

Current Practices and Optimal Futures for the Treatment of Substance Use Disorders Through Client-Treatment Matching: A Delphi Study

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Recommended Citation

Adrians, Noah Elijah, "Current Practices and Optimal Futures for the Treatment of Substance Use Disorders Through Client-Treatment Matching: A Delphi Study" (2011). *Dissertations (2009 -)*. Paper 115.
http://epublications.marquette.edu/dissertations_mu/115

CURRENT PRACTICES AND OPTIMAL FUTURES FOR THE TREATMENT OF
SUBSTANCE USE DISORDERS THROUGH CLIENT-TREATMENT
MATCHING: A DELPHI STUDY

By

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A Dissertation Submitted to the Faculty of the Graduate School,
Marquette University,
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy

Milwaukee, WI

August 2011

ABSTRACT
CURRENT PRACTICES AND OPTIMAL FUTURES FOR THE TREATMENT OF
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Noah E. Adrians

While over 4 million people in the United States aged 12 and over are engaged in treatment for substance use disorders each year, much remains unknown about how clients can be optimally referred to available treatment services, settings, providers, and interventions. Historically, clients received treatment in uniform, high intensity settings. Research over recent decades, however, has shown increased cost effectiveness and sustained, if not improved, clinical outcomes associated with efforts to individualize care. This study utilized the Delphi research methodology to examine community experts' (N = 9) perspectives on the real world implementation of client-treatment matching principles within a major metropolitan area in the Midwest.

Expert panel members underwent an iterative process of qualitative and quantitative surveys to build consensus and highlight areas of dis-sensus related to: 1) current matching practices in the region of interest, 2) matching practices in an optimal treatment system, 3) barriers to treatment system improvement, 4) consequences of existing systemic shortcomings, and 5) solutions for identified problems in client-treatment matching. Results are compared with both available information about treatment systems in the community of interest and published literature about client-treatment matching to yield recommendations for enhancing the efficiency and effectiveness of substance use disorder treatment through client-treatment matching. Recommendations suggest specific strategies for improving treatment by: enhancing clients' capacity to make informed treatment choices, expanding the scope of available services and interventions to which clients can be matched, improving screening and comprehensive assessment, and better motivating providers to utilize client treatment-matching strategies.

DEDICATION

Throughout my life, a small handful of individuals have tolerated me at my worst, celebrated with me at my best, and loved and prayed for me without reserve and without condition. It is to my family that I dedicate this dissertation. Amber, my wife and best friend, and our sons Eden, Isaac, and Levi have given me the love, support, and encouragement needed to embark upon this and life's many other adventures. They are each a daily blessing, and in them I find both a living embodiment of my hope and a renewal of my desire to strive for excellence.

My first and best teachers were my parents, Ron and Alison. They worked tirelessly to instill in me both a deep love of learning and the insight that the value of knowledge lies in its ability to be used in the service of others. For these lessons and so many others, I am eternally grateful. My parents-in-law, Mary and Barney, have shared with me their home, their lives, and their family. My life is enriched by their presence in it. My mother once told me, "you don't marry a girl; you marry a family." I am glad I married theirs. My brothers, Jason and Josh, brother-in-law, Ryan, and sisters-in-law, Katie and Jessie, complete the circle of those most important to me. They have never hesitated to keep me grounded in my life and to my values. Thank you all.

ACKNOWLEDGEMENTS

Noah E. Adrians

“Have faith in God, for all else bring data.”

I would like to offer my most genuine thanks to my dissertation committee and the many others who contributed to and participated in this project. First among them is Dr. Todd C. Campbell, who for the last six years has offered me his wisdom (the above adaptation of W.E. Deming’s quote included), vision, and guidance. He displayed faith in my ability to rise to challenges beyond what I once thought possible and has impacted me personally and professionally in innumerable ways. I, and subsequently this dissertation, have been heavily influenced by his dedication to social justice and commitment to using the best of what science can offer to improve the lives of our neighbors.

This project also owes much to Drs. Terry Young and Lisa Edwards, whose support, insight, and valuable feedback have enhanced the quality of both this project and of my graduate education. Through the teaching, guidance, and prodding of these two, along with many other faculty members and clinical supervisors, I have gained new eyes for seeing this world and the people in it. I am forever grateful. I would also like to thank my fellow CECP students, particularly Laura and Pete, who freely gave their time in assisting me with this project.

Finally, I have been honored to work with and learn from Robert Cherry, Walter Laux, and many other members of the Milwaukee Addiction Treatment Initiative and Milwaukee County’s Behavioral Health Division. My most sincere hope is that the outcome of this dissertation will yield dividends for their investments of time and expertise.

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Chapter One: Introduction

Statement of the Problem

Approximately 4 million people in the United States aged 12 and over are engaged in treatment for substance use disorders (SUD) each year, according to the 2006 National Survey on Drug Use and Mental Health (Substance Abuse and Mental Health Services Administration, 2007). Among them, 2.5 million individuals received services from an ever-increasing range of “specialty services,” including: hospital based inpatient programs, residential rehabilitation programs, outpatient treatment providers, community mental health centers, or intensities of treatment, including: day treatment, partial hospitalization, or intensive inpatient programs housed in any of the previously described settings. Also, among the 4 million people engaged in SUD treatment, 2.2 million reported participation in a self-help group (i.e. Alcoholics Anonymous, Narcotics Anonymous), many of whom were simultaneously or had previously been engaged in other specialty services.

As the diversity in treatment options has grown over time, clients, providers, and payees have often struggled to identify the optimal treatment program or provider to address client needs, as SUD treatments can vary widely on type, philosophy, setting, intensity, activities, services, and cost, amongst other aspects of the therapeutic milieu (Gastfriend & McLellan, 1997; Mee-Lee & Gastfriend, 2008). In efforts to address this concern, methods have been explored for referring patients to each of the various treatment types, settings, and providers. These methods include but are not limited to patient self-selection, availability/convenience, random assignment, clinical judgment, or an algorithm or formal placement rule (Mattson & Allen, 1991). Of these methods, the most widely accepted today is the use of a formal rule or algorithm, generally in the form of a patient placement criteria (PPC) used to assign a client to a specific setting and intensity of treatment.

According to Kolsky (2006), 43 states require that some form of PPC be used to assign patients to the appropriate level of care for SUD treatment. Although numerous PPC exist, as developed by individual states, health care providers, or other organizations, the most widely used PPC is that of the American Society of Addiction Medicine (ASAM). The ASAM-PPC is approved for use by Value Options and other major healthcare providers, the Department of Defense for use in all military bases abroad, and the Veterans Administration for use in its 171 hospitals nationwide (Callahan, 1999; Kosanke et al., 2002; Substance Abuse and Mental Health Service Administration's Co-Occurring Center for Excellence, 2005; Sharon et al., 2003). Additionally, Kolsky (2006) reports that the ASAM-PPC is required for use in 29 states, with additional states requiring the use of either the ASAM or a different PPC (i.e. New York), using PPC either closely based on the ASAM-PPC (i.e. Kansas), or that were planning to adopt the ASAM-PPC in the immediate future (i.e. Maine). Moreover, one state (i.e. Wisconsin) was misrepresented in the study, as state statutes have allowed for the use of either the ASAM or Wisconsin Uniform Placement Criteria (UPC), but it was represented in the study as only allowing use of the Wisconsin UPC. In total, 33 states were found to now use or be in the process of officially adopting the ASAM-PPC or another PPC that is only a slight variation from the ASAM-PPC.

The ASAM-PPC was first published in 1991 and is now in its second revision, the ASAM-PPC-2R (American Society of Addiction Medicine, 1991; American Society of Addiction Medicine, 2001). The ASAM series of PPC has had tremendous influence over the science, practice, and policy of assigning clients to SUD treatment, as it has clarified and organized the process of assigning clients to various settings and intensities of treatment, as well as having influenced the development of other PPC tools. The ASAM series of PPC has also shaped how health care and legal systems, even those not utilizing the ASAM-PPC, conceptualize patient placement and treatment referral in general. The ASAM series of PPC

has also strongly influenced substance use research, Medicaid, individual state treatment and healthcare systems, and managed care organizations (Kosanke et al., 2001; Sharon et al., 2003). Congruent with the ASAM-PPC, a priority in modern SUD treatment systems is typically placed on regulating referral based on the setting and intensity (i.e. hours per week) of treatment provided, while other aspects of treatment not regulated by the ASAM (e.g. services provided, treatment interventions, modalities) are often less closely attended to in the referral process.

Despite the widely accepted nature and prominence of the ASAM-PPC among policy makers and treatment providers, the ASAM-PPC and other formal rules or algorithms for placing clients into a SUD treatment level of care must be recognized as one specific area of research within a broader body of literature addressing the topic of client-treatment matching (CTM). In the study of CTM, the chief underlying question pertains to which treatment, or components of treatment, offer(s) the best outcomes in the most efficient manner to which clients at which times. Patient placement criteria, such as the ASAM-PPC generally attempt to address that question by matching clients to a level of care characterized by a specific intensity and setting for treatment (i.e. outpatient, day treatment, residential). However, other approaches to CTM extend beyond solely matching clients to a treatment setting and intensity. Other approaches include matching clients to specific treatment services (e.g. education, vocation, housing, transportation, child care) (Hser, Polinsky, Maglione, & Anglin, 1999), modalities (e.g. cognitive behavioral therapy, motivational enhancement therapy) (Project MATCH Research Group, 1997), or other interventions (e.g. individual therapy, group therapy, anger management). Such dimensions of and efforts toward CTM have shown broad potential to enhance client outcomes, increase the potency of treatment interventions and services, and the improve efficiency/cost-effectiveness of SUD treatment systems.

Theoretically, CTM policies and practices strive to avoid inefficiency in the organization, delivery, and assignment of treatment components, the consequence of which would be a system in which clients have worsened outcomes and need either 1) more episodes of treatment or 2) longer stays within each treatment episode to achieve the desired outcome. Furthermore, a potential consequence of poor CTM is that treatment providers would be less cost-effective, being less likely to assign individuals to the minimum effective level and type of treatment, rendering providers less able to offer more treatment options to a greater number of clients. One global outcome of such cumulative systemic inefficiencies is a considerable gap between the number of individuals who need and those who actually are able to receive treatment services. According to the most recent information available, of the 23.2 million Americans in need of treatment for addiction in a given year, only 10% actually received treatment (Substance Abuse and Mental Health Services Administration, 2007). This gap also occurs on a local level, as in Milwaukee County, Wisconsin, the community of interest for this study, where over 82,000 citizens needed but did not receive addiction treatment in a recent year (Milwaukee Addiction Treatment Initiative, 2009).

Study Rationale and Research Questions

Understanding, developing, and refining the potential benefits and practical implementation of CTM, through the use of PPC and other methods, in assigning clients to a wide range of treatment settings, intensities, services, and other components is critical to the clinical success and financial sustainability of the SUD treatment field. Issues associated with the assessment, matching, referral, and treatment of clients utilizing CTM practices are vital to effectively providing a wide range of interventions, levels of care, and supportive services to the greatest possible number of individuals across treatment systems, ranging from the individual clinician to the provider network, community, region, or state. Such issues, informed by a study of CTM, are also highly relevant to legislative bodies responsible for

regulating treatment practices. Improvements in CTM have been cited as effective in enhancing client outcomes, the potency of treatment interventions, and efficiency in the provision of SUD treatment. Increasing the overall effectiveness and efficiency of SUD treatment should have broad positive outcomes, including increasing benefit for individuals participating in SUD treatment, potentially reducing both the length of time in treatment and the need for repeated treatment episodes, thereby making treatment more cost-effective.

CTM strategies have been widely researched for their utility in enhancing the efficiency and effectiveness of SUD treatment. Moreover, CTM strategies are widely practiced and are frequently mandated by both private organizations and public institutions, although these mandates and their implementation vary widely. Particularly, CTM by using a PPC to match clients to various levels of care is a widely implemented and recognizable form of matching used in SUD treatment. However, multiple questions persist regarding how CTM, including and beyond level of care matching, is implemented both by individual providers and across broader treatment systems. Furthermore, questions exist in the literature regarding what ideal CTM practices are, which barriers continue to restrain ideal CTM implementation, what are the implications of such barriers (and the subsequent CTM deficits), and what potential solutions exist. Therefore, the primary research questions are as follows:

1. How are CTM strategies and principles implemented in a current, “real world,” SUD treatment?
2. What CTM practices are characteristic of an optimal treatment system?
3. What barriers prevent CTM practices from taking a more ideal form?
4. What are the implications of such barriers (and subsequently limited CTM) on current SUD treatment and client outcomes?

5. What possible solutions exist to overcome identified barriers, thereby enhancing CTM capabilities?

Chapter 2: Review of the Literature

Definitions

Client-treatment matching: The deliberate and consistent attempt to prescribe treatment on the basis of individual patient needs, rather than treating all patients with common characteristics or diagnoses the same (Glaser & Skinner, 1981; Mattson & Allen, 1991). CTM aims to 1) maximize the effectiveness of specific treatments by identifying those individuals most likely to benefit from them, 2) optimize positive outcomes for individual clients by matching them to needed treatment elements, and 3) improve the effectiveness and efficiency of treatment systems by both maximizing outcomes while minimizing costs (Gastfriend & McLellan, 1997; Longabaugh et al. 1994).

Co-occurring disorder(s): These are any medical, mental health, or other diagnosable conditions that coexist with substance-related problems. Depending upon the respective severities of each of a client's co-occurring substance use, mental health, medical, or other disorders, the client may be best served by receiving primary treatment in a substance use, psychiatric, or medical facility. However, wherever the client receives care, providers are recommended to provide services targeted at addressing all co-occurring disorders in an integrated fashion, rather than treating only one problem area (American Society of Addiction Medicine, 2001).

Inpatient Treatment: Often delivered in acute or medically monitored medical inpatient settings, inpatient treatment is the highest intensity treatment available for SUD. These programs include a 24-hour structure of evaluation and treatment provided under medical direction. Full access to acute medical, psychiatric, and other services are available, although the treatment is targeted primarily for the treatment of SUD (American Society of Addiction Medicine, 2001).

Intensive Outpatient: A level of care for SUD treatment serving patients needing intensive treatment programming but who do not need 24-hour supervision or access to services and can generally succeed in treatment on an ambulatory basis. Intensive outpatient services generally involve 9 – 19 hours of structured programming each week. Intensive outpatient programs are also commonly referred to as “day treatment” (American Society of Addiction Medicine, 2001).

Level of care: Levels of care represent SUD treatment options organized along a continuum of program levels, each targeted to meet client needs based on the setting and intensity of treatment services provided. The optimal level of care is considered to be the least intensive treatment level capable of facilitating client change, meeting treatment objectives, and providing appropriate supervision and security for the client. Beliefs regarding the optimal level of care indicate that receiving services at a lower than recommended level will facilitate worsened treatment outcomes, while receiving services at a higher than the needed level will not enhance outcomes but rather represents an unnecessary expense and inefficient use of resources (American Society of Addiction Medicine, 2001).

Outpatient Treatment: A level of care for treatment providing evaluation, treatment, and recovery services designed to help an individual change alcohol- and drug-use, as well as other maladaptive behaviors or conditions. Treatment is provided on an ambulatory basis and consists of regularly scheduled sessions, at an intensity that (usually) involves fewer than nine hours of service a week (American Society of Addiction Medicine, 2001).

Overtreatment: This condition occurs when a client receives services at a higher intensity level of care than is needed to facilitate optimal client outcomes. Overtreatment conditions do not further enhance treatment outcomes, but rather represent unnecessary expenses and an inefficient use of payee, provider, and client resources (Magura et al., 2003).

Partial hospitalization: A level of care for SUD treatment serving patients needing intensive treatment programming but who do not need 24-hour supervision or access to services and can generally succeed in treatment on an ambulatory basis. Partial hospital programs generally provide 20+ hours of structured programming each week. Partial hospitalization programs are also commonly referred to as “day treatment” (American Society of Addiction Medicine, 2001).

Patient placement criteria (PPC): Patient placement criteria are theoretically and empirically supported clinical decision trees or algorithms, which serve as structured guidelines for conducting a multidimensional assessment of and assigning patients to a specific level of care. Patient placement criteria are thought to enhance the treatment of substance use and other co-occurring conditions by placing clients in a treatment setting and service intensity capable of optimizing outcomes in the most efficient (i.e. cost effective) manner possible (American Society of Addiction Medicine, 2001)

Residential Treatment: A level of care for SUD treatment serving patients in need of 24-hour a day supervision and access to services. Clients in residential treatment need safe and stable living environments in which to develop the attitudes, skills, behaviors, and other changes necessary to fulfill the goals stated in the treatment plan. Residential treatments encompass a range of intensities, including clinically managed low, medium, and high intensity programs that differ on the number and intensity of services provided to clients while they remain engaged in residential treatment (American Society of Addiction Medicine, 2001).

Undertreatment: Undertreatment conditions are thought to exist when clients receive services at a lower intensity level of care than is recommended. Receiving services at a lower intensity level of care than needed, although generally constituting a reduction in the up front cost of services, is generally thought to lead to worse substance use, mental health, and other client outcomes. Undertreatment conditions have also been demonstrated as leading to increased future service utilization, also causing undertreatment to rather represent unnecessary expenses and an inefficient use of payee, provider, and client resources (Magura et al., 2003).

Client-Treatment Matching Theory Development

Although many programs, models, and settings for substance use disorder (SUD) treatment have existed over time, comprehensive, residential, high intensity treatments (e.g.

Minnesota Model programs for alcohol, Synanon and therapeutic communities for drug use) dominated the SUD treatment field through the 1970s and into the 1980s. These models represented advancements from past treatment options as they provided conceptualizations and treatments reflecting SUDs as “chronic diseases that have multiple etiological roots, multiple dimensions in their symptomatology, and which are characterized by episodes of remission and relapse” (White, 1998, p. 212). The degree to which such comprehensive, high intensity, residential programs were effective as the treatment of choice for most clients entering SUD treatment has been well documented for therapeutic communities and Minnesota Model programs over time. Marlatt and Gordon (1985) stated that approximately 90% of individuals who completed treatment in therapeutic communities remained abstinent on a “long-term basis”, although only small percentages, frequently as low as 20%, actually completed treatment. Early reports of Minnesota Model programs indicate that approximately 30% of participants attained a prolonged abstinence at six-month follow-up, 24% demonstrated notable reduction in alcohol use although they had not maintained complete abstinence, and another 30% of clients were drinking at follow-up, although with significant reductions in the negative effects associated with alcohol use (White, 1998) (see Appendix A for an extended review of substance use and SUD treatment in American history).

Despite empirical and anecdotal evidence supporting the overall effectiveness of high intensity treatments following the Minnesota Model (Cook, 1988) and therapeutic communities (Borkman et al., 2007; De Leon, 1989; White, 2005), evidence demonstrated that other models, settings, and intensities of treatment for SUD offered comparable outcomes among unmatched or randomly assigned samples of individuals entering treatment. These findings led to questioning of the necessity and appropriateness of approaches in which all clients were enrolled in uniform, intensive inpatient or residential treatments (i.e. Minnesota Model, therapeutic communities, narcotics farms). Multiple factors contributed to

a gradual shift away from traditional patterns of placing all clients in high intensity residential or inpatient programs.

Among these factors was a shift from indemnity to managed care among payees for SUD treatment, which called for greater efficiency in the utilization of treatment resources and reductions in treatment cost where possible (Gastfriend & McLellan, 1997). Also, evidence that lower intensity treatments offered financial incentives for client and provider as they generally cost only 40 – 60% as much, required considerably less time, and were less disruptive to the client's life than more intensive treatments pushed the treatment field to explore elements of CTM (Alterman, O'Brien, McLellan, August, Snider, Droba, et al., 1994; Annis, 1986). Additionally, CTM practices were aided by research demonstrating the lack of absolute differences in outcomes for unmatched or randomly assigned clients across various treatment settings and intensities (i.e. outpatient, day treatment, residential, inpatient) (Annis, 1986; Guydish, Werdegar, Sorensen, Clark, & Acampora, 1998; Longabaugh, Wirtz, DiClemente, & Litt, 1994; Mattson & Allen, 1991; Miller & Hester, 1986; Rychtarik et al., 2000). Finally, the development and accumulation of evidence toward the "matching hypothesis," (i.e. treatment outcomes can be augmented by matching specific clients to specific treatments based on an understanding of how interactions between client- and provider-level variables impact client outcome beyond what would be accounted for in the main effects of treatment best practices) showed that CTM could not only save money but could also improve treatment. Many factors in this shift are based on the established premise that although treatment for substance use disorders is generally effective in promoting change for most individuals, no single treatment has been shown effective in maximizing positive outcomes for all individuals or better than other treatments in all circumstances (Gastfriend & Mee-Lee, 2004) (see Appendix B for an extended review of the development of and rationale supporting the matching hypothesis).

Client-Treatment Matching Effects

A gradual accumulation of evidence regarding the possibilities of CTM, motivated by both a need to find a more cost-effective means of providing SUD treatment and evidence that no single treatment meets the needs of every client, played a central role in the shift away from assigning all clients to high intensity treatments. This shift gradually led the SUD treatment field toward efforts to individualize care, matching each client to treatment options seen as best suited to address that person's unique needs. In examining the principles of CTM, authors state that it is important to: 1) note the interest(s) served by CTM research, 2) discriminate between different types of CTM interactions, and 3) distinguish effects of CTM from the main effects of treatments themselves (Allen, Babor, Mattson, Kadden, 2003; Longabauch, Wirtz, DiClemente, & Litt, 1994; Mattson & Allen, 1991).

Longabauch and colleagues (1994) identified three primary motivations for matching research. The first motivation for studying a matching interaction is the maximization of the effectiveness of a specific treatment setting, intensity, or intervention (i.e. cognitive behavioral therapy, medically monitored inpatient) by identifying and assigning clients to it who would be most likely to benefit. The second motivation is the ability to focus on a specific client variable (i.e. presence of co-occurring disorders, gender) in an effort to identify the optimal treatment conditions for clients with that characteristic. The third motivation for matching research is the opportunity to focus on neither a specific client nor treatment variable, but rather to globally enhance the effectiveness of SUD treatment on a systemic level, achieving maximization of both client and provider outcomes, through coordinated/standardized CTM practices. Each of the three motivating factors regularly influence CTM research, as most matching studies investigate either specific the properties of a treatment setting, intensity, or intervention or client characteristics (i.e. the first two

motivations), while the aggregated results of this body of research is regularly applied on a more systemic level, such as in the adoption of PPC, in pursuit of systemic improvements.

In examining the specific types of effects examined by CTM research, it is important to distinguish between the main effects of a specific client- or provider-level predictor variable and the interaction effects between provider- and client-level variables that represent the matches investigated in CTM research. Client-treatment matching researchers state that matching effects can generally be detected or ruled out based on the presence or absence of several distinct statistical relationships. The first potential client treatment relationship, which indicates the absence of evidence of a matching effect, shows only the main effect of a predictor variable associated with either the client or the treatment. Real life examples of such main effects are those of multiple best practices of substance abuse treatment as identified by Stark (1992), which include minimizing wait times for entry to treatment, establishing a positive therapeutic relationship, and establishing a continuity of care between SUD treatment providers and other professionals in contact with the client. Each of these factors appear to have a main effect in enhancing client retention and treatment success and are likely to have similar effects across treatment settings, providers, intensities, modalities, and clients. Each treatment factor demonstrating a main effect is important as it maximizes the effectiveness of SUD treatment in general. However, because such main effects inherently have similar impacts on the SUD treatment process across clients and treatment settings, types, intensities, and providers, such facets of treatment are immaterial to the study of the matching process (Allen et al., 2003; Mattson & Allen, 1991). Other types of main treatment effects, generally thought of as best practices within SUD treatment literature, can be found within specific treatment modalities (i.e. cognitive behavioral therapy, motivational interviewing) and treatment settings (i.e. outpatient, residential) when examining the effects of treatment on heterogeneous or randomized (i.e. unmatched) subjects. The presence of

main effects of treatment variables across randomized, heterogeneous, or other unmatched groups indicates that although components of treatment have overall positive effects on the individual receiving SUD treatment, few absolute statistically or clinically significant differences may exist between modalities and settings when matching processes are not applied (Annis, 1986; Cooney, Babor, DiClemente, & Del Boca, 2003; Miller & Hester, 1986).

While the presence of only treatment main effects are not indicative of the presence of CTM, Longabaugh and colleagues (1994), as well as Allen and colleagues (2003) identify that the presence of ordinal and disordinal relationships demonstrate the existence of matching effects. Although authors subdivide ordinal and disordinal relationships into a detailed taxonomy of many different types of statistical client treatment matches, most important for this review is an understanding of the basic CTM implications when ordinal or disordinal relationships are found. In ordinal relationships, “nonparallel regression lines do not intersect within the research range of interest” (Allen et al., 2003, p. 6). In ordinal type matching relationships the presence of nonparallel regression lines indicate that different clients are impacted differently by the variable being measured. This is interpreted as a matching effect, as clients appear to demonstrate better or worse outcomes associated with different components of their treatment. Possible examples of ordinal relationships include situations in which different types of subjects have either the same general response to treatment (i.e. improvement) with some client groups simply improving more than others across conditions (Appendix C) or one group of subjects will have similar outcomes across all measured conditions with another group of clients performing better in some conditions than others (Appendix D). When regression lines representing different patient responses to different treatments do intersect within the research range of interest, the interaction is be disordinal. Disordinal matching relationships are commonly thought to be more clinically

useful than ordinal relationships, as they represent a much more clear delineation between which treatments are optimal for which subgroups than do ordinal interactions (Appendix E) (Allen et al., 2003; Longabaugh et al., 1994). Whether by ordinal or disordinal interactions, empirical research of CTM strives to quantify, define, and explore the conditions and components of treatment under which individual clients will achieve different outcomes.

CTM research, beyond the underlying research motivation or type of interaction found, focuses on investigating relationships between placements to specific treatment settings, intensities, modalities, or services; client and/or provider level (predictor) variables; and both long- and short-term treatment outcomes. According to Mattson and Allen (1991), CTM is not the only means of treatment placement that has been utilized by clinicians over time. These authors describe five distinct methods of placing patients in treatment and explain how information gathered about the benefits of CTM versus other methods of treatment placement serves an important role in determining which method of treatment assignment is used. Clients can be assigned to treatment based on: 1) availability or convenience for the provider, 2) client self-selection, 3) random assignment, 4) informal “clinical judgment,” or 5) algorithms or formal rules based on CTM theory. These authors reasoned that the presence of evidence in favor of the efficiency and effectiveness of CTM to facilitate optimal client outcomes would strengthen the call for formal algorithms, protocols, or formal rules to assign clients to specific treatment based on matches of client and provider/treatment characteristics. In the absence of such evidence, authors concluded that placements based on less rigorous or convenience methods (i.e. self-selection, availability, informal judgment) would be reasonable. Relevant to decisions about treatment placement recommendations, a large body of evidence has been developed over time to support that: 1) studies of CTM interactions between matching variables and client outcomes indicate that CTM can be more efficient than other methods of treatment placement, and 2) little to no

evidence exists to support the relative efficacy of other types of placement (i.e. self-selection, availability, randomization) (Mattson & Allen, 1991).

Annis (1986) reviewed six early matching studies and found evidence that efforts to match specific clients to specific treatments are likely to improve treatment outcomes. This review found consistent evidence that specific client level variables served as predictors for varying client outcomes across different treatments. Client level predictor variables identified by Annis include: the client's "conceptual level;" personality variables (e.g. self-image); dependent vs. non-dependent personality characteristics; interaction between age and alcohol dependency; and interaction between social stability and alcohol sensitizing medication, psychiatric severity, employment, and family relations on short- and long-term outcomes of treatment for SUD. Miller and Hester (1986) also reviewed six early matching studies, four of which were different than those reviewed by Annis (1986). Miller and Hester's (1986) review offered further support that specific client-level variables predict treatment outcome. This review demonstrated that interactions involving client variables of social stability (e.g. clients with low social stability performed better in high intensity treatment; those with high social stability performed better in low intensity) and personal deterioration (e.g. clients with greater psychiatric, family, legal, and employment problem severity performed better in inpatient settings), served as better predictors of treatment outcome than did main effects associated with the setting or intensity of treatment. Findings from a study included in both reviews (McLellan, Woody, Luborsky, O'Brien, & Druley, 1983), one of the first to compare clients in matched vs. mismatched conditions, found that by matching clients to different treatments using client ratings of problem severity and provider ratings of treatment offerings, matched patients showed 27% better long term outcomes than did mismatched patients, although statistical indicators of the statistical or clinical significance of this relationship were not reported. The body of research reviewed by Annis (1986) and Miller

and Hester (1986): 1) highlighted the potential utility of less intensive treatment options by demonstrating that factors other than treatment intensity have potentially large effects on client outcome, 2) further evidenced that traditional practices of referring all clients to high-intensity treatments (i.e. residential, inpatient) could no longer be viewed as best practice because of identified differences in how various clients are best served, and 3) began to demonstrate effective means of appropriately assigning clients to the increasingly diverse array of available SUD treatments (i.e outpatient, residential, inpatient).

Client-Treatment Matching Types

The body of literature informing CTM has grown considerably since the initial reviews published by Annis (1986) and Miller and Hester (1986). This literature base has increased in the quantity of research produced, diversity of match related client- and provider- level variables examined, and role of importance of matching research in the SUD treatment field (Mattson, 2003; McGee & Mee-Lee, 1997; Stark, 1992). Major areas of focus for CTM research have generally included research investigating matching by modality and matching by treatment placement (Gastfriend, ShaoHua, & Sharon, 2000). Limited research has also been conducted to investigate the effects of matching clients to specific types of services (Hser, Polinsky, Maglione, & Anglin, 1999; Melnick et al., 2001). Client treatment modality matching refers to the suitability of specific orientations, approaches, and intervention strategies in treatment (i.e. cognitive behavioral therapy, motivational enhancement therapy, Alcoholics Anonymous, Twelve-Step Facilitation). Placement matching investigates the efficacy of assigning specific clients to specific treatment settings or intensities (i.e. outpatient, day treatment, inpatient) (Gastfriend et al., 2000). Service matching examines the unique benefits of assigning patients with specific types of needs to

services capable of directly treating that particular problem area (i.e. housing assistance, vocational training, education) (Hser et al., 1999; Melnick et al., 2001).

Service Matching

Client-treatment service matching, although making up of the smallest body of matching research, has demonstrated a notable capacity to improve treatment outcomes among clients with specific service needs. Client treatment service matching relates to the notion that in its ideal form addiction “treatment matching involves not only selection of the so-called level of care, but identification of specific components of treatment intensity required in each clinical dimension” (Minkoff, Zweben, Rosenthal, & Ries, 2003, p. 117). Client treatment service matching consists of efforts to match clients to specific types of services, beyond traditional SUD treatment interventions, which correspond to specific areas of need in clients’ lives. McLellan and colleagues (1997) studied service matching by assigning clients to either standard SUD treatment or to SUD treatment enhanced with matched services to address employment, family, or psychiatric needs, based on problem areas identified by each client on the Addiction Severity Index. Authors found that upon comparing groups of clients placed in SUD treatments enhanced with matched services to those who received the SUD treatment as usual condition, clients who received treatment enhanced with matched services were significantly more likely to: stay in treatment longer (20 vs. 26 days on average for standard versus matched), complete treatment (81% vs. 93% for standard versus matched), and have better outcomes at six months post-treatment in being gainfully employed, not having family conflicts, having fewer legal problems, and being less likely to need further SUD treatment.

Similar findings were reported by Hser, Polinsky, Maglione, and Anglin (1999), who found in a study of clients participating in community based SUD treatment programs (n=171) that higher levels of needs and services matching across eight core domains,

including alcohol use, drug use, medical problems, psychological problems, family/social, legal, employment, and housing as well as specific needs for services to facilitate treatment engagement and retention (i.e. child care, language/translation, transportation) resulted in statistically significant increases in treatment retention. Results indicated that clients who endorsed needs and received services related to housing and child care demonstrated statistically and clinically significant improvements in drug use (i.e. 50% and 45% reductions in drug use severity) than did those who endorsed but did not receive services in those areas (i.e. 23% and 20% reductions in drug use severity). Furthermore, clients who received matched services in specific problem areas demonstrated statistically significant improvements in treatment retention than clients with unmet needs or clients who did not endorse needs in problem areas. Across problem areas, treatment retention in days for matched clients, unmatched clients, and clients not endorsing service needs respectively were: for vocational services 164, 99, and 104 days; for childcare 156, 104, and 98 days; for housing 151, 103, and 100 days; and for transportation 118, 81, and 114 days. These results demonstrate the potential potency of client treatment service matching by showing that clients with specific problems matched to a needed service not only had better treatment retention than clients with unmet service needs, but they were also retained in treatment longer than clients without an initial problem requiring supportive services who received the same SUD treatment.

Client treatment services matching has demonstrated great effectiveness in facilitating prolonged engagement in treatment and can potentially improve outcomes related to both personal functioning and future substance use behaviors (Belenko & Peugh, 2005; Hser et al., 1999; McLellan et al., 1997; Minkoff et al., 2003). Despite the benefits of providing comprehensive, matched, services to clients receiving SUD treatment, some indications exist that SUD treatment providers have offered fewer services over time beyond

standard SUD treatment. Etheridge, Craddock, Dunteman, and Hubbard (1995) compared two national samples of clients, the Treatment Outcome Prospective Study (TOPS), conducted from 1979 – 1981, and the Drug Abuse Treatment Outcome Study (DATOS), conducted from 1991 – 1993, and found that the overall number of services being offered to clients, particularly the number of hours of treatment offered related to specific services, declined across the decade between studies. Authors also found that across the years in which the TOPS data alone was collected, the number of hours of treatment related to specific services meant to enhance SUD treatment (i.e. housing, vocation, education) declined. A consequence of this trend has been a sharp increase in the levels of unmet service needs among clients in SUD treatment (Hser et al., 1999; Moos & Finney, 1995).

Many authors cite practical limitations as barriers to offering service enhancements to treatment and to service matching, despite research indicating the positive outcomes associated with this type of CTM. Literature identifies the change to managed care, an accompanying emphasis on cost reduction in SUD treatment, and higher priorities placed on examining the effects of other types of CTM (i.e. modality, placement) as factors associated with reductions in the scope and frequency of specific services added to enhance treatment beyond standard care for substance use and co-occurring mental health diagnoses across the 1970s, 1980s, and 1990s (Etheridge et al., 1995; Moos & Finney, 1995; Simpson et al., 1997). Other studies have further shown the role that managed care cost cutting efforts have played in restricting the scope and amount of additional services available to clients by demonstrating that programs relying on insurance, forms of client self-pay, or serving unemployed individuals are most likely to show services reductions. Conversely, programs with little emphasis on fee for service payment, such as those relying on grants or public funding, are more likely to include additional employment, financial, and housing services as components that complement, enhance, and improve SUD treatment (Moos & Finney, 1995).

Modality Matching

A very large body of research has been dedicated to the study of client treatment modality matching, which examines the degree to which the modality of treatment provided (i.e. cognitive behavioral therapy, motivational enhancement therapy, twelve step facilitation) contributes to treatment outcomes based on client characteristics. The most significant client treatment modality matching research has been large, randomized, multi-site trials, particularly Project MATCH (Project MATCH Research Group, 1997) and the United Kingdom Alcohol Treatment Trial (UKATT; UKATT Research Team, 2007). Project MATCH took ten years to complete, involved 1,726 subjects receiving treatment for SUD, examined two treatment program types, 1) outpatient treatment and 2) aftercare following inpatient or intensive day hospital treatment, across nine communities, included 39-months of follow-up post-treatment, cost over 27 million dollars, and has led to the publication of 90+ scientific articles, books, monographs, and commentaries about its findings (Cooney, Babor, DiClemente, & Del Boca, 2003).

The scope of Project MATCH was enormous, making it “the largest, most statistically powerful, psychotherapy trial ever conducted” (Glaser, 1999, p. 34) Project MATCH was founded on the initial hypothesis that individuals with SUD who had specific characteristics would have better outcomes when assigned to a specific modality of psychotherapy than they would in other therapeutic modalities (Cooney et al., 2003). Based on this overarching theory, the Project MATCH research team identified 21, empirically grounded, a priori hypotheses about the relative efficacy and matching effects of cognitive-behavioral therapy (CBT), motivational enhancement therapy (MET), and twelve-step facilitation (TSF) across a wide range of client characteristics. The research design called for extremely high internal validity, with each of the treatments and participating clinicians being carefully selected, rigorously trained in administering a manualized intervention, and closely

monitored. This design represented a conscious tradeoff between internal and external validity on behalf of the research team, as they recognized that in order for the results to have maximal theoretical value in CTM research, it was necessary to utilize relatively “pure” examples of the therapies. The expected benefits of maximizing internal validity included opportunities to identify and evaluate each therapy’s active ingredients and reduce the “noise” of the therapeutic process through specific and replicable procedures (Donovan, Carroll, Kadden, DiClemente, & Rounsaville, 2003; Donovan et al., 1994).

A similar study to Project MATCH, the UKATT, also sought to test the client treatment modality matching effects of assigning clients with distinctive characteristics to different psychotherapies. The UKATT utilized a similar randomized, multi-site, longitudinal format to Project MATCH and yielded extremely robust statistical results, although the UKATT was conducted on a slightly smaller scale. The UKATT included a follow-up period of 12 months, five treatment centers, and 740 subjects. The UKATT, unlike Project MATCH however, began with a somewhat altered goal, as the UKATT was oriented more towards gathering information for practical decision making in client assignment while Project MATCH focused on the pursuit of information regarding core theoretical ideas about psychotherapeutic approaches and CTM. Treatment orientations tested in the UKATT were brief MET and social and behavior network therapy (SBNT). The UKATT explored five subsidiary, a priori hypotheses, related to which types of clients would most greatly benefit from the therapeutic approaches studied. These a priori hypotheses were meant to complement and replicate the design and findings of Project MATCH (UKATT Research Team, 2007).

Both Project MATCH and the UKATT serve as gold standards of statistically powerful, well designed, theoretically and clinically relevant research into client-treatment modality matching. Because of the size, scope, and relevance of these studies to the field of

CTM, and the degree to which the results of these correlate, the conclusions drawn by the respective research teams cannot be overlooked. In examining the results of the 21 a priori hypotheses from Project MATCH, the 5 hypotheses examined in the UKATT, and the broader statistical analyses performed in each of the studies, one can draw substantial conclusions about the theory, feasibility, and practice in matching clients to a particular therapeutic modality (Cooney et al., 2003; UKATT Research Team, 2007; Walters, 2002).

Results from Project MATCH found statistically significant results for only 4 of 21 initial matching hypotheses. Statistically significant matching effects were found between treatment modality (i.e. MET, CBT, TSF) and client attributes of anger, social support for drinking, severity of alcohol dependence, and psychiatric severity; however, even the statistically significant interactions were reported to have only questionable clinical significance due to small to modest effect sizes. Furthermore, no matching effect reached statistical significance across both outpatient and aftercare treatment program types, contrary to matching theory, and no matching interaction was found to involve all three treatment modalities (i.e. two modalities could be distinguished as one being more effective than the other, but the third modality in each of the four instances had non-significant differences with both) (Cooney et al., 2003). The relatively few statistically significant interactions found by Project MATCH also served as the primary focus of the UKATT, as the UKATT Research Team sought to replicate the significant findings of Project MATCH, among other research goals.

The results from the UKATT failed to confirm any of the five matching hypotheses identified by the authors. Each of the five hypotheses in the UKATT were in part founded on a statistically significant interaction found in Project MATCH, whether or not the interaction was among the initial a priori hypotheses of the Project MATCH research group. The first hypothesis of the UKATT, based on the finding in Project MATCH that TSF was more

effective than MET at 3-years post-treatment among clients with social networks supportive of drinking, was that clients with weak social networks at intake would perform better in SNBT than MET. A second hypothesis, based on Project MATCH findings that outpatients with low motivation to change at intake who were treated with MET had fewer drinking days in the past 90 at 15-month follow-up than those treated with CBT, predicted that clients with low readiness/motivation to change at intake would show better outcomes when treated with MET than with SBNT. The third UKATT hypothesis, which predicted an interaction would occur between psychiatric severity and MET vs. SBNT treatment conditions, was based on Project MATCH's finding that among outpatients, clients initially low in psychiatric severity had more abstinent days at 15-months post-treatment if they were treated with TSF than if treated with CBT. The fourth UKATT hypothesis was that clients high in anger at initial assessment would perform better when treated with MET than with SBNT, which was built upon Project MATCH's findings that clients initially high in anger reported more days of abstinence and fewer drinks per drinking day from 1- to 3-years post-treatment if they had received MET rather than CBT. The fifth, and final, of the UKATT's hypotheses was that an interaction would exist between the severity of alcohol dependence and the relative effectiveness of MET vs. SBNT. The fifth hypothesis was based on Project MATCH's findings that clients low in alcohol dependence in the aftercare arm of treatment reported fewer days of drinking and fewer drinks per drinking day at 15-months post-treatment when treated with CBT rather than with TSF, whereas those high in dependence performed better when treated with TSF rather than with CBT. Of the five hypotheses predicted in the UKATT, none of the interactions achieved statistical significance in predicted directions, and the study failed to replicate any of the findings of Project MATCH (UKATT Research Team, 2007).

As a whole, the largely null findings of both Project MATCH and the UKATT provided little to no evidence for clinically relevant CTM effects related to treatment modality. However, the combined results did provide strong evidence for the effectiveness of SUD treatment in general, as clients across treatment programs and modalities in both studies showed marked improvement throughout and following their time in treatment (Cooney et al., 2003; Randall et al., 2003; Soyka, 1999; UKATT Research Team, 2007). Results of these studies appear to mirror findings of the “dodo bird effect” in psychotherapy research, indicating that although each treatment modality appears clinically effective, few to no actual differences exist between the sizes of the main or matching/interaction effects across treatment modalities (Luborsky, Siguer, Berman, & Seligman, 2002). In examining the broader findings of both Project MATCH and the UKATT, authors routinely describe multiple reasons why CTM effects were not identified. Authors also regularly state that although the null findings of these studies may prevent future large, multi-site, randomized modality matching studies, the results should not be interpreted as indicating that CTM is not effective as a whole (Cooney et al., 2003; Walters, 2002).

A commonly cited criticism of Project MATCH, and an explanation for the largely null findings of Project MATCH, was based on its design as an efficacy trial with high internal validity, at the expense of external validity. Authors state that Project MATCH, in its efforts to standardize both the treatments and the types of clients to whom the treatments were administered, created a mode of intervention and a sample of clients that were unique and distinct from what would be found in typical treatment settings. Furthermore, the underrepresentation of a “real world” treatment population because of exclusion criteria is thought to have interacted with: reactivity effects from large amounts of assessment and follow-up, rigorous supervision and implementation of therapeutic intervention, the high degree of training of therapists, and general high effectiveness of each of the treatments

offered to have had an overall blunting action against any matching effects. Each of these factors are thought to have combined to create a ceiling effect, in which all treatments were unrealistically effective and matches were difficult to detect. Another pair of connected, widely cited reasons for the general failure of both Project MATCH and the UKATT to identify modality matching effects is that matching by treatment modality either 1) is too simplistic a form of research to detect matching effects that are in actuality much more complex or 2) is a non-existent or weak method of matching that is unlikely to reveal statistically or clinically significant results. (Velazquez, DiClemente, & Addy, 2000; UKATT Research Team, 2007).

Each of these arguments relate to the general fact that, across many studies comparing matching effects associated with treatment modalities, the modality of treatment/therapy (i.e. CBT, psychodynamic, MET, humanistic) generally accounts for much less of the overall variance than does other factors, particularly the therapeutic relationship and other extratherapeutic factors (i.e. developmental, social) (Walters, 2002). Similarly, the UKATT Research Team (2007) argues that matching effects may be too complex to identify based on the relatively narrow range of client attributes and treatment variables (e.g. therapeutic modality) examined in Project MATCH and the UKATT. These authors contend that CTM may require “a more multi-dimensional approach... [to] include matching client attributes or profiles to in-patient vs. out-patient, psychosocial vs. pharmacological or individual vs. group treatments” (p. 234). Both the findings of these studies that few to any discernable matching effects exist between client attributes and the therapeutic modality, and the recommendations of authors stating that more complex, multi-dimensional conceptualizations to CTM are needed, serve as notable evidence in support of more broadly examining the body of research examining CTM. Such assertions by the UKATT Research

Team affirm the need for another line of CTM research, including that of investigating the effects of matching clients to a specific treatment placement or setting.

Placement Matching and Patient Placement Criteria

Practical limitations associated with client treatment service matching (Moos & Finney, 1995) and findings demonstrating the lack of matching effects associated with matching to a specific therapeutic modality (UKATT Research Team, 2007; Walters, 2002) have limited the practical application and clinical utility of client treatment service and modality matching. Research into client treatment placement matching however, has focused heavily on real world, systemic, matching applications, has had considerably influence in SUD treatment practices, and has made up the vast majority of CTM research conducted in recent years. The body of client treatment placement matching is built upon on the established findings that: 1) more intensive treatments are not inherently more effective than less intensive treatments, 2) less intensive treatments often produce comparable outcomes to more intensive treatments but at a considerably reduced cost, 3) all types of SUD treatments appear to help many clients, while no treatment uniformly/optimally helps all clients, and 4) treatment matching effects appear too complex to be characterized by examining relatively narrow spectra of client and treatment variables (i.e. modality of treatment, dependence history, etc.) (Annis, 1986; Gastfriend & McLellan, 1997; McKay McLellan, & Alterman, 1992; McLellan, Grissom, Zanis, Randall, Brill, & O'Brien, 1997; Miller & Hester, 1986; Walters, 2002).

These findings led to an active debate among SUD treatment providers, payees, and researchers concerning which client would benefit most from which setting and intensity of treatment, and how to provide SUD treatment services in the most cost-effective manner. One proposed solution was to develop theoretically and empirically supported guidelines for assessing and assigning clients to the most cost-effective treatment setting and intensity

capable of fulfilling the client's treatment needs. These sets of guidelines, referred to as patient placement criteria (PPC), were meant to serve as algorithms/decision trees by which providers and payees could make optimally efficient and effective client placements. The development of PPC attempted to answer the call within the addictions treatment field to match specific clients with a treatment placement that would best meet their needs while not expending unnecessary resources (American Society of Addiction Medicine, 2001; Gastfriend & McLellan, 1997). This direction for the treatment of SUD, paired with economic realities and pressures from managed care systems, continued the move away from using traditional models of residential treatment for all recovering individuals (i.e. Minnesota Model programs, therapeutic communities) toward individualized plans in which each patient is placed in an optimal treatment setting and intensity, making up the level of care, based on a biopsychosocial assessment of that patient. The most appropriate level of care, within the realm of client treatment placement matching, is generally thought of as the most financially efficient treatment setting and intensity in which the client can be successfully treated for the diagnosed SUD (American Society of Addiction Medicine, 2001; Hoffman, Halikas, & Mee-Lee, 1987).

The first formal PPC was the Cleveland Admission, Discharge, and Transfer Criteria, developed for the Northern Ohio Chemical Dependency Treatment Directors Association, published in 1987 (Hoffman, Halikas, & Mee-Lee, 1987). The Cleveland Criteria was a novel approach to CTM in that it provided guidelines for assessing seven domains of clients' lives: 1) acute intoxication/withdrawal, 2) physical complications, 3) psychiatric complications, 4) impairments in areas of life, 5) acceptance of treatment, 6) loss of control, and 7) recovery environment. Based upon the results of this tool the Cleveland Criteria yielded a placement recommendation to one of four levels of care, ranging from the least intensive (mutual self-help) to the most intensive (inpatient treatment). Each of the seven domains was given a

problem severity rating, and a placement recommendation was made based almost entirely upon the single highest problem severity score among the seven, the logic being that the most efficient level of care must be able to effectively treat the most severe problem area while also providing treatment for less severe problem areas (Gastfriend & McLellan, 1997; Hoffman et al., 1987; McKay et al., 1992).

Because of the perceived face validity of the Cleveland Criteria among treatment providers at that time, the widespread perception of its immediate need, and its rapid call for availability by a wide range of publicly and privately funded treatment programs, the Cleveland Criteria were not empirically validated before publication. McKay and colleagues (1992) performed an initial examination of the validity of the Cleveland Criteria based on a sample of 143 male veterans enrolled in an intensive day treatment program (i.e. 27 hours of outpatient treatment per week for 4 – 6 weeks), 70 identified as alcoholic and 73 identified as cocaine dependent. Clients were assessed at intake to treatment, as well as at 4- and 7-months post-treatment. Intake assessment results, processed through the Cleveland Criteria, were used to determine whether patients were correctly enrolled in the intensive day treatment program (N=35) or whether clients actually qualified for inpatient care, representing an undertreatment condition in which patients were theorized to be receiving an insufficient treatment intensity (N=108). Outcomes of clients identified by the Cleveland Criteria as being correctly placed in intensive day treatment were then compared with outcomes of patients identified as needing inpatient care (i.e. undertreated).

The authors initially hypothesized that clients who were undertreated (i.e. not receiving a sufficient intensity of care) would perform more poorly on post-treatment outcome measures than clients who were correctly matched to a sufficient treatment. Results of the study however, failed to reveal any statistically significant differences in post-treatment alcohol or cocaine use between the correctly matched (e.g. needed intensive day

treatment, received intensive day treatment) and under treated (e.g. needed inpatient treatment, received intensive day treatment) groups. These results demonstrated a distinct lack of predictive validity by the Cleveland Criteria to enhance patient outcomes through recommending an optimal level of care as use of the Cleveland Criteria would have resulted in 75% of patients receiving referral to inpatient care. This high rate of referral to more intensive treatment was interpreted by researchers as evidence that the Cleveland Criteria lacked sufficient discriminative ability and would result in over referrals to inpatient care, which ran counter to the cost saving goals of implementing PPC (Gastfriend & McLellan, 1997; McKay et al., 1992).

Despite the poor predictive validity of the Cleveland Criteria and its tendency to over assign clients to high intensity treatments, this initial PPC became recognized as a significant advancement in the study of CTM. Despite the noted problems with the Cleveland Criteria, the push to develop increasingly efficient, accurate, and PPC that were theoretically and empirically supported quickly grew. Although the Cleveland Criteria was the first published PPC, and was only published in 1987, the use of PPC quickly grew, and by the end of the 1980's private health care providers and utilization management firms had developed and implemented 40 to 50 different sets of PPC. These tools varied sharply in their criteria, guidance for assessment and placement, and occasionally directly contradicted other competing PPC, which led to a growing call within the SUD treatment community for a more widely accepted, possibly national standard, PPC (American Society of Addiction Medicine, 2001; Gastfriend & McLellan, 1997; Mee-Lee & Gastfriend, 2008).

The ASAM Series of Patient Placement Criteria

The call for a national standard PPC was answered through a partnership between the Northern Ohio Chemical Dependency Treatment Directors Association, the authors of the

Cleveland Criteria, and the National Association of Addiction Treatment Providers (NAATP), as they incorporated experts from such diverse fields as internal medicine, adult and child psychiatry, pediatrics, psychology, social work, and addiction counseling to review and build off existing PPC in the development of a new gold standard placement tool. The result of this collaborative effort was the publication of the first edition of the American Society of Addiction Medicine Patient Placement Criteria (ASAM-PPC). The ASAM-PPC called for the use of biopsychosocial assessment to establish client strengths, impediments to recovery, and problem severity across six dimensions: 1) acute intoxication or withdrawal, 2) biomedical conditions or complications, 3) emotional, behavioral, or cognitive conditions, 4) readiness to change, 5) relapse, continued use, or continued problem potential, and 6) recovery environment. Each dimension was given a problem severity rating, ranging from the absence of any problems (0) to the most severe problems possible in need of immediate intervention (4) (American Society of Addiction Medicine, 1991; Gastfriend & McLellan, 1997; Mee-Lee & Gastfriend, 2008).

Analysis of problem severities across each of the six client dimensions was used in the Cleveland Criteria to match a client to one of four levels of care of increasing intensity: Level I - outpatient (e.g. <9 hours of service per week), Level II - intensive outpatient (e.g. 9-19 hours of service per week) or partial hospitalization (e.g. >20 hours of service per week), Level III - residential/medically monitored inpatient (e.g. 24-hour per day placement in a supportive living environment or residential program), and Level IV - medically managed intensive inpatient (e.g. 24-hour per day placement in a medical inpatient setting). Each level of care differed on the degree of structure, security, medical management, and treatment intensity. The goal of this placement match, congruent with the goals of CTM, was to refer the patient to the least intensive level of care capable of meeting the patient's treatment needs

and objectives (American Society of Addiction Medicine, 1991; Gastfriend & McLellan, 1997; Mee-Lee & Gastfriend, 2008).

Level of care placement decisions are made based on a global analysis of problem severity scores across all six dimensions. Although the recommendation criteria for programs within a greater level of care have grown increasingly specific across revisions of initial ASAM-PPC, the following basic placement recommendations continue to be used. Referrals are made to Level I, outpatient, services when SUD problems exist but no dimension exceeds a problem severity score of one. Level II, intensive outpatient/partial hospitalization, is recommended when one of dimensions 3 – 6 has a problem severity of two or three and dimensions 1 and 2 are no higher than a two. Level III, residential/medically monitored inpatient is recommended when at least two of the six dimensions meet level three. Level IV, medically managed inpatient treatment, is recommended when at least one of the dimensions 1, 2, or 3 meets level four problem severity criteria (American Society of Addiction Medicine, 2001; Turner, Turner, Reif, Gutowski, & Gastfriend, 1999).

The focus of the ASAM-PPC, as well as that of other PPC, was to facilitate SUD treatment as a continuum of care, within which each treatment setting/intensity was a level of care that could be accessed by a patient depending on need. Within the ASAM-PPC, there were no predetermined lengths of stay in any of the different levels of care (i.e. outpatient, intensive outpatient, residential, medically managed intensive inpatient), and patients were actively transferred between providers at different levels of care depending on the patient's need at a given time. Important to an understanding of matching a patient to a level of care within the broader continuum of care is the concept of the ASAM-PPC implementing a linear format in patient placement, with higher problem severities across the six domains of the PPC indicating the need for a higher overall level of care (Book et al., 1995; Gregoire, 2000).

Linear patient placement, although a type of client treatment placement matching, must be noted as distinct from client treatment modality matching and other types of client treatment placement matching. Matching to a treatment modality, as well as to other types of patient placement, focuses on matching specific problem types or client attributes (i.e. high client anger, low client motivation) to specific treatment modalities or treatment placements (i.e. modalities of MET or CBT, placements to a specific anger management therapy group, outpatient treatment) (Gastfriend et al., 2000; MATCH Research Group, 1997; UKATT Research Team, 2007). Linear placement, such as that in the ASAM-PPC, uses a different approach to client-treatment placement matching as it matches not based on the content, presence, or state of a specific problem but rather on the general severity of problems across a problem severity spectrum. For example, in a linear patient placement decision in the ASAM-PPC, if a patient is determined to have high problem severities (i.e. severity of 3 or 4) in such domains as relapse potential, readiness to change, and recovery environment the client is placed to a level of care deemed capable of addressing high severity problems (i.e. residential treatment), while no match is made regarding the specific content, services, or approaches used within the treatment (i.e. housing assistance, family therapy, job training) (American Society of Addiction Medicine, 1991; Gastfriend & McLellan, 1997; Levine et al., 2003; McLellan et al., 1997; Mee-Lee & Gastfriend, 2008).

Since its initial publication, the ASAM-PPC has received two revisions: a second edition (ASAM-PPC-2; American Society of Addiction Medicine, 1996) and a second edition-revised, which also included a discussion of possible future directions for the ASAM series of PPC (ASAM-PPC-2R; American Society of Addiction Medicine, 2001) (see Appendix F for an extended review of revisions to the ASAM series of PPC). Changes to, as well as possible future directions of, the ASAM-Series of PPC are very important to the SUD treatment field because the ASAM series of PPC carries considerable influence based upon

its widespread use, general acceptance, and sizeable research base in both CTM and SUD treatment in general. Although many state, federal, and private health care systems have developed PPC, the most widely used PPC has been and continues to be the ASAM series of PPC. The ASAM series of PPC is approved for use in over 30 states, by Value Options and other major healthcare providers, by the Department of Defense for use in all military bases abroad, and by the Veterans Administration for use in its 171 hospitals nationwide (Callahan, 1999; Kosanke et al., 2002; Substance Abuse and Mental Health Service Administration's Co-Occurring Center for Excellence, 2005; Sharon et al., 2003). The ASAM-PPC, now in its third revision, (American Society of Addiction Medicine, 1991; American Society of Addiction Medicine, 2001) has had tremendous influence over the development of other PPC tools as well as how other systems conceptualize patient placement and CTM in general. This influence extends well beyond the systems in which the ASAM-PPC are formally accepted, as the ASAM series of PPC have strongly influenced substance use research, particularly on CTM, Medicaid SUD treatment services and policies, individual state SUD treatment systems, and managed care organizations (Kosanke et al., 2001; Sharon et al., 2003).

Evaluating the ASAM and other Patient Placement Criteria

Because of the central role that the ASAM series of PPC plays in the practical implementation of SUD treatment in the United States, as well as in empirical and theoretical investigations of both SUD treatment and CTM, an accurate evaluation of the degree to which the ASAM-PPC fulfills its stated goals of using CTM, particularly placement matching, to maximize treatment outcomes while minimizing burdens associated with treatment (i.e. cost, life disruption, time) is paramount. Multiple avenues exist by which the ASAM series of PPC can be evaluated. One primary means of evaluating the ASAM series of PPC is to examine its established psychometric properties. By examining the fundamental

psychometric properties of the ASAM-PPC, one can gain essential insight into the degree to which the ASAM-PPC completes its most basic CTM objectives. Research relevant to the psychometric properties of the ASAM has investigated the: overall feasibility of utilizing the ASAM-PPC in CTM, reliability of computer based algorithms, face validity, convergent validity, and predictive validity of the ASAM-PPC. A second method of evaluating the ASAM-PPC is to identify and analyze specific conceptual and theoretical criticisms of each of the ASAM-PPC, as offered by SUD treatment and CTM researchers, as well as criticisms by authors of alternative PPC. By identifying current shortcomings and needed growth areas and of the ASAM-PPC, both hypothesized and psychometrically established, it is hoped that the potency of CTM effects can be enhanced, thereby improving the overall effectiveness, efficiency, and viability of SUD treatment.

Psychometric Properties of the ASAM-PPC

A global evaluation of the available psychometric data regarding the ASAM-PPC, although limited by the relatively small number of studies conducted in this area to date, demonstrates evidence for adequate face validity (Gastfriend & Mee-Lee, 2003), reliability across raters and between raters and an automated algorithm under optimal circumstances (Baker & Gastfriend, 2003). Furthermore, available evidence supports the predictive validity of the ASAM-PPC, as correct matching versus undertreatment was associated with less overall hospital utilization and more positive SUD treatment outcomes (Magura et al., 2003; Sharon et al., 2003). However, despite evidence supporting the adequacy of the psychometric characteristics of the ASAM-PPC, some evidence exists to indicate that clinician-generated level of care recommendations may have relatively low convergence with automated ASAM-PPC placement recommendations in conditions with less standardization and training (Staines et al., 2003). Furthermore, one study failed to find any statistically significant differences between matched and undertreated samples (McKay et al., 1996), although the

results of the study should be interpreted with a degree of caution because of its relatively low statistical power and somewhat skewed sample, stemming from the inclusion of few clients with problems severe enough to receive recommendations for inpatient care based on ASAM-PPC criteria and elimination criteria that created a body of subjects unlikely to fully represent the greater pool of individuals needing SUD treatment (see Appendix G for an extended review of the psychometric properties of the ASAM-PPC).

Theoretical and Conceptual Criticisms of the ASAM Series of PPC

Along with examining the basic psychometric properties and other empirical research of the ASAM-PPC to date, another means of evaluation for the ASAM series of PPC is to examine both the general reception of and common criticisms against these placement criteria. By most standards, the ASAM series of PPC receives a tremendous amount of support as it is the most widely accepted, implemented, and researched of all PPC available today. Also, the theoretical base, structure, and format of the ASAM series of PPC has had a very strong influence in shaping both other competing PPC and CTM public policy, clinical practice, and research (American Society of Addiction Medicine, 2001; Callahan, 1999; Kosanke et al., 2002; Substance Abuse and Mental Health Service Administration's Co-Occurring Center for Excellence, 2005; Sharon et al., 2003). Despite the general acceptance and positive perceptions of the ASAM series of PPC across areas of policy, practice, and research, and multiple revisions to improve the ASAM-PPC over time, noteworthy criticisms of the structure and content of the ASAM-PPC persist.

A frequently repeated criticism of the ASAM series of PPC relates to the nature of the CTM that is utilized. The ASAM series of PPC utilizes a linear approach to CTM, which emphasizes matching patients with more severe problems to programs that offer a greater intensity of services. This linear approach can be conceptualized as generally matching individuals needing and entering treatment for SUD with a specific *dosage* (i.e. intensity,

hours of treatment offered each week, amount of supervision) of a treatment housed within a specific setting, with considerably less attention paid to the *ingredients* (i.e. interventions, modalities, types of services) of that treatment. Although the categorization of treatment providers by the services they offer for co-occurring disorders is an example contrary to this theme, the ASAM series of PPC as a whole has depended on a linear type of CTM in which the intensity and setting of the treatment placement receives the most attention, while the specific interventions, services, and other treatment factors within the level of care receive minimal, if any, recognition in the matching process (American Society of Addiction Medicine, 2001).

Counter-Intuitive and Overtreatment Placements: One specific criticism of the ASAM series of PPC is that a linear approach to client treatment placement matching can result in placement recommendations that exaggerate the need for higher intensity treatments (i.e. matching clients to overtreatment conditions). Matching clients to high intensity levels of care (i.e. residential, medically managed inpatient) when lower intensity treatments (i.e. day treatment, outpatient) are sufficient represents an inefficient use of resources and violates fundamental goals that underlie CTM research and PPC development.

An example of an exaggeration of the need for higher levels of care is requiring individuals with low severity SUD to enter into a high intensity treatment because of problems in another PPC dimension (i.e. housing, medical need). This practice is often criticized as inefficient because many higher severity problems in dimensions 1, 2, 3, or 6 can be addressed sufficiently outside of a residential or inpatient program (Book et al., 1996; Gregoire, 2000; Staines et al., 2003). This has been a concern across many PPC, including the Cleveland Criteria, an early predecessor of the ASAM-PPC. As was noted earlier, evidence was found against the validity of the Cleveland Criteria by McKay and colleagues (1992), who found that the Cleveland Criteria would have 1) assigned 75% of participants in

their study to inpatient treatment and that 2) no statistically significant differences could be found between clients who received the recommended treatment and those who were undertreated.

Gastfriend, Donovan, Rubin, Gorski, Sharon, Marlatt, and colleagues (2003) offer further discussion of the potential for linear CTM to exaggerate the need for high intensity levels of care. These authors examined Dimension 5, Relapse Potential, as part of a project to prepare for the release of the ASAM-PPC-2R. Upon their examination of the decision tree used to determine patient placement recommendations in the ASAM-PPC they found that “the nature of multidimensional assessment is that it is not necessarily linear. For example, someone may have high ASI [symptom] severity but have good treatment readiness and engagement in recovery groups” (p. 100), which would enable the person to thrive in less intense treatment settings than would be indicated by solely determining placement by the highest problem severity scores across dimensions. The thoughts reflected by these authors in their study of Dimension 5 relate closely to criticisms by other authors of linear placement methods used in that ASAM-PPC as they describe how linear placement may appear to mandate referral to more intensive levels of care than are necessary based on client strengths or attributes in other dimensions. It should be noted that the linear format of client-treatment placement matching is generally appropriate and effective, as many clients with higher intensity problems do benefit from higher intensity treatments that provide 1) more hours of service, 2) more supervision/monitoring, and 3) separation from the temptations and pressures of normal life, which all facilitate behavior change. However, as noted by many authors, linear placement matching alone with minimal regard for the nature of the problem can result in overtreatment placements or treatment matches that fail to address other underlying concerns that may impact the client’s overall recovery (Book et al., 1996; Gregoire, 2000; Staines et al., 2003).

Intra-Level of Care Differences and Non-Linear Matching: A second noted consequence of the primarily linear format of client-treatment placement matching used within the ASAM series of PPC is the potential presence of many differences between providers within each of the discrete levels of care. This criticism, focusing on intra-level of care differences, stems from the fact that the level of care philosophy used by the ASAM and other PPC discuss only certain elements of treatment and leave many practical aspects of treatment unspecified, while individual providers within each level of care are conceived as functionally the same when making treatment recommendations. For example, the ASAM-PPC-2R describes within each level of care the: treatment setting (i.e. inpatient treatment occurs in a structured setting, outpatient treatment often occurs in an office and is ambulatory in nature), approximate number of hours of treatment per week (i.e. outpatient consists of 0 – 9 hours of service per week, intensive outpatient has 9 or more hours of service per week, partial hospitalization includes 20+ hours of clinical services per week), and degree of medical supervision provided. However, the ASAM series of PPC makes no mention of the inclusion or exclusion of other services or treatment interventions associated with a level of care or treatment provider, even when such services closely relate to problems assessed for within the six problem dimensions (American Society of Addiction Medicine, 2001).

The linear matching philosophy utilized by the ASAM and many other PPC do not identify the specific modalities, interventions, or treatment services recommended for an individual's treatment, although the ASAM and other PPC stress the need for individualized treatment based on the client's identified needs. Examples of services and treatment offerings that have been empirically and theoretically connected to individuals' processes of recovery related to SUD, co-occurring mental health disorders, or conditions closely linked to SUD (i.e. homelessness) not addressed within the current system of linear client treatment placement matching to a specific level of care include: anger, stress, anxiety, and other

emotional management (Klee & Reid, 1998; Reilly & Shopshire, 2000); computer, literacy, financial and other educational opportunities (Christensen & Grace, 1999; Cook, 2006; Miller, Bunch-Harrison, Brumbaugh, Kutty, & Fitzgerald, 2005; Solliday-McRoy, Campbell, Melchert, Young, & Cisler, 2004; Washington, 2002); exercise and physical health promotion/education (Hauser & Iber, 1989; Read & Brown, 2003); safe and supportive housing and housing rights (Cunnane et al., 1995; Miller et al., 2005; Milby, Schumacher, Wallace, Freeman, & Vuchinich, 2005); vocational training and employment assistance (Pickett-Schenk, Cook, Grey, Banghard, Rosenheck, & Randolph, 2002; Platt, 1995; Staines, Blankertz, Magura, Cleland, & Bali, 2005); life, social, and communication skills (Bartholomew, Hiller, Knight, Nucatola, & Simpson, 2000); and trauma and abuse treatment (Christensen, Hodgkins, Garces, Estlund, & Touchton, 2005; Kim & Arnold, 2004), amongst other services potentially offered as integral components of SUD treatment. Other areas of potential intra-level of care differences include providers offerings of individual therapy, process oriented groups, skill groups, case management, and peer support, amongst others. Each of these services and treatment areas, potentially integral to the treatment of individuals receiving SUD treatment based on their identified needs, stand as possible intra-level of care differences. Individual providers at each level of care may offer some, most, or all of these additional services, while others may offer none, yet all receive clients from the same basic pool based solely on a client's PPC match to a given level of care.

Providers within the same level of care are identified by PPC as being largely equivalent because they offer an intensity of programming in a treatment setting that falls within a range determined by the PPC. Yet the presence of multiple, clinically meaningful, areas of potential intra-level of care differences raise questions amongst researchers, providers, and payees regarding whether programs within the same level of care ought to be treated as equivalent when they differ in actual services provided (Levine, Turner, Reif,

Janas, & Gastfriend, 2003; McLellan et al., 1997). A specific example of intra-level of care differences can be made in comparing two hypothetical, ASAM compliant, outpatient clinics that exist within the same [hypothetical] payee network, each of which serves low-income populations in a large urban area, with a large homeless population.

Both clinics, in keeping with the basic requirements for outpatient care offer 9 or fewer hours of service per week, meet basic requirements for the provision of SUD treatment (i.e. medical monitoring, emergency services, licensing of facility and clinicians, etc.), and do not provide residential services. Clinic A offers each client 1 hour of individual therapy per week; 1.5 hours of a process oriented recovery group, with groups specifically targeting recovery needs and key activities as clients progress through each stage of change; 1.5 hours of group therapy for co-occurring disorders; 3 hours of group therapy emphasizing acquiring positive skills (i.e. relapse prevention, anger management, communication, personal empowerment); 1 hour of contact with a social worker to help the access services, set, and meet goals related to housing, employment, and education. Clinic A also has staff members certified in family therapy to assist clients and their families throughout the recovery process. Clinic B offers each client 1 hour of individual therapy per week and referral to either a general process oriented therapy group or a process oriented therapy group that includes discussion of themes relevant to individuals with co-occurring SUD and mental health disorders.

Both clinics offer services that are perfectly capable of effectively and efficiently providing services to particular clients in need of SUD treatment, although in this example it is relatively clear that many clients with specific individual needs may have greater potential for recovery in Clinic A than Clinic B. This example demonstrates the question asked by many critics of the ASAM and other PPC of whether or not providers offering different services can be adequately categorized as essentially equivalent simply because they exist

within the same level of care, particularly when current linear standards of client treatment matching do not further attempt matching after the recommended level of care has been determined (Levine et al., 2003). Problems with intra-level of care differences between SUD treatment providers, both real and hypothetical, relate closely to the general lack of efforts toward client treatment service matching within the ASAM and other PPC. Although the ASAM series of PPC, particularly with the ASAM-PPC-2R, has improved its capacity to match clients to services based on medical needs (e.g. degree of medical monitoring in partial hospital, medically monitored residential, and medically managed inpatient) and the presence of co-occurring disorders (e.g. AOS, DDC, DDE distinctions between programs), the ASAM series of PPC as a whole does not attempt to match clients along other areas of importance to the recovery process.

McLellan and colleagues (1997) evidenced the potential effectiveness of client-treatment service matching when they matched clients to either standard SUD treatment or to SUD treatment enhanced with matched services to address employment, family, or psychiatric needs. These authors found that clients who were matched to SUD treatments enhanced with matched services were significantly more likely to: stay in treatment longer, complete treatment, and have better outcomes at six months post-treatment in being gainfully employed, not having family conflicts, having fewer legal problems, and being less likely to be in need of further SUD treatment. These findings were supported by those of Hser and colleagues (1999), who demonstrated the effectiveness of client treatment service matching through showing that higher levels of client treatment service matching across core domains (e.g. alcohol use, drug use, medical problems, psychological problems, family/social, legal, employment, and housing) other areas (i.e. child care, language, transportation) resulted in statistically significant increases in treatment retention. The current inability of the ASAM

and other series of PPC to capitalize upon the benefits of client treatment service matching remains a frequently mentioned criticism.

Minkoff and colleagues (2003) further described problems with the ASAM-PPC in saying that, in its ideal form, addiction “treatment matching involves not only selection of the so-called level of care, but identification of specific components of treatment intensity required in each clinical dimension” (p. 117). The notion that placement to a level of care is necessary but not sufficient to generate maximal effects of CTM is also reflected to a limited degree in the newest revision of the ASAM series of PPC, the ASAM-PPC-2R, regarding the treatment of co-occurring disorders. The ASAM-PPC-2R expanded upon earlier editions of the ASAM-PPC by including a taxonomy categorizing SUD treatment providers as DDE, DDC, or AOS (American Society of Addiction Medicine, 2001).

The ASAM-PPC-2R states that for any treatment program to accept patients with SUD and co-occurring mental health disorders the following elements should be in place: 1) M.D. and Ph.D. staff skilled in diagnosing and treating psychopathology, 2) a majority of staff is cross-trained in both SUD and mental health disorders, 3) components of treatment address both mental health and SUD related disorders, 4) a psychiatrist is available on site or through coordination (depending on need), 5) medication management is integrated into the treatment plan, 6) counselors are trained to facilitate compliance with pharmacotherapy, 7) intensive case management and assertive community treatment services are available for individuals with severe co-occurring mental health disorders (American Society of Addiction Medicine, 2001). The degree to which each of these criteria are met determines whether programs are identified as DDE, DDC, or AOS. The addition of a taxonomy to define distinctions between providers within each level of care represents the first attempt by the ASAM series of PPC to address intra-level of care differences between providers. This effort to match patients to both a level of care and to a provider within that level of care capable of

meeting the client's needs for a specific treatment service services is a potentially important adjustment to SUD treatment matching because it adds an element of service matching to add further precision to established placement matching strategies.

McGovern and colleagues (2007) examined the ASAM-PPC-2R taxonomy of SUD treatment programs' abilities to treat clients with co-occurring mental health disorders in an effort to gauge the utility and feasibility of implementing such a system. The authors surveyed SUD treatment providers (n=453) who were asked to identify their program as DDE, DDC, or AOS, as well as to provide prevalence estimates, descriptions of clinical practices, and perceived barriers to treatment of patients with co-occurring substance use and mental health disorders. Results of the survey by McGovern and colleagues (2007) indicated that 92.9% of community SUD treatment providers were able to categorize their programs as DDE, DDC, or AOS, with 64 – 67% of programs identifying themselves as DDC, 10 – 14% of programs as DDE, and 21 – 24% of programs as AOS depending upon the response source (i.e. clinic manager, director, clinician). Results also indicated that the taxonomy to categorize co-occurring disorder treatment capacity represented clinically meaningful differences across provider levels. Clinically meaningful differences were found as DDE programs identified themselves as treating more psychiatrically severe clients, having greater capacity and flow of clients with severe psychiatric problems, and having the fewest and least inhibiting barriers to treating clients with co-occurring substance use and mental health disorders. Programs categorizing themselves as DDC indicated a lower capacity, flow, and severity of psychiatric symptoms among clients served. DDC programs also identified more barriers to serving clients with co-occurring disorders than were found among DDE programs. Positive results from the study lend support to the notion that it may be feasible and efficient to address intra-level of care differences between providers within the broader framework of client treatment placement matching. These results relate directly to CTM

literature stating that matching clients to particular SUD treatment providers within a level of care, based on client need, may add further clinical efficiency and effectiveness to the treatment substance use and mental health disorders.

The inclusion of a taxonomy to identify and distinguish between providers on their ability to provide integrated treatment to clients with co-occurring disorders in the ASAM-PPC-2R is congruent with a growing awareness among addiction treatment researchers and providers that both psychiatric and substance use disorders must both be treated as primary issues when they co-occur. Furthermore, co-occurring disorders must be presumed to be the “expectation, not an exception” by individuals who design, coordinate, research or implement addiction treatment (Minkoff et al., 2003, p. 116). Evidence supporting this stance can readily be found in epidemiologic data, as Sacks (2000) states that the mental health treatment literature has reported that 20 – 50% of patients also have co-occurring SUDs, while among individuals receiving SUD treatment, estimates state that 50 – 90% of patients have co-occurring mental health treatment needs. Approximately 10 million Americans are estimated to suffer from co-occurring substance use and mental health disorders in any given year.

The taxonomy distinguishing SUD treatment providers based on their capacity to treat co-occurring mental health disorders is also reflective of a call for increased integration in treating co-occurring disorders among SUD treatment providers. Sacks (2000) describes eight clinical best practices for the treatment of co-occurring substance use and mental health disorders: 1) take a perspective that recovery is long-term, internal, and proceeds through various stages; 2) provide integrated, comprehensive, and continuous treatment to address SUD, mental illness, and other multidimensional service needs (i.e. housing, health care, diversity, social services); 3) develop a phased treatment approach (i.e. engagement, stabilization, treatment, preparation for aftercare, and aftercare); 4) employ self-help and peer self-help principles (i.e. AA, 12-step programs); 5) solve “real life” problems, including

housing, family, legal, economic, and other needs; 6) provide concrete, simplified, and highly structured services; 7) build an ongoing community or fraternity in which support from other clients with similar problems is used to promote and sustain change; and 8) integrate housing and treatment, including residential/therapeutic community and other housing options.

Sacks' (2000) best practices describe the overall need for SUD treatment providers to be aware of and differentiated by their capacity to provide specific services based on client need, beyond differentiation across levels of care/treatment intensity. However, the breadth of treatment/service domains (i.e. finance, housing, family, social support, education, employment, etc.) described as necessary best practices, highly important to the positive outcomes of many clients, are neither commonplace among all SUD treatment providers nor are they incorporated into the ASAM-PPC to be addressed in CTM. This discrepancy between optimal treatment conditions and current placement strategies lends credibility to criticisms of problems related to intra-level of care differences across SUD treatment providers. These potential intra-level of care differences, although grossly assessed within the six domains of the ASAM series of PPC, are not formally addressed in any CTM procedures as of the ASAM-PPC-2R and represent a significant area of concern for many authors who evaluate the ASAM and other PPC (American Society of Addiction Medicine, 2001).

Validity and Feasibility with Specific Populations: A third criticism is that the ASAM series of PPC and of CTM in general is that the ASAM and other PPC may not hold validity or feasibility for all populations or treatment needs. Support for this criticism has come from studies of accessibility of services/barriers to treatment as well as types of services available to various populations. A concern among researchers who question CTM in this manner is that CTM with the ASAM and other models of PPC assumes the presence of a continuum of treatments offering optimal solutions for different types and intensities of problems to be

available and accessible. However, this continuum does not appear to exist for many clients in many situations.

One example of a population for which the ASAM and other PPC may hold only a limited degree of utility or validity is prison inmates. Among state and federal prison systems, along with local jails housing inmates with sentences less than one year or who are awaiting trial, it is estimated that much higher percentages of inmates would benefit from SUD treatment than who are actually able to receive such services. Furthermore, even among inmates able to receive SUD treatment, available treatment options are much narrower in both scope and intensity than those outlined in most PPC and available to individuals pursuing SUD treatment in the community. Belenko and Peugh (2005) developed a PPC modeled on the ASAM-PPC but which consisted of the treatment options available to prison inmates and matched clients to one of four levels of care: 1) no treatment needed, 2) short-term intervention (i.e. self-help, drug education), 3) outpatient treatment (e.g. moderate duration individual or group counseling but not in a separate housing unit), or 4) residential treatment (e.g. long-term intensive intervention where inmates reside in a separate treatment unit). Match recommendations were made based on an analysis of three dimensions: severity of drug problems, number of health and social problems, and the total number of drug related consequences reported by the inmate throughout their lifetime.

Belenko and Peugh's (2005) sample included 14,285 inmates from 280 prisons (220 male, 60 female), stratified by census region, facility type, security level, and size of inmate population. Results indicated that 82% of inmates experienced some level of problems with drugs or alcohol, with 70.4% of males and 76.8% of females needing some level of SUD treatment. Approximately one-third of males (31.5%) and slightly greater than one-half of females (52.3%) were calculated to need residential treatment, and another 18.7% of males and 16.2% of females were estimated to need outpatient treatment. However, despite results

indicating a high prevalence of SUD problems and high need for SUD treatment, only 16.8% of males and 21% of females estimated to need outpatient or residential services had received any clinical SUD services throughout their time as an inmate. These results indicate that although CTM efforts are thought to maximize client outcomes while minimizing misuse of resources, the overall lack of resources, frequent lack of options across a continuum of SUD treatments of varying intensity, lack of incentives and contingencies for engagement in treatment, and lack of sufficient assessment services relevant to SUD treatment placement may make the ASAM and other types of PPC infeasible for implementation among current prison inmates.

Another population for whom the validity/feasibility of the ASAM and other PPC have been questioned is the homeless, particularly the unsheltered homeless. Despite early findings that the ASAM-PPC is feasible for use throughout networks of SUD treatment providers (Kosanke et al., 2002; Turner et al., 1999), a study by O'Toole and colleagues (2004) found that the CTM with the ASAM-PPC may be invalid or infeasible for homeless individuals because of: 1) inadequate access to treatment resources, 2) frequent under treatment placements when treatment is available, and 3) the inadequacy of the ASAM-PPC to match homeless individuals treatments with integrated services to address specific needs (i.e. co-occurring disorder, housing, employment, education, family counseling). Problems serving homeless individuals within the current linear client treatment placement matching framework also relate to differences between placement and service matching strategies. In the ASAM-PPC, homelessness is perceived to be a high severity problem in Dimension 6: Recovery Environment, and homeless individuals are likewise often referred to high intensity treatment programs. However, even in situations where homeless individuals become successfully engaged in high intensity SUD treatments, there is no formal strategy in place within current CTM to secure housing, educational, or vocational services for these

individuals to improve their life after termination from the high intensity level of care or to match homeless individuals to a treatment provider capable of meeting individual service needs (see Appendix H for an extended review of CTM in other fields).

Literature Summary

Substance use disorder research demonstrated the potential utility of CTM to improve SUD treatment by showing that while broad SUD treatment modalities, settings, and intensities each have unique main effects in reducing SUD problems, studies of randomized, heterogeneous, or otherwise unmatched samples demonstrated that no single treatment setting held uniformly greater effects for all clients. Essentially, while all treatments worked for some individuals, no single treatment was better for all individuals, and less intensive/less costly treatments often offered outcomes comparable to more intensive residential and inpatient settings for many clients. These results contradicted early SUD treatment practices that emphasized the routine placement of all clients in high intensity, high cost, treatment programs (i.e. Minnesota Model programs, therapeutic communities). This determination left SUD treatment providers, payees, and researchers to question whether specific types, settings, intensities, or other characteristics of SUD treatment, although not optimal for all clients in all situations, may be best for specific clients with specific needs. This line of active questioning led to the eventual development of a matching hypothesis for SUD treatment (Annis, 1986; Gastfriend & McLellan, 1997; Rychtarik et al., 2000).

Initial investigations of matching hypotheses revealed three primary domains in which CTM could occur: service matching (Belenko & Peugh, 2005; Hser et al., 1999; McLellan et al., 1997; Muinkoff et al., 2003), modality matching (Project MATCH Research Group, 1997; UKATT Research Team, 2007) and placement matching (Gastfriend et al., 2000). In lieu of results demonstrating reductions in different services available to clients in

SUD treatment across recent decades, despite clinical advantages associated with service matching (Etheridge et al., 1995) and the absence of observed matching effects related to treatment modality (Project MATCH Research Group, 1997; UKATT Research Team, 2007), the most widely studied and implemented type of CTM has occurred in the form of the development of algorithmic decision trees, referred to as PPC, which are used to assign clients to different levels of care (American Society of Addiction Medicine, 2001; Hoffman et al., 1987; Gastfriend & Mee-Lee, 2003; Mee-Lee & Gastfriend, 2008). By far, the most widely used and influential PPC to date has been the ASAM-PPC (Callahan, 1999; Kosanke et al., 2002; Substance Abuse and Mental Health Service Administration's Co-Occurring Center for Excellence, 2005; Sharon et al., 2003). Although initial reviews and psychometric analyses of the use of the ASAM series of PPC have generally demonstrated favorable results (American Society of Addiction Medicine, 2001) many authors remain critical of the process, nature, and limitations of aspects of client-treatment matching practices utilized in the ASAM and other PPC (Book et al., 1995; Book et al., 1996).

Although the ASAM-PPC is widely regarded as the “gold standard” SUD PPC and is the most widely used and accepted by SUD providers and payees, authors have documented multiple areas in which the ASAM series of PPC may benefit from further investigation and possible revision. Particularly, practices that could benefit from further research include those in which PPC are thought to use inappropriate or insufficient strategies in attempting to match clients to the ideal form of SUD treatment. An important area of theoretical criticism, supported in part by empirical research, relates to the use of linear CTM principles. Linear placements strategies for CTM have been thought to match clients to higher levels of care than clinicians believe them to need (Staines et al., 2003) or to levels of care that may be insufficient or inappropriate to meet specific client service or intervention needs, regardless of the intensity of treatment (Levine et al., 2003; McLellan et al., 1997; Gastfriend &

McLellan, 1997). Examples of such problems can be found in cases of individuals struggling with unemployment, homelessness, anger management, legal, or other problems; these problem areas often have potent, direct, influences on substance use outcomes, yet treatment for many such specific concerns is neither monitored nor assured by current linear CTM practices (Book et al., 1996). Furthermore, the sole use of linear CTM strategies to place clients in a specific level of care also fails to capitalize on the benefits associated with other forms of CTM, such as client-treatment service matching (Hser et al., 1999; McLellan et al., 1997).

Another area of concern in the study of both CTM and the broader SUD treatment field relates to the presence of intra-level of care differences between providers, in both intensity of treatment and services offered. Research into current level of care matching practices indicates that 1) providers identified as essentially the same because they exist within the same level of care actually differ in clinically important ways (e.g. services, quality) and 2) matching clients to both a specific level of care and specific services within that level of care can amplify the established benefits of matching to either treatment intensity (Magura et al., 2003; Sharon et al. 2003) or specific services (Hser et al., 1999; McLellan et al., 1997). Also, although a large body of published research exists to evaluate the matching hypothesis for specific types of matching or within or between specific programs, no studies were located that evaluated the state of CTM on a more global, comprehensive, or systemic level. Furthermore, beyond a brief description of an experimental matrix for matching multidimensional risk with type and intensity of service needs, presented as a “possible future direction,” found in the ASAM-PPC-2R (ASAM, 2001, p. 281), no efforts to formally or systematically implement and evaluate a more comprehensive approach to CTM (e.g. implement multiple types of CTM concurrently) could be found within the literature. Moreover, beyond the possible future direction matrix presented in the ASAM-

PPC-2R, few recommendations for systemically improving current CTM strategies were identified.

The cumulative effects of the progress made toward utilizing CTM in SUD treatment, given existing knowledge and systemic inefficiencies and barriers, appear to be in systems with significant growth over recent decades but that still have much room for improvement. Many communities, such as the region of interest for this study (Milwaukee, WI) have multiple, discrete treatment systems that overlap for some patients while leaving others effectively unable to access SUD treatment. The most recent available information on the disparity between individuals who need treatment and those who receive treatment, indicates that in 2007 only 10% of the 23.2 million Americans who needed addiction treatment received treatment (Substance Abuse and Mental Health Services Administration, 2007), while in Milwaukee County, WI, over 82,000 citizens needed but did not receive treatment in 2004 (Milwaukee Addiction Treatment Initiative, 2009). The sharp discrepancy between those who need and those who actually receive treatment serves to highlight the presence of ongoing inefficiencies, inefficiencies that CTM practices seek to overcome, in both the organization and implementation of addiction treatment services. Presumably, principles and practices of CTM offer considerable opportunity to reduce this treatment gap, as CTM has been demonstrated to optimize both client outcomes and the potency of interventions, potentially reducing both clients' time in treatment and decreasing the number of episodes of treatment needed to achieve desired changes, while simultaneously increasing cost-efficiency among treatment providers. Such combined effects have great potential to increase the overall availability, amount, and diversity of treatment options available for those in need.

While much of the available literature supports the potential role of CTM in optimizing both treatment outcomes and resource utilization, available data about SUD treatment in "real world" settings suggests that treatment remains often either not available to

or fully effective for many individuals struggling with SUD. The apparent gap between the identified potential of CTM and the continuance of problems potentially addressed by CTM in real world treatment settings justifies that several questions be asked. Such questions particularly relate to how, or whether, CTM theory is practiced in current treatment systems; the actual impacts of such practices; and whether modification of existing CTM practices can improve treatment outcomes and availability for those with SUD. As such, this study will extend the existing literature by examining the implementation of CTM research and theory in an existing treatment system, the positive and negative implications of present day CTM practices for that system, and any identified barriers to and potential solutions for further enhancing the system's treatment offerings through CTM.

Chapter 3: Research Methods

The Delphi Approach

This study uses the Delphi technique, an iterative process of gathering expert information, to highlight areas of consensus and disagreement regarding: 1) the current state of client-treatment matching (CTM) in substance use disorder (SUD) treatment in Milwaukee, WI, 2) characteristics of CTM found in an optimal SUD treatment system, 3) barriers to overcoming identified CTM shortcomings in the community of interest, 4) the ramifications of identified systemic flaws and barriers to improvement, and 5) solutions for overcoming identified barriers and improving treatment systems through CTM. According to Linstone and Turoff (2002), the Delphi approach “may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (p. 3). The Delphi methodology is constructed around the adage that “two heads are better than one” when dealing with an issue for which exact knowledge is unavailable (Clayton, 1997; Dalkey, 1969). Based on this underlying premise, the Delphi methodology has been widely and successfully applied across corporate, industrial, political, and academic institutions to seek knowledge and aid decision making in a range of areas, including but not limited to: best practice and service delivery, professional development, putting together the structure of a model, delineating the pros and cons of policy decisions, planning expansion/development models, and exploring causal relationships within complex phenomena (Clayton, 1997; Linstone & Turoff, 2002).

Moreover, the Delphi approach was initially developed as a forecasting tool and has achieved success to forecasting the likelihood, desirability, and feasibility of attaining some

future states. According to Gordon (1994), the name Delphi was drawn, initially with humorous intent, by developers “from the site of the Greek oracle at Delphi where necromancers foretold the future using hallucinogenic vapors and animal entrails” (p. 1). Philosophically, developers of the Delphi approach started with the question of just how much could be known about the future. Historically, development of the Delphi approach occurred in the 1950s by researchers at the RAND Corporation while working on a forecasting project sponsored by the U.S. Air Force. “The aim of the project was the application of expert opinion to the selection – from the point of view of a Soviet strategic planner – of an optimal U.S. industrial target system, with a corresponding estimation of the number of atomic bombs required to reduce munitions output by a prescribed amount” (Dalkey & Helmer, 1963, p. 458). According to Gordon (1994), Delphi studies have accurately predicted the development of: economically useful desalination of sea water, oral contraceptives, transplanting organs, self-replicating molecules, synthetic proteins, and the feasibility of control over hereditary defects, amongst others. Past Delphi studies have also missed on future forecasts as well, most notably predictions over the timeline for: developing limited weather control, world population being under 6 billion by 2000, and achieving a manned landing on Mars, amongst others.

Central to the Delphi approach is the understanding that Delphi is an improved process for data collection and decision-making in situations where the knowledge or action of a group is preferred to that of an individual. According to Clayton (1997), “critical decisions, the kind involving... program improvement and management, and resource allocation, for example require accurate information, careful consideration and involvement of more than a single decision-maker” (p. 374). In situations where groups of key individuals are needed to either 1) serve as sources of information directing key decisions or 2) to make decisions, multiple problems with group processes occur, which the Delphi is thought to

avoid or overcome. Particularly, the social-emotional nature of many group interactions can be disruptive, as individuals who are louder, more verbose or eloquent, or in a position of power can dominate the discussion or influence the decision making processes disproportionate to their respective knowledge or ability (Dalkey, 1969; Linstone & Turoff, 2002). Furthermore, traditional group decision-making strategies can result in decisions that are more extreme in nature than individual decisions. This phenomenon, dubbed the “risky shift,” occurs when group discussion intensifies attitudes, beliefs, values, judgments, and perceptions among members and results in a more extreme outcome than the mean, pre-discussion, personal opinions of group members (Clayton, 1997) (see Appendix I for an extended review of the Delphi Methodology).

Methods

Appropriateness of the Delphi Approach in Examining CTM

The Delphi technique was selected as an optimal research methodology to examine the current status, potential optimal states, implications of current problems, barriers to system improvement, and available solutions for overcoming barriers as these factors related to CTM in SUD treatment in Milwaukee, WI. These questions traverse a complex array of content domains (e.g. social, legal, economic, academic) and represent areas in which relatively few absolute truths are known. Moreover, no use of other, similar research techniques was identified in the study of CTM. While PPC development and decision making for SUD treatment systems are often made by expert groups, no available information indicates that processes were put in place to reduce the previously mentioned, inherent, problems with traditional group efforts. Also, no qualitative data is available to offer information that is more in depth and experientially rich than the quantitative research methods that have thus far been used to study CTM. Although the Delphi approach is not a

solely qualitative research method, the initial phase in which expert panel members are asked open-ended questions about their perceptions on CTM and SUD treatment effectively grounds all subsequent phases of the study on a foundation of qualitatively rich data. By remaining grounded in the language, experiences, and rationale of experts, the results of a Delphi study serve as an excellent bridge between research and practice (Fish & Busby, 1996). The ability of the Delphi approach to bridge issues of research and practice is particularly notable as conclusions: are expressed in the language of the expert participants; offer a rich, experientially grounded, composite representation of a diverse array of expert knowledge and perceptions; and remain closely tied to the skills, knowledge, and experiences of field leaders (Gordon, 1994).

Furthermore, the Delphi technique is appropriate for examining current and optimal future CTM issues, practices, and systemic issues because a primary function of the Delphi approach is to bring clarity to complex areas where an absolute, objective, truth is not known. In the process of bringing clarity, Delphi studies help those responsible for key recommendations and decisions about current and future practices to both build consensus and better understand areas of existing confusion or dis-sensus (Linstone & Turoff, 2002). The Delphi approach has been used, with great positive effect, in the military, government, and private sector for over forty years to structure communication and build consensus across diverse groups on complex issues (Gordon, 1994; Linstone & Turoff, 2002). The added structure of the Delphi approach allows researchers and expert panels to examine complex areas coolly and objectively, while more traditional group discussion, exploration, and decision making processes can be rife with problems (e.g. members who are more outspoken, verbose, or socially empowered may have voices that are disproportionately large) (Dalkey, 1969; Linstone & Turoff, 2002). These functions of the Delphi approach are of great potential benefit for the SUD treatment field, where a complex arrangement of

interconnected treatment systems (e.g. SUD, mental health, physical health, non-health support services), individual providers, and researchers struggle to coordinate in providing the most effective, most efficient services to those in need of treatment.

Collaboration with the Milwaukee Addiction Treatment Initiative

The Milwaukee Addiction Treatment Initiative (MATI) is a collaboration among 80+ state- and community-level organizations that seeks to expand access to drug and alcohol treatment for everyone in Milwaukee County and the state of Wisconsin. The goals of the MATI are highly congruent with and will be greatly aided by efforts to enhance CTM in SUD treatment. The MATI's stated goals include: increasing integration of all components necessary to comprehensively treat SUD; restructuring the delivery of services to produce seamless engagement with SUD, mental health, health care, and other needed services; and enhancing the overall efficiency and effectiveness of SUD treatment in the pursuit of reducing the treatment gap (Community Advocates, 2008).

The strong correlation between many of the stated goals of the MATI and of CTM research and practice indicates that the MATI has already demonstrated a significant commitment to enhancing CTM in Milwaukee County, even if the phrase "client-treatment matching" has not been explicitly used by the MATI. By this rationale, the outcomes of the proposed Delphi study of CTM in SUD treatment, particularly in Milwaukee County, will have a direct, positive, impact on the efforts and activities of the MATI. Moreover, as the MATI has relied in the past upon group interactions for strategic planning and decision-making, they will benefit from utilization of the Delphi approach, as it is particularly well suited to reducing problems with more traditional group processes (Clayton, 1997).

The confluence of system, community, and other experts actively involved with the MATI rendered it an optimal starting point for the recruitment of an expert panel for this Delphi study. The MATI's members and community partners retain practical, highly

contextualized, and locally grounded knowledge about SUD treatment in the Milwaukee area, an area with among the best treatment outcomes in America (MATI, 2009), and they have significant general knowledge about the science of SUD treatment, service provision, relevant policy, and matching principles. Congruent with Delphi panel recommendations (Gordon, 1994), the MATI also includes experts from each discipline identified as relevant to evaluating the use, barriers, problems, effects, and ideal states of CTM in SUD treatment. Experts collaborating with the MATI include those with key knowledge and experience related to direct service provision, facility/system administration, public policy development, and client advocacy and who have backgrounds in SUD/addictions, mental health, social work, and other partnered business and legal fields.

However, while the MATI as an organization provided an excellent pool from which to recruit expert panel members, not all MATI members had the requisite knowledge for inclusion in this research project, and some community experts outside of the MATI also held relevant information. In order address this potential concern, and congruent with common practices for development of expert panels in Delphi research, this survey used snowball sampling (Patten, 2005; Thomas & Hersen, 2003), referred to as “daisy chaining” within the Delphi Literature (Gordon, 1994). In this approach, experts were included based upon the consensus recommendation of Robert Cherry, the MATI System Redesign Coordinator/Public Health Systems Coordinator, and Todd C. Campbell, Ph. D., the dissertation chair (also a MATI member), both of whom held extensive knowledge about local and national SUD and related treatment systems, treatment system redesign efforts, and the relative expertise of individual MATI and other community members. Specifically, experts in this study were identified based upon their meeting the following criteria: 1) being recognized by peers within the treatment system as having relevant expert knowledge to inform each of the five core questions asked in this study, 2) having extensive firsthand

knowledge (i.e. 10+ years) of SUD treatment and systems in Milwaukee County, and 3) advanced education, represented by a graduate degree or advanced credentialing relevant to SUD treatment design (Gordon, 1994).

Status of Treatment Systems the Region of Interest

Milwaukee County, the home region for the MATI, is the most populous county in the state of Wisconsin, with 915,097 of the state's 5,556,506 people in 2006 (Laux, 2009); the city of Milwaukee, WI contains approximately 692,339 individuals (Wisconsin Department of Health Services, Division of Mental Health and Substance Abuse Services, 2010). Importantly, according to the Wisconsin DHS (2010), among urban areas in the United States, Milwaukee has: the highest rate (12.47%) of persons over the age of 12 with a SUD in the past year, the highest rate (30.46%) of binge drinking in the past month, and the second highest percentage (9.64%) of persons needing but not receiving alcohol treatment. Additionally, among persons receiving services from the county's public SUD treatment system, there were notably high rates of co-occurring mental health concerns: 58.5% of males and 88.4% of females experienced serious depression, 57.3% of males and 88.0% of females experienced serious anxiety, 17.1% of males and 42.6% of females experienced psychotic symptoms, and 15.4% of males and 56.9% of females had a recent suicide attempt, among other mental health disorders.

Given the high incidence of substance use and co-occurring mental health disorders in the area, Milwaukee County has actively pursued an integration of previously disparate substance use and mental health treatment systems. A primary impetus for this merger was a desire to continue the move the county's service system in a direction congruent with the large body of research indicating that integrated care is the best possible treatment for individuals with co-occurring substance use and mental health disorders (Bellack, Bennett, Gearon, Brown, & Yang, 2006; Mueser, Noordsy, Drake, & Fox, 2003; Substance Abuse and

Mental Health Services Administration, 2002; Tsemberis, Gulcur, & Nakae, 2004).

Additionally, a fully integrated community substance use disorder and mental health care system was expected to create a more efficient system, allowing both a greater scope of higher quality services and decreased service redundancies. In 2002, Milwaukee County took a major step toward this goal by changing the Mental Health Division to the Behavioral Health Division (BHD); this new division of the Milwaukee County Department of Health and Human Services assumed responsibilities for administration and programming of both SUD treatment services, formerly under the Adult Services Division, and mental health services, formerly under the Mental Health Division (Laux, 2009).

While full system integration remains an ongoing goal within Milwaukee County, SUD and mental health treatment services continue to be delivered through separate, although parallel treatment systems. Reasons for the ongoing separation include: discrete federal, state, and community funding streams (e.g. tax levies, block grants); different reimbursement schedules and billing/tracking systems for SUD versus mental health treatment; and a historical, fundamental difference between the systems that drives service provision (i.e. short-term care in SUD treatment versus long-term care in the mental health system) (Laux, 2009). While service delivery in any particular agency or domain remains largely specific to SUD or mental health care, the system as overseen by the BHD is integrative through its overarching organization under the Comprehensive, Continuous, Integrated System of Care (CCISC) model (Minkoff, 2001; Minkoff & Cline, 2004). This model emphasizes eight core principles for service delivery:

- 1) Dual diagnosis is an expectation, not an exception.
- 2) The four quadrant model for categorizing disorder for use in service planning (see Figure 1; adopted from SAMHSA, 2002).

- 3) Empathic, hopeful, integrated treatment relationships as important contributors to treatment success across settings.
- 4) Case management and care balanced with empathic detachment, expectation, contracting, consequences, and contingent learning.

Figure 1. Level of care quadrants



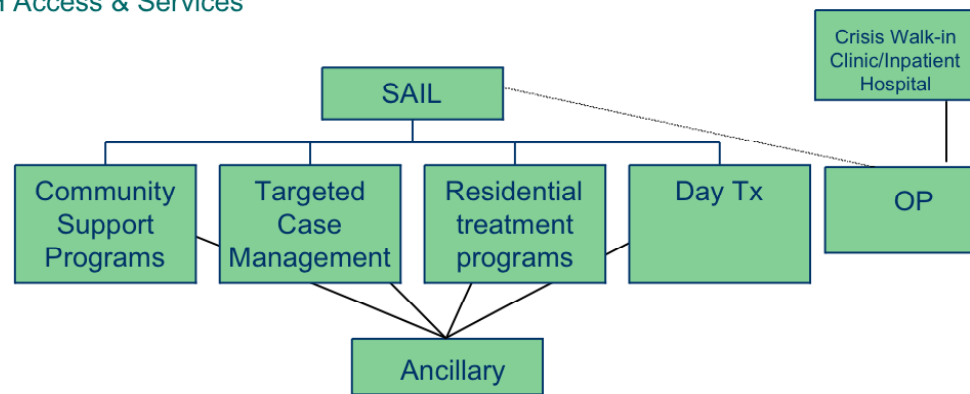
- 5) When substance use and psychiatric disorders coexist, both should be considered primary; integrated or multiple primary diagnosis-specific treatments are recommended.
- 6) Both mental and behavioral health concerns can be treated with disease and recovery model frameworks, with parallel phases of recovery, in which interventions are diagnosis, stage-of-change, and phase specific.
- 7) There is no single correct intervention, as interventions must be individualized according to quadrant, diagnosis, functioning, external factors, recovery phase/stage of change, and level of care requirements.
- 8) Clinical outcomes must also be individualized, based on similar parameters for individualizing interventions.

These principles serve as a core philosophy, governing both the mental health and substance use disorder treatment systems under Milwaukee County's BHD. Regarding mental health services, individuals with co-occurring substance use and mental health

disorders falling in Category II of the four quadrant model receive primary services through the mental health system, accessible by referral from behavioral or medical providers.

Milwaukee County's Service Access to Independent Living (SAIL) unit manages access to all long-term community-based mental health services; see Figure 2 for a schematic outline of the community mental health system (adapted from Laux, 2009). Upon entering the mental health system through either SAIL as a central access point or the crisis walk-in clinic (CWIC)/inpatient psychiatric hospital, individuals are referred each respective service as appropriate.

Figure 2: MH Access & Services



Within the mental health system, community support programs (CSP) offer psychiatric treatment, rehabilitation, and support services congruent with the Assertive Community Treatment (ACT) model up to a service intensity of client contact twice a day, seven days a week in the community where the participant lives. Individuals served by CSP have chronic mental illnesses with repeated or acute treatment or prolonged episodes of institutional care who exhibit persistent difficulties in independent functioning. Targeted case management (TCM) is a less-intensive service regulated by Wisconsin Medicaid; TCM serves individuals with Axis I psychotic or major affective disorders or Axis II diagnosis in cluster A or B who have demonstrable recent functional limitations. Individuals in TCM programming see their case manager once per week and receive assessment, case plan

development, and ongoing monitoring/service coordination services reimbursed by Medicaid. Other services, including residential, day, and outpatient programs are available for individuals with a wide range of disorders and at a wide range of intensities, although many individuals with mental health diagnoses qualifying for services under these programs carry predominant substance use disorder diagnoses and are predominantly seen through the BHD's substance use disorder treatment system (Laux, 2009).

Milwaukee County's public substance use disorder treatment system works in conjunction with other community agencies (e.g. private SUD treatment providers, the Milwaukee VA Medical Center, the court system/departments of corrections) to provide treatment services to the estimated 86,335 adults in Milwaukee with a SUD (Wisconsin DHS, 2010). Individuals enrolled in this system have either only primary substance use diagnoses or fall in Category III of the four quadrant model when co-occurring mental health concerns are present. A majority of public services are provided through the Wisconsin Supports Everyone's Recovery (Wiser) Choice program, funded in part by a series of three Access to Recovery (ATR) grants through the Substance Abuse and Mental Health Services Administration (SAMHSA), the most recent of which, ATR-3, was awarded in 2010 and will contribute to funding the Wiser Choice program through 2014.

The ATR grants have played an integral role in helping Milwaukee County develop a network of 73 clinical treatment and recovery support service (RSS) providers, delivered at 100 sites throughout the county. These sites span seven distinct clinical levels of care: outpatient, intensive outpatient, day treatment, transitional residential, medically monitored, residential, co-occurring biomedically enhanced monitored residential and methadone treatment. Also available within the public Wiser Choice system are a host of RSS, including: after school care, child care, daily living skills training, housing assistance, parenting assistance/education, language interpreters, education/skill development,

employment assistance/work adjustment training, case management, recovery support coordination, and recovery check-ups, among other services. The most recent iteration of the Wiser Choice program, funded in part by the ATR-3 grant, has also expanded both the range of clinical services provided (i.e. Seeking Safety for co-occurring PTSD and SUD, Community Reinforcement and Family Training; CRAFT) and the client populations served (e.g. better serves returning veterans, expanded integration in drug and alcohol treatment courts, collaboration with Wisconsin's Intoxicated Driver Program). These program expansions have sought to use the Wiser Choice network by leveraging existing resources to provide RSS to augment SUD treatment for individuals for whom other funding streams (e.g. veteran's benefits, other state agencies) provide primary SUD treatment. These changes represent Milwaukee County's continued effort to most efficiently using available resources to provide a more comprehensive system of care to an expanded population (Wisconsin DHS, 2010).

In accessing Milwaukee County's public treatment system, Milwaukee County residents can utilize a Wiser Choice Central Intake Unit (CIU) where they will undergo a comprehensive intake evaluation. Assessments conducted at the CIU emphasize gathering information required for client assignment to a level of care according to the ASAM-PPC-2R. The primary tool utilized in these evaluations is the Addiction Severity Index (ASI), with other brief measures included to augment the data collected on the ASI (Laux, 2009). While these evaluations have historically focused on collecting data necessary for clinical placement/referral, recently updated evaluations for ATR-3 will also include the Recovery Support Service Questionnaire (RSSQ), a tool designed by SAMHSA to identify client service needs and facilitate referral to optimal RSS (Wisconsin DHS, 2010).

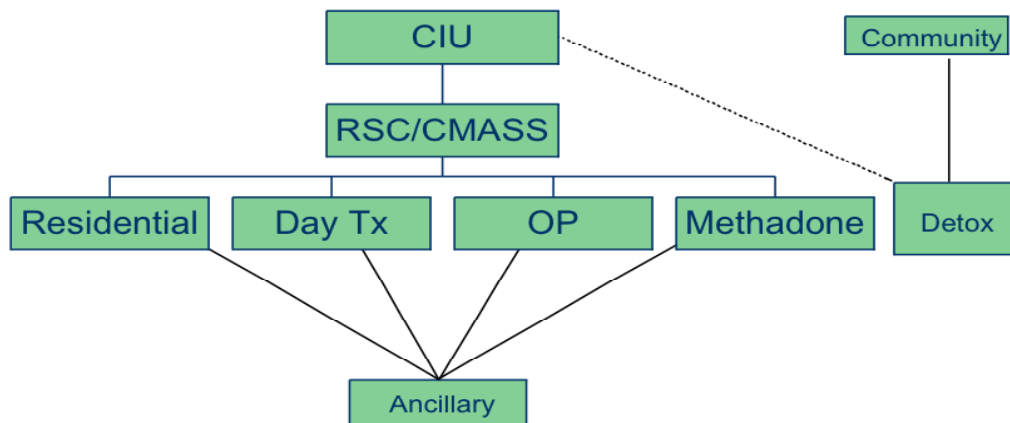
Primary CIUs are available on the north and south sides of the city, with additional CIUs specializing in evaluating clients who identify as Hispanic/Latino as well as those

engaged in the criminal justice system. Additionally, area RSS providers can administer a brief screen (i.e. the Alcohol Use Disorders Identification Test; AUDIT) to any individual believed to have a SUD; a positive score on this screen will trigger follow-up for an on-site comprehensive evaluation from Milwaukee County's mobile CIU. Under the ATR-3 grant, a priority was also placed on more actively engaging veterans in the Wiser Choice system. To ease engagement, along with the general Milwaukee County CIUs, veterans can request evaluation through the mobile CIU at two different veteran peer to peer service organizations; they can also receive the comprehensive intake evaluation at the Milwaukee VA Medical Center's CIU or the through Wisconsin National Guard (WING) Prevention, Treatment and Outreach Program (Wisconsin DHS, 2010).

Following the CIU's comprehensive evaluation and identification of the appropriate level of care, each client is provided a directory of all appropriate treatment providers and is assisted by CIU staff in making a free and informed choice regarding the best provider for their individual care. When selecting a treatment provider, clients view provider profiles for potential providers with each profile containing information such as the location, services offered, faith based or secular nature of the program, population specialties (e.g. ethnicity, men/women), site and language accessibility, and a narrative description of the provider (Laux, 2009; Milwaukee County Behavioral Health Division, Community Services Branch, 2010). Additionally, under the ATR-3 grant each provider profile will be updated to also include provider scorecards that contain information about rates of client satisfaction and other key outcomes for each provider (Wisconsin DHS, 2010). Following client selection of a provider, the CIU issues an initial, time-limited authorization to the provider and submits authorization to the BHD to activate authorization of payment to the specified provider to serve the client. Providers utilize ASAM-PPC-2R criteria to request extensions of service or change in level of care (Laux, 2009).

Additionally, prior to leaving the CIU, clients are assigned to a level of case coordination, utilizing Recovery Support Coordination (RSC), Case Management (CM), or Recovery Checkup (RC). Both RSC and CM services aim to utilize a strength based, team-based approach to actively plan and coordinate client-involvement in systems and services, with RSC services being somewhat more intense and generally reserved for clients with children, more severe clinical concerns, or involvement in more disparate systems. Recovery Checkup services consist of quarterly telephonic monitoring for all clients not engaged in RSC or CM and include brief evaluations and motivational feedback. This service is utilized to minimize time to increase detection of client relapse, accelerate treatment re-entry when needed, and improve long-term outcomes (Wisconsin DHS, 2010). Randomized clinical trials of the RC model have shown clients receiving RC services to outperform controls in re-entering treatment more quickly, having fewer past-month symptoms of SUD, and having increased days of abstinence over a two year span (Scott & Dennis, 2009). See Figure 3 (adapted from Laux, 2009) for a schematic outline of the community SUD treatment system.

Figure 3: AODA Access & Services



Milwaukee County's ongoing efforts to integrate mental health and substance use disorder treatment, encompassing both traditional clinical interventions and RSS, have enabled the Wiser Choice network to establish itself as a national leader in SUD treatment.

Despite the significant treatment gap in Milwaukee County and many indicators that the citizenry of Milwaukee County struggles with severe SUD concerns (Wisconsin DHS, 2010), the Wiser Choice treatment system regularly yields treatment outcomes well above the national average. Among data reported through the Government Results Performance Act (GRPA), relative changes across the first 6-months of treatment in key variables for individuals engaged in Wiser Choice programming versus average national rates showed: 68.3% vs. 55% increases in abstinence from alcohol and drugs across the past 30 days; 102.8% vs. 63% increases in employment or enrollment in school/training; 65.7% vs. 5% decreases in arrests across the past 30 days; and a 3.9% increase vs. a 3% decrease among clients reporting they had a friend or family member supportive of their recovery (Milwaukee County Behavioral Health Division, 2008).

Recruiting and Data Collection

The Expert Panel: Following the recommended course and process for Delphi research, this study began with an intentional, focused effort to recruit an expert panel that would: 1) actively participate, 2) contain a breadth of expert perspectives and knowledge of key areas, and 3) give integrity and validity to the data collected throughout the Delphi process. Initial contact with MATI, a primary point of contact with such experts in the Milwaukee area, was made through a meeting with Robert Cherry, the MATI's System Redesign Coordinator/Public Health Systems Coordinator on 8/18/2009. In this initial meeting, the rationale, benefits, process, predicted time investment, and expected outcomes/returns associated with participation in this study were discussed. Following this meeting, a consensus start list of potential panel members was developed by Mr. Cherry and Todd C. Campbell, Ph. D., the dissertation chair and also a MATI member.

This consensus start list contained the names, email addresses, and phone numbers for 20 MATI members and community partners determined to have the requisite expertise. Potential

panel members were then contacted by the primary investigator to request/invite participation in this study, clarify the projected time investment, highlight the anticipated benefits of participating, and emphasize the critical nature of their perspective and expertise being represented in the Delphi Panel. See Appendix K for an informed consent letter sent to each prospective participant.

All potential panel members who expressed initial interest were electronically sent informed consent materials. Congruent with the snowball sampling/"daisy chaining" approach commonly used in Delphi Research (Gordon, 1994; Patten, 2005; Thomas & Hersen, 2003), each potential participant was given the opportunity to name others whom they believed would have the necessary knowledge and experience to contribute to this study. Notably, 100% of individuals suggested by potential participants were already represented on the start list provided by the dissertation chair and System Redesign Coordinator/Public Health Systems Coordinator. This high degree of saturation on the start list was interpreted as an indicator that the individuals initially identified represented the breadth of individuals in the region of interest with the requisite experience and expertise for participation. Of the 20 individuals from the consensus start list of participants, 11 gave consent to participate and completed the phase one survey; 9 community experts completed all iterations of the Delphi survey, yielding a final response rate of 45%, although retention of expert panel members from phase one through the end of data collection was 81.8%.

Participants were 9 practicing professionals in middle- to senior-level positions across a variety of settings and agencies in the Milwaukee area. Participants were between the ages of 39- and 64-years-old ($M = 55.33$; $SD = 9.32$); five men and four women served on the panel. Expert panel members had between 16 and 22 years of education ($M = 19.11$; $SD = 2.03$) and had worked in substance use disorder treatment or a closely related field for between 10 and 35 years ($M = 21.5$; $SD = 8.33$). Regarding professional roles in which the

panel members are presently engaged, seven serve as direct treatment service providers, all nine serve in an administrative capacity, two function as client advocates, seven are involved in policy and program development, and one works within the criminal justice system.

Phase One, Qualitative Data Collection: The phase one survey included a stimulus descriptor of CTM science and practice, an open-ended questionnaire examining the five research questions, and a demographics form (see Appendix J). All materials were electronically delivered to expert panel members via email. Panel members were given two weeks to complete the initial questionnaire; a reminder email with an attached additional copy of the survey was distributed after one week.

Following the return of the initial questionnaire by participants, the Delphi management team (i.e. the primary investigator and two students in a Master's in Community Counseling program experienced in qualitative data analysis) analyzed, refined, and integrated the data within each of the five survey domains. As has been completed in other Delphi studies and is often recommended for qualitative research in general (Burkard et al., 2005; Lombardo, 2007; Miles & Huberman, 1994), the management team developed an initial start list of themes present in the panel's responses (e.g. assessment, funding, client choice, access, referral, social factors). Data was independently reviewed and assigned to themes by each member of the management team; all data was assigned to at least one theme.

Following independent review, the team compared and discussed the assignment of data to themes until consensus was reached in all assignments. Subsequently, the same process was followed to identify core ideas (e.g. "boiling down" or "abstracting") within each theme (Strauss & Corbin, 1990), which reduced the data to more concise terms with core ideas that closely reflected the data. Core ideas were then reworded as 100 distinct questionnaire items for use in future iterations of the Delphi survey process. Appropriate Likert-type scales were also determined by consensus for use in each survey domain. Items in

the four domains examining present CTM practices in Milwaukee County, conditions of CTM in an optimal treatment system, implications of systemic flaws, and solutions for overcoming identified barriers to improvement were each assigned two separate scales, either agree/disagree and impact or agree/disagree and feasibility of implementation in Milwaukee County; only items in Domain 3: Barriers to System Improvement were rated on one scale, the overall restrictiveness of each identified practice or condition.

The management team then sent by the final consensus version of the themes, core ideas, and quantitative questionnaire items to the auditor (i.e. dissertation chair) for independent review (e.g. evaluate identification of themes, check assignment of data to themes, scrutinize core ideas, examine final questionnaire items). Following return of the quantitative questionnaire by the auditor to the Delphi management team, the management team reviewed and made final decisions regarding the feedback of the auditor and created a final version of the survey to be used in across iterations of quantitative data collection (see Appendix L) (Burkard et al., 2005). Changes to the survey made in response to feedback from the auditor were to allow panel members to individually rate the each of the publicly funded system's four central intake units (CIUs) and to allow panel members to individually rate specific services (e.g. housing, education/vocation, transportation, childcare) on items examining the integration of these services in SUD treatment.

Phase Two, Quantitative Data Collection: When finalized, the quantitative questionnaire was sent to expert panel members, who again had two weeks to complete the questionnaire; a reminder email with additional copy of the survey attached was again sent after one week. Following return of the first iteration of the phase two survey by expert panel members, item responses were aggregated, and the mean and standard deviation for each item was prepared for presentation to panel members as feedback on the overall amount of

consensus (i.e. smaller standard deviations indicate higher consensus) and direction of the panel's overall response (i.e. mean) on each item.

A second iteration of the phase two survey was then distributed to panel members. This second iteration contained the same questions, scales, and survey format and also displayed the mean response and range of responses within approximately one standard deviation of the mean from the previous iteration alongside each item. Panel members were then asked to re-rate items in lieu of this feedback and provide rationale for responses beyond approximately one standard deviation from the previous mean. Upon return of the second iteration of the phase two questionnaire (e.g. panel members given two weeks, reminder email sent out after one week), item responses were again aggregated and prepared for presentation to panel members as an updated mean and standard deviation. Additionally, panel members' rationale for more extreme responses were synthesized and prepared for presentation to the panel as a whole on the final iteration of the survey.

The third and final iteration of the quantitative questionnaire was then re-submitted to the expert panel with descriptive statistical information (e.g. mean and standard deviation) and rationale for more extreme responses provided for each item. Panel members were then asked to re-answer each questionnaire item a final time, given aggregate group responses and rationale for more extreme responses provided.

Chapter 4: Results

To better validate the following results, it was important to determine whether participant's ratings on survey items were solely related to their expert status or were influenced by key demographic features, such as: age, years of experience in SUD treatment or a related field, or years of education. A series of analysis of variance (ANOVA) were computed for each of these potentially confounding demographic factors. In each ANOVA, participants were separated into higher and lower groups by age, education, and field experience. None of these analyses emerged as significant, indicating that panel member's responses were due to unique expert knowledge, rather than demographic characteristics.

Overall Expert Consensus

As a core feature of the Delphi approach is the ability to build consensus among a panel of experts in a field, both the degree to which areas of high consensus and high dis-sensus occurred within the panel and the degree to which overall consensus changed across iterations of the quantitative survey represent key results. While many Delphi studies use a $SD \leq 1.00$ as an indicator of high expert consensus (Clayton, 1997; Jonassen, Tessmer, & Hannum, 1999), a $SD \leq 1.25$ was used in this study as a marker of high consensus due to the relatively small number of participants; items with $SD \geq 2.00$ were interpreted as having a high degree of expert dis-sensus. As presented in Table 1, of the 211 total items in the survey, a high level of expert consensus occurred for 89 items (42.2%), while only 16 items (7.6%) demonstrated high dis-sensus among experts. Additionally, across the final iterations of the quantitative survey, of the 211 total items, consensus grew (i.e. SD decreased) for 125 items (59.2%) while consensus decreased for 80 items (37.9%); no change in consensus occurred across final iterations for 6 items (2.8%).

Table 1: Indicators of Consensus and Dis-sensus by Domain

		Total Items	Increased Consensus	Decreased Consensus	High Consensus	High Dis- sensus
Aggregate	All Results	211	125	80	89	16
D1	CTM Practices					
	Characteristic of the					
	Region of Interest	62	34	25	13	7
D2	Optimal CTM Practices					
	and their Feasibility for					
	Implementation	40	23	16	4	6
D3	Identified Barriers to					
	System Improvement	25	16	8	15	0
D4	Consequences of					
	Systemic Flaws and					
	CTM Shortcomings	42	25	16	30	1
D5	Solutions for Barriers					
	to Treatment					
	Improvement	42	27	15	27	2

Across this study's domains of interest, the lowest rates of expert consensus and highest rates of dis-sensus occurred when looking at current practices in the community of interest and characteristics of an optimal treatment system. Domain 2, CTM practices in optimal treatment systems, yielded high consensus on only 10% of items and high dis-sensus on 15% of items; domain 1, present CTM practices in the community of interest yielded high consensus on 21% of items and high dis-sensus on 11.3% of items. However, despite the relatively low level of expert consensus within these domains, both domains displayed a tendency for increased consensus across final survey iterations; consensus increased for 23 of 40 items (57.5%) in domain 2 and 34 of 62 items (54.8%) in domain 1. Remaining domains, those examining the consequences of systemic flaws in the use of CTM (domain 4), solutions to overcoming identified barriers to system improvement (domain 5), and barriers to system improvement (domain 3) yielded markedly higher rates of expert consensus. These domains yielded high consensus on 71%, 64.3%, and 60% of items respectively; they also displayed lower rates of expert dis-sensus, on 2.4%, 4.8% and 0% of items respectively. These domains also showed a trend toward increased consensus across final iterations, as consensus

increased among 64% of items in domain 3, 59.5% of items in domain 4, and 64.3% of items in domain 5.

Expert Ratings of Individual Items across Domains of Interest

The expert panel's overall consensus in responding, as represented by standard deviation statistics, as well as the strength and direction of their responses, as represented by mean responses, varied widely across both domains and individual items. Items within each domain were organized first into three groups by the level of consensus: 1) high consensus ($SD \leq 1.25$), 2) low consensus ($1.26 \leq SD \leq 1.99$), and 3) high dis-sensus or disagreement among experts ($SD \geq 2.00$). Results within each consensus group were then organized by response strength and direction, as indicated by item mean. Results were determined to be the strongest and most interpretable when the panel replied with both a high degree of consensus and a clear, non-neutral direction (i.e. domains 1, 2, 4, and 5: $M \leq 3.00$ or $M \geq 5.00$; domain 3: $M \geq 3.00$). Results were also noted when the panel replied in a clear direction but with a lower level of consensus consensus. Survey items for which the panel replied with a neutral direction or high degree of dis-sensus are also reported.

Domain 1: Current CTM practices in the region of interest: In the initial, open ended survey each expert identified up to 10 characteristics of CTM practices in the region of interest. As presented in table 2, expert panel members identified 19 separate features of CTM in the Milwaukee, WI area, relating primarily to the evaluation of clients; accessibility of treatment and related services; and practices associated with treatment referral, recommendations, and selection. Each of the 19 identified features of CTM in this region were rated on two separate scales: 1) the degree to which panel members agreed or disagreed that the feature was characteristic of the region of interest and 2) the impact of this practice on the region of interest. See Appendix L for the specific items and Likert-type scales used in domains 1 – 5 of this study. Items in domain 1 that related to the community's publicly

funded central intake units (CIUs) were further divided to allow expert panel members to rate each of the four CIUs individually.

Table 2: CTM Practices Characteristic of the Region of Interest

Item:	Mean	S.D.
High Consensus:		
5 Evaluation of co-occurring disorder treatment needs occurs infrequently: A	6.222	0.667
10 Accessibility of provider's location is considered in referral: A	5.778	0.667
11 Accessibility of times provider offers services is considered in referral: A	5.375	1.061
16 CIUs treat all clients the same – CIU 1: I	5.000	1.195
17 CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 3: A	4.667	1.225
8 Clients select a treatment provider based on word-of-mouth from family and friends: A	4.444	1.236
8 Clients select a treatment provider based on word-of-mouth from family and friends: I	4.333	0.500
7 Clients select treatment from level of care (LOC) offered by payor: I	3.556	1.014
16 CIUs treat all clients the same – CIU 4: A	3.500	1.195
4 LOC evaluation conducted by individual provider: I	3.300	1.225
19 Clients are referred to individual clinicians based on that clinicians style, expertise, and training: I	3.125	1.126
18 Providers request treatment extensions based on program design, rather than individual client needs: I	2.857	1.069
14 Provider capacity to address co-occurring disorders is considered in referral: A	2.625	1.188
Low Consensus:		
2 LOC evaluation conducted at CIU – CIU 1: A	5.222	1.563
2 LOC evaluation conducted at CIU – CIU 2: A	4.889	1.537
2 LOC evaluation conducted at CIU – CIU 3: A	4.889	1.537
10 Accessibility of provider's location is considered in referral: I	4.778	1.394
2 LOC evaluation conducted at CIU – CIU 4: A	4.778	1.563
3 Comprehensive assessment conducted by individual provider: A	4.750	1.282
18 Providers request treatment extensions based on program design, rather than individual client needs: A	4.571	1.272
16 CIUs treat all clients the same – CIU 3: I	4.500	1.414
16 CIUs treat all clients the same – CIU 2: I	4.500	1.512
17 CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 1: I	4.500	1.512
6 Urinalyses are used to monitor clients while in treatment: A	4.444	1.667
16 CIUs treat all clients the same – CIU 1: A	4.375	1.598
17 CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 3: I	4.333	1.500
17 CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 1: A	4.333	1.732
11 Accessibility of times provider offers services is considered in referral: I	4.250	1.408
3 Comprehensive assessment conducted by individual provider: I	4.250	1.488
2 LOC evaluation conducted at CIU – CIU 2: I	4.222	1.922
2 LOC evaluation conducted at CIU – CIU 3: I	4.222	1.922
15 Clients receive treatment, rather than incarceration, following drug-related offenses: A	4.111	1.616

17	CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 2: A	4.000	1.581
17	CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 4: A	4.000	1.581
2	LOC evaluation conducted at CIU – CIU 4: I	4.000	1.871
1	Comprehensive assessment conducted at CIU – CIU 2: I	3.889	1.900
1	Comprehensive assessment conducted at CIU – CIU 3: I	3.889	1.900
16	CIUs treat all clients the same – CIU 2: A	3.875	1.458
16	CIUs treat all clients the same – CIU 3: A	3.875	1.458
16	CIUs treat all clients the same – CIU 4: I	3.875	1.642
6	Urinalyses are used to monitor clients while in treatment: I	3.778	1.394
1	Comprehensive assessment conducted at CIU – CIU 4: I	3.750	1.982
4	LOC evaluation conducted by individual provider: A	3.667	1.500
9	Client demographic/multicultural needs are considered in referral: A	3.667	1.658
17	CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 2: I	3.667	1.658
17	CIUs evaluate multicultural/demographic treatment related client characteristics – CIU 4: I	3.667	1.658
14	Provider capacity to address co-occurring disorders is considered in referral: I	3.500	1.309
19	Clients are referred to individual clinicians based on that clinicians style, expertise, and training: A	3.375	1.506
7	Clients select treatment from LOC offered by payor: A	3.333	1.581
9	Client demographic/multicultural needs are considered in referral: I	3.000	1.414
12	Clients are matched to needed services (e.g. housing, vocation/education, transportation, childcare): A	2.889	1.269
12	Clients are matched to needed services (e.g. housing, vocation/education, transportation, childcare): I	2.778	1.302
13	Provider outcome data/success rates with specific populations and problems is considered in referral: I	2.333	1.500
5	Evaluation of co-occurring disorder treatment needs occurs infrequently: I	2.111	1.616
13	Provider outcome data/success rates with specific populations and problems is considered in referral: A	2.000	1.323
High Dis-sensus			
2	LOC evaluation conducted at CIU – CIU 1: I	4.556	2.068
1	Comprehensive assessment conducted at CIU – CIU 1: I	4.222	2.108
1	Comprehensive assessment conducted at CIU – CIU 4: A	4.333	2.121
1	Comprehensive assessment conducted at CIU – CIU 2: A	4.440	2.128
1	Comprehensive assessment conducted at CIU – CIU 3: A	4.444	2.128
15	Clients receive treatment, rather than incarceration, following drug-related offenses: I	3.667	2.179
1	Comprehensive assessment conducted at CIU – CIU 1: A	4.778	2.224

Regarding their agreement with which CTM practices are most characteristic of the region of interest, panel members showed a high level of consensus in moderately to strongly agreeing that evaluation of co-occurring disorders does not occur with enough frequency, as well as slightly to moderately agreeing that accessibility of providers' locations and times in which treatment is available are considered when referring clients to treatment. Panel

members also displayed high consensus in slightly to moderately disagreeing that a provider's capacity to address co-occurring disorders is considered when referring clients to that provider. Although with lower consensus, the panel also displayed: slight to moderate disagreement that clients in the region of interest are matched to needed services (e.g. housing, education, transportation, childcare) and moderate disagreement that provider outcomes are considered when referring particular clients to that provider. Panel members also tended to slightly to moderately agree that level of care evaluations were conducted at one of the county's publicly funded CIUs, although they showed a high level of dis-sensus when asked if clients received comprehensive assessments at county CIUs.

While panel members responded to many agree/disagree items in domain 1 with a clear direction, most items fell in the neutral range. Panel members as a whole neither agreed nor disagreed that many practices were descriptive of the region of interest. A majority of these items had to do with the evaluation of clients, as the panel as a whole neither agreed nor disagreed with statements regarding the: use of urinalyses, administration of comprehensive assessments by the individual provider, evaluation of client multicultural/demographic information by CIUs and individual providers, and whether individual providers conduct level of care assessments. Additionally, panel members neither agreed nor disagreed with statements regarding treatment referral or selection, particularly whether: client multicultural/demographic needs are considered in treatment referral, clients are referred to specific clinicians based upon clinicians' attributes/strengths, clients are limited in only selecting from among the level of care offered by their payer, and that clients select provider's based on word-of-mouth from family and friends. Regarding the accessibility of treatment, the panel as a whole neither agreed nor disagreed that clients receive treatment (rather than incarceration) following drug-related offenses and that providers request treatment extensions based upon program design, rather than client needs.

Regarding the overall impact of practices described in domain 1, panel members had a high level of consensus that requesting treatment extensions based on program design, rather than individual needs, had a negative effect on the quality of treatment. Additionally, although with lower consensus, panel responses revealed slightly to moderately negative impacts associated with infrequently evaluating co-occurring disorder needs, failing to consider provider success rates in client referrals, failing to match clients to needed services (e.g. education/vocation, housing, transportation, childcare), and not considering client multicultural/demographic needs in treatment referral. Responses also revealed a high level of dis-sensus among experts regarding the impact of level of care and comprehensive assessment at a CIU, as well as the impact of the community's practices for clients receiving treatment, rather than incarceration, following a drug-related offense.

While the panel indicated that some items had a clearly positive or negative impact on the region of interest, a majority of items were rated by the panel as having a neither positive nor negative impact. Many of these neutral impact responses, most without a strong expert consensus, correlated with items in which the panel neither agreed nor disagreed that the item was representative of CTM practices in the community of interest. Such items included those examining the impact of many different evaluative practices, such as: level of care and comprehensive assessment at the community's CIUs; the use of urinalyses; CIUs evaluating client multicultural/demographic characteristics; individual providers conducting level of care or comprehensive assessments. Additionally, panel responses were neutral regarding the impact of requesting treatment extensions based on program; CIUs treating all clients the same; clients selecting a level of care from only those offered by their payer; clients selecting a treatment based on word-of-mouth; and clients being referred to individual clinicians based on clinicians respective style, expertise, and training. Additionally, the panel also provided neutral responses regarding the impact of the accessibility treatment (i.e.

location, time) being considered in treatment referral, although the panel had a high consensus in slightly to moderately agreeing that these practices occurred in the community. The panel was also neutral in the impact of considering provider's capacity to address co-occurring disorders in treatment referral, although the panel agreed that this did not typically occur in the region of interest.

Domain 2: CTM practices in an optimal treatment system: Each expert identified up to 10 characteristics of CTM practices in an optimal treatment system. As presented in table 3, expert panel members identified 20 separate features of CTM in an optimal system; each feature was rated on 1) the degree to which panel members agreed or disagreed that the feature was representative of a practice in an optimal system and 2) the feasibility of implementing that practice in Milwaukee, WI. Identified CTM practices typically fell within themes of: client evaluation; treatment accessibility; treatment practices/CTM foundations; and recommendation, referral, and selection of treatment.

While this scale had the lowest rates of high expert consensus of all domains examined, expert panel members did display high consensus in slightly to moderately agreeing that a level of care screening tool should be used when referring clients to various settings and intensities of treatment. Although with somewhat lower consensus, panel responses also displayed slight to moderate agreement that in an optimal treatment system, relapse would not necessitate discharge from treatment and that treatment would be offered in accessible locations. Additionally, aggregate responses demonstrated slight to moderate disagreement that, in an optimal system, provider outcome data would be available to consumers and would be used in treatment decision making. High levels of dis-sensus were evident among experts regarding whether, in an optimal system: funding would be sufficient and available for clients to receive the optimal level of care, treatment for co-occurring disorders would be integrated into SUD treatment, treatment would be available upon

demand, family members would be integrated into treatment, or whether all relevant individuals (e.g. providers, administrators) would hold expertise in treating co-occurring mental health and substance use disorders.

Table 3: Optimal CTM Practices and their Feasibility for Implementation

Item:	Mean	S.D.
High Consensus		
13 A LOC assessment tool is used in referring clients to a LOC: F	5.889	1.054
13 A LOC assessment tool is used in referring clients to a LOC: A	5.556	1.130
20 Outcome data is available to treatment consumers and facilitates treatment decision-making: F	5.556	1.236
6 All relevant individuals hold expertise in treating co-occurring mental health and substance use disorders: F	5.000	1.225
Low Consensus		
14 Assessment data is used to develop individualized treatment plans: F	5.778	1.302
16 Relapse does not cause discharge from treatment: A	5.778	1.481
16 Relapse does not cause discharge from treatment: F	5.667	1.581
12 Comprehensive assessment is used to determine treatment needs: F	5.556	1.333
15 Integrated treatment is offered for co-occurring disorders: F	5.556	1.590
2 Treatment is offered in convenient/accessible locations: A	5.375	1.598
11 Treatment recommendations and interventions are tailored toward client demographic/multicultural characteristics: F	5.333	1.323
2 Treatment is offered in convenient/accessible locations: F	5.250	1.581
19 Providers collect outcome data for specific populations and problem areas: F	5.222	1.302
7 Clients can move fluidly across LOC and providers as their needs change: F	5.111	1.537
18 Interventions to address client trauma are integrated: F	5.111	1.900
8 Family members are included in treatment: F	5.000	1.658
17 EBTs are available and offered by qualified staff: F	5.000	1.732
9 Individuals responsible for facilitating referrals understand provider differences, weaknesses, and strengths: F	4.889	1.616
14 Assessment data is used to develop individualized treatment plans: A	4.778	1.302
3 Treatment is offered at times that minimally disrupt clients' work and family responsibilities: A	4.750	1.982
3 Treatment is offered at times that minimally disrupt clients' work and family responsibilities: F	4.714	1.799
5 Providers are highly trained, well qualified, and multiculturally competent: F	4.667	1.732
1 Funding is sufficient and available for clients to receive the optimal LOC: F	4.625	1.847
10 Clients select a provider based on an understanding of treatments and additional services offered by that provider: F	4.556	1.667
12 Comprehensive assessment is used to determine treatment needs: A	4.444	1.590
9 Individuals responsible for facilitating referrals understand provider differences, weaknesses, and strengths: A	4.333	1.500

19	Providers collect outcome data for specific populations and problem areas: A	4.000	1.732
5	Providers are highly trained, well qualified, and multiculturally competent: A	4.000	1.803
11	Treatment recommendations and interventions are tailored toward client demographic/multicultural characteristics: A	4.000	1.803
4	Treatment is available upon demand: F	3.778	1.787
10	Clients select a provider based on an understanding of treatments and additional services offered by that provider: A	3.667	1.936
7	Clients can move fluidly across LOC and providers as their needs change: A	3.556	1.878
17	EBTs are available and offered by qualified staff: A	3.444	1.810
20	Outcome data is available to treatment consumers and facilitates treatment decision-making: A	2.778	1.856
High Dis-sensus			
6	All relevant individuals hold expertise in treating co-occurring mental health and substance use disorders: A	3.667	2.000
8	Family members are included in treatment: A	3.333	2.000
18	Interventions to address client trauma are integrated: A	2.889	2.147
4	Treatment is available upon demand: A	2.625	2.200
15	Integrated treatment is offered for co-occurring disorders: A	3.667	2.345
1	Funding is sufficient and available for clients to receive the optimal LOC: A	3.500	2.619

Accompanying relatively low levels of consensus and particularly high levels of dis-sensus among experts, analysis of panel responses also yielded a high frequency of items without clear agreement or disagreement regarding whether the item was characteristic of an optimal treatment system. Items with neutral agreement/disagreement spanned themes of evaluation, accessibility, referral, and CTM foundations. Regarding client evaluation, the panel's responses were neutral regarding whether, in an optimal system, assessment data would be used to develop individualized treatment plans or whether comprehensive assessment would be used to determine treatment needs. Regarding treatment accessibility, responses were neutral for whether treatment should be offered at times that minimally disrupt work and family responsibilities, whether clients should be able to fluidly move across level of care and providers as their needs change, and whether EBTs should be readily available and offered by qualified staff. The panel's responses were also neutral regarding whether, in an optimal system: individuals responsible for facilitating client referral would

understand provider differences, weaknesses, and strengths; treatment recommendations/interventions would be tailored to client multicultural/demographic characteristics; and clients would select a provider based upon an understanding of treatments and adjunctive services offered by that provider. Finally, regarding treatment foundations relevant to CTM, panel responses were neutral regarding whether providers should collect outcome data for specific populations and problem domains as well as whether providers should be highly trained, well qualified, and multiculturally competent.

While the panel demonstrated high dis-sensus, a neutral response direction, or both on 16/20 items (80%) examining perceived features of an optimal treatment system, the panel had both higher consensus and a more clear response direction regarding the perceived feasibility of implementing each of the potentially optimal practices in the region of interest. The panel displayed high consensus, a clear response direction, or both on 14/20 items (70%) regarding the feasibility of implementing these practices in the community of interest. The panel had high level of consensus that it is slightly to moderately feasible to use a level of care assessment tool to refer clients to treatment as well as to make outcome data available to consumers to better facilitate decision making. Additionally, they displayed high consensus that it is slightly feasible for all relevant individuals (e.g. treatment providers, administrators) to hold expertise in providing treatment services to individuals with co-occurring substance use and mental health disorders.

Additionally, although with a lower level of consensus, many CTM characteristics related to treatment accessibility, client evaluation, treatment referral, and CTM/treatment foundations were rated as slightly to moderately feasible. Characteristics of accessibility in an optimal treatment system that were deemed slightly to moderately feasible for Milwaukee, WI were: having relapse not cause treatment discharge, integrating treatment for co-occurring disorders into SUD treatment, offering treatment in convenient locations, and allowing

clients to fluidly move across providers and level of care as their needs change. Additionally, allowing clients to access EBTs offered by qualified staff was found to be slightly feasible. Also rated as slightly to moderately feasible, related to evaluation practices, were using assessment data to generate individualized treatment plans and using comprehensive evaluations to determine treatment needs, along with working to ensure that treatment recommendations were congruent with clients' multicultural/demographic characteristics. Related to CTM foundations in an optimal treatment system, the panel found it slightly to moderately feasible to have providers collect outcome data for specific populations and problem areas; they also found it slightly feasible to have EBTs offered by qualified staff. Importantly, no items were found to be infeasible by the expert panel for the region of interest, and the panel did not display high dis-sensus on the feasibility of implementing any of the potential practices.

The panel also found many practices with lower overall consensus to be neutral in their feasibility, as they found multiple practices related to treatment accessibility to be neither clearly feasible nor infeasible. Such practices included: offering treatment at times that minimally disrupt clients' work and family responsibilities, making treatment available upon demand, and having sufficient funding for clients to receive treatment at the optimal level of care. Additionally, panel experts were neutral regarding the feasibility of having: individuals responsible for facilitating treatment referrals understand provider differences, clients select a provider based upon an understanding of treatments and services offered by that provider, and having providers be highly trained and multiculturally competent.

Domain 3: Barriers to System Improvement: In domain 3, each expert identified up to 10 barriers that restricted implementation of optimal client-treatment matching practices in the community of interest's treatment system. As presented in table 4 experts identified 22 distinct barriers that restrict system improvement in the community of interest. Each of the 22

barriers was rated on the overall restrictiveness of each practice on treatment improvement. One barrier, examining the absence of funding for necessary adjunctive services, was divided to allow panel members to rate the restrictiveness of low funding for each service individually. These barriers generally fell within themes of: treatment accessibility/funding concerns, staff or treatment provider attributes, and social factors. Across these themes, identified barriers restricted system improvement through circumstances in which CTM was absent or ignored, unavailable or diminished because of systemic attributes, or attempted but poorly implemented.

Table 4: Identified Barriers to System Improvement

Item:	Mean	S.D.
High Consensus		
1 Funding limitations restrict LOC availability: R	6.333	0.500
7 Staff trained in either SUD or MH treatments do not work together to provide integrated treatment for co-occurring disorders: R	6.111	0.782
2 Reimbursement rates do not support important aspects of treatment: R	6.111	1.054
15 Providers want clients to adapt to the program offered, rather than tailoring treatment to clients' needs: R	6.000	0.707
6 Too few staff are trained in both MH and SUD treatment: R	6.000	0.866
14 Too few providers offer integrated SUD and MH treatments: R	5.778	0.833
16 Too few treatments address specific life phases (e.g. older adulthood, adolescence): R	5.556	0.726
4 Funding/payors necessitate client referral to inoptimal LOC: R	5.556	1.236
17 Insufficient time is spent collaboratively treatment planning with clients: R	5.500	0.926
22 Family members/significant others are not included in treatment: R	5.444	0.882
11 Incarceration is favored by social/legal systems over SUD treatment: R	5.333	0.500
3 Funding does not accommodate client childcare needs: R	5.111	1.167
12 Clients are insufficiently informed before making treatment decisions: R	5.000	1.225
8 Staff are not sufficiently trained to administer and interpret LOC assessment tools: R	4.556	1.130
9 The field of SUD treatment is not well respected or sought after: R	4.333	1.225
Low Consensus		
5 Funding is unavailable for therapy adjuncts (e.g. art therapy, acupuncture): R	5.556	1.333
21 Waiting lists are too long for higher LOC: R	5.556	1.424
3 Funding does not accommodate client housing needs: R	5.556	1.590
10 No educational/specialty degrees for SUD treatment are available: R	4.778	1.302
3 Funding does not accommodate client transportation needs: R	4.778	1.563

3	Funding does not accommodate client education/vocation needs: R	4.778	1.716
13	Too many providers focus solely on 12-step approaches: R	4.667	1.658
18	Assessments are not sufficiently comprehensive and do not address important individual characteristics: R	4.222	1.394
20	Treatment are not offered at times convenient to the client: R	4.000	1.323
19	Treatments are not offered in convenient/accessible locations: R	3.889	1.537

The panel's aggregate responses showed notably higher consensus and a more clear direction of responding in domain 3 than in domains 1 or 2; the panel displayed high consensus for 60% (15/25) of items in this scale and did not exhibit high dis-sensus on any items. Additionally, the panel's aggregate responses indicated that all items in this scale were clearly seen as barriers, as all items were shown to be at least slightly restrictive ($M \geq 3.00$; slightly restrictive). All items for which panel members displayed high consensus fell in the range of being moderately to severely restrictive. A majority of these moderately to severely restrictive, high consensus items related to staff or treatment provider attributes. Such items detailed that it is moderately to severely restrictive that: funding limitations impede level of care availability; providers want clients to adapt to the program, rather than individualizing treatment; too few staff are trained in both MH and SUD treatment; too few providers offer integrated SUD and MH treatments; insufficient time is spent in collaborative treatment planning; and family members are infrequently provided in treatment.

Additionally, many high consensus items also identified that lack of access or insufficient funding to support critical aspects of treatment moderately to severely restricts treatment improvement. These items stated that: funding limitations restrict level of care availability; reimbursement rates do not support important aspects of treatment (e.g. individual therapy); too few treatments are offered to address specific life phases (e.g. older adulthood, adolescence); funding/payers necessitate client referral to in-optimal level of care; incarceration is favored by social/legal systems over SUD treatment; and that funding does

not accommodate clients' childcare needs. Additionally, the expert panel had high consensus that it is moderately to severely restrictive to system improvement that clients are insufficiently informed before making treatment decisions.

Items with lower consensus, rated by the panel as moderately to severely restrictive, related to the accessibility or funding of treatment. These items identified funding being unavailable for therapy adjuncts (e.g. art therapy, acupuncture), waiting lists being too long for higher level of care, and funding not accommodating client's housing needs as moderately to severely restrictive. Additionally, items related to accessibility and funding rated by the panel as slightly to moderately restrictive were that funding does not accommodate clients' transportation or education/vocational needs as well as that treatment is not offered at times or in convenient locations to clients. Staff and treatment provider attributes rated as slightly to moderately restrictive were that too many providers focus solely on 12-step approaches, staff members are insufficiently trained to administer and interpret LOC assessment tools, and evaluations are not sufficiently comprehensive and do not address important individual characteristics. Social factors rated as slightly to moderately restrictive were that educational/specialty degrees for SUD treatment are unavailable as well as that the field of SUD treatment is not well respected or sought after.

Domain 4: Consequences of Systemic Flaws in CTM: Each expert identified up to 10 negative effects of flaws or shortcomings in current CTM policies or procedures in the region of interest. As presented in table 5 expert panel members identified 18 distinct consequences of flaws in CTM policies or practices in the region of interest. Each consequence was rated on both the degree to which expert panel members agreed or disagreed that the item was a consequence of flaws in CTM policies and the degree to which each consequence negatively impacted the community of interest. Identified consequences related to ways in which flaws

in the poor implementation or absence of CTM negatively impacted clients in or pursuing treatment, broader society, and the treatment system itself.

Table 5: Consequences of Systemic Flaws and CTM Shortcomings

Item:	Mean	S.D.
High Consensus		
6 Health care costs increase (e.g. preventable illness, ER visits): A	6.333	0.707
9 Community incarceration rates increase: A	6.333	0.866
6 Health care costs increase (e.g. preventable illness, ER visits): I	6.111	0.782
11 Death rates among individuals with MH and SUD concerns increase: I	6.111	0.782
9 Community incarceration rates increase: I	6.111	1.054
2 Many clients do not enter/begin treatment: A	6.000	0.707
5 Costs increase in other social systems (e.g. child welfare, social security): A	6.000	0.707
5 Costs increase in other social systems (e.g. child welfare, social security): I	6.000	0.707
7 Community crime rates increase: A	6.000	0.756
4 Work productivity is reduced and jobs are lost: A	6.000	0.926
2 Many clients do not enter/begin treatment: I	5.889	0.601
11 Death rates among individuals with MH and SUD concerns increase: A	5.889	0.601
16 Housing service needs that co-occur with substance use disorders are not met: A	5.889	1.054
4 Work productivity is reduced and jobs are lost: I	5.875	0.641
7 Community crime rates increase: I	5.875	0.991
18 Quality assurance measures are not adequately utilized: A	5.778	0.667
3 Families are disrupted (e.g. divorce, children placed in foster care): I	5.778	1.093
16 Childcare service needs that co-occur with substance use disorders are not met: A	5.778	1.093
16 Housing service needs that co-occur with substance use disorders are not met: I	5.667	1.225
13 Clients have high rates of relapse and become chronic consumers of treatment: I	5.556	1.014
3 Families are disrupted (e.g. divorce, children placed in foster care): A	5.556	1.130
14 Long wait lists for entering treatment occur: A	5.556	1.130
10 Clients develop an absence of hope and feelings of failure: A	5.444	0.882
14 Long wait lists for entering treatment occur: I	5.444	1.130
10 Clients develop an absence of hope and feelings of failure: I	5.333	1.118
12 Provider outcomes worsen: I	5.125	0.641
17 Treatment adherence is reduced: A	5.125	0.641
12 Provider outcomes worsen: A	5.125	0.835
1 Treatment retention is decreased: I	5.111	0.928
1 Treatment retention is decreased: A	5.000	0.860
Low Consensus		
15 Treatment systems remain at overcapacity and are unable to meet demand, making treatment unavailable for others in need: A	5.714	1.604

8	Clients do not recover from co-occurring mental health and substance use disorders: I	5.571	1.718
16	Childcare service needs that co-occur with substance use disorders are not met: I	5.333	1.658
16	Educational/vocational service needs that co-occur with substance use disorders are not met: I	5.111	1.364
13	Clients have high rates of relapse and become chronic consumers of treatment: A	5.110	1.364
16	Educational/vocational service needs that co-occur with substance use disorders are not met: A	4.889	1.616
18	Quality assurance measures are not adequately utilized: I	4.778	1.563
16	Transportation service needs that co-occur with substance use disorders are not met: I	4.670	1.803
17	Treatment adherence is reduced: I	4.625	1.408
15	Treatment systems remain at overcapacity and are unable to meet demand, making treatment unavailable for others in need: I	4.571	1.397
16	Transportation service needs that co-occur with substance use disorders are not met: A	4.444	1.590
High Dis-sensus			
8	Clients do not recover from co-occurring mental health and substance use disorders: A	5.429	2.070

Domain 4 had the highest overall rate of consensus, having high consensus on 71% (30/42) of items overall. An area of particularly high consensus related to the notion that societal consequences stem, at least in part, from flaws or shortcomings in existing CTM policies and procedures. The panel displayed high consensus in moderately to strongly agreeing that flaws in present CTM practices cause health care costs to increase (e.g. preventable illness, increased ER visits) and cause community incarceration rates to increase. Additionally, panel members had high consensus in moderately agreeing that shortcomings in CTM in the community of interest result in cost increases in other social systems (e.g. social security, child welfare), higher crime rates in the community, and a reduction in work productivity and loss of jobs. Panel members also showed high consensus in slightly to moderately agreeing that flaws in CTM result in disruptions to families (e.g. divorce, children in foster care).

Additionally, expert panel members were in high consensus about how shortcomings in CTM in the community of interest impact clients. Panel members displayed high

consensus in moderately agreeing that many clients do not enter treatment because of CTM shortcomings; they also displayed high consensus in slightly to moderately agreeing that CTM flaws contribute to: higher death rates among individuals with MH and SUD concerns, unmet housing needs that co-occur with SUD, unmet childcare needs among individuals with SUD, decreased adherence to treatment recommendations, and an increase in hopelessness and feelings of failure among clients in SUD treatment. Panel members were also displayed high consensus in slightly to moderately agreeing that flaws in CTM in the community of interest impact the broader treatment system by decreasing the utilization of quality assurance measures, increasing treatment wait lists, and worsening provider outcomes.

Among items in which panel members had lower consensus, they slightly to moderately agreed that systemic shortcomings in CTM contribute to: higher relapse rates among clients, clients becoming chronic consumers of treatment/treatment systems remaining at overcapacity and being unable to meet demand, making treatment unavailable for many in need. Additionally, among items in which panel members displayed a lower consensus, they neither agreed nor disagreed that flaws in CTM result in unmet educational/vocational and transportation service needs. Panel members had a high level of dis-sensus regarding whether flaws in CTM in the community of interest caused clients to not recover from co-occurring MH and SUD.

Regarding the impact of CTM shortcomings on the community of interest, the panel displayed a high consensus in rating all societal impacts as being moderately to severely negative. Such items stated that due to flaws in CTM: health care costs increase (e.g. due to preventable illness, ER visits), community incarceration rates increase, costs increase in other social systems, work productivity is reduced and jobs are lost, community crime rates increase, and families are disrupted. Additionally, the panel displayed a high consensus that many of the identified consequences have moderately to severely negative impacts on clients.

Clients were rated as being moderately to severely negatively impacted by CTM shortcomings due to: increased death rates among individuals with co-occurring SUD and MH, not entering treatment, having unmet housing needs that co-occur with SUD, having high rates of relapse and becoming chronic users of treatment, developing an absence of hope and feelings of failure, and having decreased treatment retention. Also, the panel had high consensus that consequences of CTM shortcomings for the treatment system itself are worsened provider outcomes and long wait lists for entering treatment, both of which were rated as having moderately to severely negative impacts.

While the expert panel did not display high dis-sensus in the impact of any of the identified consequences, the panel did display a lower level of consensus on many items related to the consequences to clients and the broader treatment system. The panel had low consensus in identifying moderately to severely negative consequences associated with clients' unmet childcare and educational/vocational needs as well as clients not recovering from co-occurring mental health and substance use disorders. Additionally, the panel identified, with lower consensus, that CTM shortcomings have slightly to moderately negative consequences for clients, as CTM shortcomings result in clients having unmet transportation needs, having decreased adherence to treatment recommendations, as well as for treatment systems, as CTM shortcomings result in systems not adequately utilizing quality assurance measures and treatment and consistently remaining at overcapacity, making treatment unavailable for many in need.

Domain 5: Solutions for overcoming identified barriers: Each expert identified up to 10 solutions or strategies for using CTM to overcome barriers and improve treatment in the community of interest. As presented in table 6 expert panel members identified 21 potential solutions to identified flaws in treatment systems. Identified potential solutions were rated on 1) the degree to which panel members agreed or disagreed that the item would resolve

systemic shortcomings or overcome barriers to system improvement and 2) the feasibility of implementing that practice in the community of interest. Potential solutions identified by the panel spanned themes of increasing accessibility and funding, addressing social factors, changing treatment referral and selection practices, altering systemic and provider characteristics, and changing evaluation practices.

Table 6: Solutions for Barriers to Treatment Improvement

Item:	Mean	S.D.
High Consensus		
4 Provider greater public funding for individuals with no insurance or other access to treatment services: A	6.889	0.333
11 Increase integration of interventions for addressing client trauma: A	6.778	0.441
12 Increase use of drug courts for individuals with drug related offenses: A	6.778	0.667
19 Include service needs (e.g. education, vocation, housing) as part of initial treatment referral: A	6.667	0.500
21 Provide improved pathways for other systems (e.g. education, health care) to refer clients into treatment: A	6.667	0.500
7 Educate clients about treatment characteristics and relevant outcomes to facilitate better decision making: A	6.556	0.527
9 Increase diversity of interventions/modalities in which providers are trained: A	6.556	0.527
20 Increase frequency of SUD screening in medical settings: A	6.556	0.527
12 Increase use of drug courts for individuals with drug related offenses: F	6.444	0.527
13 Expand efforts to reduce stigma associated with co-occurring disorder treatment: A	6.444	0.726
14 Move away from "Gatekeeper Model" in which number of screenings/evaluations is capped; move toward assessment available to all to better understand community needs: A	6.444	0.726
2 Increase billing/payment rates for providers: A	6.333	0.866
17 Increase public access to data on provider capabilities for treatment and additional services: A	6.333	0.866
3 Base payment and referral to providers based upon demonstrated effectiveness (e.g. outcome data): A	6.222	0.441
8 Provide additional public funding for clients to enter higher LOC: A	6.111	0.928
6 Expand public campaigns to increase awareness of substance use behaviors: A	6.000	0.707
10 Increase use of EBTs across treatment providers: A	6.000	0.866
6 Expand public campaigns to increase awareness of substance use behaviors: F	5.889	0.782
1 Expand treatment and related service coverage, largely through efforts at parity: F	5.778	0.833

19	Include service needs (e.g. education, vocation, housing) as part of initial treatment referral: F	5.778	0.833
11	Increase integration of interventions for addressing client trauma: F	5.667	1.118
16	Implement Comprehensive Continuous Integrated System of Care (www.kenminkoff.comm/ccisc.html): F	5.667	1.225
21	Provide improved pathways for other systems (e.g. education, health care) to refer clients into treatment: F	5.556	0.726
1	Expand treatment and related service coverage, largely through efforts at parity: A	5.444	0.882
20	Increase frequency of SUD screening in medical settings: F	5.444	0.882
15	Decentralize access to assessment/screening (e.g. online evaluations; self-screening kiosks with manned assistance available, allow results to lead to a scheduled intake): A	5.333	1.225
18	Use technology as an adjunct to traditional, in office, treatment (e.g. web chat, telephone): F	4.778	1.093
Low Consensus			
7	Educate clients about treatment characteristics and relevant outcomes to facilitate better decision making: F	5.667	1.500
16	Implement Comprehensive Continuous Integrated System of Care (www.kenminkoff.comm/ccisc.html): A	5.667	1.871
13	Expand efforts to reduce stigma associated with co-occurring disorder treatment: F	5.444	1.333
9	Increase diversity of interventions/modalities in which providers are trained: F	5.333	1.414
4	Provider greater public funding for individuals with no insurance or other access to treatment services: F	5.111	1.616
10	Increase use of EBTs across treatment providers: F	5.000	1.323
17	Increase public access to data on provider capabilities for treatment and additional services: F	5.000	1.581
5	Reimburse student trainees for services provided: A	4.889	1.965
3	Base payment and referral to providers based upon demonstrated effectiveness (e.g. outcome data): F	4.667	1.414
18	Use technology as an adjunct to traditional, in office, treatment (e.g. web chat, telephone): A	4.667	1.500
8	Provide additional public funding for clients to enter higher LOC: F	4.556	1.509
5	Reimburse student trainees for services provided: F	4.333	1.732
15	Decentralize access to assessment/screening (e.g. online evaluations; self-screening kiosks with manned assistance available, allow results to lead to a scheduled intake): F	3.556	1.590
High Dis-sensus			
14	Move away from "Gatekeeper Model" in which number of screenings/evaluations is capped; move toward assessment available to all to better understand community needs: F	4.670	2.062
2	Increase billing/payment rates for providers: F	4.444	2.242

Among items in which the panel displayed a high consensus, panel members moderately to strongly agreed that 14 of 21 items in domain 5 would serve as effective

solutions for overcoming systemic flaws and barriers to system improvement. Related to accessibility and funding, panel members moderately to strongly agreed that: providing greater public funding to individuals with no insurance or access to treatment, increasing the use of drug courts, increasing billing/payment rates for providers, and providing additional public funding to provide more access to higher level of care would overcome barriers and resolve existing flaws. Regarding system and provider characteristics, panel members moderately to strongly agreed that: increasing the use of interventions to address client trauma, increasing the diversity of interventions/modalities in which providers are trained, and basing payment and referral to providers based on demonstrated effectiveness (e.g. through outcome data) would improve services provided in the community of interest.

Additionally, among items in which the panel displayed high consensus, panel members moderately to strongly agreed that: including service needs (e.g. education, vocation, housing) as part of the initial referral, providing improved pathways for other systems (e.g. education, health care) to refer clients for SUD treatment, and educating clients about treatment characteristics and relevant outcomes would serve as effective solutions. Panel members also moderately to strongly agreed practices related to evaluation and social factors would serve as effective solutions to existing problems; such practices included: increasing the frequency of SUD screening in medical settings, moving away from a Gatekeeper Model/making SUD assessment available to all, expanding efforts to reduce stigma, and increasing public access to data on provider capabilities and outcomes. The panel also displayed high consensus in moderately agreeing that increasing the use of EBTs and expanding public campaigns to increase awareness of SUD would assist in overcoming barriers and improve the treatment system. The panel also had high consensus in slightly to moderately agreeing that expanding treatment and service coverage through efforts at

insurance parity and decentralizing access to assessments/screening tools (e.g. online evaluations, self-screening kiosks) would assist in resolving existing areas of concern.

While the panel did not display high dis-sensus on any items relating to their agreement or disagreement over whether items would serve as solutions for overcoming systemic flaws and barriers to improvement, the panel did not have high consensus on all items. The panel had low consensus in slightly to moderately agreeing that implementing the Comprehensive Continuous Integrated System of Care Model (CCISC; Minkoss, 2001; Minkoff & Cline, 2004; Substance Abuse and Mental Health Services Administration, 2002) in the community of interest would serve as a solution. The panel also displayed low consensus in their neutral responses, as they neither agreed nor disagreed that reimbursing student trainees for services provided and using technology as an adjunct to traditional, in office, treatment (e.g. web chat, telephone) would serve as solutions.

Regarding the feasibility of implementing possible solutions in the region of interest, the panel displayed somewhat lower rates of high consensus and tended to respond in a less extreme manner. Among items with high consensus, only one item, increasing the use of drug courts for individuals with drug related offenses, was rated as moderately to very feasible. Seven other items were rated as slightly to moderately feasible. These items included, related to treatment referral and selection: including service needs as part of the initial treatment referral and providing improved pathways for other systems (e.g. education, health care) to refer clients for SUD treatment. Additionally, related to the system and individual providers, increasing integration of interventions for addressing client trauma and implementing the CCISC were rated as slightly to moderately feasible. Other items rated as slightly to moderately included: expanding public campaigns to increase awareness of substance use behaviors; expanding treatment and related service coverage, largely through efforts at insurance parity; and increasing the frequency of SUD screening in medical

settings. The panel also displayed high dis-sensus regarding the feasibility of implementing two possible solutions, despite displaying high consensus in moderately to strongly agreeing that both items would resolve existing problems; items of high dis-sensus related to the feasibility of moving away from the “Gatekeeper Model” and making assessment available upon demand and increasing billing/payment rates for providers.

Although with lower consensus, the panel the panel also found it slightly to moderately feasible to: facilitate better decision making by better educating clients about treatment characteristics and outcomes, expand efforts to reduce stigma associated with co-occurring disorder treatment, increase the diversity of interventions/modalities in which providers are trained, and provide greater public funding for individuals with no insurance or other form of payment to access needed treatment services. Expert panel members also found it slightly feasible to increase the use of EBTs across providers as well as to increase public access to data on provider capabilities for treatment and additional services. Aggregate panel responses fell in a neutral range, finding it neither feasible nor infeasible, to use technology as an adjunct to traditional, in office treatments; base payment and referral to providers upon demonstrated effectiveness; provide additional public funding for clients to enter higher level of care, reimburse student trainees for services provided, and decentralize access to assessment/screening. Although it remained in the neutral range, decentralizing access to assessment/screening was rated as the least feasible of all proposed solutions.

Chapter 5: Discussion

While a large body of research supports the potential for client-treatment matching (CTM) to improve the treatment experience for individual clients as well as to enhance the efficiency and effectiveness of services provided across larger treatment systems (Alterman et al., 1994; American Society of Addiction Medicine, 2001; Annis, 1986; Hser et al., 1999; Miller & Hester, 1986), much uncertainty remains regarding how CTM actually is and optimally could be implemented across treatment systems, in real world settings. This study examined expert consensus regarding how CTM is presently implemented within a public treatment system serving a large metropolitan area with among the highest rates of SUD in the United States (Wisconsin DHS, 2010). Additionally, expert participants also offered their understanding of how CTM would be implemented in an optimal treatment system; the implications of existing shortcomings in CTM implementation in the region of interest (i.e. Milwaukee County, Wisconsin); barriers to improved use of CTM in the region of interest; and possible solutions to overcome identified problems and improve the treatment system through use of CTM.

The Delphi research approach utilized in this study presents an optimal format for examining such present, real world uses for CTM theory and research. This methodology facilitates direct, structured access to those with comprehensive, contextualized knowledge; endows a quantitative understanding of both the nature of the expert response and the strength (or absence) of expert consensus; and facilitates multidisciplinary exploration of facets of CTM for which no absolute, objective truth is known (e.g. optimal future practices, barriers to improvement, possible solutions). Data gathered in this study derive their validity from the expert nature of participants, as participants represented a variety of relevant perspectives on CTM implementation and theory (e.g. administration, advocacy, direct

service provision) and had on average 19.1 years of education with an average of 21.5 years of experience in SUD treatment or a closely related field.

While five distinct research questions were initially identified, interpretation and subsequent recommendations are synthesized to best discuss: 1) the current state of SUD treatment systems related to CTM and 2) future directions for CTM in SUD treatment. Specifically, original domains examining current practices (i.e. domain 1), barriers to system improvement (i.e. domain 3), and consequences of existing shortcomings (i.e. domain 4) are synthesized into a commentary on the present state of the treatment system. Initial domains looking at CTM practices in an optimal treatment system (i.e. domain 2) and potential solutions for identified problems and barriers (i.e. domain 5) are discussed as directions to pursue for potential improvement of CTM within both the region of interest and the broader SUD treatment community.

State of the System

In describing the present state of the treatment system in Milwaukee County, the expert panel identified CTM practices characteristic of the treatment system, barriers restricting implementation of improved CTM, and the consequences of flaws or shortcomings in current CTM policies or procedures. Also, specific areas of low consensus or high dissent among experts, as well as rationale provided for more extreme or dissenting perspectives, offer further insight into what is and is not thought to be characteristic of the region of interest. Despite data supporting Milwaukee County's role as an advanced treatment system with positive outcomes and national recognition, and despite serving a population with more severe substance use concerns than most other areas (Laux, 2009; Wisconsin DHS, 2010), panel members predominantly displayed the greatest consensus and most clear response direction related to system features seen as either having a negative impact on treatment or being barriers to treatment improvement in the Milwaukee area.

High Consensus System Characteristics: While the expert panel generally agreed that the accessibility of a provider's location and the times it offers services are considered throughout the referral process, and that this has a neutral to mildly positive impact on overall treatment, a majority of high consensus items about the current state of the treatment system related to its perceived shortcomings. Such shortcomings most frequently related to the restrictiveness or negative impacts of:

- A perceived lack of treatment funding, particularly for higher levels of care
- Unsatisfactory integration of mental health and SUD treatment:
 - Too few staff/providers offering integrated services
 - Lack of cooperation between staff trained in SUD and mental health treatment
 - Clients in SUD treatment being insufficiently evaluated for co-occurring mental health concerns
 - Providers' abilities to provide integrated treatment services are not considered in referral
- Insufficiently individualized care:
 - Clients forced to adapt to programs, rather than programs adapting to clients' needs
 - Lack of treatments oriented toward specific life phases
 - Insufficient time spent collaboratively treatment planning
 - Clients make treatment decisions based upon incomplete information

In examining these areas, it should be noted that CTM's capacity to influence treatment is not inherently tied to the presence or absence of funding or other material resources. Rather, CTM emphasizes the optimal utilization of resources in order to reduce

systemic inefficiencies and enhance treatment outcomes. Resource limitations, which can be anticipated to some degree in all real world settings, effectively place a ceiling on the level and type of services to which clients can be matched. In the extreme, a complete absence of funding and resources, CTM would be a meaningless issue as no services would be available to which clients could be matched. In the region of interest, however, evidence suggests that sufficient resources are available to provide a system in which CTM can contribute positively to both the number of clients served and the scope of services available.

Regarding treatment funding, Milwaukee County recently obtained the ATR-3 grant, adding approximately \$4 million dollars to the public treatment system's annual budget through 2014. These funds will further enhance the region's ability to provide services at all levels of care to clients, subsequent to evaluation by the ASAM-PPC-2R. The annual award from this grant will comprise approximately 33% of the budget for the county's Wiser Choice treatment system. Accompanying this additional funding, which will allow Milwaukee County to serve an additional 2,356 clients on average annually through 2014, Milwaukee County will also actively utilize electronic reports, run at least weekly, to compare spending across levels of care with approved spending rates from both federal grants and local budgeting, allowing the county to expand or retract services as needed to optimize available funding and ensure that funds are not exhausted prematurely. These regular reports were endorsed as a high priority under ATR-3, as in earlier iterations of this grant (i.e. ATR-1, ATR-2) the region ran out of grant related funding prematurely, forcing significant reductions and restrictions in available services and causing provider closings (Wisconsin DHS, 2010). Additionally, as reported by both members of the expert panel and the Milwaukee Addiction Treatment Initiative (2009), ongoing efforts to enhance mental health and SUD treatment insurance parity is expected to continue to expand the availability of funding for needed clinical and other supportive treatment services.

While the maximization of available funding is an obvious priority for which Milwaukee County has made considerable gains, other concerns noted by members of the expert panel (i.e. insufficient integration of mental health and SUD treatment; insufficiently individualized care) present clear domains in which improved CTM can have an immediate positive impact on the overall scope and quality of services. Individualized treatment, frequently commented on by the panel, is nearly synonymous with CTM, as both are founded on goals of facilitating client access to optimally beneficial, minimally restrictive or disruptive, treatment elements. CTM theory and practice, however, expand on this by also examining how the individualization of care through matching enhances the financial viability and service distribution of treatment systems.

Many areas of concern identified by the expert panel relate to individualization within the referral process, which in Milwaukee County centers upon the client's right to select from a large number of providers, in a non-coercive environment, with an ability to choose a provider for whom there is no religious objection, based on a clear understanding of the clinical services or RSS available at that site. Following comprehensive assessment at the CIU to determine client's RSS and level of care needs, the client selects a network provider offering the qualifying clinical treatments and/or supportive services (Wisconsin DHS, 2010). While, at this phase, formal CTM practices are utilized in determining the optimal level of care and supportive services, final treatment decisions are the sole responsibility of the client. While others have suggested that client self-selection may not offer the same capacity to enhance treatment efficiency and effectiveness as CTM (Mattson & Allen, 1991), efforts made by the Wiser Choice network to guide clients toward making an optimal choice (i.e. assessment to determine LOC and RSS needs, access to information regarding differences between RSS and treatment providers) exceed traditional client self-selection practices and

may actually optimize treatment referral by capitalizing on CTM principles while also providing consumers a sense of ownership and self-directedness.

Potentially disruptive to this process, however, are practices noted by the expert panel in which clients either do not have access to or do not have the opportunity to fully understand information about potential treatment offerings, as well as likely differences between providers. Panel members identified insufficient evaluation of individuals' co-occurring mental health concerns and insufficient consideration of treatment offerings for co-occurring disorders when selecting a treatment provider as factors that detract from clients' treatment selection/referral experience. Additionally, panel members expressed a strong consensus that clients' treatment experiences are inhibited or worsened by a lack of integration between their mental health and SUD treatment providers, as panel members reported that few providers offer truly integrated services.

According to Laux (2009), Milwaukee County's treatment system is constructed on a basis of systemic, as opposed to provider, integration for SUD and mental health treatment. In this approach, the entire system strives to operate "as a coherent whole to meet the needs of the population served" (p. 6). Specifically, SUD treatment providers are perceived as individual parts of a dual diagnosis capable (DDC) system (ASAM, 2001), in which co-occurring disorder needs are met through "coordination and collaboration with mental health services" (p. 9), rather than by individual providers offering fully integrated treatment services. While such a system is effective for many individuals with mental health concerns, individuals with more severe co-occurring substance use and mental health disorders, those best served in DDE settings, may struggle to complete their respective treatment goals in a DDC system. Similarly, expert panel members indicated a clear belief that many clients would benefit from: 1) having greater access to dual diagnosis enhanced (DDE) providers with truly integrative, on site treatments for co-occurring disorders (ASAM, 2001) and 2)

CIU and RSC or CM staff placing greater emphasis on helping individuals with co-occurring disorders select providers with appropriate (e.g. DDC, DDE) capacities for integrated care.

These recommendations by the expert panel are highly congruent with gold standards otherwise promoted in the broader addiction treatment community (ASAM, 2001), which recommends, “provider networks should include facilities that can deliver Dual Diagnosis Enhanced services” (p. 11). Analysis of the existing network directory does not clearly indicate whether such DDE enhanced providers are available, and if so, which providers meet DDE criteria. Therefore, in order to achieve greater congruence with existing optimal care standards, Milwaukee County’s public treatment system would likely benefit from 1) expanding the number of DDE providers, those best suited to serve individuals with more severe co-occurring substance use and mental health concerns and/or 2) better identifying DDC and DDE providers in the network directory, better enabling clients to select a provider capable of meeting their needs for integrated care for co-occurring substance use and mental health disorders.

Notably, while approximately 70% of providers within the network’s directory indicate that they serve individuals with co-occurring mental health and substance use disorders, few provider profiles describe the specific mental health services offered (e.g. individual/group psychotherapy, empirically based treatments, diagnostic assessment, medication management), the intensity of such services, and whether the site is certified as a mental health clinic in addition to holding certification for SUD treatment (Milwaukee County Behavioral Health Division, Community Services Branch, 2010). This lack of clarity within the provider profiles likely impedes optimal client self-selection and corresponds well with the panel’s findings that treatment for co-occurring disorders is insufficiently considered in the initial treatment selection/referral process. The panel’s responses also suggest that this lack of consideration negatively impacts treatment offered in Milwaukee County (although

with somewhat lower consensus) and impedes to treatment improvement. Fortunately, avenues for addressing such concerns are readily available, as further updates to provider directory can both 1) encourage (or mandate) greater specificity by providers regarding services offered in the narrative description and 2) clearly indicate whether a program is DDC or DDE (McGovern et al., 2007) in the provider profile. Such additional information could be paired with brief feedback from CIU staff regarding which program type (DDC or DDE) would be most appropriate based on clients' anticipated treatment needs for co-occurring disorders and would be beneficial in maximizing clients' capacity to select RSS and clinical providers that are an optimal match to their values, goals, and needs.

Additionally, while available information indicated that clients, following their CIU assessment, select clinical and RSS providers from the available provider directory, it was unclear how much assistance individual clients received from CIU staff in narrowing the range of available providers or weighing the pros and cons of different providers (Laux, 2009; Wisconsin DHS, 2010). Potentially, clients could be helped considerably through a formal, brief (i.e. 5 – 15 minute) process with CIU or other qualified staff to weigh the pros and cons of different agencies. Such a process could assist clients in weighing providers in which they were interested prior to their assessment (e.g. through word of mouth, prior experiences) against other providers identified in the directory or deemed an optimal match by the evaluator/CIU staff based on an assessment-based understanding of clients' needs. Factors distinguishing various providers, such as: primary populations served, outcome/client satisfaction data, available SUD treatment services (i.e. individual/group, various empirically based treatments), available mental health treatment services, available supportive services, location, and accessibility could be compared, assisting the client in both making a careful, personalized choice and in more fully taking ownership of the treatment process.

Moreover, expert panel members showed high consensus in rating practices incongruent with a philosophy of individualized care as being both restrictive of treatment improvement and of negatively impacting treatment offered in Milwaukee County. While the Wiser Choice network has built in many components to enhance clients' treatment through CTM-congruent individualized service plans (i.e. RSS and LOC evaluation at the CIU, client selection of RSS and SUD treatment providers, regular provider level of care assessment to re-examine treatment needs) (Laux, 2009; Wisconsin DHS, 2010), results from the expert panel indicate that further individualization is needed in order to maximize both clinical outcomes and client ratings of treatment satisfaction. Foreseeably, the upcoming inclusion of provider outcomes and client satisfaction ratings in the provider directory will motivate the system to continue shifting toward high quality, individualized care. Following the inclusion of such data, providers offering better individualized, higher quality treatment services are likely to be more frequently selected by clients, positively reinforcing such treatment practices, while providers less capable of showing positive outcomes due to inadequate assessment practices or lower quality treatment services will be less likely to be selected by clients, diminishing their overall revenue stream.

Areas of Low Consensus: While the expert panel clarified many components of CTM within the region of interest by responding with high consensus and a clear direction, much can also be learned through examining areas in which community experts showed low consensus to high dis-sensus. While such results must be interpreted with caution, they often highlight areas of possible concern or needed growth across the system. Particularly, among areas of low consensus and high-dis-sensus, the expert panel showed low overall consensus regarding many system components that were elsewhere described as strengths of Milwaukee County and were congruent with positive CTM practices identified within the broader scientific literature. Such areas of low consensus and high dis-sensus warrant further

consideration, as they relate to access to drug courts, whether clients are matched to needed services (e.g. housing, transportation, childcare, education), whether provider outcome data is used in clients' treatment selection/referral process, and the nature of level of care and other comprehensive assessments conducted at CIUs, amongst other aspects of the treatment system. Importantly, as shown in both available information about Milwaukee County and expert participants' rationale for dissenting opinions across the survey's final iterations, many of these areas of disagreement among panel members relate to planned or ongoing initiatives to improve treatment in Milwaukee County, often associated with the ATR-3 grant. Relative dis-sensus within the panel may indicate that many panel members were either not aware of ongoing or planned changes (i.e. expand use of drug courts, include RSSQ in the CIU intake to improve matches to RSS, integrate provider "score cards" with outcome data and client satisfaction rates into the network provider directory) or had not yet witnessed the impact or roll out of these changes at the time of the survey.

Interestingly, while the Delphi approach is generally recommended to address questions for which no absolute truth can be known (Fish & Busby, 1996; Linstone & Turoff, 2002), the domain of this study for which the most concrete, objective information is available was an area of decidedly low consensus and high dis-sensus among community experts. In examining the treatment system in Milwaukee County, the panel's lack of consensus appears to represent a relative communication gap or difference of opinion between the Milwaukee BHD/Wiser Choice network administration and individual treatment providers serving within the provider network, both of which were prominently represented in the expert panel. Foreseeably, many such areas of incomplete understanding surrounding the broader initiatives and practices across the Wiser Choice network can be further addressed at scheduled quarterly all-provider meetings (Milwaukee County BHD, 2011), giving BHD/Wiser Choice administrators the opportunity to update individual providers on

the roll out of new initiatives/programs, the relative success of ongoing programs, and the network's understanding of areas of potential improvement yet to be addressed. Such meetings also present rich opportunities for providers to offer feedback on the greater front line effects of such programs as they are implemented.

Moreover, the expert panel showed relative dis-sensus related to practices of the area's CIUs. While none of the CIUs tended to receive higher or lower performance ratings than the others by panel members, the panel displayed relatively low consensus regarding the status of level of care assessments conducted at the CIUs, despite these assessments being based upon well-supported evaluations (e.g. ASI, ASAM-PPC-2R), and high dis-sensus related to the comprehensive nature of assessments conducted at the CIUs. In providing rationale for dissenting opinions, panel members indicated that important multicultural/demographic and family system data are not included in CIU evaluations and that, often, a relatively small percentage of assessment data collected at the CIU is made available to the treatment provider. Additionally panel members displayed low consensus across items examining whether individual providers appropriately conducted comprehensive or level of care assessment, as well as whether providers requested treatment extensions based upon individual client needs or that the design of that provider's treatment program.

These areas of lower consensus and relatively neutral responses suggest disagreement among community experts regarding the respective assessment practices and roles of both CIUs and individual providers. While available data from Milwaukee County's BHD indicate that the primary function of the CIU evaluation is to determine the appropriate level of care, using such comprehensive tools as the ASI and ASAM-PPC-2R, and needed RSS, using the RSSQ (Wisconsin DHS, 2010), members of the expert panel, particularly those representing individual providers within the Wiser Choice network, displayed uncertainty regarding whether additional client dimensions should be evaluated by the: CIU only, the individual

provider upon treatment intake only, or both. Similar questions of assessment practices can potentially be addressed, if not resolved, by further clarification regarding the role of assessment at the CIU (e.g. level of care and RSS determination) and the individual provider (e.g. level of care review, outcome evaluation, treatment planning).

Additionally, according to feedback from the expert panel, providers would benefit from increased access to assessment data about referred clients collected at the CIU. Providers' capacity to administer on-site comprehensive evaluations may also be further enhanced by such transparency in CIU evaluations, allowing providers to avoid re-administering assessments recently completed at the CIU while also better using on-site resources to evaluate desired domains that were rated as insufficiently assessed at the CIUs but which may be less immediately relevant in establishing level of care and RSS recommendations. Milwaukee County's BHD could also support this venture, likely increasing comprehensive evaluation by individual providers, by offering a central/electronic library of recommended, well-validated, empirically supported, public domain instruments that providers could utilize to extend their assessment capacity. Such an assessment library could include those assessments administered at the CIU that would be helpful for re-evaluation/re-assessment of level of care needs by the provider, as well as those that may be highly relevant to individual provider outcomes that would not otherwise be offered through the centralized intake (e.g. life satisfaction, therapeutic relationship, specific symptom inventories). Such a two-tiered level of evaluation by CIUs and providers across the system could potentially greatly expand both the scope and depth of assessment data available to treatment providers.

Impact of CTM Shortcomings: While the goals and potential benefits of implementing CTM in SUD treatment are well established (American Society of Addiction Medicine, 2001; Belenko & Peugh, 2005; Etheridge et al., 1995; Gastfriend et al., 2000; Hser

et al., 1999; McLellan et al., 1997; Minkoff et al., 2003; Project MATCH Research Group, 1997; UKATT Research Team, 2007), few studies have formally discussed the impacts of absent or insufficient CTM practices within an area. The available research examining absent CTM, however, primarily examined only either the lack of an absolute advantage to high intensity treatment for all or unnecessary costs associated with universal higher intensity treatment (Alterman et al., 1994; Annis, 1986; Miller & Hester, 1986). Expert participants in this study, however, contribute to the body of research related to CTM by commenting on a broad range of outcomes associated with systemic flaws in the region of interest, particularly related to absent CTM. Panel members displayed the highest rates of consensus of any domain in this study in identifying multiple moderately to severely negative impacts of insufficient CTM. Such moderately to severely negative impacts occurred for: individual clients (e.g. clients do not enter treatment, death rates among those who need treatment increase, clients develop an absence of hope and feelings of failure), the treatment system (e.g. provider outcomes worsen, treatment retention decreases, long wait lists for treatment develop), and society as a whole (e.g. health care costs increase, community incarceration rates increase, community crime rates increase, families are disrupted). While these findings do not contribute positively to immediate recommendations for improving the implementation or effectiveness of CTM in the region of interest, these findings richly portray the high stakes associated with improving the use of CTM within treatment communities in a manner not otherwise available within the available literature.

Future Directions

In examining the future use of CTM in Milwaukee County and other treatment systems, data related to 1) perceived optimal states for use of CTM and 2) solutions for overcoming existing problems with/limitations for the use of CTM were included. Among all data collected, however, panel members displayed the lowest overall consensus and the

highest rates of dis-sensus in identifying characteristics of an optimal treatment system.

While this domain was initially intended to serve as a foundation upon which goals for future CTM in Milwaukee County and other treatment systems could be determined, the overall low rates of consensus and high rates of dis-sensus in this domain restrain use of the data in this manner.

Despite low rates of overall consensus however, aspects of the panel's responses related to optimal practices are highly congruent with both broader perceptions and ongoing questions of CTM throughout the United States. An example of this trend can be found in the high consensus that it is both optimal and feasible to utilize level of care screening instruments in matching clients to an optimal treatment setting and intensity. This finding is highly reflective of the state of overall SUD treatment in the United States, as many states and treatment systems mandate use of formal patient placement criteria (PPC) in determining the most appropriate level of care (Callahan, 1999; Kolsky, 2006; Kosanke et al., 2002). Similarly, just as expert panel members were unable to reach consensus related to matching related to intra-level of care, inter-provider differences (i.e. referral based on understanding of provider differences, weaknesses, and strengths; use of EBTs, trauma focused interventions, or other treatment modalities), other treatment systems are not mandated to and inconsistently use other forms of CTM (i.e. service matching, modality matching) despite literature supporting the effectiveness of CTM beyond level of care matching (Etheridge et al., 1995; Moos & Finney, 1995). Additionally, the expert panel displayed a lack of consensus around many items of theory and practice that have been divisive for AODA treatment providers in the past. Items such as those examining whether relapse would cause discharge from treatment or whether interventions for co-occurring disorders should be fully integrated at the provider level reflect persisting points of discussion within the SUD

treatment community (e.g. abstinence only/zero-tolerance versus harm reduction treatment programs; SUD only, DDC, or DDE treatment).

Regarding the expert panel's recommendations for improving treatment in Milwaukee County, practices that the panel displayed strong consensus in identifying as both likely to enhance the treatment system and being feasible for implementation can be placed in three domains. These domains include: 1) expanding treatment availability and easing access to treatment, 2) maximizing the quality and expanding the scope of available interventions, and 3) increasing public awareness of SUD and treatment services. Items identified as contributing to systemic improvement are also interesting in that many of them are already occurring, to varying degrees, in the region of interest.

Expanding Availability and Easing Access to Treatment: The panel identified such practices as increasing the use of drug courts, improving pathways for other systems (e.g. education, health care) to refer clients to treatment, and increasing SUD screening in medical settings as strategies for extending treatment services to additional individuals. According to Milwaukee County (2011), Milwaukee's drug treatment court utilizes a year-long, four phase program involving SUD treatment and case management to address primary client concerns and minimize the potential for future SUD or criminal activity; the program presently has the capacity to serve approximately 100 participants annually (Wisconsin DHS, 2010). While initial outcomes for participants in Milwaukee's drug court are unavailable, existing literature related to participation in drug courts shows generally positive outcomes, including lower rates of future substance use, criminal activity, and future enrollment in welfare programs (Banks & Gottfredson, 2003; Gottfredson, Kearley, Najaka, & Rocha, 2005). Additionally, costs associated with participation in the drug court (e.g. court costs, SUD treatment, case management/supervision) are substantially lower than the costs associated with incarceration, thereby saving money for the community as a whole. Due to the role of drug courts in

reducing costs for the community and minimizing the consequences associated with diminished or absent CTM in SUD treatment previously identified in this study, Milwaukee County and other communities would likely benefit considerably from expanded capacities within and matching of clients to drug treatment courts.

Moreover, expert panel members displayed slight to strong agreement that the region of interest would benefit from both expanding the use of SUD screening measures in health care settings and in easing the referral process for other systems (e.g. health care, education) to place clients in treatment. Although many clients seen in health care settings are likely to have insurance, thereby likely granting access to treatment for mental health or substance use disorders, panel members' responses suggest that such individuals will be less likely to take advantage of available treatment services if they are not screened or referred for needed services. Along with encouraging medical providers to increase the use of SUD screening tools, many of which are publicly available, can be quickly completed, and have strong psychometric properties, panel members indicated that Milwaukee County would benefit from easing pathways for referring clients to the public treatment system. While access to Milwaukee County's public treatment system generally occurs through accessing any of four CIUs, the system also utilizes a mobile CIU in evaluating veterans and other qualifying individuals who screen positive for likely substance use disorder on the Alcohol Use Disorders Identification Test (AUDIT; Wisconsin DHS, 2010). Following the recommendation of the expert panel, extending a similar screening protocol with access to the mobile CIU to medical providers who serve regions and client populations for whom substance use and co-occurring mental health disorders are most prevalent but presently lack formal relationships with the BHD may improve access to the Wiser Choice network.

The expert panel also showed high consensus in slightly to moderately agreeing that expanding funding for SUD treatment would be of benefit to the community, although the

panel showed generally low consensus to high dis-sensus that most funding related comments were feasible for implementation. Among survey items related to funding, panel members showed moderate to strong agreement that the system would benefit from basing payment on provider outcomes as well as from increasing payments to providers, although they displayed low consensus and somewhat lower ratings of feasibility in implementing these strategies. While system-wide increases in payment for services are unlikely to be feasible these responses from the expert panel suggest that the region may strongly benefit from opportunities for providers to be rewarded financially for evidence of positive outcomes, through either opportunities to bill at higher rates or other financial incentives. In selecting top tier programs to qualify for such hypothetical financial incentives, the network could establish either cutoff rates on key outcomes or offer incentives to a top percentage of providers on key markers of success (e.g. client satisfaction, change in substance use). Expert data suggest that such efforts, while not punishing providers who perform at lower levels, may strongly motivate providers across the network to improve the consistency and comprehensive nature of on-site outcome evaluations as well as to enhance their treatment services.

Maximizing Quality and Expanding the Scope of Interventions: Expert participants also showed high consensus in moderately to strongly agreeing that increasing the breadth of modalities in which providers are trained, including service needs in the initial referral, and integrating empirically based treatments for client trauma and other presenting problems would improve treatment provided in the region of interest. Each of these practices are closely tied to CTM, as they either directly match clients to needed services or expand the breadth of treatments available, allowing clients to select or be referred to interventions best suited for their individual needs. Additionally, foundations of these practices already occur, albeit to varying degrees, in the region of interest. As described earlier, policy exists for

clients to be administered the RSSQ during their CIU evaluation, enabling providers to identify RSS needs and assist clients in selecting optimal RSS providers.

Moreover, under the ATR-3 grant the network will emphasize training providers in both Seeking Safety, an empirically supported intervention appropriate for treating co-occurring symptoms of SUD and trauma, and CRAFT, a manualized, non-confrontational cognitive behavioral intervention directed at assisting family members and concerned others in restructuring their thoughts and actions related to a family member with SUD (Wisconsin DHS, 2010). While these empirically supported interventions are primarily described as being implemented in the Wiser Choice network to enhance treatment services to veterans and women, these interventions hold tremendous potential to enhance the care provided to clients across the entire treatment system. Although Milwaukee County has already taken positive steps to incorporate training for these empirically supported treatments across elements of the network (e.g. veterans, women), the strong consensus of this expert panel indicates that these steps can be taken further.

An initial step in this regard would be for the network to encourage at least one clinician from each provider to acquire a competency in either Seeking Safety or CRAFT training. According to the Wisconsin DHS (2010), a plan is already in place for a local expert to provide CRAFT training to interested network providers, while training for Seeking Safety is primarily directed toward sites primarily serving veterans and women. While veterans and women served in the Wiser Choice network may have higher rates of PTSD symptoms, the dimensions of anger, trauma, empathy, meaning making, self-care, coping, substance use, and recovery, amongst other topics, that are included in the Seeking Safety curriculum are applicable to the full breadth of individuals in SUD treatment. According to the developers of this intervention, Seeking Safety is an effective means for stabilizing individuals with only SUD concerns, only PTSD, or both (Najavits, Schmitz, Johnson, Smith, North, Hamilton et

al., 2009). Just as Seeking Safety is widely applicable to individuals seen within the Wiser Choice network, the intervention would be relatively easy to roll out on a network-wide basis. Presently, there are no set licensure criteria for carrying out this intervention, allowing it to be implemented by individuals with mental health and substance use disorder treatment certifications. Additionally, the two primary identified clinician characteristics for successfully implementing this intervention are: 1) a desire to work with individuals struggling with trauma and SUD and 2) a willingness to use a manual-based intervention (Najavits, 2004).

Congruent with the panel's recommendation to increase the modalities in which providers are trained and increase the use of empirically based treatments for trauma and other concerns, the network may also benefit from expanding their present training options. While the BHD is using expert consultants to provide training in CRAFT and Seeking Safety, if these trainings have strong, steady attendance and the subsequent interventions are found to positively impact client, provider, and network outcomes, the network may wish to make such trainings a regular, more permanent fixture and to expand the base of interventions for which training is available. Such a program, hypothetically titled a "Wiser Clinician Series," could offer cycles of bi-weekly or monthly trainings, led by community experts, in a host of well-established interventions related to the treatment of substance use and co-occurring mental health disorders (e.g. Motivational Interviewing, Behavioral Activation, Acceptance and Commitment Therapy). Such trainings could likely be implemented at a relatively low cost and would enable clinicians to both acquire new skills and information and collaborate with other providers in strategizing how to best implement such interventions at their respective locations.

Increasing Public Awareness: The expert panel also displayed high consensus in slightly to strongly agreeing that efforts toward increasing public awareness of the impact

and presence of SUDs in the community, along with the availability of effective, available treatments, was a worthwhile pursuit for Milwaukee County. Despite displaying relatively low consensus regarding the feasibility of such ventures, the expert panel indicated that: expanding public campaigns to raise awareness of maladaptive substance use behaviors, reducing stigma associated with the treatment of substance use and mental health disorders, and increasing public access to data on provider outcomes would help to overcome existing systemic problems. While such efforts are less directed at enhancing matching effects associated with treatment and would more likely constitute best practices for SUD treatment in a community, they represent a worthwhile finding nonetheless.

As with many other future directions identified by the expert panel, ongoing efforts toward raising awareness and reducing stigma are already present in the community of interest, yet findings indicate either the view that such practices can be taken further still. According to information collected about the BHD/Wiser Choice system, recent efforts to enhance community awareness of SUDs and available treatment include: forging partnerships with other major providers/networks in the region (e.g. the Veteran's Administration), expanding the breadth of clinical and RSS providers in the network, and incorporating supportive family members and other community resources into treatment planning and follow-up (i.e. CRAFT interventions, Recovery Teams) (Laux, 2009; Wisconsin DHS, 2010). Additionally, a wealth of information, including a provider directory that will soon include information about client satisfaction and treatment outcomes, is available online through Milwaukee County's website (Milwaukee BHD, Community Services Division, 2010; Wisconsin DHS, 2010). While such publicly available information is helpful, Milwaukee County may also benefit from more prominently displaying aggregated, system wide data for client satisfaction and relevant outcomes associated with clinical and RSS services. While Milwaukee County has historically been recognized as a national leader and has subsequently

received multiple, large federal grants to expand and improve services, consensus statements by this expert panel indicate that Milwaukee County could benefit from improved advertisement of its successes in its home community, particularly compared to other regions' outcomes and national treatment averages.

Implications for Clinical Services

While results and subsequent interpretations are primarily directed systemically, conclusions from the expert panel also relate directly to clinicians have an integral role in implementing all clinical services. Relating most directly to clinicians, and subsequently the implementation of clinical services, are areas of high consensus from the expert panel associated with treatment integration and individualization. While much can be accomplished on a broad, systemic level to enhance the potential for optimal care, individual clinicians can also make vast, individual contributions to enhancing the treatment offerings of any individual provider or system. Fundamentally, the expert panel identified concerns associated with a lack of integration of mental health and substance use disorder treatment options. Clinical service providers can individually contribute to ameliorating this area of concern by seeking out education and training opportunities to better enable them to offer treatment for co-occurring disorders. While some trainings are already anticipated to be made available (e.g. CRAFT, Seeking Safety) and more are recommended within this report, the overall success of such training opportunities will in large part stem from clinicians' overall participation in and utilization of the skills offered by such trainings.

Furthermore, associated with both individualized care and integration of services, are domains identified by the expert panel associated with assessment and program design. While the public system's CIUs are expected to assess pt's upon their entry to the system, particularly related to their overall needed level of care and key problem areas identified within the ASI, individual clinical service providers have the opportunity to offer further

assessment for the purpose of identifying more specific concerns, multicultural needs, and individual levels of functioning, as well as to track changes in these domains over time. While this report recommends that CIUs and the public system increasingly share initial assessment data with providers/clinicians and develop a central bank of potentially useful diagnostic, process, and outcome measures to be used by clinicians, individual clinicians will bear the most immediate responsibility for incorporating such assessment into the treatment process as well as for using data from such assessments to facilitate treatment planning (e.g. treatment emphasis, level of care change, needed treatment components). Such efforts for integrated, individualized care represent significant advancements in the addiction treatment field made over recent decades and are vital in efforts to use CTM in improving both the quality and availability of treatment (Gastfriend & McLellan, 1997; White, 1998).

Conclusion and Recommendations

While the publicly available treatment system in Milwaukee County, Wisconsin regularly outperforms national averages in key treatment variables (Milwaukee County Behavioral Health Division, 2008); has a history of being recognized with a series of noteworthy federal grants to enhance the capabilities of the existing treatment system; and displays ongoing growth well aligned with best practices in both general SUD treatment and CTM (Laux, 2009; Wisconsin DHS, 2010), results from this structured expert analysis reveal several areas of potential improvement. This data was collected following the Delphi approach, which excelled at integrating the expert knowledge and insight of key personnel most familiar with the characteristics of this treatment system, barriers to its ongoing improvement, implications of existing shortcomings, and solutions for treatment improvement in the community of interest. Experts spanned the full breadth of the SUD treatment system in Milwaukee County, including experts employed through the BHD administration, CIUs, RSS and clinical providers (within and external to the Wiser Choice

network), advocacy groups; participants also held a diverse array of administrative and clinical positions.

In examining each CTM related domain, expert participants displayed high consensus on 42% of total items, with many domains having high consensus on 60% of items or more. Recommendations were developed based upon areas in which the expert panel displayed a high consensus with a clear, non-neutral response direction. Limited interpretation of areas of low consensus to high dis-sensus among experts also revealed areas of continued uncertainty, for which additional recommendations are offered. These recommendations, consistent with CTM, emphasize the improved utilization of existing resources as well as the establishment of a treatment system in which CTM theory and practice can flourish. Additional recommendations suggested by the expert panel also relate to general “best practices” that can potentially be adopted, improving the overall status of the treatment system. Based on responses from community experts, recommendations are as follows:

1. Expand provider profiles in the Wiser Choice Network Directory (Milwaukee County BHD, Community Services Branch, 2010) to better specify DDC and DDE programs, as well as specific treatments for co-occurring mental health disorders either integrated into a provider’s care or available through consultation/collaboration between an SUD treatment provider and another agency (see p. 107).
2. Augment clients’ ability to select an optimally matched treatment provider through a brief, formal intervention offered by CIU staff in which the client identifies key treatment-related goals and values, and then weighs the relative offering of different providers with a staff member from the CIU, facilitating a more consistently well-informed provider selection (see p. 108).

3. Further emphasize ongoing and anticipated roll out of new system-wide initiatives and treatment practices in quarterly all-provider meetings, enabling providers to stay abreast of areas of ongoing improvement and to offer feedback on the front line effects of such programs as they are implemented (see p. 110).
4. Further clarify the role of comprehensive assessment conducted at the CIU, presently oriented toward level of care and RSS determination, and comprehensive assessment conducted by providers, oriented toward treatment planning, outcomes tracking, and repeated level of care determination. Data suggest that it would be helpful for assessment information collected at the CIU to be more consistently made available to the individual provider to which the client is assigned (see p. 111).
5. Expand drug court services subsequent to further collection of data displaying relative positive outcomes and lower costs of this service compared to the average incarceration of someone who committed a similar offense (see p. 113).
6. Encourage SUD screening in medical settings, and extend mobile CIU services to participating/partnered medical providers (see p. 116).
7. Offer financial incentives to identified top tier providers, based on outcome data (e.g. top X% of providers, all providers scoring over X level in key outcomes) (see pp. 116 – 117).
8. Extend training for relevant, empirically supported interventions to providers by broadening planned trainings of Seeking Safety and CRAFT interventions and possibly offering ongoing “Wiser Clinician” seminar series in which providers can build competencies in additional interventions. Additionally, encourage all providers to have at least one clinician learn at least one

intervention for which the BHD/Wiser Choice network offers training (see pp. 118 – 119).

9. Better advertise the network's successes within the region of interest. While individual provider outcomes are anticipated to be made publicly available in the online provider directory, perhaps also make aggregated network outcome data available on the BHD's website alongside similar outcomes from both the nation on average and other metropolitan areas (see p. 120).

While this study revealed multiple strategies for treatment improvement, by both directly changing how CTM is conducted (e.g. improved access to and processing of information when selecting a provider) and creating a treatment context in which additional CTM avenues can flourish (e.g. increase access to SUD treatment, increase diversity of interventions and services available to clients), it also identified many positive aspects of and indicators for the future of treatment through CTM, as well as for the specific treatment system in the region of interest. Fundamentally, results of this study revealed many pathways in which ongoing initiatives within both the state and community of interest are congruent with both recommendations by expert panel members (e.g. pursue insurance parity, expand drug courts, increase accessibility of and matching to RSS) and are consistent with present understandings of best practices within the CTM literature related to level of care and service matching (e.g. level of care assessment with ASAM-PPC-2R, service needs assessment and referral through RSSQ, integrate treatment for co-occurring disorders).

Additionally, this study presents a strong source of data motivating future research into the role, function, and real world implementation of CTM. Expert consensus within this study strongly suggests that diminished CTM capabilities within a treatment system contribute to a broad spectrum of difficulties for individual clients, treatment systems, and society as a whole. Poor CTM was identified within this study as contributing to diminished

access to treatment, poorer retention and outcomes while in treatment, increased incarceration rates, family disruptions, and increased preventable costs for society (e.g. health care, foster care), amongst other problem areas.

Limitations and Future Research

One manner in which this study differed from the generally recommended procedure for conducting Delphi research lies in the relatively small number of members within this expert panel. Although the nine individuals who completed all phases of this study represent 45% of all individuals determined to be qualified for participation, and while 81% of all participants who completed the first survey were retained throughout the entire study, the overall size of the expert panel was slightly lower than is generally recommended for Delphi research. The general recommended size for a Delphi panel is 15 – 35 individuals (Gordon, 1994) with as few as 10 expert participants being generally viewed as minimally sufficient (Jonassen et al., 1999). To compensate for a slightly smaller than recommended panel size, benchmarks for interpreting data as having high consensus were changed from $S.D. \leq 1.00$ (Clayton, 1997; Jonassen et al., 1999) to $SD \leq 1.25$. While the somewhat smaller sample size potentially impacted the overall ability of the panel to build, or quantitatively demonstrate consensus, the panel was constructed for maximum validity in examining CTM practices in a specific community.

This goal for development of the expert panel may have also impacted the panel's ability to discuss the characteristics of a hypothetical, optimal treatment system, which showed the lowest overall consensus of any domain of interest. Participants in this study were primed, through to the recruiting process and survey questions, to ground their responses in the unique concerns and conditions of Milwaukee County, which may have diminished their ability to freely consider a hypothetical, abstract, optimal system. In order to better examine characteristics of CTM in an optimal treatment system, as well as to widen the

potential pool of expert participants, it may be advisable to conduct future Delphi research into the use of CTM with a more diverse, national panel, although each individual participant in this study holds sufficient expertise to participate in such a panel.

Such a panel was not feasible for this study, given the current emphasis on analyzing and improving treatment in a specific community, but a more diverse panel in future studies would: enable a greater potential pool of experts from which to draw participants; include a greater diversity of expert knowledge and insight; and could include nationally recognized CTM researchers, complementing individuals from the integral professional roles already included in this study (e.g. administrators, service providers, policy makers). Additionally, in examining potential avenues for further enhancing the expert panel in future Delphi research, it may be advisable to include a number of people who have been consumers of SUD treatment and have personally experienced the process of being matched to aspects of treatment. Such individuals would represent an additional type of stakeholder that is often included in Delphi research but was not included in this study (Linstone & Turoff, 2002).

While future research examining the role and function of CTM in an optimal treatment system conducted with a more diverse expert panel would likely yield important, readily applicable information, further research into the specific community of interest is also potentially richly rewarding. At the time of this study, the treatment system was undergoing significant changes and improvements, the immediate nature of which were hypothesized to attribute to lower consensus related to CTM characteristics in the region of interest. Follow-up research, examining both understanding and practice of CTM within this community as it changes in response to both the ATR-3 grant and feedback contributed by this study would offer important insights into the role and function of CTM, as well as the processes by which expansive treatment systems evolve and adapt in response to changing social and political contexts.

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Appendices

Appendix A: Historical Perspectives on Substance Use Disorder Treatment

Understanding the historical development, from the earliest origins to present practices in substance use disorder (SUD) treatment is an important component in defining the tasks that client-treatment matching (CTM) is meant to accomplish. A keen awareness of how the SUD treatment field has changed over time and has developed into its current form can help modern scientists, clinicians, and policy makers understand the growing need for validity, effectiveness, efficiency, and accuracy in SUD CTM strategies. This awareness also offers a crucial understanding of how client treatment has and continues to contribute to the clinical success and practical viability of addictions treatment.

The impact of mood altering substances and the treatment of individuals with problems related to their use has, from the earliest foundations of the United States, had an important role in shaping social, political, and cultural aspects of American life. The earliest American conceptualizations of addiction and substance misuse were those of Benjamin Rush (1746 – 1813). According to White (1998), Rush is considered the first American authority on alcohol and alcoholism, as well as being widely considered the “father of American psychiatry.” Rush was among the first to suggest that chronic drunkenness was a progressive medical condition; Rush was also the first to suggest that drunkenness was a disease requiring abstinence and treatment. While Rush’s treatments of alcohol, like other physicians of his era, sought to balance of the four humors and are markedly different than therapies used today, his conceptualizations of alcohol as a problem substance in an age when per capita alcohol consumption approached the highest in American history played an important role in shaping the perceptions of his peers towards alcohol. Many early 19th century thinkers influenced by both early declarations, such as those by Rush, on the potential dangers of alcohol as well as those who independently noted substance related

problems in many Americans, called for action to be taken related to the use of substances and gave rise to the American Temperance movement in 1808. This movement started at first as a call for awareness of the potential problems and need for moderation in the consumption of alcohol. However, initial struggles and poor outcomes among those attempting a moderation approach motivated followers of the temperance movement to call for people to completely abstain from alcohol and, eventually, for society as a whole to engage in prohibition against alcohol (White, 1998).

Other movements against alcohol misuse starting in the first half of the 19th century included: the Washingtonian movement, which provided moral and material support to those recovering from alcohol addiction; mutual aid societies and fraternal temperance organizations, providing mutual and financial support for recovering and newly recovered individuals who had formerly abused alcohol; and the reform clubs, which developed as temperance societies grew increasingly restrictive in membership and politically oriented. Each of these personal recovery movements helped lay foundations for later aid societies and treatments for substance use, as well as facilitating an ongoing American dialogue about the nature, scope, and potential for reform among those who struggled with addiction to alcohol (White, 1998).

Accompanying mutual aid societies, 19th century treatment for alcohol misuse, starting most prominently after the development of the American Association for the Cure of Inebriates in 1870, also included asylums and other institutions (i.e. lodging houses, inebriate homes, sanatoria, reformatories, retreats, etc.). Many institutions evolved out of the former “dry hotels” and “lodging houses” of the mutual aid societies and provided minimal treatment, room, and board. Asylums were large medical facilities, the first of which was the New York State Inebriate Asylum founded in 1864, in which patients were treated for their medical problems while detoxifying from alcohol. Asylums for the treatment of individuals

with alcohol problems quickly became common, as 32 private institutions existed by 1878, more than 100 existed by 1902, and by 1909 multiple states had added state-run asylums to the list of potential options for the treatment of alcohol disorders (White, 1998).

Treatment in asylums included medical monitoring and care to assuage the need for alcohol, but few actual treatments were then available to address what would now be considered alcohol addiction. However, as time passed, a wide range of treatments became available to treat addiction to alcohol and other substances. Among these early treatments were sterilization of the alcoholic/eugenics movement, natural therapies, hydrotherapy, morphine or sedative treatment, convulsive therapies, psychosurgery and lobotomization, and, among the strangest, inoculating patients against alcohol problems by infecting them with gonorrhea following observations by one physician that his patients with advanced gonorrhea appeared to have less interest in consuming alcohol. The majority of these treatments were noted over time to have negligible to inordinately harmful effects on patients' general health as well as having little impact on drinking behavior. Published reports of the relatively poor outcomes associated with 19th and early 20th century treatments significantly reduced public confidence in addiction treatment as both a system and a science (White, 1998).

Other early treatments for alcohol involved medicinal "cures," tonics, or home remedies to remedy people of their need for alcohol. One of the most widely distributed "cures" for alcohol addiction was Leslie Keeley's Double Chloride of Gold Remedy for the treatment of alcoholism, drug addiction, and tobacco. Keeley developed his cure in the years following his discharge from the military in 1864 and opened the first Keeley Institute in 1879 using the guarantee "drunkenness is a disease and I can cure it." Early growth of the Keeley Institutes was slowed in the early to mid-1880's as Keeley temporarily lost his medical license for "unprofessional" advertising and because of serious side effects

experienced by many of the individuals treated with the Double Chloride of Gold. Following some adjustment of the Double Chloride's formula, the Keeley Institutes grew rapidly from 1890 – 1893, expanding to 118 institutes by mid-1893. Although the formula to Keeley's Double Chloride was never released, the treatment was considered highly effective following positive portrayal of former patients in books and newspaper articles and Keeley's claims of 95% success rate among individuals who completed his treatment, although others who polled former graduates found a much lower 51% rate of prolonged abstinence, with very large numbers of former patients having died or gone "insane" following the end of treatment. The Keeley Institutes gradually decreased in their popularity and perceived effectiveness, particularly following the published testimony of one of Keeley's former partners in 1907, which stated that Keeley's medicines had no actual gold in them and that the early testimonies of success on which the Keeley empire was founded were written not by former patients but rather by Keeley and his other former partners (White, 1998).

Along with the widely heralded Keeley Cure, many other remedies, tonics, and self-proclaimed miracle cures for alcohol misuse were advertised, distributed, and sold throughout the United States as early treatments for alcohol addiction. According to White (1998), many of these addiction cure companies used promises of infallibility, interesting and authoritative names, attacks on other "false cures," financially motivated recommendations by popular physicians and scientists, and parallel promises (i.e. cures impotence) to solicit customers. Despite their many promises, the vast majority of companies that patented and sold "cures" for addiction were actually marketing either the same or another drug to addicted individuals. For example, an 1886 expose on opium "antidotes" found that 19 of 20 formulas studied contained opium as a main ingredient; a parallel study in 1889 by the American Association for the Cure of Inebriety found that all of the cures for alcoholism included in the study contained between 7 and 45% alcohol. Advertised cures also included

other drugs, particularly morphine or caffeine, or ingredients with no actual medical benefits, such as milk sugar. The federal government attempted to address these false cures with the Pure Food and Drug Act of 1906, which required the presence and dosage of substances be included on the labels of products sold in interstate commerce. This law helped regulate the worst and most widespread offenders, although the distribution and sale of these and other “miracle cures” continued into the 1930’s and 1940’s and represented a disturbingly common trend of fraud in the treatment of alcohol and other drugs.

Other treatments for alcohol use in the early 20th century, many of which share psychological roots with treatments used today included psychoanalytic and aversion therapy approaches. Psychoanalytic treatments were gradually demonstrated to be ineffective in the treatment of addictive disorders, despite their widespread use and approval among analytic therapists, while aversion therapy techniques commonly reported 40 – 50% rates of long-term abstinence following treatment. Downfalls and risks associated with aversion therapy included the unpleasant circumstances associated with treatment and multiple client deaths, although the prolonged support, empathic professional staff, mutual aid provided by other recovering persons, and screening out of unmotivated individuals used by providers of aversion therapy helped facilitate prolonged abstinence (White, 1998).

Historically, treatment for alcohol use disorders (AUD) has made up a sizable portion of all treatment for SUD. Treatment of AUD in the mid to late 20th century, from the late 1940s to the early 1990s, primarily occurred in high intensity residential, commonly 28 day programs, followed by a prolonged period of aftercare. These programs traditionally followed the Minnesota Model, a unified, abstinence only approach closely tied to the 12-step recovery model (Cook, 1988; Gastfriend & McLellan, 1997). Treatment programs following the Minnesota Model have four key elements: 1) belief in the possibility of change for individuals with addiction, 2) the disease concept of alcoholism, 3) treatment goals that

extend beyond abstinence from alcohol (i.e. improvement of lifestyle, and 4) the principles of Alcoholics Anonymous and Narcotics Anonymous. The development of Minnesota Model programs resulted from a growing shift in Americans' perceptions toward alcohol. In the late 19th and early 20th centuries, the growing influence of the prohibition movement decried alcohol as a social evil and individuals who struggled with alcohol as pests and menaces who had fallen prey to alcohol's deleterious effects. Following the end of American prohibition, the disease model of alcohol subscribed to by Minnesota Model and other programs became prominent and asserted that individual vulnerabilities to alcohol misuse, not the inherent social evils of alcohol, were the root cause of AUD problems (White, 1998).

The incorporation of a disease model of alcohol allowed for the individual treatment of AUD to develop as an alternative to a national prohibition on alcohol. Such changes in perceptions of alcohol facilitated the development of new treatment options and programs, particularly the Minnesota Model. Minnesota Model programs appeared almost simultaneously in three distinct treatment facilities in and near Minneapolis, MN: the Pioneer House, Hazelden, and Willmar State Hospital. Developments of these centers were gradually adopted by other programs, spread geographically, and took on a widely accepted and replicated format in the Minnesota Model. Treatment within these programs varied little from patient to patient, as treatment for all individuals adhered closely to a system of: group therapy; didactic lectures; 'recovering' individuals as counselors; multi-disciplinary staff (i.e. physicians, social workers, psychologists, clergy, recovering individuals); a therapeutic milieu of daily routines, values, and beliefs; work assignments; family counseling; progression through the 12-Steps; daily reading from AA/NA literature focusing on meditation and the 12-Steps; an exploration of one's life history; regular attendance of AA/NA meetings; and recreational or physical activities (Borkman, Kaskutas, & Owen, 2007; Cook, 1988).

The treatment of drug use disorders, although carried out to a limited degree by Minnesota Model programs, has a history that can be clearly differentiated from the primary history of treatments for AUD. The historical development of treatments for drug use disorders has been heavily influenced by the therapeutic community, other treatment systems, and changing social and legal perceptions of drugs. The need for discrete services to treat drug addiction became more pronounced in the early 20th century, when the Pure Food and Drug Act (1906) and Harison Anti-Narcotic Act (1914) limited public access to opiates, cocaine, and other drugs by mandating that they could only be sold by a physician. Accompanying the passing of laws to regulate substances, court rulings (i.e. Webb v. the United States) also declared that physicians could not prescribe narcotics or other drugs to addicted individuals as a means of alleviating symptoms of addiction. These laws and court rulings represented a major shift in how drugs and drug addictions were conceptualized and handled. Prior to these laws, many medicinal “cures” for drug addiction contained considerable amounts of alcohol, cocaine, cannabis, or other narcotics in order to help addicted individuals manage withdrawal and other symptoms. Following these legal changes, detoxification programs in large federal hospitals and community programs became prominent, but the accessibility and quantity of treatments for drug addiction were greatly reduced until the mid-1930s. Starting in the mid- to late-1930s large “narcotics farms” were opened to rehabilitate individuals addicted to narcotics who were entering the federal prison system. These large narcotics farms served as examples of the early focus on drug treatment as a criminal justice matter. This mode of treatment, and the accompanying notion that drug use was solely a criminal justice concern, rather than a public health or social problem, remained pervasive until efforts by the American Medical Association and American Bar Association gradually called for drug treatment to be conceptualized as a matter of public health (Borkman et al., 2007; White, 2005).

The roots of a dominant model of drug treatment as a public health concern can be traced back to Chuck Dedrich's 1958 founding of Synanon. The Synanon approach, similar to the Minnesota Model, was largely based on the teachings of AA, including: a focus on truth telling, focus on a personality change among individuals in recovery, valuing the process of revealing one's errors and mistakes to another, making amends, "acting as if" (i.e. choosing to behave in a positive way even when personal desires differ), and a focus on mutual aid of individuals in recovery sharing their experiences with their recovering peers. Also similar to Minnesota Model programs, in Synanon programs the group therapy process was considered paramount to a successful recovery, although group processes in Synanon programs functioned differently than those in Minnesota Model programs. Unlike Minnesota Model programs, Synanon oriented programs rejected the religious/spiritual messages of AA and replaced these teachings with a secular philosophy, based largely on Ralph Waldo Emerson's essay *Self-Reliance*. Another important component of Synanon programs was the use of the Synanon Game, which was a very confrontational style of "attack therapy" in which one resident was on the "hot seat" in the center of a circle while others intensely confronted the individual regarding self-deception, destructiveness of drug use, maladaptive behavior patterns, and a destructive lifestyle (Borkman et al., 2007, p. 27).

A type of treatment setting that historically relied heavily on Synanon treatment philosophies and interventions is the therapeutic community. Therapeutic communities have been quite influential and widespread in treating individuals with drug use disorders. Therapeutic communities are primarily residential programs in which individuals in recovery often remained for time spans ranging from six months to a period of years. Throughout this time, the therapeutic milieu allowed individuals in recovery to progress from the status of a new resident until they became formal staff members of the therapeutic community and worked with counselors and other professionals to aid in the recovery of those in the

community. Therapeutic communities focused largely on serving indigent populations and individuals with criminal justice problems, while traditional Minnesota Model programs routinely served middle to upper class clientele (Borkman et al., 2007; White, 2005).

Mandates for professionalization of the drug treatment workforce and increasingly specific requirements of SUD treatment providers by government and payee networks have served as challenges to therapeutic communities over time, particularly because of the roles that recovering individuals play in providing services to others engaged in treatment.

Therapeutic communities have adapted to changing requirements by: meeting professionalization requirements, shortening the overall length of stay of individuals in their programs, incorporating less intensive levels of care into their treatment system (i.e. day treatment, outpatient treatment), better integrating systems of case management and services for clients with co-occurring disorders, and gradually involving the complete 12-step philosophy and 12-step meetings as a way of compensating for shorter lengths of stay and increased client need for aftercare. Despite these changes, the foundational elements of therapeutic communities, namely the use of the: therapeutic community perspective, treatment approach and structure, community as the therapeutic agent, educational and work activities, inclusion of formal therapeutic elements, and treatment process survive as a major influence in the treatment of drug use disorders throughout the United States (Borkman et al., 2007; Melnick, De Leon, Thomas, & Kressel, 2001; White, 2005).

Therapeutic communities, in many instances as a unified movement, have undergone effective efforts to maintain the overall design, culture, and methods of their services. Such efforts include the formation of the Therapeutic Communities of America, an organization of 69 agencies, approximately 40% of which include multiple treatment settings/levels of care, and the development of the Survey of Essential Elements Questionnaire (SEEQ; Melnick et al., 2001). The SEEQ is a measure of the degree to which a treatment provider reflects the

treatment philosophies and elements of a therapeutic community. The SEEQ, congruent with modern therapeutic communities, defines a provider as a therapeutic community based on the degree to which it includes each of the previously described foundational elements of therapeutic communities (Melnick et al., 2001).

Appendix B: Development of and Rationale of the Matching Hypothesis

Costs of Treatment

An initial motivating factor in the shift away from traditional patterns of placing all clients in high intensity residential or inpatient programs occurred as the payment system of SUD treatment was converted from indemnity to managed care financing. This change led to a focused call by payees to find ways of treating clients that could continue to maximize client outcomes while avoiding the expenditure of any unnecessary resources on SUD treatment (Gastfriend & McLellan, 1997). While traditional, high intensity, treatments for SUD involved months to years of inpatient or residential care; drastic changes, interruptions, and inconveniences to the client's life; and large treatment expenses (i.e. food, housing, supervision), providers became increasingly aware that less-intense treatments cost considerably less and caused far less inconvenience, burden, or disruption in the client's life. Lower intensity treatments, including outpatient and day treatment options, also offered financial incentives for client and provider as they generally cost only 40 – 60% as much, required considerably less time, and offered a smaller disruption to the client's life than did more intensive treatments (Alterman, O'Brien, McLellan et al., 1994; Annis, 1986).

These findings provided financial and practical incentive for providers and researchers to examine the efficacy and logic of placing all individuals with SUD in the most intense settings and forms of treatment (i.e. residential, medically monitored inpatient). Cost studies of SUD treatment motivated payees to push for an increasing amount of efficiency in client care, as it was no longer sufficient for providers to demonstrate client outcomes, the question posed to SUD treatment providers by payees was how to both maximize client outcomes while minimizing overall cost. The conversion of the payment system of treatment for SUD from indemnity to managed care financing called for a greater efficiency in placing

clients in the least expensive treatment setting capable of meeting a client's SUD treatment needs (Gastfriend & McLellan, 1997). This goal is a core construct of CTM and has changed relatively little over time, as the many strategies, models, and theories behind CTM have consistently tried "to prescribe treatment that will engage and retain the client, be efficacious, and make the best use of available resources" (Mattson, 2003 p. 98).

Absence of Absolute Outcome Differences Between Treatment Settings

Stemming in part from the question of how to provide maximal SUD treatment outcomes at a minimal cost, and a contributing factor in the cessation of assigning all clients to high intensity treatment settings, was the general finding that high intensity treatments (i.e. inpatient, residential) have no consistent, absolute benefits when compared to less intensive treatment options among samples of unmatched or randomly assigned clients. Essentially, although all treatments appeared to improve SUD problems, no one treatment appeared best for all clients (Annis, 1986; Guydish, Werdegar, Sorensen, Clark, & Acampora, 1998; Longabaugh, Wirtz, DiClemente, & Litt, 1994; Mattson & Allen, 1991; Miller & Hester, 1986; Rychtarik et al., 2000). Early strong evidence against the traditional assumption that placing all clients in high intensity residential or inpatient settings was aggregated and summarized in a pair of literature reviews by Annis (1986) and Miller and Hester (1986).

These reviews, although surveying slightly different bodies of literature, reached similar conclusions that high intensity treatments, such as inpatient and residential programs, have no absolute benefits when compared to less intensive treatments (i.e. outpatient, day treatment, partial hospitalization). Although both reviews concluded that inpatient treatment does not inherently produce better client outcomes than day or outpatient treatments, the findings of Miller and Hester (1986) are slightly more persuasive because their review included a more thorough sampling of the extent of literature at the time. Miller and Hester (1986) incorporated all but one of the articles that Annis (1986) reviewed, while also

including an extra twelve controlled, randomized studies comparing inpatient and other less intensive levels of care. The only study reviewed by Annis (1986) not discussed by Miller and Hester (1986) was a study by Wanberg, Horn, and Fairchild (1970). This study's findings stated that "preliminary results at three months only slightly favored the inpatient group" (Annis, 1986, p. 181), which indicated a slight, yet present, absolute advantage to the inpatient treatment. However, the results of this study must be taken with caution, as clients were randomly assigned to either a traditional inpatient program or a generic "community treatment" which occurred in 2 – 3 sessions implemented by a "community worker." No mention is made of any formal outpatient SUD treatment, and no description of either the community treatment or community worker is offered, so it cannot be assumed that the community treatment serves as an appropriate proxy for other less intensive treatment options. These flaws restrict the opportunity to generalize the results of the study to other treatment options or to compare the results of the study by Wanberg and colleagues (1970) to other research comparing higher and lower intensity treatment options, which may explain why the study was not included in the review by Miller and Hester (1986).

In their review of the literature, Miller and Hester (1986) found that among research comparing the main effects of inpatient, outpatient, day treatment, and intensive outpatient levels of care, no studies found that residential or inpatient care was superior to less expensive/intensive treatment settings. Furthermore, many of the studies reviewed found statistically significant results demonstrating greater benefits in less intensive treatment options among randomized samples. Some of these benefits included better self-concept, general adjustment, and reduction in symptoms of alcohol addiction at 5-month follow-up (Wilson, White, & Lange, 1978) and fewer days of hospitalization or general hospital utilization in the period following treatment among outpatient and day treatment groups compared with inpatient treatment subjects (Edwards & Guthrie, 1966; Edwards & Guthrie,

1967; McLachlan & Stein, 1982). Despite many individual methodological flaws across studies within the body of research cited, including: violations of randomization, questionable or unidentified definitions of treatment success, and inadequate inclusion or description of statistical analyses, Miller and Hester (1986), with Annis (1986) and other authors of the era, found strong evidence to contradict then widely held assumptions within the SUD treatment community that all clients would be best served by default referrals to high intensity (i.e. inpatient or residential) programs.

Although the frequency of studies comparing of the absolute effectiveness of different levels of care among unmatched or randomized samples has tapered, recent years have seen further support for the general notion that inpatient or residential treatments do not offer absolute advantages among randomly assigned or unmatched client groups. Guydish and colleagues (1998) randomly assigned patients to either a traditional residential therapeutic community or a day treatment program and found that although clients in both day and residential treatment programs showed improvement throughout treatment, no statistically significant differences existed between programs' outcomes related to alcohol, drug, medical, employment, or legal problems, depression or social support. In this study however, residential clients did show statistically significant improvements in social problems and on a global measure of psychiatric well-being, which were not demonstrated among day treatment clients. Findings of the lack of absolute differences between high intensity and lower intensity treatments among unmatched or randomized groups of clients have also been supported by other researchers comparing: cocaine and alcohol patients in day versus inpatient treatment at seven months post-treatment (Alterman, O'Brien, & Droba, 1993; Alterman et al., 1994), day versus inpatient clients at a community hospital at 18-months post-treatment (Bachman, Batten, Minkoff, Higgins, Manzik, & Mahoney, 1992),

and among primary drinking outcomes in outpatient, intensive outpatient, and inpatient alcohol treatment programs (Rychtarik et al., 2000).

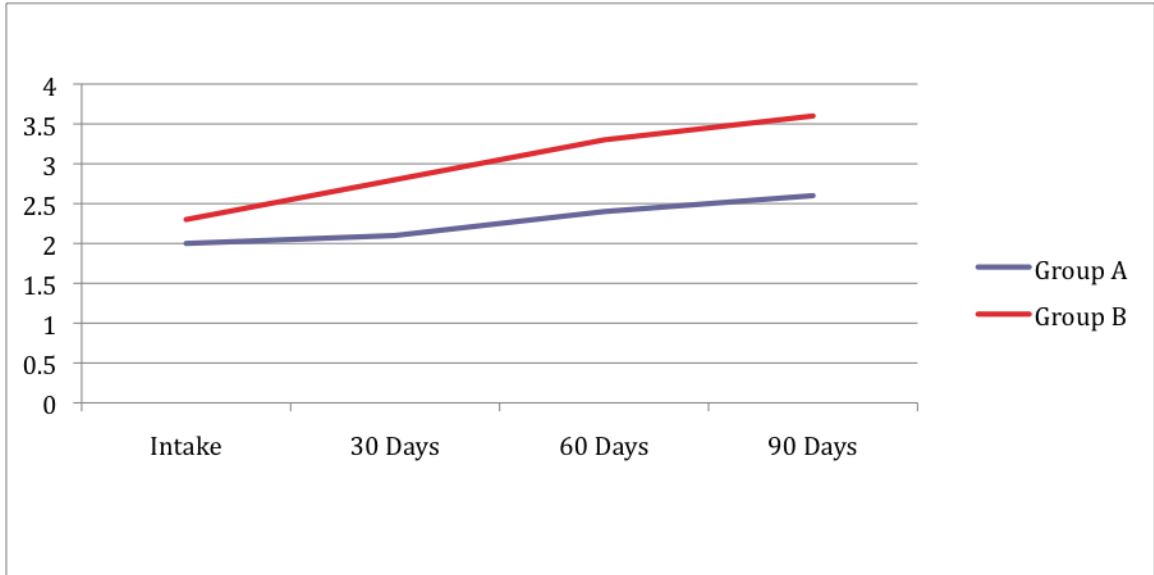
Development of the “Matching Hypothesis”

The conclusions that “outpatient treatment of heterogenous groups... produces an essentially equivalent outcome to inpatient treatment” and that “It can no longer be assumed that intensity ... of treatment programming will produce better outcome” (Annis, 1986, p. 182) helped lay the foundation for a shift away from traditional practices of uniformly placing patients in high intensity programs toward individualized treatment based on specific client characteristics and identifiable needs. Previously discussed evidence demonstrating the relatively equal efficacy of lower intensity treatment options when compared to high intensity inpatient or residential programs among randomized or unmatched clients demonstrated a need for further investigation into which clients would most benefit from referral to each type of treatment. Also supporting the need for further investigation into how to maximize clients’ treatment outcomes was evidence that that 1) no single treatment was shown to be optimal for all persons with SUD problems, 2) each treatment showed promise among different clients with different presenting problems, and 3) many providers, payees, and policy makers began to perceive that SUD treatment as a field could improve services by working as a continuum of care as well as by reaching a better understanding of how to most efficiently match clients within that continuum to the treatment best suited to address each person’s needs (Annis, 1985; Mattson & Allen, 1991).

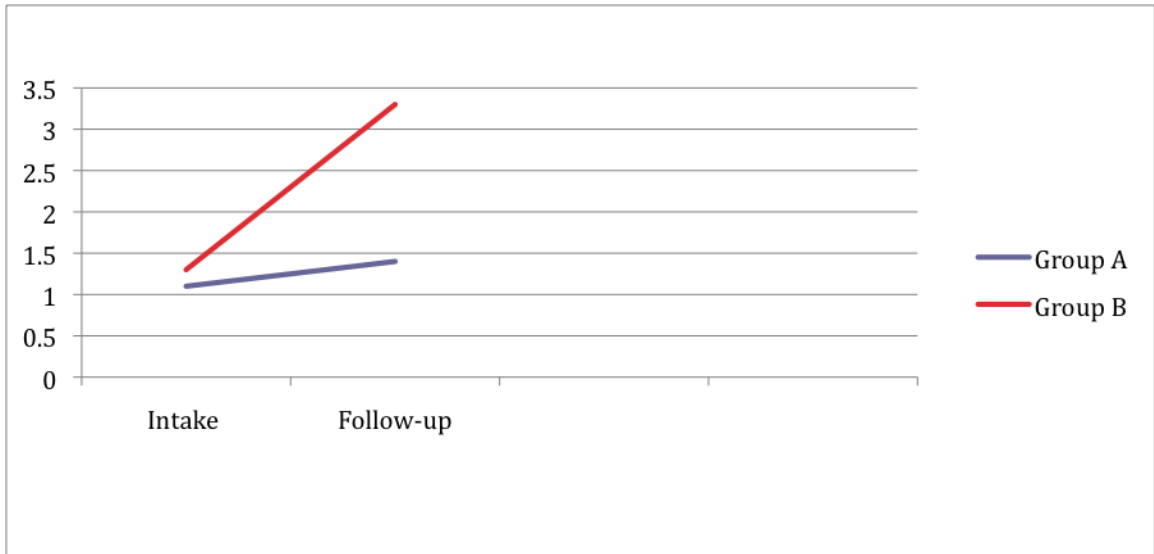
These findings facilitated a growing curiosity in the “matching hypothesis” (Annis, 1986, p. 184). Matching, defined by Glaser and Skinner (1981), is “...the deliberate and consistent attempt to select a specific candidate for a specific method of intervention, in order to achieve specific goals” (p. 302). Mattson and Allen (1991) further expanded this definition of CTM by stating that CTM “deals with prescribing treatment on the basis of individual

patient needs, as opposed to treating all patients with a common diagnosis the same” (p. 34). Furthermore these authors reported a fundamental idea behind CTM to be that although differences across treatments may not be apparent when examining a heterogeneous population, clinically significant differences are likely to exist across subgroups of patients.

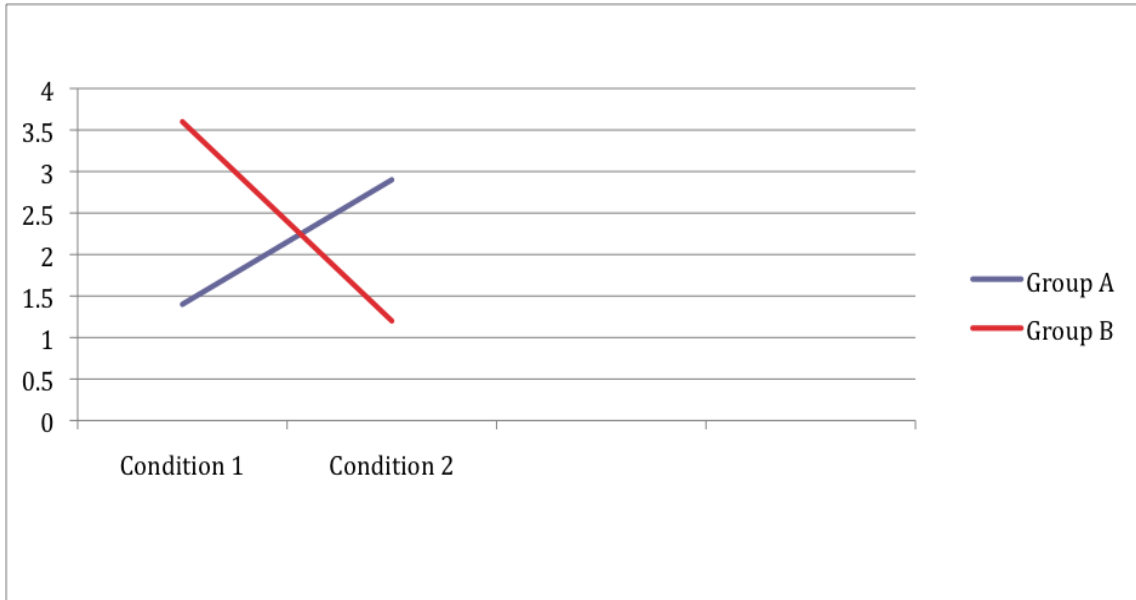
Appendix C: Ordinal Client-Treatment Matching Effect 1



Appendix D: Ordinal Client-Treatment Matching Effect 2



Appendix E: Disordinal Client Treatment Matching Effect



Appendix F: Revisions of the ASAM-PPC

Since its initial publication, the ASAM-PPC has received two revisions: a second edition (ASAM-PPC-2; American Society of Addiction Medicine, 1996) and a second edition-revised (ASAM-PPC-2R; American Society of Addiction Medicine, 2001). The ASAM-PPC-2 expanded on the first edition by increasing the overall number of levels of care included, including criteria for methadone treatment, and unbundling pharmacotherapies (i.e. detoxification) from their previous status as part of an inpatient placement to create five discrete levels of detoxification. The new detoxification levels included: 1 & 2) two levels of ambulatory detoxification, 3) social detoxification, 4) medically monitored detoxification, and 5) medically managed detoxification. Also in the ASAM-PPC-2 was the addition of multilevel steps within each level of care. For example, Level II (i.e. ASAM-PPC's intensive outpatient level of care) now included criteria to differentiate between discrete levels of treatment intensity within the level of care: day treatment programs (Level II.1) and partial hospitalization programs (Level II.5). Similar steps were included for Level III (ASAM-PPC's residential inpatient), as it now included specific criteria for placement in clinically managed, low intensity residential treatments such as halfway houses (Level II.1) and clinically managed, high-intensity residential treatments such as participation in a therapeutic community or 28-day residential program (Level III.5), amongst other discrete steps. These and other changes made within the ASAM PPC-2 maintained the fundamental theory, methods, and ideals of the first edition ASAM-PPC while expanding and adding further specificity to the overall linear patient-placement capacity of the tool (American Society of Addiction Medicine, 1996; Mee-Lee & Gastfriend, 2008).

The second revision of the ASAM-PPC, the ASAM-PPC-2R, offered further changes to and expansions upon the earlier versions. Two important changes in the ASAM-PPC-2R relate directly to the design and content of the patient placement criteria itself, particularly

redefinitions of the various levels of care and the six problem dimensions. The levels of care were redefined to include five levels (an expansion from the original four): Level 0.5, Early Intervention; Level 1, Outpatient Treatment; Level II, Intensive Outpatient/Partial Hospitalization; Level III, Residential/Medically Monitored Inpatient Treatment; and Level IV, Medically Managed Intensive Inpatient Treatment. An important addition to the ASAM-PPC-2R is Level 0.5, Early Intervention, which includes DUI or DWI programs, as well as other interventions emphasizing education and exploration of how ongoing substance use affects the individual's goals. The ASAM-PPC-2R also builds upon changes made to the levels of care in the ASAM-PPC-2 by offering precise assignments to programs with differential steps of intensity within each of the five levels of care. Such distinctions, similar to in the ASAM-PPC-2, are made by assigning decimal numbers ranging from .1 to .9 to criteria for placement within a specific level of care (i.e. II.1 is intensive outpatient, II.5 is partial hospitalization, III.7 is medically monitored inpatient treatment) (American Society of Addiction Medicine, 2001).

Along with expansions to the levels of care, the ASAM-PPC-2R also provides expansion and greater specificity to the six problem dimensions. Expansions to the six problem dimension criteria include: improved placement criteria and options for detoxification programs within dimension one; inclusion of cognitive conditions and complications to dimension three; redefinition of dimension four include the stages of change model, moving beyond concepts of denial and resistance; redefinition of dimension five to include mental health problems in the conceptualization of ongoing problems in need of care; and improved assessment considerations, including specific questions to ask, within each of the problem dimensions. No changes were made to dimension 2, biomedical conditions and complications, and dimension 6, recovery/living environment (American Society of Addiction Medicine, 2001).

Other changes to the ASAM-PPC-2R were slightly more divergent from previous editions than were the changes made to the levels of care and six problem dimensions. One important change was the removal of discharge criteria from each level, as the ASAM-PPC-2R included only placement criteria for entrance into each of the five levels of care (and detoxification). This change was made to better reflect the emerging conceptualization of SUD treatment as a continuum of care, in which few limits are preset to treatment (i.e. discharge criteria). Rather, the ASAM-PPC-2R advocates that clients should be discharged to a different level of care when they have either 1) completed the goals for the current level of care and now qualify for treatment at a lower level of care or 2) experienced an intensification of problems or have failed to improve at a less intensive level of care, indicating that referral to a more intensive level of care is appropriate. A second divergent change from previous editions in the ASAM-PPC-2R is the integration of specific criteria for the treatment of co-occurring disorders within each level of care (American Society of Addiction Medicine, 2001).

The ASAM-PPC-2R also offers criteria by which service providers can be classified as either Dual Diagnosis Capable, Dual Diagnosis Enhanced, or Addiction-Only. Dual Diagnosis Capable programs adequately serve clients whose mental health conditions are stable and who are capable of independent functioning. Dual Diagnosis Enhanced programs serve clients who have more severe, acute, or immediate mental health symptomatology with functional impairment. Dual Diagnosis Enhanced programs have resources to provide specific psychiatric and mental health support, with appropriate monitoring and accommodation to clients for whom such services are appropriate. Addiction-Only programs lack the necessary staff, interventions, and other resources to adequately serve clients with psychiatric illnesses in need of ongoing treatment; such programs are conceived as appropriate for clients with only substance use problems. By differentiating SUD treatment

providers based on their capacity to treat clients with co-occurring disorders, the ASAM-PPC-2R is reflective of a growing awareness, particularly within the study of CTM, that accommodation and treatment for co-occurring disorders is a critical component in the success of many clients' SUD treatment. This current system is only a first step though, as it does relatively little to actually regulate the quality, type, and scope of services given to clients with co-occurring disorders. The emphasis of this component of the PPC is on the presence of staff competent to provide services, the quantity (e.g. intensity) of services offered, and the degree to which mental health care is integrated into addiction services (American Society of Addiction Medicine, 2001).

A third notable area of divergence between the ASAM-PPC-2R and earlier versions of the ASAM-PPC is the inclusion of a preliminary "future directions matrix." The goal of this matrix, although in relatively early stages, is to advance CTM in a more holistic, multidimensional, manner. In practice, the future directions matrix offers early insight regarding possible ways to expand the ASAM-PPC-2R beyond its current linear format of CTM and move the ASAM series of PPC toward the integration of treatment modalities and services into the overarching level of care model (American Society of Addiction Medicine, 2001). This future directions matrix, along with the inclusion of criteria to differentiate between providers within a level of care based on their capacity to treat clients with co-occurring disorders, represents a slight move toward the inclusion of client treatment service matching within the overall client treatment placement matching framework of the ASAM series of PPC.

Appendix G: Psychometric Properties of the ASAM-PPC

Because the ASAM and other PPC were developed primarily for clinical use, an important aspect of investigating the tool is establishing whether or not it can be efficiently used and practically implemented in field use. Even if all other aspects of the ASAM-PPC were demonstrated to be valid, reliable, and otherwise sound, if the PPC is not feasible to use or implement in actual clinical practice, the tool cannot be considered a success. An initial study of the feasibility of using the ASAM-PPC in a clinical setting was carried out by Kosanke, Magura, Staines, Foote, and DeLuca (2002). Kosanke and colleagues (2002) monitored subjects' ASAM-PPC generated placement recommendations as well as clients' actual treatment placement in "real world" treatment settings. ASAM-PPC placement recommendations were generated as subjects entered SUD treatment (N=281) into one of three levels of care: outpatient treatment, consisting of 3 hours of treatment per week; intensive outpatient, consisting of 3.5 hours of treatment per day, five days per week; and residential rehabilitation, with a maximum length of stay of up to 28 days. Level of care was recommended independent of available slots in treatment, client choice, and other factors. Recommendations made were based on information gathered from the Structured Clinical Interview for the DSM-IV, client participation in a detoxification program, and interviews conducted as part of the regular intake to treatment. Clients, referred to each level of care, were tracked based on their eventual participation in a treatment program. Clients were identified as matched if placed in the recommended level of care, undertreated if the recommended level of care was more intensive than the actual treatment in which the client was placed, and overtreated if the recommended level of care was less intense than the actual treatment into which the client was placed.

Kosanke and colleagues (2002) monitored, recorded, and analyzed the reasons clients were placed in overtreatment or undertreatment conditions, as well as conducting other

quantitative analyses of client placement. Results showed that of 281 clients initially enrolled in the study, 88% (248) were successfully placed in 1 of the three treatment conditions. Of participants successfully engaged in treatment, 72% (N=179) were correctly matched to the recommended level of care, 12% (N=29) were undertreated, and 16% (N=40) were overtreated. Notably, almost all clients (90%) in the overtreatment condition were placed in residential treatment, while the ASAM-PPC recommended intensive outpatient. Among reasons given for overtreatment were: availability of insurance (i.e. Medicaid) to pay for a higher than needed level of care, assumptions by detoxification providers that clients would “step down” from detoxification directly to residential or inpatient treatment, social pressure for the patient to engage in the most intensive treatment possible, and mandates from external bodies (i.e. employee assistance programs) that clients attend inpatient treatment. The majority of clients receiving undertreatment (90%) were placed in regular outpatient programs when intensive outpatient care was recommended by the ASAM-PPC. The most frequently cited reasons for undertreatment were: work schedule conflicts precluding participation in more intensive levels of care, reluctance to commit the time and resources necessary to engage in a higher intensity treatment, lack of insurance to pay for the recommended treatment program, and concerns of how engagement in higher intensity treatment settings would interfere with family or personal responsibilities.

The authors cited evidence of the many client and provider/payee system variables that continue to interfere with clients engaging in the recommended level of care as demonstrating that fully implementing ASAM-PPC level of care placement recommendations with all clients may be neither feasible nor realistic, despite being largely feasible for many clients in most situations. The authors acknowledged that specific groups (i.e. homeless, prison inmates) might have had particularly great problems receiving the recommended level of care for SUD treatment. However, the authors noted that overall,

strong evidence for the feasibility of implementation of the ASAM-PPC among clients entering into treatment does exist, particularly as many subjects across both over and undertreatment conditions had the option of entering into the recommended level of care (i.e. placements were feasible); these subjects simply *chose* alternate placements based on personal or other situational factors (Kosanke et al., 2002).

According to Turner and colleagues (1999), any validity research of the ASAM, or any other assessment system, is incomplete without first establishing evidence of the tool's feasibility and reliability of use. Although the results of Kosanke and colleagues (2002) indicate that placements to the continuum of care described within the ASAM-PPC is possible, Turner and colleagues (1999) concluded based upon a review of the literature that it may be impractical or implausible for even experienced clinicians to consistently and accurately implement the varied and complex rules of the ASAM-PPC. Such concerns receive at least some enhanced degree of credibility based upon the results of Staines et al. (2003), who found in a naturalistic study of the ASAM-PPC that the placement recommendations of clinicians frequently differed from the placement recommendations of an automated tool based on decision tree created from a thorough evaluation of the ASAM-PPC. However, in this study many of the clinician versus automated tool recommendation differences were related at least in part to a choice by the clinicians to ignore or alter ASAM-PPC placement rules, not an inability to understand or implement the placement guidelines.

To enable the study of the feasibility and reliability of the ASAM-PPC under more ideal circumstances Turner and colleagues (1999) developed an automated version of the ASAM-PPC to produce algorithm-generated level of care recommendations. The development of this tool was made possible initially by the completion of a decision analysis of the initial version of the ASAM-PPC (American Society of Addiction Medicine, 1991) to determine the overall number of underlying decisions contributing to a final level of care

recommendation. All complex or compound decision points (i.e. multiple underlying conditions contributing to fulfillment or exclusion) were also subdivided into the smallest logical decision components. Each decision rule was then converted into a simplified item “that could yield an affirmative or negative answer for each decision point, in essence reducing each item to a binary logic problem” (p. 37). In all, 266 discrete decisional points were identified and organized into an automated decision tree/algorithm that upon completion yielded a level of care placement recommendation. Each of the decisional points was then paired with question items from existing SUD evaluation tools. Of the total body of items used to generate a placement recommendation, 28% were matched to the Addiction Severity Index, 36% to the Recovery Attitude and Treatment Evaluator, 9% to the Clinical Institute Withdrawal/Narcotics Assessment, and 27% to information from the client’s history and physical exam. By this process, information derived from a specific and relatively small number of evaluative tools yielded an automated, concrete, patient placement recommendation.

The authors then collected data and made algorithm-generated (i.e. automated) placement recommendations for 593 adults entering SUD treatment for the purpose of examining both the feasibility and discriminative ability of such an automated tool. The authors concluded that the entire administration time for the automated placement protocol process was approximately two hours, including informed consent, information releases, and self-report questionnaires, while the actual computerized (i.e. automated) patient placement assessment was completed and capable of generating a level of care recommendation in an average of 58 minutes (S.D. 23 minutes). The authors concluded that the ASAM-PPC criteria could be successfully automated, standardized, and could effectively discern patients’ level of care needs based upon ASAM-PPC criteria, effectively making implementation of an automated and standardized version of the ASAM-PPC feasible (Turner et al., 1999). Baker

and Gastfriend (2003) also used the automated version of the ASAM-PPC to investigate the reliability of the ASAM-PPC. Similarly, Staines and colleagues (2003) and Magura and colleagues (2003) used this automated version to inspect the convergent validity of algorithm- versus clinician-generated placement recommendations and the predictive validity of the ASAM-PPC.

Baker and Gastfriend's (2003) examination of the inter-rater reliability of the ASAM-PPC, compared with evaluations of the automated version of the ASAM-PPC, was conducted based upon clinicians' analyses of videotapes from the intake assessments of eight clients entering into SUD treatment. Each of the four rating clinicians viewed tapes of the intake assessment protocol, including administrations of the: Addiction Severity Index, Recovery Attitude and Treatment Evaluator – Clinical Evaluation, Clinical Institute Withdrawal Assessment – Alcohol/ Revised, Clinical Institute Narcotic Assessment, Hamilton Depression Rating Scale, and Mini-Mental Status Exam. Rating clinicians were blind to the level of care that the patients qualified for based on the automated version of the ASAM-PPC when they made their dimensional problem severity ratings and level of care recommendations. Based on the automated administration of the ASAM-PPC for the eight clients, two qualified for Level IV – medically managed inpatient, four qualified for Level III – residential rehabilitation, and two qualified for Level II – intensive outpatient/partial hospitalization. Upon observing taped administrations of the intake assessment protocol, rating clinicians gave scores for each of the assessment tools, ASAM-PPC problems severity dimensions, and for the ASAM-PPC recommended level of care.

According to Baker and Gastfriend (2003), inter-rater reliability was high overall, for clinician ratings of both the feeder instruments in the assessment protocol and for the overall level of care placement recommendation. The intraclass correlation coefficient for level of care recommendation across raters was .77, and all but two of the subscales for the

instruments included in the intake battery had statistically significant correlation values above .70. Importantly, Baker and Gastfriend (2003) sought to maximize inter-rater reliability through intense training, manualization, and certification. Clinicians who viewed tapes and served as raters in the study received intensive training for each of the assessment instruments, using the ASAM-PPC, manuals for administration and interpretation of each of the instruments and the ASAM-PPC, and completed a rigorous certification process relating to the assessment protocol and ASAM-PPC before participating in the study. The results of this study lend evidence supporting the inter-rater reliability of the ASAM-PPC, which is an important contribution to the body of research addressing the ASAM because it represents a more realistic condition for using the ASAM-PPC, as few providers or clinicians have access to the automated versions of the ASAM-PPC used in other studies.

Along with evidence that implementation of the ASAM-PPC is feasible and can be executed with reasonable reliability, either as an automated algorithm or by trained and supervised clinicians, multiple sources have commented on and demonstrated the face, convergent, and predictive validity of the ASAM-PPC. Face validity of the ASAM-PPC was acknowledged and endorsed by the Center for Substance Abuse Treatment (1995), based on the results of a comprehensive independent literature review by experts in the fields of SUD treatment and of CTM (Gastfriend & Mee-Lee, 2003). Convergent validity of the ASAM-PPC was analyzed by Staines and colleagues (2003).

Staines and colleagues (2003) assessed the convergent validity of the ASAM-PPC between the previously described automated algorithm and a standard clinician-generated recommendation based on the clinician's understandings of the clients' treatment needs. Clinician-generated placement recommendations were made based upon the same intake assessment battery and process and assessments used to generate automated placement recommendations in this and other studies. However, unlike other studies of the ASAM-PPC

in which clinician raters were used, such as that of Baker and Gastfriend (2003), clinicians in this study appeared to have been far less rigorously trained, as no mention was made of the specific training or criteria necessary for clinicians' participation in this study. Clinicians also had no knowledge of the algorithm-generated level of care recommendation when they made their placement recommendation. Upon comparing the computer- versus clinician-generated level of care recommendations, this study revealed significant areas of divergence between ASAM-PPC computer- and clinician-generated placements. The two methods of generating placement recommendations differed for 58% of subjects, with the algorithm recommending a higher level of care than the clinician in 81% of divergent cases.

The majority of differing recommendations (97%) were associated with one or more of three trends. The first trend was associated with intentional clinician departures from ASAM-PPC rules, which shows a conflict not with the algorithm itself but rather with the ASAM-PPC as a whole. The two most commonly violated rules in making level of care recommendations were: 1) requiring problem severity scores of III on at least two dimensions before making a referral to residential care, perceived by clinicians as too conservative and 2) allowing a problem severity score of II on any dimension to cause recommendation to intensive outpatient, while many clinicians felt such clients could be successful at the outpatient level of care. A second major source of divergence between the algorithm and clinicians was the restrictiveness of the algorithm's level of care recommendations, as in many situations the endorsement of a single item on the algorithm's decision tree triggered referral to a higher level of care. Some dimensions, particularly dimension 2 (biomedical problems) and dimension 3 (emotional/behavioral complications), contained many specific items that when endorsed, triggered referral to high intensity levels of care regardless of other elements of the patient's profile. Clinicians were less likely to allow a single characteristic determine a placement recommendation. A third trend, linked with poor convergence

between clinician recommendations and the algorithm, was a high degree of overlap between dimension 5 (relapse potential) and dimension 6 (recovery environment). Much of this overlap was associated with a high reliance on a specific subsection of the Recovery Attitude and Treatment Evaluator (RAATE) in generating the overall scores for both dimensions in the algorithm (Staines et al., 2003).

Although the study by Staines et al. (2003) showed relatively poor convergence between clinician recommendations and computer-generated recommendations from an algorithm based on the ASAM-PPC, it is important to note that no measures of convergence with other PPC were reported, and the degree to which the clinicians were trained to interpret data from the assessment/intake interview and apply the data to the ASAM-PPC was unclear. Previous research has found that a large degree of reliability both across raters and between raters and an algorithm-generated placement recommendation is possible under optimal circumstances with well-trained clinicians (Baker & Gastfriend, 2003).

Although this study showed poor convergence between computer- and clinician-generated ASAM-PPC level of care placements, a study of treatment outcomes across the same pool of subjects (N=248) by Magura and colleagues (2003) supported the overall predictive validity of the ASAM-PPC. These authors found that across both computer- and clinician generated ASAM-PPC placement recommendations, clients who were either correctly matched or overtreated had outcomes showing a statistically significant advantage over clients receiving undertreatment. Differences for algorithm generated-recommendations showed mean days of alcohol use were 3.4 for overtreated, 2.7 for correctly matched, and 6.4 for undertreated ($p < .01$); respective means for clinician-generated recommendations were 1.7 for overtreatment, 4.1 for matched, and 10.3 for undertreated ($p < .001$). One specific type of undertreatment, namely receiving outpatient treatment when intensive outpatient treatment was recommended, predicted particularly poor alcohol use outcomes when

compared with matched treatment. Contrarily, patients in one undertreatment condition, those who received recommendations for inpatient treatment by the algorithm but placed in intensive outpatient care, had no significant differences in their outcomes than did correctly matched patients. These findings, when interpreted alongside the findings of Staines et al. (2003), although supportive of the general predictive validity of ASAM-PPC to improve treatment outcomes among correctly matched clients and reduce the number of overtreated clients, appear to indicate that the ASAM-PPC, similar to earlier PPC (e.g. Cleveland Criteria), may still facilitate recommendations to residential treatment when less intensive treatments would suffice.

Congruent with the findings of Magura et al. (2003) demonstrating the predictive validity of the ASAM-PPC is a study by Sharon and colleagues (2003). This study utilized a computer-generated algorithm of the ASAM-PPC to make treatment recommendations for adult U.S. veterans (N=95) who had been naturalistically assigned by counselors into a SUD residential rehabilitation program. Among subjects, the ASAM-PPC predicted that 47% were correctly matched to residential treatment, 28% were overtreated and needed a less intensive treatment, and 25% were undertreated in their current treatment setting. Subjects were monitored for hospital and SUD treatment service utilization in the year post-treatment. Authors compared bed-days of hospital utilization both before and after treatment, and found that: 1) no significant differences existed between correctly matched and overtreated clients, consistent with general CTM theory, 2) both correctly matched and overtreated clients demonstrated a trend of less hospital utilization in the year following treatment, although these results were not statistically significant ($p = .19$), and 3) undertreated clients used significantly and substantially more bed-days of care post-treatment than either before treatment or than correctly matched or overtreated groups post treatment.

Sharon et al.'s (2003) results demonstrated favorable predictive validity of the ASAM-PPC in showing that mismatching to undertreatment conditions may result in excess hospital utilization, while mismatching to overtreatment does not result in more positive outcomes, simply an inefficient use of resources. Also supporting the overall validity of the ASAM-PPC is a study by Klein, di Menza, Arfken, and Schuster (2002) who examined a large administrative database of 2,471 records of clients who had engaged in SUD treatment. Authors in this study used problem severity composite scores from dimensions of the Addiction Severity Index as proxies for ASAM dimensions of relapse potential, emotional/psychiatric conditions, and recovery environment to investigate whether interaction effects could be found within client data to support the overall model of the ASAM series of PPC. Results supported favorable validity for the ASAM-PPC relapse potential dimension, as interactions were found between higher treatment intensity and greater SUD problem severity (i.e. many previous treatments, notable drug-related problems). Results offered questionable to no support for dimensions of emotional/psychiatric problem severity and recovery environment, as none of the predicted interactions were observed between variables in these domains and treatment outcomes. However, authors questioned the ability to draw meaningful conclusions from this study based concerns over whether Addiction Severity Index composite scores offered sensitive and comprehensive enough estimates in these areas to fully represent the ASAM-PPC problem dimensions. Despite concerns about the data, authors from this study reached the overall conclusion that "the present study demonstrates that combinations of treatment setting and client characteristics are associated with increased retention and completion rates" (p. 49), supporting the overall design and validity of the ASAM and other CTM tools.

Although evidence exists supporting the predictive validity of the ASAM-PPC to assign clients to the most cost-efficient level of care likely to promote client change, a study

by McKay, Cacciola, McLellan, Alterman, and Wirtz (1996) failed to identify any predictive power of the ASAM-PPC to improve client outcomes and efficiency of service from SUD treatment. McKay and colleagues (1996) studied the effects of correct matches versus treatment mismatches according to the ASAM-PPC among alcohol (N=133) and cocaine (N=159) dependent male veterans entering into SUD treatment. These authors found, among patients meeting criteria for inpatient care, “there were no significant differences between day hospital patients and inpatients on any of the substance use or psychosocial problem severity measures at any of the follow-ups” (p. 245). However, these findings should be interpreted with some restraint as the authors had relatively small samples of patients recommended by the ASAM-PPC to receive inpatient treatment (N=45 for alcohol, N=35 for cocaine), and very few of these patients were actually tested in an undertreatment condition (N=24 for alcohol, N=10 for cocaine), indicating that the study may have lacked sufficient power to find poor outcomes associated with undertreatment. Furthermore, the sample was significantly reduced due to strict exclusion criteria, as the authors included only 30% of patients initially screened for inclusion in the study. Many of these subjects were eliminated from the study based on criteria that would have been associated with higher problems severities on ASAM-PPC dimensions. Many subjects were eliminated from the sample that would have likely needed inpatient care, such as: 73 individuals due to “dementia, psychosis, or history of schizophrenia”; 43 individuals with severe medical problems; and 55 individuals who had completed recent past inpatient rehabilitation programs. By restricting many from the sample who would have likely needed inpatient care, the authors of this study reduced their overall statistical power and created a subject pool that is unlikely to fully represent the greater body of individuals in need of SUD treatment.

Appendix H: Client-Treatment Matching in other Fields

Despite criticisms of CTM theory and application within the SUD treatment field, the study and practical implementation of the matching hypothesis toward SUD treatment appears to be better developed than in the closely related field of mental health treatment. Efforts to match clients to effective treatment types, settings, and residential placements in the mental health treatment field, particularly for clients with severe mental illness (SMI), are similar to those in SUD treatment in that they are motivated by a need to cut treatment costs (Holley, Jeffers, & Hodges, 1997; Lamb & Weinberger, 2005), enhance client outcomes, and demonstrate validity through comparisons of individuals conceived to be in overtreatment, undertreatment, or correctly matched condition (Fitz, 1999; Gibbons et al., 2008). However, CTM strategies for individuals with SMI are also motivated by an ongoing movement toward de-institutionalization and clients' rights to live in the least restrictive environment (Fitz, 1999; Holley et al., 1997), which is not a factor in SUD treatment as clients generally retain greater decision making capacities and the ability to freely discontinue treatment, with the exception of individuals legally mandated to receive treatment for SUD.

Despite similarities in the motivations for and ideal functions of CTM strategies between the mental health and SUD treatment fields, stark differences exist between actual matching practices in each respective field. One primary reason for these differences is that in SUD treatment, CTM with PPC, particularly the ASAM-PPC, is the norm, is legally required of providers in most areas, and is widely accepted as having a practical advantage over clinician judgment or other methods of referring clients to treatment (American Society of Addiction Medicine, 2001). Very few providers for individuals with SMI or other mental health problems however are mandated, expected, or even recommended to use a matching instrument (Gibbons et al., 2008; Holley et al., 1997). Also, in the treatment of SMI and other mental health conditions, "there is no generally agreed upon methodology for understanding

a patient's present and future needs or for linking these to treatment options" (Holley et al., 1997, p. 754). Furthermore, among treatments for individuals with SMI, clinician generated recommendations, rather than PPC based on a rule or algorithm as in the SUD treatment field, are widely considered to be the gold standard (Fitz, 1999; Gibbons et al., 2008), and any CTM tools serve primarily as clinical aides rather than rule to override clinical judgment or gain payee approval for services (Fitz, 1999).

Despite significant differences in the use of CTM strategies and protocols between SUD treatment providers and providers who care for individuals with SMI or other mental health problems, multiple tools have been developed to facilitate CTM for individuals with SMI, and these tools have at times demonstrated positive psychometric and functional properties. One such example is the Resident Assessment Instrument – Mental Health (RAI-MH), which assesses a broad array of life domains (e.g. medical, legal, mental state, mood, psychosis, substance use, excessive behaviors, harm to self, harm to others, distressing or disturbing behaviors, cognition, memory, activities of daily living, role functioning, social relations) to place individuals in one of five levels of care. Levels of care on the RAI-MH include low, medium, and high support community settings, long-term care, and hospital inpatient treatment. Results of the RAI-MH supported the overall validity of the instrument, as the level of care model explained 67.5% of the treatment variance, and individuals in undertreatment conditions fared significantly worse, both statistically and clinically, than did individuals who placed in the recommended treatment condition. Undertreated individuals demonstrated worse psychiatric outcomes, more emergency room visits following treatment, and greater recidivism to psychiatric care (Gibbons et al., 2008).

Other tools, such as the Missouri Level of Care instrument (Kramer, Massey, & Pokorny) and the St. Louis Inventory of Community Living Skills (Fitz, 1999), have also attempted to match clients to appropriate treatment settings, including apartments (i.e.

outpatient), boarding homes, nursing homes, and other inpatient or residential facilities, although these tools have at times failed to: 1) keep pace with calls for de-institutionalization and placement of clients in the least restrictive environment, 2) provide sufficient evidence to support their use, and 3) achieve widespread enough implementation to facilitate a sufficient research base (Fitz, 1999; Kramer et al., 1990). As a whole, hopes for CTM to reduce costs and improve client outcomes in the treatment of individuals SMI or other mental health problems have not been pursued, implemented, or successfully demonstrated to nearly the degree that CTM practices have among SUD treatment payees, providers, and researchers. Furthermore, the available CTM research and tools in the mental health treatment field have no other notable advantages over those used in SUD treatment, as they also do nothing to overcome criticisms against CTM in SUD treatment, particularly criticisms associated with intra-level of care differences across providers, the possibility for enhancement of the matching process by including service or other types of matching along with existing placement matching strategies, or poor applicability to specific populations (i.e. homeless, prison inmates).

Appendix I: Core Features of the Delphi Approach

Key Components: The Delphi technique effectively eliminates many concerns associated with more traditional group processes through the use of four key features: anonymity of respondents, iteration, controlled feedback, and the statistical aggregation of group response (Linstone & Turoff, 2002; Rowe & Wright, 1999). Anonymity among respondents is achieved by having panel members remain unaware of the identities and individual opinions of others in the group, as all communication occurs through questionnaires and is processed by a central director. In this way, no single expert participant is able to disproportionately dominate or influence the group process, and each individual is able to consider ideas on the basis of their knowledge of the merits of each idea. The iteration of questionnaires over multiple rounds also achieves a degree of equality within group processes, as with each successive round of questionnaires, participants are able to adjust their opinions and judgments without fears of losing face in the eyes of other expert group members. Changing individual judgments over time are based on each individual's expanding knowledge and evaluation of feedback from the group as a whole (Dalkey & Helmer, 1963; Rowe & Wright, 1999; Linston & Turnoff, 1975).

Controlled feedback and the statistical aggregation of group responses also play important roles in optimizing the group decision-making process. These processes give group communication utilizing the Delphi technique the flavor of a "controlled debate" (Gordon, 1994, p. 3). Feedback occurs between iterations of the questionnaire, in which group members are presented with both the statistical aggregate (e.g. mean, quartile, standard deviation) responses of their peers as well as (in later iterations) specific arguments provided by peers to support more extreme responses. By providing statistically aggregated responses, the Delphi technique ensures that all participants' responses are represented and that no individual expert's voice has an unduly large influence. Statistical aggregation also aides in

avoiding the “risky shift” associated with other group processes by pulling participant consensus toward the mean, as opposed to pushing expert participants toward a more extreme response than the mean of individual responses (Clayton, 1997; Rowe & Wright, 1999).

Selection of Expertise: An additional core component of the Delphi approach is the expert nature of the panel. While other types of research often strive for subjects to be representative of the greater population, Delphi studies rely on the use of non-representative experts who are more knowledgeable about a topic than those in the general population (Gordon, 1994). Past research into the Delphi process has shown that expert Delphi panels tend to become more accurate in predicting and evaluating across rounds of questionnaire and feedback, while non-expert panels do not show increases in accuracy over rounds (Rowe & Wright, 1999). Three kinds of panelists are recommended for inclusion: stakeholders, those who are or will be directly impacted; experts, who have applicable specialty skills, knowledge, ideas, and insights; and facilitators, who clarify, organize, synthesize, and stimulate information in a particular area (Jonassen et al., 1999; Linstone & Turoff, 2002). Panels, depending on the subject area investigated by the Delphi, can include a diverse array of individuals, including atomic physicists, teachers, community residents, or any other individual who would have key knowledge about or insight into a topic or process (Jonassen et al., 1999).

Experts are usually identified through literature searches for prominent authors in the area, recommendations from institutions or other experts, or membership in a specific group seen as holding key information or insight (e.g. community residents, professional organizations) (Clayton, 1997; Gordon, 1994; Linstone & Turnoff, 2002). Furthermore, because the nature of Delphi is to aid in understanding or decision-making, it is also recommended that those who will eventually act upon the results of the Delphi are engaged throughout the process. Individuals can be engaged as participants/panel members, study

directors, supporters, or simply through ongoing contact with and commitment to attend to the results of the Delphi inquiry. Additionally, in most situations potential participants should be contacted individually and personally by the Delphi director or others working on the study. The individualized nature of contact is crucial to pay appropriate respect to the expert role of desired panel members, maintain anonymity of participants, and increase the likelihood of participation, as in many instances the selection process (e.g. being recognized as an expert or field leader) can be sufficiently motivating to facilitate participation (Clayton, 1997).

It is also widely recommended that expert panels include individuals who can speak to each core component of an issue, as many issues are broad and multidisciplinary in nature. An example of how the expert group within a Delphi study is often interdisciplinary in nature is the Michigan Sea Grant Delphi (Linstone & Turoff, 2002). This Delphi study sought to coordinate, refine, and convey the judgments of the Michigan Sea Grant Program, a program through the University of Michigan that included “over 120 research and faculty personnel from practically every major school or college in the university.” The related Delphi study, along with incorporating university faculty and other scientists, also included community representatives and concerned citizens in the fields of: civics, business, community planning, politics, natural resources, government, and education. Similarly, the National Drug Abuse Policy Delphi included both experts from the field of drug abuse and those directly impacted by national drug use trends (e.g. police chiefs). The National Drug Abuse Policy Delphi’s final respondent group included notable researchers, treatment administrators, law-enforcement officials, and policymakers. Such interdisciplinary cooperation is often paramount in attempting to understand and effectively reach conclusions about complex social systems and issues (Jonassen et al., 1999; Linstone & Turoff, 2002).

The size of most Delphi panels is approximately 15 – 35 individuals (Gordon, 1994), with as few as 10 – 15 expert participants being accepted as minimally sufficient in many instances (Jonassen et al., 1999). However, as the complexity and multidisciplinary nature of the topic covered within the Delphi increases, sample sizes vary. Among heterogeneous populations, a minimum of 5 people is generally seen as appropriate represent any single pool of expert participants (e.g. lawyers, teachers, scientists, administrators, government officials) (Clayton, 1997). Despite relatively small minimal sample sizes, many Delphi panels include 100+ participants (Burkard, Cole, Ott, & Stoflet, 2005; Jonassen et al., 1999).

Delphi Process

Following assembly of the expert panel, the Delphi approach contains multiple, discrete, phases. Although much flexibility exists within Delphi studies regarding the particular details of each phase, based on the needs, goals, and logistics of each respective project, the phases follow a similar general progression. In preparatory work, along with assembling the panel of experts, initial, typically open-ended, questions are developed and an initial stimulus (e.g. information primer, case vignette, scenario) is selected. In Phase One, the open-ended question(s) are posed to the expert panel; the initial questions are generally submitted along with the concrete stimulus to reduce the abstraction and minimize divergence of interpretation within the expert panel. Once panel members return their responses, the results of Phase One are summarized, tabulated, and listed as generic statements. These generic statements are then further screened to eliminate duplicate statements and provide a combined list of all statements (Lombardo, 2007); the final list of generic statements is used to develop a second questionnaire in which panel members rate the responses to Phase One on an appropriate, typically Likert-type, scale (e.g. agree/disagree, level of importance, probability of success/accuracy) (Clayton, 1997; Gordon, 1994; Jonassen et al., 1999; Linstone & Turoff, 2002).

In Phase Two, the results of Phase One are presented back to panel members in the form of the previously described, second, questionnaire. Experts then rate each item along the appropriate/given scale and return their results to the study director. The responses to each questionnaire item are then summarized and given a measure of central tendency (e.g. mean, median, interquartile range, standard deviation). Questionnaires are then resubmitted to each participant along with the aggregated responses from the last administration, and participants are asked to reconsider their answers to each item in light of the group's composite response and revise their answers if they so desire. If panel member's new responses lie outside of the central tendency (e.g. top or bottom quartile, +/- 1.5 standard deviations), they are asked to provide their rationale (if they choose) behind reaching a notable different answer than that of the group. The group's responses are again summarized and submitted back to the group along with the provided rationale for more extreme responses. Given the new group responses and provided rationale for more extreme responses, panel members are then asked to reconsider their answers to items on the questionnaire. This process is then repeated as necessary, with each iteration of the questionnaire being provided to panel members alongside the central tendency and rationale for more extreme responses from the previous iteration, and panel members are asked to reconsider and (if they choose) change their answer in light of the group's rationale and responses (Clayton, 1997; Gordon, 1994; Jonassen et al., 1999; Linstone & Turoff, 2002). It is generally found that variance among responses is reduced across iterations of the questionnaire (Rowe & Wright, 1999), although a point of diminishing returns, in which consensus/variance in group responses changes little, is often observed after two iterations of the questionnaire (Linstone & Turoff, 2002); the point after which diminishing returns for new iterations of the survey are noted is generally used as an indicator of the end of Phase Two.

Phase Three occurs after the process of offering new iterations of the questionnaire have ended and consists of the process of analyzing the data to highlight areas of consensus and dis-sensus among experts. In Phase Three, the director sets a criterion to define areas of consensus and dis-sensus among panel members. For example, if the questionnaire used the following Likert-type scale with the accompanying numerical values for each response: Strongly Disagree (-2), Disagree (-1), Unsure (0), Agree (+1), and Strongly Disagree (+2), the director could set cutoffs of +/- 1 to indicate areas where the panel reached strong consensus over their level of agreement for a particular item. Furthermore, the amount of variance on a particular item can be used to discern the relative strength of the agreement (i.e. larger standard deviation indicates less consensus). In Phase Three, the results are summarized and written as a final report or position paper to be distributed to both panel members and other stakeholders (e.g. management, policymakers). Discussion of strong minority opinions that persist through multiple iterations of the questionnaire/feedback process along with bi-modal distributions on items is also included in the final report (Clayton, 1997; Jonassen et al., 1999).

Assessment and Criticisms of the Delphi Method

According to Clayton (1997), the overall effectiveness and validity of the Delphi method stems from the choice of expert panel members, the clarity of questions/sampling techniques used, and the ways in which the technique is implemented. Because of both the nature and process of data collection in the Delphi approach “traditional types of reliability and validity are not easily obtained or applicable to the Delphi approach” (Fish and Busby, 1996, p. 479). Lombardo (2007) states that typical reliability estimates are not often useful because of the open-ended, qualitative, nature of initial data collected. Furthermore, test-retest reliability estimates for individual respondents are of relatively little use as a key purpose of the Delphi approach is to promote consensus (i.e. change) among opinions of

panel members across multiple iterations of the questionnaire. The respective degree of consensus reached by panel members across Phase Two processes may, however, serve as an indicator of the reliability of the Delphi study, with greater consensus serving as an indicator for greater reliability. Rowe and Wright (1999) note that by this measure of reliability, Delphi studies generally produce reliable results, as variance reduction across Phase Two iterations is typical.

Validity of Delphi studies is directly related to both the source from which data is collected (i.e. the expert panel) (Fish & Busby, 1996) as well as the accuracy of study results in making accurate predictions/recommendations (Rowe & Wright, 1999). Utilizing a matrix to outline the needed competencies and knowledge to be represented in the panel, ensuring that each area is sufficiently represented within the final panel (Gordon, 1994), and having the criteria for selection to the panel evaluated for validity by other professionals (Lombardo, 2007) are common ways by which the validity of the panel as experts can be maximized. Regarding the accuracy of results of the Delphi approach, although evidence is somewhat equivocal, results generally support that groups utilizing the Delphi approach are more accurate than single round staticized group estimates. Additionally, when expert panels are used, the accuracy of predictions made by Delphi panels increases over rounds. Furthermore, Delphi panels also tend to be more accurate than unstructured interacting group approaches (Rowe & Wright, 1999).

Common criticisms of the Delphi approach relate to the validity, accuracy, and clarity in the selection of panel experts; unclear explanations behind key panel and process decisions have often been cited as sources for criticism against Delphi studies (Lombardo, 2007). Additionally, a criticism of the Delphi approach relates to the assumption that the iterative process promotes consensus, rather than conformity, among panel members. This is of particular importance because one of the most significant benefits of the Delphi over

traditional group approaches is stated to be that the Delphi approach minimizes social pressures toward conformity, equalizes the voices of participants, and gives panel members the opportunity to coolly evaluate and re-evaluate their responses based on feedback from the group. Theoretically, if panel members are being drawn toward a central measure “for reasons other than a genuine acceptance of the rationale behind that position” than the Delphi approach is less successful in achieving its goals of minimizing pressures to conform (Rowe & Wright, 1999). Studies have examined consensus versus conformity among Delphi panel members using estimates of post-group consensus (i.e. agreement by individual panel members with: group consensus, individual final round estimates, or final round estimates of other panelists). These studies have offered inconsistent results regarding the degree of conformity versus consensus estimated, although they have uniformly demonstrated that some tendencies toward conformity remain within Delphi studies. Furthermore, past evaluations of the Delphi process have also found that individuals who report lower degrees of certainty in their responses to questionnaire items demonstrate significantly greater shifts toward the central tendency than do individuals with greater confidence, another possible indicator of conformity rather than consensus (Rowe & Wright, 1999).

Appendix J: Phase One Survey

Client-Treatment Matching Survey: Phase One

Client-treatment matching can be thought of as the attempt to prescribe treatment on the basis of individual needs, rather than treating all patients with common characteristics or diagnoses the same. Client-treatment matching aims to: 1) maximize the effectiveness of treatments by identifying those clients most likely to benefit from them, 2) optimize positive outcomes for clients by matching them to needed treatment elements, and 3) improve the efficiency of treatment systems by maximizing outcomes while minimizing costs.

The most frequent type of client-treatment matching formally used today is thought to be the match (i.e. assignment) of a client to a specific level of care (e.g. outpatient, day treatment, residential) through the use of a standardized patient placement criteria (PPC), such as the ASAM-PPC. However, treatment systems, agencies, clinicians and others have also made efforts to match clients to specific treatment modalities (e.g. Cognitive Behavioral Therapy, Motivational Interviewing), services (e.g. psychiatry/mental health, housing, medical care, education), and interventions (e.g. anger management, group therapy), amongst others. Client-treatment matching can occur based upon standardized assessment, recommendations of individual clinicians, or a broad range of other factors as treatment providers attempt to provide the most effective and appropriate client care.

The questions below will help to explore: the primary roles of client-treatment matching in current substance use disorder treatment systems, ideal states of client-treatment matching, barriers to attaining those ideal states, the implications of such barriers, and solutions to overcoming those barriers.

- A. Client-treatment matching essentially consists of efforts to get people what they need to be successful in treatment and in life. It occurs across a wide range of settings, with potentially great variety in how matching efforts are implemented, what types of matching occur, and on what information matching recommendations are based. **Please list and describe up to 10 specific ways in which client-treatment matching occurs in current substance use disorder treatment settings and systems, particularly within Milwaukee County.**
- B. Although various client-treatment matching strategies are presently in place, current practices may fall short of an ideal treatment matching system. **Please list and describe up to 10 key client-treatment matching practices found in an ideal substance use disorder treatment system.**
- C. **Please list and describe up to 10 barriers that prevent implementation of the optimal client-treatment matching practices you previously described (B).**
- D. **Please list and describe up to 10 specific negative effects that result from flaws in or shortcomings of current client-treatment matching policies or procedures, particularly those used in Milwaukee County.**

- E. **Please list and describe up to 10 solutions/strategies for overcoming barriers to improving treatment by enhancing client-treatment matching in Milwaukee County.**

Appendix K: Expert Panel Member Informed Consent

Dear Milwaukee Addiction Treatment Initiative Member,

Thank you for participation in an expert panel for this Marquette University dissertation research study aimed at increasing the understanding of current and ideal practices, barriers to improvement, and methods for overcoming such barriers related to client-treatment matching in substance use disorder treatment. You have been selected for inclusion in this expert panel based upon your ongoing efforts to improve substance use disorder treatment in Milwaukee County. Your contributions have already helped bring about significant positive service changes and made Milwaukee County a leader in efforts to integrate, streamline, and improve substance use treatment.

The results of this study will be used to help the Milwaukee Addiction Treatment Initiative and other partner organizations focus and organize system redesign efforts. Results are also expected to provide important information to the broader substance use disorder treatment field about the use of client-treatment matching practices. Your unique knowledge and insight related to the treatment of substance use disorders makes you uniquely qualified to offer an up-to-date view of current and optimal uses of client-treatment matching in substance use disorder treatment.

Your participation in this survey process is expected to consist of four iterations of a survey over 3 – 6 months; each survey iteration is expected to take 10 – 30 minutes to complete. Delphi surveys typically occur in three distinct phases. The first phase is an open-ended questionnaire in which we will ask for your ideas about how client-treatment matching is currently implemented in substance use disorder treatment, features of an optimal client-treatment matching system, barriers to attaining a more ideal system, negative effects related to flaws in the current system, and solutions for overcoming barriers to service improvement. Basic demographic information will also be collected during the first phase. After receiving responses to this first questionnaire from each participating member of the expert panel, we will consolidate all of the responses into a second follow-up survey in which we will ask you to rate items on an appropriate Likert-type scale (e.g. agree/disagree, importance, feasibility). In following iterations of this second survey, you will be presented with information about the overall responses from the expert panel and rationale for viewpoints that differ from the group consensus. You will then be asked to rate the survey items given new information about the groups' overall responses and rationale, and you will be given opportunities to present your unique rationale if your responses differ than the apparent group consensus.

Participation in this research is entirely voluntary and may be discontinued at any time without penalty. Participation involves no known risks. Data is recorded confidentially and will be used for research purposes only. Data will be presented primarily as group aggregates, although rationale for minority opinions may also be presented. Your participation in this study is confidential, and the Delphi study management team will not disclose information of your participation to other members of the expert panel or other groups or individuals. Please note that as the primary method for data collection is

electronic, your privacy may be impacted by your administrator's policies and practices if you complete this survey from your office or workplace equipment. The Office of Research Compliance at Marquette University has determined that this research meets the criteria for human subjects according to federal guidelines. If you have questions about human research participants' rights, please contact the Marquette University's Office of Research Compliance at 414-288-1479. My faculty sponsors at the Marquette University Department of Counselor Education and Counseling Psychology are Todd C. Campbell, Ph. D. and Lisa Edwards, Ph. D., and Terrence J. Young, Psy. D. Final survey results will be made available to all participants and will be presented to the Milwaukee Addiction Treatment Initiative.

Should you wish to use postal mail rather than online administration of the survey process or have any other questions or concerns associated with your participation in this study, please contact me directly.

Thank you for your participation and assistance in this needed research.

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*** *Adapted from Lombardo, 2007****

Appendix L: Phase Two Survey

Domain 1: Current Practices in Milwaukee County

Please use the following scales to rate the each statement on the degree to which you:

Agree/Disagree that the statement describes practices currently used in Milwaukee County:

7	6	5	4	3	2	1
Strongly	Moderately	Slightly	Neutral	Slightly	Moderately	Strongly
Agree	Agree	Agree		Disagree	Disagree	Disagree

Perceive the overall **impact** of each practice on treatment in Milwaukee County when this practice occurs:

7	6	5	4	3	2	1
Very	Moderately	Slightly	Neutral	Slightly	Moderately	Very
Positive	Positive	Posivie		Negative	Negative	Negative

1. A Central Intake Unit (CIU) conducts a comprehensive screen of clients, examining salient life domains and gathering data necessary for treatment referral.

IMPACT: Agree/Disagree: _____ Impact: _____

M&S Clinical Services: Agree/Disagree: _____ Impact: _____

UCC: Agree/Disagree: _____ Impact: _____

WCS: Agree/Disagree: _____ Impact: _____

2. A CIU completes a level of care assessment tool (i.e. WI-UPC, ASAM-PPC) that yeilds an optimal level of care in which the client is referred for treatment.

IMPACT: Agree/Disagree: _____ Impact: _____

M&S Clinical Services: Agree/Disagree: _____ Impact: _____

UCC: Agree/Disagree: _____ Impact: _____

WCS: Agree/Disagree: _____ Impact: _____

3. Individual providers conduct comprehensive evaluations of clients, examining salient life domains, gathering data necessary for treatment planning.

Agree/Disagree: _____ Impact: _____

4. Individual providers complete a level of care assessment tool (i.e. WI-UPC, ASAM-PPC) that yeilds an optimal level of care in which the client is referred for treatment.

Agree/Disagree: _____ Impact: _____

5. Screening for co-occurring mental health disorders occurs less frequently than it should.

Agree/Disagree: _____ Impact: _____

6. Urinalyses are utilized to monitor clients' substance use while in treatment.

Agree/Disagree: _____ Impact: _____

7. Clients select the treatment that best fits their needs from among the levels of care and providers available through their payor (e.g. Wiser Choice, private insurance).

Agree/Disagree: _____ Impact: _____

8. Clients' selection of a treatment provider is heavily influenced by word of mouth from friends, family, and others.

Agree/Disagree: _____ Impact: _____

9. Clients are referred to specific treatment programs based upon unique needs associated with their gender, culture, race, religion, and other significant aspects of their identity.

Agree/Disagree: _____ Impact: _____

10. The convenience/accessibility of a provider's location is considered when referring individuals to that provider.

Agree/Disagree: _____ Impact: _____

11. The convenience/accessibility of times a provider offers programming is considered when referring individuals to that provider.

Agree/Disagree: _____ Impact: _____

12. Clients are matched to needed services (e.g. housing, education, child care, transportation) along with traditional interventions aimed at addressing substance use.

Agree/Disagree: _____ Impact: _____

13. Clients are matched to treatment providers based upon the success rates/outcomes of providers with specific populations and problem areas.

Agree/Disagree: _____ Impact: _____

14. Clients are matched to a provider based upon that capacity to address co-occurring substance use and mental health concerns.

Agree/Disagree: _____ Impact: _____

15. Clients are referred for treatment, rather than being incarcerated, following involvement in the criminal justice system for a drug related offense.

Agree/Disagree: _____ Impact: _____

16. CIUs treat all clients the same.

IMPACT: Agree/Disagree: _____ Impact: _____

M&S Clinical Services: Agree/Disagree: _____ Impact: _____

UCC: Agree/Disagree: _____ Impact: _____

WCS: Agree/Disagree: _____ Impact: _____

17. Assessments utilized at CIUs assess important aspects of clients' identity that are relevant to treatment (e.g. gender, culture).

- IMPACT: Agree/Disagree: _____ Impact: _____
- M&S Clinical Services: Agree/Disagree: _____ Impact: _____
- UCC: Agree/Disagree: _____ Impact: _____
- WCS: Agree/Disagree: _____ Impact: _____
18. Providers request treatment extensions based upon program design, not based upon the optimal level of care/treatment needs of the client.
 Agree/Disagree: _____ Impact: _____
19. Clients are matched to individual clinicians based upon that clinician’s respective expertise, training, and therapeutic style.
 Agree/Disagree: _____ Impact: _____

Domain 2: Optimal Treatment System Practices

Please use the following scales to rate the each statement on the degree to which you:

Agree/Disagree that the statement describes practices used in an optimal treatment system:

- | | | | | | | |
|----------|------------|----------|---------|----------|------------|----------|
| 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| Strongly | Moderately | Slightly | Neutral | Slightly | Moderately | Strongly |
| Agree | Agree | Agree | | Disagree | Disagree | Disagree |

Perceive the overall **feasibility** of each practice being implemented in Milwaukee County:

- | | | | | | | |
|----------|------------|----------|---------|------------|------------|------------|
| 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| Very | Moderately | Slightly | Neutral | Slightly | Moderately | Very |
| Feasible | Feasible | Feasible | | Infeasible | Infeasible | Infeasible |

- Funding is sufficient and available for clients to receive the optimal level of care.
 Agree/Disagree: _____ Feasibility: _____
- Treatment is offered in locations that are convenient and accessible to clients.
 Agree/Disagree: _____ Feasibility: _____
- Treatment is offered at times that are convenient to clients and do not interfere with other important areas of clients’ lives (e.g. work, family).
 Agree/Disagree: _____ Feasibility: _____
- Treatment is available on demand.
 Agree/Disagree: _____ Feasibility: _____
- Staff/clinicians are highly trained, well qualified, and multiculturally competent.
 Agree/Disagree: _____ Feasibility: _____

6. All relevant individuals (e.g. service providers, system administrators) hold expertise in providing services to individuals with co-occurring substance use and mental health disorders.
 Agree/Disagree: _____ Feasibility: _____
7. Clients can fluidly move between levels of care and treatment programs as their needs change over time.
 Agree/Disagree: _____ Feasibility: _____
8. Family members are included in treatment.
 Agree/Disagree: _____ Feasibility: _____
9. Individuals responsible for facilitating client referral to providers within a level of care understand treatment differences, strengths, and weaknesses across providers.
 Agree/Disagree: _____ Feasibility: _____
10. Clients select a treatment provider based upon a full understanding of treatment and service offerings by that provider.
 Agree/Disagree: _____ Feasibility: _____
11. Treatment recommendations and treatment interventions are tailored to client demographic/multicultural characteristics (e.g. age, race, ethnicity, religion, gender).
 Agree/Disagree: _____ Feasibility: _____
12. Clients are comprehensively assessed to determine their unique treatment needs.
 Agree/Disagree: _____ Feasibility: _____
13. Clients are referred to a specific level of care based upon use of a level of care assessment tool (e.g. WI-UPC, ASAM-PPC).
 Agree/Disagree: _____ Feasibility: _____
14. Assessment data is used to develop individualized, holistic treatment plans.
 Agree/Disagree: _____ Feasibility: _____
15. Treatments are integrated to fully address clients' substance use and mental health disorder treatment needs.
 Agree/Disagree: _____ Feasibility: _____
16. Relapse does not necessitate/force discharge from treatment.
 Agree/Disagree: _____ Feasibility: _____
17. Empirically Based Treatments (EBTs) are widely available and offered by highly trained, well-qualified staff.
 Agree/Disagree: _____ Feasibility: _____
18. Specific interventions to address issues of client trauma are integrated into treatment.
 Agree/Disagree: _____ Feasibility: _____
19. Providers collect data on their outcomes working with specific problem areas and client populations.
 Agree/Disagree: _____ Feasibility: _____

20. Outcome data is available to treatment consumers and is used to make treatment decisions.

Agree/Disagree: _____ Feasibility: _____

Domain 3: Barriers to System Improvement

Please rate the overall **restrictiveness** of each identified barrier to improving the present treatment system in Milwaukee County:

7	6	5	4	3	2	1
Very Restrictive		Moderately Restrictive		Slightly Restrictive		Not Restrictive/ Not a Barrier

1. Funding limitations restrict the availability of needed levels of care.
Restrictiveness: _____
2. Reimbursement rates are too low to support important aspects of treatment (e.g. individual therapy).
Restrictiveness: _____
3. Funding does not accommodate for important service needs
 - Childcare: Restrictiveness: _____
 - Housing: Restrictiveness: _____
 - Education/Vocational Training: Restrictiveness: _____
 - Transportation: Restrictiveness: _____
4. Funding/payors necessitate referral of clients to inoptimal levels of care.
Restrictiveness: _____
5. Funding is unavailable for non-traditional adjuncts to therapy (e.g. acupuncture, aromatherapy, art therapy).
Restrictiveness: _____
6. Too few staff are trained in both substance use and mental health treatment.
Restrictiveness: _____
7. Staff trained in either substance use or mental health treatments do not adequately work together to provide integrated treatment for co-occurring substance use and mental health disorders.
Restrictiveness: _____
8. Staff members are not sufficiently trained to administer and interpret level of care assessment tools.
Restrictiveness: _____

9. The field of substance use disorder treatment is not well respected or sought after.
Restrictiveness: _____
10. No educational or specialty degrees for substance use disorders/treatment are available in universities.
Restrictiveness: _____
11. Incarceration is favored by current social and legal systems over treatment for substance use.
Restrictiveness: _____
12. Clients are insufficiently informed when selecting providers and making other important treatment decisions.
Restrictiveness: _____
13. Too many treatments currently offered focus on traditional 12-step approaches.
Restrictiveness: _____
14. Too few treatment providers offer integrated treatments for co-occurring mental health and substance use disorders.
Restrictiveness: _____
15. Providers want clients to adapt to the program being offered, rather than adapting the program to clients' individual needs.
Restrictiveness: _____
16. Too few treatments are available that address specific life phases (e.g. adolescence, young adulthood, older adulthood) or multicultural concerns (e.g. race, ethnicity, gender).
Restrictiveness: _____
17. Insufficient time is spent on individual collaborative treatment planning with clients.
Restrictiveness: _____
18. Assessments are not sufficiently comprehensive; assessments do not address important individual characteristics or focus too heavily on either substance use or mental health concerns.
Restrictiveness: _____
19. Treatments are not offered in convenient/accessible locations.
Restrictiveness: _____
20. Treatments are not offered at times convenient to the client.
Restrictiveness: _____
21. Waiting lists are consistently too long for higher levels of care.
Restrictiveness: _____
22. Family members/significant others are not sufficiently included in treatment.
Restrictiveness: _____

Domain 4: Consequences of Identified Systemic Flaws

Please rate the following statements related to CTM on the degrees to which you:

Agree/Disagree that the statement describes a consequence related to existing flaws in Milwaukee County’s client-treatment matching practices:

7	6	5	4	3	2	1
Strongly	Moderately	Slightly	Neutral	Slightly	Moderately	Strongly
Agree	Agree	Agree		Disagree	Disagree	Disagree

Perceive the overall **impact** of each identified consequence on Milwaukee County:

7	6	5	4	3	2	1
Very		Moderately		Slightly		Not
Negative		Negative		Negative		Negative

1. Client retention in treatment is decreased.
 Agree/Disagree: _____ Impact: _____
2. Many clients do not enter/begin treatment.
 Agree/Disagree: _____ Impact: _____
3. Families are disrupted (e.g. children placed in foster care, divorce).
 Agree/Disagree: _____ Impact: _____
4. Work productivity is decreased and jobs are lost.
 Agree/Disagree: _____ Impact: _____
5. Costs increase in other social systems (e.g. child welfare, social security).
 Agree/Disagree: _____ Impact: _____
6. Health care costs increase due to preventable illness and inefficient use of medical resources (e.g. ER visits, lack of preventative care).
 Agree/Disagree: _____ Impact: _____
7. Community crime rates increase.
 Agree/Disagree: _____ Impact: _____
8. Clients do not recover from co-occurring mental health and substance use disorders.
 Agree/Disagree: _____ Impact: _____
9. Community incarceration rates increase.
 Agree/Disagree: _____ Impact: _____
10. Current systems contribute to an absence of hope and feelings of failure among clients.

- Agree/Disagree: _____ Impact: _____
11. Death rates among individuals struggling with co-occurring substance use and mental health disorders increase.
 Agree/Disagree: _____ Impact: _____
12. Treatment providers have poorer treatment outcomes.
 Agree/Disagree: _____ Impact: _____
13. Clients become chronic consumers of treatment settings due to high rates of relapse.
 Agree/Disagree: _____ Impact: _____
14. Long wait lists for entering treatment occur.
 Agree/Disagree: _____ Impact: _____
15. Treatment systems are consistently at overcapacity and unable to meet client demand, making treatment unavailable to many clients who would otherwise benefit from it.
 Agree/Disagree: _____ Impact: _____
16. Service needs that co-occur with substance use disorders (e.g. education, housing, employment, transportation) are insufficiently met.
 Childcare: Agree/Disagree: _____ Impact: _____
 Housing: Agree/Disagree: _____ Impact: _____
 Education/Vocational Training: Agree/Disagree: _____ Impact: _____
 Transportation: Agree/Disagree: _____ Impact: _____
17. Adherence to treatment programming, while clients are engaged in treatment, is reduced.
 Agree/Disagree: _____ Impact: _____
18. Quality assurance measures are not adequately utilized.
 Agree/Disagree: _____ Impact: _____

Domain 5: Solutions for Overcoming Identified Barriers

Please rate the following statements related to CTM on the degrees to which you:

Agree/Disagree that the statement describes practices would serve as a **solution** for overcoming identified systemic flaws and barriers to change:

7	6	5	4	3	2	1
Strongly	Moderately	Slightly	Neutral	Slightly	Moderately	Strongly
Agree	Agree	Agree		Disagree	Disagree	Disagree

Perceive the overall **feasibility** of each practice being implemented in Milwaukee County:

7	6	5	4	3	2	1
Very	Moderately	Slightly	Neutral	Slightly	Moderately	Very
Feasible	Feasible	Feasible		Infeasible	Infeasible	Infeasible

1. Expand coverage for treatment and related services, largely through efforts at parity in coverage.
 Agree/Disagree: _____ Feasibility: _____
2. Increase billing/payment rates for providers.
 Agree/Disagree: _____ Feasibility: _____
3. Base payment to and referrals to providers based upon demonstrated effectiveness (i.e. outcome data).
 Agree/Disagree: _____ Feasibility: _____
4. Provide greater public funding to provide services to individuals with no other insurance or access to treatment services.
 Agree/Disagree: _____ Feasibility: _____
5. Reimburse student trainees for services provided.
 Agree/Disagree: _____ Feasibility: _____
6. Expand public campaigns to increase awareness of risky substance use behaviors.
 Agree/Disagree: _____ Feasibility: _____
7. Better educate clients entering treatment about treatment characteristics and relevant treatment outcomes to facilitate clients making more informed treatment decisions.
 Agree/Disagree: _____ Feasibility: _____
8. Provide additional public funding to pay for more client slots in higher levels of care.
 Agree/Disagree: _____ Feasibility: _____
9. Increase the diversity of interventions and treatment approaches in which providers/clinicians are trained.
 Agree/Disagree: _____ Feasibility: _____
10. Increase implementation of Empirically Based Treatments (EBTs) across treatment providers.
 Agree/Disagree: _____ Feasibility: _____
11. Increase integration of interventions for addressing client trauma in substance use disorder treatment.
 Agree/Disagree: _____ Feasibility: _____
12. Increase use of drug courts for individuals in the legal system for substance related offenses.

Agree/Disagree: _____ Feasibility: _____

13. Expand public campaigns to reduce stigma associated with the treatment of co-occurring substance use and mental health disorders (e.g. improve public opinion of this field).
Agree/Disagree: _____ Feasibility: _____
14. Move away from current “Gatekeeper Model” in which the number of available screenings/evaluations done is capped, and transition to a system in which assessments are available to all and community need is better assessed.
Agree/Disagree: _____ Feasibility: _____
15. Decentralize access to screenings and assessments (e.g. implement possible online evaluations and self-screening kiosks with available staff assistance with results leading to a scheduled formal intake appointment).
Agree/Disagree: _____ Feasibility: _____
16. Implement the Comprehensive Continuous Integrated System of Care model across Milwaukee County; see www.kenminkoff.comm/ccisc.html for additional information.
Agree/Disagree: _____ Feasibility: _____
17. Increase public access to data on provider capabilities in treating co-occurring substance use and mental health disorders, as well as other related service needs.
Agree/Disagree: _____ Feasibility: _____
18. Use technology as an adjunct to traditional, in office treatment interventions (e.g. therapy via telephone, web chat).
Agree/Disagree: _____ Feasibility: _____
19. Include service needs (e.g. education, employment/vocation, housing) as part of initial treatment referral.
Agree/Disagree: _____ Feasibility: _____
20. Increase frequency of screening for substance use disorders in the medical settings.
Agree/Disagree: _____ Feasibility: _____
21. Provide improved pathways for other systems (e.g. education, medicine) to refer clients for treatment of substance use and co-occurring mental health disorders.
Agree/Disagree: _____ Feasibility: _____