outcome Study (DATOS), were collected for a finite period of time. With the exception of the National Longitudinal Alcohol Epidemiologic Survey, all of the substance abuse data sets are available on the web.

EXHIBIT IV-1

SUBSTANCE ABUSE DATA SOURCES CONTAINING INFORMATION ON SUBSTANCE ABUSE AND MENTAL HEALTH

Data Set

Years

Available in

PUDF* Sample Size

Examples of Relevant

Types of Substance

Abuse Data

Examples of Relevant Types of

Mental Health Data How to Access**

Alcohol and

Drug Services

Study (ADSS)

1996-1999 Main Incentive

Abstract= 5,005

In-Treatment

Methadone

Abstract=925

Main Study

Follow-up=1,184

Substance use history

and patterns, treatment

history, service

utilization

Diagnosis (all 3)

12 month depression and received

treatment (Main Study Follow-up

only)

<http://www.icpsr.umich.edu/SAMHDA/>

Drug Abuse

Treatment

Outcome Study

(DATOS)

1991-1994 2,966 (completed

12 month followup)

Use patterns and

history, service
utilization
Intake 1: mental health status,
service utilization
Intake 2: presence of symptoms
such as anxiety and depression
<http://www.icpsr.umich.edu/SAMHDA/>
Drug Services
Research Survey
(DSRS)
1990 2,222 Use patterns, use
history, service
utilization
Presence of psychiatric disorder at
admission, dual diagnosis at
admission, diagnosis
<http://www.icpsr.umich.edu/SAMHDA/>
National
Household
Survey on Drug
Abuse (NHSDA)
1994-2000 1994B= 17,809
1995=17,747
1996=18,269
1997=24,505
1998=25,500
1999=53,560
2000=58,680
Age of first use, use
patterns (e.g., 30-day
use)
Service utilization, payment
information (adults only), questions
to diagnose various disorders
(adolescents only)
<http://www.icpsr.umich.edu/SAMHDA/>
National
Longitudinal
Alcohol
Epidemiologic
Survey (NLAES)
1992 Use of alcohol and
other drugs (illicit and
prescription), specific
abuse and dependence,
family history of
alcoholism, alcoholrelated
medical
conditions, and
treatment utilization.
Psychiatric disorders Call the National Institute on Alcohol
Abuse and Alcoholism at 301.443.3306.

EXHIBIT IV-1

SUBSTANCE ABUSE DATA SOURCES CONTAINING INFORMATION ON SUBSTANCE ABUSE AND MENTAL HEALTH

(CONT.)

Data Set

Years

Available in
PUDF*

Sample Size

Examples of

Relevant Types of

Substance Abuse

Data

Examples of Relevant Types of
Mental Health Data How to Access**

National

Treatment

Improvement

Evaluation

Study (NTIES)

1992-1997 4,411 (completed
all 3 interviews)

Use patterns, treatment
history

Service utilization, questions on
anxiety, fears, suicide attempts,
taking medications for mental health
problems

<http://www.icpsr.umich.edu/SAMHDA/>

Treatment

Episode Data

Set (TEDS)

1992-1999 Approximately

1.6 million

admissions per
year

Primary, secondary
and tertiary substance

of abuse, age of first

use, frequency of use

DSM diagnosis, whether the

individual has psychological

problems in addition to alcohol or

drug use problems

<http://www.icpsr.umich.edu/SAMHDA/>

Washington,

DC,

Metropolitan

Area Drug

Study (DC

MADS)

1991 Homeless

and Transient
Population
Study
1992: Drug
Use Among DC
Women
Delivering Live
Births in DC
Hospitals
1991:Househol
d and Nonhousehold
Populations
Homeless and
Transient
Population
Study=908,
DC Women=
1,048,
Household and
Nonhousehold=
4,658

Use patterns Lifetime and 30 day depression,
anxiety, hallucinations, admissions
to treatment, length of stay, taking
prescription medications for mental
health problems

<http://www.icpsr.umich.edu/SAMHDA/>

* Public Use Data Files

** To provide funding agencies with essential information about use of archival resources and to facilitate the exchange of information about ICPSR participants research activities, users of ICPSR data are requested to send to ICPSR bibliographic citations for each completed manuscript or thesis abstract. Please indicate in a cover letter which data were used. The original collector of the data, ICPSR, and the relevant funding agency bear no responsibility for uses of these data or for interpretations or inferences based upon such uses.

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Overview of Data Resources

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1.1 Alcohol and Drug Services Study

The Alcohol and Drug Services Study (ADSS) was a national study of substance abuse treatment facilities and clients. The study was designed to develop estimates of the duration and

costs of treatment and to describe the post-treatment status of substance abuse clients. ADSS continues and extends upon data collected in the Drug Services Research Survey (DSRS) and the Services Research Outcomes Study, 1995-1996: United States] (ICPSR 2691). ADSS was implemented in three phases.

In Phase I, a nationally representative sample of treatment facilities was surveyed to assess characteristics of treatment services and clients including treatment type, costs, program capacity, number of clients served, waiting lists, and services provided to special populations. In Phase II records were abstracted from a sample of clients in a subsample of Phase I facilities.

This phase included four sub-components: (1) the Main Study, an analysis of abstracted records to assess the treatment process and characteristics of discharged clients, (2) the Incentive Study, which assessed the impact of varying financial payments on follow-up interview participation among non-methadone outpatient clients, (3) the In-Treatment Methadone Client study (ITMC), which assessed the treatment process of methadone maintenance, and (4) the comparison study of Early Dropout clients (EDO), which provided a proxy comparison group of records from substance abusers that went untreated. Phase III involved follow-up personal interviews with Phase II clients who could be located. This interview sought to determine post-treatment status in terms of substance use, economic condition, criminal justice involvement, and further substance abuse treatment episodes. Urine testing was conducted to validate self-reported drug use. Drugs included in the survey were alcohol, marijuana, cocaine, crack cocaine, heroin, barbiturates, benzodiazepines, amphetamines, non-prescribed use of prescription medications, abuse of over-the-counter medications, and other drugs.

1.2 Drug Abuse Treatment Outcome Study

DATOS is a prospective study designed to determine the outcomes of drug abuse treatment delivered in typical, stable, community-based programs and to provide comprehensive information on continuing and new questions about the effectiveness of drug abuse treatment currently available in a variety of publicly funded and private programs. It examined the role of treatment outcomes and program type, client characteristics (including dependence, treatment history, and physical and mental health comorbidities), treatment received (e.g., length and intensity of services provided), therapeutic approaches, and provision of aftercare. Four types of programs were included: outpatient methadone (OPM), short-term inpatient (STI), long-term residential (LTR), and outpatient drug-free (ODF). Respondents were

Overview of Data Resources

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sampled from among those admitted to treatment in sampled facilities in 1991-1993. Clients entering treatment completed two comprehensive intake interviews (Intake 1 and Intake 2), approximately one week apart. This information is provided in Parts 1 and 2 of the data collection. These interviews were designed to obtain baseline data on drug use and other behaviors, as well as information on background and demographic characteristics, patterns of dependence, living situation and child custody status, education and training, income and expenditures, and HIV risk behaviors, along with assessments of dependence, mental health, physical health, and social functioning. Data on criminal justice status and criminal behavior are reported in Part 5, Illegal Activities Data, and are drawn from the Intake 1 interview.

Data reflecting during-treatment progress, including service delivery and client satisfaction, were collected in the one- and three-month in-treatment interviews (Parts 3 and 4). The 12-month post-treatment follow-up interview (Part 6) replicated many of the intake questions and focused on key behaviors in the year following treatment. The drugs covered in the study were alcohol, tobacco, marijuana (hashish, THC), hallucinogens or psychedelics such as LSD, mescaline, and PCP, cocaine (including crack), heroin, narcotics or opiates such as morphine, codeine, Demerol, Dilaudid, and Talwin, downers or depressants such as sedatives, barbiturates, and tranquilizers, amphetamines or other stimulants such as speed or diet pills, and other drugs.

1.3 Drug Services Research Survey

The Drug Services Research Survey (DSRS) was sponsored by the National Institute on Drug Abuse (NIDA). It was conducted for NIDA by the Institute for Health Policy at Brandeis University in Waltham, MA and by Westat, Inc. in Rockville, MD. The staff at the Institute for Health Policy supervised the study design and data collection, performed the data analysis, and wrote the final reports. The Institute for Health Policy and Westat designed the study instruments in consultation with NIDA. Westat staff designed the data collection plan, developed the sampling plans, and selected the samples of facilities and client records within facilities. Westat staff also collected the data, processed and edited the data, calculated the sampling weights, performed the data imputation, and created the data files. The quality control

measures used to ensure data integrity were developed and applied by Westat staff, and Westat provided software for the data analysis.

DSRS data were collected from June through December of 1990 from a nationally representative sample of drug treatment facilities stratified by treatment modality. The objective

of DSRS was to collect detailed information on the characteristics of drug treatment facilities and

on clients discharged from those drug treatment facilities. DSRS was conducted in two phases.

Overview of Data Resources

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Facility-level data were collected during Phase I, and client-level data were collected during Phase II.

Phase I involved a telephone interview to collect data from a national sample of 1,183 drug treatment facilities. The questionnaire included point prevalence data for March 30, 1990 and annual data for the most recent 12-month period for which data were available. The questionnaire was mailed to the facilities about 1 week before the facilities were contacted by telephone to collect the information. This allowed the facility staff the time necessary to obtain answers to the questions before being asked to provide the answers over the telephone. The Drug Services Research Survey, Phase I Final Report: Non-Correctional Facilities documents the methodology and presents descriptive results.

Phase II involved site visits to a sample of 120 of the facilities that participated in Phase I. The site visit included an in-person interview with the facility director or administrator, compilation of a sampling frame and selection of a sample of discharged client records, and collection of client-level data from the sample of discharged client records at each facility. In total, client-level data were collected for 2,222 clients discharged from treatment during the 12-month period from September 1, 1989 through August 31, 1990. The Drug Services Research Survey, Final Report: Phase II documents the methodology and presents descriptive results.

1.4 National Household Survey on Drug Abuse

The NHSDA is designed to produce drug and alcohol use incidence and prevalence estimates and report the consequences and patterns of use and abuse in the general U.S. civilian population aged 12 and older. Questions include age at first use, as well as lifetime, annual, and past-month usage for the following drug classes: cannabis, cocaine, hallucinogens, heroin, alcohol, tobacco, and non-medical use of prescription drugs, including psychotherapeutics. Data include problems from use of drugs, alcohol, and tobacco, perceptions of the risks involved, and personal and family income sources and amounts. Demographic data include gender, race, age,

ethnicity, educational level, job status, income level, veteran status, household composition, and population density.

A new questionnaire design was introduced in 1994 to enhance the clarity of questions, improve accuracy of responses, and increase the reliability of measurement of drug use across survey years. The 1994 survey also included a rural population supplement to allow separate estimates to be calculated for this population. Various other modules have been added to the NHSDA each year and retained in subsequent years: Mental health and access to care (1994-B); Risk/availability of drugs (1996); Cigar smoking and new questions on marijuana and cocaine use (1997); Question series asked only of respondents aged 12 to 17 (1997). The Office of

Overview of Data Resources

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Applied Studies at the Substance Abuse and Mental Health Services Administration sponsors the

NHSDA.

1.5 National Longitudinal Alcohol Epidemiologic Survey (NLAES) -- 1992

NLAES is a multipurpose survey designed to collect longitudinal data on the prevalence of alcohol abuse and dependence and associated disabilities. Abuse and dependence are defined using DSM-IV criteria. Data collected include detailed measures of alcohol consumption and patterns of use; consequences of alcohol use; other drug use and associated disorders; other psychiatric disorders; other medical problems; detailed income from a variety of different sources for use in assessing the economic impact of alcohol disorders; treatment utilization; and

awareness of alcohol warning labels. Data collection began in 1991 for the 1992 wave survey.

A multistage stratified sample design was used with a target population of civilian, noninstitutionalized adults, 18 years and older, in the 48 contiguous states and the District of Columbia. Military personnel living off base were included. Sample design uses National Health Interview Survey methodology, including oversampling criteria, and may be stratified within four geographic regions (NE, MW, S, W). Direct face-to-face interviews were conducted by the Bureau of the Census. The household response rate was 91.9%.

The 1992 survey collected data from 42,862 adults age 18 years and older from a random sample of households in the U.S. Approximately 2,000 stratified primary sampling units were included for the 1992 sample. Blacks and young adults are oversampled.

1.6 National Treatment Improvement Evaluation Study

NTIES is a congressionally mandated five-year study of the impact of drug and alcohol treatment on thousands of clients in hundreds of treatment units that received public support from the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Treatment (CSAT). The NTIES project collected longitudinal data on a purposive sample of clients in treatment programs receiving CSAT demonstration grant funding.

Client-level data were obtained at treatment intake, at treatment exit, and 12 months after treatment exit. Service delivery unit (SDU) administrative and clinician (SDU staff) data were obtained at two time points, one year apart. Data were collected across several important outcome areas, including drug and alcohol use, physical and mental health, criminal activity, social functioning, and employment. For a random sample of approximately half of those interviewed, urine specimens were collected at follow-up to corroborate clients' self-reports of substance use. Substances covered in the study included alcohol, analgesics, antianxiety

medications, anticonvulsants, antidepressants, antimanics, barbiturates, cocaine (powder and
Overview of Data Resources

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crack), depressants, hallucinogens/psychedelics, heroin and other opiates, illegal methadone, inhalants, marijuana/hashish, methadone, methamphetamine/amphetamine and other stimulants, narcotics, and sedatives.

1.7 Treatment Episode Data Set

The Treatment Episode Data Set (TEDS), collected yearly since 1992, is a compilation of data on the demographic and substance abuse characteristics of 1.6 million annual admissions to

substance abuse treatment facilities that are licensed or certified by state substance abuse agencies. With the exception of some facilities operated by the Indian Health Service, TEDS does not include facilities run by Federal agencies (e.g., Bureau of Prisons). Information on treatment admissions is routinely collected by state administrative systems and then submitted to

SAMHSA in a standard format. TEDS is one of three components of the Drug and Alcohol Services Information System (DASIS).

The types of data available in the TEDS data set include: Primary, secondary, and tertiary substance of abuse; age of first use; and frequency of use. TEDS data can be accessed at: <http://www.icpsr.umich.edu/SAMHDA>.

1.8 Washington, DC, Metropolitan Area Drug Study (DC*MADS)

Three data sets from the Washington, DC, Metropolitan Area Drug Study (DC*MADS) are available:

1991: Homeless and Transient Population

1992: Drug Use Among DC Women Delivering Live Births in DC Hospitals

1991: Household and Nonhousehold Populations.

These data sets are described in the following sections.

1.9 1991: Homeless and Transient Population

This study examines the prevalence of illicit drug, alcohol, and tobacco use among members of the homeless and transient population aged 12 and older in the Washington, DC, Metropolitan Statistical Area (DC MSA). The study was designed to be comparable with the National Household Survey on Drug Abuse, 1991 (ICPSR 6128) and with other DC*MADS population-based studies.

Eligible respondents included those who met one of the following conditions: (1) persons who stayed overnight in an emergency shelter for homeless people, runaways, or neglected or abused women, (2) persons who stayed overnight in a house, apartment, or room paid for with

Overview of Data Resources

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municipal emergency housing funds, (3) persons who stayed overnight in a nondomicile, such as a vacant building, public or commercial facility, city park or car, or on the street, (4) persons whose regular place to stay was a nondomicile, regardless of where s/he stayed the prior night, and (5) persons who were using a soup kitchen or emergency food bank serving the homeless population.

Information is provided on topics such as history of homelessness, alcohol and drug treatment or counseling, illegal activities and arrests, physical health, pregnancy, alcohol and

drug consumption during pregnancy, mental health status and treatment, employment, income and expenditures, entitlement participation, emergency room treatment and hospital stays, living arrangements and population movement, and specific and general drug use. Drugs covered include tobacco, alcohol, marijuana/hash, inhalants, cocaine and crack, hallucinogens, heroin, methamphetamines, stimulants, sedatives, analgesics, and tranquilizers. Data also include age at first use, route of administration, needle use, withdrawal symptoms, polysubstance use, perceived risks, and insurance coverage. Demographic data include gender, age, marital status, race, education, military service, and number of children and other dependents.

1.10 1992: Drug Use Among DC Women Delivering Live Births in DC Hospitals

This study was designed to examine the nature and extent of drug use among women delivering live births in hospitals in Washington, DC, as well as related infant and maternal outcomes. The study had four key objectives: (1) to estimate the prevalence of use of illicit drugs, alcohol, and tobacco among women giving birth to live infants in DC hospitals, (2) to compare rates of drug use among DC resident women giving birth to infants of normal birth weight, intermediate-low birth weight, and very low birth weight, (3) to describe epidemiologic characteristics and health outcomes among drug-using and drug-free mothers and their newborn

infants, and (4) to serve as a methodological model for similar hospital-based, maternal drug use research in other metropolitan areas.

Interviews were conducted with 1,020 women (766 DC residents and 254 nonresidents) who gave birth to live infants in the eight DC hospitals participating in the study. Medical records for 695 consenting women (527 DC residents and 168 nonresidents) and their infants were abstracted to document maternal and infant medical problems. Data from the questionnaires include prenatal care, health problems during pregnancy, pregnancy history including abortions, gender, premature status, and birth weight of previous liveborn children, lifetime, past year, past month, past week, and pregnancy drug use history, needle use, polysubstance use, treatment history, frequency of use, age at first use, perception of risks,

Overview of Data Resources

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lifetime and past month occurrence of psychological and emotional problems, income and insurance coverage.

Drugs covered included cigarettes, alcohol, marijuana/hash, crack cocaine and other forms of cocaine, heroin, and nonmedical use of stimulants, sedatives, tranquilizers, and analgesics. Abstracted data on the mothers include age, marital status, race, education, household composition, discharge diagnoses, disposition at discharge, delivery information, chronic diseases, substances used during pregnancy, and results of urine screens. Abstracted data on the infants include race, gender, birth and delivery information such as birth weight, gestational age, and length, discharge diagnoses/procedures, status at discharge, and first urine toxicology screen results.

1.11 1991: Household and Nonhousehold Populations

This study examines the prevalence of illicit drug, alcohol, and tobacco use among members of household and nonhousehold populations and a combined aggregate population aged

12 and older in the District of Columbia Metropolitan Statistical Area (DC MSA). In addition, selected characteristics of three drug-abusing subgroups in the household and aggregate populations are examined: crack cocaine users, heroin users, and needle users. The study had three methodological objectives: (1) to investigate the effect that combining data from household

and nonhousehold populations has on estimates of the prevalence of drug use and number of users, (2) to determine whether the addition of nonhousehold populations allows more detailed demographic analyses to be conducted for specific drug-using behaviors, and (3) to identify important methodological issues when combining and analyzing data from household and nonhousehold populations.

Household population data were collected as part of the DC MSA oversample of the National Household Survey on Drug Abuse, 1991 (ICPSR 6128). Nonhousehold population data were subsetted from the 1991 DC* MADS Institutionalized Population Study and Washington, DC, Metropolitan Area Drug Study (DC* MADS), 1991: Homeless and Transient Population (ICPSR 2346). Household survey topics included age at first use as well as lifetime, annual, and past-month usage for the following drug classes: marijuana and hash, cocaine (and crack), hallucinogens, heroin, inhalants, alcohol, tobacco, anabolic steroids, nonmedical use of prescription drugs including psychotherapeutics, and polysubstance use. Respondents were also

asked about substance abuse treatment history, problems resulting from use of drugs, perceptions

of the risks involved, personal and family income sources and amounts, need for treatment for drug or alcohol use, mental health and access to care, illegal activities and arrests, and needlesharing.

Overview of Data Resources

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Demographic data for the household population include gender, race, age, ethnicity, marital status, motor vehicle use, educational level, job status, income level, veteran status, and past and current household composition. Topics from the Institutionalized Study and the Homeless and Transient Population Study included history of homelessness, alcohol and drug treatment or counseling, illegal activities and arrests, physical health, pregnancy, mental health, mental health treatment, employment, income and expenditures, living arrangements and population movement, and specific and general drug use. Drugs covered include tobacco, alcohol, marijuana and hash, inhalants, cocaine and crack, hallucinogens, heroin, stimulants, and

tranquilizers. Data also provide information on age at first use, route of administration, polysubstance use, perceived risks, and insurance coverage. Demographic data for the nonhousehold population include gender, age, marital status, race, education, military service, and number of children and other dependents.

2. HEALTH DATA SETS

Exhibit IV-2 describes seven publicly available health data sets that also contain substance abuse and mental health data. All are available on the web, and with the exception of the National Longitudinal Survey of Adolescent Health (Add Health), all data sets are free of charge.

EXHIBIT IV-2

HEALTH DATA SOURCES CONTAINING INFORMATION ON SUBSTANCE ABUSE AND MENTAL

HEALTH

Data Set

Years

Available

in PUDF* Sample Size

Examples of

Relevant Types

of Substance

Abuse Data

Examples of Relevant

Types of Mental Health

Data How to Access**

Alameda County

California Health

and Ways of

Living Study

1965

1977

1994

1995

6,928 (1965)

4,864 (1974)

2,729 (1994)

2,569 (1995)

Frequency of

drinking, and

whether treatment

was received

Questions regarding

depression, mental illness

during lifetime, whether

treatment was received,

taking medications for a

mental health problem

<http://www.icpsr.umich.edu/NACDA/archive.html>

Asset and Health

Dynamics

Among the

Oldest Old Study

1993

1995

8,224

(baseline)

Alcohol use CES-D depression <http://www.umich.edu/~hrswww>

Health Behavior

in School Aged

Children

1996 9,938 Alcohol, tobacco,

and other drug use

Depression, behavioral

problems

<http://www.icpsr.umich.edu/SAMHDA/>

Health and

Retirement

Study (HRS)

1992

1994

1996

1998

2000

12,600 (1992) Drinking patterns,
problems related
to drinking

Receiving treatment, taking
medication for mental health
problems, presence of
depression in past 12 months,
symptoms of depression

<http://www.umich.edu/~hrswww>

National

Longitudinal

Survey of

Adolescent

Health (Add

Health)

1994-1996 6,504 Substance use Questions related to
depression and various
behavioral issues (e.g.,
violent behavior, eating
disorders)

<http://www.socio.com/srch/summary/afda2/fam48-50.htm>

cost: \$150.00

National Survey
of Midlife

Development in
the United States
(MIDUS)

1995-1996 4,242 Alcohol, tobacco
and illegal drug
use, history and
regularity of use,
attempts to quit

12 month presence of
conditions such as depression
and anxiety, self-rating of
emotional/mental health

<http://www.icpsr.umich.edu/>

* Public Use Data Files

** To provide funding agencies with essential information about use of archival resources and to facilitate the exchange of information about ICPSR participants research activities, users of ICPSR data are requested to send to ICPSR bibliographic citations for each completed manuscript or thesis abstract.

Please indicate in a cover letter which data were used. The original collector of the data, ICPSR, and the relevant funding agency bear no responsibility for

uses of these data or for interpretations or inferences based upon such uses

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Overview of Data Resources

2.1 Alameda County California Health and Ways of Living Study

The purpose of this survey was to explore the influences of health practices and social relationships on the physical and mental health of a typical sample of the population. Data collected in 1994 and 1995 provide information on whether the respondent has received treatment for alcoholism and frequency of drinking.

The first wave of the study (Health and Ways of Living Study, 1965 Panel: Alameda County, California) collected information from 6,928 respondents. It used a stratified random sample of Alameda County households with noninstitutionalized residents age 21 or older and, if married, age 16-21 and older. The data collected includes information on chronic health conditions, health behaviors, social involvements, and psychological characteristics.

The second wave, the 1974 panel (Alameda County California] Health and Ways of Living Study, 1974 Panel), collected information from 4,864 of the original respondents.

The third and fourth waves (the 1994 and 1995 panels, respectively) explored some new topics. The third wave provided a follow-up of 2,729 original 1965 and 1974 respondents and examined health behaviors such as alcohol consumption and smoking habits, along with social activities. It provides information on such health conditions as diabetes, osteoporosis, hormone replacement, and mental illness. It also offers information on activities of daily living (including self-care such as dressing, eating, and shopping), along with use of free time and level of involvement in social, recreational, religious, and environmental groups.

The fourth wave, a follow-up to the 1994 panel, collected information on 2,569 cases.

This wave examined changes in functional abilities such as self-care activities, employment, involvement in community activities, visiting friends/family, and use of free time since 1994.

Data from the Alameda County Health and Ways of Living Study can be accessed at <http://www.icpsr.umich.edu/NACDA/archive.html>.

2.2 Asset and Health Dynamics Among the Oldest Old Study

The Asset and Health Dynamics Among the Oldest Old Study (AHEAD) provides information on alcohol use. AHEAD was funded beginning in 1993 as a biennial supplement to the Health and Retirement Study (HRS). Its focus is on non-institutionalized persons born before 1924, and it covers many of the same areas as the HRS. Originally, HRS and AHEAD

Overview of Data Resources

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data were collected in two separate studies. Beginning in 1998, the National Institute on Aging has collected the data using a single instrument.

This study investigates the relationships between age related health transitions and economic, familial, and claims based resources. Questionnaire topics include cognitive performance, family structure and support, physical and functional health, economic status, housing, service use (community and nursing home), demographic characteristics, out-of-pocket

costs for all services, claims on transfer programs, and Medicaid eligibility. Baseline interviews were completed for 8,224 respondents. Interviews were conducted with both husbands and wives in sampled households. In addition, seven experimental modules utilize innovative measures such as a resiliency scale. The survey data are being linked with administrative records

from Medicare files, the National Death Index, and Social Security earnings and benefit files.

The AHEAD Study can be accessed at <http://www.umich.edu/~hrswww>.

2.3 Health Behavior in School-Aged Children

Since 1982, the World Health Organization (WHO) Regional Office for Europe has sponsored a cross-national, school-based study of health-related attitudes and behaviors of young people. These studies, generally known as Health Behavior in School-Aged Children (HBSC), are based on nationally independent surveys of school-aged children in as many as 30 participating countries. The HBSC studies were conducted every four years since the 1985-1986 school year. The United States was one of three countries chosen to implement the survey out of cycle. The data available here are the results of the United States study from 1996. The study results can be used as stand-alone data, or to compare to the other countries involved in the international HBSC. The HBSC study has two main objectives. The first objective is to monitor health-risk behaviors and attitudes in youth over time to provide background and identify targets for health promotion initiatives. The second objective is to provide researchers with relevant information to understand and explain the development of health attitudes and behaviors through early adolescence. The study contains 209 variables dealing with many types of drugs such as tobacco, alcohol, marijuana, cocaine, inhalants, hallucinogens, and a number of other substances.

The study also examines the ease of obtaining drugs, frequency of drug usage, and other health behaviors and their history such as eating habits, family make-up, depression, stealing, fighting, bringing weapons to school, anger management, attention span at school, and opinions about school itself.

Overview of Data Resources

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2.4 Health and Retirement Study

The Health and Retirement Study (HRS) provides data on drinking patterns. It also assesses problems related to drinking using the CAGE. About one-third of its respondents is age 55 and older. The HRS is intended to provide data for researchers, policy analysts, and program planners who are making major policy decisions that affect retirement, health insurance, and saving and economic wellbeing.

In 1990, the National Institute on Aging issued a five-year cooperative agreement to plan and undertake a study that would provide the most promising source of data on retirement for the foreseeable future. The planning process included an unprecedented amount of interdisciplinary input from experts across the country. Throughout the design process, nine planning committees met to discuss the most important issues that could be addressed in this longitudinal study. Many of the committees continue to influence study design and quality. The fourth wave of data collection (HRS 1998) was completed in March of 1999.

The initial HRS sample included more than 12,600 persons in 7,600 households. A national panel study, it over-sampled 100 percent of Hispanics, African Americans, and Florida residents. In 1992, in-home, face-to-face interviews were conducted for the 1931-41 birth cohort

(and their spouses, if married, regardless of age); in 1998, 1924-1930 and 1942-47 birth cohorts were added. Follow-ups are conducted by telephone every second year, with proxy interviews after death.

HRS data can be accessed at <http://www.umich.edu/~hrswww>.

2.5 The National Longitudinal Survey of Adolescent Health, Waves I & II (Add Health), 1994-1996

The National Longitudinal Survey of Adolescent Health (Add Health) was mandated by Congress to collect data for the purpose of measuring the impact of social environment on adolescent health. It examines the general health and wellbeing of adolescents in the United States, including, with respect to these adolescents, (1) the behaviors that promote health and the behaviors that are detrimental to health; and (2) the influence on health of factors particular to the communities in which adolescents reside. Some of the dependent variables include diet and nutrition, eating disorders, alcohol and drug use, drug treatment, depression, violent behavior, intentional injury, unintentional injury, suicide, exercise, health/mental health service use, and health insurance coverage.

Overview of Data Resources

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Because Sociometrics is responsible for distributing only the public-use version of the Add Health data, we focus on it in this summary. Add Health data were collected in two waves. Wave I (collected between September, 1994 and December, 1995) includes three sets of data available for public use. The in-school data was collected from students grades 7 through 12 and consists of responses to questions about social and demographic characteristics of the respondents, the education and occupation of parents, household structure, risk behaviors, expectations for the future, self-esteem, health status, friendships, and school-year extracurricular activities. The in-home data set consists of responses to a detailed and lengthy interview of a subset of adolescents who were selected from the rosters of the sampled schools. More than 75 percent of adolescents interviewed for the in-home component of the study also completed the in-school questionnaire. Finally, the Parent data were collected from one parent or parent-figure for each In-home sampled student.

Wave II of the Add Health data (collected from April, 1996 through August, 1996) consists of the in-home adolescent follow-up interviews. The school friendship network data, released in conjunction with the Wave II in-home follow-up data, consist of 269 constructed network variables. The complete public-use version of the Add Health data distributed by Sociometrics contains 6,504 cases and 5,800 variables. In addition, the community contextual data are appended to the Wave II release and distributed by Sociometrics as two ACSII files consisting of 32 variables each. Although not included in the search-and-retrieval capabilities of the main data file, the community contextual data may be merged with the raw data for analyses.

The Add Health data sets are available at <http://www.socio.com>.

2.6 National Survey of Mid-life Development in the United States, 1995-1996

The National Survey of Mid-life Development in the United States (MIDUS) provides data on respondents' alcohol, tobacco, and illegal drug use; history and regularity of use; and attempts to quit. It also provides information on how substance use affected respondents'

physical and mental wellbeing. About 27 percent of the respondents were age 55 and older. MIDUS is a collaborative, interdisciplinary investigation of patterns, predictors, and consequences of mid-life development in the areas of physical health, psychological wellbeing, and social responsibility. Respondents were asked to provide extensive information on their physical and mental health throughout their adult lives and to assess the ways in which their lifestyles, including relationships and work-related demands, contributed to the conditions they experienced.

Overview of Data Resources

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Those queried were asked to describe their histories of physical ailments, including heart-related conditions and cancer, as well as the treatment and/or lifestyle changes they went through as a result. A series of questions addressed alcohol, tobacco, and illegal drug use and focused on history of use, regularity of use, attempts to quit, and how the use of substances affected respondents' physical and mental wellbeing.

Respondents were drawn from a nationally representative random-digit-dial sample of noninstitutionalized, English-speaking adults, age 25-74, selected from working telephone banks in the contiguous United States. Those queried participated in an initial telephone interview and responded to a mail questionnaire. Part 1, Main Data, contains responses from the main survey of 4,242 respondents.

MIDUS data can be accessed at <http://www.icpsr.umich.edu/NACDA/archive.html>.

3. OTHER RELEVANT DATA SETS

Four additional data sets on a variety of topics also contained substance abuse and mental health data (see Exhibit IV-3). Two data sets, the National Comorbidity Survey and the National Survey of Alcohol, Drug and Mental Health Problems, focus on mental health and substance abuse issues. The National Youth Survey examines deviant behavior, and the Survey of Inmates of Local Jails focuses on criminal justice issues. All of these data sets are available on the Web.

Overview of Data Resources

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EXHIBIT IV-3

OTHER DATA SOURCES CONTAINING INFORMATION ON SUBSTANCE ABUSE AND MENTAL HEALTH

Data Set

Years

Available

in PUDF* Sample Size

Examples of

Relevant

Types of

Substance

Abuse Data

Examples of

Relevant Types

of Mental

Health Data How to Access**

National

Comorbidity

Survey (NCS)

1990-

1992

8,098 Use patterns
and history
Modified version
of Composite
International
Diagnostic
Interview (CIDI)
to determine
diagnosis(es)
<http://www.icpsr.umich.edu/SAMHDA/>
National
Survey of
Alcohol, Drug
and Mental
Health
Problems
(Healthcare for
Communities)
1997-
1998
9,585 Use patterns,
problems due to
use, and
whether the
respondent has
received
substance abuse
treatment
Service
utilization,
presence of
anxiety,
depression,
dysthymia,
payment
questions
<http://www.icpsr.umich.edu/>
Survey of
Inmates of
Local Jails
1978
1983
1989
1996
1978=5,300
1983=5,785
1989=5,675
1996=6,133
Use patterns
and use history,
service
utilization
General
questions about

the presence of
mental health
problems, and
whether
individual has
ever received
mental health
treatment

<http://www.icpsr.umich.edu/NACJD/>

* Public Use Data Files

** To provide funding agencies with essential information about use of archival resources and to facilitate the exchange

of information about ICPSR participants research activities, users of ICPSR data are requested to send to ICPSR bibliographic citations for each completed manuscript or thesis abstract. Please indicate in a cover letter which data

were used. The original collector of the data, ICPSR, and the relevant funding agency bear no responsibility for uses of these data or for interpretations or inferences based upon such uses.

3.1 National Comorbidity Survey

The National Comorbidity Survey (NCS) was a collaborative epidemiologic investigation designed to study the prevalence and correlates of DSM III-R disorders and patterns and correlates of service utilization for these disorders. The NCS was the first survey to administer a structured psychiatric interview to a nationally representative sample. The survey was carried out in the early 1990's with a household sample of over 8,000 respondents aged 15 to 54 in the non-institutionalized civilian population in the 48 coterminous U.S. and was based on a stratified

multistage area probability sample. The study also included a supplemental sample of students

Overview of Data Resources

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living in campus group housing and a non-respondent survey. Diagnoses were based on a modified version of the Composite International Diagnostic Interview (the UM-CIDI), which was developed for the NCS. The NCS was sponsored by the National Institute of Mental Health, National Institute on Drug Abuse, and W.T. Grant Foundation.

3.2 National Survey of Alcohol, Drug, and Mental Health Problems (Healthcare for Communities), 1997-1998

The National Survey of Alcohol, Drug, and Mental Health Problems provides information on use patterns, problems due to use, and whether the respondent has received substance abuse treatment. One-quarter of the survey population are over the age of 57. This survey is a component of the Robert Wood Johnson Foundation's Health Tracking Initiative, a program designed to monitor changes within the health care system and how these changes affect people. It re-interviewed respondents to the Community Tracking Study Household Survey, 1996-1997, and Follow-back Survey, 1997-1998: (United States) (ICPSR 2524), focusing on care and treatment for alcohol, drug, and mental health conditions. Topics covered by the questionnaire include:

- Demographics

- Health and daily activities

- Mental health

- Alcohol and illicit drug use

- Use of medications

- General insurance coverage and insurance coverage for mental health

Access to, utilization, and quality of behavioral health care
Work, income, and wealth
Life difficulties.

Five imputed versions of the data are included in the collection for analysis with multiple imputation techniques.

A stratified probability sample was selected from a sampling frame consisting of 30,375 adult respondents from the Community Tracking Study Household Survey, 1996-1997, and Follow-back Survey, 1997-1998 (ICPSR 2524). Respondents who were poor, mentally distressed, and users of mental health services were over-sampled.

Data from the National Survey of Alcohol, Drug, and Mental Health Problems can be accessed through the SAMHDA Web site at <http://www.icpsr.umich.edu/SAMHDA/>.

Overview of Data Resources

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3.3 Survey of Inmates in Local Jails

The 1996 Survey of Inmates in Local Jails was conducted for the Bureau of Justice Statistics by the U.S. Bureau of the Census. This survey, conducted every 5 to 6 years, provides nationally representative data on persons held prior to trial and on those convicted offenders serving sentences in local jails or awaiting transfer to prison. Similar surveys of jail inmates were conducted in 1972, 1978, 1983, and 1989. From October 1995 through March 1996 Census Bureau interviewers collected data on individual characteristics of jail inmates; current offenses, sentences and time served; criminal histories; jail activities, conditions and programs; prior drug and alcohol use and treatment; and health care services provided while in jail. The interviews, about an hour in length, used computer-assisted personal interviewing (CAPI). With CAPI, computers provide the interviewer with the questions, including follow-up questions tailored to preceding answers. Before the interview inmates were told verbally and in writing that participation was voluntary and that all information provided would be held in confidence. Participants were assured that the survey was solely for statistical purposes and that no individual could be identified through the use of survey results.

V. ANNOTATED BIBLIOGRAPHY

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V. ANNOTATED BIBLIOGRAPHY

This chapter presents annotated citations for the body of literature selected for this bibliography on co-occurring substance use and mental disorders. The citations are organized alphabetically in three subsections of peer-reviewed and other professional documents:

Peer-reviewed publications, 1997-2003

Peer-reviewed publications: Landmark articles, 1972-1996

Government and professional organization documents and other relevant books, 1993-2003.

The most recent peer-reviewed publications (1997-2003) comprise the literature characterized in Chapter III. Exhibit III-13 in Chapter III is a valuable tool for identifying articles addressing specific topics of interest (e.g., special populations, treatment modalities, outcome studies).

1. PEER-REVIEWED PUBLICATIONS, 1997-2003

This section includes annotated citations for the 290 peer-reviewed publications selected from the past five years of literature addressing co-occurring disorders.

Abbott, P. J., Moore, B. A., Weller, S. B., & Delaney, H. D. (1998). AIDS risk behavior in

opioid dependent patients treated with community reinforcement approach and relationships with psychiatric disorders. *Journal of Addictive Diseases*, 17(4), 33-48.

This study examined the Community Reinforcement Approach's (CRA's) effect on AIDS risk behaviors and the relationship between comorbid psychiatric disorders and risk for AIDS behavior in opioid-dependent patients entering methadone maintenance treatment. Also, AIDS risk behaviors were studied as they related to the Addiction Severity Index, Beck Depression Inventory, SCL-90-R, and Social Adjustment Scale-Self Report. Subjects (aged 20 through 63) totaled 227 and were drawn from a large clinical trial that examined the effectiveness of a CRA for treatment of opioid dependence. Both CRA and standard treatment demonstrated a significant effect on reduction of AIDS risk behaviors. There was no relationship between comorbid psychiatric disorders and the risk for AIDS behavior. However, there were correlations with other psychiatric, social, and substance abuse variables. Multivariate analyses indicated that increased drug and legal ASI composite scores were primary predictors of increased AIDS risk behavior.

Annotated Bibliography

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Albanese, M. J., Clodfelter, R. C., Jr., & Khantzian, E. J. (2000). Divalproex sodium in substance abusers with mood disorder. *Journal of Clinical Psychiatry*, 61(12), 916-921.

This study examined clinical experience using divalproex sodium in substance-abusing patients with mood disorder. Twenty patients (aged 20 through 55) admitted to an intermediate-care inpatient substance abuse program were diagnosed with comorbid mood disorder and treated with divalproex sodium in an open-label, naturalistic trial with no blind. All patients were followed clinically and were assessed using the Clinical Global Impressions (CGI) scale and laboratory studies. Seven patients referred while on divalproex treatment continued to exhibit improved mood. Eleven others had at least one week of follow-up, and ten of these also showed improvement. In 13 cases, divalproex was used safely with other psychiatric medications. Two patients, one of whom was also taking fluoxetine, complained of slight tremor. Fifteen of 17 patients in whom biochemistry and hematology laboratory studies were completed had unremarkable results; two other patients had pretreatment abnormalities, which worsened over the course of treatment. This report suggests that divalproex sodium is efficacious and safe, both alone and in combination with other psychiatric medications, in treating substanceabusing patients who have mood disorder.

Alpert, J. E., Fava, M., Uebelacker, L. A., Nierenberg, A. A., Pava, J. A., Worthington, J. J., & Rosenbaum, J. F. (1999). Patterns of Axis I comorbidity in early-onset versus late-onset major depressive disorder. *Biological Psychiatry*, 46(2), 202-211.

Lifetime co-occurrence of Axis I disorders among 381 outpatients 18 through 65 years old who had Major Depressive Disorder (MDD) was examined by Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders-III-R-Patient Edition. The subjects were divided into groups as follows: 47 subjects with childhood-, 101 with adolescent-, and 233 with adult-onset MDD. Results show that the two earlyonset groups exhibited significantly increased rates of Axis I comorbidity. The childhood-onset group accounted for a disproportionately high percentage of depressed adults with two or more comorbid Axis I disorders. Social and simple phobias and

alcohol abuse/dependence were significantly more prevalent among subjects with childhood-onset MDD than among subjects with adult-onset MDD. Alcohol abuse/dependence was significantly more prevalent among adolescent-onset than adult-onset MDD groups. Panic, generalized anxiety, obsessive-compulsive, and somatoform disorders were equally distributed across MDD onset groups. Comorbid disorders were more likely to have followed the onset of MDD among subjects with childhood onset, except for social phobia, which more frequently preceded the depression. The relative ordering among the comorbid conditions with respect to whether they followed or preceded MDD did not vary notably across the groups.

Annotated Bibliography

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Alterman, A. J., McDermott, P. A., Cacciola, J. S., Rutherford, M. J., Boardman, C.R., McKay, J. R., & Cook, T. G. (1998). A typology of antisociality in methadone patients. *Journal of Abnormal Psychology, 107*(3), 412-422.

Multistage cluster analyses with replications were used to sort score profiles of 252 methadone-maintained men on four continuous measures of antisociality: childhood conduct disorder and adult antisocial personality disorder symptoms, the revised Psychopathy Checklist, and the Socialization scale of the California Psychological Inventory. The analysis yielded six replicable and temporally stable cluster groups varying in degree and pattern of antisociality. The groups were statistically compared on sets of external criterion variables: Addiction Severity Index measures of past and recent substance abuse and functioning and lifetime criminal history, Axis I and II symptomatology, anxiety and depression, object relations and reality testing, hostility, guilt, and Machiavellianism. The expression of antisociality in the six groups and differences found among them on the external variables supported the validity of a more complex conceptualization of antisociality than is provided by antisocial personality disorder.

Alterman, A. J., Rutherford, M. J., Cacciola, J. S., McKay, J. R., & Boardman, C. R. (1998). Prediction of 7 months methadone maintenance treatment response by four measures of antisociality. *Drug and Alcohol Dependence, 49*, 217-223.

Zero-order correlational and simultaneous regression analyses were performed to ascertain the comparative validity of four measures of antisociality for predicting the initial seven months treatment response of 193 male methadone-maintenance (MM) patients. Predictor variables were the number of childhood conduct disorder (CD) behaviors, number of adult antisocial personality disorder (A-APD) behaviors, the revised Psychopathy Checklist (PCL-R) score, and the revised California Psychological Inventory-Socialization (CPI-So) scale score. The outcome measures were completion/noncompletion of seven months of treatment, percent positive during treatment of cocaine, opiate, and benzodiazepine urine toxicologies, and change from baseline to seven months follow-up in seven Addiction Severity Index (ASI) composite scores (CSs). All four measures of antisociality were significantly correlated with treatment noncompletion, although only the PCL-R score was significant in the predictor model. The PCL-R predicted more positive cocaine urines. At the individual level, both PCL-R and the CPI-So were associated with more positive benzodiazepine urines, but neither contributed a significant amount of variance when both were entered in the model. None of the predictors were significantly associated with self-reported

improvement in the CSs. The PCL-R and CPI-So were more successful in predicting outcomes than the two behavior-based measures.

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Appleby, L., Dyson, V., Altman, E., & Luchins, D. J. (1997). Addressing substance use in multiproblem patients: Reliability and validity of the Addiction Severity Index in a mental hospital population. *The Journal of Nervous and Mental Disease, 185*(3), 159-165.

The Addiction Severity Index (ASI) is the most widely used measure of substance use in the field. Its reputation has been supported by reliability and validity studies. Despite its success, the psychometric properties of the ASI have not been examined in mental hospital populations. The intent of this study was to replicate prior studies and expand upon the validity of the ASI in a sample of 100 public-sector psychiatric patients selected for a larger study. Findings revealed that (a) reliability was acceptable, but there was only moderate agreement on the psychiatric scale severity score, (b) the relationship between extent of rater training and reliability requires further study, (c) despite some overlap, the scales were largely independent of each other, (d) modification of the employment scale was necessary because of low correlations between the composite and severity score, (e) raters are more responsive to client subjective ratings in psychiatric settings, (f) ASI drug and alcohol scales correlate well with other substance use instruments and with DSM III-R diagnoses, and (g) the ASI can identify meaningful types of patient problems through cluster analysis. These findings, on the whole, support the use of the ASI drug and alcohol scales in public psychiatric hospitals.

Appleby, L., Dyson, V., Luchins, D. J., & Cohen, L. S. (1997). The impact of substance use screening on a public psychiatric inpatient population. *Psychiatric Services, 48*(10), 1311-1316.

This study sought to determine the impact of a formal screening program for substance use disorders among psychiatric inpatients. Both identification of these disorders and referrals to aftercare were measured. A total of 193 patients admitted to a state psychiatric facility during a two-month period before screening was initiated were compared with 183 patients admitted during the same two months a year later, when screening was in place. Patients were screened using the Chemical Use, Abuse, and Dependence Scale. Data were collected from hospital and state computerized files. Consistent with findings of previous studies, the formal screening procedure increased the identification of substance use disorders, even among those who were not screened during the screening period. However, despite heightened awareness of staff, referrals to outpatient treatment in the community after discharge did not increase. In fact, patients who did not have a comorbid substance use disorder were more frequently referred to aftercare than were dually diagnosed patients. Both staff and patient barriers may limit access to services for dually diagnosed patients. Under-diagnosis may be partly overcome by formal screening procedures, but staff bias may influence the use of screening tools, as well as aftercare referrals. In turn, individuals with a comorbid disorder who are not referred to aftercare may be more resistant to treatment and followup care. These issues must be clinically addressed by educating and sensitizing staff, as well as by administrative means.

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Appleby, L., Luchins, D. J., Dyson, V., Fanning, T., & Freels, S. (2001). Predischarge linkage and aftercare contact among dually diagnosed public psychiatric patients. *Journal of Nervous & Mental Disease, 189*(4), 265-267.

This study examined whether continual outpatient involvement by a dual-diagnosis population was more likely to be facilitated by predischarge, face-to-face contact (personal) with community representatives than by telephone contact (impersonal). Subjects numbering 193 (mean age 32.0 years) were selected in approximately equal numbers from each of 4 treatment wards. Inpatient data were collected from central files and hospital records. Outcome measures included keeping the initial appointment and making 2 or more visits (engagement) within 30 days after discharge. Logistic regression models were used to examine the relationship between linkage mode, as well as the other predictor variables, and aftercare contacts. Forward variable selection with criteria at alpha .10 was used to select the best set of independent predictors of aftercare contact. Results indicate that personal involvement between the patient and the provider was more effective in linkage to outpatient care than just making contact via telephone. In-person linkage and a psychotic disorder were the only significant variables in the regression model related to keeping the first appointment as well as being engaged. Comparisons between the two linkage models revealed statistically reliable differences in age, diagnosis, and length of stay.

Armstrong, T. D., & Costello, E. (2002). Community studies on adolescent substance use, abuse, or dependence and psychiatric comorbidity. *Journal of Consulting & Clinical Psychology, 70*(6), 1224-1239.

A literature review on community studies of adolescent substance use, abuse, or dependence (SU/A/D) and psychiatric comorbidity yielded 22 articles from 15 studies with information on rates, specificity, timing, and differential patterns of comorbidity by gender, race/ethnicity, and other factors. Results revealed that 60 percent of youths with SU/A/D had a comorbid diagnosis, and conduct disorder (CD) and oppositional defiant disorder (not attention-deficit/hyperactivity disorder) were most commonly associated with SU/A/D, followed by depression. Child psychopathology (particularly CD) was associated with early onset of substance use and abuse in later adolescence. The authors suggest that available data relevant to SU/A/D and psychiatric comorbidity can be used to better address such questions.

Arnold, E. M., Stewart, J. C., & McNeece, C. A. (2001). Enhancing services for offenders: The impact on treatment completion. *Journal of Psychoactive Drugs, 33*(3), 255-262.

This study explored the impact of providing mental health services and gender-specific services for women with substance abuse problems in a modified therapeutic community setting. Eighty-two women age 18 through 79 who received mental health services and/or gender-specific treatment services, in addition to the substance abuse services, had similar rates of treatment completion, as compared to those who received only substance abuse services. Logistic regression results indicated that, controlling for other variables, age and length of time using one's primary drug were the only statistically significant

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predictors of treatment completion. It is suggested that the treatment model described in this article is a potentially cost-effective method of maximizing existing resources for

treating substance abusing criminal offenders in community-based treatment settings. **Avants, S. K., Margolin, A., Kosten, T. R., Rounsaville, B. J., & Schottenfeld, R.S. (1998). When is less treatment better? The role of social anxiety in matching methadone patients to psychosocial treatments. *Journal of Consulting and Clinical Psychology, 66*(6), 924-931.**

In response to a need to match drug users to the most appropriate and cost-effective level of care, it was hypothesized that socially anxious methadone-maintained patients would attain greater benefit from coping skills training provided in the context of a low-intensity enhanced standard methadone maintenance intervention (E-STD) than in the context of a high-intensity, socially demanding day treatment program (DTP). Social anxiety was assessed in 307 methadone-maintained patients using the Social Anxiety and Distress Scale prior to randomization to either E-STD or DTP. The hypothesis was supported: Socially anxious patients were drug free longer during treatment, were more likely to be abstinent at treatment completion, and had greater reductions in HIV risk behaviors if assigned to the lower intensity intervention, which was provided at 1/3 the cost of the DTP. (PsycINFO Database Record (c) 2002 APA, all rights reserved)

Ball, S. A., Rounsaville, B. J., Tennen, H., & Kranzler, H. (2001). Reliability of personality disorder symptoms and personality traits in substance-dependent inpatients. *Journal of Abnormal Psychology, 110*(2), 341-352.

The authors compared the internal consistency, one-year temporal stability, self-informant agreement of ratings of personality trait (NEO Five-Factor Inventory; NEOFFI), and personality disorder symptom severity (Structured Clinical Interview for DSM-III-R Personality Disorders Questionnaire; SCID-II-Q) in 131 substance-dependent inpatients. Internal consistency coefficients were acceptable to very good for most NEOFFI and SCID-II-Q scales, and temporal stability correlations were significant for all measures. Agreement between patient and informant ratings was more modest. Substance abuse and depression symptom severity moderated the temporal stability and self-informant agreement of several personality trait and disorder ratings. The authors did not find that the five factors were more reliable than the Axis II symptoms. Issues related to the reliability of personality assessment in multiply diagnosed patients are discussed.

Bebout, R. R., Drake, R. E., Xie, H., McHugo, G. J., & Harris, M. (1997). Housing status among formerly homeless dually diagnosed adults. *Psychiatric Services, 48*(7), 936-941.

This study examined residential outcomes of homeless adults with severe mental illness and a substance use disorder over 18 months during which participants received integrated dual diagnosis services and housing supports based on a continuum model. Subjects numbering 158 (mean age 36.2 years) were interviewed at baseline and at 6-,

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12-, and 18-month follow-ups. The subjects were assessed on housing status, residential history, substance abuse and progress toward recovery, psychiatric symptoms, and quality of life. Complete data were available for 122 subjects. Findings show that 64 subjects achieved stable housing. Most of those 64 first entered staffed and supervised housing before moving to independent arrangements. Stable housing during the final evaluation period was associated with lower substance use, greater progress towards

substance abuse recovery, and higher quality of life. Final housing status was not predicted by baseline variables but was predicted by progress toward recovery during months 0-6 and 6-12 and by less severe drug use during months 6-12. Subjects who abused no illicit drugs during months 6-12 were almost 3 times more likely to achieve stable housing.

Belenko, S., Lang, M. A., & O'Connor, L. A. (2003). Self-reported psychiatric treatment needs among felony drug offenders. *Journal of Contemporary Criminal Justice, 19*(1), 9-29.

Among 280 felony drug sale offenders with substance use disorders, self-reported psychiatric treatment, medication, and symptoms yielded estimates that 40 percent to 60 percent had comorbid psychiatric disorders. Two-thirds reported recent psychiatric symptoms or emotional problems, or were troubled by these symptoms/problems, and more than one-third of them felt that they needed psychiatric treatment; only four were currently receiving treatment. More than two thirds of those reporting current symptomatology and a need for mental health treatment had never received treatment. Offenders who reported a need for treatment were more likely to recently experience cognitive difficulties or mental or emotional problems, or to be troubled by psychiatric symptoms. Those reporting current treatment need were more likely to have a history of outpatient psychiatric treatment. The strongest predictor for self-reported psychiatric treatment need was being troubled by psychiatric symptoms, independently or in combination with recent cognitive difficulties, experiencing any emotional problems recently, or a history of outpatient treatment.

Bellavia, C. W., & Toro, P. A. (1999). Mental disorder among homeless and poor people: A comparison of assessment methods. *Community Mental Health Journal, 35*(1), 57-67.

This study assessed mental disorders among 144 homeless and poor adults using four different methods: (a) history of psychiatric hospitalization, (b) structured clinical interview, (c) self-report symptom checklist, and (d) interviewer ratings. These four methods yielded divergent estimates of mental illness, ranging from 3 through 70 percent. Correlations assessing the degree of overlap among the measures were generally modest in magnitude. The results suggest that the variation in rates of mental illness across existing studies is due to methodological differences and that, with the exception of the structured interview, the various methods fail to adequately distinguish mental disorder from substance abuse.

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Biederman, J., Wilens, T. E., Mick, E., Faraone, S. V., & Spencer, T. (1998). Does attention-deficit hyperactivity disorder impact the developmental course of drug and alcohol abuse and dependence? *Biological Psychiatry, 44*(4), 269-273.

This study examined the effects of attention deficit hyperactivity disorder (ADHD) on the transitions from substance abuse to dependence and between different classes of agents of abuse. An ADHD sample of 239 consecutively referred adults of both genders with a clinical diagnosis of childhood-onset and persistent DSM-III-R ADHD confirmed by structured interview was compared with 268 non-ADHD, healthy adults. ADHD was associated with a twofold increase in risk for psychoactive substance use disorder (PSUD). ADHD subjects were significantly more likely than comparisons to make the

transition from an alcohol use disorder to a drug use disorder and were significantly more likely to continue to abuse substances following a period of dependence. ADHD is associated with a sequence of PSUD in which early alcohol use disorder increases the risk for subsequent drug use disorder, and early substance dependence increases the risk for subsequent substance abuse. If confirmed, such developmental pathways might lead to preventive and early intervention strategies aimed at reducing the risk for PSUD in ADHD subjects.

Bing, E. G., Burnam, M. A., Longshore, D., Fleishman, J. A., Sherbourne, C. D., London, A. S., Turner, B. J., Eggen, F., Beckman, R., Vitiello, B., Morton, S. C., Orlando, M., Bozzette, S. A., Ortiz-Barron, L., & Shapiro, M. (2001). Psychiatric disorders and drug use among human immunodeficiency virus-infected adults in the United States. *Archives of General Psychiatry, 58*(8), 721-728.

The prevalence of mental disorders and drug use among adults receiving care for HIV disease in the United States was examined. In a nationally representative probability sample of 2,864 adults, participants were administered a brief structured psychiatric instrument that screened for psychiatric disorders (major depression, dysthymia, generalized anxiety disorders, and panic attacks) and drug use during the previous 12 months. Sociodemographic and clinical factors associated with screening positive for any psychiatric disorder and drug dependence were examined in multivariate logistic regression analyses. Nearly half of the sample screened positive for a psychiatric disorder, nearly 40 percent reported using an illicit drug other than marijuana, and more than 12 percent screened positive for drug dependence during the previous 12 months. Factors independently associated with screening positive for a psychiatric disorder included number of HIV-related symptoms, illicit drug use, drug dependence, heavy alcohol use, and being unemployed or disabled. Factors independently associated with screening positive for drug dependence included having many HIV-related symptoms, being younger, being heterosexual, having frequent heavy alcohol use, and screening positive for a psychiatric disorder.

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Blixen, C. E., McDougall, G. J., & Suen, L. J. (1997). Dual diagnosis in elders discharged from a psychiatric hospital. *International Journal of Geriatric Psychiatry, 12*(3), 307-313.

Recent evidence indicates that persons 60 years and over experience significant alcohol and substance use problems. Since a combination of alcoholism and depression is likely to increase the relative risk of suicide, it is important to examine the prevalence of dual diagnosis in older adults. The purpose of this study was to examine the prevalence and correlates of dual diagnosis in older psychiatric inpatient populations and compare its results with findings from studies of younger hospitalized dually diagnosed patients. A retrospective chart audit was performed on 101 elders who were discharged from three psychiatric hospitals. Clinical variables examined included length of hospital stay, psychiatric and medical diagnoses, medications, and history of suicidal ideation or intent. The leading psychiatric disorder diagnosis for this sample of hospitalized psychiatric elders was depression. Over one-third (37.6%) had a substance use disorder in addition to a psychiatric disorder. Almost three-fourths (71%) of this dual diagnosis group abused alcohol, and 29 percent abused both alcohol and other substances. In addition,

significantly more elders in the dual diagnosis group (17.7%) than in the group with only a mental disorder diagnosis (3.3%) made a suicide attempt prior to admission to the hospital. Because affective disorders in conjunction with alcohol abuse are the disorders most frequently found completed suicides, this study's findings have important relevance for the advocating of routine use of diagnostic assessment and screening for both substance use and mental disorders in this population.

Bogenschutz, M. P., & Akin, S. J. (2000). 12-step participation and attitudes toward 12-step meetings in dual diagnosis patients. *Alcoholism Treatment Quarterly*, 18(4), 31-45.

This study examined participation in 12-step programs and attitudes toward 12-step meetings in an outpatient sample of 81 severely mentally ill patients with comorbid substance use disorders. It found that dual diagnosis patients attended 12-step programs at rates comparable to those reported for patients in primary addiction treatment settings. Diagnosis and attitudes toward 12-step meetings each had independent effects on 12-step participation. The difficulties that some dual diagnosis patients report experiencing at 12-step meetings may need to be addressed to maximize 12-step attendance and the potential to benefit from 12-step programs.

Bogenschutz, M. P., & Siegfried, S. L. (1998). Factors affecting engagement of dual diagnosis patients in outpatient treatment. *Psychiatric Services*, 49(10), 1350-1352.

This study examined factors associated with engagement in outpatient treatment of patients with dual diagnoses of psychiatric disorder and substance use disorder. The charts of all 57 patients (aged 19-57 years) referred to a dual diagnosis treatment program during a 6-month period were reviewed, and data on patients' substance use diagnosis, psychiatric diagnosis, sex, ethnicity, and referral source were collected. Measures used included a global assessment of functioning measure. Patients referred from inpatient

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treatment were more likely to attend three or more appointments at the dual diagnosis program than those referred from outpatient treatment. Substance of abuse interacted with both referral source and sex in predicting engagement.

Boles, S. M., & Johnson, P. B. (2001). Violence among comorbid and noncomorbid severely mentally ill adults: A pilot study. *Substance Abuse*, 22(3), 167-173.

The relationship between substance dependence and violence in a sample of 42 subjects (23 males and 19 females, aged 20 through 62 years) was examined. Almost 40 percent of the subjects reported perpetrating at least one violent act in the past 12 months. Comorbid subjects were more than 4.5 times more likely than noncomorbid subjects to have committed a violent act in the past 12 months. Substance dependence was also more frequently associated with perpetration of a violent act by female than by male subjects and by Caucasian than by African-American Subjects. Comorbid mentally ill subjects appear more likely to perpetrate violent acts than those who have mental illness alone. The dangers of substance dependence in terms of the perpetration of violence may lie, not in mental illness or substance dependence alone, but in their co-occurrence. Further investigation is needed to assess risk factors for violence and victimization in multiple environmental and situational domains. It will be important to explore the moderating effects of gender and race on the co-occurrence of mental illness and substance dependence and the perpetration of violent acts.

Borges, G., Walters, E. E., & Kessler, R. C. (2000). Associations of substance use, abuse, and dependence with subsequent suicidal behavior. *American Journal of Epidemiology*, 151(8), 781-789.

General population survey data are used to disaggregate the associations of substance use disorders with suicide attempts in order to evaluate a number of hypotheses about the processes leading to these associations. Data are from the U.S. National Comorbidity Survey (1990-1992). Discrete-time survival analysis is used to study the effects of retrospectively reported temporally prior substance use, abuse, and dependence in predicting first onset of suicidal behavior. Alcohol and drug use predict subsequent suicide attempts after controlling for sociodemographics and comorbid mental disorders. Previous use is not a significant predictor among current nonusers. Abuse and dependence are significant predictors among users for 3 of the 10 substances considered (alcohol, inhalants, and heroin). In predicting suicidal behavior, the number of substances used is more important than the types of substances used. Disaggregation shows that the effects of use are largely on suicidal ideation and nonplanned attempts among ideators. In comparison, the effects of use on suicide plans and planned attempts among ideators are not significant. Clinicians need to be aware that current substance use, even in the absence of abuse or dependence, is a significant risk factor for unplanned suicide attempts among ideators.

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Brady, K. T., Dansky, B. S., Back, S. E., Foa, E. B., & Carroll, K. M. (2001). Exposure therapy in the treatment of PTSD among cocaine-dependent individuals: Preliminary findings. *Journal of Substance Abuse Treatment*, 21(1), 47-54.

Thirty-nine subjects participated in an outpatient, 16-session individual, manual-guided psychotherapy designed to treat concurrent posttraumatic stress disorder (PTSD) and cocaine dependence. Therapy consisted of a combination of imaginal and in-vivo exposure therapy techniques to treat PTSD symptoms, and cognitive-behavioral techniques to treat cocaine dependence. The dropout rate was high, but treatment completers demonstrated significant reductions in all PTSD symptom clusters and cocaine use, from baseline to end of treatment. Significant reductions in depressive symptomatology, as measured by the Beck Depression Inventory, and psychiatric and cocaine use severity, as measured by the Addiction Severity Index, were also observed. These improvements in PTSD symptoms and cocaine use were maintained over a sixmonth follow-up period among completers. Baseline comparisons between treatment completers and noncompleters revealed significantly higher avoidance symptoms, as measured by the Impact of Events Scale, and fewer years of education among treatment noncompleters as compared to completers. This study provides preliminary evidence to suggest that exposure therapy can be used safely and may be effective in the treatment of PTSD in some individuals with cocaine dependence.

Brady, K. T., Dansky, B. S., Sonne, S. C., & Saladin, M. E. (1998). Posttraumatic stress disorder and cocaine dependence. *The American Academy of Addiction Psychiatry*, 7(2), 128-135.

To investigate differences between patients whose posttraumatic stress disorder (PTSD) preceded their cocaine dependence and vice versa, 33 patients with comorbid PTSD and cocaine dependence were divided into two groups: one in which the trauma and PTSD

occurred before onset of cocaine dependence (primary PTSD) and one in which the PTSD occurred after cocaine dependence was established (primary cocaine). In the primary-PTSD group, the trauma was generally childhood abuse. In the primary-cocaine group, the trauma was generally associated with the procurement and use of cocaine. In the primary-PTSD group, there were significantly more women, more other Axis I diagnoses, more Cluster B and C Axis II diagnoses, and more benzodiazepine and opiate use. In the primary-cocaine group, there was a trend toward more cocaine use in the previous month. Significant clinical differences between these two groups may indicate the need for different types of treatment or differing treatment emphasis.

Brems, C., & Namyniuk, L. L. (1999). Comorbidity and related factors among ethnically diverse substance using pregnant women. *Journal of Addictions & Offender Counseling, 19*(2), 76-87.

This study explored the course of treatment, risk factors, and drug-related issues among 192 ethnically diverse pregnant women (aged 15 through 44 years) who were actively using drugs at admission to a residential treatment program. Findings revealed that the course of treatment was more difficult for comorbid clients, who perceived more

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treatment barriers than noncomorbid clients. Comorbid clients were more likely to have a history of attempting suicide but no more likely to have been reported for child abuse or charged with a crime. Comorbid clients reported greater severity of alcohol use but did not differ from noncomorbid clients regarding drug of choice. Comorbid clients were no more likely to leave against treatment advice, and noncomorbid clients were no more likely to complete treatment.

Brook, D. W., Brook, J. S., Zhang, C., Cohen, P., & Whiteman, M. (2002). Drug use and the risk of major depressive disorder, alcohol dependence and substance use disorders. *Archives of General Psychiatry, 59*(11), 1039-1044.

The Children in the Community Study is a prospective longitudinal study investigating the association between early drug use (childhood, adolescence, and early 20s) and later psychiatric disorders (in the late 20s). Data from a community-based sample of 736 adults from upstate New York were used in interviewing the subjects at the mean ages of 14, 16, 22, and 27 years. Psychiatric disorders, measured by age-appropriate versions of the University of Michigan Composite International Diagnostic Interview, and participants' drug use were assessed. Results showed that adolescent and young adult tobacco use was significantly associated with an increased risk of alcohol dependence and substance use disorders (SUDs) at a mean age of 27 years, but not with new episodes of major depressive disorder (MDD). Earlier alcohol use significantly predicted later MDD, alcohol dependence, and SUDs in the late 20s, as did early marijuana use and other illicit drug use. Except for the effect of tobacco use on MDD, early drug use was significantly related to later psychiatric disorders, even after statistically controlling for age, sex, parental educational level, family income, and prior episodes of MDD and SUDs. Results suggest that early drug use is associated with and predicts later psychiatric disorders.

Brook, J. S., Cohen, P., & Brook, D. W. (1998). Longitudinal study of co-occurring psychiatric disorders and substance use. *Journal of the American Academy of Child & Adolescent Psychiatry, 37*(3), 322-330.

This study examined temporal priority in the relationship between psychiatric disorders and drug use. Psychiatric assessments and drug use questions were completed at three different points in time spanning nine years. Structured interviews were administered to a cohort of youths and their mothers. The sample was predominantly composed of white male and female youths who were one through ten years old at the time of the initial data collection. Psychiatric diagnoses were assessed by a supplemented version of the Diagnostic Interview Schedule for Children Version 1, using computer algorithms designed to match Mental Disorders-III-Revised (DSM-III-R) criteria to combine information from mothers and youths. Substance use information was obtained in the interviews. A significant relationship was found to exist between earlier adolescent drug use and later depressive and disruptive disorders in young adulthood, controlling for earlier psychiatric disorders. Earlier psychiatric disorders did not predict changes in young adult drug use. For policy, prevention, and treatment, it is suggested that more

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medical attention needs to be given to the use of legal and illegal drugs and a decrease in drug use may result in a decrease in the incidence of later psychiatric disorders.

Broome, K. M., Flynn, P. M., & Simpson, D. D. (1999). Psychiatric comorbidity measures as predictors of retention in drug abuse treatment programs. *Health Services Research, 34*(3), 791-806.

The purposes of this study were to examine lifetime and current psychiatric comorbidity measures as predictors of drug abuse treatment retention and to test the generalizability of results across treatment agencies in diverse settings and with varying practices. Data were collected in the national Drug Abuse Treatment Outcome Studies (DATOS), a longitudinal study of clients from 96 treatment agencies in 11 United States cities. The design was naturalistic and used longitudinal analysis of treatment retention in long-term residential, outpatient drug-free, and outpatient methadone treatment modalities. Client background (including psychiatric comorbidity) and program service provision are predictors. Clinical thresholds for adequate treatment retention were 90 days for long-term residential and outpatient drug-free, and 360 days for outpatient methadone.

Psychiatric indicators included lifetime DSM-III-R diagnoses of depression/anxiety and antisocial personality and dimensional measures of current symptoms for depression and hostility. Data included structured interviews with clients, a survey of treatment program administrators, and program discharge records. Dimensional measures of current psychiatric symptoms emerged as better predictors than lifetime DSM-III-R diagnoses. In addition, the predictive association of hostility with retention varied significantly across treatment agencies in both the long-term residential and the outpatient drug-free modalities. Other notable findings were that on-site mental health services in long-term residential programs were associated with better retention for clients with symptoms of hostility. Assessment issues and stability of results across programs are important considerations for treatment research and practice.

Brooner, R. K., King, V. L., Kidorf, M., Schmidt, C. W., & Bigelow, G.E. (1997).

Psychiatric and substance use comorbidity among treatment-seeking opioid abusers. *Archives of General Psychiatry, 54*(1), 71-80.

This study assessed psychiatric and substance use comorbidity in 716 opioid abusers (aged 20 through 58 years) seeking methadone maintenance. A Mental Disorders-III-Revised

(DSM-III-R) diagnostic assessment was conducted one month after admission. Rates of psychiatric and substance use disorder were compared by gender, and associations were assessed between psychiatric comorbidity and dimensional indexes of substance use severity, psychosocial impairment, and personality traits. Psychiatric comorbidity was documented in 47 percent of the sample (47% women and 48% men), with antisocial personality disorder (25.1%) and major depression (15.8%) as the most common diagnoses. Overall results showed that psychiatric comorbidity, especially personality and mood disorder, was common in both men and women.

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Brown, P. J., Stout, R. L., & Gannon-Rowley, J. (1998). Substance use disorder-PTSD comorbidity: Patients' perceptions of symptom interplay and treatment issues. *Journal of Substance Abuse Treatment, 15*(5), 445-448.

Forty-two patients with both a current substance use disorder (SUD) and posttraumatic stress disorder (PTSD) were asked about the interrelationship of their two disorders, their treatment preferences and experiences, as well as possible deterrents to receiving PTSD treatment. Patients perceived their two disorders to be functionally related. They reported that when one disorder worsened, their other disorder was more likely to worsen; when one disorder improved, the other disorder similarly improved. Consistent with these perceptions, SUD-PTSD patients favored simultaneous treatment of their two disorders. The majority of SUD-PTSD patients were never referred to PTSD treatment. Although several possible deterrents to PTSD treatment were identified, only lack of trust appeared to differentiate PTSD treatment compliers versus noncompliers. Implications of these findings on referral and treatment practices are discussed.

Brown, P. J., Stout, R. L., & Mueller, T. (1999). Substance use disorder and posttraumatic stress disorder comorbidity: Addiction and psychiatric treatment rates. *Psychology of Addictive Behaviors, 13*(2), 115-122.

This study compares substance use disorder (SUD) patients with and without a comorbid diagnosis of posttraumatic stress disorder (PTSD) on their use of addiction and psychiatric services over the six-month period before an inpatient substance abuse admission. Compared with non-PTSD patients, PTSD patients had a greater number of hospital overnights for addiction treatment. Given no significant between-groups differences on any substance use indexes, PTSD patients apparently overuse costly inpatient addiction services. Despite their greater rates of psychiatric comorbidity, PTSD patients did not receive treatment for psychiatric problems at greater rates than did non-PTSD patients. Among PTSD patients, use of PTSD treatment was low. Assessment of psychiatric comorbidity and referral to treatment targeting co-occurring PTSD and other disorders are suggested as possible ways to reduce the high treatment costs associated with SUD-PTSD comorbidity.

Brown, V. B., Melchior, L. A., & Huba, G. J. (1999). Level of burden among women diagnosed with severe mental illness and substance abuse. *Journal of Psychoactive Drugs, 31*(1), 31-40.

These studies examined the outcomes of 577 women (mean age 30.7 years) with severe mental illness and substance abuse who were participating in a residential substance abuse treatment program. In Study 1, the effects of severe mental illness and overall level of burden on retention in treatment were examined. Cost regression analyses reveal

that severe mental illness was significantly related negatively to retention in treatment: women diagnosed with severe mental illness tended to stay in treatment less time than women who did not have such a diagnosis. In Study 2, staff ratings of the women's status at departure from residential treatment, for a subsample of 311 women, were examined with respect to overall retention in treatment and severe mental illness. Ratings

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of client status at program exit were significantly related to time in program but were not related to having a severe mental illness diagnosis. Implications for the treatment of multiply diagnosed women are discussed.

Brunette, M. F., Drake, R. E., Woods, M., & Hartnett, T. (2001). A comparison of long-term and short-term residential treatment programs for dual diagnosis patients. *Psychiatric Services, 52*(4), 526-528.

The authors compared measures of process and six-month outcomes for 45 individuals who were treated in a long-term residential treatment program for patients with dual diagnoses with measures for 39 individuals who were treated in a short-term program. They also compared outcomes for individuals within each group. Those who received long-term treatment experienced improvements between entry into the program and six-month

follow-up, and they were more likely to have engaged in treatment than individuals in the short-term group. At follow-up, individuals in the long-term residential treatment group were more likely to have maintained abstinence and less likely to have experienced homelessness than those in the short-term group.

Bucholz, K. K., Hesselbrock, V. M., Heath, A. C., Kramer, J. R., & Schuckit, M. A. (2000). A latent class analysis of antisocial personality disorder symptom data from a multicentre family study of alcoholism. *Addiction, 95*(4), 553-567.

This was a study to determine if there are subtypes of antisocial personality disorder (ASPD), as manifested by distinctive symptom profiles or by associations with alcohol or other drug dependence or other psychiatric disorders. The authors collected data on 38 symptoms of ASPD (including childhood conduct disorder) from 2,834 females (mean age 36 years) and 3,488 males (mean age 38.3 years) from probands, their relatives, and controls recruited for the Collaborative Study on the Genetics of Alcoholism. They used latent class analysis to analyze the data. The authors found that among women, conduct disorder and ASPD were found almost exclusively in the most severely affected class. Additional classes with mild and moderate behavior problems were also identified. A trend for alcohol dependence was observed, with each successive class manifesting a higher prevalence than the previous class. Milestones of drinking careers and dependence on other drugs also showed a strong association with class severity. Among men, the highest prevalence of ASPD (74.6%) was found in the most severely affected class. Overall, findings from both men and women did not support the existence of subtypes of ASPD, but rather indicated a disorder distributed on a severity spectrum.

Bulik, C. M., Sullivan, P. F., Carter, F. A., & Joyce, P. R. (1997). Lifetime comorbidity of alcohol dependence in women with bulimia nervosa. *Addictive Behaviors, 22*(4), 437-446.

To determine how women with comorbid bulimia nervosa and alcohol dependence differed from those with bulimia nervosa alone, 114 women (aged 17 through 45 years)

with Mental Disorders-III-Revised (DSM-III-R) bulimia nervosa were assessed at intake for a randomized clinical trial with structured diagnostic interviews and psychometric

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instruments. The sample was divided on the basis of the presence (47%) or absence (53%) of lifetime alcohol dependence. Axis I and Axis II disorders, clinical features of bulimia, and personality and temperament characteristics were then compared. Women with comorbid alcohol dependence and bulimia nervosa reported a higher prevalence of suicide attempts, anxiety disorders, other substance dependence, conduct disorder and personality disorders (especially borderline and histrionic), and higher scores on novelty seeking, impulsivity, and immature defenses. There were few differences in the severity of bulimic symptoms. Findings revealed that women with comorbid bulimia nervosa and alcohol dependence bear a greater burden of Axis I and Axis II psychopathology and display greater symptoms of impulsivity and novelty seeking.

Cacciola, J. S., Alterman, A. I., McKay, J. R., & Rutherford, M. J. (2001). Psychiatric comorbidity in patients with substance use disorders: Do not forget Axis II disorders. *Psychiatric Annals*, 31(5), 321-331.

This study focuses on the prevalence of psychiatric comorbidity in substance abuse patients and the characteristics and treatment outcomes of patients who have comorbid disorders. Comorbidity is examined with regard to the co-occurrence of non-substance use psychiatric disorders, both Axis I and Axis II, in patients who abuse or are dependent on alcohol or other drugs. All of the patients were treated in some type of substance abuse treatment program in the United States or Canada.

Cacciola, J. S., Alterman, A. I., Rutherford, M. J., McKay, J. R., & Mulvaney, F. D. (2001). The relationship of psychiatric comorbidity to treatment outcomes in methadone maintained patients. *Drug & Alcohol Dependence*, 61(3), 271-280.

This study examined the relationship of comorbid non-substance use psychiatric disorders to outcomes in opiate-dependent individuals recently admitted to methadone maintenance treatment. A total of 278 methadone maintenance patients (mean ages 38.9 through 41.1 years) completed diagnostic interviews and were assigned Mental Disorders-III-Revised (DSM-III-R) Axis I and II diagnoses. Past and current substance use and psychosocial problems were assessed with the Addiction Severity Index at admission and seven-month follow-up. Additional collected data included treatment compliance and drug urinalysis results. Results showed that, across substance use and psychosocial domains, subjects showed significant and comparable levels of improvement, regardless of comorbidity. Psychiatric comorbidity was associated with poorer psychosocial and medical status at admission and after seven months, and subjects with the combination of Axis I and II comorbidity exhibited the most severe problems. Findings suggest that substance use at admission and seven months subsequently were not related to psychiatric comorbidity, although there was an observed trend of greater treatment attrition for subjects with personality disorders.

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Cacciola, J. S., Rutherford, M. J., Alterman, A. I., McKay, J. R., & Mulvaney, F. D. (1998). Long-term test-retest reliability of personality disorder diagnoses in opiate dependent patients. *Journal of Personality Disorders*, 12(4), 332-337.

This article reports the two-year test-retest reliability of Mental Disorders-III-Revised (DSM-III-R) personality disorder (PD) diagnoses in 219 patients with opiate dependence admitted to methadone treatment. The Structured Interview for DSM-III-R Personality Disorders was used to make the diagnoses. Results showed that the reliability of any PD diagnosis versus no PD was fair. The reliability for any specific PD was poor. Antisocial PD and sadistic PD were the only specific PDs for which at least fair reliability was achieved. At the cluster level, only Cluster B had fair reliability. The intraclass correlation coefficients between the numbers of criteria for the specific PDs at the two evaluation points were consistently higher than were the corresponding kappas for categorical diagnoses. In that the base rates for most of the PDs were low and agreement of no diagnosis tended to be high, percentage exact agreement for the specific PDs typically exceeded 90 percent. Increasing the base rate by lowering the diagnostic threshold, or examining more severe cases by raising the diagnostic threshold, did not consistently affect reliability.

Carey, K. B., Carey, M. P., Maisto, S. A., & Purnine, D. M. (2002). The feasibility of enhancing psychiatric outpatients' readiness to change their substance use. *Psychiatric Services, 53*(5), 602-608.

This stage I therapy development study evaluated the feasibility and acceptability of a brief motivational intervention for outpatients with severe and persistent mental illness and drug use problems and examined preliminary indicators of outcome. A motivational intervention was evaluated with 22 outpatients. The intervention consisted of four individual sessions that were guided by the therapeutic principles of motivational interviewing. All participants met DSM-IV criteria for substance abuse or dependence within the previous six months and were not engaged in treatment for substance abuse. Substance use, treatment involvement, and attitudes toward substance use and cessation were assessed before and after the intervention and at a three-month follow-up session. The feasibility of the motivational intervention was demonstrated. The median time to completion of the intervention was 28 days. It was possible to retain psychiatric outpatients in the intervention, and the patients had favorable perceptions of the intervention. Readiness to change and involvement in treatment increased between preintervention and post-intervention assessments. However, many of the post-intervention gains had not been maintained at three-month follow-up. Use of brief motivational interventions can enhance patients' readiness to change substance use to better prepare them for drug treatment programs. Future interventions might benefit from the integration of the intervention with ongoing treatment to ensure that motivational gains are maintained.

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Carey, K. B., Cocco, K. M., & Correia, C. J. (1997). Reliability and Validity of the Addiction Severity Index Among Outpatients With Severe Mental Illness. *Psychological Assessment, 9*(4), 422-428.

This study provides psychometric data for the Addiction Severity Index (ASI) when administered to persons with severe and persistent mental disorders. Participants were 97 outpatients (26 women) at a public psychiatric facility. The internal consistency of the composite scores was lower in this psychiatric sample than in previous nonpsychiatric

samples. Inter-rater reliability was acceptable for most composite scores but low for many severity ratings. Several scores showed low temporal stability. Validity evidence was weak for the employment and family-social subscales, acceptable for the drug and alcohol subscales, and mixed for the psychiatric, medical, and legal subscales. Because of mixed reliability and validity evidence, caution should be exercised when using the ASI with patients who have severe mental illness.

Carey, K. B., & Correia, C. J. (1998). Severe mental illness and addictions: Assessment considerations. *Addictive Behaviors, 23*(6), 735-748.

This article provides a selective overview of the empirical literature on substance use assessment for persons with severe mental illness. The review is organized around key questions related to three assessment goals. With regard to screening, it addresses what screening tools are appropriate for use in psychiatric settings and what methodological concerns arise regarding their use in these contexts. With regard to diagnosis, the review discusses why diagnosing comorbid disorders is difficult and how clinicians can enhance the reliability and validity of their diagnoses. With regard to the related goals of treatment planning and outcome evaluation, it considers what are appropriate outcome measures and how assessment information can assist in treatment planning. Finally, it outlines three promising directions for future research: (a) evaluating the psychometric properties of established substance-related measures in persons with severe mental illness, (b) identifying the conditions under which self-report information is more or less accurate, and (c) improving the population relevance of substance assessment instruments.

Carey, K. B., Purnine, D. M., Maisto, S. A., & Carey, M. P. (2002). Correlates of stages of change for substance abuse among psychiatric outpatients. *Psychology of Addictive Behaviors, 16*(4), 283-289.

Brief algorithms are used to determine stage of change; however, psychometric support in substance users other than smokers is minimal. The authors examined the reliability and validity of a self-report algorithm in a sample of 84 persons with both psychiatric and substance use disorders. A one-week retest resulted in 75 percent of persons' being reassigned to the same stage. Compared with precontemplators, participants in the preparation stage reported higher problem recognition, steps taken toward change, costs of using, and benefits of quitting. The pros of using did not differ across stages. The action stage was marked by less-frequent substance use and lower perceived costs of

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quitting. These results support the reliability and validity of staging algorithms in patients with comorbid disorders.

Carpenter, K. M., & Hasin, D. S. (1999). Drinking to cope with negative affect and DSM-IV alcohol use disorders: A test of three alternative explanations. *Journal of Studies on Alcohol, 60*(5), 694-704.

This study evaluated three alternative explanations or models of drinking to cope with negative affect and risk for alcohol problem development: risk-factor, generalizing, and epiphenomena. A cross-sectional design was used to compare levels of self-reported drinking to cope with negative affect between individuals who had current Mental Disorders-IV (DSM-IV) alcohol use disorders and those who did not. Participants consisted of a sample of 777 community residents (aged 18 through 65 years). All

participants completed an in-person structured psychiatric interview and a self-report questionnaire assessing alcohol use, drinking motives, depressive affect, and negative alcohol consequences. Linear regression models yielded significant differences in mean drinking to cope with negative affect scores between participants with DSM-IV alcohol dependence diagnosis and participants with no diagnosis. These differences remained after controlling for depressive affect and frequency of negative alcohol consequences in three of the four adjusted comparisons. The DSM-IV alcohol dependence and no diagnosis comparisons were most consistent with the predictions of risk-factor model. These results provide further evidence that drinking to cope with negative affect may have an etiological role in development of alcohol dependence. .

Carroll, J. F. X., & McGinley, J. J. (1998). Managing MICA clients in a modified therapeutic community with enhanced staffing. *Journal of Substance Abuse Treatment, 15*(6), 565-577.

To determine how effective a modified therapeutic community (TC) with enhanced mental health staffing would be in treating mentally ill chemical abusing (MICA) clients in a "mainstream" program, a treatment outcome evaluation study was considered involving 438 residents (aged 18 through 55 years old). Client admissions were screened for Mental Disorders-IV (DSM-IV) diagnoses and then placed into one of three diagnostic groups: non-MICA, general MICA (without medication), and severe MICA (with psychotropic medication). Clients were administered the Tennessee Self-Concept Scale (TSCS) after admission and at six-month intervals thereafter. Results indicated the following: (1) the three diagnostic groups were significantly different at initial TSCS testing, with the non-MICA group showing the least lowest measures of self-esteem and lesser degrees of psychopathology and the severe MICA group having the lowest psychological scores; (2) all three diagnostic groups showed significant improvement in their TSCS scores after six to seven months of treatment; (3) covariance analyses observed that the three diagnostic groups did not significantly differ at six-month testing when the initial TSCS testing was taken into account; and (4) it was noted on several TSCS scales that women scored lower in self-esteem and higher in psychopathology.

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Cecero, J. J., Ball, S. A., Tennen, H., Kranzler, H. R., & Rounsaville, B. J. (1999). Concurrent and predictive validity of antisocial personality disorder subtyping among substance abusers. *Journal of Nervous & Mental Disease, 187*(8), 478-486.

This study examined the concurrent and predictive validity of antisocial personality disorder (APD) subtyping among substance abusers. A total of 370 inpatient and outpatient substance abusers (mean age 32.6 years) were divided according to presence and subtype of APD into groups comparing: 1) adult antisocial behavior (AAB) versus full APD; 2) APD with low versus high sociopathy; 3) APD with versus without lifetime depression; and 4) APD with, versus without, other Axis II disorders. Multivariate regression was used to predict the unique contribution to the variance in baseline and 12-month follow-up measures of substance use, psychiatric severity, and personality. The presence of comorbid Axis II pathology was the strongest predictor of baseline severity in all three domains. APD substance abusers with lifetime depression exhibited greater baseline to follow-up reductions in psychiatric severity than did APD substance abusers who did not have a history of depression. All APD subtypes improved over time with

treatment, suggesting that this diagnosis does not necessarily indicate poor prognosis. **Chilcoat, H. D., & Breslau, N. (1998a). Investigations of causal pathways between PTSD and drug use disorders. *Addictive Behaviors, 23*(6), 827-840.**

Although numerous studies have demonstrated an association between PTSD and substance use disorders, little is known about the causal nature of this relationship. In this article, the authors put forth and test major causal hypotheses. Specific hypotheses tested include self-medication of PTSD symptoms, substance users' high risk of exposure to traumatic events, and drug users' increased susceptibility to PTSD following a traumatic exposure. We also examine the possibility of an indirect pathway linking drug use disorders and PTSD via a shared vulnerability. Evidence for these causal hypotheses is evaluated using Hill's criteria for causal inference: strength, consistency, specificity, temporality, gradient, plausibility, coherence, experimental evidence, and analogy. We present data analytic strategies that exploit information about the temporal order of PTSD and drug use disorders to shed light on their causal relationship. Finally, we present findings on the PTSD/drug use disorder association from an epidemiological study of young adults.

Chilcoat, H. D., & Breslau, N. (1998b). Posttraumatic stress disorder and drug disorders: Testing causal pathways. *Archives of General Psychiatry, 55*(10), 913-917.

Although there is a high degree of comorbidity between posttraumatic stress disorder (PTSD) and drug use disorders, little is known about causal relationships between PTSD, exposure to traumatic events, and drug use disorders. In a longitudinal study in southeast Michigan, 1,007 adults aged 21 to 30 years were initially assessed in 1989 and were followed up three and five years later, in 1992 and 1994. The National Institute of Mental Health Diagnostic Interview Schedule was used to measure psychiatric disorders according to Mental Disorders-III-Revised (DSM-III-R) criteria. PTSD signaled an increased risk of drug abuse or dependence, whereas exposure to traumatic events in the

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absence of PTSD did not increase the risk of drug abuse or dependence. The risk for abuse or dependence was the highest for prescribed psychoactive drugs. There was no evidence that preexisting drug abuse or dependence increased the risk of subsequent exposure to traumatic events or the risk of PTSD after traumatic exposure. The results suggest that drug abuse or dependence in persons with PTSD might be the inadvertent result of efforts to medicate symptoms, although the possibility of shared vulnerability to PTSD and drug use disorders cannot be ruled out.

Chutuape, M. A., Brooner, R. K., & Stitzer, M. (1997). Sedative use disorders in opiatedependent patients: Association with psychiatric and other substance use disorders. *Journal of Nervous & Mental Disease, 185*(5), 289-297.

This study determined the prevalence of sedative use disorder (SUD) among 231 opiatedependant

patients entering methadone maintenance and compared the characteristics of patients without an SUD, those with a current disorder, and those with a history of SUD. Subjects were given the Structured Clinical Interview for the DSM-III-R two to four weeks after entering maintenance. Twenty-one percent currently had SUD, 39 percent had a history of SUD, and 40 percent had no history of SUD. Several group differences

were found. Subjects with a current SUD or a history of SUD had more lifetime drug use disorders, including the use of alcohol, cannabis, stimulants, cocaine, and hallucinogens. In contrast, other psychiatric disorders were low in prevalence and did not differ across groups, with the exception of a higher prevalence of antisocial personality disorder in subjects with a current SUD or a history of SUD. Results suggested that SUD is related more to a severe spectrum of multiple substance abuse than it is to self-medication of underlying mood or anxiety disorders.

Clark, D. B., Kirisci, L., & Tarter, R. E. (1998). Adolescent versus adult onset and the development of substance use disorders in males. *Drug & Alcohol Dependence*, 49(2), 115-121.

This study examined the influence of adolescent age of onset on the development of substance use disorders (SUD) by comparing adult males (n=181) with SUD categorized into adolescent-onset, early-adult onset and late-adult onset groups on patterns of substance use and related disorders, time course of the development of substance dependence, and rates of comorbid mental disorders. A sample of male adolescents (n=81) with SUD was also included as a comparison group. The subjects were recruited from intervention programs in the community and participated in semi-structured interviews with diagnoses determined by the best estimate method. Adolescent-onset adults, compared with other adult-onset groups, had higher lifetime rates of cannabis and hallucinogen use disorders, shorter times from first exposure to dependence, shorter times between the development of their first and second dependence diagnoses, and higher rates of disruptive behavior disorders and major depression. Adolescents were similar to adolescent-onset adults. Although the findings must be interpreted in light of methodological limitations, these results suggest that adolescent-onset SUD is a distinct subtype involving different substances and more rapid development than adult-onset SUD.

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Clark, R. E. (2001). Family support and substance use outcomes for persons with mental illness and substance use disorders. *Schizophrenia Bulletin*, 27(1), 93-101.

This study explored the relationship between direct support from family members and friends and substance use outcomes for people with co-occurring severe mental illness (SMI) and substance use disorder (SUD). Data were collected from a 3-year study of 174 community health center patients (aged 18 through 60 years) in treatment for SMI and SUD. Specifically, the informal or family caregivers (aged 25 through 88 years) rated by patients as providing the greatest amount of support were interviewed concerning the economic assistance (EA) and direct care (DC) that they provided to patients. Caregivers were interviewed at six-month intervals and reported on the EA and DC time they spent on behalf of the patients in the previous two-weeks. One primary caregiver per patient was interviewed. The results indicated that family EA is associated with substance abuse recovery. Care-giving hours are significantly associated with substance use reduction but not with cumulative substance use. Informal support is not associated with changes in psychiatric symptoms. These findings suggest that direct family support may help people who have dual disorders to reduce or eliminate their substance use.

Clark, R. E., Ricketts, S. K., & McHugo, G. J. (1999). Legal system involvement and costs for persons in treatment for severe mental illness and substance use disorders.

Psychiatric Services, 50(5), 641-647.

For three years, this study followed 203 subjects enrolled in specialized treatment for cooccurring severe mental illness and substance use disorders to better understand how the subjects were involved with the legal system and to identify factors associated with different kinds of involvement. Cost and utilization data were collected from multiple data sources, including police, officers of the court, attorneys, and paid legal guardians. Over the 3 years, 169 subjects (83%) had contact with the legal system, and 90 (44%) were arrested at least once. The subjects were four times more likely to have encounters with the legal system that did not result in arrest than they were to be arrested. Costs associated with nonarrest encounters were significantly less than costs associated with arrests. Mean costs per person associated with an arrest were \$2,295, and mean costs associated with a nonarrest encounter were \$385. Combined 3-year costs averaged \$2,680 per person. Arrests and incarcerations declined over time. Continued substance use and unstable housing were associated with a greater likelihood of arrest. Poor treatment engagement was associated with multiple arrests. Effective treatment of substance use among persons with mental illness appears to reduce arrests and incarcerations but not frequency of nonarrest encounters.

Clark, R. E., Xie, H., Adachi-Mejia, A. M., & Sengupta, A. (2001). Substitution between formal and informal care for persons with severe mental illness and substance use disorders. *The Journal of Mental Health Policy & Economics*, 4(3), 123-132.

This analysis estimates the extent of substitution between direct care provided by family and friends and formal treatment for people with severe mental illness and substance use disorders. It includes detailed data for 193 persons with dual disorders measured at study

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entry and every 6 months for 3 years. Hours of informal care were compared with total treatment costs within each six-month period to measure short-term effects. In the shortterm, persons with bipolar disorder used more formal care as informal care increased (complementarity). The relationship between short-term informal and formal care was significantly weaker for persons with schizophrenia. For both diagnostic groups, there was a long-term substitution effect; a 4- to 6-percent increase in informal care hours was associated with an approximate 1-percent decrease in formal care cost. These findings suggest that there is a significant relationship between care given by family and friends and that supplied by formal treatment providers. The analysis indicates that the shortterm relationship between informal care and formal treatment tends to be complementary but differs according to diagnosis. Long-term effects, which are possibly related to changing role perceptions, show substitution between the two forms of care.

Clark, W. H., Masson, C. L., Delucchi, K. L., Hall, S. M., & Sees, K. L. (2001). Violent traumatic events and drug abuse severity. *Journal of Substance Abuse*, 20(2), 121-127.

The authors examined the occurrence of violent traumatic events, DSM-III-R diagnosis of posttraumatic stress disorder (PTSD), and PTSD symptoms, and the relationship of these variables to drug abuse severity. One hundred fifty opioid-dependent drug abusers who were participants in a randomized trial of two methadone treatment interventions were interviewed using the Diagnostic Interview Schedule, the Addiction Severity Index,

and the Beck Depression Inventory. Twenty-nine percent met diagnostic criteria for PTSD. With the exception of rape, no gender differences in the prevalence of violent traumatic events were observed. The occurrence of PTSD-related symptoms was associated with greater drug abuse severity after controlling for gender, depression, and lifetime diagnosis of PTSD. The high rate of PTSD among these methadone patients, the nature of the traumatic events to which they were exposed, and subsequent violence-related psychiatric sequelae have important implications for identification and treatment of PTSD among those seeking drug abuse treatment.

Clure, C., Brady, K. T., Saladin, M. E., Johnson, D., Waid, R., & Rittenbury, M. (1999). Attention deficit/hyperactivity disorder and substance use: Symptoms pattern and drug choice. *American Journal of Drug & Alcohol Abuse*, 25(3), 441-448.

To examine the prevalence and subtypes of attention deficit hyperactivity disorder (ADHD) in a group of substance use disorder (SUD) individuals, 136 inpatients with an SUD diagnosis (cocaine vs. alcohol vs. cocaine/alcohol) were administered a structured interview for ADHD. Of the SUD individuals, 32 percent met criteria for ADHD, and 35 percent of those with a childhood diagnosis of ADHD continued to have clinically significant symptoms into adulthood. There were no significant differences in the percentage of ADHD between the SUD groups divided by drug choice. Of ADHD subtypes, subjects with combined and inattentive types were significantly more likely to have symptoms continue into adulthood than the hyperactive/impulsive subtype. Patients with cocaine use were more likely to have ADHD in childhood only when compared to the alcohol or cocaine/alcohol groups.

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Coffey, S. F., Saladin, M. E., Drobles, D. J., Brady, K. T., Dansky, B. S., & Kilpatrick, D. G. (2002). Trauma and substance cue reactivity in individuals with comorbid posttraumatic stress disorder and cocaine or alcohol dependence. *Drug and Alcohol Dependence*, 65(2), 115-127.

Although the high comorbidity of posttraumatic stress disorder (PTSD) and substance use disorders has been firmly established, no laboratory-based studies have been conducted to examine relationships between the two disorders. Using cue reactivity methodology, this study examined the impact of personalized trauma-image cues and in vivo drug cues on drug-related responding (e.g., craving) in individuals with PTSD and either crack cocaine dependence (CD) or alcohol dependence (AD). CD and AD groups displayed reactivity to both trauma and drug cues when compared to neutral cues, including increased craving. However, the AD group was more reactive than the CD group to both classes of cues. The CD participants were more reactive to trauma-image cues if drug-related material was included in the image, while the AD participants were reactive to the trauma cues regardless of drug-related content. It is hypothesized that PTSD-related negative emotion may play a relatively more important role in the maintenance of AD when compared to CD. Evidence that substance-dependent individuals with PTSD report increased substance craving in response to trauma memories is offered as a potential contributing factor in the poorer substance abuse treatment outcomes previously documented in this comorbid population.

Compton, W. M., III, Cottler, L. B., Abdallah, A. B., Phelps, D. L., Spitznagel, E. L., & Horton, J. C. (2000). Substance dependence and other psychiatric disorders among

drug-dependent subjects: Race and gender correlates. *American Journal on Addictions*, 9(2), 113-125.

The authors interviewed 512 African-American and Caucasian subjects (mean age 32.5 years) in drug treatment with drug dependence with the NIMH Diagnostic Interview Schedule to ascertain rates of Mental Disorders-III-Revised (DSM-III-R) disorders and whether these rates vary by gender and race. Lifetime prevalence rates were 64 percent for alcohol dependence; 44 percent for antisocial personality disorder (ASPD); 39 percent for phobic disorders; 24 percent for major depression; 12 percent for dysthymia; 10 percent for general anxiety disorder; 3 percent for panic disorder, mania, and obsessive-compulsive

disorder; 2 percent for bulimia and schizophrenia; and 1 percent for anorexia.

When stratified by race and age, Caucasians had a higher mean number of drug dependence disorders and higher overall rates of "any other" disorder than African-Americans. Caucasians and males had higher mean numbers of non-substance use disorders than African-Americans and females, respectively. This related to rates of alcohol, cannabis, and hallucinogen dependence, and ASPD rates, that were higher among men than women and higher among Caucasian than African-American subjects. Women had higher rates than men of amphetamine dependence, phobic disorder, major depression, dysthymia, panic disorder, obsessive-compulsive disorder, and mania.

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Compton, W. M., III, Cottler, L. B., Phelps, D. L., Abdallah, A. B., & Spitznagel, E. L. (2000). Psychiatric disorders among drug-dependent subjects: Are they primary or secondary? *American Journal on Addictions*, 9(2), 126-134.

The authors investigated the relationship between substance use disorders and comorbid psychiatric conditions among 425 subjects (mean age 32.5 years) in drug treatment who met Mental Disorders-III-Revised (DSM-III-R) criteria for drug dependence. Using the NIMH Diagnostic Interview Schedule, lifetime prevalence rates among subjects were 64 percent for alcohol abuse/dependence, 44 percent for antisocial personality disorder, 39 percent for phobic disorders, 24 percent for major depression, 12 percent for dysthymia, and 10 percent for generalized anxiety disorder. Antisocial personality disorder and phobias generally had onsets prior to the onset of drug dependence. The majority of drug-dependent subjects with general anxiety disorder reported an onset after the onset of drug dependence. Alcohol dependence, depression, and dysthymia were divided nearly evenly between earlier (primary disorder) and later (secondary disorder). These results are consistent with the body of literature indicating the importance of antisocial syndromes in the etiology of substance abuse and the literature indicating the complex, varying nature of the relationship of psychiatric disorders to substance dependence. A precise nomenclature for "age of onset," "primary," and "secondary" was developed for this study that is critical to understanding these issues and is recommended for other studies.

Compton, W. M., Cottler, L. B., Spitznagel, E. L., Abdallah, A. B., & Gallagher, T. (1998). Cocaine users with antisocial personality improve HIV risk behaviors as much as those without antisocial personality. *Drug & Alcohol Dependence*, 49(3), 239-247.

This study determined whether cocaine users who have antisocial personality disorder (APD) respond to an HIV risk-reduction intervention as well as cocaine users who do not

have the disorder. Subjects were 333 cocaine users followed up at 18 months as part of a NIDA-funded treatment demonstration project. The total sample improved across a wide range of HIV risk behaviors. Several sex-related HIV risk behaviors also improved significantly. When the sample was stratified by APD status, very similar improvement was seen in respondents with and without APD. To examine further the relationship of APD to change in HIV risk behaviors, separate logistic regression models of improving and worsening HIV risk behaviors were tested. There was no association of APD with improvement in HIV risk behaviors, but there was a significant association of APD with worsening HIV risk behaviors. It appears that cocaine users with APD improve their HIV risk behaviors just as much as those without APD but may be at higher HIV risk for the development of such behaviors.

Copeland, A. L., & Sorensen, J. L. (2001). Differences between methamphetamine users and cocaine users in treatment. *Drug & Alcohol Dependence*, 62(1), 91-95.

This study examined whether continual outpatient involvement by a dual-diagnosis population is more likely to be facilitated by predischarge, face-to-face contact (personal) with community representatives than by telephone contact (impersonal). A total of 193
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subjects (mean age 32.0 years) were selected in approximately equal numbers from each of 4 treatment wards. Inpatient data were collected from central files and hospital records. Outcome measures included keeping the initial appointment and making 2 or more visits (engagement) within 30 days after discharge. Logistic regression models were used to examine the relationship between linkage mode, as well as the other predictor variables, and aftercare contacts. Forward variable selection with criteria at alpha .10 was used to select the best set of independent predictors of aftercare contact. Results indicated that personal involvement between the patient and the provider was more effective in linkage to outpatient care than just making contact via telephone. Inperson linkage and a psychotic disorder were the only significant variables in the regression model related to keeping the first appointment as well as being engaged. Comparisons between the two linkage models revealed statistically reliable differences in age, diagnosis, and length of stay.

Cornelius, J. R., Salloum, I. M., Ehler, J. G., Jarrett, P. J., & et al. (1997). Fluoxetine in depressed alcoholics: A double-blind, placebo-controlled trial. *Archives of General Psychiatry*, 54(8), 700-705.

This study evaluated the efficacy of a selective serotonergic medication in the treatment of patients with comorbid major depression and alcohol dependence. Fifty-one patients (aged 18 through 65 years) diagnosed as having comorbid major depressive disorder and alcohol dependence received either fluoxetine (n=25) or placebo (n=26) in a 12-week double-blind, placebo-controlled trial. Results showed efficacy for fluoxetine in reducing the depressive symptoms and alcohol consumption of these patients.

Cornelius, J. R., Salloum, I. M., Haskett, R. F., Daley, D. C., Cornelius, M. D., Thase, M. E., & Perel, J. M. (2000). Fluoxetine versus placebo in depressed alcoholics: A 1-year follow-up study. *Addictive Behaviors*, 25(2), 307-310.

The authors conducted a first study to evaluate the long-term efficacy of fluoxetine for decreasing the depressive symptoms and drinking of patients with comorbid major depressive disorder and alcohol dependence. This study consisted of a 1-year naturalistic

follow-up of 31 patients (mean age 37.3 years) who previously had completed a 3-month double-blind, placebo-controlled study of fluoxetine in depressed alcoholics. The fluoxetine group continued to demonstrate less depressive symptoms and less drinking than the placebo group at the one-year follow-up evaluation. The results of the one-year follow-up evaluation suggested persistent efficacy for fluoxetine for treating the depressive symptoms and drinking of depressed alcoholics.

Cornelius, J. R., Salloum, I. M., Thase, M. E., Haskett, R. F., Daley, D. C., Jones-Barlock, A., Upsher, C., & Perel, J. M. (1998). Fluoxetine versus placebo in depressed alcoholic cocaine abusers. *Psychopharmacology Bulletin*, 34(1), 117-121.

This study examined 17 patients with Mental Disorders-III-Revised (DSM-III-R) diagnoses of major depressive disorder, alcohol dependence, and cocaine abuse, along with 34 non-cocaine-abusing depressed alcoholics in a pharmacotherapy trial involving

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the antidepressant fluoxetine versus placebo. During the study, no significant difference in treatment outcome was noted between the fluoxetine and the placebo groups for cocaine use, alcohol use, or depressive symptoms. In addition, no significant within-group improvement was noted for any of these outcome variables in either of the two treatment groups. Across the combined sample of 17 depressed alcoholic cocaine abusers, the mean Beck Depression Inventory (BDI) score worsened slightly from 19 to 21 during the course of the study, and 71 percent of the patients continued to complain of suicidal ideations at the end of the study. The 17 cocaine-abusing depressed alcoholics showed a significantly worse outcome than the 34 non-cocaine abusing depressed alcoholics on the 24-item Hamilton Rating Scale for Depression and BDI depression scales and on multiple measures of alcohol consumption. These findings suggest that comorbid cocaine abuse acts as a robust predictor of poor outcome for the drinking and the depressive symptoms of depressed alcoholics.

Costello, E. J., Erkanli, A., Federman, E., & Angold, A. (1999). Development of psychiatric comorbidity with substance abuse in adolescents: Effects of timing and sex. *Journal of Clinical Child Psychology*, 28(3), 298-311.

This study examined sex differences in the impact of childhood psychiatric disorders on the prevalence and timing of substance use and abuse. A representative population sample of 1,420 children (ages 9, 11, and 13 years at intake) was interviewed annually. American Indians and youth with behavioral problems were oversampled; data were weighted back to population levels for analysis. By age 16, more than half of the sample reported substance use, and 6 percent had abuse or dependence. Alcohol use began by age 9, and smoking by age 13. Mean onset of dependence was 14.8 years, and mean onset of abuse was 15.1 years. Substance use began earlier in boys, but not girls, who later developed abuse or dependence. Disruptive behavior disorders and depression were associated with a higher rate and earlier onset of substance use and abuse in both sexes, but anxiety predicted later onset of smoking. Family drug problems were the strongest correlate of early onset. Despite differences in prevalence of psychopathology, boys and girls showed more similarities than differences in the course of early substance use and abuse, and its associations with psychopathology.

Costello, E. J., Farmer, E. M., Angold, A., Burns, B. J., & Erkanli, A. (1997). Psychiatric disorders among American Indian and white youth in Appalachia: the Great

Smoky Mountains Study. *American Journal of Public Health*, 87(5), 827-832.

This study examined prevalence of psychiatric disorders, social and family risk factors for disorders, and met and unmet needs for mental health care among Appalachian youth. A total of 323 American Indian children (9, 11, and 13 years old) in an 11-county area of the southern Appalachians were recruited, together with a representative sample of the surrounding population of White children. Three-month prevalences of psychiatric disorders were similar. Substance use was more common in American Indian children, as was comorbidity of substance use and psychiatric disorder. American Indian poverty, family adversity (e.g., parental unemployment, welfare dependency), and family deviance (parental violence, substance abuse, and crime) rates were higher, but the rate of family

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mental illness, excluding substance abuse, was lower. Child psychiatric disorder and mental health service use were associated with family mental illness in both ethnic groups but were associated with poverty and family deviance only in White children. Despite lower financial barriers, American Indian children used fewer mental health services.

Crits-Christoph, P., Siqueland, L., Blaine, J., Frank, A., Luborsky, L., Onken, L. S., Muenz, L. R., Thase, M. E., Weiss, R. D., Gastfriend, D. R., Woody, G. E., Barber, J. P., Butler, S. F., Daley, D., Salloum, I., Bishop, S., Najavits, L. M., Lis, J., Mercer, D., Griffin, M. L., Moras, K., & Beck, A. T. (1999). Psychosocial treatments for cocaine dependence: National Institute on Drug Abuse Collaborative Cocaine Treatment Study. *Archives of General Psychiatry*, 56(6), 493-502.

This study examined the efficacy of 4 psychosocial treatments for cocaine-dependence in 487 patients (aged 18 through 60 years). Inclusion criteria included a principle diagnosis of Mental Disorders-IV (DSM-IV) cocaine dependence. Subjects were required to attend 3 clinic visits within 14 days, including 1 group session and 2 case-management visits, before being randomly assigned to either 1) individual drug counseling (IDC) plus group drug counseling (GDC), 2) cognitive therapy (CT) plus GDC, 3) supportive-expressive therapy (SE) plus GDC, or 4) GDC alone. Treatment consisted of a six-month active phase and a three-month booster phase. Assessments were completed at intake, end of orientation, monthly during the active phase of treatment, and at months 9, 12, 15, and 18 after randomization. Although the assessment battery covered multiple domains, the main focus was drug use outcomes. The primary outcome measure was the Drug Use Composite score from the interview-based Addiction Severity Index. Results showed that subjects had low levels of psychiatric severity. Treatments SE plus GDC and CT plus GDC retained patients better, and IDC plus GDC produced superior reductions of overall drug use and cocaine use. Relative to the other treatment conditions, a greater proportion of patients in IDC plus GDC achieved abstinence.

Cunningham-Williams, R. M., Cottler, L. B., Compton, W. M., & Spitznagel, E. L. (1998). Taking chances: Problem gamblers and mental disorders: Results from the St. Louis Epidemiologic Catchment Area study. *American Journal of Public Health*, 88(7), 1093-1096.

This study determined prevalence estimates of problem gambling and relationships to other psychiatric and substance use disorders among 3,004 adults (aged 18 through 96 years). The lifetime prevalence of pathological gambling was 0.9 percent, and 46 percent

of those surveyed gambled recreationally. Problem gamblers (those reporting at least 1 gambling-related problem) composed 9.2 percent of the sample and were predominantly white, male, and younger than nongamblers. They were at increased risk for several psychiatric diagnoses, especially antisocial personality disorder, alcoholism, and tobacco dependence.

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Daley, D. C., Salloum, I. M., Zuckoff, A., Kirisci, L., & Thase, M. E. (1998). Increasing treatment adherence among outpatients with depression and cocaine dependence: Results of a pilot study. *American Journal of Psychiatry*, 155(11), 1611-1613.

This pilot study examined the effect of a modified motivational therapy intervention on outpatient treatment adherence and completion for patients with comorbid depressive disorder and cocaine dependence. Depressed cocaine patients (mean age 33.6 years), stabilized with antidepressant medications on an inpatient psychiatric unit, were consecutively assigned on discharge to motivational therapy (n=11) or treatment-as-usual (n=12) during the first month of outpatient care. Subjects were compared on treatment adherence and completion and on one-year rehospitalization rates. Motivational therapy subjects attended significantly more treatment sessions during month 1, completed 30 and 90 days of outpatient care at higher rates, and experienced fewer psychiatric rehospitalizations and days in the hospital during the first year from entry into outpatient treatment.

Daley, D. C., & Zuckoff, A. (1998). Improving compliance with the initial outpatient session among discharged inpatient dual diagnosis clients. *Social Work*, 43(5), 470-473.

This study evaluated the utility of a single motivational therapy (MT) session prior to hospital discharge aimed at increasing compliance with outpatient treatment among dual diagnosis clients with major depression and a substance use disorder. The intervention was used on nearly 100 inpatients, and the show rate for the initial outpatient appointment increased from 35 percent to 67 percent. In the most recent cohort of 30 subjects, 100 percent of subjects who received an individual MT intervention attended their initial outpatient treatment appointment, compared with 53 percent of those receiving a small-groups MT session.

Dansky, B. S., Roitzsch, J. C., Brady, K. T., & Saladin, M. E. (1997). *Journal of Traumatic Stress*, 10(1), 141-148.

The goal of this investigation was to evaluate whether the process of assessing posttraumatic stress disorder (PTSD) in substance abuse/dependence inpatients (n=95) as part of a research protocol influenced the diagnostic assessment conducted by clinical staff. The prevalence of current crime-related PTSD (CR-PTSD) observed with a research interview was 40 percent (n=38), whereas the rate of current CR-PTSD documented in (the same) patients' discharge summaries was 15 percent (n=14). An even lower CR-PTSD prevalence rate of 8 percent (n=5) was obtained from a new sample of patient discharge summaries (n=59) collected after the cessation of the research project. On chart intake reports, clinical staff documented a history of sexual and/or physical assault in approximately one-half of these patients, but PTSD was not evaluated. PTSD in patients with substance use disorders appears to be under-diagnosed by clinical staff.

De Leon, G., Sacks, S., Staines, G., & McKendrick, K. (2000). Modified therapeutic community for homeless mentally ill chemical abusers: Treatment outcomes. *American Journal of Drug & Alcohol Abuse, 26*(3), 461-480.

This study compared homeless mentally ill chemical abuser (MICA) clients (n=342), male and female, sequentially assigned to either of two modified therapeutic community programs (TC1 and TC2) and to a treatment-as-usual (TAU) control group. Follow-up interviews were obtained at 12 months post baseline and at time F (on average more than 2 years post baseline) on a retrieved sample of 232 (68%) clients and 281 (82%) clients, respectively. Outcome measures assessed five domains: drug use, crime, HIV risk behavior, psychological symptoms, and employment. Individuals in both modified TC groups showed significantly greater behavioral improvement than TAU at 12 months and time F, and the modified TC2, with lower demands and more staff guidance, was superior to modified TC1. Completers of both TC programs showed significantly greater improvement than dropouts and a subgroup of TAU clients with high exposure (i.e., more than 8 months) to other treatment protocols. These findings support the effectiveness and longer-term stability of effects of a modified TC program for treating homeless MICA clients.

De Leon, G., Sacks, S., Staines, G., & McKendrick, K. (1999). Modified therapeutic community for homeless mentally ill chemical abusers: Emerging subtypes. *American Journal of Drug & Alcohol Abuse, 25*(3), 495-515.

This paper was one of a series reporting on a clinical field trial evaluating the efficacy of the modified therapeutic community (TC) approach for the treatment of homeless mentally ill chemical abusers (MICAs). The social and psychological characteristics of the treatment sample were described in an earlier paper. The purpose of this report was to categorize subtypes of homeless MICA clients to predict with greater accuracy their treatability in modified TCs. An index that consistently correlated with treatment-relevant variables was identified for each of three dimensions: homelessness (residential instability), mental illness (current severity), and substance abuse (current substance abuse/dependence diagnosis). These indices yielded distributions that captured the variability in the sample with respect to a number of variables, including drug use, criminality, human immunodeficiency virus (HIV) risk (sexual behavior), psychological status, and motivation. The indices were significantly associated with baseline drug use, criminal activity, HIV risk (sexual behavior), psychological symptoms, and motivation and readiness.

Devanand, D. P. (2002). Comorbid psychiatric disorders in late life depression. *Biological Psychiatry, 52*(3), 236-242.

In late-life depression, alcohol use, anxiety, and personality disorders are common comorbid psychiatric disorders. Elderly depressed patients are three to four times more likely to have an alcohol use disorder, compared with nondepressed elderly subjects, with a prevalence of 15 to 30 percent in patients with late-life major depression. Although the presence of a comorbid alcohol use disorder may worsen the prognosis for geriatric

reducing alcohol use leads to the best possible outcomes. Most studies show that the overall prevalence of anxiety disorders, particularly panic disorder and obsessive-compulsive disorder, is low in geriatric depression, but generalized anxiety disorder may not be uncommon. It remains unclear if the presence of a comorbid anxiety disorder impacts on the treatment and prognosis of late-life major depression. Personality disorders occur in 10 to 30 percent of patients with late-life major depression or dysthymic disorder, particularly in patients with early-onset depressive illness. Cluster C disorders, including the avoidant, dependent, and obsessive-compulsive subtypes, predominate. Cluster B diagnoses, including borderline, narcissistic, histrionic, and antisocial, are rare. Overall, the research database on comorbid psychiatric disorders in major and nonmajor late-life depression is relatively sparse. Because comorbid psychiatric disorders affect clinical course and prognosis, and may worsen long-term disability in late-life depression, considerably more research in this field is needed.

Dickey, B., Normand, S. L. T., Weiss, R. D., Drake, R. E., & Azeni, H. (2002). Medical morbidity, mental illness, and substance use disorders. *Psychiatric Services*, 53(7), 861-867.

This study examined whether certain medical disorders are more prevalent among adults with severe mental illness (SMI) and whether a comorbid substance use disorder increases prevalence beyond the effect of SMI alone. Data from the Massachusetts Division of Medical Assistance were used. The sample consisted of 26,332 Medicaid beneficiaries 18 through 64 years of age. Of these, 11,185 had been treated for SMI. Twelve-month prevalence rates were computed, and logistic regression was used to estimate the effect of a substance use disorder or another mental illness on the risk of having a medical disorder. Results showed that, compared with Medicaid beneficiaries who were not treated for SMI, those with SMI had a significantly higher age- and gender-adjusted risk of the medical disorders considered in the study. Those with a comorbid substance use disorder had the highest risk for five of the disorders. It is concluded that the higher treated prevalence of certain medical disorders among adults with SMI has three implications: substance use disorder is an important risk factor and requires early detection; integration of the treatment of medical disorders and SMI should receive higher priority; and efforts should be made to develop specialized disease selfmanagement techniques.

DiNitto, D. M., Webb, D. K., & Rubin, A. (2002a). Gender differences in dually diagnosed clients receiving chemical dependency treatment. *Journal of Psychoactive Drugs*, 34(1), 105-117.

This study investigated gender differences among 97 clients (46 males and 51 females aged 18 through 56 years) with dual diagnoses of severe mental illness and chemical dependency. Comparisons were made at the time of their admission to an inpatient chemical dependency treatment program and at follow-up in cases where data were available. Many of the findings at time of admission are consistent with the few studies that have compared men and women who had co-occurring mental and substance use disorders. For example, the women were more likely to have experienced emotional, physical, or sexual abuse, and they reported being charged with fewer types of crimes.

Most differences at admission concerned psychiatric problems and family/social relations. Women reported that they were more bothered by their psychiatric symptoms and their family/social relations, but they also reported more happiness and closeness in some relationships. The women also said they had more relatives with alcohol, drug, and, especially, psychiatric problems. At follow-up, gender differences in the family/social and psychiatric domains persisted. Findings suggested that men and women with dual diagnoses might benefit from different emphases in treatment programs.

DiNitto, D. M., Webb, D. K., & Rubin, A. (2002b). The effectiveness of an integrated treatment approach for clients with dual diagnoses. *Research on Social Work Practice, 12*(5), 621-641.

A randomized experiment tested the effectiveness of adding a psychoeducationally oriented group therapy intervention, Good Chemistry Groups, to standard inpatient chemical dependency services for clients dually diagnosed with mental and substance dependence disorders. Ninety-seven clients (aged 18 through 56 years) were randomly assigned to an experimental group (n=48) and a control group (n=49). Outcome variables included drug and alcohol use, participation in self-help support group meetings, incarceration days, psychiatric symptoms, psychiatric inpatient admissions, compliance with prescribed psychotropic medication plans, and composite scores on the Addiction Severity Index. No significant treatment effects were found on any of the outcome variables. The findings were generally consistent with those of prior controlled studies. The authors concluded that Good Chemistry Groups did not add to the effects of standard treatments for dually diagnosed clients. Practitioners should continue to develop and evaluate alternative integrated treatment approaches that might prove to be more effective than this one.

DiNitto, D. M., Webb, D. K., Rubin, A., Morrison-Orton, D., & Wambach, K. G. (2001). Self-help group meeting attendance among clients with dual diagnoses. *Journal of Psychoactive Drugs, 33*(3), 263-272.

This study examined factors associated with self-help group meeting attendance in the aftercare of 81 clients (18 through 56 years old) who had dual diagnoses of severe mental illness and chemical dependency following their discharge from an inpatient chemical dependency treatment program. The association between self-help group meeting attendance and treatment outcomes was explored. Data were collected from patient records and results of the Addiction Severity Index (ASI) administered as part of an earlier experiment that evaluated the effectiveness of the treatment program. Collaterals also provided follow-up information. Of 13 variables examined, 2 were associated with increased self-help group meeting attendance: having more years of education and having a major substance problem that did not include alcohol. No association was found between self-help group meeting attendance and treatment outcome regarding psychiatric problem severity or five other domains of the ASI. A moderate association was found,

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indicating that more self-help group meeting attendance was related to improvements in the legal problems domain of the ASI. Implications are discussed for future research and for improving self-help group meeting attendance and its influence on treatment outcomes for individuals with dual diagnoses.

Dixit, A. R., & Crum, R. M. (2000). Prospective study of depression and the risk of heavy alcohol use in women. *American Journal of Psychiatry*, 157(5), 751-758.

This study examined the association between depression and a greater risk of heavy alcohol consumption in women on the basis of a one-year follow-up of the Baltimore cohort of the National Institute of Mental Health Epidemiologic Catchment Area project. The sample consisted of 1,383 women aged 18 through 65+ years at risk for heavy alcohol use. History of depression and frequency of lifetime-experienced depressive symptoms were assessed at baseline, and incident cases of heavy drinking were identified one year later. A series of logistic regression models was developed to estimate the risk of heavy drinking at follow-up associated with depression status. The initial estimate of the risk for heavy drinking in women with a history of depressive disorder was 2.60 times greater than the risk in women with no history of depressive disorder. This estimate did not change markedly after adjustment for age, history of antisocial personality disorder, or father's history of heavy drinking (relative risk = 2.2). A higher frequency of depressive symptoms was also found to be associated with an elevation in the risk for heavy alcohol use (relative risk = 1.09). Results support evidence that depression must be considered in the assessment of vulnerability for heavy alcohol use in women.

Dixon, L., McNary, S., & Lehman, A. F. (1998). Remission of substance use disorder among psychiatric inpatients with mental illness. *American Journal of Psychiatry*, 155(2), 239-243.

This study assessed the nature and stability of remission of substance use disorder among 268 patients with severe mental illness at index hospitalization and at one-year follow-up. Consecutively admitted inpatients completed the Structured Clinical Interview for DSMIII-R, the Quality of Life Interview, and the Addiction Severity Index at admission and one year later. Seventy subjects were classified as past substance abusers in remission at baseline. Baseline characteristics and one-year outcomes of these subjects were compared with 109 current substance abusers and 89 subjects who were not substance abusers. Past abusers were significantly more likely to be women, and they consistently differed significantly from the current abusers in variables involving frequency of drug and alcohol use at baseline. During the follow-up period, subjects with current abuse at baseline were significantly more likely to have recurrences of substance use disorders and to use substance abuse services, and they had significantly more months of alcohol use and alcohol use to excess during follow-up than past abusers.

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Dixon, L., McNary, S., & Lehman, A. (1997). One-year follow-up of secondary versus primary mental disorder in persons with comorbid substance use disorders. *American Journal of Psychiatry*, 154(11), 1610-1612.

This study compared service use and outcomes of dually diagnosed patients with independent mental disorders and those with substance-induced mental disorders. Diagnosis, service use, and severity of substance use problems at baseline and one year later were assessed in consecutively admitted inpatients with independent mental disorders plus substance use disorders (n=71), substance-induced mental disorders plus substance use disorders (n=38), and independent mental disorders only (n=59). All subjects were aged 18 through 65 years. At follow-up, subjects with substance-induced mental disorders at baseline were more likely to have been rehospitalized than the other

groups, were more likely to have used outpatient substance abuse services, were less likely to have an independent mental disorder, and had the most severe alcohol- and drug-related impairment. Treatment programs for both types of dual diagnosis patients must address mental health concerns.

Donovan, S. J., & Nunes, E. V. (1998). Treatment of comorbid affective and substance use disorders: Therapeutic potential of anticonvulsants. *American Journal on Addictions, 7*(3), 210-220.

This study examines the use of anticonvulsants/mood stabilizers to treat patients with substance use disorders. Although there is high comorbidity of bipolar and substance use disorders, there has been little research on the use of these medications to treat bipolar disorders in patients who also have a substance use disorders. However, symptoms of bipolar disorders, such as irritability and mood lability, may be difficult to distinguish from the effects of acute and chronic substance use; therefore, reliable diagnostic methods will need to be developed. Further, a new, hypothesized syndrome, Explosive Mood Disorder, is described that may be distinct from the bipolar spectrum. It is characterized by childhood onset of temper outbursts and irritable mood that persist into adolescence and adulthood, are connected to marijuana use, and respond to divalproex sodium. The authors review studies of prevalence, comorbidity, family history, longitudinal course, and placebo-controlled trials of anti-convulsant medications to evaluate the validity and treatment implications of this proposed entity.

Drake, R. E., Essock, S. M., Shaner, A., Carey, K. B., Minkoff, K., Kola, L., Lynde, D., Osher, F. C., Clark, R. E., & Rickards, L. (2001). Implementing dual diagnosis services for clients with severe mental illness. *Psychiatric Services, 52*(4), 469-476.

Effective dual diagnosis programs combine mental health and substance abuse interventions that are tailored for the complex needs of clients who have comorbid disorders. The authors describe the critical components of effective programs, which include a comprehensive, long-term, staged approach to recovery; assertive outreach; motivational interventions; provision of help to clients in acquiring skills and supports to manage both illnesses and to pursue functional goals; and cultural sensitivity and competence. Many state mental health systems are implementing dual diagnosis

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services, but high-quality services are rare. The authors provide an overview of the numerous barriers to implementation and describe implementation strategies to overcome the barriers. Current approaches to implementing dual diagnosis programs involve organizational and financing changes at the policy level, clarity of program mission with structural changes to support dual diagnosis services, training and supervision for clinicians, and dissemination of accurate information to consumers and families to support understanding, demand, and advocacy.

Drake, R. E., McHugo, G. J., Clark, R. E., Teague, G. B., Xie, H., Miles, K., & Ackerson, T. H. (1998). Assertive community treatment for patients with co-occurring severe mental illness and substance use disorder: A clinical trial. *American Journal of Orthopsychiatry, 68*(2), 201-215.

Integrated mental health and substance abuse treatment within an assertive community treatment (ACT) approach was compared to treatment within a standard case management approach for 223 patients with dual disorders over three years. ACT

patients showed greater improvements on some measures of substance abuse and quality of life, but the groups were equivalent on most measures, including stable community days, hospital days, psychiatric symptoms, and remission of substance use disorder.

Drake, R. E., Mercer-McFadden, C., Mueser, K. T., McHugo, G. J., & Bond, G. R. (1998). Review of integrated mental health and substance abuse treatment for patients with dual disorders. *Schizophrenia Bulletin*, 24(4), 589-608.

Patients with severe mental disorders such as schizophrenia and co-occurring substance use disorders traditionally received treatments for their two disorders from two different sets of clinicians in parallel treatment systems. Dissatisfaction with this clinical tradition led to the development of integrated treatment models in which the same clinicians or teams of clinicians provide substance abuse treatment and mental health treatment in a coordinated fashion. The authors reviewed 36 research studies on the effectiveness of integrated treatment for dually diagnosed patients. They report that studies of adding dual-disorders groups to traditional services, studies of intensive integrated treatments in controlled settings, and studies of demonstration projects have thus far yielded disappointing results. On the other hand, 10 recent studies of comprehensive, integrated outpatient treatment programs provide encouraging evidence of the programs' potential to engage dually diagnosed patients in services and to help them reduce substance abuse and attain remission. Outcomes related to hospital use, psychiatric symptoms, and other domains are less consistent. Several program features appear to be associated with effectiveness: assertive outreach, case management, and a longitudinal, stage-wise, motivational approach to substance abuse treatment. Given the magnitude and severity of the problem of dual disorders, more controlled research on integrated treatment is needed.

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Drake, R. E., Wallach, M. A., Alvenson, H. S., & Mueser, K. T. (2002). Psychosocial aspects of substance abuse by clients with severe mental illness. *Journal of Nervous & Mental Disease*, 190(2), 100-106.

This article notes that, as the literature on co-occurring substance abuse in persons with severe mental illnesses has evolved, emphasis on biologic and pharmacologic factors has diverted attention from important psychosocial issues. The authors review research showing that 1) psychosocial risk factors may explain consistently high rates of substance abuse by these persons, 2) substance abuse is for most clients a socio-environmental phenomenon embedded in interpersonal activities, and 3) both natural recovery processes and effective treatments rely on developing new relationships, activities, coping strategies, and identities. Thus, psychosocial issues are critical in the attempts to understand and address substance abuse in this population.

Drake, R. E., Xie, H., McHugo, G. J., & Green, A. I. (2000). The effects of clozapine on alcohol and drug use disorders among patients with schizophrenia. *Schizophrenia Bulletin*, 26(2), 441-449.

This study explored the effects of clozapine on alcohol and drug use disorders among schizophrenia patients. Among 151 patients (mean age 32.3 years) with schizophrenia or schizoaffective disorder and co-occurring substance use disorder who were studied in a dual-disorder treatment program, 36 received clozapine during the study for standard clinical indications. All subjects were assessed prospectively at baseline and every six

months over three years for psychiatric symptoms and substance use. Alcohol-abusing patients taking clozapine experienced significant reductions in severity of alcohol abuse and days of alcohol use while on clozapine. For example, they averaged 54.1 drinking days during 6-month intervals while off clozapine and 12.5 drinking days while on clozapine. They also improved more than patients who did not receive clozapine. At the end of the study, 79 percent of the patients on clozapine were in remission from alcohol use disorder for 6 months or longer, while only 33.7 percent of those not taking clozapine were remitted. Findings related to other drugs in relation to clozapine were also positive but less clear because of the small number of patients with drug use disorders. This study was limited by the naturalistic design and the lack of prospective, standardized measures of clozapine use.

Drake, R. E., Yovetich, N. A., Bebout, R. R., Harris, M., & McHugo, G. J. (1997).

Integrated treatment for dually diagnosed homeless adults. *Journal of Nervous & Mental Disease*, 185(5), 298-305.

This study examined the effects of integrating mental health, substance abuse, and housing interventions for homeless persons who have co-occurring severe mental illness and substance use disorders. With the use of a quasi-experimental design, integrated treatment was compared with standard treatment for 217 homeless, dually diagnosed adults over an 18-month period. The integrated treatment group had fewer institutional days and more days in stable housing, made more progress toward recovery from substance abuse, and showed greater improvement of alcohol use disorders than the

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standard treatment group. Abuse of drugs other than alcohol (primarily cocaine) improved similarly for both groups. Secondary outcomes, such as psychiatric symptoms, functional status, and quality of life, also improved for both groups, with minimal group differences favoring integrated treatment.

Drebing, C. E., Fleitas, R., Moore, A., Krebs, C., Van Ormer, A., Penk, W., Seibyl, C., & Rosenheck, R. (2002). Patterns in work functioning and vocational rehabilitation associated with coexisting psychiatric and substance use disorders. *Rehabilitation Counseling Bulletin*, 46(1), 5-13.

Archival data from 25,480 adults entering the Compensated Work Therapy (CWT) program of the Veterans Health Administration were analyzed to identify differences in work functioning and vocational rehabilitation among participants with psychiatric disorders alone, substance use disorders (SUD) alone, and psychiatric disorders with coexisting SUD. The co-existence of psychiatric disorders and SUD was associated with better work functioning, more participation in vocational rehabilitation, and a better outcome, compared to psychiatric disorders alone. Poorer functioning was seen on all variables relative to participants with SUD alone. These findings are due in part to correlates of substance abuse, but they may suggest that clinicians should focus on work and vocational goals to support other clinical efforts for clients with dual diagnoses.

DuPont, R. L. (1997). Panic disorder and addiction: The clinical issues of comorbidity. *Bulletin of the Menninger Clinic*, 61(2, Supplement A), A54-A65.

This article notes that panic disorder and addiction are occasionally comorbid: 4.5 percent of addicted patients have panic disorder, and 16 percent of panic disorder patients are comorbid for addiction to alcohol and other drugs. Despite these relatively low rates

of comorbidity, the author points out that the treatment of these two disorders is commonly confounded by issues of comorbidity, as many physicians avoid using benzodiazepine to treat panic disorder out of inappropriate fear of addiction. Not a few physicians treat panic disorder thinking that they will thereby end comorbid addiction. It is suggested that sound clinical practice calls for clear identification of both panic disorder and addiction and fully effective treatments of the diseases from which the patients suffer.

Edens, J. F., Peters, R. H., & Hills, H. A. (1997). Treating prison inmates with co-occurring disorders: An integrative review of existing programs. *Behavioral Sciences & the Law, 15*(4), 439-457.

The tremendous growth in state and federal correctional populations has focused greater attention on the needs of mentally ill and substance abusing inmates. Although an estimated 3 to 11 percent of prison inmates have co-occurring mental health (psychotic and major mood) disorders and substance use disorders, few treatment programs are described in the literature, and there is little available information regarding effective treatment strategies for this population. The current study provides an integrative review of seven 'dual diagnosis' treatment programs developed in state and federal prisons.

Many of these programs have evolved from existing substance abuse treatment programs

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and approaches. Key program components include an extended assessment period, orientation/motivational activities, psychoeducational groups, cognitive-behavioral interventions such as restructuring of 'criminal thinking errors,' self-help groups, medication monitoring, relapse prevention, and transition into institution- or communitybased aftercare facilities. Many programs use therapeutic community approaches that are modified to provide (a) greater individual counseling and support, (b) less confrontation, (c) smaller staff caseloads, and (d) cross-training of staff. Research is underway in three of the seven sites to examine the effectiveness of these new programs.

Embry, L. E., Vander Stoep, A., Evens, C., Ryan, K. D., & Pollock, A. (2000). Risk factors for homelessness in adolescents released from psychiatric residential treatment. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(10), 1293-1299.

The authors measured the incidence of homelessness among youths discharged from an inpatient mental health facility and identified factors that put these youths at risk for homelessness. Reports of homelessness during 5 years of follow-up interviews with 83 adolescents consecutively discharged from an inpatient facility were used in conjunction with chart reviews. One-third of youths experienced at least one homeless episode after discharge. Youths who had a history of substance use, physical abuse, running away, or being in state custody were more likely to become homeless than those without such factors. Having a thought disorder, however, was inversely related to becoming homeless after hospital discharge. Youths discharged from a residential treatment facility are at high risk for becoming homeless. Interventions to prevent homelessness among adolescent inpatients should be targeted to those with a history of substance abuse, physical abuse, running away, and being in state custody.

Epstein, E. E., Labouvie, E., McCrady, B. S., Jensen, N. K., & Hayaki, J. (2002). A multisite study of alcohol subtypes: Classification and overlap of unidimensional and

multi-dimensional typologies. *Addiction*, 97(8), 1041-1053.

This study examined the usefulness of four prevailing alcohol typologies, assessed in terms of replicability of the multi-dimensional schemas, percentage of the sample classified by each typology, distribution of subtypes by gender and treatment site, and construct validity of Type 1/Type 2. In addition, overlap of classification systems was examined to determine whether the four typologies could be narrowed to a smaller set of meaningful, non-redundant subtype schemas. Baseline data from five treatment outcome studies were used to facilitate subtyping according to four alcohol typologies: antisocial (ASP) versus non-ASP, early versus late onset, Type 1/Type 2, and Type A/Type B. The studies were conducted at several in-patient and outpatient treatment sites. The sample included 342 participants (23% female) who met DSM-III-R criteria for alcohol abuse or dependence. Subjects were assessed on substance use severity, family history, psychopathology, personality, and psychosocial functioning. Type 1/Type 2 and Type A/B typologies were replicated. Type 1/Type 2 had poor construct validity because of symptom cluster overlap between the two subgroups. Only 14 percent of the subjects met criteria for ASP. The two strongest associations, including that between early versus

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late onset and Type 1/Type 2 and that between ASP versus non-ASP and Type A/Type B, were expected and reflect overlaps in conceptual definitions. In comparison, the relationship between early versus late onset and ASP versus non-ASP and Type A/B was weak. Clinical utility of the ASP/non-ASP typology is limited in non-Veterans Administration (VA) samples, because of low prevalence. The Type 1/Type 2 subtyping schema was redundant with the age of onset schema and was the least internally valid of all four typologies. In general, the Type A/B schema was the most promising of the prevailing typologies studied. It was relatively inclusive, and the A, B groups were distinct from one another. However, dichotomous typologies may not be complex enough to be clinically useful descriptors of alcoholic samples. Aside from ASP and Type B, there appears to be heterogeneity within groups typically considered homogeneous, such as 'early versus late onset' alcoholics.

French, M. T., Sacks, S., De Leon, G., Staines, G., & McKendrick, K. (1999). Modified therapeutic community for mentally ill chemical abusers: outcomes and costs. *Evaluation & the Health Professions*, 22(1), 60-85.

Several studies have established that the personal and social consequences of substance abuse are extensive and costly. These consequences are frequently compounded by mental illness. Although interventions that target mentally ill chemical abusers (MICAs) present several challenges, the potential benefits of successful interventions are significant. This article presents outcomes and costs of a modified therapeutic community (TC) intervention for homeless MICAs. Outcomes at follow-up are compared with those for a control group of homeless MICAs receiving standard services in a treatment-as-usual (TAU) condition. Annual economic costs for the modified TC and the average weekly cost of treating a single client are estimated. Treatment and other health service costs at 12 months post baseline are compared for modified TC and TAU clients. The results of this study indicate that, suitably modified, the TC approach is an effective treatment alternative for homeless MICAs, with the potential to be highly cost-effective relative to standard services.

Galanter, M., Dermatis, H., Egelko, S., & De Leon, G. (1998). Homelessness and mental illness in a professional and peer-led cocaine treatment clinic. *Psychiatric Services, 49*(4), 533-535.

This study evaluated whether homelessness, chronicity of substance use problems, and mental illness are associated with treatment outcomes for 340 patients attending a cocaine day treatment program that integrates peer leadership and professional supervision. Urinalyses for drugs of abuse were randomly obtained two or three times weekly. When patients were discharged from the program or dropped out, results of the last three sequential urine toxicology tests were tabulated for each subject who attended at least seven days of the program. Subjects with negative results on all three tests were considered to have an acceptable outcome. Thirty-six percent of the sample had a major mental illness, and 39 percent were homeless. Sixty-nine percent achieved an acceptable final urine toxicology status, and the median number of program visits was 46.

Homelessness, a longer history of cocaine use, and a diagnosis of schizophrenia were

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associated with positive treatment outcomes. The results support the feasibility of a cocaine abuse treatment model combining professional and peer leadership.

Gilman, S. E., & Abraham, H. D. (2001). A longitudinal study of the order of onset of alcohol dependence and major depression. *Drug and Alcohol Dependence, 63*(3), 277-286.

Alcohol dependence and major depression commonly occur together; however, few studies have assessed prospectively the magnitude of the risk that one disorder imparts on the subsequent occurrence of the other. The authors used data from the first two waves of the Epidemiologic Catchment Area community survey (n=14,480) to estimate the odds of either major depression or alcohol dependence being followed by the other disorder after one year of follow-up. The odds of developing major depression associated with low, medium, and high levels of alcoholic symptoms at baseline were 1.66, 3.98, and 4.32 for females (P<0.001), and 1.19, 2.49, and 2.12 for males (p=0.026). Conversely, odds ratios indicating the 1-year follow-up risk of incident alcohol dependence within low, medium, and high categories of baseline depressive symptomatology were 2.75, 3.52, and 7.88 for females (P<0.001) and 1.50, 1.41, and 1.05 for males (p=0.091).

Individuals with alcohol dependence appeared more likely to meet lifetime diagnostic criteria for both disorders after one year than individuals with depression. These results suggest that both alcohol dependence and major depression pose a significant risk for the development of the other disorder at one year.

Goldberg, J. F., Garno, J. L., Leon, A. C., Kocsis, J. H., & Portera, L. (1999). A history of substance abuse complicates remission from acute mania in bipolar disorder. *Journal of Clinical Psychiatry, 60*(11), 733-740.

This study compared remission patterns for mixed or pure manic episodes among bipolar inpatients with or without substance abuse histories. Hospital records were retrospectively reviewed for 204 Mental Disorders-III-Revised (DSM-III-R) bipolar I inpatients. Clinical features were compared for those with or without substance abuse/dependence histories predating the index manic episode. Time until remission was analyzed by Kaplan-Meier survival analysis. Naturalistic treatment outcome with lithium or anticonvulsant mood stabilizers was compared for those with or without past substance

abuse. Results show that past substance abuse was evident in 34 percent of the bipolar sample and comprised most often alcoholism, followed by cocaine, marijuana, sedativehypnotic or amphetamine, and opiate abuse. Substance abuse was more common among men and those with mixed rather than pure mania. Remission during hospitalization was less likely among patients with prior substance abuse, especially alcohol or marijuana abuse, and among mixed manic patients with past substance abuse. Bipolar patients with substance abuse histories who received divalproex or carbamazepine remitted during hospitalization more often than did those who received lithium as the sole mood stabilizer.

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Gomez, M. B., Primm, A. B., Tzolova-Iontchev, I., Perry, W., Vu, H. T., & Crum, R. M. (2000). A description of precipitants of drug use among dually diagnosed patients with chronic mental illness. *Community Mental Health Journal, 36*(4), 351-362.

The authors describe patients' perceptions of the chronological occurrence of their mental illness and substance abuse. The patients were enrolled in a community mental health center and received dual diagnosis treatment from an affiliated psychiatric rehabilitation program. Using a questionnaire designed to address this issue, the authors assessed patients' perceptions of support currently being received at the treatment program and how beneficial they perceived this support to be. In addition, the authors assessed why substance use was a coping strategy in times of perceived stress early in life and whether this behavior had changed to date. Assessing the perception of the sequence of cooccurring disorders among patients permits increased understanding of the factors that precipitate substance use and exacerbate mental illness. This knowledge may aid in the design of effective treatment strategies for this population of patients.

Gonzalez, G., & Rosenheck, R. A. (2002). Outcomes and service use among homeless persons with serious mental illness and substance abuse. *Psychiatric Services, 53*(4), 437-446.

This study compared baseline characteristics and clinical improvement after 12 months among homeless persons with a diagnosis of serious mental illness with and without a comorbid substance use disorder. The study subjects were 5,432 homeless persons with mental illness who were participating in the Center for Mental Health Services' Access to Community Care and Effective Services and Supports (ACCESS) program. Analysis of covariance was used to compare clients who had dual diagnoses and those who did not and to identify any association between service use and clinical improvement. Follow-up data were available for 4,415 clients (81% of the sample). At baseline, clients with dual diagnoses were worse off than those without dual diagnoses on most clinical and social adjustment measures. Clients with dual diagnoses also had poorer outcomes at follow-up on 15 (62%) of 24 outcome measures. However, among clients with dual diagnoses, those who reported extensive participation in substance abuse treatment showed clinical improvement comparable to or better than that of clients without dual diagnoses. On measures of alcohol problems, clients with dual diagnoses who had a high rate of participation in self-help groups had outcomes superior to those of other clients with dual diagnoses. Clients with dual diagnoses who received high levels of professional services also had superior outcomes, in terms of social support and involvement in the criminal justice system. Homeless persons with dual diagnoses had poorer adjustment on most

baseline measures and experienced significantly less clinical improvement than those without dual diagnoses. However, those with dual diagnoses who received extensive substance abuse treatment showed improvement similar to those without at 12 months.

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Goodman, L. A., Salyers, M. P., Mueser, K. T., Rosenberg, S. D., Swartz, M., Essock, S. M., Osher, F. C., Butterfield, M. I., Swanson, J., Site, H., & Risk Study Research, C. (2001). Recent victimization in women and men with severe mental illness: Prevalence and correlates. *Journal of Traumatic Stress, 14*(4), 615-632.

The problem of violence against individuals with severe mental illness (SMI) has received relatively little notice, despite several studies suggesting an exceptionally high prevalence of victimization in this population. This paper describes the results of an investigation of the prevalence and correlates of past-year physical and sexual assault among a large sample of women and men with SMI drawn from inpatient and outpatient settings across four states. Results confirmed preliminary findings of a high prevalence of victimization in this population (with sexual abuse more prevalent for women and physical abuse more prevalent for men) and indicated the existence of a range of correlates of recent victimization, including demographic factors and living circumstances, history of childhood abuse, and psychiatric illness severity and substance abuse. The research and clinical implications of these findings are discussed.

Grant, B. F., & Hasin, D. S. (1999). Suicidal ideation among the United States drinking population: Results from the National Longitudinal Alcohol Epidemiologic Survey. *Journal of Studies on Alcohol, 60*(3), 422-429.

Data from a national representative sample of 18,352 current drinkers (18+ years of age) were used to identify major risk factors of suicidal ideation in the United States drinking population. Multivariate associations were examined between risk factors for suicidal ideation and the occurrence of suicidal ideation. For men and women, past year major depression and alcohol dependence were identified as risk factors of suicidal ideation, with major depression having the more sizable impact. Suicidal ideation was increased among men with a past alcohol use disorder and elevated among women who had used drugs nonmedically and developed a drug use disorder during the past year. The occurrence of a recent physical illness and lifetime treatment for depression among men and women increased the risk of suicidal ideation, while marriage was protective against ideation for both sexes. Unemployment and having a family history of alcoholism increased the risk of suicidal ideation among men, but not women. Major findings are discussed in terms of the impact of severity versus chronicity of psychopathology on suicidal ideation, gender roles and differential engagement in suicidal ideation, and the recognition and treatment of major depression as the single most important intervention in reducing suicidal behavior.

Grella, C. E., Hser, Y.-I., Joshi, V., & Rounds-Bryant, J. (2001). Drug treatment outcomes for adolescents with comorbid mental and substance use disorders. *Journal of Nervous & Mental Disease, 189*(6), 384-392.

This study compared the pretreatment characteristics and post-treatment outcomes of substance-abusing adolescents with and without comorbid mental disorders in the Drug Abuse Treatment Outcome Studies for Adolescents. Subjects numbering 992 were sampled from 23 adolescent drug treatment programs across three modalities (residential,

short-term inpatient, outpatient drug-free). Nearly two thirds (64%) of the sample had at least one comorbid mental disorder, most often conduct disorder. Comorbid youth were more likely to be drug or alcohol dependent and had more problems with family, school, and criminal involvement. Although comorbid youth reduced their drug use and other problem behaviors after treatment, they were more likely to use marijuana and hallucinogens and to engage in illegal acts in the 12 months after treatment, as compared with the noncomorbid adolescents. Integrated treatment protocols need to be implemented in drug treatment programs in order to improve the outcomes of adolescents with comorbid substance use and mental disorders.

Grilo, C. M., Martino, S., Walker, M. L., Becker, D. F., Edell, W. S., & McGlashan, T. H. (1997). Controlled study of psychiatric comorbidity in psychiatrically hospitalized young adults with substance use disorders. *American Journal of Psychiatry*, 154(9), 1305-1307.

This study examined Mental Disorders-III-Revised (DSM-III-R) Axis I and Axis II comorbidity in 70 psychiatrically hospitalized young adults (aged 18 through 37 years) with substance use disorders, compared with 47 patients without substance use disorders. Structured diagnostic interviews were conducted with all subjects. High rates of cooccurrence of Axis I disorders were observed, but no disorder coexisted in the group with substance use disorders at a significantly higher rate than in the group without substance use disorders. Among Axis II disorders, borderline personality disorder was diagnosed significantly more frequently in the group with substance use disorders. The findings suggest that substance abuse can perhaps be regarded as due, in part, to deficits in affect regulation and impulse control, which are characteristic of persons with borderline personality disorder.

Hall, G. W., Carriero, N. J., Takushi, R. Y., Montoya, I. D., Preston, K. L., & Gorelick, D. A. (2000). Pathological gambling among cocaine-dependent outpatients. *American Journal of Psychiatry*, 157(7), 1127-1133.

The authors investigated the occurrence of pathological gambling among cocaine-dependent outpatients, its influence on short-term outcome of treatment, and comparative characteristics of patients with and without pathological gambling. The subjects were 313 cocaine-dependent (200 also opiate-dependent) outpatients (mean age 34.37 years) in clinical trials of medication for cocaine dependence. Pathological gambling was assessed with the Diagnostic Interview Schedule, and sociodemographic and socioeconomic characteristics were determined with the Addiction Severity Index. Outcome was defined as time in treatment and proportion of cocaine-positive urine samples during treatment. Pathological gambling had a lifetime occurrence rate of 8.0 percent and a current (past month) occurrence of 3.8 percent. Onset preceded the onset of cocaine dependence in 72.0 percent of the patients. Patients with pathological gambling (lifetime or current) did not differ significantly from other patients in length of treatment or proportion of cocaine-positive urine samples. Those with lifetime pathological gambling were significantly more likely to have tobacco dependence and antisocial personality disorder,

to be unemployed, to have recently engaged in illegal activity for profit, and to have been

incarcerated.

Harris, V., & Koepsell, T. D. (1998). Rearrest among mentally ill offenders. *Journal of the American Academy of Psychiatry & the Law*, 26(3), 393-402.

This study investigated whether mentally ill criminal offenders have higher rates of rearrest than non-mentally ill offenders. A sample of 127 mentally ill offenders was drawn at random from all admissions to a jail psychiatric unit. The subjects were compared with a sample of 127 non-mentally ill offenders in the same jail. The two groups were frequency-matched on age, gender, and crime at index arrest. Both groups were followed for up to four years or until the next arrest. After 12 months, 54.3 percent of the mentally ill group and 51.2 percent of the non-mentally ill group were rearrested. Using the log rank test in Kaplan-Meier survival analysis, no statistical difference in the relative risk of rearrest occurred for the mentally ill group. Adjustment for housing, marital status, and previous criminal history had little effect on this finding. The presence of substance abuse or psychosis at the index arrest did not affect rearrest significantly. Mentally ill offenders, as a whole, may not be at increased risk for rearrest. However, there may be specific high-risk subgroups that can benefit from early intervention.

Hasin, D., Liu, X., Nunes, E., McCloud, S., Samet, S., & Endicott, J. (2002). Effects of major depression on remission and relapse of substance dependence. *Archives of General Psychiatry*, 59(4), 375-380.

The effects of major depressive disorder (MDD) on the course of substance dependence may differ depending on the temporal relationship of depression to dependence. The authors investigated the effects of MDD on the outcome of substance dependence under three circumstances: (1) lifetime onset of MDD prior to lifetime onset of dependence onset, (2) current MDD occurring during a period of abstinence, and (3) current MDD during substance use that exceeded the expected effects of intoxication or withdrawal. A sample of 250 inpatients with DSM-IV cocaine, heroin, and/or alcohol dependence was followed up at 6, 12, and 18 months. The Psychiatric Research Interview for Substance and Mental Disorders (PRISM) was used to make DSM-IV diagnoses. Using Cox proportional hazards models, stable remissions (those lasting at least 26 weeks) from DSM-IV cocaine, heroin, and/or alcohol dependence and from use were studied, as well as subsequent relapses of dependence and use. Patients with current substance-induced MDD were less likely to remit from dependence (adjusted hazards ratio, 0.11) than patients with no baseline MDD. A history of MDD prior to lifetime onset of substance dependence also reduced the likelihood of remission relative to the absence of such a history (adjusted hazard ratio, 0.49). Major depressive disorder during sustained abstinence predicted dependence relapse (adjusted hazards ratio, 3.07) and substance use after hospital discharge, compared with those without abstinence MDD (adjusted hazards ratio, 1.45). The timing of depressive episodes relative to substance dependence served as an important factor in the remission and relapse of substance dependence and substance use.

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Hasin, D., Trautman, K., & Endicott, J. (1998). Psychiatric research interview for substance and mental disorders: Phenomenologically based diagnosis in patients who abuse alcohol or drugs. *Psychopharmacology Bulletin*, 34(1), 3-8.

The Psychiatric Research Interview for Substance and Mental Disorders (PRISM) is a psychiatric diagnostic interview designed to diagnose DSM-IV substance and mental disorders in patients who abuse alcohol or drugs. Primary disorders tested in the DSM-III-R version of the interview showed improved reliability over existing instruments, and substantially improved reliability for major depressive disorder (MDD). Developments for DSM-IV include a systematic set of procedures for differentiating primary disorders, substance-induced disorders, and the expected effects of intoxication and withdrawal based on the phenomenology of symptoms in conjunction with alcohol and drug use. A longitudinal version of the PRISM provides data on remission and relapse that can be analyzed with survival methods. Pilot and preliminary testing of the DSM-IV and longitudinal versions of the instruments is presented. By making use of psychometric principles, particularly the need to reduce criterion variance, these instruments can clarify some of the longstanding issues in the diagnosis of patients who abuse alcohol and drugs.

Havassy, B. E., & Arns, P. G. (1998). Relationship of cocaine and other substance dependence to wellbeing of high-risk psychiatric patients. *Psychiatric Services, 49*(7), 935-940.

This study determined the co-occurrence of substance dependence disorders in 160 frequently hospitalized adults with severe mental illness and examined the relationship between substance dependence and psychosocial functioning and wellbeing. Subjects were administered a structured interview that included the subscales of the Addiction Severity Index, the Center for Epidemiological Studies-Depression Scale, Lehman's Quality of Life Interview, Rosenberg's Self-Esteem Scale, the Mastery Scale, and questions about service needs. Seventy-eight subjects were diagnosed as having at least one current substance dependence disorder. Most subjects with comorbid substance dependence were polysubstance dependent, and almost half met criteria for cocaine dependence. Subjects who were substance-dependent were significantly over represented among those diagnosed with bipolar disorder, psychotic disorder not otherwise specified, and major depression. Controlling for demographic characteristics and primary diagnosis, comorbidity was related to depression, adverse life conditions, and diminished life satisfaction. Substance-dependent subjects were significantly more likely to have been arrested and jailed than nondependent subjects.

Havassy, B. E., Shopshire, M. S., & Quigley, L. A. (2000). Effects of substance dependence on outcomes of patients in a randomized trial of two case management models. *Psychiatric Services, 51*(5), 639-644.

This study compared the effectiveness of a community-based intensive clinical case management program with that of a hospital-based expanded brokerage case management program. A total of 268 frequently hospitalized psychiatric patients (18 through 59 years old) were recruited during acute psychiatric hospitalization. Fifty-three percent of

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subjects were diagnosed as having at least one current Mental Disorders-III-Revised (DSM-III-R) substance dependence disorder co-occurring with their alcohol use, anxiety, and personality disorders. Subjects were stratified by substance dependence status and randomly assigned to one of the case management programs. They were interviewed before hospital discharge and at one, two, and six months after discharge to assess psychosocial and drug use variables. The subjects' service use was examined for the six

months before and after hospitalization. Results show that the hypothesis that substance-dependent subjects would benefit more from intensive clinical case management was not supported. Substance dependence predicted negative outcomes independent of the case management intervention. Intensive clinical case management was the superior treatment for subjects who were not dependent on substances. Fewer of them required psychiatric hospitalization in the six-month post-discharge period than in the six-month period before hospital admission.

Herman, S. E., BootsMiller, B., Jordan, L., Mowbray, C. T., Brown, W. G., Deiz, N., Bandla, H., Solomon, M., & Green, P. (1997). Immediate outcomes of substance use treatment within a state psychiatric hospital. *Journal of Mental Health Administration, 24*(2), 126-138.

Outcomes of an integrated inpatient treatment program for persons with serious mental illness and substance use disorders were examined in relationship to five stages of treatment: stabilization, engagement, persuasion/awareness, active treatment, and relapse prevention. The study used a randomized design with participants assigned to an integrated mental health and substance abuse treatment program or standard psychiatric hospital treatment. At discharge, participants in the integrated treatment program indicated more active engagement in treatment and greater awareness of mental health issues, substance use issues, and the 12-step program than those who received standard hospital treatment. Participants in the integrated treatment program also saw their treatment as being more effective and had more motivation to stay healthy and sober. The integrated treatment program was not equally effective at each treatment stage with all participants. The implications of the program's success overall and at each treatment stage are discussed.

Herman, S. E., Frank, K. A., Mowbray, C. T., Ribisl, K. M., Davidson, W. S. II, BootsMiller, B., Jordan, L., Greenfield, A. L., Loveland, D., & Luke, D. A. (2000). Longitudinal effects of integrated treatment on alcohol use for persons with serious mental illness and substance use disorders. *Journal of Behavioral Health Services & Research, 27*(3), 286-302.

A randomized experimental design was used to assign 485 participants to an integrated mental health and substance use treatment program or to standard hospital treatment. A multilevel, nonlinear model was used to estimate hospital treatment effects on days of alcohol use for persons with serious mental illness and substance use disorders over 18 months. The integrated treatment program had a significant effect on the rate of alcohol use at 2 months post discharge, reducing the rate of use by 54 percent. Motivation for sobriety at hospital discharge, post-treatment self-help attendance, and social support for

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sobriety were also found to reduce the rate of use during the follow-up period. Implications for mental health treatment and aftercare support are discussed.

Hernandez-Avila, C. A., Burlinson, J. A., James, P., Tennen, H., Rounsaville, B. J., & Kranzler, H. R. (2000). Personality and substance use disorders as predictors of criminality. *Comprehensive-Psychiatry, 41*(4), 276-283.

This study evaluated the relationship between a personality disorder (PD) diagnosis and criminal behavior among drug- and alcohol-dependent Connecticut patients (n=370), both

retrospectively and prospectively. One-year pretreatment and one-year post-treatment crime rates among patients were examined. Hierarchical logistic regression was used to analyze the predictive value of DSM-III-R PD diagnoses after controlling for demographic features and type and severity of substance dependence. A PD diagnosis, particularly ASPD, was associated with a variety of criminal behaviors during the one-year period preceding substance abuse treatment. Following treatment, a PD diagnosis had limited value in the prediction of criminal behavior. Possible explanations for these findings are discussed.

Hesselbrock, V. M., Segal, B., & Hesselbrock, M. N. (2000). Alcohol dependence among Alaska Natives entering alcoholism treatment: A gender comparison. *Journal of Studies on Alcohol, 61*(1), 150-156.

The authors investigated the etiology of alcohol problems and other associated clinical conditions among 200 Alaska Native males and females (mean age 32.6 years) admitted to treatment in 3 residential programs. Data were obtained through a comprehensive, standardized clinical assessment of consecutive admissions to each of the three programs. The development of alcohol problems, the psychological and physical consequences of chronic drinking, the flushing response, withdrawal symptoms, and comorbid lifetime psychiatric conditions were examined. Results show an early onset of drinking and an acute exacerbation and clustering of drinking problems during late adolescence, followed by the development of severe alcohol dependence. A high lifetime prevalence of Mental Disorders-III-Revised (DSM-III-R) major depressive disorder was found, typically complicated by chronic drinking. The rates of other substance dependencies were relatively low, except for cannabis and cocaine dependence among females. Few gender differences noted were noted.

Hien, D., Zimberg, S., Weisman, S., First, M., & Ackerman, S. (1997). Dual diagnosis subtypes in urban substance abuse and mental health clinics. *Psychiatric Services, 48*(8), 1058-1063.

This study examined rates of dual disorders (psychiatric and substance use disorders) in 130 low-income inner-city outpatients and examined the clinical usefulness of classifying patients with dual disorders into 3 subtypes. Subjects (57 receiving mental health and 73 substance abuse treatment) were given semi-structured clinical interviews to ascertain lifetime and concurrent DSM-III-R Axis I disorders. Subjects with dual disorders were classified into subtypes on the basis of whether their psychiatric or substance use disorder

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was caused by the comorbid disorder or whether both disorders existed independently. In both treatment settings, nearly two-thirds of the patients met criteria for a lifetime diagnosis of a dual disorder. This high rate of comorbidity did not appear to be attributable to substance use causing psychiatric symptoms, or vice versa. The high rate suggests the need for greater integration of mental health and substance abuse treatment, regardless of setting.

Ho, A. P., Tsuang, J. W., Liberman, R. P., Wang, R., Wilkins, J. N., Eckman, T. A., & Shaner, A. L. (1999). Achieving effective treatment of patients with chronic psychotic illness and comorbid substance dependence. *American Journal of Psychiatry, 156*(11), 1765-1770.

The changing effectiveness of a treatment program for dual-diagnosis patients was

evaluated over a two-year period with the use of a sequential study group design. The treatment outcome of 179 consecutively enrolled patients with chronic psychotic illness and comorbid substance dependence who entered a specialized day hospital dualdiagnosis treatment program from September 1, 1994, to August 31, 1996, was evaluated.

The 24 months were divided into four successive 6-month periods for comparing the evolving effectiveness of the program for groups of patients entering the day hospital during these four periods. Treatment attendance, hospital utilization, and twice-weekly urine toxicology analyses were used as outcome measures. The initial treatment engagement rate, defined as at least two days of attendance in the first month, increased significantly from group one to group four, more than doubling. Thirty-day and 90-day treatment retention rates also substantially increased from group one to group 4. More patients had no hospitalization in the six months after entering the day hospital program than in the six months before entering the day hospital program. Urine toxicology monitoring indicated that the patients in group four were more likely than those in group one to remain abstinent at follow-up. The evolving clinical effectiveness of a developing program can be quantified by using a sequential group comparison design. The sequential outcome improvements may be related to the incremental contributions of assertive case management and skills training for relapse prevention.

Hoff, R. A., Beam-Goulet, J., & Rosenheck, R. A. (1997). Mental disorder as a risk factor for human immunodeficiency virus infection in a sample of veterans. *Journal of Nervous & Mental Disease, 185*(9), 556-560.

This study used data from the 1992 National Survey of Veterans to determine if veterans with posttraumatic stress disorder (PTSD), or with other mental or emotional problems, were at increased risk for HIV infection. A sample of 5,529 veterans living in contacted households and 6,116 from the Veterans Administration databases indicated if they had a history of substance abuse, PTSD, or other mental disorder or if they had a positive HIV test or had AIDS. The results indicate that the combination of PTSD and substance abuse increased the risk of HIV infection by almost twelve times over those without either.

Although cross-sectional, these data allow some conjecture about the timing of the onset of PTSD in relation to HIV infection. These results present powerful evidence that

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mentally ill persons, such as those with PTSD, who may be under-served for health services, including AIDS prevention efforts, should be targeted as an at-risk group.

Hoff, R. A., & Rosenheck, R. A. (1998). Long-term patterns of service use and cost among patients with both psychiatric and substance abuse disorders. *Medical Care, 36*(6), 835-843.

This study examined whether patients dually diagnosed with psychiatric and substance use disorders incur higher health care costs than other psychiatric patients, and whether higher costs can be attributed to particular subgroups of the dually diagnosed or types of care. Two cohorts of veterans (9,813 inpatients and 58,001 outpatients) treated in Veterans Administration (VA) mental health programs were followed for six years. Data were analyzed on utilization of all types of VA health care. Repeated-measures analysis of variance was used to examine cost differentials between dually diagnosed patients and other patients. Dually diagnosed outpatients incurred consistently higher health care costs than other psychiatric outpatients, attributable to higher rates of inpatient

psychiatric and substance abuse care; however, this difference decreased with time. Costs were substantially higher in the inpatient cohort overall, but there were no differences in cost between dually diagnosed and other psychiatric patients.

Holdcraft, L. C., Iacono, W. G., & McGue, M. K. (1998). Antisocial Personality Disorder and depression in relation to alcoholism: A community-based sample. *Journal of Studies on Alcohol, 59*(2), 222-226.

Antisocial Personality Disorder (ASPD) and depression frequently co-occur with alcoholism. This study examined the relationship between the presence of ASPD or depression and the course and severity of alcoholism. Alcoholic men (n=207), recruited from a community-based sample, the Minnesota Twin-Family Study (MTFS), were categorized according to comorbid diagnoses into the following four groups: alcoholics with ASPD (n=25), alcoholics with depression (n=24), alcoholics with neither ASPD nor depression, but who were allowed to have additional psychopathology (n=130); and alcoholics with no other psychiatric diagnoses (n=28). The four diagnostic subgroups were compared on alcohol and drug use, alcohol-related problems, and personality dimensions. ASPD was associated with an earlier age of first intoxication, a more chronic and severe course of alcoholism, more social consequences of drinking, and higher levels of drug use. On the whole, depression was associated with a less severe course of alcoholism. Alcoholics with depression and alcoholics with ASPD had higher negative emotionality, and alcoholics with ASPD had lower constraint scores on the Multidimensional Personality Questionnaire. These findings, derived from a communitybased sample, indicate the importance of assessing comorbidity among alcoholics and confirm the association of ASPD with a more severe and chronic course of alcoholism and with higher likelihood of drug abuse.

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Holroyd, S., & Duryee, J. J. (1997). Substance use disorders in a geriatric psychiatry outpatient clinic: Prevalence and epidemiologic characteristics. *Journal of Nervous & Mental Disease, 185*(10), 627-632.

This study investigated the prevalence of substance use disorders in a geriatric psychiatry outpatient clinic. Data from 161 patients aged ≥ 60 years were used. The overall prevalence for any substance use disorder was 20 percent (n=28). The prevalence of benzodiazepine dependence was 11.4 percent (n=16); the prevalence of alcohol dependence was 8.6 percent (n=12); and the prevalence of prescription narcotic dependence was 1.4 percent (n=2). These findings suggest that substance use disorders in the geriatric psychiatry outpatient population exist to a significantly greater extent than previously reported. Descriptive statistics were used to characterize patients with benzodiazepine dependence, alcohol dependence, and no substance use disorder. These groups were compared on demographic and clinical variables using one-way ANOVA and chi-squared statistical techniques. Results suggest that clinicians working in comparable outpatient settings may be in a better position to prevent, detect, and treat substance use disorders in their patients as a result of increased awareness of its epidemiologic characteristics in this population.

Hubbard, R. L., Craddock, S. G., Flynn, P. M., Anderson, J., & Etheridge, R. M. (1997). Overview of 1-year follow-up outcomes in the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors, 11*(4), 261-278.

The Drug Abuse Treatment Outcome Study (DATOS) collected one-year follow-up outcomes for 2,966 clients in outpatient methadone (OMT), long-term residential (LTR), outpatient drug-free (ODF), and short-term inpatient (STI) programs in 1991-1993. LTR, STI, and ODF clients reported 50 percent less weekly or daily cocaine use in the followup year than in the preadmission year. Reductions were greater ($p < .01$) for clients treated for three months or more. Clients still in OMT reported less weekly or daily heroin use than clients who left OMT. Multivariate analysis confirmed that SIX months or more in ODF and LTR and enrollment in OMT were associated with the reductions. Reductions of 50 percent in illegal activity and 10 percent increases in full-time employment for LTR clients were related ($p < .01$) to treatment stays of six months or longer. The results replicated findings from 1979 through 1981 for heroin use in OMT and illegal activity and employment for LTR, but not for illegal activity in OMT and ODF.

Humphreys, K., & Rosenheck, R. (1998). Treatment involvement and outcomes for four subtypes of homeless veterans. *American Journal of Orthopsychiatry*, 68(2), 285-294.

A longitudinal study examined treatment services and outcomes in a nationwide sample of 565 homeless veterans who were classified as alcoholic, psychiatrically impaired, multiproblem, or best functioning. All four groups experienced some improvement in their primary problem area, in employment status, and in residential quality at eightmonth follow-up, but there were significant differences in degree of improvement across groups. Implications for the design of homeless programs and policies are discussed.

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Humphreys, K., & Weisner, C. (2000). Use of exclusion criteria in selecting research subjects and its effect on the generalizability of alcohol treatment outcome studies. *American Journal of Psychiatry*, 157(4), 588-594.

This study evaluated the use of exclusion criteria in alcohol treatment outcome research and its effects on the comparability of research subjects with real-world individuals seeking alcohol treatment. Eight of the most common exclusion criteria described in the alcohol treatment research literature were operationalized and applied to large, representative clinical patient samples from the public and private sectors to determine whether the hypothetical research samples differed substantially from real-world samples. A total of 593 subjects (mean age 39 years) seeking alcohol treatment at 1 of 8 treatment programs participated. A trained research technician gathered information from subjects on demographic variables and on alcohol, drug, and psychiatric problems as measured by the Addiction Severity Index. Large proportions of potential research subjects were excluded under most of the criteria tested. The overall pattern of results showed that African-Americans, low-income individuals, and individuals who had more-severe alcohol, drug, and psychiatric problems were disproportionately excluded under most criteria.

Hunt, G. E., Bergen, J., & Bashir, M. (2002). Medication compliance and comorbid substance abuse in schizophrenia: Impact on community survival 4 years after a relapse. *Schizophrenia Research*, 54(3), 253-264.

This prospective study examined the effect of medication compliance and substance abuse on 4-year outcome in 99 patients following a relapse of schizophrenia. Univariate survival analysis revealed longer community tenure in patients if they were over the age

of 35 years, not admitted 2 years prior to the index episode, remained medication compliant, and did not abuse substances during the follow-up interval. Comparisons between patients grouped according to medication compliance and current substance abuse indicated that patients who regularly took their medication but also abused substances were readmitted to hospital sooner (median survival, 10 months), compared to compliant patients who did not use substances (37 months). For noncompliant patients, time to first readmission was shorter for patients with a dual diagnosis (5 months) compared to patients with a singular diagnosis of schizophrenia (10 months). Over the 4-year period, noncompliant patients with a dual diagnosis (n=28) accounted for 57 percent of all hospital readmissions for the cohort and averaged 1.5 admissions per patient year. These data indicate that much of the benefit that antipsychotic medication has on increasing community survival is reduced by substance abuse. This interval is further reduced in patients who are both substance abusers and noncompliant with medication, resulting in a revolving door situation of frequent hospital admissions. Integrated treatment programs that address these issues are likely to reduce the need for hospital readmission in patients with a dual diagnosis.

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Hunter, E. E., Powell, B. J., Penick, E. C., Nickel, E. J., Liskow, B. I., Cantrell, P. J., & Landon, J. F. (2000). Comorbid psychiatric diagnosis and long-term drinking outcome. *Comprehensive Psychiatry*, 41(5), 334-338.

This longitudinal study of alcoholics investigated which psychiatric comorbidities among 255 males (mean age 41.5 years) with alcohol dependence would predict very long-term drinking outcome. The authors hypothesized that antisocial personality characteristics alone among psychiatric comorbidities would show an association with poorer drinking outcome. The use of multiple measures of psychopathology and a large sample size, and an absence of systematic treatment matching to particular groups, were all aspects of the current study that allowed for a comprehensive examination of this issue. The setting was an inpatient Veterans Administration alcohol dependence treatment unit and followup clinic. The predictors were the Symptom Checklist 90 (SCL), MMPI, and Psychiatric Diagnostic Interview (PDI). The outcome measure was the Clinician Rating of Drinking Scale (CRDS). The study showed that antisocial personality characteristics alone were consistently associated with a worse long-term drinking outcome. However, despite the consistent presence of a statistical association between antisocial personality characteristics and a poorer long-term drinking outcome, the small size of the relationship is a very important issue that is discussed in detail.

Jacobsen, L. K., Southwick, S. M., & Kosten, T. R. (2001). Substance use disorders in patients with posttraumatic stress disorder: A review of the literature. *American Journal of Psychiatry*, 158(8), 1184-1190.

Alcohol use disorders and other substance use disorders are extremely common among patients with posttraumatic stress disorder (PTSD). This article reviews studies pertaining to the epidemiology, clinical phenomenology, and pathophysiology of comorbid PTSD and substance use disorders. Studies were identified by means of computerized and manual searches. The review of research on the pathophysiology of PTSD and substance use disorders was focused on studies of the hypothalamic-pituitary-adrenal Axis and the noradrenergic system. Results indicate that high rates of comorbidity suggest that PTSD

and substance use disorders are functionally related to one another. Most published data support a pathway whereby PTSD precedes substance abuse or dependence. Substances are initially used to modify PTSD symptoms. With the development of dependence, physiologic arousal resulting from substance withdrawal may exacerbate PTSD symptoms, thereby contributing to a relapse of substance use. Preclinical work has led to the proposal that in PTSD, corticotropin-releasing hormone and noradrenergic systems may interact such that the stress response is progressively augmented. Patients may use sedatives, hypnotics, or alcohol in an effort to interrupt this progressive augmentation.

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Jaffe, C., Comtois, K. A., Calsyn, D. A., & Saxon, A. J. (1998). A pilot study comparing severely and persistently mentally ill opiate-addicted patients in dual-diagnosis treatment with patients in methadone maintenance. *American Journal on Addictions*, 7(4), 288-298.

The authors describe a severely and persistently mentally ill (SPMI) opiate-addicted (OA) patient sample (n=43) in a dual-diagnosis outpatient treatment program by demographic, clinical, and treatment characteristics and compare these with other dually diagnosed SPMI patients in the same treatment center (n=297). Also, those SPMI/OA patients with physiological dependence (n=20) were compared with a matched sample of OA patients in traditional methadone maintenance (n=20). The authors then present a clinical evaluation of treatment course and outcome for the SPMI/OA patients (n=43) and discuss implications from these pilot data.

Jerrell, J. M., & Ridgely, M. S. (1999). The relative impact of treatment program "robustness" and "dosage" on client outcomes. *Evaluation & Program Planning*, 22(3), 323-330.

This study examined the relationship between two aspects of program quality (robustness of model implementation and service dosage), client outcomes of self-reported and observer-rated psychosocial functioning, and intensive mental health service utilization costs for 132 adults with dual mental and substance disorders. Membership in the robustly implemented behavioral skills intervention was significantly associated with higher levels of self-reported and observer-rated psychosocial functioning, while membership in the robustly implemented 12-step group was significantly related to higher intensive mental health service costs. Dosage of supportive service exhibited a significant, positive relationship to lower intensive mental health service costs but not to functioning. Although the addition of qualitative data was useful in interpreting the findings from the main study analyses, it had no discernable statistical impact on the regression equations for three major outcome variables.

Jerrell, J. M., & Wilson, J. L. (1997). Ethnic differences in the treatment of dual mental and substance disorders: A preliminary analysis. *Journal of Substance Abuse Treatment*, 14(2), 133-140.

The authors compared differences between white and ethnic client psychosocial functioning, psychiatric, and substance abuse symptomatology, and service utilization costs from a longitudinal clinical trial examining the relative cost effectiveness of three specialized interventions for dual mental and substance use disorders. The three approaches were behavioral skills training, case-management, and a 12-step recovery model. Ethnic clients composed 30 percent of the treated sample of 132 adults (aged 18-

59 years), had lower psychosocial functioning scores (rated and self-reported), and received less supportive treatment services during the first six months of the intervention program; however, their overall outcomes were equivalent to those of white clients at six months. There were no functioning or symptom outcome differences across the three treatment groups, but the 12-step group had the highest intensive and supportive service

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costs over time, and also the greatest reductions in intensive service costs after six months. Clinical issues are described, and the clinical implications for more effectively serving dually diagnosed ethnic clients are outlined.

Jerrell, J. M., Wilson, J. L., & Hiller, D. C. (2000). Issues and outcomes in integrated treatment programs for dual disorders. *Journal of Behavioral Health Services & Research, 27*(3), 303-313.

In an integrated, dual disorder treatment program delivered at two sites, the authors addressed numerous barriers to delivering services to dually diagnosed consumers and employed a set of multidimensional indicators to assess outcome. A total of 98 consumers (aged 18 through 59 years) who received services through the wellimplemented, integrated services program for 12 months were functioning better in the community. There was a cost shifting from mental health to drug and alcohol services, as well as a one-third increase in the total costs of care by the end of the first year of treatment. The article discusses program implementation issues and the clinical management implications for more effectively serving dually diagnosed consumers through integrated treatment programs.)

Jordan, B. K., Federman, E. B., Burns, B. J., Schlenger, W. E., Fairbank, J. A., & Caddell, J. M. (2002). Lifetime use of mental health and substance abuse treatment services by incarcerated women felons. *Psychiatric Services, 53*(3), 317-325.

This study examined the lifetime use of alcohol, drug, and mental health treatment services by recently incarcerated women prison inmates. A total of 805 women entering a North Carolina prison for new felony charges in 1991 and 1992 were interviewed in person shortly after incarceration. The women were assessed for psychiatric disorders and lifetime use of substance abuse and mental health treatment services. Rates of service use were analyzed by inmate characteristics and were compared with rates for a sample of women in the community in North Carolina. The majority of women inmates reported a history of using substance abuse services or mental health services or both. Those with psychiatric disorders and prison recidivists were the most likely to have used such services. Rates of service use were substantially higher for the inmates than for the women in the community, even when the effects of having a psychiatric or substance use disorder were controlled for. Many of the incarcerated women in the study met lifetime criteria for alcohol, drug, and mental disorders that were significantly related to their use of substance abuse and mental health treatment services. The majority of the inmates met criteria for a current disorder despite past treatment. Further research is needed to help in developing programs to reduce women inmates' alcohol, drug, and mental health problems.

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Jordan, L. C., Davidson, W. S., Herman, S. E., & BootsMiller, B. J. (2002). Involvement in

12-step programs among persons with dual diagnoses. *Psychiatric Services*, 53(7), 894-896.

Although many people with substance use problems are referred to Alcoholics Anonymous (AA) or Narcotics Anonymous (NA), few studies have examined characteristics of persons who comply with such referrals. In particular, little is known about self-help meeting attendance by persons with dual diagnoses. This study examined rates of AA and NA attendance among 351 persons with dual diagnoses who were treated in a hospital setting. It also explored the relationship between diagnosis and meeting attendance. Ten months after hospitalization, the study participants demonstrated rates of AA or NA attendance that were similar to those of persons who were diagnosed as having substance use disorders without severe mental illness. However, patients with schizophrenia or schizoaffective disorders reported significantly fewer days of AA or NA meeting attendance.

Kadden, R. M., Litt, M. D., Cooney, N. L., Kabela, E., & Getter, H. (2001). Prospective matching of alcoholic clients to cognitive-behavioral or interactional group therapy. *Journal of Studies on Alcohol*, 62(3), 359-369.

Earlier work showed that client sociopathy and global psychopathology were effective variables for treatment matching: clients low on both sociopathy and severity of psychopathology were likely to benefit from interactional group therapy, whereas those scoring high on either of these dimensions benefited more from a coping skills intervention. This study assessed whether outcomes improve further when clients are assigned to group treatments prospectively based on a matching strategy derived from the previous findings. All participants (n=250, 66% men) met criteria for alcohol dependence or abuse. About half were prospectively assigned to either cognitivebehavioral (CB) coping skills training or interactional therapy; those with higher levels of psychiatric severity or sociopathy were given CB, and those who were low on both dimensions were given interactional therapy. The other half was randomly assigned to those treatments, replicating the procedure of the earlier study. Outcome data were collected at the conclusion of treatment and at three-month intervals for one year following. Prospective matching of clients to treatment did not produce superior drinking outcomes compared to random treatment assignment. Randomly assigned clients were more likely to be abstinent at the end of treatment, but this effect disappeared at later follow-ups. Prospectively matched clients had fewer negative consequences of drinking than did those assigned randomly (unmatched). Neither sociopathy nor psychiatric severity was particularly effective for matching. The matching effects from our previous study were not replicated. Nevertheless, prospective matching did reduce the negative consequences of drinking, consistent with our previous results.

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Kalechstein, A. D., Newton, T. F., Longshore, D., Anglin, M. D., van Gorp, W. G., & Gawin, F. H. (2000). Psychiatric comorbidity of methamphetamine dependence in a forensic sample. *Journal of Neuropsychiatry & Clinical Neurosciences*, 12(4), 480-484.

This study examined the association between psychiatric symptoms and methamphetamine dependence. A 4-hour survey was administered to 1,580 arrestees (aged 18 and older) sampled from the 14 most populous counties in California. The

survey included items assessing demographic profile, history of substance dependence, and psychiatric symptomatology. In the twelve months prior to the assessment, methamphetamine-dependent individuals were more likely to report depressive symptoms and suicidal ideation than individuals denying methamphetamine dependence, even after controlling for demographic profile and dependence on other drugs. Methamphetamine-dependent individuals also were more likely to report a need for psychiatric assistance at the time of the interview. These findings suggest that methamphetamine-dependent individuals are at greater-risk to experience particular psychiatric symptoms. Further study to determine the etiology of these symptoms is warranted.

Kandel, D. B., Huang, F. Y., & Davies, M. (2001). Comorbidity between patterns of substance use dependence and psychiatric syndromes. *Drug & Alcohol Dependence, 64*(2), 233-241.

Comorbidity of dependence on single and multiple drugs with psychiatric syndromes was examined in national samples from the National Household Survey on Drug Abuse (NHSDA). Subjects were adults from the 1994, 1995, and 1996 NHSDA surveys. Proxy measures of drug dependence in the last year were constructed from five dependence symptoms that approximated DSM-IV criteria. Measures of patterns of concurrent dependence on cigarettes, alcohol, and illicit drugs were constructed. Fallible indicators of a major depressive episode and any anxiety disorder (generalized anxiety disorder, agoraphobia, and panic attack) were based on scales measuring symptoms during the last year. Comorbidity was estimated by adjusted odds ratios. Probable drug dependent individuals have higher rates of psychiatric syndromes. Rates of psychiatric syndromes were similar for those uniquely dependent on alcohol, cigarettes, or illicit drugs (adjusted odds ratios approximately 2.0). Rates almost doubled for those who were dependent on both an illicit and a licit drug. Individuals uniquely dependent on a single drug class experienced similar rates of psychiatric morbidity. All those who were dependent on illicit drugs experienced higher rates of psychiatric syndromes. This reflects the additive association of dependence on legal and illegal drugs with psychiatric disorders and the increased rates of dependence on a legal drug among those dependent on an illicit drug. Individuals with multiple dependencies on legal and illegal drugs have the highest need for mental health services.

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Kandel, D. B., Johnson, J. G., Bird, H. R., Canino, G., Goodman, S. H., Lahey, B. B., Regier, D. A., & Schwab-Stone, M. (1997). Psychiatric disorders associated with substance use among children and adolescents: Findings from the Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) study. *Journal of Abnormal Child Psychology, 25*(2), 121-132.

This study investigated the relationships between specific quantities and frequencies of alcohol, cigarette, and illicit substance use and substance use disorder (SUD) and other psychiatric disorders among 1,285 randomly selected children and adolescents (aged 9 through 18 years) and their parents from the Methods for the Epidemiology of Child and Adolescent Mental Disorders Study B. Findings indicated that daily cigarette smoking, weekly alcohol consumption, and any illicit substance use in the past year were each independently associated with an elevated likelihood of diagnosis with SUD and other

psychiatric disorders (anxiety, mood, or disruptive behavior disorders), controlling for sociodemographic characteristics (age, gender, ethnicity, family income). Alcohol and illicit substance use were associated with higher risks of a SUD diagnosis among males than females and, by contrast, daily cigarette smoking was associated with more than twice as high a risk among females than males.

Kandel, D. B., Johnson, J. G., Bird, H. R., Weissman, M. M., Goodman, S. H., Lahey, B. B., Regier, D. A., & Schwab-Stone, M. E. (1999). Psychiatric comorbidity among adolescents with substance use disorders: Findings from the MECA study. *Journal of the American Academy of Child & Adolescent Psychiatry, 38*(6), 693-699.

This study investigated the extent to which adolescents in the community who had current substance use disorders (SUDs) experienced co-occurring psychiatric disorders. Diagnostic data were obtained from probability samples of 401 adolescents (aged 14 through 17 years) and their mothers/caretakers, who participated in the Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) study. Rates of mood and disruptive behavior disorders were much higher among subjects with current SUD than among subjects without SUD. Comparison with adult samples suggests that the rates of current comorbidity of SUD with psychiatric disorders were the same among subjects as among adults, and were lower for lifetime disruptive disorders/antisocial personality disorder among subjects than adults.

Kaspro, W. J., Rosenheck, R., Frisman, L., & DiLella, D. (1999). Residential treatment for dually diagnosed homeless veterans: A comparison of program types. *American Journal on Addictions, 8*(1), 34-43.

This study compared two types of residential programs that treat dually diagnosed homeless veterans. Programs specializing in the treatment of substance use disorders (SA) and programs addressing both psychiatric disorders and substance abuse problems within the same setting (DDX) were compared on program characteristics, clients' perceived environment, and outcomes of treatment. The study was based on surveys and discharge reports from residential treatment facilities that were under contract to the Department of Veterans Affairs Health Care for Homeless Veterans program, a national

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outreach and case management program operating at 71 sites across the nation. Program characteristics surveys were completed by program administrators, perceived environment surveys were completed by veterans in treatment, and discharge reports were completed by VA case managers. DDX programs were characterized by lower expectations for functioning, more acceptance of problem behavior, and more accommodation for choice and privacy, relative to SA programs after adjusting for baseline differences.

Kay, J. H., Altshuler, L. L., Ventura, J., & Mintz, J. (1999). Prevalence of Axis II comorbidity in bipolar patients with and without alcohol use disorders. *Annals of Clinical Psychiatry, 11*(4), 187-195.

This study determined the prevalence of comorbid personality disorder in euthymic bipolar I patients. Sixty-one outpatients (aged 22 through 71 years) were assessed using the Structured Clinical Interview for DSM-III-R Personality Disorders (SCID II) and/or the Personality Diagnostic Questionnaire-Revised (PDQ-R). Thirty-eight percent of bipolar patients met criteria for an Axis II diagnosis based on the SCID II. Bipolar

subjects with a history of comorbid alcohol use disorder were significantly more likely to have a SCID II diagnosis (52%), compared to bipolar subjects without an alcohol use disorder history (24%). Cluster A diagnoses were significantly more common in the bipolar/alcohol use disorder group. The PDQ-R consistently over-diagnosed Axis II disorders, finding 62 percent of the overall bipolar group to have an Axis II diagnosis. Euthymic bipolar patients may have an increased rate of personality disorders, but much less so than previously reported in studies that did not take into account current mood state, comorbidity for an alcohol use disorder, and instrument used for assessment of Axis II psychopathology.

Kelley, J. L., & Petry, N. M. (2000). HIV risk behaviors in male substance abusers with and without antisocial personality disorder. *Journal of Substance Abuse Treatment, 19*(1), 59-66.

Antisocial personality disorder (ASP) is common in male substance abusers and may be associated with increased HIV risk behaviors. This study examined the prevalence of ASP, as well as IV drug use (IVDU) and sexual HIV-risk behaviors, in males with heroin, cocaine, or alcohol abuse disorders recruited from the community. Forty-three subjects (mean age 40.9 years) met diagnostic criteria for ASP. Although ASP and non-ASP subjects demonstrated equivalent knowledge about HIV, subjects with ASP participated in more risky behaviors as assessed by the HIV Risk Behavior Scale. On a lifetime measure of drug risk behaviors, ASP subjects reported higher rates of IVDU, frequency of needle sharing, and number of equipment-sharing partners and lower rates of needle cleaning. On a measure of past-month risk behaviors, ASP subjects reported higher rates of IVDU and lower rates of needle cleaning. Subjects with ASP also reported greater participation in lifetime sexual risk behaviors, including number of sexual partners and frequency of anal sex. Findings suggest that clients entering substance abuse treatment programs should be screened for ASP and that clients identified with ASP should be provided risk-reduction interventions early in treatment.

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Kessler, R. C., Berglund, P. A., Bruce, M. L., Koch, B. J., Laska, E. M., Leaf, P. J., Manderscheid, R. W., Rosenheck, R. A., Walters, E. E., & Wang, P. S. (2001). The prevalence and correlates of untreated serious mental illness. *Health Services Research, 36*(6), 987-1007.

The objective of this study was to identify the number of people in the United States who have untreated serious mental illness (SMI) and the reasons for their lack of treatment. The data source was the National Comorbidity Survey, a cross-sectional, nationally representative household survey. Data collection was an operationalization of the SMI definition set forth in the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act that identified individuals with SMI in the 12 months prior to the interview. The presence of SMI then was related to the use of mental health services in the past 12 months. Of the 6.2 percent of respondents who had SMI in the year prior to interview, fewer than 40 percent received stable treatment. Young adults and those living in nonrural areas were more likely to have unmet needs for treatment. The majority of those who received no treatment felt that they did not have an emotional problem requiring treatment. Among those who did recognize this need, 52 percent reported situational barriers, 46 percent reported financial barriers, and 45 percent

reported perceived lack of effectiveness as reasons for not seeking treatment. Wanting to solve the problem on their own was individuals' most commonly reported reason both for failing to seek treatment (72%) and for treatment dropout (58%). Although changes in the financing of services are important, they are unlikely by themselves to eradicate unmet need for treatment of SMI. Efforts to increase both self-recognition of need for treatment and the patient centeredness of care also are needed.

Kessler, R. C., Crum, R. M., Warner, L. A., Nelson, C. B., Schulenberg J, Anthony J. C. (1997). Lifetime co-occurrence of DSM-III-R alcohol abuse and dependence with other psychiatric disorders in the National Comorbidity Survey. *Archives of General Psychiatry*, 54(4), 313-321.

This study examined the lifetime patterns of the co-occurrence of Mental Disorders-III Revised (DSM-III-R) alcohol abuse and dependence with other psychiatric disorders in a large household sample. Data were drawn from 8,098 National Comorbidity Survey (NCS) respondents (aged 15 through 54). NCS is a nationally representative household survey designed to study patterns and correlates of psychiatric morbidity and comorbidity. Co-occurrence was stronger among females than males. Anxiety and affective disorders constitute the largest proportion of lifetime co-occurring cases among females. Substance disorders, conduct disorder, and antisocial personality disorder account for the majority of co-occurrence among males. The majority of subjects with lifetime co-occurrence reported that at least one other disorder occurred at an earlier age than their alcohol use disorder. A positive pattern of associations was found between lifetime co-occurrence and persistence of alcohol abuse among males and between both alcohol abuse and alcohol dependence among females.

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Kilpatrick, D. G., Acierno, R., Saunders, B., Resnick, H. S., Best, C. L., & Schnurr, P. P. (2000). Risk factors for adolescent substance abuse and dependence: data from a national sample. *Journal of Consulting & Clinical Psychology*, 68(1), 19-30.

A national household probability sample of 4,023 adolescents aged 12 to 17 years was interviewed by telephone about substance use, victimization experiences, familial substance use, and posttraumatic reactions to identify risk factors for substance abuse/dependence as defined in the Diagnostic and Statistical Manual of Mental Disorders (4th edition, American Psychiatric Association, 1994). Age and ethnicity data were available for 3,907 participants. Major findings were that (a) adolescents who had been physically assaulted, who had been sexually assaulted, who had witnessed violence, or who had family members with alcohol or drug use problems had increased risk for current substance abuse/dependence, (b) posttraumatic stress disorder independently increased risk of marijuana and hard drug abuse/dependence, and (c) when effects of other variables were controlled, African-Americans, but not Hispanics or Native Americans, were at approximately one-third the risk of substance abuse/dependence as Caucasians.

King, V. L., Brooner, R. K., Kidorf, M. S., Stoller, K. B., & Mirsky, A. F. (1999). Attention deficit hyperactivity disorder and treatment outcome in opioid abusers entering treatment. *Journal of Nervous & Mental Disease*, 187(8), 487-495.

Symptoms of Mental Disorders-IV (DSM-IV) attention-deficit hyperactivity disorder (ADHD) were determined in 125 patients with a mean age of 37 years entering

methadone maintenance treatment. The relationship of ADHD to psychiatric and substance abuse comorbidity, attention testing, and treatment outcome was analyzed; 19 percent of patients had a history of ADHD, and 88 percent of these had current symptoms. Continuous Performance Testing indicated evidence of greater attention problems in patients with ADHD. ADHD cases with multiple current symptoms were more likely than the non-ADHD group to have a lifetime clonidine use disorder. There was significantly more current Axis I disorder, including dysthymic disorder, anxiety disorder and social phobia, and antisocial personality disorder in the ADHD patients. There was no difference between groups at the one-year follow-up for illicit drug use, treatment retention, or treatment performance. The ADHD diagnosis did not convey significant prognostic implications for methadone maintenance treatment. A strong psychiatric assessment and treatment focus in the treatment program may help to explain the good treatment outcome.

King, V. L., Kidorf, M. S., Stoller, K. B., & Brooner, R. K. (2000). Influence of psychiatric comorbidity on HIV risk behaviors: Changes during drug abuse treatment. *Journal of Addictive Diseases, 19*(4), 65-83.

This study evaluated whether psychiatric comorbidity is related to change in HIV high-risk behaviors during outpatient drug abuse treatment. Participants were opioid abusers entering methadone treatment. Psychiatric and substance use diagnoses were determined at intake. Information on HIV high-risk drug use and sexual behaviors, psychosocial

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functioning, and urine toxicology was assessed at intake and at month six. Subjects were divided into those with versus without a lifetime comorbid non-substance use psychiatric disorder. The comorbid group reported more injection equipment sharing, lower rates of condom use, and higher rates of alcohol use at intake and follow-up. Overall injection drug use behavior decreased over the follow-up period for both groups, however.

Methadone treatment had a beneficial effect on HIV risk behaviors, and though some risk behaviors improved significantly for both groups, comorbid subjects continued to have higher rates of HIV risk factors than noncomorbid subjects.

King, V. L., Kidorf, M. S., Stoller, K. B., Carter, J. A., & Brooner, R. K. (2001). Influence of antisocial personality subtypes on drug abuse treatment response. *Journal of Nervous & Mental Disease, 189*(9), 593-601.

This methodological study examined the impact of antisocial personality disorder (APD) and other psychiatric comorbidity on drug use and treatment retention in 513 new admissions (mean age 34.5 years) to methadone maintenance treatment. Patients were classified into one of four groups: APD ONLY, APD plus other psychiatric disorder (APD MIXED), other psychiatric disorder, and no psychiatric disorder. Patients completed research assessments and were then followed for one year of treatment. Patients with APD had longer histories of heroin and cocaine use than non-APD patients and were more likely to meet criteria for cocaine dependence. Distinct clinical profiles emerged that differentiated APD ONLY from APD MIXED. APD ONLY patients exhibited higher rates of cocaine and heroin use, whereas those with APD MIXED exhibited higher rates of benzodiazepine use. Self-report measures supported urinalysis results, but group differences did not affect treatment retention. These differences in clinical profiles should be considered when evaluating treatment performance in

substance abusers with APD.

Koegel, P., Sullivan, G., Burnam, A., Morton, S. C., & Wenzel, S. (1999). Utilization of mental health and substance abuse services among homeless adults in Los Angeles. *Medical Care, 37*(3), 306-317.

Even though psychiatric disorders are disproportionately present among the homeless, little is known about the extent to which homeless people receive treatment for those problems or the factors that are associated with receiving treatment. This article examined utilization and predictors of mental health and substance abuse treatment among a community-based probability sample of homeless adults. The data analyzed here were collected through face-to-face interviews with 1,563 homeless individuals. Bivariate analyses examined differences between homeless men and women in (1) the prevalence of major mental illnesses and substance dependence and (2) utilization of inpatient and outpatient treatment services for those with specific diagnoses. Logistic regression analyses identified predictors of mental health treatment among those with chronic mental illness and substance abuse treatment among those with recent substance dependence. Two-thirds of these homeless adults met criteria for chronic substance dependence, whereas 22 percent met criteria for chronic mental illness, with substantial overlap between those two disorders: 77 percent of those with chronic mental illness

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were also chronic substance abusers. Only one-fifth of each of those two groups reported receiving treatment for those disorders within the last 60 days. Mental health service utilization was predicted largely by factors related to need (e.g., diagnosis, acknowledgment of a mental health problem), whereas substance abuse service utilization was predicted by myriad additional factors, reflecting, in part, critical differences in the organization and financing of these systems of care. More attention must be directed at how to better deliver appropriate mental health and substance abuse services to homeless adults.

Krakow, D. S., Galanter, M., Dermatis, H., & Westreich, L. M. (1998). HIV risk factors in dually diagnosed patients. *American Journal on Addictions, 7*(1), 74-80.

This study examined correlates of HIV seropositivity in a sample of dually diagnosed inpatients. The subjects were 147 consecutively admitted patients to a specialized dualdiagnosis unit in a municipal hospital who were given a structured interview and HIV testing. The HIV seroprevalence was 19 percent, with women having a nearly fourfold increased risk of being HIV seropositive, as compared with men. Cocaine as drug of choice was also highly significant as a risk factor for HIV infection, independent of gender. This finding suggests that targeted prevention and education programs need to be developed for the dually diagnosed patient.

Kuhn, R., & Culhane, D. P. (1998). Applying cluster analysis to test a typology of homelessness by pattern of shelter utilization: Results from the analysis of administrative data. *American Journal of Community Psychology, 26*(2), 207-232.

Using administrative data on public shelter use in New York City (1988-1995) and Philadelphia (1991-1995), the authors tested a typology of homelessness. Cluster analysis is used to produce three groups (transitionally, episodically, and chronically homeless) by number of shelter days and number of shelter episodes. Results show that the transitionally homeless, who constitute approximately 80 percent of shelter users in

both cities, are younger, less likely to have mental health, substance abuse, or medical problems, and to over-represent Whites relative to other clusters. The episodically homeless, who constitute 10 percent of shelter users, are also comparatively young, are more likely to be nonwhite, and more likely to have mental health, substance, abuse, and medical problems. The chronically homeless, who account for 10 percent of shelter users, tend to be older and nonwhite and to have higher levels of mental health, substance abuse and medical problems. Despite their relatively small number, the chronically homeless consume half of the total shelter days.

Langenbucher, J., Bavly, L., Labouvie, E., Sanjuan, P. M., & Martin, C. S. (2001). Clinical features of pathological gambling in an addictions treatment cohort. *Psychology of Addictive Behaviors, 15*(1), 77-79.

This study examined the prevalence and descriptive psychopathology of pathological gambling in a heterogeneous treatment sample of 372 substance users. About 14 percent of male participants and 10 percent of female participants were identified as presumptive

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pathological gamblers (PGs) on the South Oaks Gambling Screen (SOGS). The authors contrasted 49 PGs with 323 participants who were not pathological gamblers (NPGs) on a host of variables measuring premorbid risk, pathological patterns of substance use, consequences of use, and psychiatric comorbidity. PGs showed more disturbance than NPGs on some measures of premorbid risk, pathological substance use, social consequences of use, and psychiatric comorbidity. Gambling status may be an important comorbid condition in addictions treatment settings and a significant covariate in research.

Lapham, S. C., Smith, E., C'De Baca, J., Chang, I., Skipper, B. J., Baum, G., & Hunt, W. C. (2001). Prevalence of psychiatric disorders among persons convicted of driving while impaired. *Archives of General Psychiatry, 58*(10), 943-949.

This study strived to determine the prevalence of driving while impaired (DWI) offenders' alcohol use and comorbid psychiatric disorders and how much this differs from that of the general community. A total of 612 women and 493 men who were convicted DWI offenders were interviewed. Common sense and previous research have already informed researchers that the DWI offender population has high rates of alcohol use disorders. What is significant about this report's findings is how high these rates are, especially when compared with those of the general community sample. In addition to the high rates, most individuals involved with alcohol or other drugs in the DWI sample met the criteria for lifetime dependence, whereas in the general population sample there was a higher proportion of abuse (without dependence). The data suggests that as a group the population of DWI offenders is closer to a clinical than a nonclinical population. Furthermore, 12-month diagnoses indicated a high degree of symptoms in the ensuing years following the DWI referral, which underscores the need for effective therapies in this population.

Latimer, W. W., Newcomb, M., Winters, K. C., & Stinchfield, R. D. (2000). Adolescent substance abuse treatment outcome: The role of substance abuse problem severity, psychosocial, and treatment factors. *Journal of Consulting & Clinical Psychology, 68*(4), 684-696.

A structural equation model incorporating substance abuse problem severity,

psychosocial risk and protection, and treatment variables examined adolescent drug abuse treatment outcome pathways across 6- and 12-month follow-up points. Findings on resiliency factors and an empirical method adapted from previous research were used to select and assign ten psychosocial factors to either a multiple protective factor index or a risk factor index. Gender, substance abuse problem severity, treatment modality, treatment length, and aftercare participation were also examined as outcome predictors. The findings suggest that treatment intensity decisions may be better informed by pretreatment psychosocial risk level rather than by substance abuse problem severity. The present study also suggests that drug-abusing adolescents who receive sufficiently long treatment, participate in aftercare, and possess at least one individual or interpersonal protective factor during their recovery process have the best chance to maintain gains made during treatment.

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Latimer, W. W., Stone, A. L., Voight, A., Winters, K. C., & August, G. J. (2002). Gender differences in psychiatric comorbidity among adolescents with substance use disorders. *Experimental & Clinical Psychopharmacology*, 10(3), 310-315.

The authors examined gender differences in rates of comorbid psychiatric disorders among adolescents with one or more psychoactive substance use disorders. Baseline diagnostic data were obtained from 135 adolescents, aged 12 to 19, and their parents/guardians, who participated in a study to develop and test the efficacy of Integrated Family and Cognitive-Behavioral Therapy. Rates of attention deficit/hyperactivity disorder and conduct disorder were higher among drug-abusing male adolescents compared with drug-abusing female adolescents. However, high rates of disruptive behavior disorders also characterized drug-abusing female adolescents. Similarly, drug-abusing female adolescents exhibited a higher rate of major depression compared with drug-abusing male adolescents. However, rates of dysthymia, double depression (i.e., major depression and dysthymia), and bipolar disorder were equivalent between genders.

Laudet, A. B., Magura, S., Vogel, H. S., & Knight, E. (2000). Support, mutual aid and recovery from dual diagnosis. *Community Mental Health Journal*, 36(5), 457-476.

The authors used cross-sectional self-report data to investigate the associations among social support (including dual-recovery mutual aid), recovery status, and personal wellbeing in dually diagnosed (substance abuse and mental disorders) individuals (n=310, aged 20 through 63 years). Persons with higher levels of support and greater participation in dual-recovery mutual aid reported less substance use and mental health distress and higher levels of wellbeing. Participation in mutual aid was indirectly associated with recovery through perceived levels of support. The association between mutual aid and recovery held for dual-recovery groups but not for traditional, single-focus self-help groups. The important role of specialized mutual aid groups in the dual recovery process is discussed.

Leal, D., Galanter, M., Dermatis, H., & Westreich, L. (1999). Correlates of protracted homelessness in a sample of dually diagnosed psychiatric inpatients. *Journal of Substance Abuse Treatment*, 16(2), 143-147.

The authors assessed sociodemographic, drug use, and diagnostic correlates of protracted homelessness in a sample of 147 dually diagnosed patients who required admission to the

hospital. When 58 patients with protracted homelessness, defined as continuous undomiciled status for over a year, were compared with 74 patients without protracted homelessness, significant differences were found with regard to diagnosis, employment status, criminality, Brief Psychiatric Rating Scale score on admission, and history of injection drug use. The results of a multiple logistic regression analysis confirmed that a history of injection drug use, current unemployment, and a diagnosis of schizophrenia were positively associated with a history of protracted homelessness. No significant relationships were obtained between protracted homelessness and demographics or chronicity of mental illness.

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Leon, S. C., Lyons, J. S., Christopher, N. J., & Miller, S. I. (1998). Psychiatric hospital outcomes of dual diagnosis patients under managed care. *American Journal on Addictions*, 7(1), 81-86.

The authors compared patterns of psychiatric hospitalization utilization and outcomes between persons with and without co-existing substance-related disorders in a managed care environment by means of a prospective follow-along study of persons hospitalized for psychiatric reasons under the auspices of a large regional managed care firm. Forty-two psychiatric inpatients with comorbid substance disorders and 121 inpatients without coexisting substance disorders were compared across measures of service use and psychiatric acuity. Readmission to the hospital was assessed at 30 days and after 6 months. Patients with coexisting substance disorders spent fewer days in the hospital, but were rehospitalized at a higher rate both within 30 days and after 6 months. These results suggest that the revolving-door pattern of service utilization is also present in managed care environments.

Leslie, D. L., & Rosenheck, R. (1999). Inpatient treatment of comorbid psychiatric and substance abuse disorders: Comparison of public sector and privately insured populations. *Administration & Policy in Mental Health*, 26(4), 253-268.

This study examined discharge abstract records for 114,679 Veterans Administration (VA) patients and insurance claims data for a national sample of 14,425 privately insured (PI) individuals to investigate trends in inpatient utilization and costs for dually diagnosed individuals in these two systems. Patient variables included age, gender, diagnostic category (major depression/bipolar disorder; mild/moderate depression; or other psychiatric illness), and illness severity. A substantially higher proportion of the VA inpatient psychiatric users were dually diagnosed (38.6% versus 10.9% among PI inpatients). VA inpatients also had substantially longer lengths of stay (49.03 days versus 15.76 days), but lower costs per day of care. However, these lower VA per diem costs were not enough to overcome the differences in length of stay, resulting in a 70-percent higher cost per treated inpatient in the VA as compared to the PI sample. In the VA, inpatient utilization and costs decreased more for dually diagnosed than for singly diagnosed patients. In the PI sample, trends in service use and costs were similar for the dually diagnosed and singly diagnosed patients. Overall, the data suggest that directly provided mental health service use and costs have followed similar trends over time in the VA and in the private sector.

Levin, F. R., Evans, S. M., & Kleber, H. D. (1998). Prevalence of adult attention-deficit hyperactivity disorder among cocaine abusers seeking treatment. *Drug & Alcohol*

Dependence, 52(1), 15-25.

A total of 281 cocaine abusers seeking treatment were assessed for adult attention deficit hyperactivity disorder (ADHD). Structured assessments included the Structured Clinical Interview for Mental Disorders-IV (DSM-IV) (SCID), a SCID-like module for ADHD, and a pattern-of-drug-use questionnaire. Twelve percent (34 subjects) of the sample met DSM-IV criteria for childhood ADHD. Of the entire sample, 10 percent (27 subjects), or

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79 percent of the patients diagnosed with childhood ADHD, had adult ADHD. A history of conduct disorder and antisocial personality disorder were prevalent among those with adult ADHD (63% and 52%, respectively). This subpopulation of cocaine abusers may be one of the most difficult-to-treat cocaine-abusing groups, particularly if the ADHD remains undetected. To provide effective treatment for cocaine abusers, clinicians may need to identify subpopulations of patients, such as those with ADHD, and target both pharmacologic and nonpharmacologic interventions for these groups.

Linehan, M. M., Schmidt, H., III, Dimeff, L. A., Craft, J. C., Kanter, J., & Comtois, K. A. (1999). Dialectical behavior therapy for patients with borderline personality disorder and drug-dependence. *American Journal on Addictions*, 8(4), 279-292.

The authors compared results obtained from dialectical behavior therapy (DBT) and a treatment-as-usual (TAU) regimen for drug-dependent suicidal women displaying borderline personality disorder. A total of 28 women (aged 18 through 45 years) were randomly assigned to DBT or TAU groups. The 12 subjects receiving DBT, which comprises strategies from cognitive and behavioral therapies and acceptance strategies adapted from Zen teaching, participated in individual psychotherapy, group skills training sessions, and skills-coaching phone calls when needed. Those receiving TAU were referred to alternative substance abuse or mental health counselors and community programs, or continued with their own psychotherapists. Results show a dropout rate of 36 percent from DBT, compared with a rate of 73 percent from TAU. Urinalysis showed a significant reduction in substance abuse among the DBT subjects and significant improvements in social and global adjustment in DBT subjects at 16-month follow-up. Findings suggest that DBT is an effective treatment for severely dysfunctional drug-dependent patients.

Link, B. G., Struening, E. L., Rahav, M., Phelan, J. C., & Nuttbrock, L. (1997). On stigma and its consequences: Evidence from a longitudinal study of men with dual diagnoses of mental illness and substance abuse. *Journal of Health & Social Behavior*, 38(2), 177-190.

This study tested whether stigma had enduring effects on wellbeing by interviewing 84 men with dual diagnoses of mental disorder and substance abuse at two points in time: at entry into treatment, when they were addicted to drugs and had many psychiatric symptoms, and then again after a year of treatment, when they were far less symptomatic and largely drug- and alcohol-free. Results showed a relatively strong and enduring effect of stigma on wellbeing. This finding indicates that stigma continues to complicate the lives of the stigmatized, even as treatment improves their symptoms and functioning. It follows that if health professionals want to maximize the wellbeing of the people they treat, they must address stigma as a separate and important factor in its own right.

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Little, J. (2001). Treatment of dually diagnosed clients. *Journal of Psychoactive Drugs*, 33(1), 27-31.

Up to 80 percent of people with mental and emotional disorders have abused or will abuse street drugs or alcohol at some point in their lives. Similarly, over half of people with substance use disorders are also diagnosed with a mental disorder at some point. In clinical populations and institutional settings, the numbers are far higher. The term dual diagnosis (coexisting mental and substance use disorders) refers to a large and complex group of people. This article addresses general issues regarding the complexities of dual diagnosis: differential diagnosis, the difficulty of achieving abstinence for people who perceive significant benefits from drug use, and the problems due to the historical split between the mental health and substance abuse treatment systems. Harm reduction, an approach to treating drug-using clients that focuses on the damage done by drugs and alcohol without insisting on abstinence from all psychoactive substances, can offer a useful way of conceptualizing treatment of dual diagnosis. A treatment group specifically designed for dually diagnosed clients is described. This group, inspired by the idea that changes in addictive behavior occur in a series of stages and that motivation can be influenced by the quality of the relationship with the treatment provider, uses a drop-in structure to provide low-threshold access to supportive treatment, to meet clients "where they are."

Lydiard, R. B. (2001). Social anxiety disorder: Comorbidity and its implications. *Journal of Clinical Psychiatry*, 62(Supplement 1), 17-23.

Social anxiety disorder is an extremely common and potentially disabling psychiatric disorder. Generalized social anxiety disorder, a subtype of the disorder, is believed to be the most common and most severe form. It is also the form most often associated with psychiatric comorbidity. Unless the clinician has a high index of suspicion, social anxiety disorder may remain undetected. The clinical and treatment implications of the most common psychiatric comorbidities associated with social anxiety disorder are discussed in this article, with a focus on major depression, panic disorder, posttraumatic stress disorder (PTSD), and alcohol abuse/dependence. Other psychiatric disorders and some medical conditions commonly associated with social anxiety disorder are briefly mentioned. Finally, a differential diagnosis of social anxiety disorder is described. Individuals who present for treatment of other anxiety disorders, mood disorders, or alcohol/substance use disorders should be considered at risk for current undetected social anxiety disorder. A question and answer session from the discussion at the symposium, Advances and Emerging Treatments in Social Phobia, follows the article.

Magura, S., Kang, S. Y., Rosenblum, A., Handelsman, L., & Foote, J. (1998). Gender differences in psychiatric comorbidity among cocaine-using opiate addicts. *Journal of Addictive Diseases*, 17(3), 49-61.

Psychiatric comorbidity was examined for a sample of 212 methadone patients dually addicted to opiates and cocaine, focusing on gender differences. Diagnoses were determined using the SCID for DSM-III-R. Men displayed more lifetime (but not

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current) substance use disorders, while women displayed more lifetime and current nonsubstance

use disorders. There were several significant interactions among psychiatric disorders and gender. Women were more likely than men to present with concurrent mood and anxiety disorders. Women with ASPD were unlikely to have alcohol use disorder, but likely to have opioid use disorder. Men with anxiety were likely to be diagnosed with ASPD. Treatment implications of the findings are discussed.

Magura, S., Laudet, A. B., Mahmood, D., Rosenblum, A., & Knight, E. (2002). Adherence to medication regimens and participation in dual-focus self-help groups. *Psychiatric Services, 53*(3), 310-316.

The authors examined the associations between attendance at self-help meetings, adherence to psychiatric medication regimens, and mental health outcomes among members of a 12-step self-help organization specifically designed for persons with both chronic mental illness and a substance use disorder. A sample of members of Double Trouble in Recovery (DTR) was interviewed at baseline and one year later. Correlates of adherence to psychiatric medication regimens at the follow-up interview were identified for 240 attendees who had received a prescription for a psychiatric medication. Consistent attendance at DTR meetings was associated with better adherence to medication regimens after baseline variables that were independently associated with adherence were controlled for. Three baseline variables were associated with adherence: living in supported housing, having fewer stressful life events, and having a lower severity of psychiatric symptoms. In addition, better adherence was associated with a lower severity of symptoms at one year and no psychiatric hospitalization during the follow-up period. Treatment programs and clinicians should encourage patients who have both mental illness and a substance use disorder to participate in dual-focus self-help groups that encourage the responsible use of effective psychiatric medication, particularly after discharge to community living. Clinicians also should be sensitive to stressful life events and discuss with patients how such events might affect their motivation or ability to continue taking medication.

Mannuzza, S., & Klein, R. G. (2000). Long-term prognosis in attention deficit/hyperactivity disorder. *Child & Adolescent Psychiatric Clinics of North America, 9*(3), 711-726.

The authors traced the developmental course of ADHD from childhood to adulthood, showing that it is a bumpy road for many. In early and middle adolescence, relative deficits are seen in academic and social functioning, ADHD symptoms remain problematic in two-thirds to three-quarters of these children, and antisocial behaviors, in some cases amounting to CD, are common. Many of these same difficulties persist into the late teenage years. Deficits continue to be observed in academic and social domains (compared with controls, probands exhibit lower grades, more courses failed, worse performance on standardized tests, have fewer friends, and are rated less adequate in psychosocial adjustment). About two-fifths continue to experience ADHD symptoms to a clinically significant degree. One-quarter to one-third has a diagnosed antisocial disorder, and two-thirds of these individuals are arrested. Also, drug abuse is observed in

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a significant minority of these youths. Importantly, the greatest risk factor for the development of antisocial behavior and substance abuse by the late teenage years is the maintenance of ADD symptoms. When evaluated in their mid-twenties, dysfunctions are

apparent in these same areas. Compared with controls, probands complete less schooling, hold lower-ranking occupations, and continue to suffer from poor self-esteem and social skills deficits. In addition, significantly more probands than controls exhibit an antisocial personality and, perhaps, a substance use disorder in adulthood. Furthermore, many do not outgrow all facets of their childhood syndrome. These relative deficits, however, do not tell the whole story of the ADHD child's adult fate. Indeed, nearly all probands were gainfully employed. Furthermore, some had achieved a higher level education (e.g., completed Master's degree, enrolled in medical school) and occupation (e.g., accountant, stock broker). In addition, two thirds of these children showed no evidence of any mental disorder in adulthood. In conclusion, although ADHD children, as a group, fare poorly compared with their non-ADHD counterparts, the childhood syndrome does not preclude attaining high educational and vocational goals, and most children no longer exhibit clinically significant emotional or behavioral problems once they reach their mid-twenties.

Mason, B. J., Kocsis, J. H., Melia, D., Khuri, E. T., Sweeney, J., Wells, A., Borg, L., Millman, R. B., & Kreek, M. J. (1998). Psychiatric comorbidity in methadone maintained patients. *Journal of Addictive Diseases, 17*(3), 75-89.

Diagnosing comorbid psychiatric disorders in methadone maintained patients may help identify subgroups with different outcomes and needs for treatment. In this study, 75 methadone-maintenance clinic patients in treatment longer than 30 days were assessed using the Addiction Severity Index, Global Assessment Scale, and Mini-Mental Status Exam and were interviewed for Mental Disorders-III-Revised (DSM-III-R) psychiatric diagnosis using the computerized Diagnostic Interview Schedule. Psychiatric diagnoses were prevalent in the sample, with depression, phobic disorders, antisocial personality, and generalized anxiety the most common. Both number of DSM-III-R diagnoses and severity of psychopathology were correlated with outcome measures such as concurrent drug abuse, family-social problems and employment status. Overall, the results indicate that comorbid psychopathology is a significant variable in methadone maintenance patients. Clinicians working with this group should attend to these patients' needs for treatment of comorbid disorders.

Maxwell, S., & Shinderman, M. S. (2000). Use of naltrexone in the treatment of alcohol use disorders in patients with concomitant major mental illness. *Journal of Addictive Diseases, 19*(3), 61-69.

This article reports the use of naltrexone for treatment of alcohol use disorder in patients with major psychiatric illness. The records of 72 mentally ill outpatients treated with naltrexone for alcohol use disorders at a community mental health center were reviewed. The psychiatric diagnoses included major depression (n=37), schizophrenia (n=17), bipolar illness (n=11), schizoaffective disorder (n=7), and gender identity disorder (n=4). Sixty-three patients (85%) had histories of psychiatric hospitalization. Total retention in

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naltrexone treatment for at least 8 weeks was 81.9 percent: 5 (6.9%) were lost to followup, and 8 (11.1%) discontinued the medication because of side effects, primarily nausea. Subjects showed good clinical response to naltrexone, with 82 percent reducing their drinking by at least 75 percent and only 17 percent relapsing at 8 weeks. It is concluded that naltrexone is useful in the treatment of dually disordered patients. The hypothesis

that clinical response to naltrexone is facilitated by active alcohol drinking during treatment is discussed.

Maynard, C., & Cox, G. B. (1998). Psychiatric hospitalization of persons with dual diagnoses: Estimates from two national surveys. *Psychiatric Services, 49*(12), 1615-1617.

Individuals with both mental illness and alcohol or drug use disorders present distinctive treatment and human service problems, including increased risk for psychiatric hospitalization in community hospitals. Using national hospital discharge abstract data for 1990 and 1994, this study compared differences in psychiatric hospitalization in community hospitals of patients with mental illness only and those with mental disorders and substance use disorders. Subjects with dual diagnoses were younger, and a greater proportion of the subjects were men. Medicaid was the primary payer for a larger percentage of those with dual diagnoses. Nationally, the number of community hospitalizations for dually diagnosed patients increased 15 percent from 1990 to 1994, and total hospital charges increased from \$1.9-2.2 billion.

McDowell, D. M., Levin, F. R., Seracini, A. M., & Nunes, E. V. (2000). Venlafaxine treatment of cocaine abusers with depressive disorders. *American Journal of Drug & Alcohol Abuse, 26*(1), 25-31.

There appears to be a link between depression and cocaine that is both complex and elusive. The purpose of this study was to examine the effect of venlafaxine, a broadspectrum antidepressant, in the treatment of 13 patients who were diagnosed with cocaine dependence and comorbid major depressive disorder (MDD). The majority of the patients in the study were part of a larger double-blind trial using desipramine. This subgroup consisted of people who had failed to respond to desipramine or could not tolerate its side effects. Thirteen patients were enrolled, 10 men and 3 women. Of the patients, 11 completed the 12-week study. All of the patients had a Hamilton Depression (HAM-D) score greater than 14 at baseline, and each had used at least \$20 worth of cocaine per week in the 4 weeks prior to entering the study. In addition, all of the patients received weekly relapse prevention therapy throughout the study. The median dose of venlafaxine was 150 mg/day. The 11 patients who completed the study had significant reductions in mood symptoms by the end of the study. The average total HAM-D score at baseline was 18.0 +/- 3.2; at Week 2, it was 1.9 +/- 0.94; and at the end of the study, it was 1.4 +/- 1.8. The majority of patients reported reductions of cocaine use short of abstinence. All subjects reported a greater than 75 percent reduction in cocaine use compared to baseline. There were no serious side effects. The results of this small study indicate that venlafaxine may be a safe, well tolerated, rapidly acting, and

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effective treatment for patients with a dual diagnosis of depression and cocaine dependence.

McGeary, K. A., French, M. T., Sacks, S., McKendrick, K., & De Leon, G. (2000). Service use and cost by mentally ill chemical abusers: Differences by retention in a therapeutic community. *Journal of Substance Abuse, 11*(3), 265-279.

Earlier research estimated the incremental costs and outcomes of a modified therapeutic community (modified TC) for mentally ill chemical abusers (MICAs) relative to a treatment-as-usual (TAU) control group. This study extended the earlier cost analysis by

disaggregating the modified TC group into clients who completed the program (completers) and clients who dropped out (separaters). Bivariate and multivariate analyses were conducted to estimate differences in treatment and other service costs among completers, separaters, and TAU. Subjects were sequentially assigned to the modified TC (n=171) or TAU (n=47), and the analysis period covered 12 months postbaseline. Using a standardized instrument to collect resource use and cost data, the estimated weekly cost per client in the modified TC was \$554, with completers showing a larger average cost of treatment (\$27,595) than separaters (\$9,986). The average TAU subject had a much higher cost for other (non-modified TC) services (\$29,795) relative to separaters (\$22,048) or completers (\$1,986). These findings suggest that, from baseline to the 12-month follow-up, the total cost of modified TC treatment and other services for completers may be slightly lower than the total cost for separaters or TAU subjects. Since the modified TC group had better outcomes than the TAU group, and the completers had better outcomes than the separaters, the modified TC program could be an effective mechanism to reduce the costs of service utilization as well as improve clinical outcomes. This detailed investigation into service utilization and cost provides policymakers and program directors with valuable information regarding potentially costeffective interventions and further underscores the importance of retention in treatment for this vulnerable population.

McGrath, P. J., Nunes, E. V., & Quitkin, F. M. (2000). Current concepts in the treatment of depression in alcohol-dependent patients. *Psychiatric Clinics of North America*, 23(4), 695-711.

This article addresses the comorbidity of depression and alcoholism, including an overview of the epidemiologic evidence available, reasons for the association between depression and alcoholism, and basic mechanisms common to both disorders. Other topics covered include possible explanations for the comorbidity (e.g., genetics) and treatment issues. Practical evidence and experience-based advice on the management of these patients also are provided.

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McHugo, G. J., Drake, R. E., Teague, G. B., & Xie, H. (1999). Fidelity to assertive community treatment and client outcomes in the New Hampshire dual disorders study. *Psychiatric Services*, 50(6), 818-824.

This study examined the association between fidelity of programs to the assertive community treatment model and client outcomes in dual disorders programs. Assertive community treatment programs in the New Hampshire dual disorders study were classified as low-fidelity programs (three programs) or high-fidelity programs (four programs) based on extensive longitudinal process data. The study included 87 clients with a dual diagnosis of severe mental illness and a comorbid substance use disorder. Sixty-one clients were in the high-fidelity programs, and 26 were in the low-fidelity programs. Client outcomes were examined in the domains of substance abuse, housing, psychiatric symptoms, functional status, and quality of life, based on interviews conducted every six months for three years. Clients in the high-fidelity assertive community treatment programs showed greater reductions in alcohol and drug use and attained higher rates of remission from substance use disorders than clients in the lowfidelity programs. Clients in high-fidelity programs had higher rates of retention in

treatment and fewer hospital admissions than those in low-fidelity programs. No differences between groups were found in length of hospital stays and other residential measures, psychiatric symptoms, family and social relations, satisfaction with services, and overall life satisfaction. Faithful implementation of, and adherence to, the assertive community treatment model for persons with dual disorders was associated with superior outcomes in the substance use domain. The findings underscore the value of measures of model fidelity, and they suggest that local modifications of the assertive community treatment model or failure to comply with it may jeopardize program success.

McKay, J. R., Alterman, A. I., Cacciola, J. S., Mulvaney, F. D., & O'Brien, C. P. (2000). Prognostic significance of antisocial personality disorders in cocaine-dependent patients entering continuing care. *Journal of Nervous & Mental Disease, 188*(5), 287-296.

The authors examined the relationship of antisocial personality disorder (APD) to response to continuing care treatments in a sample of cocaine-dependent patients. Patients (n=127) were randomly assigned to 20-week standard group or individualized relapse prevention continuing care interventions after the completion of an initial treatment episode and followed up at 3, 6, and 12 months. APD and non-APD patients did not differ on retention in continuing care, substance use outcomes, social function outcomes, or experiences before or during cocaine relapse episodes. A diagnosis of APD was also not a predictor of differential response to the two continuing care interventions in the study. However, APD patients had worse medical and psychiatric problem severity than non-APD patients at entrance to continuing care and during follow-up. These results suggest that cocaine patients with APD who are in the continuing care phase of outpatient rehabilitation might benefit from additional medical and psychiatric treatment services.

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McKay, J. R., Pettinati, H. M., Morrison, R., Feeley, M., Mulvaney, F. D., & Gallop, R. Relation of depression diagnoses to 2-year outcomes in cocaine-dependent patients in a randomized continuing care study. *Psychology of Addictive Behaviors, 16*(3), 225-235.

This study examined the relation between depression diagnoses and outcomes in 132 cocaine-dependent patients who were randomized to relapse prevention (RP) or standard 12-step focused group continuing care and followed for 2 years. Depressed patients attended more treatment sessions and had more cocaine-free urines during treatment than participants without depression, but they drank alcohol more frequently before treatment and during the 18-month post-treatment follow-up. Cocaine outcomes in depressed patients deteriorated to a greater degree after treatment than did cocaine outcomes in patients without depression, particularly in patients in RP who had a current depressive disorder at baseline. The best alcohol outcomes were obtained in nondepressed patients who received RP. The results suggest that extended continuing care treatment may be warranted for cocaine-dependent patients with co-occurring depressive disorders.

McKinnon, K., & Cournos, F. (1998). HIV infection linked to substance use among hospitalized patients with severe mental illness. *Psychiatric Services, 49*(10.), 1269.

This paper summarizes the cumulative results of 11 studies of 2,873 predominantly hospital-based psychiatric patients in three United States cities. Across the studies, the

average HIV infection rate among adults with serious mental illness was 7.8 percent, or nearly 20 times the rate estimated for the general population. Patients with co-morbid alcohol or other substance use disorders had a significantly higher rate of infection than those without such comorbidity, and drug injection conferred the highest risk. Patients with substance use disorders may be members of social networks where sex and drugs combine to increase the risk of HIV infection. Only by asking patients about their sexual and drug-use behaviors can providers learn of their HIV risks and service needs and appropriately address them.

McLellan, A. T., Grissom, G. R., Zanis, D., Randall, M., & et al. (1997). Problem-service "matching" in addiction treatment: A prospective study in 4 programs. *Archives of General Psychiatry*, 54(8), 730-735.

A sample of 94 adult patients referred to four substance abuse treatment programs by an employee assistance program were randomly assigned to standard treatment or were assigned to "matched" services, in which patients received at least three professional sessions directed at their important employment, family, or psychiatric problems. All subjects were interviewed with the Addiction Severity Index at admission and 6 months after treatment discharge. Results indicate matched patients (n=45) stayed in treatment longer, were more likely to complete treatment, and had better post-treatment outcomes than did the standard patients (n=49) treated in the same programs. The findings show that the strategy was clinically and administratively practical, attractive to patients, and responsible for a 20- to 30-percent increase in the effectiveness of this substance-abuse treatment system.

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McNamara, C., Schumacher, J. E., Milby, J. B., Wallace, D., & Usdan, S. (2001). Prevalence of nonpsychotic mental disorders does not affect treatment outcome in a homeless cocaine-dependent sample. *American Journal of Drug & Alcohol Abuse*, 27(1), 91-106.

This study examined the prevalence and the effects of comorbid nonpsychotic mental disorders on drug rehabilitation day treatment outcome among homeless individuals. A total of 128 individuals (mean age 37.7 years) enrolled in a drug treatment program were diagnosed for psychoactive substance use disorders and other nonpsychotic mental disorders (ONMD) according to Mental Disorders-III-Revised (DSM-III-R) criteria.

Drug usage was reported at 6-month follow-up. Other collected data included days of stable housing and days of full-time employment. Results show that 82 subjects were diagnosed with comorbid disorders. ONMD subjects had significantly more alcohol disorders than did others. The most prevalent ONMDs were mood and anxiety disorders. ONMD subjects had more severe problems than others at baseline concerning alcohol, medical condition, employment/support, and psychiatric status. Both groups showed treatment improvements at 6-month follow-up, with ONMD subjects showing greater mean changes than others.

Meisler, N., Blankertz, L., Santos, A. B., & McKay, C. (1997). Impact of assertive community treatment on homeless persons with co-occurring severe psychiatric and substance use disorders. *Community Mental Health Journal*, 33(2), 113-122.

This study evaluated the impact of an integrated (mental health/substance abuse) assertive community treatment program on homeless persons with serious mental and

substance use disorders. High rates of retention in treatment, housing stability, and community tenure were attained, and all but the most severe substance users appeared to gain these benefits. Although the intervention appears to be an effective means of retaining in services and monitoring such difficult-to-treat and costly populations, it did not yield high rates of abstinence and social benefits in severe users.

Meissen, G., Powell, T. J., Wituk, S. A., Girrens, K., & Arteaga, S. (1999). Attitudes of AA contact persons toward group participation by persons with a mental illness. *Psychiatric Services, 50*(8), 1079-1081.

Alcoholics Anonymous (AA) groups are under-used by persons with the dual diagnoses of mental illness and substance use disorder, and mental health professionals are cautious about referring them to AA because of fears that the AA group will discourage them from taking prescribed medication. The study assessed the attitudes of 125 AA contact persons about the participation of persons with mental illness. The majority had positive attitudes toward such persons, and 93 percent indicated that they should continue taking their medication. Fifty-four percent felt that participation in a group especially for persons with a dual diagnosis would be more desirable than in a traditional AA group. However, such groups are often not available.

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Mercer-McFadden, C., Drake, R. E., Brown, N. B., & Fox, R. S. (1997). The Community Support Program demonstrations of services for young adults with severe mental illness and substance use disorders, 1987-1991. *Psychiatric Rehabilitation Journal, 20*(3), 13-24.

Between 1987 and 1991, thirteen Community Support Program demonstration projects served 1,157 young adults who had co-occurring severe mental illness and substance use disorder. The service demonstrations and related program evaluations provided a watershed in the development of dual-disorder services and research. The service demonstrations showed that substance abuse treatments could be integrated with components of outpatient mental health services and that motivational interventions were fundamental. The program evaluations showed that clients could be engaged in integrated, community-based services, with the possibility of concomitant reductions in hospital use, improvements in severity of substance abuse, and gains in other areas. The program evaluations also elucidated several assessment issues for future dual-disorder services research.

Merikangas, K. R., Mehta, R. L., Molnar, B. E., Walters, E. E., Swendsen, J. D., Aguilar-Gaziola, S., Bijl, R., Borges, G., Caraveo-Anduaga, J. J., DeWit, D. J., Kolody, B., Vega, W. A., Wittchen, H. U., & Kessler, R. C. (1998). Comorbidity of substance use disorders with mood and anxiety disorders: results of the International Consortium in Psychiatric Epidemiology. *Addictive Behaviors, 23*(6), 893-907.

This article reports the results of a cross-national investigation of patterns of comorbidity between substance use and psychiatric disorders in six studies participating in the International Consortium in Psychiatric Epidemiology. In general, there was a strong association between mood and anxiety disorders as well as conduct and antisocial personality disorder with substance disorders at all sites. The results also suggest that there is a continuum in the magnitude of comorbidity as a function of the spectrum of substance use category (use, problems, dependence), as well as a direct relationship

between the number of comorbid disorders and increasing levels of severity of substance use disorders (which was particularly pronounced for drugs). Finally, whereas there was no specific temporal pattern of onset for mood disorders in relation to substance disorders, the onset of anxiety disorders was more likely to precede that of substance disorders in all countries. These results illustrate the contribution of cross-national data to understanding the patterns and risk factors for psychopathology and substance use disorders.

Messina, N. P., Wish, E. D., & Nemes, S. (1999). Therapeutic community treatment for substance abusers with antisocial personality disorder. *Journal of Substance Abuse Treatment, 17*(1-2), 121-128.

This study compared drug treatment outcomes of 338 substance abuse clients with and without antisocial personality disorder (APD) who were randomly assigned to two residential therapeutic communities that differed primarily in length of inpatient and outpatient treatment. The authors hypothesized that APD clients would be less likely to

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complete treatment and more likely to test positive for drugs and recidivate at follow-up. They also hypothesized that, because of the standard program's longer inpatient treatment, APD clients in the standard program would have more favorable outcomes than those in the abbreviated inpatient program. Self-reports and objective measures of criminal activity and substance abuse were collected at pre- and post-treatment interviews. APD clients were as likely to complete treatment as other clients, and they exhibited the same patterns of reduced drug use and recidivism as did non-APD clients. The treatment program attended was unrelated to outcomes. The authors concluded that substance abusers diagnosed with APD can benefit from treatment in a therapeutic community combined with outpatient care.

Mierlak, D., Galanter, M., Spivack, N., Dermatis, H., Jurewicz, E., & De Leon, G. (1998). Modified therapeutic community treatment for homeless dually diagnosed men: Who completes treatment? *Journal of Substance Abuse Treatment, 15*(2), 117-121.

The authors studied a modified therapeutic community designed for the treatment of patients with combined substance abuse and psychiatric disorders. This model has been applied on a limited basis in clinical practice, and little is known about the characteristics of patients who are likely to complete the prescribed stay in such a program. This report presents characteristics of 189 homeless dually diagnosed men who entered a shelterbased, modified therapeutic community with a prescribed 6-month stay. Thirty-four percent of admissions completed the prescribed stay. These patients were more likely to have fewer inpatient psychiatric admissions and more job experience than those who did not complete their stay. Findings are discussed in terms of their similarities and differences to findings from traditional therapeutic communities for the singly diagnosed.

Milby, J. B., Schumacher, J. E., McNamara, C., Wallace, D., Usdan, S., McGill, T., & Michael, M. (2000). Initiating abstinence in cocaine abusing dually diagnosed homeless persons. *Drug & Alcohol Dependence, 60*(1), 55-67.

This study measured effectiveness of behavioral day treatment plus abstinence contingent housing and work therapy (DT +) versus behavioral day treatment alone (DT). A randomized controlled trial assessed participants at baseline, two and six months. Participants (n=110) met criteria for cocaine abuse or dependence, non-psychotic mental

disorders, and homelessness. DT + achieved greater abstinence at two and six months and more days housed at six months than DT. Effectiveness of DT + was demonstrated, with greatest impacts on abstinence outcomes. Results replicate earlier work demonstrating effectiveness of behavioral day treatment and contingency management as an effective combination for cocaine abusing homeless persons.

Moggi, F., Ouimette, P. C., Moos, R. H., & Finney, J. W. (1999). Dual diagnosis patients in substance abuse treatment: relationship of general coping and substance-specific coping to 1-year outcomes. *Addiction, 94*(12), 1805-1816.

This study examined general and substance-specific coping skills and their relationship to treatment climate, continuing care, and one-year post-treatment functioning among dual diagnosis patients (i.e., co-occurrence of substance use and psychiatric disorders). In a prospective multi-site study, dual diagnosis patients participating in substance abuse treatment were assessed at intake, discharge, and one-year follow-up. Patients were recruited from 15 substance abuse treatment programs, which were selected from a larger pool of 174 inpatient treatment programs in the Department of Veterans Affairs Health Care System. A total of 981 male dual diagnosis patients participated in the study. Assessments included general and substance-specific coping skills, treatment climate, continuing outpatient care, abstinence and clinically significant psychiatric symptoms. Dual diagnosis patients modestly improved on general and substance-specific coping skills over the one-year follow-up period. Patients who were in programs with a 'dual diagnosis treatment climate' and who participated in more 12-step self-help groups showed slightly more gains in adaptive coping. Both general and substance-specific coping were associated with abstinence, but only general coping was associated with freedom from significant psychiatric symptoms. Enhancing general and substance-specific coping skills in substance abuse treatment may reduce dual diagnosis patients' post-treatment substance use and improve their psychological functioning.

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diagnosis patients (i.e., co-occurrence of substance use and psychiatric disorders). In a prospective multi-site study, dual diagnosis patients participating in substance abuse treatment were assessed at intake, discharge, and one-year follow-up. Patients were recruited from 15 substance abuse treatment programs, which were selected from a larger pool of 174 inpatient treatment programs in the Department of Veterans Affairs Health Care System. A total of 981 male dual diagnosis patients participated in the study.

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Moos, R. H., Finney, J. W., Federman, E. B., & Suchinsky, R. (2000). Specialty mental health care improves patients' outcomes: Findings from a nationwide program to monitor the quality of care for patients with substance use disorders. *Journal of Studies on Alcohol, 61*(5), 704-713.

This article describes the implementation of a nationwide program to monitor the quality of treatment for substance use disorders in the Department of Veterans Affairs, and examines how the provision of outpatient mental health care, and the duration and intensity of care, relate to patients' outcomes. Clinicians completed a baseline Addiction Severity Index (ASI) on more than 34,000 patients with substance use disorders, reassessing more than 21,000 (63%) with the ASI an average of 12 months later. Nationwide health service utilization databases were used to obtain information about patients' diagnoses and their use of services during an index episode of care. On average, patients who received specialty outpatient mental health care experienced better risk-adjusted outcomes than did patients who did not receive such care. Patients who had longer index episodes of mental health care improved more than did those who had shorter episodes. There was some evidence that the duration of care contributed more to better outcomes among patients with only substance use disorders, whereas the intensity of care was more important for patients with both substance use and psychiatric

disorders.

Morgenstern, J., Langenbucher, J., Labouvie, E., & Miller, K. J. (1997). The comorbidity of alcoholism and personality disorders in a clinical population: Prevalence rates and relation to alcohol typology variables. *Journal of Abnormal Psychology, 106*(1), 74-84.

This study assessed prevalence rates and overlap among Diagnostic and Statistical Manual of Mental Disorders (3rd ed., revised; DSM-III-R; American Psychiatric Association, 1987) personality disorders in a multisite sample of 366 substance abusers in

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treatment. In addition, the relation of antisocial personality disorder (APD), borderline personality disorder (BPD), and paranoid personality disorder (PPD) to alcohol typology variables was examined. Structured diagnostic interviews and other measures were administered to participants at least 14 days after entry into treatment. Results indicated high prevalence rates for APD and non-APD disorders. There was extensive overlap between Axis I disorders and personality disorders, and among personality disorders themselves. APD, BPD, and PPD were linked to more severe symptomatology of alcoholism and other clinical problems. However, only APD and BPD satisfied subtyping criteria, after controlling for other comorbidity. Implications for classifying alcoholics by comorbid disorders are discussed.

Mowbray, C. T., Ribisl, K. M., Solomon, M., Luke, D. A., & Kewson T. P. (1997).

Characteristics of dual diagnosis patients admitted to an urban, public psychiatric hospital: An examination of individual, social, and community domains. *American Journal of Drug & Alcohol Abuse, 23*(2), 309-326.

This article provides descriptive information on 467 patients with mental illness and substance abuse problems (average age 33.35 years) from an urban state psychiatric hospital utilizing a comprehensive array of clinical, social and community functioning measures. Subjects were 76.6 percent black and 23.4 percent non-Hispanic white. Interviews showed that the majority of the subjects had serious economic and employment problems, undesirable living arrangements, limited or conflictive family or social relationships and records of arrest. The psychiatric, alcohol and drug abuse, employment, family/social, legal and medical problems were least in the treatment need. Alcohol, cocaine and cannabis were the most abused substances with a high rate of polydrug abuse. Subjects had a median of 3.0 previous psychiatric hospitalizations, fewer outpatient substance abuse treatments and limited community mental health contact. The subgroup differences on gender, age and race had implications for community treatment planning.

Mueser, K. T., Drake, R. E., & Wallach, M. A. (1998). Dual diagnosis: a review of etiological theories. *Addictive Behaviors, 23*(6), 717-734.

The etiology of the high prevalence of substance use disorders in patients with severe mental illness (schizophrenia or bipolar disorder) is unclear. The authors reviewed the evidence of different theories of increased comorbidity, organized according to four general models: common factor models, secondary substance use disorder models, secondary psychiatric disorder models, and bidirectional models. Among common factor models, evidence suggested that antisocial personality disorder accounts for some increased comorbidity. Among secondary substance use disorder models, there was

support for the supersensitivity model, which posits that biological vulnerability of psychiatric disorders results in sensitivity to small amounts of alcohol and drugs, leading to substance use disorders. There was minimal support for the self-medication model, but the accumulation of multiple risk factors related to mental illness, including dysphoria, may increase the risk of substance use disorder. Secondary psychiatric disorder models remain to be convincingly demonstrated. Bidirectional models have not

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been systematically examined. Further clarification of etiologic factors, including the identification of subtypes of dual diagnosis, may have implications for developing more effective prevention efforts and treatment.

Mueser, K. T., Essock, S. M., Drake, R. E., Wolfe, R. S., & Frisman, L. (2001). Rural and urban differences in patients with a dual diagnosis. *Schizophrenia Research, 48*(1), 93-107.

The purpose of the study was to evaluate the differences between two cohorts of patients with severe mental illness (schizophrenia-spectrum or bipolar disorder) and co-occurring substance-use disorders, living in either predominantly rural areas or urban areas. Two study groups of patients with a dual diagnosis, recruited using the same criteria, were evaluated, including 225 patients from New Hampshire and 166 patients from two cities in Connecticut. The two study groups were compared on demographic characteristics, housing, legal problems, psychiatric and substance use diagnoses, substance use and abuse, psychiatric symptoms, and quality of life. Patients in the Connecticut study group had higher rates of cocaine-use disorder, more involvement in the criminal justice system, more homelessness, and were more likely to be from minority backgrounds. The Connecticut group also had a higher proportion of patients with schizophrenia and more severe symptoms, as well as lower rates of marriage, educational attainment, and work than the New Hampshire study group. Alcohol-use disorder was higher in the New Hampshire group. Subsequent analyses within the Connecticut group indicated that although African American patients had higher rates of cocaine-use disorder than white patients, cocaine disorder and not minority status was most strongly related to criminal involvement and homelessness. Because of the substances abused and the greater degree of psychiatric illness severity, patients with a dual diagnosis who are living in urban areas may require greater ancillary services, such as residential programs, Assertive Community Treatment, and jail diversion programs in order to treat their disorders successfully.

Mueser, K. T., Kavanagh, D. C. (2001). Treating comorbidity of alcohol problems and psychiatric disorder. In N. Heather & T. J. Peters (Eds.), *International handbook of alcohol dependence and problems*. Chichester, England: John Wiley & Sons.

The authors begin the chapter with a review of the epidemiology of alcohol and psychiatric disorder comorbidity, in which they include both large community-based surveys of alcohol and psychiatric comorbidity and studies in treatment settings. Next, they describe the principles of treating patients with alcohol misuse and comorbid psychiatric disorders. As these principles of treating differ according to the type of disorder, the authors discuss treatment strategies separately for three broad classes of disorders: severe mental disorders, anxiety and affective disorders, and antisocial personality disorder.

Mueser, K. T., Rosenberg, S. D., Drake, R. E., Miles, K. M., Wolford, G., Vidaver, R., & Carrieri, K. (1999). Conduct disorder, antisocial personality disorder and substance use disorders in schizophrenia and major affective disorders. *Journal of Studies on Alcohol, 60*(2), 278-284.

The authors examined the relationships between childhood conduct disorder (CD), antisocial personality disorder (ASPD) and substance use disorders (substance abuse or substance dependence) in psychiatric patients with severe mental illness. Substance use-related problems on screening instruments, lifetime and recent prevalence of substance use disorders, and family history of substance use disorder were evaluated in 4 groups of 293 patients (mean age 38 years) with mainly schizophrenia-spectrum and major affective disorders: (1) No ASPD/CD, (2) CD Only, (3) Adult ASPD Only, and (4) Full ASPD. Results show that Full ASPD was strongly related to all measures of substance use problems and disorders, including fathers' history of substance use disorder. The odds ratios for Full ASPD and substance use disorders ranged between 3.96 and 11.35.

Murray, M. G., Anthenelli, R. M., & Maxwell, R. A. (2000). Use of health services by men with and without antisocial personality disorder who are alcohol dependent. *Psychiatric Services, 51*(3), 380-382.

The authors investigated differences in service utilization between medically stable alcohol-dependent men with and without comorbid antisocial personality disorder. The quantity and frequency of service use were examined, and standardized diagnostic criteria were used to determine whether subjects differed in their rates of health services utilization. Among 104 medically stable male veterans with alcohol dependence, rates of health service utilization were compared for 48 patients with a primary diagnosis of antisocial personality disorder and 56 patients without this diagnosis. All subjects were 18 through 55 years old. Patients were diagnosed using Mental Disorders-IV (DSM-IV) lifetime criteria; previous utilization of health services was based on self-reports. Although a similar proportion of both groups reported previous service use, patients with antisocial personality disorder reported using more substance abuse treatment services than those with a primary diagnosis of alcohol dependence. Between-group multiple regression analysis showed that an earlier age at onset of alcoholism and a history of a comorbid substance-induced mental disorder best predicted higher rates of substance abuse treatment.

Myers, M. G., Stewart, D. G., & Brown, S. A. (1998). Progression from conduct disorder to antisocial personality disorder following treatment for adolescent substance abuse. *American Journal of Psychiatry, 155*(4), 479-485.

The authors investigated the progression from conduct disorder to antisocial personality disorder among individuals treated for adolescent substance abuse. This was a prospective longitudinal study of 137 substance-abusing adolescents (53 female and 84 male), whose average age was 15.9 years and who met the Mental Disorders-III-Revised (DSM-III-R) criteria for conduct disorder. Consecutively admitted patients were recruited from two adolescent inpatient alcohol and drug treatment facilities. Subjects

of the study group met criteria for antisocial personality disorder. Onset of deviant behavior at or before age 10, a greater diversity of deviant behavior, and more extensive pretreatment drug use best predicted progression to antisocial personality disorder. At four-year follow-up, the subjects with an antisocial personality disorder diagnosis exhibited more involvement with alcohol and drugs and poorer functioning across important life domains than the subjects without antisocial personality disorder.

Najavits, L. M., Gastfriend, D. R., Barber, J. P., Reif, S., Muenz, L. R., Blaine, J., Frank, A., Crits-Christoph, P., Thase, M., & Weiss, R. D. (1998). Cocaine dependence with and without PTSD among subjects in the National Institute on Drug Abuse Collaborative Cocaine Treatment Study. *American Journal of Psychiatry, 155*(2), 214-219.

This study examined the prevalence of lifetime traumatic events and current symptoms of posttraumatic stress disorder (PTSD) among treatment-seeking cocaine-dependent outpatients and compared patients with and without PTSD on current substance use, psychopathology, and sociodemographic characteristics. The subjects were 122 adult cocaine-dependent outpatients participating in a treatment outcome study of psychosocial therapy. In addition to standard self-report and interview measures of psychopathology and substance use, the subjects completed the Trauma History Questionnaire and the PTSD Checklist before entering treatment. These patients experienced a large number of lifetime traumatic events (mean = 5.7); men experienced more general disasters and crime-related traumas than women, and women experienced more physical and sexual abuse than men. According to self-report measures, 20.5 percent of the subjects currently met the DSM-III-R criteria for PTSD; the rate of PTSD was 30.2 percent among women and 15.2 percent among men. Patients with PTSD had significantly higher rates of cooccurring Axis I and Axis II disorders, interpersonal problems, medical problems, resistance to treatment, and psychopathology symptoms than patients without PTSD. Psychopathology symptoms represented the most consistent difference between the two groups and provided the best prediction of PTSD status in a logistic regression. However, the groups did not differ significantly in current substance use or sociodemographic characteristics. These findings underscore the value of screening substance abusers for PTSD, because it can identify a small but substantial number who might require additional treatment. Further studies of the relationship between PTSD and substance abuse appear warranted.

Nishith, P., Mueser, K. T., Srsic, C. S., & Beck, A. T. (1997). Differential response to cognitive therapy in parolees with primary and secondary substance use disorders. *Journal of Nervous & Mental Disease, 185*(12), 763-766.

This study examined the role of the primary/secondary distinction as a predictor of response to cognitive therapy for substance use disorders in an outpatient parolee population. Subjects were 88 probation patients (aged 24 through 57 years) with a history of incarceration for alcohol and drug related crimes and were on probation during the treatment phase. Of the 88 subjects, 52 completed the treatment protocol, and 36 did

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not. The treatment itself comprised of structured sessions of cognitive therapy. Comparison of the therapy completers with the noncompleters showed that the two groups were comparable on sociodemographic and diagnostic variables. When

categorized into primary and secondary groups on the basis of Axis I diagnoses, subjects in the secondary group were significantly higher on depression, anxiety, and hopelessness, compared with subjects in the primary group at intake. These findings are consistent with the hypothesis that the order of the onset of substance use disorder and psychiatric disorders may provide information as to the motives underlying substance abuse.

Nunes, E. V., Quitkin, F. M., Donovan, S. J., Deliyannides, D., Ocepek-Welikson, K., Koenig, T., Brady, R., McGrath, P. J., & Woody, G. (1998). Imipramine treatment of opiate-dependent patients with depressive disorders: A placebo-controlled trial. *Archives of General Psychiatry*, 55(2), 153-160.

This study tested the hypothesis that antidepressant medication would result in improved mood and diminished substance abuse in patients with depressive syndromes diagnosed by clinical history and receiving methadone treatment for drug dependence. A total of 137 subjects received either imipramine or placebo. Eighty-four subjects completed an adequate trial of at least six weeks' duration. A robust antidepressant effect of imipramine was demonstrated. In keeping with a self-medication model of substance abuse, craving and one measure of self-reported substance use were reduced by imipramine treatment, and mood improvement was associated with lower self-reported substance use. However, the treatment effect on substance use was not as robust as the antidepressant effect. Few patients became abstinent, and substance use improved before depression did in more than half of the responders.

Nuttbrock, L. H., Ng-Mak, D. S., Rahav, M., & Rivera, J. J. (1997). Pre- and postadmission attrition of homeless, mentally ill chemical abusers referred to residential treatment programs. *Addiction*, 92(10), 1305-1315.

The aim of this study was to assess the magnitude and psychopathologic predictors of attrition among homeless, mentally ill chemical abusers (MICAs) referred to residential treatment programs in New York City. Homeless, MICAs were randomly referred to a therapeutic community (TC) or community residence (CR) and monitored with regard to pre- and post-admission attrition. From an initial pool of 694 treatment candidates, 147 (22%) were rejected for admission at their assigned facility; 247 (36%) failed to show up for treatment; and 212 (31%) dropped out of treatment at some point during the first 12 months. Contrary to expectation, those with severe levels of psychotic ideation, depressive symptoms and hostility were admitted to treatment more frequently and stayed in treatment longer at the TC, a high demand approach, than the CR, a low demand approach. Thus, clinicians should consider the TC as a viable treatment option for MICAs.

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Nuttbrock, L., Rahav, M., Rivera, J., Ng-Mak, D., & Pepper, B. (1997). Stability of psychiatric symptoms among mentally ill chemical abusers in long-term residential treatment programs. *Journal of Drug Issues*, 27(4), 795-806.

The authors examined patterns of changes in psychiatric symptoms among 320 mentally ill chemical abusers (MICAs) in long-term residential treatment. Clients were evaluated with various measures of psychopathology, referred to a therapeutic community (TC) or community residence, and reassessed with regard to anxiety, depressive symptoms, and psychotic ideation after 2, 6, and 12 months of treatment. Reductions in mean values of

psychopathology were found only for anxiety and depressive symptoms at the TC during the first 2 months of treatment. However, an examination of changing patterns of symptoms revealed a more complex set of findings. At both programs, a significant number of MICAs showed reductions in psychopathology during treatment, a significant minority exhibited no improvements in psychiatric symptoms, and a few reported new symptoms of anxiety, depression, and psychotic ideation.

Nuttbrock, L. A., Rahav, M., Rivera, J. J., Ng-Mak, D. S., & Link, B. G. (1998). Outcomes of homeless mentally ill chemical abusers in community residences and a therapeutic community. *Psychiatric Services, 49*(1), 68-76.

The feasibility and effectiveness of treating homeless mentally ill chemical abusers in community residences compared with a therapeutic community were evaluated. A total of 694 homeless mentally ill chemical abusers were randomly referred to two community residences or a therapeutic community. All programs were enhanced to treat persons with dual diagnoses. Subjects' attrition, substance use, and psychopathology were measured at 2, 6, and 12 months. Forty-two percent of the 694 referred subjects were admitted to their assigned program and showed up for treatment, and 13 percent completed 12 months or more. Clients retained at both types of program showed reductions in substance use and psychopathology, but reductions were greater at the therapeutic community. Compared with subjects in the community residences, those in the therapeutic community were more likely to be drug free, as measured by urine analysis and self-reports, and showed greater improvement in psychiatric symptoms, as measured by the Center for Epidemiological Studies Depression Scale and the Brief Psychiatric Rating Scale. Their functioning also improved, as measured by the Global Assessment of Functioning scale. Homeless mentally ill chemical abusers who are retained in community-based residential programs, especially in therapeutic communities, can be successfully treated.

Ouimette, P. C., Ahrens, C., Moos, R. H., & Finney, J. W. (1998). During treatment changes in substance abuse patients with posttraumatic stress disorder: The influence of specific interventions and program environments. *Journal of Substance Abuse Treatment, 15*(6), 555-564.

Male substance abuse patients with posttraumatic stress disorder (PTSD) (SA-PTSD; n=140) were compared to patients with only substance use disorders (SA-only; n=1,262), and those with other Axis I diagnoses (SA-PSY; n=228) on changes during substance

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abuse treatment. Diagnoses were determined by chart review, and patients completed questionnaires assessing coping, cognitions, and psychological distress. Although SAPTSD patients improved on outcomes during treatment, they showed less benefit relative to SA-only patients. At discharge, SA-PTSD patients reported less use of effective coping styles and endorsed more positive beliefs about substance use than SA-only patients. They had more psychological distress than SA-only and SA-PSY patients. More counseling sessions devoted to substance abuse and family problems and increased involvement in 12-step activities partially counteracted the negative effects of having a PTSD diagnosis on several outcomes. SA-PTSD patients reported fewer psychological symptoms at discharge in programs that were high in support and order/organization.

Ouimette, P. C., Brown, P. J., & Najavits, L. M. (1998). Course and treatment of patients

with both substance use and posttraumatic stress disorders. *Addictive Behaviors*, 23(6), 785-795.

Posttraumatic stress disorder (PTSD) is a common co-occurring diagnosis in patients with substance use disorders (SUDs). Despite the documented prevalence of this particular dual diagnosis, relatively little is known about effective treatment for SUD/PTSD patients. This article reviews empirical research on the course and treatment of SUD-PTSD comorbidity and highlights clinically relevant findings. On the basis of this review, the following is noted: PTSD is highly prevalent in SUD patients, consistently associated with poorer SUD treatment outcomes, and related to distinct barriers to treatment. Specific treatment practices are recommended for substance abuse treatment providers: (a) all patients should be carefully screened and evaluated for trauma and PTSD; (b) referrals should be provided for concurrent treatment of SUD-PTSD, if available, or for psychological counseling with the recommendation that trauma/PTSD be addressed; and (c) increased intensity of SUD treatment should be offered in conjunction with referrals for family treatment and self-help group participation.

Ouimette, P. C., Finney, J. W., & Moos, R. H. (1999). Two-year post-treatment functioning and coping of substance abuse patients with posttraumatic stress disorder. *Psychology of Addictive Behaviors*, 13(2), 105-114.

The two-year post-treatment course of substance abuse patients with posttraumatic stress disorder (PTSD) was examined in a multisite evaluation of Veterans Affairs substance abuse treatment. Substance abuse patients with PTSD (SUD-PTSD) were compared with patients with only substance use disorder (SUD only) and patients with other comorbid psychiatric diagnoses (SUD-PSY) on outcomes during the two years after treatment. SUD-PTSD patients had a poorer long-term course on substance use, psychological symptom, and psychosocial outcomes than SUD-only and SUD-PSY patients. Coping methods were examined as mediators of the effect of PTSD on substance use outcomes. Greater use of avoidance coping styles and less use of approach coping at one year partially accounted for the association of PTSD with two-year substance use. Treatments that address multiple domains of functioning and focus on alternative coping strategies are recommended for this population.

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Ouimette, P. C., Gima, K., Moos, R. H., & Finney, J. W. (1999). A comparative evaluation of substance abuse treatment IV. The effect of comorbid psychiatric diagnoses on amount of treatment, continuing care, and 1-year outcomes. *Alcoholism: Clinical & Experimental Research*, 23(3), 552-557.

Recent surveys of the substance abuse patient population have shown a striking increase in the proportion of patients with a comorbid psychiatric disorder. In this study, patients with substance abuse and psychotic, anxiety/depressive, or personality disorders were compared with patients with only substance use disorders on treatment experiences and outcomes. Regardless of dual diagnosis status, patients generally improved on both substance use and social functioning outcomes after substance abuse treatment. At the one-year follow-up, dually diagnosed patients, and patients with only substance use disorders, had comparable substance use outcomes. However, patients with major psychiatric disorders, specifically psychotic and anxiety/depressive disorders, fared worse on psychological symptoms and employment outcomes than did patients with personality

disorders and only substance use disorders. Although there were some group differences on the amount of index treatment received and continuing care, the overall pattern of relationships between treatment variables and outcomes was comparable for the patient groups. In addition, there was no diagnostic group by treatment orientation matching effects, which indicated that the dual diagnosis patient groups improved as much in 12-Step as in cognitive-behavioral substance abuse programs.

Parks, C. A., Hesselbrock, M. N., Hesselbrock, V. M., & Segal, B. (2001). Gender and reported health problems in treated alcohol dependent Alaska natives. *Journal of Studies on Alcohol, 62*(3), 286-293.

An ongoing study of phenotypes of alcohol dependence among Alaska Natives provided the opportunity to investigate gender differences in reported health-related problems among alcohol-dependent clients in three residential programs in Anchorage, Alaska. Clinical assessment information was obtained on 469 (263 male) subjects from consecutive admissions to each of three treatment programs. The average age of the sample was 33.7 (8.4) years. Patterns of substance use, comorbid psychopathology, overall health status, alcohol and other drug withdrawal symptoms, and psychological and physical consequences of alcohol and other drug use were examined. Male and female subjects reported similar experiences with alcohol-related health problems, including symptoms of withdrawal and the psychological and physical consequences of chronic alcohol abuse. However, women were significantly more likely to have lifetime diagnoses of major depression and cocaine dependence, whereas men were more likely to have lifetime diagnoses of antisocial personality disorder and marijuana dependence. Women reported a lower overall health status, more medication use and pain complaints, and more negative consequences of cocaine abuse and withdrawal than did men. Both men and women within this sample of inpatient alcohol-dependent Alaska Natives were found to have a similar early onset and rapid progression to DSM-III-R alcohol dependence, and to report a similar prevalence of alcohol-related psychological and physical problems. Reports by women of more pain symptoms, more medication use and more negative health consequences related to their cocaine abuse, compared with men in

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this alcohol dependent sample, suggests additional considerations for treatment planning and intervention.

Pelissier, B. M. M., & O'Neil, J. A. (2000). Antisocial personality and depression among incarcerated drug treatment participants. *Journal of Substance Abuse, 11*(4), 379-393.

Co-occurrence of antisocial personality (ASP) and depression among drug-dependent individuals was examined in a sample of federal inmates participating in residential or outpatient drug and alcohol treatment to increase understanding of the co-occurrence of these disorders. Drug dependence patterns were examined both by the number of drugs of dependence as well as by type of drug. The Diagnostic Interview Schedule was used to obtain diagnostic information on a sample of 609 men and women participating in a multi-site drug treatment evaluation project. Logistic regression results are reported that compared lifetime rates of ASP and major depression by number of drugs of dependency for men and women. Results show that both the number of drugs and drug type are related to prevalence patterns for both diagnoses. The high rates of ASP and major

depression among specific subgroups of drug-dependent inmates highlight the need for thorough psychiatric assessment and the tailoring of treatment programs to the issues associated with these diagnoses. These results suggest that although there are similarities in co-morbidity between men and women, the differences point to the need to study men and women separately.

Penick, E. C., Nickel, E. J., Powell, B. J., Liskow, B. I., Campbell, J., Dale, T. M., Hassanein, R. E., & Noble, E. (1999). The comparative validity of eleven alcoholism typologies. *Journal of Studies on Alcohol, 60*(2), 188-202.

This study directly compared the clinical validity of 11 empirically defined alcoholism typologies to determine whether some typologies are clinically more valid than others. A sample of 360 hospitalized alcoholic men was extensively evaluated at entry into the study and again one year later. Twenty-three measures of clinical validity were employed; 15 were postdictive and 8 were predictive. Postdictive retrospective measures obtained at entry into the study included family history, age of onset and lifetime course characteristics associated with alcoholism severity, general psychopathology and psychosocial functioning. Predictive outcome measures drawn from information obtained during the one-year follow-up included: abstinence, alcoholism severity and clinician ratings of outcome. The measures were subjected to various statistical analyses, including factor analysis. We found that all of the alcoholism typologies met at least 7 of the 23 *a priori* measures of clinical validity. The correlations between these conceptually and methodologically disparate typologies were often striking. Exploratory factor analysis, which explained 35 percent of the variance, suggested three possible underlying dimensions to account for the overlap among typologies: (1) age and its correlates, including age-of-alcoholism onset; (2) "pure" alcoholism versus psychiatrically heterogeneous alcoholism that encompassed antisocial personality disorder; and (3) current severity of psychiatric distress, impairment and dysfunction. No single method of subtyping alcoholics clearly emerged as superior. All demonstrated some degree of

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predictive and postdictive clinical validity. Most methods of subtyping correlated positively with each other at moderate, but typically significant, levels.

Penn, P. E., & Brooks, A. J. (2000). Five years, twelve steps, and REBT in the treatment of dual diagnosis. *Journal of Rational-Emotive & Cognitive Behavior Therapy, 18*(4), 197-208.

This article describes a five-year National Institute on Drug Abuse-funded grant that compared client-centered 12-step-oriented and Rational Emotive Behavior Therapy/Self Management and Recovery Training-oriented intensive outpatient treatment/partial hospitalization programs received by 112 severely impaired clients with dual diagnosis (serious mental illness/substance abuse). Results are presented, and suggestions made for applying the findings.

Petrakis, I., Carroll, K. M., Nich, C., Gordon, L., Kosten, T., & Rounsaville, B. (1998). Fluoxetine treatment of depressive disorders in methadone-maintained opioid addicts. *Drug and Alcohol Dependence, 50*(3), 221-226.

This study tested the effectiveness of fluoxetine as a treatment for depression in a population of methadone-maintained opioid addicts. Methadone-maintained opioid addicts (44) with depression received fluoxetine or placebo in addition to their

methadone, in a double-blind randomized trial, for 12 weeks. Depressive symptoms decreased significantly overall with no significant differences between the groups treated with fluoxetine versus placebo. In addition, drug use outcomes, including cocaine and heroin self-reported use and urine toxicology were measured. There was a significant decrease in heroin use in treatment, but no medication effect. Cocaine use was unchanged from pre-treatment to endpoint. In separately analyzing data for the subsample of subjects with the most severe depression, there was a significant decrease in depression during treatment and a significant decrease in self-reported cocaine use, but no medication effect on either depressive symptoms or on cocaine use. This study suggests that fluoxetine is not an effective agent in treating depression or cocaine use in this population.

Petry, N. M. (2001). Substance abuse, pathological gambling, and impulsiveness. *Drug and Alcohol Dependence*, 63(1), 29-38.

This study evaluated behavioral and self-report indices of impulsiveness in pathological gambling substance abusers (n=27), non-pathological gambling substance abusers (n=63), and non-pathological gambling/non-substance abusing controls (n=21). The Bechara card task measured preferences for decks of cards that ranged in magnitude and probability of delayed and immediate rewards and punishers. The Stanford Time Perception Inventory (STPI) assessed orientation to the future, the Zuckerman Sensation Seeking Scale evaluated sensation seeking, and the Eysenck and Barratt scales measured impulsivity. A Principal Components analysis revealed that these personality measures comprised three distinct measures of impulsivity: impulse control, novelty seeking and time orientation. Linear contrast analyses revealed that substance abuse and pathological

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gambling resulted in additive effects on the impulse control and time orientation factors, but not on the novelty-seeking scale. Performance on the card task did not correlate with any of the three factors derived from the personality scale scores, but the presence of both substance abuse and pathological gambling had an additive effect on preferences for decks containing greater immediate gains but resulting in large punishers and overall net losses. These results provide further evidence of an association among substance abuse, pathological gambling, and impulsivity.

Petry, N. M. (2000). Psychiatric symptoms in problem gambling and non-problem gambling substance abusers. *American Journal on Addictions*, 9(2), 163-171.

This study compared demographic characteristics, Addiction Severity Index (ASI) ratings, and psychiatric symptoms in 103 substance abusers with and without gambling problems. Thirty-one of the substance abusers were identified as probable pathological gamblers on the South Oaks Gambling Screen. Although no difference in demographic characteristics or ASI ratings was noted between groups, subjects with a gambling problem consistently reported more psychiatric distress than substance abusers without a gambling problem. Specifically, they had increased ratings on somatization, obsessivecompulsive,

interpersonal sensitivity, hostility, and paranoia scales. Results are discussed in terms of the need to identify and treat gambling problems among substance abusers.

Petry, N. M., & Bickel, W. K. (1999). Therapeutic alliance and psychiatric severity as predictors of completion of treatment for opioid dependence. *Psychiatric Services*,

50(2), 2192-2227.

The role of patient characteristics and the strength of the therapeutic alliance in predicting completion of treatment by opioid-dependent patients were examined. Information about patient characteristics and scores on subscales of the Addiction Severity Index (ASI) was obtained for 114 patients at intake to a buprenorphine treatment program lasting three to four months. The Helping Alliance Questionnaire (HAQ) was used to assess the strength of the therapeutic alliance. Patients were classified as treatment completers or noncompleters, and logistical regression examined predictors of treatment completion. Only two variables significantly predicted treatment completion: severity of psychiatric symptoms and interaction between HAQ scores and psychiatric severity. Patients with fewer psychiatric symptoms were more likely to complete treatment. The strength of the therapeutic alliance was not related to treatment completion among patients with few psychiatric symptoms, and 62 percent of these patients completed treatment. In contrast, among patients with moderate to severe psychiatric problems, less than 25 percent with weak therapeutic alliances completed treatment, while more than 75 percent with strong therapeutic alliances completed treatment. The results underscore the importance of early identification of opioid-dependent patients with moderate to severe levels of psychopathology. In this patient subgroup, a strong therapeutic alliance may be an essential condition for successful treatment.

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Pettinati, H. M., Pierce, J. D., Belden, P. P., & Meyers, K. (1999). The relationship of Axis II personality disorders to other known predictors of addiction treatment outcome. *American Journal on Addictions, 8*(2), 136-147.

The authors evaluated the prevalence of Axis II disorders in substance abuse patients and the relationship between Axis II psychopathology and two other known predictors of adverse addiction treatment outcomes: Axis I psychiatric comorbidity and illegal drug use, specifically cocaine. A total of 232 patients (mean age 34.6 years) with cocaine and/or alcohol dependence were admitted to either inpatient or outpatient addiction recovery programs at a non-profit, private-pay hospital. Axis II disorders were more prevalent in cocaine than alcohol dependence and in patients with Axis I psychiatric comorbidity. When all three predictors were evaluated in one prediction model, the combination of Axis I and II psychopathologies was the best predictor of a return to substance use at one year post treatment, compared with the three factors alone. These findings highlight the importance of the interrelationship of the relative prognostic value of three known predictors of addiction treatment.

Pettinati, H. M., Rukstalis, M. R., Luck, G. J., Volpicelli, J. R., & O'Brien, C. P. (2000). Gender and psychiatric comorbidity: Impact on clinical presentation of alcohol dependence. *American Journal on Addictions, 9*(3), 242-252.

The authors examined the differences in clinical presentation for outpatient alcohol treatment in: (1) males and females, considering comorbidity; and (2) three comorbid groups, considering gender. Drinking indices and emotional, physical, and sexual abuse reports were compared in 127 male and 69 female alcohol-dependent patients (mean age 45 years) who had a current or lifetime psychiatric disorder or who never had a psychiatric disorder. Females reported more emotional and physical abuse than males. Females reported drinking smaller volumes of alcohol but on more days than males. All

subjects with current comorbidity, irrespective of gender, reported more days of heavy drinking than other groups. When evaluating drinking status, gender, and comorbidity should be considered.

Pettinati, H. M., Volpicelli, J. R., Kranzler, H. R., Luck, G., Rukstalis, M. R., & Cnaan, A. Sertraline treatment for alcohol dependence: Interactive effects of medication and alcoholic subtype. *Alcoholism: Clinical and Experimental Research*, 24(7), 1041-1049.

The aim of this study was to explore the validity of differential responding by alcoholdependent subtypes using the serotonin reuptake inhibitor, sertraline. A *k*-means clustering procedure was applied to a sample of alcohol-dependent subjects enrolled in a 14-week, placebo-controlled trial of 200 mg/day of sertraline, classifying them into lower-risk/severity (Type A: n=55) and higher-risk/severity (Type B: n=45) subgroups. A significant interaction between alcoholic subtype and medication condition was found, confirming the findings of Kranzler and colleagues that alcoholic subtypes responded differently to serotonergic medication. Somewhat at variance with their results, however, the present study showed that the lower risk/severity (Type A) subjects had more

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favorable outcomes when treated with sertraline compared to placebo. Alcoholic subtypes differentially responded to sertraline when used as a treatment to reduce alcohol drinking, with one subtype having more favorable outcomes. Subtyping alcoholics may help to resolve conflicting findings in the literature on serotonergic treatment of alcohol dependence.

Pettinati, H. M., Volpicelli, J. R., Luck, G., Kranzler, H. R., Rukstalis, M. R., & Cnaan, A. (2001). Double-blind clinical trial of sertraline treatment for alcohol dependence. *Journal of Clinical Psychopharmacology*, 21(2), 143-153.

This study examines the efficacy of sertraline for treating alcohol dependence in patient groups that were differentiated by the presence or absence of lifetime depression. This study examined the effectiveness of sertraline (200 mg/day) or placebo for 14 weeks in 100 alcohol-dependent subjects with or without a lifetime diagnosis of comorbid depression. Sertraline treatment seemed to provide an advantage in reducing drinking in alcohol-dependent patients without lifetime depression, illustrated best with a measure of drinking frequency during treatment. However, sertraline was no better than placebo in patients with a diagnosis of lifetime comorbid depression, and current depression did not change the results. Treatment with selective serotonin reuptake inhibitors may be useful in alcohol-dependent patients who are not depressed. Subtyping those with alcohol dependence on the basis of the absence versus the presence of a lifetime depressive disorder may help to resolve conflicting findings in the literature on the treatment of alcohol dependence with serotonergic medications.

Poling, J., Rounsaville, B. J., Ball, S., Tennen, H., Kranzler, H. R., & Triffleman, E. (1999). Rates of personality disorders in substance abusers: A comparison between DSMIII-R and DSM-IV. *Journal of Personality Disorders*, 13(4), 375-384.

The publication of the Mental Disorders-IV (DSM-IV) represents the first revision in seven years to the Mental Disorders-III-Revised (DSM-III-R) diagnostic criteria. This study evaluated the impact of changes to the Axis II criteria on diagnostic rates in a substance abusing population. A total of 370 patients (mean age 32.6 years) entering

treatment were interviewed using a modified version of the Structured Clinical Interview (SCID-II), which allowed for the diagnosis of both DSM-III-R and DSM-IV Axis II diagnoses. Prevalence rates for each Axis II disorder are given, as well as kappa statistics showing diagnostic agreement between the two systems. The results indicate good rates of diagnostic agreement between the two systems with a few notable exceptions. Poor rates of diagnostic agreement were obtained for the histrionic and dependent diagnostic categories. No single diagnostic change appears to be responsible for the prevalence rate differences between the two systems.

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Potenza, M. N., Steinberg, M. A., McLaughlin, S. D., Wu, R., Rounsaville, B. J., O'Malley, S. S. Gender-related differences in the characteristics of problem gamblers using a gambling help line. *American Journal of Psychiatry*, 158(9), 1500-1505.

The characteristics of male and female gamblers utilizing a gambling help line were examined to identify gender-related differences. The authors performed logistic regression analyses on data obtained in 1998-1999 from callers to a gambling help line serving southern New England. Of the 562 phone calls used in the analyses, 349 (62.1%) were from male callers and 213 (37.9%) from female callers. Gender-related differences were observed in reported patterns of gambling, gambling-related problems, borrowing and indebtedness, legal problems, suicidality, and treatment for mental health and gambling problems. Male gamblers were more likely than female gamblers to report problems with strategic or "face-to-face" forms of gambling, e.g., blackjack or poker. Female gamblers were more likely to report problems with nonstrategic, less interpersonally interactive forms of gambling, e.g., slot machines or bingo. Female gamblers were more likely to report receiving nongambling-related mental health treatment. Male gamblers were more likely to report a drug problem or an arrest related to gambling. High rates of debt and psychiatric symptoms related to gambling, including anxiety and depression, were observed in both groups. Individuals with gambling disorders have gender-related differences in underlying motivations to gamble and in problems generated by excessive gambling. Different strategies may be necessary to maximize treatment efficacy for men and for women with gambling problems.

Prigerson, H. G., Desai, R. A., & Rosenheck, R. A. (2001). Older adult patients with both psychiatric and substance abuse disorders: prevalence and health service use. *Psychiatric Quarterly*, 72(1), 1-18.

The prevalence and service use among older adults with concurrent psychiatric and substance use disorders (the dually diagnosed) were examined in a cross-sectional survey of a representative national sample of Department of Veterans Affairs mental health program patients (n=91,752). Rates of dual diagnosis declined significantly (p=0.001) as the age of the respondents increased (26.7% of patients < 65 years; 6.9% of patients > or = 65 years). Dually diagnosed older adult patients had longer inpatient stays for substance abuse and more outpatient substance abuse visits than did non-dually diagnosed elderly patients, and more outpatient general psychiatric visits than all the contrast groups. Dual diagnosis appears less common among older compared to younger patients, although their heavy use of certain (particularly, outpatient psychiatric) services suggests that should more dually diagnosed patients survive to old age their consumption of some forms of mental health care is likely to be high.

Primm, A. B., Gomez, M. B., Tzolova-Iontchev, I., Perry, W., Vu, H. T., & Crum, R. M. (2000). Mental health versus substance abuse treatment programs for dually diagnosed patients. *Journal of Substance Abuse Treatment, 19*(3), 285-290.

The authors assessed similarities and differences of 129 patients with co-existing psychiatric and substance use disorders attending treatment in either a mental health
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setting (64 subjects) or a substance abuse treatment (SABT) setting (65 subjects).

Treatment records were reviewed for diagnoses and sociodemographic data. The two groups were highly similar with regard to age and ethnicity. There were significant differences in psychiatric profile, with the SABT group having less severe diagnoses and no patients with schizophrenia, and the mental health treatment group having a majority of patients with schizophrenia. Other differences in the two groups, such as marital and parental status, disability status, and medical problems, appeared to be directly linked with the aforementioned diagnostic profile. Data suggest differences in characteristics of patients with comorbid disorders that appear to be dependent on the type of treatment program they attend.

Pristach, C. A., & Smith, C. M. (1999). Attitudes towards alcoholics anonymous by dually diagnosed psychiatric inpatients. *Journal of Addictive Diseases, 18*(3), 69-76.

Self-help programs such as Alcoholics Anonymous (AA) have been viewed as beneficial adjuncts to comprehensive treatment programs for the treatment of alcohol use disorders. The usefulness of such programs for individuals with dual psychiatric disorders has not been established. This study examined the alcohol and psychiatric treatment histories of 60 psychiatric inpatients with concomitant alcohol use or abuse with attention to the frequency and correlates with past AA attendance. Most subjects reported feeling comfortable with the basic tenets of AA; neither diagnosis nor gender was related to AA participation, belief in its basic tenets, or willingness to attend AA in the future. Regular, past attendance at AA was surprisingly high (37%) and was not different for individuals with schizophrenic spectrum disorders compared to those with other psychiatric disorders. The majority reported plans to attend AA as part of their outpatient treatment program. The potential benefits of AA for dual diagnosis individuals deserve further attention.

Project MATCH Group. (1997a). Matching Alcoholism Treatments to Client Heterogeneity: Project MATCH Post-treatment Drinking Outcomes. *Journal of Studies on Alcohol, 58*, 7-29.

This study assessed the benefits of matching alcohol-dependent clients to three different treatments with reference to a variety of client attributes. Two parallel but independent randomized clinical trials were conducted, one with alcohol dependent clients receiving outpatient therapy (n=952; 72% male) and one with clients receiving aftercare therapy following inpatient or day hospital treatment (n=774; 80% male). Clients were randomly assigned to one of three 12-week, manual-guided, individually delivered treatments: Cognitive Behavioral Coping Skills Therapy, Motivational Enhancement Therapy, or Twelve-Step Facilitation Therapy. Clients were then monitored over a one-year posttreatment period. Individual differences in response to treatment were modeled as a latent growth process and evaluated for 10 primary matching variables and 16 contrasts specified *a priori*. The primary outcome measures were percent days abstinent and

drinks per drinking day during the one-year post-treatment period. Clients attended on average two-thirds of treatment sessions offered, indicating that substantial amounts of treatment were delivered, and research follow-up rates exceeded 90 percent of living

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subjects interviewed at the one-year post-treatment assessment. Significant and sustained improvements in drinking outcomes were achieved from baseline to one-year post treatment by the clients assigned to each of these well defined and individually delivered psychosocial treatments. There was little difference in outcomes by type of treatment. Only one attribute, psychiatric severity, demonstrated a significant attribute-by-treatment interaction: in the outpatient study, clients low in psychiatric severity had more abstinent days after 12-step facilitation treatment than after cognitive behavioral therapy. Neither treatment was clearly superior for clients with higher levels of psychiatric severity. Two other attributes showed time-dependent matching effects: motivation in outpatient and meaning seeking in aftercare clients. Client attributes of motivational readiness, network support for drinking, alcohol involvement, gender, psychiatric severity, and sociopathy were prognostic of drinking outcomes over time. The findings suggest that psychiatric severity should be considered when assigning clients to outpatient therapies. The lack of other robust matching effects suggests that, aside from psychiatric severity, providers need not take these client characteristics into account when triaging clients to one or the other of these three individually delivered treatment approaches, despite their different treatment philosophies.

Project MATCH Group. (1997b). Project MATCH secondary a priori hypotheses.

***Addiction*, 92(12), 1671-1698.**

The aims of this study were (1) to assess the benefits of matching alcohol-dependent clients to three treatments on the basis of a priori hypotheses involving 11 client attributes and (2) to discuss the implications of these findings and of matching hypotheses previously reported from Project MATCH. The participants were (1) clients receiving outpatient therapy (n=952; 72% male) and (2) clients receiving aftercare therapy following inpatient or day hospital treatment (n=774; 80% male). Clients were randomly assigned to one of three 12-week, manual-guided, individual treatments: Cognitive Behavioral Coping Skills Therapy (CBT), Motivational Enhancement Therapy (MET), or Twelve-Step Facilitation Therapy (TSF). Two parallel but independent randomized clinical trials were conducted, one with outpatients and one with aftercare clients. Participants were monitored over 15 months, including a one-year post-treatment period. Individual differences in response to treatment were modeled as a latent growth process and evaluated for 17 contrasts specified a priori. Outcome measures were percentage of days abstinent and drinks per drinking day. Two a priori contrasts demonstrated significant post-treatment attribute-by-treatment interactions as follows: (1) outpatients high in anger and treated in MET had better post-treatment drinking than in CBT and (2) aftercare clients high in alcohol dependence had better post-treatment outcomes in TSF, whereas low dependence clients did better in CBT. Other matching effects varied over time, while still other interactions were opposite than predicted. The authors concluded that (1) anger and dependence should be considered when assigning clients to these three treatments and (2) considered together with the results of the primary hypotheses, matching effects contrasting these psychotherapies are not robust. Possible explanations

include: (a) among the client variables and treatments tested, matching may not be an important factor in determining client outcomes; (b) design issues limited the robustness

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of effects; and (c) a more fully specified theory of matching is necessary to account for the complexity of the results.

RachBeisel, J., Dixon, L., & Gearon, J. (1999). Awareness of substance abuse problems among dually diagnosed psychiatric inpatients. *Journal of Psychoactive Drugs*, 31(1), 53-57.

This study examined the ability to acknowledge the need for treatment of mental illness and substance abuse problems among 264 dually diagnosed inpatients (mean age 37.7 years) before and after an inpatient substance abuse treatment program. Perceptions of patients diagnosed with a substance-induced mental disorder were compared to those of patients with a primary mental illness regarding their problems and need for treatment before and after the dual diagnosis program. Most patients acknowledged a substance abuse or mental illness problem and need for treatment. Patients with substance-induced mental disorders were more likely to acknowledge a substance use problem and need for treatment. After treatment, changes in perception of mental illness were greater for substance-induced mental disorder patients compared to patients with a primary mental illness. Persons with more severe substance abuse were more likely to acknowledge a problem and need for treatment. The majority of dually diagnosed patients admitted with a substance use disorder agreed that substance use was a problem, suggesting that inpatient hospitalization presents a prime opportunity to address addiction in dually diagnosed patients.

RachBeisel, J., Scott, J., & Dixon, L. (1999). Co-occurring severe mental illness and substance use disorders: A review of recent research. *Psychiatric Services*, 50(11), 1427-1434.

The authors reviewed research studies from the period 1992 through 1997 that have contributed to knowledge about effective assessment, diagnosis, course of illness, and treatment approaches for patients with comorbid severe mental illness and substance use disorders. Research on special populations, including women, persons infected with HIV, and violent patients, is highlighted. PsycINFO, Silver Platter, and MEDLINE databases were used to search for English-language studies published in the United States and other countries. Information was sought on epidemiology, screening and assessment strategies, illness course, models of treatment delivery, and cost of care. Results show that estimates of the prevalence of substance use disorders vary by population, and a higher prevalence among persons with severe mental illness has been confirmed. Routine screening for substance use disorders among this population has become accepted standard of care. The course of severe mental illness is negatively influenced by a substance use disorder, and an integrated approach to the treatment of both disorders is accepted to be the most promising treatment strategy. Components of this strategy include harm reduction, treatment in stages, motivational interviewing, cognitivebehavioral interventions, and modified 12-step self-help groups.

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Rahav, M., Nuttbrock, L., Rivera, J. J., & Link, B. G. (1998). HIV infection risks among

homeless, mentally ill, chemical misusing men. *Substance Use & Misuse*, 33(6), 1407-1426.

This study attempted to identify the specific role that each of three conditions afflicting homeless, mentally ill, chemically misusing (HMICM) men plays in exposing these men to the risk of HIV infection. A total of 315 HMICM men (33 of whom were HIV+) were interviewed on intravenous drug use (IVDU) and sex practices. Two scales of risky IVDU practices and sex conducts were constructed and analyzed in relation to HIV status. The severity of homelessness, mental illness, and chemical misuse then were analyzed as possible predictors of risky IVDU and sex practices. Strong correlations were found between IVDU practices and HIV seropositivity, and between risky sex conduct and HIV seropositivity. Serious depression was the strongest predictor of risky IVDU practices. Prolonged homelessness was the condition most associated with risky sexual conduct. This study concludes that HMICM men are at high risk for HIV infection, stemming predominately from two conditions: depression, leading to risky IVDU practices, and homelessness, leading to risky sex conduct with two separate types of risky behavior.

Raimo, E. B., Smith, T. L., Danko, G. P., Bucholz, K. K., & Schuckit, M. A. (2000). Clinical characteristics and family histories of alcoholics with stimulant dependence. *Journal of Studies on Alcohol*, 61(5), 728-735.

As part of the Collaborative Study on the Genetics of Alcoholism, structured interviews were administered to 3,882 (2,432 male) subjects who were alcohol- and/or stimulant-dependent, as defined by Mental Disorders-III-Revised (DSM-III-R). The characteristics and family histories of four groups were compared: Group 1 (26%), with the onset of alcohol before stimulant dependence; Group 2 (10%), with alcohol dependence simultaneously with or after stimulant dependence; Group 3 (58%), with alcohol dependence only; Group 4 (6%), with stimulant dependence only. Individuals with concomitant alcohol and stimulant dependence (Groups 1 and 2) reported more general life problems (e.g., marital instability), a higher rate of antisocial personality disorder (ASPD) and more substance-induced mood disorders, additional drug dependencies and substance-related difficulties than those with dependence on one substance only. People with alcohol dependence before stimulant dependence had the most severe clinical patterns. In addition, alcohol dependence and stimulant dependence were found to breed true in families of subjects with these concomitant disorders. The major findings were confirmed with logistic regression analyses and were independent of ASPD and gender.

Randall, C. L., Johnson, M. R., Thevos, A. K., Sonne, S. C., Thomas, S. E., Willard, S. L., Brady, K. T., & Davidson, J. R. (2001). Paroxetine for social anxiety and alcohol use in dual-diagnosed patients. *Depression & Anxiety*, 14(4), 255-262.

The authors compared the efficacy and tolerability of paroxetine to matched placebo in adults with co-occurring social anxiety disorder and alcohol use disorder. Outcome measures included standardized indices of social anxiety and alcohol use. Fifteen

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individuals (aged 22 through 48 years) meeting DSM-IV criteria for both social anxiety disorder and alcohol use disorder were randomized to treatment. Paroxetine (n=6; 5 males and 1 female) or placebo (n=9; 8 males and 1 female) was given in a double-blind format for eight weeks using a flexible dosing schedule. Dosing began at 20 mg/d and

increased to a target dose of 60 mg/d. There was a significant effect of treatment group on social anxiety symptoms: patients treated with paroxetine improved more than those treated with placebo on both the Clinical Global Index (CGI) and the Liebowitz Social Anxiety Scale. On alcohol use, there was not a significant effect of treatment on quantity/frequency measures of drinking, but there was for the CGI ratings (50% paroxetine patients versus 11 % placebo patients were improvers on drinking). This pilot study suggests that paroxetine is an effective treatment for social anxiety disorder in individuals with comorbid alcohol problems and that positive treatment effects can be seen in as little as eight weeks.

Randall, C. L., Thomas, S., & Thevos, A. K. (2001). Concurrent alcoholism and social anxiety disorder: A first step toward developing effective treatments. *Alcoholism: Clinical & Experimental Research*, 25(2), 210-220.

This study investigated whether simultaneous treatment of social anxiety disorder (SAD) and alcohol dependence (ALD), compared with treatment of ALD alone, improves alcohol use and social anxiety for clients with dual diagnoses of SAD and ALD. Subjects were 93 individuals (mean age 38 years) who met Mental Disorders-III-Revised (DSM-III-R) diagnostic criteria for both ALD and SAD. The methodology involved a two-group experimental design that used 12 weeks of individual cognitive-behavioral therapy for ALD only (44 subjects) or concurrent treatment for both ALD and SAD (49 subjects). Baseline measures of alcohol usage and social anxiety were completed before treatment start. Outcome data were collected at the end of the 12 weeks of treatment and at 3-month follow-up. Although both groups improved significantly from baseline on all drinking outcome measures, the group receiving concurrent alcohol and social anxiety treatment actually fared worse than the group receiving only alcohol treatment. Specifically, alcohol-dependent subjects in the dual treatment group drank more frequently, drank more total drinks, and experienced more frequent heavy drinking days than alcohol-dependent subjects with alcohol-only treatment.

Ries, R. K., Demirsoy, A., Russo, J. E., Barrett, J., & Roy-Byrne, P. P. (2001). Reliability and clinical utility of DSM-IV substance-induced psychiatric disorders in acute psychiatric inpatients. *American Journal on Addictions*, 10(4), 308-318.

The goal of this study was to evaluate in 1,951 acute psychiatric inpatients the reliability, construct, convergent, and predictive validity of substance-induced psychiatric syndrome ratings made by clinical attending psychiatrists. The primary admitting condition for each subject was categorically rated by clinical attendings as not, mildly, moderately, or mostly substance-induced at both admission and discharge. Individual substance categories were associated with characteristic demographic, clinical treatment response, and length of stay, findings that indicate good construct, predictive validity, and clinical utility. A linear dimensional approach to rating substance-induced syndromes in acute

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clinical populations may be preferable to the simple dichotomous approach used in DSM-IV.

Ries, R. K., Dyck, D. G., Short, R., Srebnik, D., Snowden, M., & Comtois, K. A. (2002). Use of case manager ratings and weekly urine toxicology tests among outpatients with dual diagnoses. *Psychiatric Services*, 53(6), 764-766.

Use of drugs and alcohol by 43 predominantly male outpatients who had severe mental illness and a comorbid substance use disorder was assessed weekly through the ratings of

experienced dual disorder case managers and through blinded research urine toxicology tests. The percentage of weeks in which drugs or alcohol were used was calculated on the basis of one or both assessments. The case managers often missed weekend drug use, which was detected by the urine toxicology tests. Agreement between the two methods varied widely, even when highly experienced case managers made the ratings. These findings have implications for monitoring patients with dual diagnoses, and they provide insight into the accuracy of case manager ratings.

Ries, R. K., Jaffe, C., Comtois, K. A., & Kitchell, M. (1999). Treatment satisfaction compared with outcome in severe dual disorders. *Community Mental Health Journal, 35*(3), 213-21.

This paper examines patient (n=75) ratings of treatment satisfaction and outcome for severely mentally ill dually diagnosed outpatients participating in long-term integrated dual focus treatment. In addition, it compares these ratings with case manager ratings of patient outcome over a one-year period. Satisfaction ratings ranged from very good to excellent. Combined means of several outcomes ratings indicated that most patients rated themselves as improved. Satisfaction with overall care and with case management was significantly, though weakly ($r=.3$ and $.31$, respectively, $p < .05$), related to patient ratings of overall outcome. Although most patients rated that they had improved, satisfaction with treatment was only weakly related to either patient or case manager rated clinical outcomes. These findings indicate the relatively independent relationship of satisfaction with treatment outcome, and they caution against over-generalizing the meaning of treatment-satisfaction measures.

Ries, R. K., Russo, J., Wingerson, D., Snowden, M., Comtois, K. A., Srebnik, D., & Roy-Byrne, P. (2000). Shorter hospital stays and more rapid improvement among patients with schizophrenia and substance disorders. *Psychiatric Services, 51*(2), 210-215.

This study examined length of stay and treatment response of inpatients with acute schizophrenia to determine whether differences existed between those with and without comorbid substance-related problems. The sample comprised 608 patients with a diagnosis of schizophrenia or schizoaffective disorder treated on hospital units with integrated dual diagnosis treatment. They were rated on admission and discharge by a psychiatrist using a structured clinical instrument. Patients with no substance-related problems were compared with those with moderate to severe problems using t tests, chi

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square tests, and analysis of variance. When analyses controlled for age, gender, and other clinical variables, dually diagnosed patients were found to have improved markedly faster compared with patients without a dual diagnosis. Their hospital stays were 30 percent shorter on both voluntary and involuntary units. They also showed somewhat greater symptomatic improvement and no increase in 18-month readmission rates. On admission, the dual diagnosis group was more likely to be younger, male, and homeless and more likely to be a danger to self and others. Severity of psychosis was the same at admission for the two groups, but the dually diagnosed patients were rated as less psychotic at discharge. Dually diagnosed patients with schizophrenia appear to stabilize faster during acute hospitalization than those without a dual diagnosis. The authors hypothesized that substance abuse may temporarily amplify symptoms or that these

patients may have a higher prevalence of better-prognosis schizophrenia. The availability of integrated dual-focus inpatient treatment and a well-developed outpatient system may also have helped these patients recover more rapidly.

Roberts, A. (2000). Psychiatric comorbidity in white and African-American illicit substance abusers: Evidence for differential etiology. *Clinical Psychology Review, 20*(5), 667-677.

Research on psychiatric comorbidity among opiate and cocaine addicts has consistently found African-Americans to report fewer symptoms of anxiety and affective disorders than whites. This article reviews the research on these racial differences, evaluates various interpretations of these differences, and discusses the limitations of past research. It is concluded that white and African-American addicts differ in their underlying reasons for abusing drugs. Drug addiction among whites appears to be related largely to psychopathology, whereas African-American drug abuse is best understood in terms of social and environmental factors. Treatment implications are also discussed.

Rosenberg, S. D., Trumbetta, S. L., Mueser, K. T., Goodman, L. A., Osher, F. C., Vidaver, R. M., & Metzger, D. S. (2001). Determinants of risk behavior for human immunodeficiency virus/acquired immunodeficiency syndrome in people with severe mental illness. *Comprehensive Psychiatry, 42*(4), 263-271.

This study examined the prevalence and correlates of human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) risk behaviors in a large sample of severely mentally ill (SMI) patients. Risk levels were correlated with demographic factors, diagnosis, symptom severity, trauma history, post-traumatic stress disorder (PTSD), substance use disorder (SUD), and sexual orientation. A total of 275 SMI clients (aged 18 through 60 years) from urban and rural settings were assessed regarding HIV/ AIDS risk behaviors, and hypothesized risk factors. Patients exhibited substantial levels of risky behavior, particularly sexual risk. Correlates of increased risk included SUD, trauma, male homosexual orientation, younger age, and symptom severity. Structural equation modeling identified SUD and sexual orientation as the primary determinants of both drug and sexual risk behavior. The authors concluded that specific illness-related variables appear to have less impact on risk behavior among people with

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SMI than previously hypothesized. Substance abuse prevention and treatment may be the most effective means of reducing HIV risk in this population.

Rounsaville, B. J., Kranzler, H. R., Ball, S., Tennen, H., Poling, J., & Triffleman, E. (1998). Personality disorders in substance abusers: Relation to substance use. *Journal of Nervous & Mental Disease, 186*(2), 87-95.

Distinguishing between personality disorder symptoms that are independent versus substance-related (SR) is a particular challenge for diagnosing comorbid Axis II disorders in substance abusers. DSM-IV guidelines currently recommend excluding Axis II symptoms that are accounted for by an Axis I disorder, including a substance use disorder (SUD). In this study, Axis II diagnoses were made on a heterogeneous clinical sample of 370 subjects entering treatment for SUDs. Axis II diagnoses were made using the Structured Clinical Interview for Mental Disorders-III-Revised (DSM-III-R), which was modified to determine, on an item-by-item basis, whether symptoms were attributed to subjects' SUDs or independent of these disorders. The majority (57.0%) of SUD patients

met criteria for at least one comorbid Axis II disorder, with cluster B (46.7%) being particularly prominent, especially antisocial personality disorder (ASP) and borderline personality disorder (BPD). Notably, inclusion of SR symptoms led to a substantial number of newly diagnosed cases, especially for ASP and BPD. Including SR symptoms improved the reliability of ASP and did not change the reliability of BPD diagnoses. Generally, subjects with SR and independent personality disorders had a similar clinical profile.

Roy-Byrne, P. P., Pages, K. P., Russo, J. E., Jaffe, C., Blume, A. W., Kingsley, E., Cowley, D. S., & Ries, R. K. (2000). Nefazodone treatment of major depression in alcohol-dependent patients: A double-blind, placebo-controlled trial. *Journal of Clinical Psychopharmacology*, 20(2), 129-136.

This study tested the efficacy of nefazodone (NFZ) versus placebo for the treatment of depression in actively drinking, alcohol-dependent patients who were also participating in weekly group treatment for alcoholism. A total of 64 subjects (aged 18 through 55 years) with major depression disorder and alcohol dependence and with a history of at least one prior episode of depression when not drinking were randomly assigned to receive 12 weeks of either NFZ or placebo and participated in a weekly psychoeducational group on alcoholism. Subjects were assessed every two weeks for depression, anxiety, side effects, and drinking frequency. Subjects taking NFZ were significantly more likely to complete the study than those taking placebo. Analyses of covariance (ANCOVAs) using drinks per week as a time-dependent covariate showed lower Hamilton Rating Scale for Depression scores at week 8 for endpoint analysis and at weeks 8 and 12 for completers. The endpoint analysis demonstrated a significantly greater response in the NFZ group (48%) than in the placebo group (16%). Both groups showed a similarly significant decrease in the average number of alcoholic drinks consumed per day over the course of the study. Although the number of adverse effects was significantly greater for the NFZ group, there were no severe adverse events, and NFZ was well tolerated.

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Rutherford, M. J., Cacciola, J. S., & Alterman, A. I. (1999). Antisocial personality disorder and psychopathy in cocaine-dependent women. *American Journal of Psychiatry*, 156(6), 849-856.

The goal of this study was to examine the lifetime prevalence of antisocial personality disorder according to five diagnostic systems and the prevalence of psychopathy in a study group of women. Differences in treatment admission variables based on the presence or absence of antisocial personality disorder and/or psychopathy were evaluated. Antisocial personality disorder was diagnosed in 137 treatment-seeking, cocaine-dependent women according to the Feighner criteria, Research Diagnostic Criteria (RDC), and Mental Disorders-III (DSM-III), Mental Disorders-III-Revised (DSM-III-R), and Mental Disorders-IV (DSM-IV) criteria. The Revised Psychopathy Checklist was used to assess psychopathy. Results indicate that rates of antisocial personality disorder varied from 76 percent according to the Feighner criteria to 11 percent for the RDC. Nineteen percent (n=26) of the women scored in the moderate to high range on the Revised Psychopathy Checklist. All of these women were diagnosed with antisocial personality disorder according to DSM-III and Feighner criteria, but only 15 of the 26 were diagnosed according to DSM-III-R, 12 according to DSM-IV, and 6

with the RDC. Moderate levels of psychopathy were associated with a history of illegal activity at treatment admission, whereas antisocial personality disorder was not.

Sacks, S., Sacks, J. Y., & De Leon, G. (1999). Treatment for MICAs: Design and implementation of the modified TC. *Journal of Psychoactive Drugs*, 31(1), 19-30.

This article describes the main features of an innovative therapeutic community (TC) model adapted for use with mentally ill chemical abusers (MICAs). It describes the rationale for use of the modified TC with MICAs, the treatment structure and environment created, the essential components of the modified TC program, staffing, and the process and goals of client change. Details are given regarding issues and strategies for the implementation of the new program in terms of program planning, staff training, and system initiation. Evaluation data are summarized to support the adoption of the modified TC model. The article makes clear the feasibility of a modified TC model of established effectiveness with a mentally ill chemical abuser population. This model has now been successfully introduced into mental health, drug treatment, shelter, and correctional settings.

Salloum, I. M., Cornelius, J. R., Thase, M. E., Daley, D. C., Kirisci, L., & Spotts, C. (1998). Naltrexone utility in depressed alcoholics. *Psychopharmacology Bulletin*, 34(1), 111-115.

This study examined the utility of naltrexone in decreasing alcohol use and assessed its impact on depressive symptoms among depressed alcoholics who have failed to abstain from alcohol use despite treatment with a selective serotonin reuptake inhibitor (SSRI). Fourteen ambulatory care patients (aged 18 through 65 years) with Mental Disorders-III Revised (DSM-III-R) comorbid diagnoses of alcohol dependence and major depressive disorder and who failed to abstain despite treatment with an antidepressant medication

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were enrolled in the study. Patients were followed for 12 weeks with weekly assessment of drinking behavior, depressive symptoms, functioning, alcohol craving, and side effects. The results show a significant decrease in alcohol use and in urges to drink alcohol in the presence of the usual triggers. There was also a trend suggesting improvement in depressive symptoms and overall functioning. Naltrexone was well tolerated, with mild side effects reported at the onset of treatment.

Salloum, I. M., Moss, H. B., Daley, D. C., Cornelius, J. R., Kirisci, L., & Al-Maalouf, M. (1998). Drug use problem awareness and treatment readiness in dual-diagnosis patients. *American Journal on Addictions* 7(1), 35-42.

Problem awareness and treatment readiness are factors that influence treatment-seeking behavior and, thus, morbidity and outcome. This study elucidated patterns of problem awareness and treatment readiness among hospitalized dually diagnosed patients by administering the Problem Awareness and Readiness for Treatment subscales of the Alcohol Use Inventory to 67 psychiatric inpatients with comorbid substance-related disorders and using a multivariate model approach to data analysis. The results suggest differential and interactive effects of gender, ethnicity, voluntary admission status, and a diagnosis of major depression (MDD) on drug abuse problem awareness and treatment readiness. Female gender, voluntary admission status, and a comorbid diagnosis of MDD were associated with increased awareness and readiness for treatment.

Saxon, A. J., Davis, T. M., Sloan, K. L., McKnight, K. M., McFall, M. E., & Kivlahan, D. R.

Trauma, symptoms of posttraumatic stress disorder, and associated problems among incarcerated veterans. *Psychiatric Services*, 52(7), 959-964.

To help improve treatment for incarcerated veterans, this study examined exposure to trauma, symptoms of posttraumatic stress disorder (PTSD), functional status, and treatment history in a group of incarcerated veterans. The methods utilized were a convenience sample of 129 jailed veterans who agreed to receive outreach contact and completed the Life Event History Questionnaire, the PTSD Checklist-Civilian Version (PCL-C), and the Addiction Severity Index. Participants who had scores of 50 or above on the PCL-C, designated as screening positive for PTSD, were compared with those whose scores were below 50, designated as screening negative for PTSD. Some 112 veterans (87%) reported traumatic experiences. A total of 51 veterans (39%) screened positive for PTSD, and 78 (60%) screened negative. Compared with veterans who screened negative for PTSD, those who screened positive reported a greater variety of traumas; more serious current legal problems; a higher lifetime use of alcohol, cocaine, and heroin; higher recent expenditures on drugs; more psychiatric symptoms; and worse general health despite more previous psychiatric and medical treatment as well as treatment for substance abuse. The findings encourage the development of an improved treatment model to keep jailed veterans with PTSD from repeated incarceration.

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Scheidt, D. M., & Windle, M. (1997). A comparison of alcohol typologies using HIV risk behaviors among alcoholic inpatients. *Psychology of Addictive Behaviors*, 11(1), 3-17.

This study evaluated the strength of associations for HIV risk behavior and 5 typologies of alcoholism (gender, comorbid psychopathology, gamma-delta, family history, and drug abuse) among 802 inpatients (481 men and 321 women; mean age 34.4 years) at alcohol treatment centers. Findings suggest that some of the alcohol typologies describe subtypes with significant differences on rates and levels of HIV risk behaviors.

Specifically, gender, depression, and anxiety subtypes were not consistently associated with HIV risk; however, the antisocial personality disorder and drug abuse subtypes had the strongest average effect size across a number of indicators of HIV risk behaviors (e.g., condom nonuse, multiple sex partners, and injection drug use). The gamma-delta and family history subtypes also resulted in elevated HIV risk behaviors, although with smaller effect sizes.

Schmitz, J. M., Averill, P., Stotts, A. L., Moeller, F. G., Rhoades, H. M., & Grabowski, J. (2001). Fluoxetine treatment of cocaine-dependent patients with major depressive disorder. *Drug & Alcohol Dependence*, 63(3), 207-214.

Sixty-eight male and female individuals with both DSM-IV diagnoses of cocaine dependence and major depressive disorder were randomly assigned to one of two medication conditions (placebo versus 40 mg per day) as part of a double-blind, placebocontrolled

clinical efficacy trial of fluoxetine for the treatment of this dual diagnosis.

During the 12-week outpatient treatment phase, all participants also received individual cognitive-behavioral psychotherapy targeting both cocaine use and depression.

Depressive symptoms remitted as a function of time in treatment, with no significant medication effects found. Fewer cocaine-positive urines were found during the first 6

weeks of treatment in the placebo group, compared with the 40-mg group. Cocaine use and depressive symptoms during treatment were significantly correlated. The findings fail to support the role of fluoxetine for treatment of cocaine use and depression in dually diagnosed patients.

Schmitz, J. M., Stotts, A. L., Averill, P. M., Rothfleisch, J. M., Bailey, S. E., Sayre, S. L., & Grabowski, J. Cocaine dependence with and without comorbid depression: A comparison of patient characteristics. *Drug and Alcohol Dependence*, 60(2), 189-198.

This study compared depressed cocaine dependent patients (CD, n=50) with patients who were cocaine dependent only (CO, n=101) on pre-treatment psychiatric symptomatology, substance use, and psychosocial functioning. Results indicate that the CD group had more overall distress and poorer psychiatric functioning than the CO group. CD individuals scored higher on all subscales of the SCL-90-R, had a higher prevalence of antisocial personality disorder, and reported higher craving for cocaine, lower self-efficacy to refrain from drug use, and lower perceived social support. These findings support the need for more intensive treatment approaches for dually diagnosed patients.

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Schubiner, H., Tzelepis, A., Milberger, S., Lockhart, N., Kruger, M., Kelley, B. J., & Schoener, E. P. (2000). Prevalence of attention-deficit/hyperactivity disorder and conduct disorder among substance abusers. *Journal of Clinical Psychiatry*, 61(4), 244-251.

This study examined the prevalence of attention-deficit/hyperactivity disorder (ADHD) and conduct disorder among adults admitted to two chemical dependency treatment centers. It was hypothesized that ADHD alone or in combination with conduct disorder would be over-represented in a population of patients with psychoactive substance use disorders. A total of 201 subjects were selected randomly from two chemical dependency treatment centers. Forty-eight (24%) of the subjects were found to meet DSM-IV criteria for ADHD. The prevalence of ADHD was 28 percent in men (30/106) and 19 percent in women (18/95). Seventy-nine participants (39%) met criteria for conduct disorder, and 34 of these individuals also had ADHD. Overall, individuals with ADHD (compared with those without ADHD) were more likely to have had more motor vehicle accidents. Women with ADHD (in comparison with women without ADHD) had a higher number of treatments for alcohol abuse. Subjects with conduct disorder were younger, had had a greater number of jobs as adults, and were more likely to have repeated a grade in school, to have a learning disability, to have been suspended or expelled from school, to have had an earlier age at onset of alcohol dependence, and to have had a greater number of treatments for drug abuse.

Schuckit, M. A., Tipp, J. E., Bergman, M., & Reich, W. (1997). Comparison of induced and independent major depressive disorders in 2,945 alcoholics. *American Journal of Psychiatry*, 154(7), 948-957.

Semi-structured, detailed interviews were administered to 2,945 alcohol-dependent subjects. Using a timeline method for determining the type of mood disorder among probands, relatives, and comparison subjects, the authors compared individuals with histories of the two types of mood disorders. Major depressive episodes with an onset before the development of alcohol dependence or during a subsequent long abstinence

period (i.e., independent depressions) were observed in 15.2 percent of the alcoholics, while 26.4 percent reported at least one substance-induced depressive episode. Subjects with independent major depressive episodes were more likely to be married, Caucasian, and female, to have had experience with fewer drugs and less treatment for alcoholism, to have attempted suicide, and, on the basis of personal interviews with family members, to have a close relative with a major mood disorder. Results support the contention that it is possible to differentiate between what appear to be substance-induced and independent depressive episodes in alcoholics.

Sekerka, R., Goldsmith, R. J., Brandewie, L., & Somoza, E. (1999). Treatment outcome of an outpatient treatment program for dually diagnosed veterans: The Cincinnati Veterans Affairs Medical Center. *Journal of Psychoactive Drugs*, 31(1), 85-94.

This study evaluated the effectiveness of a multidisciplinary outpatient treatment program with a high staff-to-patient ratio and an individualized approach for veterans who have a
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psychiatric illness in addition to a substance dependence problem. An outcome study was conducted looking at the psychiatric emergency room visits, hospitalization rates, and average length of stay for 557 patients. Patients were divided into two groups: those who completed the assessment period and those who did not. Equal periods of time before and after this assessment period were studied. Data indicate that patients who completed the program were more likely to have had fewer psychiatric emergency room visits after the assessment period than before, when compared to dropouts. The engaged group had the same number of or more hospital admissions after the assessment period than before, while the dropout group had fewer. This finding suggests that there is a significant disorder of engagement for the dual diagnosis populations and that the first impact of successful treatment is engagement.

Sengupta, A., Drake, R. E., & McHugo, G. J. (1998). The relationship between substance use disorder and vocational functioning among people with severe mental illness. *Psychiatric Rehabilitation Journal*, 22(1), 41-45.

This study examined the relationship between substance use disorder and vocational functioning in people with severe mental illness, using data from five studies that had a total of 2,541 subjects (aged 25.5 through 57.9 years). Two studies of supported employment, one study of assertive community treatment, and two studies of community support programs were included. Cross-sectional and longitudinal analyses showed few significant associations between substance use disorder and competitive employment in the five studies. The authors conclude that the presence of substance use disorder should not be used to exclude clients from vocational rehabilitation or supported employment programs.

Sherbourne, C. D., Hays, R. D., Fleishman, J. A., Vitiello, B., Magruder, K. M., Bing, E. G., McCaffrey, D., Burnam, A., Longshore, D., Eggen, F., Bozzette, S. A., & Shapiro, M. F. (2000). Impact of psychiatric conditions on health-related quality of life in persons with HIV infection. *American Journal of Psychiatry* 157(2), 248-254.

Little is known about the impact of comorbid psychiatric symptoms in persons with HIV. This study estimates the burden on health-related quality of life associated with comorbid psychiatric conditions in a nationally representative sample of persons with HIV. The authors conducted a multistage sampling of urban and rural areas to produce a national

probability sample of persons with HIV receiving medical care in the United States (n=2,864). Subjects were screened for psychiatric conditions with the short form of the Composite International Diagnostic Interview. Health-related quality of life was rated with a 28-item instrument adapted from similar measures used in the Medical Outcomes Study. HIV subjects with a probable mood disorder diagnosis had significantly lower scores on health-related quality of life measures than did those who did not have such symptoms. Diminished health-related quality of life was not associated with heavy drinking, and in drug users it was accounted for by presence of a comorbid mood disorder. The authors conclude that optimization of health-related quality of life is particularly important now that HIV is a chronic disease with the prospect of long-term

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survival. Comorbid psychiatric conditions may serve as markers for impaired functioning and wellbeing in persons with HIV.

Sinha, R., & Rounsaville, B. J. (2002). Sex differences in depressed substance abusers. *Journal of Clinical Psychiatry, 63*(7), 616-627.

The main goal of this article was to highlight gender-specific differences in the epidemiology, clinical nature, and treatment responses of comorbid depression and substance abuse. The second goal was to make recommendations for future research in the area of gender-specific aspects of comorbid depression and substance abuse. A literature review was conducted using the keywords *sex, gender, depression, and substance use disorders* for the time period 1980 to the present. The authors first outline the well-known sex differences in the epidemiology of depressed substance abusers and discuss the clinical significance of substance abuse in depression. Two distinct ways of understanding the role of substance abuse in depression are presented. The first is the role that depression may play in escalation of substance use, and the second is depression as a common sequela of chronic substance abuse. These two manifestations, which are not mutually exclusive and often co-occur in female substance abusers, have important treatment implications. Research on treatment response for the above clinical presentations is discussed, followed by a summary of the association between depression and substance abuse. Recommendations for future research examining sex differences in animal models of depression, substance abuse, and therapeutic response to medications are made. The need for gender-specific clinical research on the association between depression, stress, and substance abuse is also highlighted.

Skinstad, A. H., & Swain, A. (2001). Comorbidity in a clinical sample of substance abusers. *American Journal of Drug & Alcohol Abuse, 27*(1), 45-64.

The authors examined comorbid psychopathology in a population of substance abusers. A total of 125 male inpatients (mean age 29.48 years) admitted to substance abuse treatment centers were diagnosed for psychological disorders according to Mental Disorders-III-Revised (DSM-III-R) criteria. Results show that the most frequently diagnosed comorbid Axis I conditions were anxiety and mood disorders, while the most frequently observed Axis II disorders were in Cluster B, borderline personality disorder (PD) and antisocial PD; followed by Cluster C, avoidant PD, passive-aggressive PD, and obsessive-compulsive PD; followed by Cluster A, schizoid PD. Subjects who were diagnosed with borderline PD showed the highest rate of comorbid psychopathology, including Axis I disorders of generalized anxiety disorder, major depression, cocaine

dependence, and inhalant dependence. The most likely comorbid diagnosis for antisocial PD was bipolar disorder.

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Skodol, A. E., Oldham, J. M., & Gallaher, P. E. (1999). Axis II comorbidity of substance use disorders among patients referred for treatment of personality disorders.

American Journal of Psychiatry, 156(5), 733-738.

Two hundred inpatients and outpatients referred for treatment of personality disorders were assessed by semi-structured interviews for substance use and personality disorders. Univariate odds ratios were calculated for groups of substance use disorders and each Mental Disorders-III-Revised (DSM-III-R) Axis II disorder. Comorbidity among Axis II disorders was controlled in multivariate models predicting current or lifetime substance use disorder groups. The impact of personality disorder on chronicity and overall impairment associated with substance use disorders was evaluated. Close to 60 percent of subjects with substance use disorders had personality disorders. Borderline personality disorder was significantly associated with current substance use disorders, excluding alcohol and cannabis, and with lifetime alcohol, stimulant, and other substance use disorders, excluding cannabis. Antisocial personality disorder was associated with lifetime substance use disorders other than alcohol, cannabis, and stimulants. There was no evidence that personality disorders increased the chronicity of substance use disorders, but comorbid personality disorders were associated with greater global impairment. .

Sloan, K. L., Kivlahan, D., & Saxon, A. J. (2000). Detecting bipolar disorder among treatment-seeking substance abusers. *American Journal of Drug & Alcohol Abuse, 26(1), 13-23.*

This article describes a brief self-report form for the efficient detection of bipolar disorder. The 19-item form was piloted in 373 consecutive applicants (mean age 45 years) for substance abuse treatment at an urban Veterans Affairs medical center. Results show reasonable internal consistency and high rates of manic symptomatology (36%), previous bipolar diagnosis (30%, 51% of whom reported prior psychiatric hospitalization), and exposure to mood stabilizers (20%, 66% of whom reported therapeutic benefit). Comparison of nine different scoring algorithms with chart diagnosis as the validating criterion found that self-report of bipolar diagnosis was optimally sensitive. Either self-report of bipolar diagnosis with hospitalization or self-report of exposure to mood stabilizers with therapeutic response was optimally specific. Symptom self-report items had significantly poorer sensitivity and specificity. The authors conclude that questions pertaining to diagnostic and treatment history (especially hospitalization or therapeutic medication response) are considerably superior to symptom-based screening for clinically diagnosed bipolar disorder.

Sloan, K. L., & Rowe, G. (1998). Substance abuse and psychiatric illness: Treatment experience. *American Journal of Drug & Alcohol Abuse, 24(4), 589-601.*

The purpose of this paper was to describe an outpatient dual-diagnosis treatment program and one-year clinical outcome and hospital utilization data. Subjects were 118 consecutive admissions to the Seattle Veterans Affairs (VA) Medical Center's Dual Disorders Program over the period from June 1, 1992, to August 31, 1994. Program eligibility requirements included having a current substance use disorder and an active

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non-substance-related major Axis I disorder typically major depression, post-traumatic stress disorder (PTSD), bipolar disorder, or schizoaffective disorder. The treatment frame involved group-based programming (including support, medications management, and psychoeducation), routine urine drug screening, and crisis interventions. Results showed that subjects averaged 1.5 non-substance-related Axis I psychiatric disorders (54% involving psychotic symptoms) and 1.8 active substance use disorders. Patients stayed engaged in treatment for a median of 217 days, with 60 percent having no positive drug screens, and the overall sample having a 40-percent reduction in the number of inpatient bed days in the year after intake. Conclusions were that, for a number of patients with comorbid disorders, psychiatric stabilization and cessation of substance use could be accomplished within an outpatient treatment frame that averages two completed clinical contacts per week.

Smith, H., Sawyer, D. A., & Way, B. B. (2002). Central New York Psychiatric Center: An approach to the treatment of co-occurring disorders in the New York State correctional mental health system. *Behavioral Sciences & the Law*20(5), 523-534.

Central New York Psychiatric Center operates a maximum-security inpatient treatment hospital and outpatient mental health services for all of the 72 New York State prisons. In this article, prevalence data, patient characteristics, and interventions offered to inmates diagnosed with co-occurring mental illness and substance use disorders in the New York State prison system are reviewed and discussed. Available interventions have resulted from the close collaboration of the State Department of Correctional Services and the State Office of Mental Health. Aspects of current programs and plans for future service developments are discussed, along with implications for the treatment of an offender population diagnosed with a co-occurring disorder.

Solkhah, R., & Wilens, T. E. (1998). Pharmacotherapy of adolescent AOD use disorders. *Alcohol Health & Research World*, 22(2), 122-126.

This article explores strategies for using medications to treat alcohol and other drug (AODs) use disorders in youth, focusing on alcoholism when relevant data are available. Pharmacotherapeutic strategies for treating AOD disorders include craving reduction, substitution therapy, aversive therapy, and treatment of underlying psychiatric conditions.

Strakowski, S. M., Sax, K. W., McElroy, S. L., Keck, P. E., Jr., Hawkins, J. M., & West, S. A. (1998). Course of psychiatric and substance abuse syndromes co-occurring with bipolar disorder after a first psychiatric hospitalization. *Journal of Clinical Psychiatry*, 59(9), 465-471.

Patients with bipolar disorder frequently meet criteria for other psychiatric and substance abuse diagnoses. To clarify relationships among these disorders, the authors examined the course of syndromes co-occurring with bipolar disorder for 12 months after a first hospitalization. Seventy-seven patients were recruited from consecutive inpatient admissions who met DSM-III-R criteria for bipolar disorder, manic or mixed with psychosis. The 12-month syndromal course of co-occurring DSM-III-R alcohol and drug abuse disorders, posttraumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), and other anxiety disorders were longitudinally recorded. The rates of all syndromes, except other anxiety disorders, were elevated. OCD demonstrated an interval

abuse disorders, posttraumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), and other anxiety disorders were longitudinally recorded. The rates of all syndromes, except other anxiety disorders, were elevated. OCD demonstrated an interval

course that frequently mirrored the course of the bipolar disorder. The courses of PTSD and substance abuse syndromes were separate from that of the bipolar disorder in many of those with both syndromes. Alcohol and drug abuse syndromes were strongly correlated. The obsessive-compulsive syndrome may represent an alternative expression of bipolar disorder in some patients. In contrast, PTSD appears to represent a truly separate disorder, which is possibly more prevalent in bipolar patients because of a shared risk factor. Substance abuse does not appear to result simply from attempts at self-medication or from the impulsivity of mania. These results suggest that future studies examining the course of syndromes co-occurring with bipolar disorder are warranted.

Swanson, A. J., Pantalon, M. V., & Cohen, K. R. (1999). Motivational interviewing and treatment adherence among psychiatric and dually diagnosed patients. *Journal of Nervous & Mental Disease, 187*(10), 630-635.

The effect of motivational interviewing on outpatient treatment adherence among psychiatric and dually diagnosed inpatients was investigated. Subjects were 121 psychiatric inpatients, 93 (77%) of whom had concomitant substance abuse/dependence disorders. Patients were randomly assigned to: (1) standard treatment (ST), including pharmacotherapy, individual and group psychotherapy, activities therapy, milieu treatment, and discharge planning, or (2) ST plus motivational interviewing (ST + MI), which involved 15 minutes of feedback on the results of a motivational assessment early in the hospitalization and a one-hour motivational interview just before discharge. Interviewers utilized motivational techniques such as reflective listening, discussion of treatment obstacles, and elicitation of motivational statements. Results indicate that the proportion of patients who attended their first outpatient appointment was significantly higher for the ST + MI group (47%) than for the ST group overall, and for dually diagnosed patients. Brief motivational interventions show promise in improving outpatient treatment adherence among psychiatric and dually diagnosed patients.

Swartz, J. A., & Lurigio, A. J. (1999). Psychiatric illness and comorbidity among adult male jail detainees in drug treatment. *Psychiatric Services, 50*(12), 1628-1630.

The prevalence of psychiatric disorders was examined in a sample of 204 pretrial jail detainees receiving standard drug treatment. More than half of the sample had at least one lifetime Mental Disorders-III-Revised (DSM-III-R) Axis I diagnosis, and the lifetime rates of serious mental illness were higher than reported prevalence rates for arrestees in general jail populations. Detainees with comorbid disorders were more likely than others to have more than one co-occurring psychiatric disorder, to have been arrested for property crimes, and to be dependent on alcohol, marijuana, or PCP. These findings argue for the expansion of integrated treatment services within criminal justice drug treatment settings.

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Swartz, J. A., Lurigio, A. J., & Goldstein, P. (2000). Severe mental illness and substance use disorders among former supplemental security income beneficiaries for drug addiction and alcoholism. *Archives of General Psychiatry, 57*(7), 701-707.

This study had three goals: (1) to determine the rates of past-year and lifetime substance dependence, severe mental illness (SMI), and psychiatric comorbidities among former drug abuse and/or alcoholism (DAA) beneficiaries using a standardized diagnostic

instrument, (2) to assess their degree of drug use using urine tests, a more objective measure than self-reported information, and (3) to examine the rates of drug dependence, drug use, SMI, and psychiatric comorbidities among subjects who were unemployed or underemployed or among subjects who requalified for federal assistance under another impairment category or other source, such as Temporary Assistance to Needy Families, compared with the rates of these same conditions among employed subjects earning enough money to replace their lost cash benefits. A total of 204 subjects (aged 30 through 49 years) participated. The results revealed that as a group, former Supplemental Security Income DAA recipients had elevated rates of SMI and drug dependence. Only a small proportion of the sample, those with the lowest rates of psychiatric impairment, had been able to gain even marginal employment one year following the termination of their disability benefits. These results support the anecdotal assertion by Social Security Administration field officers and client advocates that those most in need of disability benefits are also those least able to complete the reapplication (or initial application) process.

Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, H. R., & Burns, B. J. (1998). Violence and severe mental illness: The effects of substance abuse and nonadherence to medication. *American Journal of Psychiatry, 155*(2), 226-231.

A total of 331 involuntarily admitted inpatients (aged 18+ years) with severe mental illness and awaiting a period of outpatient commitment were interviewed to gather data on sociodemographic characteristics, illness history, clinical status, medication adherence, substance abuse, insight into illness, and violent behavior during the four months prior to hospitalization. Associations between serious violent acts and a range of individual characteristics and problems were analyzed by multivariate logistic regression. The combination of medication noncompliance and alcohol or substance abuse problems was significantly associated with serious violent acts in the community, after sociodemographic and clinical characteristics were controlled.

Swift, R. M. (1999). Drug therapy for alcohol dependence. *New England Journal of Medicine, 340*(19), 1482-1490.

In patients with alcohol dependence, drug therapy can improve the outcomes of other treatments and thereby reduce morbidity and mortality and improve the quality of life. Following a brief discussion of the neurobehavioral aspects of alcohol dependence, this review discusses the putative mechanisms of action of drugs used to treat alcohol dependence and their efficacy. The following drugs discussed in this review have been evaluated in double-blind, placebo-controlled clinical trials: aversive drugs, opioid *Annotated Bibliography*

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antagonists, acamprosate, dopaminergic drugs, and other drugs, including mood stabilizers, sedative drugs, and serotonergic drugs. Drug therapy for patients with alcohol dependence or alcoholism and comorbid major depression or anxiety disorder is also reviewed. Recommendations are outlined, including that drug therapy should be considered for all patients with alcohol dependence who have no medical contraindications to the use of the drugs and who are willing to take them.

Taylor, S. M., Galanter, M., Dermatis, H., Spivack, N., & Egelko, S. (1997). Dual diagnosis patients in the modified therapeutic community: Does a criminal history hinder adjustment to treatment? *Journal of Addictive Diseases, 16*(3), 31-38.

Data from a sample of chemically dependent homeless male patients with severe, persistent mental illness were analyzed to determine if those patients with a history of criminal convictions were as likely as non-criminal patients to adjust effectively to the social milieu of a modified drug-free therapeutic community. Of 183 sequential admissions studied, 76 had never been convicted of a crime, 46 had 1 conviction, and 61 had two or more. No differences were observed between the groups with respect to length of stay, social adjustment on admission, and change in social adjustment during the first two months of treatment. These findings suggest that a history of criminal conduct does not compromise a dually diagnosed patient's likelihood of engaging in the social contract necessary for successful treatment in a TC.

Teitelbaum, L. M., & Carey, K. B. (2000). Temporal stability of alcohol screening measures in a psychiatric setting. *Psychology of Addictive Behaviors, 14*(4), 401-404.

The authors evaluated the test-retest reliability of two common screening instruments administered in a psychiatric setting. The Michigan Alcoholism Screening Test (MAST) and the CAGE questionnaire were administered twice, separated by a one-week interval, to 71 people receiving outpatient psychiatric services and 64 people in the community with no reported history of psychiatric care. The MAST ($r=.95$) and the CAGE ($r=.80$) demonstrated adequate test-retest reliability and showed little evidence of variation with respect to degree or direction when administered in a psychiatric setting. Reliability estimates obtained in a psychiatric setting were only slightly lower and more variable than those obtained in a nonclinical sample. In the psychiatric sample, younger men who had a history of alcohol use disorder were found to be the least reliable. Overall, data suggest that people with severe and persistent mental disorders can offer reliable information about their alcohol-related problems.

Thomas, S. E., Thevos, A. K., & Randall, C. L. (1999). Alcoholics with and without social phobia: A comparison of substance use and psychiatric variables. *Journal of Studies on Alcohol, 60*(4), 472-479.

The authors examined baseline differences between alcoholics with and without social phobia (SCP) on substance use and psychiatric variables. A total of 397 alcoholics without SCP were matched to 397 alcoholics with SCP (all subjects aged 21-69 years) on variables such as age and gender. All subjects were participants in a clinical client-

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treatment matching study. Subjects with SCP had higher scores on an alcohol dependence scale and endorsed more dependence symptoms on a structured clinical interview, but they did not drink greater amounts or more often than did subjects without SCP. Subjects with SCP also reported drinking to improve sociability and to enhance functioning more than did subjects without SCP. Subjects with SCP were more likely to conform to social norms, had more symptoms of depression, and had higher incidence of a major depressive episodes relative to subjects without SCP. Differences were not mediated by gender.

Thomas, V. H., Melchert, T. P., & Banken, J. A. (1999). Substance dependence and personality disorders: Comorbidity and treatment outcome in an inpatient treatment population. *Journal of Studies on Alcohol, 60*(2), 271-277.

This study examined the distribution of personality disorders (PDs) among substance-dependent patients and assessed their role in treatment outcome. PDs and substance use

disorders were diagnosed for 181 male and 71 female substance-dependent inpatients (mean age 35.7 and 38.6 years, respectively) using structured clinical interviews. A subsample of 104 patients was also followed for one year to monitor treatment outcome and relapse. Results show that 50 percent of the patients were diagnosed with one PD or more, but no consistent relationships between drug of choice and PDs were found. The likelihood of relapse increased significantly with the diagnosis of a PD. Only 6 percent of the patients who received more than one PD diagnosis maintained sobriety at the end of one year, versus 44 percent of those with no PD diagnoses. A preference for cocaine was also a significant predictor of relapse. The findings suggest that more attention should be given to Axis II disorders in substance dependence research and treatment.

Tidey, J. W., Mehl-Madrona, L., Higgins, S. T., & Badger, G. J. (1998). Psychiatric symptom severity in cocaine-dependent outpatients: Demographics, drug use characteristics and treatment outcome. *Drug & Alcohol Dependence, 50*(1), 9-17.

This study assessed psychiatric symptom severity (PSS) and associated characteristics and the relationship between these characteristics and treatment outcome in 185 subjects seeking outpatient treatment for cocaine dependence in Vermont. Subjects were assigned to low-, medium-, and high-PSS groups. The relationship between PSS and treatment outcome was assessed among a subsample of 123 patients assigned to one of these 24-week psychosocial treatments: (1) behavioral treatment with a voucher-based incentive program, (2) the same behavioral treatment but without vouchers, or (3) drug abuse counseling. Results showed that patients with high PSS had poorer pretreatment functioning and more adverse consequences of cocaine use than lower PSS groups. Further, PSS failed to influence treatment outcome with any of the treatments. Thus, no evidence was found that high PSS predicts poor response to psychosocial treatment for cocaine abuse.

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Triffleman, E., Carroll, K., & Kellogg, S. (1999). Substance dependence posttraumatic stress disorder therapy. An integrated cognitive-behavioral approach. *Journal of Substance Abuse Treatment, 17*(1-2), 3-14.

Substance abuse and posttraumatic stress disorder (PTSD) are known to frequently cooccur, but there have been few published clinical trials evaluating integrated approaches for this form of dual diagnosis. This article describes Substance Dependence PTSD Therapy (SDPT), the first manualized individual treatment to undergo a controlled clinical trial. SDPT is a five-month, twice-weekly, two-phase individual cognitivebehavioral treatment utilizing (a) relapse prevention and coping skills training for substance abuse and (b) psychoeducation, stress inoculation training, and in vivo exposure for PTSD. SDPT is also unique in having been designed for use in mixedgendered civilians with varied sources of trauma. Design considerations and the format, structure, and content of therapy sessions are discussed. Open trial pilot data indicate efficacy in reducing PTSD severity.

Tsuang, J. W., Ho, A. P., Eckman, T. A., & Shaner, A. (1997). Dual diagnosis treatment for patients with schizophrenia who are substance dependent. *Psychiatric Services, 48*(7), 887-889.

This article describes the evolution of the dual diagnosis treatment program at the West Los Angeles Veterans Affairs Medical Center, an integrated, biobehavioral program

focused on the treatment of patients with substance use disorders and schizophrenia. The dual diagnosis treatment program provides both inpatient and outpatient treatment services. The article provides information pertaining to characteristics of clients in the dual diagnosis program (e.g. age, race, substance use patterns), various treatment interventions used within the program (e.g., assertive case management, credit incentive program, urine toxicologies), and indicators of program effectiveness (e.g., relapse rates, rates of transfer from inpatient to outpatient treatment, outpatient attendance rate).

Turner, R. J., & Gil, A. G. (2002). Psychiatric and substance use disorders in South Florida: Racial/ethnic and gender contrasts in a young adult cohort. *Archives of General Psychiatry*59(1), 43-50.

This article presents findings on the prevalence and demographic distributions of psychiatric and substance use disorders among a representative cohort of 1,803 young adults. Most participants were between 19 and 21 years of age when interviewed. Despite the youth of this cohort, or perhaps because of it, more than 60 percent met criteria for one or more study disorders during their lives. In the vast majority of instances, the first onset of disorder occurred during the middle school and early high school years, and, in 58 percent of the cases, detected disorders were comorbid. These findings indicate that there is a substantial presence of psychiatric and substance use disorders in middle and high school classrooms in South Florida. Thus, it cannot be assumed that study or intervention participants have no history of having a disorder just because they are young. This is a point that may not be well understood by many researchers and service providers.

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Unger, J. B., Kipke, M. D., Simon, T. R., Montgomery, S. B., & Johnson, C. J. (1997). Homeless youths and young adults in Los Angeles: Prevalence of mental health problems and the relationship between mental health and substance abuse disorders. *American Journal of Community Psychology*, 25(3), 371-394.

This study assessed the prevalence and demographic correlates of symptoms of depression, low self-esteem, attention deficit hyperactivity disorder (ADHD), suicidality, and self-injurious behavior (SIB) in a sample of homeless youth and young adults living in Hollywood, CA. The study also determined whether these mental health problems were associated with increased risk of drug and alcohol use disorders. Data were collected from 426 individuals 12 through 23 years old who were homeless or at imminent risk for homelessness. Results indicated extremely high rates of symptoms of mental health problems and substance-related disorders. Prevalence of mental health problems differed by age and ethnicity. African-Americans were at lower risk of suicidal thoughts and SIB than other ethnicities. Older subjects and females were at increased risk of depressive symptoms, and younger subjects were at increased risk of SIB.

Previous history of sexual abuse and/or assault was associated with increased risk of suicidality and SIB. Risk factors for drug abuse included ethnicity other than African-American, homelessness for one year or more, suicidality, SIB, depressive symptoms, and low self-esteem. Risk factors for alcohol abuse included male gender, white ethnicity, homelessness for one year or more, suicidality, and SIB.

Van Horn, D. H., & Bux, D. A. (2001). A pilot test of motivational interviewing groups for dually diagnosed inpatients. *Journal of Substance Abuse Treatment*, 20(2), 191-195.

Motivational interviewing is a brief treatment approach designed to produce rapid, internally motivated change in addictive behaviors. Motivational interviewing shows promise for engaging clients with dual psychiatric and psychoactive substance use diagnoses in treatment. Motivational interviewing was initially developed as an individual treatment approach, but key motivational enhancement principles may be applied to structured group interventions to facilitate the introduction of this approach to inpatient dual-diagnosis treatment. The authors describe how they developed and pilottested a motivational interviewing group for dually diagnosed inpatients, and they illustrate successes and pitfalls in clinical implementation. Group participants were readily engaged by the entertaining format and often-provocative content. They appeared to benefit from exploring their ambivalence regarding change. Directions for further development and evaluation are proposed.

Van Horn, D. H. A., & Frank, A. F. (1998). Substance-use situations and abstinence predictions in substance abusers with and without personality disorders. *American Journal of Drug & Alcohol Abuse*, 24(3), 395-404.

Rates of personality disorders in substance abusers are higher than in the general population. Comorbid personality disorders are believed to complicate the treatment of addicted persons: in addition to having more severe substance-use disorders and life problems, personality-disordered patients may use substances differently than their peers

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who do not have Axis II disorders. In a sample of 339 adults (aged 17 through 71 years) receiving inpatient treatment for alcohol or drug abuse/dependence, 71.7 percent received Axis II diagnoses, and they presented a more severe clinical picture. They also had more self-reported impulsive substance abuse and use of drugs or alcohol in positive situations. Different groups of personality-disordered subjects had different patterns of self-efficacy for abstinence for hypothetical future situations.

Velasquez, M. M., Carbonari, J. P., & DiClemente, C. C. (1999). Psychiatric severity and behavior change in alcoholism: The relation of the transtheoretical model variables to psychiatric distress in dually diagnosed patients. *Addictive Behaviors*, 24(4), 481-496.

The use of techniques that focus on the change process variables that are most strongly related to psychiatric distress could enhance treatment programming for individuals diagnosed with a chronic mental illness and an alcohol use disorder. The transtheoretical model (TTM) provides a useful framework within which to study these relations. The associations between psychiatric severity and the TTM constructs of stages and processes of change, decisional balance, temptation, and self-efficacy were measured among 132 alcohol-dependent patients in a public mental health clinic's outpatient dual diagnosis program. Participants' scores on the Temptation subscale of the Alcohol Abstinence Self-Efficacy Questionnaire are strongly related to psychiatric severity: the more psychiatric distress a person is experiencing, the more he or she is tempted to drink, particularly in situations that trigger negative affect. Decisional balance considerations are also related to psychiatric severity: the higher participants scored on the Global Severity Index of the Brief Symptom Inventory, the more importance they placed on the negative aspects, or cons, of drinking. Subjects with more psychiatric distress also scored higher on the Maintenance Stage of Change subscale, possibly indicating an increased

fear of relapse and struggle to maintain sobriety.

Velasquez, M. M., Crouch, C., von Sternberg, K., & Grosdanis, I. (2000). Motivation for change and psychological distress in homeless substance abusers. *Journal of Substance Abuse Treatment, 19*(4), 395-401.

The authors investigated the treatment needs of homeless individuals participating in a large urban day shelter program. Subjects were 100 homeless individuals (aged 19 through 64 years) presenting for services who completed questionnaires concerning alcohol and drug use, psychological distress, and motivation for change. Results show most subjects had used alcohol or drugs in the previous six months, and most of the users were in the higher-risk category for abuse. Subjects reported high levels of psychological distress, particularly in terms of paranoid ideation. Although the majority of subjects felt that they drank and used drugs too much, most were in the precontemplation or contemplation stages of change. The authors conclude that substance abuse treatment programs are needed for homeless shelter clients and that intervention efforts for this population should focus on motivation, facilitation through the stages of change, and the associations between psychiatric symptoms and substance use.

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Verheul, R., Kranzler, H. R., Poling, J., Tennen, H., Ball, S., & Rounsaville, B. J. (2000a). Axis I and Axis II disorders in alcoholics and drug addicts: Fact or artifact? *Journal of Studies on Alcohol, 61*(1), 101-110.

The authors examined the validity of the substance-related artifact and the trait-state artifact hypotheses in substance users. A total of 276 subjects (mean age 32.9 years) applying for treatment for substance use (SU), current SU disorders, mood/anxiety disorders, and Axis II disorders were diagnosed using semi-structured interviews both at baseline and at one-year follow-up. The authors tested the substance-related artifact hypothesis by examining the covariation between recovery from SU disorders and recovery from and/or improvement of mood/anxiety and Axis II disorders. They tested the trait-state artifact hypothesis by examining the covariation between recovery from mood/anxiety disorders and recovery from and/or improvement of Axis II disorders. Results show that recovery from SU disorders covaried with recovery from and improvement of mood/anxiety disorders, but not with recovery from or improvement of Axis II pathology. Recovery from mood/anxiety disorders covaried with recovery from and improvement of personality disorders, in particular Cluster C disorders. Findings suggest that mood/anxiety disorders, but not personality disorders, diagnosed among people with SU disorder may partly reflect substance-related artifacts.

Verheul, R., Kranzler, H. R., Poling, J., Tennen, H., Ball, S., & Rounsaville, B. J. (2000b). Co-occurrence of Axis I and Axis II disorders in substance abusers. *Acta Psychiatrica Scandinavica, 101*(2), 110-118.

This study examined the co-occurrence of anxiety/mood and personality disorders (PDs) in substance abusers, the impact of anxiety/mood disorders on the symptom profiles of PDs, and the impact of anxiety/mood disorders and PDs on pretreatment status. Current anxiety/mood disorders and PDs and pre-treatment status were assessed using semistructured interviews in 370 treated substance abusers. Anxiety/mood disorders and PDs frequently co-occurred, with the overall pattern of associations being nonspecific. The strongest associations were of social phobia with avoidant and schizotypal PD, and of

major depression with borderline PD. However, symptom profiles of PDs were not associated with anxiety/mood disorders. Finally, anxiety/mood disorders and PDs were both independently and differentially associated with poor pre-treatment characteristics. The findings suggest the clinical importance of obtaining both Axis I and Axis II diagnoses in treated substance abusers. They highlight the distinctiveness of the Axis I and Axis II disorders.

Vogel, H. S., Knight, E., Laudet, A. B., & Magura, S. (1998). Double trouble in recovery: Self-help for people with dual diagnoses. *Psychiatric Rehabilitation Journal, 21*(4), 356-364.

This article discusses Double Trouble in Recovery (DTR), a 12-step self-help group designed to meet the special needs of those diagnosed with both a psychiatric disability and a chemical addiction. DTR differs from traditional self-help groups by offering people a safe forum to discuss their psychiatric disabilities, medication, and substance abuse. *Annotated Bibliography*

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Fifty-two participants at four DTR sites in New York City completed a structured, self-administered questionnaire. A second qualitative study, designed to supplement and elucidate the information obtained in Study 1, was conducted with eight DTR members. Results indicate that DTR members have a long history of psychiatric disabilities and substance abuse, and extensive experience with treatment programs in both areas. They were actively working on their recovery, as evidenced by their fairly intensive attendance at DTR. Recent substance use was limited, suggesting that participation in DTR was having a positive effect. Most members required medication to control their psychiatric disabilities, and that alone may make attendance at "conventional" 12-step groups uncomfortable. Ratings of statements comparing DTR to other 12-step meetings suggest that DTR is a setting where members can feel comfortable and safe discussing their dual recovery needs.

Volavka, J. (1999). The effects of clozapine on aggression and substance abuse in schizophrenic patients. *Journal of Clinical Psychiatry, 60*(Supplement 12), 43-46.

Aggressive behavior in schizophrenic patients, although infrequent, is a serious problem. It is, however, a relatively common reason for psychiatric admission and poses an increasing threat, as more patients are cared for in the community. There is a strong association between substance abuse and violent behavior, and comorbid substance abuse in schizophrenia is also a major problem. The recent introduction of the atypical antipsychotics has brought hope for the pharmacologic management of this group of patients. These newer agents are thought to have antiaggressive effects and perhaps to decrease cravings for illicit substances and alcohol. Data from a number of studies have demonstrated that clozapine has antiaggressive effects. A retrospective analysis of 331 schizophrenic patients assessed the effects of clozapine on hostility and aggression. At baseline, 31.4 percent of patients showed overt physical aggression, and, after an average of 47 weeks of treatment with clozapine, this rate had fallen to 1.1 percent. The antiaggressive effects of clozapine were relatively specific and could not be explained by sedation or general antipsychotic effects. These effects were more pronounced than the effects on other symptoms and were also present in patients who showed the highest pretreatment levels of hostility and aggression. Clozapine may also be of benefit in the treatment of schizophrenic patients who have comorbid substance abuse. After six

months of treatment with clozapine, substance abusers and nonabusers with schizophrenia or schizoaffective disorder showed similar improvements on measures of psychopathology and psychosocial functioning.

Wasserman, D. A., Havassy, B. E., & Boles, S. M. (1997). Traumatic events and posttraumatic stress disorder in cocaine users entering private treatment. *Drug & Alcohol Dependence*, 46(1-2), 1-8.

The authors investigated traumatic events, post-traumatic stress disorder (PTSD), and psychiatric comorbidity in 450 men and women entering private, hospital-based treatments for cocaine dependence. Overall prevalence of event exposure was the same for women and men; however, women were approximately five times more likely than men to be diagnosed with lifetime and current PTSD. Women experienced more PTSD

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than men even when exposed to the same type of event. In most subjects with PTSD, onset of the disorder preceded onset of cocaine dependence. Subjects with PTSD were more likely than those without PTSD to have additional co-occurring mental disorders. Findings from this relatively affluent, privately treated sample suggest that PTSD and cocaine dependence are related, independent of patients' resources. They further indicate that the relationship between gender and PTSD is robust across patient populations.

Watkins, K. E., Burnam, A., Kung, F.-Y., & Paddock, S. (2001). A national survey of care for persons with co-occurring mental and substance use disorders. *Psychiatric Services*, 52(8), 1062-1068.

This study sought to describe use of appropriate mental health and comprehensive substance abuse care among 9,585 adults in the United States with probable co-occurring disorders. Data from the nationally representative sample were used to identify individuals who had probable co-occurring mental and substance use disorders. The sociodemographic and clinical characteristics of these individuals and their use of services were recorded. Variables associated with receipt of mental health and substance abuse treatment and with receipt of appropriate treatment were identified. Estimates for the United States adult population based on the weighted survey data indicated that 3 percent of the population had co-occurring disorders. Seventy-two percent did not receive any specialty mental health or substance abuse treatment in the previous 12 months. Only 8 percent received both specialty mental health care and specialty substance abuse treatment. Only 23 percent received appropriate mental health care, and 9 percent received supplemental substance abuse treatment. Perceived need for treatment was strongly associated with receipt of any mental health care and with receipt of appropriate care. The authors conclude that most individuals who had co-occurring mental health and substance use problems were not receiving effective treatment.

Weiner, D. A., Abraham, M. E., & Lyons, J. (2001). Clinical characteristics of youths with substance use problems and implications for residential treatment. *Psychiatric Services*, 52(6), 793-799.

Despite high rates of dual diagnosis among children and adolescents and evidence that adults with coexisting substance use disorders require specialized services, many children are placed in residential settings and are offered uniform service packages regardless of their individual clinical profiles. The authors examined the rate of substance use problems in a sample of children and adolescents with severe emotional or behavioral

disturbances who were in residential treatment. Differences in clinical characteristics and placement outcomes between children with and without coexisting substance use disorders were evaluated. This retrospective study analyzed clinical data obtained by chart review using the Child Severity of Psychiatric Illness, a rating scale for symptom severity. The study subjects were 564 children and adolescents in residential treatment and state custody in Florida and Illinois who had serious emotional or behavioral disturbances. Twenty-six percent of boys and 37 percent of girls had substance use problems in addition to serious emotional or behavioral disturbances. Residents with cooccurring

substance use disorders were significantly more likely than those with serious

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emotional or behavioral disturbances only to be at risk for suicide, elopement from residential placement, delinquent behavior, and institutional discharge placement. Children and adolescents with coexisting substance use problems require individualized service packages to address their greater need for supervision and higher rate of risk behaviors and to facilitate community discharge placements.

White, R. J., Ackerman, R. J., & Caraveo, L. E. (2001). Self-identified alcohol abusers in a low-security federal prison: Characteristics and treatment implications.

International Journal of Offender Therapy & Comparative Criminology, 45(2), 214-227.

A total of 115 male inmates (mostly aged 26 through 35 years) arriving at a low-security federal correctional institution in 1998 completed the Michigan Alcohol Screening Test (MAST) as part of a standard psychological intake battery that included a background questionnaire, the Milton Clinical Multiaxial Inventory, Version 3 (MCMI-III), and the Conflict Tactics Scale. The majority (61%) of inmates screened positive for alcohol problems on the MAST. Self-identified alcohol abusers were more likely to evidence antisocial personality patterns, anxiety disorders, domestic violence histories, and other substance misuse. Roughly 1 in 4 (24%) showed a combination of antisocial personality and low anxiety on the MCMI, suggestive of primary psychopathic disorder. The findings suggest that low-security inmates who screen positive on the MAST often present with other substance use problems, personality pathology, and domestic violence histories that potentially inform treatment efforts by mental health professionals in federal prisons.

Wilens, T. E., Biederman, J., & Mick, E. (1998). Does ADHD affect the course of substance abuse? Findings from a sample of adults with and without ADHD. *American Journal on Addictions, 7(2), 156-163.*

This study examined the effects of attention-deficit hyperactivity disorder (ADHD) and psychiatric comorbidity on recovery from psychoactive substance use disorder (PSUD) with 130 referred adults with ADHD and 71 non-ADHD adults, all of whom had a lifetime history of PSUD. Although PSUD remitted in 80 percent of both groups, the rate of remission and duration of PSUD were quite different in the ADHD versus non-ADHD subjects. The duration of PSUD was 37.2 months longer in the ADHD than in non-ADHD subjects. The median time to PSUD remission was more than twice as long in ADHD as in control subjects (144 versus 60 months, respectively). ADHD is associated with a longer duration of PSUD and a significantly slower remission rate. If confirmed,

such findings extend previous work showing that ADHD is a risk factor for early initiation and specific pathways of PSUD, providing further evidence of the relevance of this association.

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Windle, M. (1999). Psychopathy and antisocial personality disorder among alcoholic inpatients. *Journal of Studies on Alcohol*, 60(3), 330-336.

The authors compared the adequacy of two measurement systems, the Revised Psychopathy Checklist (PCL-R) and Mental Disorders-III (DSM-III) diagnosed antisocial personality disorder (APD), to distinguish alcoholic inpatients with regard to alcoholism characteristics, criminal activities, and psychiatric disorders. Subjects were 740 patients (aged 19 through 57 years) who were admitted to alcohol treatment inpatient centers. Each subject was interviewed, and DSM-III diagnoses and other characteristics were recorded. Trained interviewers completed the PCL-R. There was a statistically nonsignificant association between DSM-III-based APD diagnosis and PCL-based psychopathy diagnosis. APD (relative to non-APD) alcoholics had an earlier onset of problem drinking, higher levels of pathological drinking and social impairment, and a higher prevalence of familial alcoholism; a similar pattern was not indicated for PCL-R diagnosed psychopaths relative to nonpsychopaths. APD alcoholics had a higher prevalence of substance use disorders, and psychopaths had a higher prevalence of generalized anxiety disorder, panic disorder, and schizophrenia. Distinct subpopulations of alcoholic inpatients are identified via the APD criteria of DSM-III and the psychopathy criterion of the PCL-R.

Wingerson, D., & Ries, R. K. (1999). Assertive community treatment for patients with chronic and severe mental illness who abuse drugs. *Journal of Psychoactive Drugs*, 31(1), 13-18.

This article describes a modified assertive community multidisciplinary treatment team approach to the treatment of individuals who suffer from severe comorbid mental illness and substance abuse. Demographics of patients who are chosen to receive these intensive services, service utilization patterns, and elements of team treatment are discussed. Comparisons with less severely ill dual diagnosis patients who receive more traditional case management services are reviewed.

Wise, B. K., Cuffe, S. P., & Fischer, T. (2001). Dual diagnosis and successful participation of adolescents in substance abuse treatment. *Journal of Substance Abuse Treatment*, 21(3), 161-165.

A retrospective record review of one year of admissions to a residential adolescent substance abuse treatment program (n=91) examined the prevalence of comorbid psychiatric disorders and factors associated with successful treatment participation. Psychiatric and substance use disorders (SUD) were diagnosed by DSM-IV criteria. Successful participation was based on multiple factors assessed by the treatment team. Consistent with prior studies, there was considerable comorbidity (63.7% with both disruptive Attention Deficit Hyperactivity Disorder (ADHD), 11%; Conduct Disorder (CD), 24%] and other (depression, 24%; adjustment disorder, 7.7%; bipolar disorder, 3.3%) disorders. Male gender was negatively associated (OR=0.23, p=0.019) with successful participation in univariate analyses, as was ADHD (OR=0.18, p=0.007). CD (OR=0.37, p=0.053) approached significance. Multivariate analysis reveals that ADHD

was significant, while having CD and being male approached significance. Psychotropic medication use and other diagnoses were not associated with successful participation. It is concluded that further research on the relationship between ADHD, CD, and substance abuse treatment is needed.

Wiseman, C. V., Sunday, S. R., Halligan, P., Korn, S., Brown, C., & Halmi, K. A. (1999). Substance dependence and eating disorders: Impact of sequence on comorbidity. *Comprehensive Psychiatry*, 40(5), 332-336.

There is a high comorbidity between eating disorders and substance dependence. The sequence of illness may indicate differences in the underlying pathology and could reflect different etiologies and treatment. The present study subjects were 218 inpatients and outpatients with diagnoses of anorexia nervosa binge-purge type (AN-BP), bulimia nervosa (BN), and eating disorder NOS (ED-NOS). Of these 218 patients, 38 had substance dependence predating the eating disorder (SDED), 71 had an eating disorder predating the substance dependence (EDSD), and 109 had only an eating disorder (EDonly). All subjects were administered the Structured Clinical Interview for DSM-III-R, Patient Edition With Psychotic Screen (SCID-P). EDSD patients had an earlier onset of the eating disorder than SDED patients and had the greatest prevalence of comorbid pathology. SDED patients were dependent on more substances. The authors conclude that the sequence of development of the eating disorder and substance dependence in eating disorder patients influences the amount of comorbid psychopathology. Clinical implications and future research are discussed.

Wolford, G. L., Rosenberg, S. D., Drake, R. E., Mueser, K. T., Oxman, T. E., Hoffman, D., Vidaver, R. M., Luckoor, R., & Carrieri, K. L. (1999). Evaluation of methods for detecting substance use disorder in persons with severe mental illness. *Psychology of Addictive Behaviors*, 13(4), 313-326.

Substance use disorders are frequently undiagnosed in psychiatric settings. One possible reason for this under-diagnosis is the lack of screening procedures designed or validated specifically for psychiatric patients. To evaluate the utility of current detection methods, (a) criterion diagnoses were established of alcohol use disorder and drug (cannabis or cocaine) use disorder in 320 patients with severe mental illness recently admitted to a psychiatric hospital, using a combination of structured diagnostic interviews and clinician ratings, and (b) the classification accuracy of several substance abuse measures developed for the general population was examined. For this particular sample, demographic variables, clinical variables, medical exams, laboratory tests, and collateral reports did not yield accurate detection. Screens based on self-report were superior to these other approaches but still yielded modest sensitivity. The results suggest that many individuals are classified incorrectly with current techniques.

Wu, L. T., Kouzis, A. C., & Leaf, P. J. (1999). Influence of comorbid alcohol and psychiatric disorders on utilization of mental health services in the National Comorbidity Survey. *American Journal of Psychiatry*, 156(8), 1230-1236.

The authors sought to determine how comorbidity of psychiatric and substance abuser disorders affects the likelihood of using mental health services. The analysis was based

on data on adults aged 18 through 54 years in the National Comorbidity Survey (n=5,393). Users and nonusers of mental health and substance abuse services were compared in terms of their demographic characteristics, recent stressful life events, social support, parental history of psychopathology, self-medication, and symptoms of alcohol abuse dependence. The prevalence of service utilization varied by diagnostic configuration. Comorbid psychiatric or alcohol disorders were stronger predictors of service utilization than a pure psychiatric or alcohol disorder. Factors predicting utilization of services differed for each disorder. Because comorbidity increases the use of mental health and substance abuse services, research on the relationship of psychiatric and alcohol-related disorders to service utilization needs to consider the coexistence of mental disorders. Attempts to reduce barriers to help seeking for those in need of treatment should be increased.

Zanis, D. A., McLellan, A. T., & Corse, S. (1997). Is the Addiction Severity Index a reliable and valid assessment instrument among clients with severe and persistent mental illness and substance abuse disorders? *Community Mental Health Journal, 33*(3), 213-227.

This study examined aspects of reliability, validity, and utility of Addiction Severity Index (ASI) data as administered to clients with severe and persistent mental illness (SMI) and concurrent substance use disorders enrolled in a publicly funded community mental health center. Subjects, 62 clients aged 18 through 55 years with SMI, volunteered to participate in an interobserver and test-retest reliability study of the ASI. Spearman-Brown and Pearson correlation coefficients were calculated to examine the extent of agreement among client responses. Overall, 16 percent of the composite scores could not be calculated because of missing data, and 31 percent of the clients misunderstood or confused items in at least one of the seven ASI domains. As a whole, the interobserver reliability of the ASI composite scores for subjects for whom sufficient data were available was satisfactory. However, there was more variance in the stability of client responses, with four composite scores producing test-retest reliability coefficients below .65. Evidence suggests that the ASI has a number of limitations in assessing the problems of clients with severe and persistent mental illness. It is likely that other similar instruments based on the self-reports of persons with severe and persistent mental illness would also encounter these limitations.

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Zlotnick, C., Zimmerman, M., Wolfsdorf, B. A., & Mattia, J. I. (2001). Gender differences in patients with posttraumatic stress disorder in a general psychiatric practice. *American Journal of Psychiatry, 158*(11), 1923-1925.

This report examined gender differences in the clinical manifestations of current posttraumatic stress disorder (PTSD) in treatment-seeking patients. A total of 138 outpatients (mean age 35.48 years old) with PTSD were interviewed with the Structured Clinical Interview for DSM-IV. Compared with male patients, female patients experienced more reexperiencing symptoms. They were also more likely to meet criteria for current PTSD and to report sexual trauma as their index trauma. Men with PTSD were more likely than women with PTSD to meet criteria for a substance use disorder and for antisocial personality disorder. No gender differences were found in the frequency of other types of comorbid disorders, the number of comorbid disorders, or the

presence of PTSD as a primary disorder. Overall, male and female patients with current PTSD presented with fairly comparable clinical profiles.

Zweben, J. E. (2000). Severely and persistently mentally ill substance abusers: Clinical and policy issues. *Journal of Psychoactive Drugs*, 32(4), 383-389.

Communities that are struggling to provide effective treatment for the challenging population of severely mentally ill clients who use alcohol and drugs have a growing research base on which to make policy decisions. Integrating outpatient treatment for mental health and addictive disorders appears to be more effective than providing treatment in two separate systems. Integrated treatment at a single site allows for individualizing treatment priorities without fragmenting care. Harm reduction approaches provide a low threshold entry, which can be followed by interventions to enhance motivation. Managing patient benefits to discourage drug use reduces the likelihood of their becoming homeless, hospitalized, or incarcerated. Inadequate treatment capacity plays a large role in the growing number of disturbed clients who end up in the criminal justice system. Effective community treatment requires vigorous collaboration between care providers. Ultimately, professional training programs need to produce clinicians who are competent and comfortable addressing alcohol and other drug use to implement effective treatment systems. This article discusses clinical issues that relate to policy concerns in this population.

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2. PEER-REVIEWED PUBLICATIONS: LANDMARK ARTICLES, 1972-1996

This section includes annotated citations of 38 landmark articles published in the past 30 years in peer-reviewed journals.

Alterman, A. I., McLellan, A. T., & Shifman, R. B. (1993). Do substance abuse patients with more psychopathology receive more treatment? *The Journal of Nervous and Mental Disease*, 181(9), 576-582.

The association between psychopathology at treatment entry and the amount of treatment services received was evaluated in 104 alcohol-dependent and 100 cocaine-dependent male veterans treated for 1 month in either a day hospital or inpatient program. Measures of psychopathology included the Addiction Severity Index psychiatric composite score, the presence or absence of an antisocial personality disorder diagnosis, and the total number of additional lifetime or current psychiatric diagnoses. Patients with higher admission Addiction Severity Index psychiatric composite scores received more medical, alcohol, family/social, and psychiatric services. There was also preliminary evidence that patients who received more treatment showed greater improvement seven months after admission. The relationships between the other measures of psychopathology and treatment services failed to achieve overall statistical significance, although significant relationships were found in several individual areas.

Brooner, R. K., Greenfield, L., Schmidt, C. W., & Bigelow, G. E. (1993). Antisocial personality disorder and HIV infection among intravenous drug abusers. *American Journal of Psychiatry*, 150(1), 53-58.

This study examined the relationship between diagnosis of antisocial personality and HIV infection in 272 intravenous drug abusers, 140 (52%) of whom were in methadone treatment. Subjects were given an HIV risk behavior interview before diagnostic interviewing and HIV testing. Using the Mental Disorders-III-Revised (DSM-III-R)

definition, 119 (44%) of the subjects met criteria for antisocial personality. Significantly more of the subjects with antisocial personality (18%) than of those without antisocial personality (8%) had HIV infection. The diagnosis of antisocial personality disorder was associated with a significantly higher odds ratio of infection independent of ethnicity, gender, and treatment status.

Brown, S. A., Inaba, R. K., Gillin, C., Schuckit, M. A., Stewart, M. A., & Irwin, M. R. (1995). Alcoholism and affective disorder: Clinical course of depressive symptoms. *American Journal of Psychiatry, 152*(1), 45-52.

This study compared the severity of and the change in depressive symptoms among men with alcohol dependence, affective disorder, or both disorders during four weeks of inpatient treatment. After their primary and secondary psychiatric disorders were defined with the use of criteria based on chronology of symptoms, 54 unmedicated men entering treatment for alcohol dependence or affective disorder were assessed for four consecutive

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weeks with the Hamilton Depression Rating Scale. The findings indicate that the rate of remission of depressive symptoms was consistent with the primary diagnosis. Depressive symptoms remitted more rapidly among the men with primary alcoholism than among those with primary affective disorder. However, a minimum of three weeks of abstinence from alcohol appeared to be necessary to consistently differentiate the groups with dual diagnoses on the basis of their current depressive symptoms. Alcohol dependence occurring in conjunction with primary affective disorder did not intensify presenting depressive symptoms or retard the resolution of such symptoms. Diagnoses of alcohol dependence and affective disorder based on symptom chronology appear to have prognostic significance with respect to remission of depressive symptoms in men with both diagnoses. Depressive symptoms of dysphoric mood, dysfunctional cognitions, vegetative symptoms, and anxiety/agitation showed different rates and levels of remission across the primary diagnostic groups.

Brown, S. A., Irwin, M., & Schuckit, M. A. (1991). Changes in anxiety among abstinent male alcoholics. *Journal of Studies on Alcohol, 52*(1), 55-61.

Levels of state anxiety among 171 male alcoholics (aged 22 through 74 years) were examined three times per week during inpatient treatment for alcoholism and again three months following treatment. Subjects also completed the trait scale of the State-Trait Anxiety Inventory on admission to the inpatient program and three months following treatment. Results indicate that recently detoxified males experienced multiple anxiety symptoms, with 40 percent reporting significantly elevated levels of state anxiety at admission. By the second week of treatment, state anxiety scores typically returned to normal, although symptoms continued to decrease significantly with each week of continued abstinence. Elevated levels of anxiety symptoms were more common among primary alcoholics with a history of panic episodes or generalized anxiety disorder symptoms. Relapsers reported significantly higher state and trait anxiety scores at follow-up.

Bryant, K. J., Rounsaville, B., Spitzer, R. L., & Williams, J. B. (1992). Reliability of Dual Diagnosis: Substance Dependence and Psychiatric Disorders. *Journal of Nervous and Mental Disease, 180*(4), 251-257.

The Structured Clinical Interview for DSM-III-R was used to examine the effects of the

co-occurrence of psychiatric and substance dependence disorders on diagnostic reliability. The test-retest reliability over a one-week period was studied in groups of individuals with current substance abuse diagnoses (n=97), individuals with past, but not current, drug histories (n=146), and individuals without substance abuse diagnoses (n=356; primarily psychiatric patients). A measurement of reliability (Kappa coefficients) was estimated for four general psychiatric categories (psychotic, mood, anxiety, and eating disorders), along with specific most-frequent diagnoses in each category (schizophrenia, major depression, panic disorders, and bulimia nervosa, respectively). Past use and non-drug-use groups were similar in their generally reliable reporting of current and past psychiatric disorders. However, current mood and psychotic disorders were less reliably diagnosed in the group with current substance use disorders.

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Cacciola, J. S., Rutherford, M. J., Alterman, A. I., McKay, J. R., & Snider, E. C. (1996). Personality disorders and treatment outcome in methadone maintenance patients. *Journal of Nervous & Mental Disease, 184*(4), 234-239.

This study examined the relationship between personality disorder (PDs) and 7-month treatment outcome in 197 men admitted to methadone maintenance. Subjects reported pervasive improvement, and the amount of improvement did not significantly differ for those subjects with and without PDs. PD subjects entered treatment with more severe self-reported drug, alcohol, psychiatric, and legal problems, and despite progress, remained more problematic in those areas relative to subjects without PDs. Subjects with antisocial PD had admission and 7-month problem status similar to subjects with other PDs. The 7-month urinalysis results for opiates and cocaine showed no significant differences between subjects with and without PDs. Fewer PD subjects stayed in treatment continuously for the 7-month period. Several cluster B PDs-borderline, antisocial, and histrionic-predicted poorest overall outcomes. Methadone-maintained patients with PDs may warrant additional treatment services if they are to approach the functional level of patients without PDs.

Carroll, K. M., Rounsaville, B. J., Gordon, L. T., Nich, C., Jatlow, P.M., Bisighini, R.M., & Gawin, F.H. (1994). Psychotherapy and pharmacotherapy for ambulatory cocaine abusers. *Archives of General Psychiatry, 51*(3), 177-187.

This study evaluated the effects of four treatments on four groups of 139 ambulatory cocaine abusers. The treatments include desipramine (DI) hydrochloride in combination with relapse prevention (a cognitive-behavioral approach), DI in combination with clinical management (a psychotherapy control position), relapse prevention plus placebo, and clinical management plus placebo. All groups showed significant reduction in cocaine use and improvement in several of the problem areas from pretreatment levels. Baseline severity of cocaine use interacted differently with both psychotherapy and pharmacotherapy. Higher severity subjects were retained longer in treatment, attained longer periods of abstinence, and had fewer urine samples positive for cocaine when treated with relapse prevention versus clinical management. Lower-severity subjects attained longer periods of abstinence when treated with DI rather than placebo.

Cottler, L. B., Compton, W. M., Mager, D., Spitznagel, E. L., & Janca, A. (1992). Posttraumatic stress disorder among substance users from the general population. *American Journal of Psychiatry, 149*(5), 664-670.

The authors evaluated the prevalence of posttraumatic stress disorder (PTSD) among substance users in the St. Louis Epidemiologic Catchment Area survey of psychiatric illness in the general population. Data on PTSD and substance use (SU) were collected with the Diagnostic Interview Schedule. Among the 1,094 men and 1,569 women (aged 19+ years), 430 reported a traumatic event that could qualify for PTSD. Subjects were classified into one of four SU categories (polydrug use to alcohol use). Substance users were compared with subjects who did not meet SU threshold. Cocaine/opiate users (COUs) were more likely than comparison subjects to report a traumatic event, report

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more symptoms and events, and meet diagnostic criteria for PTSD. Physical attack was the most prevalent event reported among COUs. Onset of SU preceded onset of PTSD symptoms, suggesting that SU predisposes the individual to exposure to traumatic events. When other variables were controlled, female gender and use of cocaine/opiates predicted PTSD.

Hesselbrock, M. N., Meyer, R. E., & Keener, J. J. (1985). Psychopathology in hospitalized alcoholics. *Archives of General Psychiatry*, 42(11), 1050-1055.

The authors studied the prevalence of psychopathology in 321 hospitalized alcoholics, the relative age of onset of additional psychopathology, and the effect of additional psychiatric disorders on alcoholic abuse/dependence. A psychiatric history was obtained from the 231 males (mean age 39.5 years) and the 90 females (mean age 37.3 years), using the NIMH (National Institute of Mental Health) Diagnostic Interview Schedule. Lifetime and recent drinking histories were also obtained. Results show that 77 percent of subjects experienced one or more episodes of psychopathology in their lifetime. Major depression was the most common in females, while antisocial personality (ASP) was most common in males. In general, subjects with an additional diagnosis of ASP began abusing alcohol at an earlier age, consumed more alcohol, and abused other drugs. Major depression and phobia preceded the onset of alcohol abuse in the majority of females with these conditions. Subjects with no additional psychopathology consumed their first drink and began regular intoxication at a later age; their progression to alcohol abuse was much slower. The course of alcoholism was similar for subjects with ASP and those with substance-use disorder. These subjects took their first drink at an earlier age, began regular intoxication early, and quickly progressed to problem drinking. Females tended to begin regular drinking later than males, but they progressed more quickly to problem drinking.

Holderness, C. C., Brooks-Gunn, J., & Warren, M. P. (1994). Co-morbidity of eating disorders and substance abuse review of the literature. *International Journal of Eating Disorders*, 16(1), 1-34.

This article reviews 51 studies conducted since 1977 on the possible association between eating disorders and substance use and abuse. Studies of substance use/abuse in women with eating disorders are considered, as are studies of eating disorders among women classified as substance abusers. Data indicate that associations are stronger with bulimia nervosa and "bulimic" behaviors than with anorexia nervosa. Analogously, bulimic anorexics report more substance use and abuse than do restricters. The prevalence of drug abuse does not differ between the relatives of bulimics and anorexics. Several mechanisms explaining the link between eating disorders and substance use/abuse (e.g.,

addictive personality, attempts to self-medicate, genetic factors) are considered.

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Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B. Hughes, M., Eshleman, S., Wittchen, H., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry*, 51(1), 8-19.

This study estimated lifetime and 12-month prevalence of 14 DSM-III-R psychiatric disorders from the National Comorbidity Survey, the first survey to administer a structured psychiatric interview to a national probability sample in the United States. The DSM-III-R psychiatric disorders among persons aged 15 to 54 years in the noninstitutionalized civilian population of the United States were assessed with data collected by lay interviewers using a revised version of the Composite International Diagnostic Interview. Nearly 50 percent of respondents reported at least one lifetime disorder, and close to 30 percent reported at least one 12-month disorder. The most common disorders were major depressive episode, alcohol dependence, social phobia, and simple phobia. More than half of all lifetime disorders occurred in the 14 percent of the population who had a history of three or more comorbid disorders. These highly comorbid people also included the vast majority of people with severe disorders. Less than 40 percent of those with a lifetime disorder had ever received professional treatment, and less than 20 percent of those with a recent disorder had been in treatment during the past 12 months. Consistent with previous risk factor research, it was found that women had elevated rates of affective disorders and anxiety disorders, that men had elevated rates of substance use disorders and antisocial personality disorder, and that most disorders declined with age and with higher socioeconomic status. The prevalence of psychiatric disorders is greater than previously thought to be the case. Furthermore, this morbidity is more highly concentrated than previously recognized in roughly one sixth of the population who have a history of three or more comorbid disorders. This suggests that the causes and consequences of high comorbidity should be the focus of research attention. The majority of people with psychiatric disorders fail to obtain professional treatment. Even among people with a lifetime history of three or more comorbid disorders, the proportion who ever obtains specialty sector mental health treatment is less than 50 percent. These results argue for the importance of more outreach and more research on barriers to professional help seeking.

Kessler, R. C., Nelson, C. B., McGonagle, K. A., Edlund, M. J., Frank, R. G., & Leaf, P. J. (1996). The epidemiology of co-occurring addictive and mental disorders: Implications for prevention and service utilization. *American Journal of Orthopsychiatry*, 66(1), 17-31.

Data from the National Comorbidity Survey were examined to determine the prevalence of co-occurring addictive and mental disorders, the temporal relationships between these disorders, and the extent to which 12-month co-occurrence is associated with use of services. Data were collected from 5,877 respondents. Co-occurrence was highly prevalent and usually due to the association of a primary mental disorder with a secondary addictive disorder. Co-occurrence was associated with a significantly increased probability of treatment. However, fewer than half of cases with 12-month co-

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occurrence received any treatment in the year prior to interview, suggesting a need for greater outreach efforts.

Khantzian, E. J., & Treece, C. (1985). DSM-III psychiatric diagnosis of narcotic addicts. Recent findings. *Archives of General Psychiatry*, 42(11), 1067-1071.

The authors assessed the frequency and type of personality disorder and psychiatric symptom disorders and syndromes in 133 narcotic users (primarily aged 20 through 44 years), employing the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) criteria and multi-axial system. Each subject was seen for at least two 2- to 4-hour sessions for semi-structured interviews. Results show that 93 percent of subjects had diagnosable psychiatric disorders. Just under half of the subjects were clinically depressed at interview, while two-thirds reported a lifetime history of affective disorder. Almost the entire range of personality disorders was represented in the sample. Depression and personality disorder were diagnosed in the same subject with high frequency. It is suggested that drug use is consistent with and contributes to the psychological structures and behaviors associated with the personality disorders.

Kranzler, H. R., Del Boca, F. K., & Rounsaville, B. J. (1996). Comorbid psychiatric diagnosis predicts three-year outcomes in alcoholics: A post-treatment natural history study. *Journal of Studies on Alcohol*, 57(6), 619-626.

The objective of this study was to examine the impact of three common comorbid disorders on a variety of outcomes three years after inpatient alcoholism treatment. Using a prospective cohort design, the authors examined the frequency and intensity of drinking, the severity of alcohol-related symptoms, global alcohol-related outcome, and severity of psychiatric symptoms in a group of 225 (74% male) alcoholics. At the index admission, patients were categorized as to the lifetime presence of major depression, antisocial personality disorder (ASP), and drug abuse/dependence. Multiple linear regression was used hierarchically to step in blocks of predictors in a logical sequence: (1) gender and age; (2) number of comorbid psychiatric diagnoses and the presence or absence of the three individual comorbid psychiatric disorders; and (3) the interaction between gender and each of the three diagnostic groups. Men showed greater intensity of drinking, more alcohol-related symptoms, and poorer global alcohol-related outcome. Younger patients also showed more alcohol-related symptoms. Although the number of comorbid diagnoses was correlated with both the intensity of drinking and the severity of psychopathology, each of the specific comorbid diagnoses accounted for unique variance in outcome. Comorbid drug abuse/dependence was associated with more drinking days and more alcohol-related symptoms. In contrast, the presence of comorbid major depression was associated with lower intensity of drinking. Finally, ASP was associated with poorer global alcohol-related outcome. Outcomes three years after alcoholism treatment are related to the presence of specific lifetime comorbid psychiatric diagnoses. Because such disorders may positively influence the course of alcoholism, trials of clinical interventions that target these disorders are warranted.

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Lehman, A. F., Myers, C. P., & Corty, E. (1989). Assessment and classification of patients with psychiatric and substance abuse syndromes. *Hospital and Community Psychiatry*. 40:1019-1030

Patients with both mental illness and substance abuse pose a major clinical challenge to mental health and substance abuse clinicians. The literature seems to support the hypothesis that mental illness and substance abuse occur together more frequently than change alone would predict. Assessment and classification of these patients should be guided by clinicians' needs to make meaningful and therapeutic judgments and to communicate effectively with each other in coordinating treatment. Different phases of treatment require different approaches to assessment and classification. In initial classification, the clinician should recognize the problem of dual diagnosis and resist premature assumptions about which diagnosis is primary. Long-term treatment and rehabilitation may require systematic evaluation of alternative clinical hypotheses about why a patient exhibits both disorders. This approach may eventually lead to better ways to assess, classify, and treat these difficult patients.

Lehman, A. F., Myers, C. P., Dixon, L. B., & Johnson, J. L. (1996). Detection of substance use disorders among psychiatric inpatients. *Journal of Nervous & Mental Disease, 184*(4), 228-233.

This study examined the utility of the Addiction Severity Index (ASI) for detecting psychoactive substance use disorders (PSUDs) among psychiatric inpatients. The subjects, 435 inpatients (aged 18 through 64 years) at two inner-city psychiatric hospitals, completed the ASI and the Structured Clinical Interview for DSM-III-R (SCID).

Receiver operating characteristic analysis assessed the optimal threshold ASI alcohol and drug composite scores to detect DSM-III-R PSUDs. The correlations of both the ASI alcohol and drug composite scores with their corresponding DSM-III-R PSUD categories were significant. The receiver operating characteristic analysis revealed that the ASI misses approximately 20 percent of SCID-positive PSUD cases. Specificity of the ASI, however, is quite good (95 to 98%), and optimal ASI threshold scores to rule out a PSUD among these patients are identified. Results also support these patients' sensitivity to the toxic effects of illicit substance use.

Mason, B. J., Kocsis, J. H., Ritvo, E. C., & Cutler, R. B. (1996). A double-blind, placebocontrolled trial of desipramine for primary alcohol dependence stratified on the presence or absence of major depression. *Journal of the American Medical Association, 275*(10), 761-767.

The authors conducted a double-blind, placebo-controlled trial of desipramine (DES) in long-term treatment of alcohol dependence (ADP) to determine whether depression secondary to ADP could be accurately diagnosed using standard criteria, and whether this secondary depression would respond to antidepressant treatment. Seventy-one patients met Mental Disorders-III-Revised (DSM-III-R) criteria for ADP, and a subset of 28 subjects had major depression secondary to alcoholism. DES was generally well tolerated, and no serious adverse drug reactions occurred. Hamilton Rating Scale for

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Depression scores decreased significantly for DES-treated depressed subjects. DES has an overall effect on prolonging abstinence. Findings suggest that treating depression may be important in reducing risk of drinking relapse. Data do not support the use of DES to reduce risk of drinking relapse in nondepressed subjects.

McGrath, P. J., Nunes, E. V., Stewart, J. W., Goldman, D., Agosti, V., Ocepek-Welikson, K. M., & Quitkin, F. M. (1996). Imipramine treatment of alcoholics with primary

depression: A placebo-controlled clinical trial. *Archives of General Psychiatry*, 53(3), 232-240.

This study examined the effects of a 12-week, placebo-controlled imipramine trial concurrent with weekly relapse prevention therapy among 69 alcoholic individuals 18 through 65 years old who had a history of primary depression. Depression and drinking outcomes, as well as their relationship, were measured at 12 weeks. Data support the hypothesis that adequate imipramine treatment of moderately ill, actively drinking alcoholic subjects who have current primary depression results in significant, albeit modest, improvement in depression. Treatment did not cause serious adverse effects among subjects, despite the fact that some drank heavily while receiving imipramine. Data also indicated a reduction of occasions of heavy drinking correlated with depression response. This is consistent with the hypothesis that an improvement in depression also improves outcome of comorbid alcoholism, but it is not definitive, as response analysis suggested that improvement in drinking was antecedent to improvement in depression.

McLellan, A. T., Arndt, I. O., Metzger, D. S., Woody, G. E., & O'Brien, C. P. (1993). The effects of psychosocial services in substance abuse treatment. *Comment. Journal of the American Medical Association*, 269(15), 1953-1959.

The purpose of the article was to examine whether the addition of counseling, medical care, and psychosocial services improves the efficacy of methadone hydrochloride therapy in the rehabilitation of opiate-dependent patients. For a 6-month clinical trial, clients were randomly assigned to one of three treatment groups: (1) minimum methadone services (MMS), i.e., methadone alone (a minimum of 60 mg/d) with no other services; (2) standard methadone services (SMS), i.e., same dose of methadone plus counseling; or (3) enhanced methadone services (EMS), i.e., same dose of methadone plus counseling and on-site medical/psychiatric, employment, and family therapy. Ninety-two male intravenous opiate users in methadone maintenance treatment at the methadone maintenance program of the Philadelphia (PA) Veterans Affairs Medical Center participated in the study. While methadone treatment alone (MMS) was associated with reductions in opiate use, 69 percent of these subjects had to be "protectively transferred" from the trial because of unremitting use of opiates or cocaine, or medical/psychiatric emergencies. This was significantly different from the 41 percent of SMS subjects and 19 percent of EMS subjects who met the criteria. End-of-treatment data (at 24 weeks) showed minimal improvements among the 10 MMS patients who completed the trial. The SMS group showed significantly more and larger improvements than did the MMS group, and the EMS group showed significantly better outcomes than did the SMS group. MMS subjects who had been "protectively transferred" to standard

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care showed significant reductions in opiate and cocaine use within four weeks. In conclusion, methadone alone (even in substantial doses) may be effective for only a minority of eligible patients. The addition of basic counseling was associated with major increases in efficacy; and the addition of on-site professional services was even more effective.

McLellan, A. T., Luborsky, L., Woody, G. E., O'Brien, C. P., & Druley, K. A. (1983). Predicting response to alcohol and drug abuse treatments. Role of psychiatric severity. *Archives of General Psychiatry*, 40(6), 620-625.

Male alcoholics (n=460) and drug addicts (n=282) were evaluated at six-month follow-up after treatment in six rehabilitation programs. Initial analyses of the unstratified samples showed significant patient improvement but no evidence of differential effectiveness from different treatments or from "matching" patients to treatments. The two samples were then divided into groups on the basis of the number, duration, and intensity of their psychiatric symptoms at admission, i.e., their overall "psychiatric severity." Patients with low psychiatric severity improved in every treatment program. Patients with high psychiatric severity showed virtually no improvement in any treatment. Patients with midrange psychiatric severity (60% of the samples) showed outcome differences from different treatments, especially from specific patient-program matches. These findings support the effectiveness and specificity of different substance abuse treatments, suggest methodologic reasons for the lack of similar findings in previous studies, and demonstrate the importance of psychiatric factors in substance abuse treatment.

Metzger, D., Woody, G. E., de Philippis, D., McLellan, A. T., O'Brien, C. P., & Platt, J. J. (1991). Risk factors for needle sharing among methadone-treated patients. *American Journal of Psychiatry, 148*(5), 636-640.

This study examined the sociodemographic and psychiatric characteristics of 323 patients taking methadone who continued to share needles in the midst of the acquired immune deficiency syndrome (AIDS) epidemic. Data were collected via questionnaires and interviews. Psychiatric symptoms were measured with the SCL-90, the Beck Depression Inventory, and an index of addiction severity. Fear of AIDS was not associated with safer injection practices. Twenty percent of the subjects reported sharing needles within the previous six months. Those who shared needles reported greater difficulty in acquiring new needles, more legal difficulties, more severe drug problems, and higher levels of psychiatric symptoms. Reduction of psychiatric symptoms may play an effective role in changing high-risk behavior in this population.

Nace, E. P., Davis, C. W., & Gaspari, J. P. (1991). Axis II comorbidity in substance abusers. *American Journal of Psychiatry, 148*(1), 118-120.

To assess the complex relationship between substance abuse and personality disorders, the authors determined the prevalence of personality disorders in a group of middle-class substance abusers and compared the subjects who had personality disorders with those who did not. The subjects were drawn from patients consecutively admitted to an

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inpatient substance abuse program in a private psychiatric hospital (they were the first 100 who agreed to participate). Substance dependence was diagnosed according to DSM-III-R, and the patients were assessed with the Structured Clinical Interview for DSM-III-R Personality Disorders, Alcohol Use Inventory, MMPI, Health and Daily Living Form, Shipley Institute of Living Scale, and measures of chemical use and life satisfaction. Of the 100 substance abusers, 57 had personality disorders. These patients differed significantly from the 43 patients who did not have personality disorders in several ways: they had greater involvement with illegal drugs, had different patterns of alcohol use, had greater psychopathology, were less satisfied with their lives, and were more impulsive, isolated, and depressed. Because of the marked differences between the substance abusers who had personality disorders and those who did not, a uniform approach to substance abuse treatment may be inadequate.

Narrow, W. E., Regier, D. A., Rae, D. S., Manderscheid, R. W., & Locke, B. Z. (1993). Use of services by persons with mental and addictive disorders: Findings from the National Institute of Mental Health Epidemiologic Catchment Area Program. *Archives of General Psychiatry, 50*(2), 95-107.

This article presents results from the National Institute of Mental Health Epidemiologic Catchment Area Program on the use of mental health and addiction services by persons with psychiatric diagnoses. During a one-year period, 22.8 million persons made 326 million outpatient visits to a professional or volunteer source of care for mental health or substance abuse reasons (14.3 visits/person/year). Of these persons, 1.4 million were admitted to an inpatient facility (general hospitals or state and county mental health hospitals) during the same period. .

Reiger, D. A., Farmer, M. E., Rae, D. S., Locke, B. Z., Keith, S. J., Judd, L. L., & Goodwin, F. K. (1990). Comorbidity of mental disorders with alcohol and other drug abuse. *Journal of the American Medical Association, 264*(19), 2511-2518.

The prevalence of comorbid alcohol, other drug, and mental disorders in the United States total community and institutional population was determined from 20,291 persons interviewed in the National Institute of Mental Health Epidemiologic Catchment Area Program. Estimated United States population lifetime prevalence rates were 22.5 percent for any non-substance abuse mental disorder, 13.5 percent for alcohol dependence/abuse, and 6.1 percent for other drug dependence/abuse. Among those with a mental disorder, the odds ratio of having some addictive disorder was 2.7, with a lifetime prevalence of about 29 percent (including an overlapping 22 percent with alcohol and 15 percent with another drug disorder). For those with either an alcohol or an eating disorder, the odds of having the other addictive disorder were seven times greater than in the rest of the population. Among those with an alcohol disorder, 37 percent had a comorbid mental disorder. The highest mental and addictive disorder comorbidity rate was found for those with drug (other than alcohol) disorders, among whom more than half (53%) were found to have a mental disorder, with an odds ratio of 4.5. Individuals treated in specialty mental health and addictive disorder clinical settings have significantly higher odds of having comorbid disorders. Among the institutional settings, comorbidity of addictive

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and severe mental disorders was highest in the prison population, most notably with antisocial personality, schizophrenia, and bipolar disorders.

Rounsaville, B. J., Anton, S. F., Carroll, K., Budde, D., Prusoff, B. A., & Gawin, F. (1991). Psychiatric diagnoses of treatment-seeking cocaine abusers. *Archives of General Psychiatry, 48*(1), 43-51.

In a sample of 298 cocaine abusers seeking inpatient (n=149) or outpatient (n=149) treatment, rates of psychiatric disorders were determined by means of the Schedule for Affective Disorders and Research Diagnostic Criteria. Overall, 55.7 percent met current and 73.5 percent met lifetime criteria for a psychiatric disorder other than a substance use disorder. In common with previous reports from clinical samples of cocaine abusers, these overall rates were largely accounted for by major depression, minor bipolar conditions (e.g., hypomania, cyclothymic personality), anxiety disorders, antisocial personality, and history of childhood attention deficit disorder. Affective disorders and alcoholism usually followed the onset of drug abuse, while anxiety disorders, antisocial

personality, and attention deficit disorder typically preceded drug abuse.

Rounsaville, B. J., Dolinsky, Z. S., Babor, T. F., & Meyer, R. E. (1987). Psychopathology as a predictor of treatment outcome in alcoholics. *Archives of General Psychiatry*, 44(6), 505-513.

This study examined the relationship between psychopathology and treatment outcome in 211 alcoholics followed up one year after inpatient treatment. Results show that three types of intake assessment were found to predict outcome: psychiatric diagnosis, a global rating of psychopathology, and degree of alcohol dependence. There were significant interactions in the relationship between diagnosis and treatment outcome for men and women. For men, having an additional diagnosis was associated with poorer outcome. For women, having major depression was associated with a better outcome in drinking-related measures, while antisocial personality and drug abuse were associated with poorer prognosis.

Rounsaville, B. J., Weissman, M.M., Crits-Christoph, K., Wilber, C.H., & Kleber, H.D. (1982). Diagnosis and symptoms of depression in opiate addicts: Course and relationship to treatment outcome. *Archives of General Psychiatry*, 39(2), 151-156.

Evaluations of diagnosis and symptoms of depression were undertaken in 157 opiate addicts (under 30 years old) at entrance to a multimodality drug treatment program and six months later. Seventeen percent were having an episode of major depression (Symptom Checklist and Beck Depression Inventory) and 60 percent had at least mildly elevated depressive symptoms at entrance to treatment. Substantial improvement was noted at the six-month reevaluation, with the rates of major depression and elevated symptoms dropping to 12 percent and 31 percent, respectively. Symptomatic improvement, although related to retention in treatment, was not the result of specific antidepressant pharmacotherapy and did not differ across treatment modalities. Starting treatment during a major or minor depressive episode was predictive of poorer outcome

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in the areas of illicit drug use and psychological symptoms, but unrelated to the areas of occupational functioning, legal problems, and program retention.

Rounsaville, B. J., Kosten, T. R., Weissman, M. M., & Kleber, H. D. (1986). Prognostic significance of psychopathology in treated opiate addicts. A 2.5-year follow-up study. *Archives of General Psychiatry*, 43(8), 739-745.

This article reports a study of psychopathology as a factor in the treatment of opiate addicts that was conducted by reevaluating 268 addicts (mean age at time of treatment 27.6 years) 2.5 years after they had sought treatment. Schedule for Affective Disorders and Schizophrenia-Lifetime Version information data were used to classify subjects according to Research Diagnostic Criteria. The Beck Depression Inventory, a social adjustment scale, and the Global Assessment Scale were used to measure psychological symptoms. A structured clinical interview was used to rate severity of drug-related problems. Longitudinal course of functioning was assessed in 6-month periods following admission to treatment. Most measures were administered at entrance to treatment and at follow-up. Results show that most lifetime psychiatric disorders with an incidence of greater than 10 percent in the sample were significantly related to the outcome dimensions of current function and/or psychosocial adjustment and were unrelated to impairment due to substance use, legal problems, or medical disability. The structured

clinical interview appears to be a powerful and broad predictor of 2.5-year outcome in substance abusers.

Rounsaville, B. J., Weissman, M. M., Kleber, H., & Wilber, C. (1982). Heterogeneity of psychiatric diagnosis in treated opiate addicts. *Archives of General Psychiatry, 39*(2), 161-168.

A survey evaluated current and lifetime rates of psychiatric disorders in 533 opiate addicts in treatment at a multimodality program. Information was gathered using a structured interview format, the Schedule for Affective Disorders and Schizophrenia-Lifetime version. Criteria were the Research Diagnostic Criteria. Most of the subjects were given the diagnosis of at least one psychiatric disorder in addition to opiate addiction. The most common diagnoses were major depressive disorder, alcoholism, and antisocial personality. Rates of chronic minor mood disorders and anxiety disorders also were found to be elevated, in comparison with those found in a community population. In contrast, rates of schizophrenia and mania were very low and did not exceed those reported for the general population. The findings are interpreted as suggesting the importance of detecting and attending to psychopathology associated with opiate addiction.

Ross, H. E., Glaser, F. B., & Germanson, T. (1988). The prevalence of psychiatric disorders in patients with alcohol and other drug problems. *General Archives of Psychiatry, 45*, 1023-1031.

A survey evaluated the lifetime and current prevalence of mental disorders in 501 patients seeking assistance with alcohol and other drug problems at an addiction research *Annotated Bibliography*

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and treatment facility. Information was gathered using the National Institute of Mental Health Diagnostic Interview Schedule (DIS), and computer diagnoses were generated according to DSM-III criteria. Four fifths (78%) of the sample had a DIS lifetime psychiatric disorder in addition to substance use, and two thirds (65%) had a current DIS mental disorder. Excluding the unreliably diagnosed generalized anxiety disorder, the most common lifetime disorders were antisocial personality disorder, phobias, psychosexual dysfunctions, major depression, and dysthymia. Patients who abused both alcohol and other drugs were the most psychiatrically impaired. Patients with DIS psychiatric disorders had more severe alcohol and other drug problems.

Barbiturate/sedative/hypnotic, amphetamine, and alcohol abusers were the most likely to have a DIS mental disorder.

Schuckit, M. A. (1985). The clinical implications of primary diagnostic groups among alcoholics. *Archives of General Psychiatry, 42*, 1043-1049.

Interviews with patients and two resource persons were used to determine primary psychiatric diagnoses in 577 consecutive men entering an alcohol treatment program (ATP) at a Veterans Administration hospital. Twelve months later, about 95 percent of the sample was successfully followed up with a patient and resource person interview to establish the clinical course over the year for the four most populous diagnostic subgroups. At intake into the treatment program, the 432 group 1 primary alcoholic men were older, had a later age at onset of alcoholism, demonstrated a lower intensity of drinking, had fewer antisocial problems, and used fewer categories of drugs than the 60 men in group 2, who had primary drug abuse, and the 40 men in group 3, who had

primary antisocial personality disorder. During the follow-up, men in groups 2 and 3 had a greater likelihood of drug use and more police and social problems, and they demonstrated higher (more adverse) outcomes on a clinical outcome scale. The nine group 4 men with primary affective disorder at intake demonstrated an increased risk for past suicide attempts and psychiatric care and had a higher rate of affective disorder in first-degree family members. These findings underscore the importance of distinguishing between symptoms and diagnoses (e.g., sadness or antisocial problems), as well as the need to establish primary and secondary labels in substance abusers.

Schuckit, M. A., & Hesselbrock, V. (1994). Alcohol dependence and anxiety disorders: What is the relationship? *American Journal of Psychiatry*, 151(12), 1723-1734.

The authors evaluated literature from 1975 to the present regarding the relationship between lifelong Mental Disorders-III-Revised (DSM-III-R) anxiety disorders and alcohol dependence to determine whether these anxiety conditions are independent psychiatric disorders or temporary syndromes likely to disappear on their own. Data did not prove a close relationship between lifelong anxiety disorders and alcohol dependence. Further, prospective studies of children of alcoholics and individuals from the general population did not indicate a high rate of anxiety disorders preceding alcohol dependence. The high rates of comorbidity in some studies may reflect a mixture of true anxiety disorders among alcoholics at a rate equal to or slightly higher than that for the

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general population, along with temporary (but at times severe) substance-induced anxiety syndromes.

Schuckit, M. A., & Monteiro, M. (1988). Alcoholism, anxiety, and depression. *British Journal of Addiction*, 83, 1373-1380.

This paper discusses diagnostic and treatment approaches for dealing with patients who present with two or more psychiatric disorders. The authors emphasize the relationship between depressive and anxiety syndromes on one hand, and alcohol abuse on the other. Some reasons for diagnostic confusion are noted, such as the need to distinguish between drinking and alcoholism, sadness and depression, and anxiety feelings and major anxiety disorders. Because symptoms of sadness or anxiety and excessive drinking frequently overlap, a working hierarchy must be established. The approach suggested here is to determine the primary disorder on the basis of the chronology of development of symptoms. The authors point out some clinical guidelines for use in evaluating patients with primary alcohol abuse and secondary anxiety or depression. Using the data from the literature as well as from clinical experience, it is concluded that alcoholism, major affective disorder, and major anxiety disorder are distinct illnesses with different prognoses and treatments. Some implications for clinical practice are discussed.

Strain, E. C., Stitzer, M. L., & Bigelow, G. E. (1991). Early treatment time course of depressive symptoms in opiate addicts. *The Journal of Nervous and Mental Disease*, 179(4), 215-221.

The authors used the Beck Depression Inventory to assess self-reported depressive symptoms of opiate addicts at admission to a methadone treatment program and weekly during the first four treatment weeks. They found that a significant decline in scores occurred with the first follow-up evaluation (made seven days after admission), and that scores remained stable over subsequent weeks. The study suggests that a more accurate

assessment of psychiatric symptoms may be obtained by waiting one to two weeks after treatment entry, as compared with admission assessments.

Weiss, R. D., Mirin, S. M., & Griffin, M. L. (1992). Methodological considerations in the diagnosis of coexisting psychiatric disorders in substance abusers. *British Journal of Addiction, 87*(2), 179-187.

The authors reviewed the diagnostic methodology in 14 studies that examined the prevalence of coexisting psychiatric disorders in substance abusers. There was widespread variation among the studies in the timing of patient interviews, the nature of the interviews themselves, and abstinence criteria required before another psychiatric disorder could be diagnosed. These differences were reflected in some of the study results. The authors describe how variations in methodology can affect the diagnoses patients receive. They also suggest the use of more-specific abstinence criteria that are based on the substances of abuse and the specific disorders being diagnosed.

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Wolf, A. W., Schubert, D. S., Patterson, M. B., Grande, T. P., Brocco, K. J., & Pendleton, L. (1988). Associations among major psychiatric diagnoses. *Journal of Consulting & Clinical Psychology, 56*(2), 292-294.

The frequency and associations of multiple diagnoses were examined in 205 psychiatric inpatients. The Washington University research criteria assessed past and current episodes of illness. Over half the sample received more than one diagnosis. Correlations and factor analysis suggested that alcoholism, antisocial personality, and drug dependence form one group, and primary depression, primary mania, and secondary affective disorder form another. Schizophrenia was not associated with any of the other six diagnoses. The findings suggest that multiple diagnoses occur frequently and that the presence of one diagnosis should encourage the diagnostician to search for others.

Woody, G. E., & et al. (1984). Severity of psychiatric symptoms as a predictor of benefits from psychotherapy: The Veterans Administration-Penn study. *American Journal of Psychiatry, 141*(10), 1172-1177.

The subjects, 110 male opiate addicts 18 through 55 years old, received paraprofessional drug counseling alone or in combination with cognitive-behavioral or supportive-expressive psychotherapy. Outcome measures included the SCL-90, Maudsley Personality Inventory, and Beck Depression Inventory. The addition of professional psychotherapy was associated with greater benefits than was drug counseling alone. Subjects with severe psychiatric symptoms made little progress with counseling alone, but with added psychotherapy they made considerable progress and used both prescribed and illicit drugs less often.

3. GOVERNMENT, PROFESSIONAL ASSOCIATION, AND OTHER RELEVANT DOCUMENTS, 1993-2003

This section includes annotated citations of 67 documents prepared by government agencies, professional associations, and others to address the issues of identifying and treating co-occurring substance abuse and mental disorders.

American Association of Community Psychiatrists (2002). *Principles for the care and treatment of persons with co-occurring psychiatric and substance disorders*. Available at www.wpic.pitt.edu/aacp/finds/dualdx.html.

Persons with co-occurring psychiatric and substance disorders experience persistent and

recurrent difficulties that can interfere with every aspect of their lives. In addition, these persons have a high incidence of medical comorbidity, and their clinical course is associated with higher costs and poorer outcomes. This document describes a set of principles that form the basis of a collaborative planning process, in which mental health and substance abuse agencies, payers, providers, consumers, and family members work together in every system of care to perform a variety of functions.

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American Association of Community Psychiatrists (2000). *LOCUS: Level of care utilization system for psychiatric and addiction services. Adult Version 2000.* Author.

With the arrival of managed care programs and principles in many areas of the country, the use of quantifiable measures to guide assessment, level of care placement decisions, continued stay criteria, and clinical outcomes is increasingly important. In the past there have been no widely accepted standards to meet these needs. The development of LOCUS has provided a specific instrument that can be used for these functions. It provides a common language and set of standards with which to make such judgments and recommendations. Clinicians now have an instrument, which is simple, easy to understand and use, but also meaningful and sufficiently sensitive to distinguish appropriate needs and services. It provides clear, reliable, and consistent measures that are succinct, but sufficient to make care or quality monitoring judgments. This document is a dynamic system, which has evolved over the past four years. Version 2000 makes some changes to address semantic concerns, but makes no changes in content from version 2.0, which was introduced in 1998. Preliminary reliability and validity testing have been encouraging, and additional data continues to be collected as this version is released. The changes in 2000 will not affect those results; but will clarify some of the terminology previously used.

American Society of Addiction Medicine (2001). *Patient placement criteria for the treatment*

***of substance-related disorders: ASAM PPC-2R* (Rev. ed.). Chevy Chase, MD:**

American Society of Addiction Medicine.

This publication is the American Society of Addiction Medicine's (ASAM's) Second Edition - Revised of its Patient Placement Criteria (ASAM PPC-2R), the most widely used and comprehensive national guidelines for placement, continued stay, and discharge of patients with alcohol and other drug problems. Responding to requests for criteria that better meet the needs of patients with co-occurring mental and substance-related disorders ("dual diagnosis"), for revised adolescent criteria, and for clarification of the residential levels of care, the ASAM Patient Placement Criteria for the Treatment of Substance-Related Disorders, (Second Edition - Revised): (ASAM PPC-2R) was released in April 2001.

Arndt, S., Hartman, J., & Mileham, J. (2001). *Iowa Practice Research Collaborative Pilot #1 summary report: Co-occurring disorders: Agency and staff evaluation tools. Practice research collaboratives: Forging partnerships.* Iowa City, IA: Iowa Consortium for Substance Abuse Research and Evaluation.

The Iowa Practice Research Collaborative (PRC), funded by the Center for Substance Abuse Treatment in 1999, was one of nine one-year development projects implemented throughout the country. The impetus for the PRC developmental project was to establish

communication among substance abuse providers, researchers, policymakers, and consumers through a formal organizational structure. In 2000, the Iowa Consortium, in conjunction with the Prairielands Addiction Technology Transfer Center, was awarded a three-year Practice Research Collaborative implementation grant. The implementation

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phase is made up of ten pilot studies and three knowledge adoption studies. This report summarizes the results of pilot #1.

Baker, F. (1995). *TAP 4: Coordination of alcohol, drug abuse, and mental health services*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration.

The primary purposes of this report were to review current knowledge about coordination of alcohol, drug, and mental health (ADM) services, to describe the major models and mechanisms available for this purpose, and to make recommendations regarding the process of developing coordinated ADM services. The published literature, discussions with Substance Abuse and Mental Health Services Administration staff, telephone interviews with people knowledgeable about coordination, and meetings with State ADM representatives were the sources of information drawn upon for this document.

Bricker, M. (n.d.). *The STEMSS supported self-help model for dual diagnosis recovery: Applications for rural settings*. Saukville, WI: STEMSS Institute and Bricker Clinic.

Support Together for Emotional/Mental Serenity and Sobriety (STEMSS), a supported self-help model for "dual diagnosis" recovery developed in 1984, has been used with success in numerous communities across the United States and in Canada. This paper discusses the theoretical constructs of this recovery model, its defining characteristics, and its applicability to rural areas. STEMSS is a psychoeducational group intervention designed to enhance recovery from the combination of addiction and mental illness. It is designed to complement and amplify the gains available through participation in 12-Step and mental health support groups by addressing the areas of confusion where the two diseases overlap and interact. The STEMSS concept is predicated on an Interactive Disease/Synergistic Recovery Model for conjoint addictive and mental disorders, which emphasizes the empowerment of consumers in their own recovery. To this end, the STEMSS model utilizes graduated professional assistance toward the goals of peer leadership and consumer governance of individual group meetings.

Brokowski, A., & Smith, S. (2001). *Estimating the cost of preventive services in mental health and substance abuse under managed care*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Center for Mental Health Services.

In this technical report, models are presented to project the range of *potential cost* for the following interventions when they are provided to members of a managed care organization (MCO). The services span the developmental stages from prenatal to later life: 1) prenatal and infancy home visits for high-risk mothers, 2) targeted cessation education/counseling for smokers, 3) targeted short-term mental health therapy, 4) health promotion through self-care education, 5) presurgical educational intervention with adults, 6) brief counseling/advice to reduce alcohol use. The models are spreadsheet-based and include the various factors (input variables) that drive the costs of each

intervention: professional and clerical labor, supplies and materials, and general and administrative (G&A) overhead as well as profit margin. On the basis of the values published in research studies and other published studies or surveys, each model included estimates of each intervention's probable users, units of service per user, and price per unit. To achieve these estimates, a method of computer simulation in common use, known as "Monte Carlo," was applied to each spreadsheet model to estimate the potential variability in each input variable and combinations of input variables. This simulation method allows for a single, specific variable to be replaced by a distribution of all possible values.

Center for Substance Abuse Treatment (in press). *Substance abuse treatment for persons with co-occurring disorders. Treatment Improvement Protocol (TIP) 9.* Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

This revised Treatment Improvement Protocol (TIP) provides information about new developments in the rapidly growing field of co-occurring substance use and mental disorder. It focuses on what the clinician needs to know and provides the information in an accessible manner. The TIP synthesizes knowledge and grounds it in the practical realities of clinical cases and real situations so that the reader will come away with increased knowledge, encouragement, and resourcefulness in working with clients with co-occurring disorders.

Center for Substance Abuse Treatment (1997). *The national treatment improvement evaluation study (NTIES).* Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

This congressionally mandated five-year study of the impact of drug and alcohol treatment on thousands of clients in hundreds of treatment units received public support from the U.S. Department of Health and Human Services (DHHS). Commissioned by DHHS's Center for Substance Abuse Treatment, it was conducted by the National Opinion Research Center, University of Chicago, in conjunction with Research Triangle Institute. The full report provides a wealth of data useful in improving today's treatment programs and in designing new programs to advance treatment in the future. Substance abuse is known to be a major contributor to poor physical and mental health, and abusers use a disproportionately high percentage of physical and mental health services.

Improvements in the mental and physical health of clients after treatment benefit the treated individuals, their significant others, and society. Individual improvements included a 35-percent decline in those bothered by mental health problems and a 28-percent decrease in those reporting inpatient mental health visits.

Centre for Addiction and Mental Health (2001). *Best practices: Concurrent mental health and substance use disorders.* *Health Canada.* Available at www.cds-sca.com.

Over the last two decades, the co-occurrence of addiction and mental health problems among people seeking treatment and support has emerged as an important issue for those who plan and fund mental health and substance abuse programs, as well as for those who

provide direct service. Concerns about concurrent disorders have been fueled by research showing the high prevalence of such co-morbidity and its implications for the course,

cost, and outcome of treatment and other support services. This article provides an updated synthesis of the research information and offers specific recommendations for the screening, assessment, and treatment/support of this in-need population that are based on the highest quality research information available. The research synthesis was combined with the advice and input of experts and other key stakeholders in the field, including consumers who have experienced the severe consequences of concurrent disorders. This synthesis is best seen as complementing the considerable amount of work upon which it draws (key resource material is presented in Appendix A).

Clark, H. W., & McClanahan, M. (1998). New treatments for chemical addictions. In E. F. McCance-Katz & T. R. Kosten, T. R. (Eds.), *Review of psychiatry series* (pp. 151-182). Washington, DC: American Psychiatric Publishing.

This chapter discusses a spectrum of issues inherent in the concept of dual diagnosis. It describes assessment strategies that can help the practicing clinician to differentiate probable primary substance abuse problems from psychiatric disorders other than substance abuse. It addresses issues of psychopharmacology, which is an important area of concern for the practicing physician. Finally, it summarizes some of the psychosocial issues that are fundamental in the treatment process for dual diagnosis.

Cline, C., & Minkoff, K. (2002). *A strength-based systems approach to creating integrated services for individuals with co-occurring psychiatric and substance use disorders. A draft technical assistance document prepared for the Substance Abuse and Mental Health Services Administration. Sante Fe, NM: The New Mexico Department of Health, Behavioral Health Services Division.*

This technical assistance document is a case example of a state-level systems change initiative to develop integrated services for individuals with co-occurring psychiatric and substance use disorders defined as any combination of psychiatric and substance disorders of any level of severity, including both seriously mentally ill (SMI) and non-SMI populations]. The process described was designed and implemented by the State of New Mexico Department of Health/Behavioral Health Services Division within the adult indigent (non-Medicaid) public service system. This case example is presented to help policymakers, systems planners and managers, and providers in the mental health and substance abuse treatment fields better understand the processes that support the implementation of integrated services within a system of care.

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Coffey, R., Graver, L., Schroeder, D., Busch, J., Dilonardo, J., Chalk, M., & Buck, J. (2001). *Mental health and substance abuse treatment: Results from a study integrating data from state mental health, substance abuse, and Medicaid agencies.* DHHS Publication No. (SMA) 01-3528. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration.

This report, initiated and funded by the Center for Substance Abuse Treatment and the Center for Mental Health Services, presents the analytical findings from the Integrated Data Base (IDB) Project in the utilization of publicly funded mental health and substance abuse services. The report is based on one year of data (1996) for three states (Delaware, Oklahoma, and Washington) incorporating Medicaid and State mental health and substance abuse agency data.

Coley, C., M.S., & Reyes, R. M. (2001). Co-occurring Dialogues Discussion Group. Center for Substance Abuse Treatment (CSAT) (July 2000-February 2001). Substance Abuse and Mental Health Services Administration (SAMHSA). Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

This summary gives an overview of the discussion list activity for the first six months of the Co-occurring Dialogues Discussion Group's existence. Little attempt is made to capture the in-depth philosophical discussions. Rather, the focus is on collating and saving the resources that were mentioned. Several resource appendices are attached. These appendices represent a collection of self-identified field resources that appeared on the discussion list. Some subscribers may have provided only sketchy information. The authors therefore filled in gaps, when possible.

Costello, E., Armstrong, T., & Erkanli, A. (2000). *Report on the developmental epidemiology of comorbid psychiatric and substance use disorders*. Presented to the National Institute on Drug Abuse. Durham, NC: Duke University Medical Center.

One aim of this report was to review the published literature that could provide information on the development, extent, and predictors of psychiatric comorbidity with substance use and abuse in children and adolescents. From a review of 141 published papers, 21 were identified that could contribute to a meta-analysis of the extent of comorbidity with three disruptive behavior disorders (DBDs) and with depression and anxiety. The three disruptive behavior disorders are conduct disorder (CD), oppositional defiant disorder (ODD), and attention deficit hyperactivity disorder (ADHD).

Comorbidity was highest with the DBDs and lowest with anxiety. Controlling for comorbidity among psychiatric disorders reduced the odds ratios but maintained their relative ranking. Odds ratios for comorbidity with substance abuse/dependence were higher than those for any use. The excess risk associated with abuse/dependence compared with any use was highest for ADHD and depression, lowest for CD. Sex was the only correlate available for meta-analytic review of causes and correlates. For both abuse/dependence and any use, the odds ratios for comorbidity were higher in girls than in boys, significantly so for CD and anxiety. Although psychiatric comorbidity with drug

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abuse is high, varying by diagnosis, published data are lacking on correlates, risk factors, temporal ordering, and treatment. Another aim of this report was to review the information available in existing data sets that could contribute to a more detailed examination of (1) correlates and risk factors of psychiatric comorbidity with substance use and abuse and (2) the temporal relationships between psychiatric disorders and drug abuse. The authors identified 65 potentially useful data sets and sent out a questionnaire to the principal investigators. Sixteen data sets met the minimal requirements of representative sampling, psychiatric diagnoses, data on drug abuse, and information on timing. Most were panel studies with repeated assessments of participants. Data are available on more than 17,000 youth, providing some 84,000 person-observations over time. Of these, 50 percent are female; about 3,500 (11,000 person-observations) are African-American; 2,700 (6,000 person-observations) are Hispanic; and 450 (2,000 person-observations) are American Indian. The age ranges of the studies cover the period from birth through age 26. Given modern methods of data analysis, and the impressive resource represented by the data sets available, there is a real opportunity to advance

understanding of the predictors and timing of psychiatric comorbidity with drug abuse, using existing data.

Crowe, A., & Reeves, R. (1994). *Treatment for alcohol and other drug use: Opportunities for coordination*. TAP 11. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration.

This document provides information about the problem and consequences of substance abuse, the importance and effectiveness of assessment procedures, and current treatment modalities, as well as issues related to productive treatment programming. To achieve optimal treatment programs, the role and value of collaboration among systems with responsibility for coordination also are stressed. State-level legislative, judicial, and treatment officials are encouraged to use the information provided in this text as a resource in coordinating and developing treatment strategies based on state-of-the-art practices and identified needs within their states.

Daley, D. (2000). *Approaches to drug abuse counseling: Dual disorders recovery counseling*. Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse.

Dual disorders recovery counseling (DDRC) is an integrated approach to treatment of patients with drug use disorders and comorbid psychiatric disorders. The DDRC model, which integrates individual and group addiction counseling approaches with psychiatric interventions, attempts to balance the focus of treatment so that both the patient's addiction and psychiatric issues are addressed. This document describes the different phases of treatment, the goals and objectives of this treatment model, treatment format, counselor characteristics, and session format and content.

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Daley, D., Moss, H., & Campbell, F. (1993). *Dual disorders: Counseling clients with chemical dependency and mental illness*. Center City, MN: Hazelden.

The authors help professionals increase their understanding of the complex nature of dual disorders and discuss strategies they can use to guide their clients to recovery. This edition includes an overview of dual disorders and addresses the relationship between chemical dependency and psychiatric disorders (personality, antisocial personality, borderline personality, depression, bipolar, anxiety, schizophrenia, organic mental disorders); chemical dependency and recovery; practical counseling interventions; pharmacotherapeutic treatments; relapse and relapse prevention strategies; how to develop dual diagnosis programs and services for clients; and resources for clients and their families.

Davidson, S., & Hills, H. (Eds.) (2002). *Series on women with mental illness and cooccurring disorders*. Delmar, NY: The National GAINS Center.

Women entering jail may be pregnant or post-partum, or they may leave children behind in the community. More than 100,000 minor children have a mother in jail. History of abuse is known as a correlate of behavior leading to contact with the justice system; the cycle of intergenerational violence is well documented. Early identification of such history is critical in treatment decisions, planning for community re-entry, and the return of the ex-offender-mother to a parenting role. Although many correctional facilities recognize that women bring different health and relationship issues to their period of incarceration, operationally most have not adjusted practices already established for male

inmates. Jails present a challenge to service provision because of their 'short-term' nature, where lengths of stay may range from overnight detention to a sentence of up to one year. This series discusses topical issues relating to women in jails and highlights promising programs from around the nation.

Dorfman, S. (2000). *Preventive interventions under managed care: Mental health and substance abuse services*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Center for Mental Health Services.

This document responds to two questions commonly asked about preventive interventions: Are they effective? Can they produce cost savings, or can they be provided without increasing the net cost of care? This literature review addresses concerns about the outcomes and cost of these preventive interventions and helps reduce barriers to coverage for programs and services proven to be effective and economically feasible. The summarized articles provide science-based evidence that interventions designed to prevent substance abuse and mental health problems can contribute to health and wellbeing. Many also demonstrate either cost savings or no negative impact on cost. This evidence may not be widely known among purchasers and consumers.

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Dunston-Mclee, C. H. (2002). *Rehabilitation counselors' attitudes toward persons with coexisting mental illness and substance abuse disorders*. *Dissertation Abstracts International* 62(12-A), 4071. Ann Arbor, MI: University Microfilms International.

This study examined whether there is a significant relationship between amount of contact, specialized training in dual diagnosis, and rehabilitation counselors' attitudes toward individuals with dual diagnosis. These attitudes were conceptualized as attitudes toward treatment pessimism, integrated treatment, separate treatment, and vigilance in recovery. Five hundred Dual Diagnosis Attitude Surveys (DDAS) were mailed to counselors whose names were obtained for ACA and ARCA. Two hundred (41%) surveys were received for the purpose of this study. Initially, four multiple regressions were calculated to test the eight hypotheses of this study. None of the regressions resulted in significant findings, leading to the conclusion that rehabilitation counselors' amount of contact and degree of specialized training are not significantly related to their attitudes in the area of pessimism, integrated treatment, separate treatment, or vigilance in recovery. As a result of these findings, additional t-tests were computed in order to further study the problem. These tests resulted in two significant findings. Counselors who had frequent contact with clients with dual diagnosis and who had more than 15 hours of training in dual diagnosis had significantly higher pessimism scores (more optimistic) than those respondents with infrequent contact or 15 hours or less of training. In addition, non-CRC counselors had a higher mean integrated treatment score than certified counselors. On the basis of this study, it appears that rehabilitation counselors possess positive toward attitudes persons with dual diagnosis but lack an understanding of the importance of the recovery process. It appears that specialized training and the amount of contact with clients who are dually diagnosed can and does contribute to having a positive attitude. Educating and training counselors about dual diagnosis are important since the prevalence of substance abuse/dependency is on the rise among individuals with mental illness disorders as well as with other disabilities.

Fiedelholz, J. (2000). *Blamed and ashamed: The treatment experience of youth with*

cooccurring

substance abuse and mental disorders and their families. Executive summary. Alexandria, VA: Federation of Families for Children's Mental Health.

This report presents the findings of a two-year project intended to document and summarize the experiences of youth with co-occurring mental health and substance abuse problems and their families. The purposes of this study were to offer youth and their families the opportunity to reflect on and give voice to their experiences, to identify their successes and concerns, and to formulate recommendations so that a national audience might learn from their experience and improve services.

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Fleisch, B. (1993). *Approaches in the treatment of adolescents with emotional and substance*

***abuse problems.* TAP 1. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration.**

This report identifies promising treatment approaches for adolescents with mental health and substance abuse problems. These approaches will be useful to programs, local service agencies, and States seeking to respond to the growing problem of substanceabusing, mentally ill adolescents. Special attention is paid to the range of services provided through the entire treatment process, from initial intake through aftercare.

Fox, H., Wicks, L., McManus, M., & Kelly, R. (1993). *Medicaid financing for mental health and substance abuse services for children and adolescents.* TAP 2. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration.

This report provides State alcohol, drug abuse, and mental health program administrators and other policymakers with an explanation of the basic structure of the Federal Medicaid program. It also provides current information on the availability of Medicaid coverage for mental health and substance abuse prevention and treatment services across United States. The report places special emphasis on innovative approaches that either have been or could be used by States to increase Medicaid coverage of needed services.

Hazelden (1993). *The dual disorders recovery book.* Center City, MN: Hazelden.

This book, written for persons with an addiction and a psychiatric illness, provides a source of information and support throughout recovery. Personal stories offer experience, strength, and hope, as well as expert advice. The book offers information on how Steps 1 through 5 apply specifically to persons with dual disorders. An appendix includes a "Blueprint for Recovery," the meeting format of Dual Recovery Anonymous, and self-help resources.

Hendrickson, E., Schmal, M., Albert, N., & Massaro, J. (1993/1994). *Dual disorder treatment: Perspectives on the state of the art.* TIE Lines, X(4) and X(1).

More than ten years ago, the second issue of TIE Lines focused entirely on the impact of substance use on seriously mentally ill individuals. Over the years, TIE Lines has featured an additional 20 articles on dual disorders, and since October 1990 has included a page dedicated to the subject in every issue. Today, the agenda of providing accessible and effective treatment of dual disorders continues as a primary concern of The Information Exchange, Inc. (TIE) and is one of the greatest challenges facing the mental

health and substance abuse treatment fields. To continue TIE's commitment to the dissemination of up-to-date and relevant information on this topic, the authors interviewed 16 experts in the fields of mental health and substance abuse. The questions asked focused on the evolution, current status, and future directions in the treatment of

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dual disorders: What has been accomplished? What are the weaknesses in the system? Where are we headed? This special issue of TIE-Lines is based on the interviews.

Hoffmann, N., Estroff, T., & Wallace, S. (YEAR?). Co-occurring disorders among adolescent treatment populations. *The Dual Network*, 2(1), 10-12.

This article describes preliminary results of the Practical Adolescent Dual Diagnosis Interview (PADDI), a structured diagnostic interview designed to capture information about substance use disorders and mental health conditions among adolescent populations. A study of 111 adolescents indicated that the PADDI can consistently identify mental health and substance use disorders.

Janssen Pharmaceutica (1997). Providing coherent treatment to those with co-occurring addictive and mental disorders requires new vision. *Mental Health Issues Today*, 2.

This newsletter article discusses the current need to provide coherent treatment to those with co-occurring addictive and mental disorders and new approaches to this type of delivery system. It describes the characteristics of the co-occurring illness population, opinions of federal and state behavioral health experts related to existing barriers to care, highlights of innovative public sector treatment models, and complications associated with administering the pharmacy component of care. This newsletter article also includes recommendations drafted in 1995 and 1996 by a national council of co-occurring disorders experts for the federal body responsible for funding and overseeing substance abuse and mental health services.

Lehman, A., & Dixon, L. (Eds.) (1995). *Double jeopardy: Chronic mental illness and substance use disorders*. Binghamton, NY: Harwood Academic Publishers.

Of interest to practicing clinicians in both the mental health and substance abuse treatment sectors, this book provides a practical examination of the problem of substance use and abuse among persons with chronic mental disorders. Epidemiologic, diagnostic, and treatment issues are examined, as well as the problems of special populations and systems issues.

McHugo, G. J., Mueser, K. T., & Drake, R. E. (2001). Treatment of substance abuse in persons with severe mental illness. In H. D. Brenner, W. Boker, & R. Genner. *The treatment of schizophrenia: Status and emerging trends* (pp. 137-152). Kirkland, WA: Hogrefe & Huber Publishers.

This chapter summarizes the substance use and housing outcomes from two longitudinal evaluations of integrated treatment for dual disorders, substance abuse and severe mental illness. From these studies, the chapter draws conclusions for improving clinical practice. In the first study, assertive community treatment (ACT) and standard case management programs (SCM) for persons with dual disorders were compared.

Implementation criteria for the ACT teams included nine essential features and four additional criteria that focused on dual disorders. The SCM programs incorporated many

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of the same principles but implemented fewer of the features of the ACT model. In the second study, homeless, dually diagnosed subjects were placed in either the integrated treatment (IT) condition or the standard treatment (ST) group. Clients in the IT group received mental health treatment, substance abuse counseling, and housing services through a single community mental health center. Clients in the ST group received services through multiple agencies. Both studies showed that integrated dual disorders treatment improved the housing outcome. In the first study, there was a reduction in psychiatric hospitalization for both conditions. In the second study, both hospitalization and homelessness decreased for the IT group.

Miller, N. (1994). *Treating coexisting psychiatric and addictive disorders: A practical guide*. Center City, MN: Hazelden.

Focusing on the provision of treatment, this book reviews the thinking of many professionals on a broad range of dual diagnosis issues. Topics include the biology of addictive and psychiatric disorders; dual diagnosis in adolescents, minority populations, and women; relapse prevention strategies; and more.

Minden, S. L. (1994). *Mental health assessment and diagnosis of substance abusers*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Drug Abuse, Office of Science Policy, Education and Legislation, Community and Professional Education Branch.

This publication provides detailed descriptions of psychiatric disorders that can occur among drug-abusing clients.

Minkoff, K. (2001). *Service planning guidelines: Co-occurring psychiatric and substance disorders*. Prepared for the Behavioral Health Recovery Management Project funded by the Illinois Department of Human Services' Office of Alcoholism and Substance Abuse.

During the past two decades, as awareness of individuals with co-occurring psychiatric and substance disorders has increased, there has been a steady accumulation of data to permit the development of both evidence-based and consensus-based best practice models for the treatment of these individuals. These "best practices" need much more study, but they are sufficiently well developed at present that it is possible to use them to formulate coherent practice guidelines for assessment, treatment, and psychopharmacology of individuals with co-occurring disorders. This document outlines these practice guidelines.

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Minkoff, K. (1998). *Co-occurring psychiatric and substance abuse disorders in managed care*

***systems: Standards of care, practice guidelines, workforce competencies, and training curricula*. Report of the Center for Mental Health Services Managed Care Initiative: Clinical Standards and Workforce Competencies Project, Co-occurring Mental and Substance Disorders Panel. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Center for Mental Health Services.**

This report is the result of the collective efforts of a national panel of dual diagnosis experts, during the period October 1996 to February 1998, to develop national standards, workforce competencies, and training curricula for the treatment of people with cooccurring

psychiatric and substance disorders in managed care systems. The panel members were selected to represent consumers, family members, and providers and to include individuals with geographic, cultural, and racial diversity, as well as public and private sector and psychiatric and substance disorder backgrounds. To accomplish their task, the panel members first performed an extensive review of published and unpublished literature concerning dual diagnosis treatment and managed care, in order to create an Annotated Bibliography, which was completed in July 1997. On the basis of the material compiled in the Annotated Bibliography, the panel then proceeded to develop this report.

Minkoff, K. (1997). *Integration of addiction and psychiatric services. Managed mental health care in the public sector.* Amsterdam: Harwood Academic Publishers, pp. 233-245.

This chapter discusses the importance of integrated programming of psychiatric and addiction services in order to respond competitively to the demands of managed care. Advantages and disadvantages of integrated services are discussed, followed by an argument in favor of integrated service delivery. A step-by-step process for implementation is presented, focusing on organizational philosophy and mission, agency structure, clinical programs, and staff development.

Moss, S. (1998). *Contracting for managed substance abuse and mental health services: A guide for public purchasers.* TAP 22. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration.

This document is a comprehensive guide for public purchasers and others interested in influencing the development of requests for proposals (RFPs) and contracts in managed behavioral health care. Experts in both the substance abuse and mental health fields collaborated in its development. This guide provides information that will help public purchasers develop RFPs and contracts for managed behavioral health care so as to achieve programmatic success. Although this guide is intended to assist public purchasers in their managed care contracting efforts, it should not be used as a substitute for expert legal or financial guidance. Any recommendations put forth in this guide should be carefully considered by purchasers and adapted with appropriate guidance to meet the needs of the specific State or locality. This TAP is targeted most specifically to

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State and county substance abuse and mental health authorities, State Medicaid authorities, and other payers and purchasers of managed mental health and/or substance abuse services. Substance abuse and mental health treatment providers, MCOs, consumer groups, advocacy groups, academicians, and researchers may also find the document an informative discussion of the essential elements of managed care contracting for substance abuse and mental health services.

Mueser, K., Drake, R., Clark, R., McHugo, G., Mercer-McFadden, C., & Ackerson, T. (1995). *Toolkit for evaluating substance abuse in persons with severe mental illness.* Cambridge, MA: Evaluation Center, Human Services Research Institute.

This toolkit provides the information needed to assess the presence of substance use disorders in persons with a psychiatric disorder, the severity of the alcohol and drug abuse, and where on the continuum of recovery from substance abuse patients fall. The

authors have placed a premium on measurement tools that are psychometrically sound, user friendly, and time efficient to administer. At the same time, they highlight the limitations of existing instruments and discuss possible threats to the validity of assessments.

National Association of State Alcohol and Drug Abuse Directors (1997). *Preliminary information on services to individuals with co-existing substance abuse and mental disorders*. Prepared for the Center for Substance Abuse Treatment. Washington, DC: Author.

This paper summarizes results of a National Association of State Alcohol and Drug Abuse Directors (NASADAD) survey of State alcohol and other drug agencies and State mental health authorities. It provides State-level analysis of the organization, design, delivery, and financing of services for co-existing disorders. It includes State-level definitions of co-occurring disorders.

National Association of State Alcohol and Drug Abuse Directors and the National Association of State Mental Health Program Directors (1998). *Substance abuse and mental health services linkages with primary care: Analysis of state surveys and case studies*. Joint draft report prepared for Health Resources and Services Administration. Alexandria, VA and Washington, DC: Authors.

This paper examines policies and procedures States have developed and implemented to promote linkage among mental health, substance abuse, and primary health care services. It identifies the structural barriers that interfere with linkage efforts, as well as the methods States have used to overcome such barriers. Additionally, through case studies, the report examines innovative practices three states have used to promote linkages.

National Association of State Mental Health Program Directors and the National Association of State Alcohol and Drug Abuse Directors (1999). *Financing and marketing the new conceptual framework for co-occurring mental health and substance abuse disorders*. Alexandria, VA and Washington, DC: Authors.

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This is the final report of the joint task force convened to address the issue of cooccurring mental health and substance use disorders. The task force focused on the need to develop a comprehensive, coordinated system of care for individuals with co-occurring disorders, noting that this would require a significant commitment of time, creativity, resources, and expertise. The Task Force developed a general set of principles needed to finance such a continuum of care and discussed ways to market the conceptual framework and financing principles to those who fund, provide, and consume mental health and substance abuse services. The report is accompanied by a PowerPoint presentation that can be used in communicating these principles and strategies to administrators and program managers.

National Association of State Mental Health Program Directors and the National Association of Alcohol and Drug Abuse Directors (1998). *National dialogue on cooccurring mental health and substance abuse disorders*. Prepared for the Center for Substance Abuse Treatment and the Center for Mental Health Services. Alexandria, VA and Washington, DC: Authors.

This white paper is the product of a joint task force of representatives from the National Association of State Mental Health Program Directors and the National Association of

State Alcohol and Drug Abuse Directors. The task force also included recognized experts in the field and representatives from the Substance Abuse and Mental Health Services Administration's Centers for Substance Abuse Treatment and Mental Health Services. The paper presents a "consensual framework" for considering both the needs of individuals with co-occurring disorders and the system requirements designed to address these needs. The framework conceptualizes co-occurring disorders in terms of symptom multiplicity and severity rather than specific diagnoses, thereby encompassing the full range of people who have co-occurring mental health and substance use disorders. These theoretical underpinnings provide the bases of recommendations for future strategies.

National GAINS Center (2002). *Maintaining Medicaid benefits for jail detainees with cooccurring mental health and substance use disorders*. Delmar, NY: National GAINS Center.

This brief paper addresses the issue of maintaining Federal benefits for jail detainees.

National GAINS Center (2002). *The prevalence of co-occurring mental illness and substance use disorders in jails*. Delmar, NY: National GAINS Center.

This brief paper provides prevalence data on the scope and nature of mental health and substance problems affecting the target population.

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National GAINS Center (2001). *Options for offenders with mental health and substance use disorders (Albany County, NY)*. Delmar, NY: National GAINS Center.

In January 1997, the National GAINS Center supported a team of professionals from the Albany County Correctional Facility (ACCF), the Office of the Public Defender of Albany County, and the Alcohol and Drug Services Division of the Albany County Department of Mental Health to attend a three-day GAINS Regional Forum in Austin, TX. The forum, attended by representatives from 11 jurisdictions across the United States, provided a vehicle for teams to identify gaps and chart goals to improve services for people with co-occurring disorders within their county's justice system. On the plane ride home, the Albany County attendees, spurred by the realization that they had to involve many departments in the county to provide a streamlined and practicable continuum of services for offenders with health, mental health, and/or substance use disorders, began drafting a letter to the Albany County Executive. The letter summarized the objectives the team had outlined at the regional forum. One of those objectives was to form a committee.

National GAINS Center (1999). *Drug courts as a partner in mental health and co-occurring substance use disorders diversion programs*. Delmar, NY: National GAINS Center.

This brief paper outlines the use of drug courts as adjuncts to jail diversion programs for persons with mental illnesses and co-occurring substance use disorders, highlighting the successful program implemented in Lane County, OR.

National GAINS Center (1997). *The prevalence of co-occurring mental and substance abuse disorders in the criminal justice system*. Delmar, NY: National GAINS Center.

This fact sheet presents details on the explosive growth in co-occurring mental and substance use disorders in the criminal justice system over the past decade. It explains that 3 percent of the total United States adult population is currently under some form of correctional supervision, discusses how the growing correction population includes an

increasing number of individuals with special treatment needs, and reports on estimates that indicate that more than half of the people in the criminal justice system have diagnosable, serious mental illness or substance use disorders. This fact sheet addresses the percentage of jail detainees and persons in jail with a mental illness or substance use disorder, or both; comments on the prevalence estimates of serious mental illness among the growing number of people under community supervision; and expresses concern for the co-morbidity of serious mental illness and substance abuse or dependence among the general population.

National Health Policy Forum (1997). *Dual diagnosis: The challenge of serving people with concurrent mental illness and substance abuse problems*. Issue Brief 718.

Washington, DC: Author.

This report summarizes a roundtable discussion held April 14, 1998 in Washington, DC on the prevalence of co-occurring mental illness and substance abuse problems, or "dual diagnosis." It explains how this population seems to have emerged as a consequence of deinstitutionalization, points out that this population is prone to homelessness and/or incarceration, and addresses considerable barriers to effective intervention. It presents data from major surveys; comments on trends in comorbidity, causality, and relapse; illustrates the proximate risk factors of dual diagnosis, homelessness, and crime; notes several factors contributing to increased comorbidity; and addresses issues in the improvement of treatment. This report also includes strategies suggested by the Substance Abuse and Mental Health Services Administration National Advisory Council to improve prevention, treatment, and rehabilitation services for the several million individuals who have, or are at risk of developing, co-occurring substance-related and mental disorders.

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National Institute on Drug Abuse (1997). *Gender affects relationships between drug abuse and psychiatric disorders*. *NIDA Notes* (12)4. Bethesda, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health.

This newsletter describes a study conducted at the Medical University of South Carolina that examined gender differences in psychiatric disorders among 100 treatment-seeking cocaine and alcohol abusers. Some 48 percent of the men and 70 percent of the women had a comorbid affective or anxiety disorder. In addition, a substantial number were also dually diagnosed with other mental disorders, including passive-aggressive, obsessive-compulsive, and antisocial personality disorders. Some 56 percent of the men and 68 percent of the women abusers had one or more of these additional disorders, either alone or with an affective or anxiety disorder. The study's preliminary findings suggest that both onset scenarios, e.g., drug abuse first or mental disorder first, sometimes may occur. The sex of the drug abuser may be a factor in determining which comes first, depending on the comorbid psychiatric disorder involved.

Office of Applied Studies (1999). *SAMHSA position on treatment for individuals with cooccurring*

***addictive and mental disorders*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration.**

This online document describes the beginnings of the Substance Abuse and Mental Health Administration's (SAMHSA's) conceptual framework for considering the issues of how best to serve people with co-occurring addictive and mental disorders. It is based on an ongoing dialog begun in 1998 between SAMHSA's Center for Substance Abuse Treatment and Center for Mental Health Services and representative State substance abuse and mental health directors, through the National Association of State Alcohol and Drug Abuse Directors (NASADAD) and the National Association of State Mental Health Program Directors (NASMHPD). As depicted in the framework developed by this dialog, SAMHSA agrees that the individuals with at least two or more severe, independent but co-occurring addictive and mental disorders may best be served through an integrated approach to treatment. More information on the key principles of this

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conceptual framework, as well as SAMHSA programs and activities addressing this issue, is available online at:

http://www.samhsa.gov/2000_archive/centers/cmhs/001011april_1999.htm.

Office of the Inspector General (1995). *Services to persons with co-occurring mental health and substance abuse disorders*. DHHS Publication No. (OEI) 05-94-00151.

Washington, DC: Department of Health and Human Services

This report is a companion to another report, *Services to Persons With Co-occurring MH/SA Disorders*, [DHHS Publication No. (OEI) 05-94-00150], which describes the experiences and perspectives of supervisors or managers and staff who work directly with clients in treatment-related activities. The programs are all community-based (as opposed to inpatient) and were established specifically to treat people with co-occurring mental health and substance abuse disorders. In early discussions with Substance Abuse and Mental Health Services Administration staff, it was learned that information about front-line workers was of interest and would complement the programmatic information coming from the Center for Substance Abuse Treatment/Center for Mental Health Services demonstration program mentioned above. This report describes the 30 programs in which the 71 respondents work. At the exit conference on the first report, staff expressed interest in learning about the programs in which these respondents work. Hence the decision was made to produce this companion report. The 30 programs were identified through references in the literature, descriptions of the special demonstration programs and other Federal programs, and suggestions from experts. Almost all of them exclusively treat clients who have co-occurring mental health and substance abuse disorders, although a few also have some clients who have mental illnesses or substance abuse problems only.

Office of the Surgeon General (1999). *Mental health: A report of the Surgeon General*. Rockville, MD: U.S. Public Health Service.

This report addresses issues of mental health among various populations, including adolescents, adults, and older adults. Also included is a discussion of substance abuse and substance abuse services relevant to these populations.

Onken, L., Blaine, J., Genser, S., & Horton, A. (1997). *Treatment of drug-dependent individuals with comorbid mental disorders*. NIDA Research Monograph. Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse, Division of Clinical Research.

This monograph is based on the papers from a technical review, Comorbid Mental and Addictive Disorders: Treatment and HIV-Related Issues, held September 27 and 28, 1994. Topics include the influence of comorbid major depression and substance use disorders on alcohol and drug treatment: results of a national survey; challenges in assessing substance use patterns in persons with comorbid mental and addictive disorders; anxiety disorders, comorbid substance abuse, and benzodiazepine discontinuation: implications for treatment; cigarette smoking and its comorbidity;

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treatment of depression in drug-dependent patients: effects on mood and drug use; course and treatment of substance use disorder in persons with severe mental illness; substance use and HIV risk among people with severe mental illness; depression, substance use, and sexual orientation as cofactors in HIV-1 infected men: cross-cultural comparisons; and psychiatric symptoms, risky behavior, and HIV infection.

Pepper, B., & Hendrickson, M. (1996). *Developing a cross training project for substance abuse, mental health and criminal justice professionals working with offenders with co-existing disorders (substance abuse/mental illness)*. NY: The Information Exchange, Inc.

This document is an outgrowth of a cross-training project for substance abuse, mental health, and criminal justice professionals in the Northern Virginia area. The initial impetus for the regional cross-training project grew from a chain of events beginning in November 1992. At that time, Virginia voters approved a bond issue package that included funding for a 60-bed enlargement of the Northern Virginia Mental Health Institute, a 114-bed State institution that serves adults in the Northern Virginia region. A master plan for the expanded program and physical plant was developed by representatives of all jurisdictions in Northern Virginia, selected architects, engineers, consumers, advocates, institute staff, and State officials. This document is a product of the activities of that work group and the cross trainings they developed. It is divided into three sections. The first section is a review of the literature concerning this population; the second section is a guide for setting up a cross-training project; and the third section is a model twelve-session curriculum that could be used to educate professionals about this population.

Peters, R., & Hills, H. (1997). *Intervention strategies for offenders with co-occurring disorders: What works?* Delmar, NY: National GAINS Center.

This paper identifies which offenders are at higher risk for co-occurring disorders and the challenges in the treatment and supervision of these offenders. It also discusses screening and assessment of co-occurring disorders, treatment of co-occurring disorders, and supervision and case management strategies.

Ragin, A. Rasinski, K., Cerbone, F., & Johnson, R.A. (1999). *The relationship between mental health and substance abuse among adolescents*. Substance Abuse and Mental Health Services Administration National Household Survey on Drug Abuse Series: A-9. Rockville, MD: U. S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

This study used data from the 1994-1996 National Household Surveys on Drug Abuse (NHSDA) to examine the association between psychological functioning and substance

use among adolescents aged 12 to 17. The survey, conducted annually by the Substance Abuse and Mental Health Services Administration (SAMHSA), provides estimates of the prevalence of use of a variety of illicit drugs, alcohol, and tobacco, based on a nationally *Annotated Bibliography*

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representative sample of the civilian non-institutionalized population. In addition, the 1994-1996 surveys include mental health data not previously available. In 1994, the NHSDA added the Youth Self-Report, a comprehensive mental health checklist that has been used extensively in studies of adolescents. The instrument generates summary measures of emotional and behavioral problems, as well as measures for specific syndromes, including depression, anxiety, withdrawal, somatic complaints, social problems, thought problems, attention problems, delinquent behavior, and aggressive behavior.

Ridgely, M., Susan, Goldman, H., & Willenbring, M. (1998). Barriers to the care of persons with dual diagnosis: Organization and financing issues. *Readings in dual diagnosis*. Columbia, MD: IAPSRs, pp. 399-414.

Among the frustrations of managing the dual disorders of chronic mental illness and alcohol and drug abuse is the fact that knowing what to do (by way of special programming) is insufficient to address the problem. The system's problems are at least as intractable as the chronic illnesses themselves. Organizing and financing the care of patients with comorbidities are complicated. At issue are the ways in which we both administer and finance mental health and alcohol and drug treatment. Separate administrative divisions and funding pools, while appropriate for political expediency, visibility, and administrative efficiency, have compounded the problems inherent in serving persons with multiple disabilities. Arbitrary service divisions and categorical boundaries at the State level prevent local governments and programs from organizing joint projects or creatively managing patients across service boundaries. When patients cannot adapt to the way services are organized, we risk reinforcing their over-utilization of inpatient and emergency services, which are ineffective mechanisms for delivering the care these patients need. This article reviews the barriers in organization and financing of care (categorical and third-party financing, including the special problem of diagnosis-related groups limitations) and proposes strategies to enhance the delivery of appropriate treatment.

Snyder, W., & Ooms, T. (1994). *Empowering families, helping adolescents: Family-centered treatment of adolescents with alcohol, drug abuse, and mental health problems*. TAP 6. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration.

This monograph is a follow-up to a Department of Health and Human Services conference held in the fall of 1989 on the treatment of adolescents with alcohol, drug abuse, and mental health problems. It attempts to further clarify issues and treatment models and to explain the steps necessary to implement a family-centered approach to adolescent treatment. The monograph is designed for alcohol and other drug abuse (AODA) and mental health professionals, paraprofessionals, administrators, and policymakers who want to learn more about family-centered treatment.

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Squires, D., & Moyers, T. (2001). *Motivational enhancement for dually diagnosed consumers*. A guideline developed for the Behavioral Health Recovery Management project. Albuquerque, NM: University of New Mexico Center on Alcoholism, Substance Abuse and Addictions.

The purpose of this guideline is to introduce clinicians to the use of Motivational Enhancement Therapy (MET) with dually diagnosed consumers as one component of an integrated treatment program. Because substance abuse significantly interferes with the assessment, treatment, and management of psychiatric symptoms, it is important that consumers reduce their recreational use of alcohol or drugs. Motivational enhancement refers to a style of clinical interaction designed to engage ambivalent or resistant consumers in the treatment process. Within an integrated treatment program, the job of the ME therapist is to prepare unmotivated consumers for a course of treatment by encouraging change talk and by decreasing resistance to the notion of reducing the use of alcohol or drugs.

Stange, J., Levin, S., & Poonai, K. (2002). *Co-occurring disorders. Strategic recommendations for the Office of Evaluation, Scientific Analysis, and Synthesis*. Prepared for the Center for Substance Abuse Treatment. Washington, DC: ACCESS Consulting International, Inc.

The fields of mental health and substance abuse treatment have been grappling with various issues surrounding the funding and treatment of co-occurring disorders. The scope of this report is not to address those myriad issues, but rather to address the domains that are the particular responsibility of the Office of Evaluation, Scientific Analysis, and Synthesis (OESAS) and to formulate recommendations for a strategic plan specific to OESAS and its mission in the areas of publications and dissemination of information, knowledge application, and training and workforce development.

Substance Abuse and Mental Health Services Administration. (2002). *DASIS Report: Facilities offering special programs for dually diagnosed clients*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

Individuals with both mental and substance use disorders are said to be dually diagnosed. Some substance abuse treatment facilities provide special programs for dually diagnosed clients that integrate multiple treatment services in the same location. This report uses information from the Substance Abuse and Mental Health Administration's 1999 Uniform Facility Data Set (UFDS) survey to examine the characteristics of substance abuse treatment facilities offering special programs for dually diagnosed clients. UFDS is an annual survey of all facilities in the United States, both public and private, that provide substance abuse treatment. Of the 15,239 treatment facilities that responded to the 1999 UFDS survey, nearly half (45%) reported that they provided programs for dually diagnosed clients.

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Substance Abuse and Mental Health Services Administration. (2002). *Report to Congress on the prevention and treatment of co-occurring substance abuse and mental disorders*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

This report includes a summary of the manner in which individuals with co-occurring disorders are receiving treatment, including the most up-to-date information available on

the number of children and adults with co-occurring disorders, and the manner in which Federal Block Grant funds are used to serve these individuals; a summary of practices for preventing substance use disorders among individuals who have a mental illness and are at risk of having or acquiring a substance use disorder; a summary of evidence-based practices for treating individuals with co-occurring disorders and recommendations for implementing such practices; and a summary of improvements necessary to ensure that individuals with co-occurring disorders receive the services they need. The report's "Blueprint for Action" is the Substance Abuse and Mental Health Services Administration's (SAMHSA's) five-year action plan for addressing co-occurring disorders and all the attendant issues and barriers to care faced by individuals with these disorders. The plan will guide specific actions to be taken by Federal, State and local officials in establishing and strengthening treatment and prevention services for people with co-occurring substance use disorders and mental disorders and seeing to their recovery. Consistent with the President's New Freedom Initiative, the Blueprint will help ensure that those who have co-occurring disorders have the supports they need to reside in, and have a meaningful life as part of, their communities.

Substance Abuse and Mental Health Services Administration (2001). *Mental health and substance abuse treatment: Results from a study integrating data from state mental health, substance abuse and Medicaid agencies*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

The Center for Mental Health Services initiated an effort to integrate Medicaid, State mental health, and State substance abuse agency data. Under confidentiality agreements with the States, data from this Center for Substance Abuse Treatment and Center for Mental Health Services Integrated Data Base (IDB) project have been analyzed and are the subject of this first report. This IDB, built for the year 1996, assembles information from three types of State organizations: State mental health, State substance abuse, and Medicaid agencies. The IDB contains data on mental health and substance abuse clients, their use of services, and level of expenditures. The IDB is assembled separately for three participating States: Delaware, Oklahoma, and Washington. It links person-and service-level information across the multiple organizations in each State into one uniform database. This report presents findings from analyses of a subset of IDB records: persons with a primary mental or substance use disorder who are under age 65. Information about three groups of clients is presented: clients with mental disorders only, clients with substance use disorders only, and clients with co-occurring mental health and substance use disorders. The study answered questions about the treatment services received by these populations under three different State auspices: the State mental health and/or substance abuse agency, Medicaid, or multiple auspices.

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Substance Abuse and Mental Health Services Administration (2000). *SAMHSA Factsheet: Co-occurring disorders activities of the Substance Abuse and Mental Health Services Administration*. <http://www.samhsa.gov/publications/publications.html>.

This factsheet provides information on various Substance Abuse and Mental Health Services Administration programs that address co-occurring disorders. It also presents information on efforts underway to disseminate information on what works to the mental health and substance abuse treatment communities.

Substance Abuse and Mental Health Services Administration. (1999). *Substance use and mental health characteristics by employment status*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

This report examines the relationship between substance use and employment status. It also examines mental health characteristics by employment status and the interception between health issues and substance use. It measures the prevalence of substance use and dependence among individuals who received public assistance or welfare, specifically Aid to Families with Dependent Children (AFDC).

Substance Abuse and Mental Health Services Administration (1998). *The costs and effects of parity for mental health and substance abuse insurance benefits*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

This report presents findings on the costs and effects of providing parity for mental health and substance abuse benefits. Primary funding for the report was provided by the Center for Mental Health Services and the Center for Substance Abuse Treatment, with additional support provided by other components of the Substance Abuse and Mental Health Services Administration as part of the Agency's managed care initiative.

Substance Abuse and Mental Health Services Administration National Advisory Council (1997). *Improving services for individuals at risk of, or with, co-occurring substance-related and mental disorders*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.

This conference report and national strategy reflect the deliberations of over 140 expert participants attending the national conference, Improving Services: Co-occurring Substance Abuse and Mental disorders, convened by the Substance Abuse and Mental Health Services Administration in November, 1995. The recommendations are the products of six substantive conference tracks and reflect the knowledge and opinions of the experts who contributed to the track discussions. The goals, objectives, and strategies in the national strategy are based on track recommendations as complemented by input solicited and received from a reviewer panel comprised of Federal and non-Federal experts from the field. These recommendations do not necessarily reflect the official position of the Substance Abuse and Mental Health Services Administration or any other part of the United States Department of Health and Human Services.

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Winarski, J. (1998). *Implementing interventions for homeless individuals with co-occurring mental health and substance use disorders: A PATH technical assistance package*.

Prepared for The Projects for Assistance in Transition from Homelessness Program, Center for Mental Health Services. Available at www.pathprogram.com.

This technical assistance document is divided into three major sections that discuss client characteristics, treatment principles, and program planning. Chapter 2 provides background information about the unique attributes of homeless individuals with cooccurring disorders. Chapter 3 features a summary of service approaches and treatment principles associated with effective responses to the needs of homeless individuals with co-occurring disorders. These theoretical foundations provide the basis for the strategies and interventions described in Chapter 4. Finally, abstracts and contact information for the Center for Mental Health Services/Center for Substance Treatment dual diagnosis treatment demonstration projects are included in Appendix A.

VI. REFERENCES

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