Outpatient treatment approaches, services and outcomes for older addicted adults

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Outpatient Treatment Approaches,
Services and Outcomes for Older Addicted Adults

by

Nicole S. MacFarland

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Abstract

This study examined the effectiveness of specific practice approaches and interventions utilized within New York State Office of Alcoholism and Substance Abuse Services (OASAS) outpatient treatment programs. The dependent variables were social goal achievement and overall goal achievement. The independent variables examined included health related services, same-age group services, combinations of services, community linkages, and harm reduction.

The principal aim of this study was to identify effective substance abuse treatment services for older adults through a secondary analysis of an existing data set with a purposive, non-probability sample. The sample consisted of 1,456 adults ages 50 and over in 22 (OASAS) outpatient addiction treatment programs throughout the state. After matching program survey data and client level data, binary logistic regression analyses addressed the pertinent control and interaction variables. The main finding was that programs that provided age-tailored services for older addicted adults had better odds of overall goal achievement by a factor of 2.25 (p<.01), and for each increase in the number of age-tailored services provided, programs improved their odds of overall goal attainment by 21.6 percent (p<.001). Strong age-tailored services were associated with 2.3 times greater odds (p<.01) of social goal achievement, and each increase in the number of age-tailored services led to 16.7 percent improved odds (p<.001) of social goal achievement. In addition, the conditions of having employment and older age were variables linked to better odds of overall goal achievement, while the conditions of
having parents who were themselves substance addicted and having co-occurring mental illness were variables linked to overall poorer odds for these outcomes. This study verified existing assertions and extended our understanding of effective approaches for the addicted senior population.
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Chapter 1: Background and Significance

Incidence and Prevalence of Substance Use Disorders Among Older Adults

The prevalence of alcoholism, illicit drug abuse and prescriptive drug abuse is increasing among the aging population in the United States. As the baby boomers continue to age, the number of older adults requiring addiction services for alcohol/illicit drug abuse or dependence is expected to grow in unprecedented numbers (Han, Gfroerer & Colliver, 2009). Although there is a rich source of literature on adolescent and middle-age addictions, several authors assert that limited literature exists specifically focused on evidence-based practice and treatment outcomes among older addicted adults (Beechman, 2004; Oslin, Pettinati & Volpicelli, 2002; Cummings, 2006).

A recent report published by the Office of Applied Studies (OAS) Data Review (Han, Gfroerer & Colliver, 2009) examined trends in illicit drug use among adults aged 50 to 59 in the United States. In 2002, 2.7 percent of individuals in their 50s exhibited illicit drug use; in 2007, this increased to 5 percent. The annual average number of older adults in this age range with past year substance use disorders (SUDs) was 2.8 million during the years 2002 to 2006. The rate of SUDs in 2020 for this age cohort is projected to more than double, to 5.7 million here in the United States (Han et al., 2009). Based on the National Household Survey on Drug Abuse, Gfroerer et al. (2003) found that of the older population (50 and older) identified with problematic chemical use, 85.8 percent of them were dependent on or were abusing alcohol only, 10.2 percent were dependent on or abusing illicit drugs only, and 4.0 percent were dependent on or abusing both illicit drugs and alcohol. These authors noted that the most common illicit drugs of abuse or
dependence include marijuana (42 percent), cocaine (36 percent) and pain relievers (25 percent).

Overall, 9.4 percent of those ages 50-59 had illicit substance use in the United States, and nonmedical use of prescription drugs was found to be a growing proportion of this percentage between 2002-2007 (Han et al., 2009). It has been projected that the nonmedical use of psychotherapeutic drugs (i.e., prescription drug misuse or abuse) will increase from 1.2 percent (911,000) to 2.4 percent (2.7 million) by 2020 (Schonfeld, King-Kallimanis, Duchene, Etheridge, Herrera, Barry & Lynn, 2010). Therefore, prescription drug abuse is of particular concern for seniors.

The significance of the problem of substance use disorders for older adults has not been fully established until recent years. Past studies on late-life addiction did not capture the significance of the problem (Oslin, 2004). One reason for this, as discussed by Oslin (2004), is that research has focused on exploring alcohol use among the elderly who visit primary care physicians, live in nursing homes, or are hospitalized, which excludes individuals who are receiving outpatient levels of care. There has also been an increase in evidence that has revealed the physiological and biologically based reasons for the detrimental effects substance abuse has on the aging human body. As older adults mature, they are not able to tolerate the same amount of alcohol as younger adults because of greater physiological sensitivity to alcohol (Oslin, 2004). Furthermore, the interactive effects of alcohol and prescriptive drugs can be very damaging (Oslin, 2004).

In New York State, 16.7 percent of all admissions in 2009 to crisis and non-crisis treatment programs were age 50 and older, which was an increase from 15.8 percent in 2008 (OASAS, 2010). The distribution of seniors (55 and older) admitted into the New
York State OASAS programs consisted of 41.3 percent in crisis level of care (N=10,565), 41.2 percent in outpatient (N= 9,100) and methadone (N=1,449) levels of care, and 17.5 percent in the remaining residential (N=989) and rehabilitation (N=3,500) levels of care (OASAS, 2012). The number of older adults (60 and older) is projected to grow in NYS by 35 percent from 2001 to 2015, thus the demand for chemical dependency services for this aging cohort is likely to increase proportionally. This suggests the need for developing greater numbers of senior-specific services across New York State and nationally to meet this growing number of older addicted adults.

Risk and Protective Factors

There is a benefit to examining risk and protective factors of late-life addictions for the purposes of treatment and intervention. Risk factors are those characteristics and situational factors that have been shown to correlate positively with SUDs. Protective factors are those characteristics and situational factors that have been linked to decreased likelihood of SUDs. Several risk factors associated with abuse among the elderly include: male gender, loss of spouse, early onset of alcohol use, co-morbid disorders, family history of alcoholism, and other losses (CSAT, 1998). Based on a sample of 642 problem drinkers in a prospective four-year study, it was learned that the problem of alcoholism tends to be more predominant among older males than females (Brennan & Moos, 1996). Blow and Barry (2002) noted that late-onset is more predominant among women as they are more likely to outlive their spouses than the reverse. The grief and potential loneliness associated with the loss of a spouse in later life may amplify the likelihood of an older woman’s increased usage and abuse of alcohol (Blow & Barry, 2002). Changes in mental functioning coupled with changes in physical vitality may play a significant
role in how seniors cope with aging and whether or not they choose to use alcohol to cope (CSAT, 1998). Co-morbidity disorders, family history of alcoholism, and other losses are addressed in detail later in this manuscript. In a recent review of the literature on treatment of addictions with the elderly, Clay (2010) identified the following additional risk factors for late-onset drinking in the elderly: chronic medical disorders, sleep disturbances, isolation, boredom, and loneliness. A unique set of risk factors associated with prescription drug abuse was also identified, including female gender, major medical illnesses, use of multiple prescription medications, and co-occurring mental illness and chemical dependency (Clay, 2010).

Protective factors can help prevent problems of addiction from emerging later in life. Protective factors associated with late-life addictions include the following: no prior history of addiction to substances, no family history of substance abuse, no mental health concerns, appropriate management of pain, sufficient social support network, one primary doctor focused on health care, and an ability to set limits to avoid overextending oneself (Davidoff, Higgins, & Kipnis, 2004). Research that elaborates on these protective factors and identifies other protective factors unique to the senior population is lacking.

Depression and alcohol abuse are the most commonly cited co-occurring disorders in older adults, and dual diagnosis in older adults is associated with increased risk of suicide and greater behavioral health service utilization (Bartels, Blow, Van Citters & Brockmann, 2006). Based on national survey data, Bartels, Blow, Brockmann and Van Citters (2005) assert that one in four older adults suffers from a mental illness and that the most common mental health disorders of this age population include the following: depression, anxiety and dementia. “Over the next 25 years, the number of
older individuals with major psychiatric illnesses is expected to more than double from an estimated 7 to 15 million individuals” (Bartels et al, 2005, p.2). Grella (2009) asserts that minimal research currently exists regarding the prevalence and treatment of co-occurring substance use and mental health concerns in later life. Additionally, Grella (2009) suggests that the current substance and mental health treatment systems may be inadequate to meet both of these growing needs of this aging population.

As individuals mature, their ability to process alcohol and other drugs changes. Associated medical consequences have been identified in numerous studies on late-life addiction. For example, Oslin (2004) describes the state of research regarding late-life alcoholism and identifies a number of important facts regarding medical consequences. The impact of alcohol use on the older adult's aging brain is significant. Alcohol abuse can also play a key role in impairing motor coordination and mental wellness. Offering further evidence of the medical consequences of alcohol, Oslin (2004) cites higher rates of alcohol-related deaths due to disease such as cirrhosis of the liver, hypertension, strokes, and increased alcohol-related falls leading to injury. In a retrospective chart audit of 148 community-dwelling frail older adults, Emlet, Hawks and Callahan (2001) found that falls, fractures, medication interactions, and cognitive impairment were the primary issues identified among the elderly using alcohol. In a review of the literature on substance abuse and older adults, Fingerhood (2000) noted that alcohol is the second leading cause of acute pancreatitis in older people and chronic pancreatitis in over 75 percent of cases. He also noted that alcohol-related liver disease prevalence rates increase as people age, and that 25 percent of cases of liver disease are identified as individuals who are over age 60. The concern for seniors is amplified because seniors also have high
utilization of, and greater sensitivity to, prescription medications (Oslin, 2004). For example, D’Archangelo (1993) notes that older individuals are prescribed benzodiazepines more than any other age group.

Therefore, future researchers are challenged to address the risk and protective factors that play a vital role in harming and helping this vulnerable addicted elderly population. In addition, future research should focus on the impact of how prescriptive drug abuse, including pain medication, Benzodiazepines and other addictive substances affects older addicted adults.

Early Versus Late Onset Drinking

There are differences in presenting problems and treatment needs among the elderly based on the timing of the onset of their abuse of alcohol and other drugs. Although there have been differing definitions for age limits when determining early onset versus late onset, for the purposes of this manuscript the definition chosen will be that used by Memmott (2003) where the cut off was age 40. The early onset group (40 and younger) represents the majority of older patients seeking treatment for alcohol addiction (Center for Substance Abuse Treatment, 1998). Individuals identified as late onset are more likely to be physically and mentally healthier than early onset drinkers (CSAT, 1998). According to Hanson and Gutheil (2004), older adults who began their use of alcohol early in life evidence greater alcohol-related medical concerns, such as cirrhosis of the liver, as compared to late-onset alcoholics. In addition to evidencing fewer medical concerns, the late-onset addicted individuals tend to have a better social support system (Brennan & Moos, 1996). According to Brennan and Moos (1996), late onset problem drinking is more common among older women than older men. When
compared to older adults who have not abused alcohol and drugs, Boyle and Davis (2006) noted that older adults who abuse alcohol and/or drugs later in life are at increased risk for detrimental physical, psychological and social consequences.

There are several reasons why individuals may increase their use of alcohol later in life, such as bereavement, decreased social supports, limited structure in the day, and financial problems (Osln, 2004). Adams and Waskel (1993) examined whether stress due to loss of social-psychological structures was greater in older alcoholics with late onset as compared to those with early onset in a sample of 60 alcoholic men. For these researchers, early onset was defined as before the age of 40 with late onset after age 40, and the mean age was 63.6 years. The focus was to describe how early and late onset alcoholics differ in their social-psychological structures. Utilizing cross tabulations and Chi Square statistics, they found that only marital status was significantly different between early and late-onset [X^2 (58, N=60) =4.13265, P=.0421], while other social-psychological structures did not demonstrate statistically significant differences between the early and late-onset groups. Adams and Waskel conclude that the onset of the problem drinking has more to do with the loss of a spouse than with general stress. They surmised that the spouse may provide regulation of the older adult’s drinking (Adams & Waskel, 1993).

Another important consideration is the impact of retirement on later life addiction. Bacharach, Bamberger, Sonnenstuhl, and Vashdi (2008) examined the connection between work-related factors and drug abuse in later-life. They studied a sample of 978 retirement-eligible workers (some of whom had deferred retirement and others of whom had retired) from 3 blue-collar employment sectors. They used negative binominal
analyses based on a count of affirmative drug response on a brief screening instrument DAST-F. They found that those individuals who were completely retired had higher severity of drug abuse than those waiting to retire (estimate= 0.36, p< 0.05) As a result of these findings, they emphasized the importance of addressing the specialized needs of the older population who are in the process of retiring. These future retirees are at risk of increased use due to the psychological strains associated with both working and preparing for retirement (Bacharach et al., 2008). Awareness of the age of onset and how age of onset relates to level of impairment in older addicted adults, therefore, is a critical element for practitioners in assessing clinical needs of their patients.

Individual Difference Variables: Age, Race and Gender

The consideration of age may be very important in the assessment and treatment of late-life addictions. Lemke and Moos (2002) conducted a study utilizing a sample of 3,234 patients in an inpatient alcohol treatment setting. They used an ANOVA to compare the intake means of three age groups on continuous variables. They used Chi Square tests for comparison on nominal data, paired T-Tests to examine improvement in treatment, and regression analysis to identify predictors of improvement. They found significant differences in both presenting problems and treatment responses between older patients and younger patients. In terms of presenting problems, Lemke and Moos (2002) found that when compared to matched groups of younger and middle aged patients, the older patients (55+) had significantly greater average number of medical conditions [age 21-39=.6, age 40-54=.8, age 55+=1.1 (F=24.9, p<.01)] and significantly lower cognitive functioning [age 21-39= 12.1, age 40-54= 9.7, and age 55+= 7.6 (F= 98.3, p<.01)], based on the Shipley Institute of Living Scale (abstraction subscale). Based
on a variety of measures overall, older patients also possessed more supports, better adaptive coping, and fewer barriers to abstinence than younger patients. In terms of treatment response, the older patients were more likely to have longer lengths of stay and were less likely to focus on housing, legal, and vocational problems and problems related to obtaining public assistance entitlements (Lemke & Moos, 2002).

Treatment adherence differs between seniors and younger adults. In a randomized, double-blind, and placebo-controlled efficacy trial of Naltrexone treatment for alcoholism, it was found that older alcoholic patients showed greater adherence to scheduled treatment visits (85 percent versus 64.1 percent, Odds Ratio = 5.96, p < .01) and medication management (80 percent 55.3 percent, Odds Ratio = 3.28, p < .05) than their younger cohorts (Oslin, Pettinati & Volpicelli, 2002).

A 2006 study of community interventions focusing on a sample of 120 patients provided by the Geriatric Addictions Program (GAP) conducted by D’Agostino, C., Barry, K., Blow, F., and Podgorski, C. (2006) consisted of initial interviews, random assignment to two strategies for referral, and a chart audit of outcomes. Age-specific care management, assessment, motivational counseling, and the combination of aging services and chemical dependency services were found to be superior in achieving better linkages to outpatient and inpatient services as compared to a traditional non-age specific mode. In fact, the motivational, multidimensional intervention under review resulted in a 40 percent completion rate versus a 10 percent completion rate when directly linked to outpatient treatment without this intervention. In addition, this intervention when utilized to facilitate linkage to inpatient care resulted in an 80 percent completion rate versus a 57 percent completion rate for patients who were directly linked.
There is also growing evidence to support the notion that treating the older cohort separately may, in and of itself, substantially improve outcomes for seniors (Cummings, Bride, & Rawlins-Shaw, 2006; Kashner, Rodell, Ogden, Guggenheim, & Karson, 1992; Kofoed, Tolson, Atkinson, Toth, & Turner, 1987). Specifically, Kofoed et al. (1987) noted in a study that included a sample of 49 outpatients that older alcoholic patients receiving age-specific peer support group treatment had better treatment retention, compliance and rates of completion than those that did not receive age-specific peer support group treatment. This study is described in greater detail in the “Mixed versus Same Age Treatment” section.

The consideration of race in SUD treatment practices is important both in terms of patterns of substance use and abuse as well as treatment practices tailored to meet the unique needs of these subpopulations. Booth, Blow, Cook, and Bunn (1992) conducted a national study on age, race and ethnicity among 62,829 hospitalized male veteran alcoholics. They concluded that African-Americans and Hispanics may not receive adequate addictions services and illustrated a need for targeted assessments for older adults and/or minority patients with alcoholism to determine treatment needs (Booth et al., 1992). They also concluded that “future research is needed to determine longitudinal patterns of health care utilization by elderly and minority patients in order to understand better the health care needs of these groups of alcoholics and design optimum health care programs” (p.1034).

The GET SMART Program described earlier showed that drug use was more common among minority subjects and African Americans in particular compared to other ethnic groups (Schonfeld et al., 2000). Half of the participants in the GET SMART
consisted of African-Americans or Latinos, which was unlike the two other age-specific studies that had mostly Caucasians (Kofoed et al., 1987; Dupree, Broskowski, & Schonfeld, 1984). Future research is needed to address ethnic differences in SUDs among older adults. It is anticipated that there will be increasingly larger numbers of Latinos approaching older age, and one projection suggests that the number will triple between 1999 and 2020 (Andrews, 2008; Gfroerer & Epstein, 1999). However, effective, culturally sensitive addictions interventions for this population have not been identified.

It is important to consider gender differences as well. A seven year outcome study that explored gender differences for outpatient treatment of 55+ year old adults found that women had better abstinence rates when compared to men. Participants in this study were drawn from two large randomized studies within Kaiser Permanente outpatient chemical dependency treatment programs. In this study, based on a sample of 84 patients, women reported 76.0 percent abstinence within the last 30 days as compared to men who had reported a 54.2 percent abstinence within the last 30 days at the time of seven years post treatment (Satre, Blow, Chi & Weisner, 2007).

Emlet et al. (2001) examined alcohol use in a population of community dwelling, frail older adults (n=148). This retrospective study of chart audits found that at the time the study was conducted, 24 percent used alcohol and 4 percent of the total sample had a positive score on two or more on the “Cut Down, Annoyed, Feeling Guilty, and Use of an Eye Opener” (CAGE) and were therefore identified as having a problem with alcohol. A bi-variate analysis was completed and results suggested that gender was the main significant predictor in alcohol use among this sample. Men were three times more likely
than females to consume alcohol (40 percent versus 17 percent, Chi Square = 8.86, p < .01, Emlet et al., 2001).

In summarizing findings from a review of community surveys conducted by other researchers, Blow and Barry (2002) noted that the prevalence of alcohol misuse for women age 60 and older ranged from less than 1 percent to 8 percent consistently. These authors assert that women as compared to men may have increased risk for alcohol problems as they age because they tend to outlive men and are often less financially secure than men. There are several risk factors unique to women such as less lean muscle mass than men (to metabolize the alcohol) and tendency towards prescription drug misuse. With respect to gender and late-life alcoholism, a greater number of studies are focused on males and late-life alcoholism rather than on females and late-life alcoholism (Blow & Barry, 2002). This suggests an ongoing need for further research in the area of women and late-life addictions.

Prescription drug use and abuse may be of greater concern for women as well. For example, women tend to be prescribed benzodiazepines more frequently than older males (CSAT, 1998; Blow & Barry, 2002). In consideration of the potentiating effects when combining alcohol and prescription medications, the identification and development of effective services tailored to older women may be especially important.

The co-occurrence of mental health and addiction is another issue of particular concern for women. Women are twice as likely as men to suffer from depression (Blow & Barry, 2002). Older women are often experiencing multiple losses as they age, putting them at high risk for co-morbidity in later-life, in part due to living longer than men (Blow & Barry, 2002). According to Gomberg (1995), older women problem drinkers
when compared to older male drinkers have higher rates of widowhood, perhaps linking alcoholism to later-life losses and potentially explaining the increase likelihood of late-onset alcoholism for older women.

According to Brennan and Moos (1996), based on a prospective study with 581 problem drinkers, alcoholism was found to be more predominant among older males than females. In Fingerhood’s (2000) review of the literature regarding older substance abusing adults, it was found that men tend to be more likely to drink to inebriation; to experience legal consequences due to their drinking; and to have a prior episode of treatment. In addition, men are more likely to have been facing difficulty with their job, finances, and social supports.

The literature review in this section has shown that age, race, and gender differences are important considerations in addictions treatment for aging adults. At this time, very little research has been conducted on how these characteristics relate to the efficacy of treatment strategies. According to Johnson (2000), “Further longitudinal studies will help determine the relevance of the cohort effect, the study of subgroups of the elderly, particularly women and ethnic minorities, the investigation of co-morbidity of alcohol problems with functional illness and dementia” (p. 580).
Chapter 2: Theory and Practice Approaches for Addicted Seniors

Cognitive Behavioral Approaches

According to CSAT (1998), Cognitive Behavioral Therapy (CBT) is the recommended approach when working with older addicted adults. Schonfeld and Dupree (1995) found empirical support for CBT in the treatment of addictions. They noted that CBT requires that the older adult have adequate cognitive functioning to allow the patients to examine their high risk behaviors, develop new approaches for coping, and engage in longer term self-monitoring behavior. CBT and self-management approaches allow for the custom tailoring of treatment to reflect individuals' antecedents to drinking by assisting seniors to examine their high risk behaviors and learn new approaches to thinking and behaving when it comes to their addiction (Schonfeld & Dupree, 1995).

CBT is utilized in a variety of settings for a wide range of disorders. Cognitive-behavioral approaches do not exclude the internal operations or cognitions that may be occurring in the individual, but rather allow for the identification and exploration of those factors and their impacts on certain behaviors such as the issue of problem drinking (Kadden, 2001). A number of varying CBT treatment approaches are used in the addiction field to help patients work toward recovery. According to Kadenn (2001), when CBT is applied to alcoholism, “it provides a theoretical framework for understanding the etiology and persistence of pathological drinking, and a conceptual basis for developing clinical techniques to treat the disorder” (p.490). The focus of this theoretical framework is to help the individual discuss what their unwanted behaviors are, examine when they tend to drink, gain exposure to learning-based treatment interventions, and engage in the practice of techniques designed to foster relapse prevention (Kadenn, 2001).
Additionally, helping individuals to decrease their pattern of usage, to find ways of structuring their time, and to engage in positive self-talk relating to self-destructive behavior are cognitive foci. “Behavioral” techniques for maintaining sobriety include a focus on the external antecedents and consequences that may be playing an important role in the addicted individual’s unwanted behaviors.

Barrick and Connors (2002) in their review of the literature discuss how CBT has been found to be as beneficial for older adults as for younger ones. Furthermore, CBT is particularly well suited for addicted seniors because it addresses many of their common issues, such as loss of friends and family, physical decline, and issues related to retirement. In addition, it can help enhance skills to help cope with stress which, according to Barrick and Connors (2002), is an important aspect of treatment for seniors.

Another study used CBT to examine age-matched treatments to explore levels of responsiveness to interventions across three age groups (Rice, Longabaugh, Beattie & Noel, 1993). The three interventions included: CBT, relationship enhancement, and relationship plus vocational enhancement. Utilizing a MANOVA, the older group (50+) had significantly lower mean heavy use under the condition of extended cognitive behavioral treatment as compared to vocational enhancement [M=0.75 versus M=0.37 (p=.01)]. The older group (50+) had better abstinence rates and lower mean heavy use under the condition of extended cognitive behavioral treatment. The other age groups (18-29 and 30-49) did not demonstrate a similar unique benefit as a result of any one of the three interventions (Rice et al., 1993).

This section discusses CBT, an evidenced-based practice approach that is widely used and accepted when working with older addicted adults. By helping the older adult to
be more aware of their ways of thinking and behaving, the health care provider can offer the possibility for an older addicted adult to discontinue their harmful and self-destructive behaviors by substituting them for more effective health-promoting approaches. This ultimately can result in the older addicted adult moving towards greater quality of life.

Harm Reduction Model

Harm reduction approaches are often used in the treatment of addictions (Futterman & Silverman, 2004; MacMaster, 2004; Marlatt & Wilkiewitz, 2002). Harm reduction is a value-based position, consistent with CBT’s overarching theoretical framework that focuses treatment on helping clients work towards decreasing harmful behaviors over time. The harm reduction approach promotes the understanding that certain individuals are interested in engaging in treatment but may not be ready for abstinence immediately upon admission to a program (MacMaster, 2004). Unlike traditional approaches, harm reduction does not require an individual to stop using but instead works towards the goal of abstinence by reducing use and recognizing that not everyone is able to abstain from substance use during early stages of treatment (Erikson, Riley, Cheung, Yuet, & O’hare, 1997). It also seeks to reduce the negative consequences of the patient’s misuse of substances in the areas of physical wellbeing, mental wellbeing, and relationships (Futterman, Lorente, & Silverman, 2004). In a review of several empirical studies examining the addicted population, it was found that harm reduction approaches to treating alcohol problems were as helpful as abstinence-based approaches (Marlatt & Wiltkiewitz, 2002).

A harm reduction approach may be uniquely helpful to treating addicted seniors. Harm reduction covers a number of different techniques used to help the client reduce the
negative consequences associated with drug/alcohol use without requiring that the individual be abstinent during treatment (Bracato & Wagner, 2003). The harm reduction approach fosters an environment of comfort and respect, which ultimately helps with treatment adherence (Futterman & Silverman, 2004). In a review of 2008 total annual OASAS admission data, it was found that younger adults (those under 50 years of age) are referred to outpatient chemical dependency treatment in NYS from the criminal justice system at a rate of 46.2 percent, which compares to 29.2 percent for adults age 50 and older (OASAS, 2011). This would suggest that seniors are less likely to be externally mandated and therefore they are less likely to have legal consequences for disengagement of treatment prior to goal achievement. An abstinence only approach requires an abrupt change in drinking behavior, whereas the harm reduction approach allows for gradual reduction in substance involvement based on patient readiness. Therefore, without the external mandate of the criminal justice system and absent of consequences for leaving treatment prematurely, a more gradual approach may be better suited for retaining older patients in addictions services.

Motivational Interviewing

Motivational interviewing is an engagement strategy that has relevance to addictions treatment in particular because it is understood that the extent of consequences an addicted individual experiences is often outside of his/her awareness and/or acceptance and is often referred to as “denial.” Motivational interviewing enables the clinician to address the client’s needs from his or her perspective according to client readiness for change (Miller & Rollnick, 1991). Motivational interviewing as a strategy in addictions treatment specifically for seniors has not been tested (Hanson & Gutheil,
Future research is needed to reveal how this strategy may be uniquely beneficial for older addicted adults.

Transtheoretical Model

The Transtheoretical Model provides a framework for which motivational interviewing is well suited. The model describes five stages of change, moving through pre-contemplation, contemplation, preparation, action, and ultimately maintenance (Prochaska, Diclemente, Norcross, & John, 1992). The “pre-contemplation stage” is the stage when an individual is not ready to make any change in behavior. The “contemplation” stage is the stage in which one has insight into the problem and is seriously considering overcoming their addiction but is not ready to commit to making change. The next stage, “preparation,” is when the individual is ready and planning to make change within a month and has successfully taken action within the past year. The next stage, “action,” involves the individual modifying behavior, experiences, or the environment so that they can work on their problem. The fifth stage, “maintenance,” involves relapse prevention (Prochaska et al., 1992). Understanding the older addicted adult’s stage of change will support the utilization of the most appropriate treatment strategies. For example, if the older addicted adult has late-onset substance use disorder without prior treatment, intervention strategies should target pre-contemplation and contemplation initially, versus for those patients with early-onset and a history of multiple episodes of treatment, interventions would likely focus on action and maintenance stages of readiness for change.

In conclusion, motivational interviewing is consistent with harm reduction in that the focus is on individualized patient needs and abstinence is not necessarily a
requirement of treatment. In addition, motivational interviewing facilitates the client’s right to self-determination while providing structured interventions and guidance towards the patient’s recovery goals (MacMaster, 2004). Harm reduction and motivational interviewing, both consistent with cognitive behavioral treatment, provide direction that fosters successful engagement and retention of older addicted patients. They accomplish this by addressing the patient’s needs from the patient’s perspective.

Group Therapy

Group therapy can be a very helpful component of treatment for the older addicted adult. This modality of treatment enables the older adult to understand and share his/her addiction problems and recovery efforts with others having common needs and goals, and it offers an opportunity for socialization. CSAT (2005) developed a manual to aid clinicians who treat older addicted adults entitled, “Substance abuse relapse prevention for older adults: A group treatment approach.” This manual suggests that relapse-prevention strategies utilizing cognitive-behavioral and a self-management (SM) intervention can be helpful. According to CSAT (2005), the main goal is to engage and support clients by helping them gain recovery skills and by helping the patient control the daily factors that resulted in their substance abuse. It has four steps: 1) examine and analyze previous substance use behaviors of the patient; 2) help the patient identify his or her high-risk situations for substance abuse including the antecedents, behaviors, and consequences; 3) help the patient develop skills to cope with high risk situations for the prevention of relapse; and, 4) provide continued care and follow-up. CSAT (2005) suggests these phases can be carried out in group and individual sessions.
Several studies have illustrated the benefits of offering same-age group treatment to seniors in addiction programs (Schonfeld & Dupree, 1995; Koefed et al., 1987; Cummings et al., 2006 and Kashner et al., 1992). According to Barrick and Connors (2002), “… group and family therapies may be especially beneficial as they help address the issues of loneliness and lack of social support that are frequently reported as significant problems for the elderly” (p. 589). By creating a clinical milieu and other treatment opportunities for older addicted adults to interact and talk about age-related topics and relevant life stage issues, a program may be more apt to better serve the unique needs of this vulnerable population.

Family Inclusion in Treatment

It is well established that substance abuse has several negative impacts on family functioning (SAMHSA, 2004). According to CSAT (2005), family involvement can be beneficial to the older addicted adult seeking addictions services and contributes to more comprehensive assessment and improved treatment outcomes. Colleran and Jay (2002) describe how each family member who is close to the alcoholic is affected by his or her use and argue that there is an opportunity to improve relationships and quality of life for the patient and the family by engaging the family in the treatment of the older addicted adult. Practitioners must keep in mind that older adults are part of a family system that is impacted by the substance use and in a number of cases, adult children may feel hopeless and/or helpless as they try to understand and assist their addicted parent (Colleran & Jay, 2002). Family members can offer the clinician additional information about the patient including specific dynamics relating to the patient’s pattern of substance use which can be helpful, but it is important to ask the patient if they wish to include the family in the
assessment process because of issues of confidentiality and comfort level (CSAT, 2005). Although there are those elders who have limited family supports, this section emphasizes the potential benefits of family support in working with older addicted adults. Often times, the disease of addiction impacts multiple generations of family members and it is therefore helpful to encourage, where appropriate, the elder to include family members during their course of treatment. There have been no studies to date that explore if or how family involvement in the treatment of addicted seniors improves treatment outcomes.

Care Coordination

Care coordination for the older addicted adult is very important because seniors are often unaware of their entitlements and the resources potentially available to them in their communities. Based on a literature review conducted by Rinfrette (2009), older adults are prone to suffer from anxiety, depressive disorders, and alcohol problems. Rinfrette (2009) also noted that older adults engage in mental health and substance abuse treatment more successfully when there is collaboration between the primary care providers and the treatment providers for the co-occurring disorder. CSAT (1998) emphasizes the importance of linking the older addicted adult with medical services and services for the aging.

Coordinating care with primary care and specialty care providers may also be particularly important for seniors, due to the fact that seniors are often prescribed multiple medications (Oslin, 2004). Many of the medications prescribed to seniors are addictive, such as benzodiazepines (D’Archangelo, 1993), and as a result could complicate the diagnosis and treatment of seniors. The Geriatric Addictions Program
(GAP), referenced earlier in this manuscript, illustrates one program that was successful in linking older adults who had substance abuse and co-occurring mental health problems with services to assist in changing their health behaviors (D’Agostino et al., 2006). They offered a multidimensional approach to community linkage helping older adults receive support from both inpatient and outpatient treatment facilities. This model of intervention offers older adults improved outcomes and stable recovery later in life by addressing the co-occurring issues inherent within this population (D’Agostino et al., 2006). Providing education about community resources may empower older addicted adults to become more independent and broaden their opportunities for support during their recovery process.
Chapter 3: Senior Sensitive Programming

This chapter discusses considerations within the realm of senior sensitive approaches, consistent with the unique aspects of this population with respect to patterns of substance abuse and treatment response. Early versus late-onset, mixed versus same-age treatment programming and age-specific services are each addressed in this section.

Early Versus Late Onset

This section provides justification for considering the timing of the onset of alcohol or substance abuse, whether before age 40 (early onset) or after age 40 (late onset), as an important consideration during the initial assessment of seniors. According to CSAT (1998), continued use for those alcohol or substance abusers with early onset may be associated with attempting to alleviate stress by drinking alcohol, and this is a coping strategy which has persisted over a long period of time. Early onset problem drinkers are often in and out of treatment for years, and therefore, when they seek services later in life, they already have a basic knowledge of addiction. When there is a longer treatment history, the early onset older adult usually has greater awareness of his/her addiction and related consequences, and therefore may be further along in his/her “readiness for change” (Prochasca, Diclemente, & Norcross, 1992). This can positively influence their response to treatment as compared to those just beginning their recovery as late-onset drinkers. Late-onset alcoholism is associated with milder symptoms in comparison to earlier-in-life onset alcoholism (Atkinson, Tolson & Turner, 1990).

Atkinson et al. (1990) examined a sample of 132 predominately male older veterans over a period of 5 years in a VA outpatient geriatric addictions clinic, and 15 percent of this sample consisted of late-onset users (which they defined as having a
They also defined two additional categories: early onset (40 years old and younger) and mid-life onset (41-59 years of age). They found that the veterans who had late-onset had better attendance at scheduled sessions than the other two onset groups (72.42 percent for earliest onset, 82.43 percent for mid-life onset, and 88.95 percent for late-onset, F=5.38, p<.01). In addition the late-onset group had better treatment completion rates at 12 months (84 percent) versus early onset (50 percent) and mid-life onset (68 percent), Chi Square=7.76, p<.05.

In a review of the literature that discussed early versus late onset, Fingerhood (2000) found that there were no significant differences in age, marital status, level of education, or employment status associated with late versus early onset. However, there were a higher proportion of women in the late-onset group. It was also noted that early onset individuals were more likely to: drink until they were inebriated; have received a prior episode of treatment; have had legal consequences as a result of their use; and, have been facing difficulties with their job, finances, and social supports. Late onset was defined to be onset of use after age 60. Fingerhood (2000) found that these late-onset individuals were more likely to: begin treatment later in life due to a recent DWI, to experience feelings of isolation and depression when they begin a drinking occasion, to be in denial, and have a social support network including family and friends in later life (Fingerhood, 2000).

The implications of early versus late onset for treatment practices are important. Understanding that someone has early-onset substance use disorders enables the clinician to develop treatment plans that are more likely to address the specific needs of this
population, including possible co-occurring conditions and more robust family, legal and other social problems.

Mixed versus Same-Age Treatment Programming

This section describes the few treatment outcome studies that compare age-specific versus mixed-age group treatment settings that have occurred over the past three decades. Tailoring treatment to elder-specific biopsychosocial needs outside of traditional programming has been recognized as being important for nearly two decades (Liberto & Oslin, 1995). In 2002, Oslin et al. acknowledged that addiction treatment services to address the specialized needs of this population continued to be lacking. He noted that older addicted adults have physical, mental, and emotional needs which differ from younger addicted adults, and that although traditional treatments may work for younger clients, they do not always work for older clients whose disabilities may preclude them from completing traditional programming (Oslin et al., 2002). There are a few empirical studies that have explored outcomes for age-specific treatment, and these have suggested that older adults have positive outcomes when provided with age-specific treatment services (Cummings et al., 2006). These studies are discussed in the remainder of this section.

In a non-randomized retrospective study with a sample of 49, Kofoed et al. (1987) looked at two comparison groups of veterans in addictions treatment: one elderly cohort combined with younger (mainstreamed) and one elderly cohort with elderly peer groups only. Until 1982, older veterans received mixed-age group treatment for their alcoholism for up to one year; in 1982 a peer-group outpatient program for older alcoholics called the ‘class of 45’ was developed. The patients examined in this study were 54 and older.
They found striking differences in treatment retention between the two groups examined. Specifically, they showed that peer groups evidenced greater treatment attendance at 81 percent versus 68 percent (although not significant) and completion rates (17 versus 4, p<.001). The authors concluded that there is a need for further development and evaluation of specialized programs for older adults (Kofoed et al., 1987).

Beechman (2004), after conducting a review of eight articles pertaining to late life addictions, concluded, “the few elderly who do receive treatment are typically mainstreamed into treatment programs with clients of all ages, especially young people” (p. 60). He reported that the issues relevant to older adults differ in many ways from those of younger adults. Older adults are more focused on issues relating to social security, loss of friends who are dying, retirement, living on fixed incomes, and changes in their own physical wellness. In addition, he notes that older adults “… are appalled with the vulgarity that is used casually in group sessions, and will ‘drop out’ of treatment” (Beechman, 2004, p. 61).

The available research supports the notion that age-specific versus mixed-age group outpatient treatment may be more helpful to the older addicted adult (Oslin, Pettinati & Volpicelli, 2002; Schultz, Arndt & Liesveld, 2003; Oslin et al., 2005). In fact there is growing support for the notion that treating the older cohort separately may in and of itself substantially improve outcomes for seniors (Blow, Waldon, Chemac, Mudd, Kirk, & Brower 2000; Cummings et al., 2006, Kashner et al., 1992; and Kofoed et al., 1987). According to Satre, Knight and David (2006), cognitive behavioral therapy in particular can be very helpful in treating the older addicted adult. As previously referenced in an early section, older alcoholic patients show greater adherence to
scheduled treatment visits and medication management than their younger cohorts (Oslin et al., 2002).

Age-Specific Services for Older Addicted Adults

There are unique challenges associated with the examination of late-life addictions. “In spite of the recent research of this special treatment population, very little is known about factors that may be related to treatment outcome, as well as the nature of treatment outcome across a variety of domains” (Blow et al., 2000, p. 68.) Additionally, Blow et al., (2000) assert that it is more difficult to recruit older adults suffering from SUDs into treatment outcome research studies as compared to younger adults due to the concerns over privacy issues and suspicions of older adults about participating in research studies.

According to Fingerhood (2000), “Treatment modalities for substance abuse in older people should be individualized” (p.993). The Treatment Improvement Protocols (TIPs) published by SAMHSA highlight the need to accomplish improved screening and brief interventions for older addicted adults to increase utilization of outpatient services. One such initiative, the Brief Intervention and Treatment for Elders (BRITE) project, was developed and successfully implemented in Florida. In a multisite study with a sample of 3,497 older adults, it was found that brief intervention demonstrated reduction associated with their alcohol use, medication misuse, and depressive symptoms. This pilot study paved the way for obtaining federal funds to allow for the expansion of BRITE in 27 sites across 17 counties in Florida. Further expansion of initiatives such as this are needed nation-wide (Schonfeld, King-Kallimanis, Duchene, Etheridge, Herrera, Barry, & Lynn, 2010).
A previously referenced and recent study confirms positive treatment results for addicted seniors when it is tailored to their unique age-based needs (D’Agostino, et al., 2006). They discovered that age-specific care management assessment, motivation counseling, and the combination of aging services and chemical dependency linkages were superior in achieving needed linkages to outpatient and inpatient services as compared to a ‘treatment as usual’ for the same-age cohort. This section suggests there is value in providing a greater numbers of age-specific services to older addicted adults, thus maximizing the effectiveness of the services provided.

Preliminary Pilot Study

Given the limited data on senior-sensitive programming, a purposive, non-probability sample of 34 chemical dependency treatment programs in New York State was undertaken to better inform the development of the dissertation. An instrument was developed based on a literature review of important aspects of treatment approaches utilized when working with an older population. The questions were then developed in consultation with advice from researchers familiar with OASAS data, program experts, and seasoned researchers at the University at Albany. This survey was designed to explore key issues and practice approaches of OASAS licensed outpatient clinics across New York State that offer treatment to older addicted adults in mixed-age group settings. Refer to Appendix B for a copy of the survey. The six page survey consisted of 19 sets of questions, with the last two being open-ended for additional comments to enhance our understanding of treatment practices in outpatient clinics for older adults in New York State. The survey was administered from July through September in 2008. A total of 69 variables were generated for the purpose of data analysis.
There was a 65 percent return rate in on-line surveys and in-person interviews, producing 22 completed surveys. Each agency designated a Clinical Director, Executive Director, or Senior Clinician to complete the survey or in-person interview.

Table 1: Proportion of those 50 and Older in Surveyed Programs

<table>
<thead>
<tr>
<th></th>
<th>Total #</th>
<th>20-35% *GE age 50</th>
<th>35-50% *GE age 50</th>
<th>&gt;50% *GE age 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Completed</td>
<td>22</td>
<td>18</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Survey No Response</td>
<td>12</td>
<td>9</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>27</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

*GE refers to greater than or equal to

Tables 1, 2 and 3 illustrate the age, geographic and size distributions of the programs surveyed overall and specifically, and compared those who responded to those who did not respond to the survey. The majority of programs including those who responded to the survey and those who did not had between 20-35 percent of their population age 50 or older. Only four programs in total had a population of 50 percent or greater that were ages 50 and older. The distribution of age categories between those programs that responded to the survey and those that did not was quite similar. The majority of surveyed programs were located in the NYC region and the remainder were in LI, Northeastern NY, Mid Hudson region, and the Western/Finger Lake region.

Table 2: Geographic Distribution of 50 and Older in Surveyed Programs

<table>
<thead>
<tr>
<th></th>
<th>Total #</th>
<th>LI</th>
<th>NYC</th>
<th>Mid Hudson</th>
<th>Northeast Region</th>
<th>Western/Finger Lakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveyed</td>
<td>22</td>
<td>2</td>
<td>13</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Survey-No Response</td>
<td>12</td>
<td>0</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>2</td>
<td>21</td>
<td>6</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
As illustrated in Table 3, the distribution of programs within regions when compared with those who responded to the survey and those that did not was very similar. In terms of size distribution, the majority of the programs (10) were in the 200-300 discharges per year range, and the overall size distribution of programs surveyed was relatively normal. However, the programs that did not respond to the survey tended to be among the smaller programs (i.e. those with discharges under 200), whereas the programs that responded to the survey tended to be larger (i.e. 300 or more discharges in a year).

Table 3: Size Distribution (Program Size based on 2007 annual discharges)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>&lt; 100</th>
<th>100-200</th>
<th>200-300</th>
<th>300-400</th>
<th>&gt;400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveyed</td>
<td>22</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Survey -No Response</td>
<td>12</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>5</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

The focus was on those programs that served the highest percentage of older adults (ages 50 and older) based on discharges in the prior year, and examined key issues and practice approaches; consideration was given to both mixed and same-age group settings. Fifteen of the 22 programs that completed the survey provided heterogeneous services to seniors (meaning mixed-age groups). The emphasis in programs and services targeting seniors was on psycho-education, psychiatric care and family services. Case management, health and nutrition programming, and grief and loss of work were also widely utilized. Out of nine community service resources for seniors, senior centers were found to be the most widely utilized (45 percent). Of the programs surveyed, 80 percent acknowledged that the needs of seniors are minimally met or not met at all.
Four main variables from the survey are summarized in Figures 4-7. One question in the survey asked the respondents to indicate their top three approaches that best reflect their clinic’s approach for their patients age 50 and older. The top three treatment approaches for older addicted adults were relapse prevention, cognitive behavioral, and psycho-education. Another question explored their services offered to the 50 and older population; these included: grief and loss, psycho-education, health and nutrition, transportation, psychiatric services, case management, family intervention, and others. The top services offered to older addicted adults were: psycho-education, psychiatric, and family intervention. The least frequently offered services were grief and loss, health and nutrition, and transportation. When asked about what community services were utilized, those most frequently listed were: senior centers, nursing homes, day treatment programs and faith based senior community groups. An additional question asked, “Does your clinic offer seniors same-age group services, mixed-age group services, or both.” The large majority provided mixed age group services; about one third of the programs were found to provide age-specific services to seniors.

This pilot study examined those clinics in NYS that were catering to high numbers of older addicted adults. This study has illustrated how treatments provided to seniors vary among programs in New York State. Despite efforts to cater to their older patients with a wide range of services, the majority of the clinics surveyed combine younger and older patients in the treatment programming out of necessity. The practice of combining seniors with younger adults may have negative implications for ongoing engagement and retention of this cohort of older patients. One survey question revealed that these providers believe the needs of older addicted adults are minimally met or not
met at all in treatment programs across the state. These findings point to the need for the development and implementation of senior sensitive programming to accommodate the growing cohort of aging baby boomers across NYS.

Figure 4: Top Treatment Approaches

Treatment Approaches (Top 3)

<table>
<thead>
<tr>
<th>Treatment Approaches</th>
<th>Number of Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Step</td>
<td>12</td>
</tr>
<tr>
<td>Relapse Prevention</td>
<td>15</td>
</tr>
<tr>
<td>Harm Reduction</td>
<td>14</td>
</tr>
<tr>
<td>Cognition-Behavioral</td>
<td>13</td>
</tr>
<tr>
<td>PsychoEd</td>
<td>12</td>
</tr>
<tr>
<td>Family Support</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
</tr>
</tbody>
</table>

Figure 5: Senior-Specific Program Services

Senior-Specific Programs and Services

<table>
<thead>
<tr>
<th>Service Or Program Type</th>
<th>Number of Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grief &amp; Loss</td>
<td>7</td>
</tr>
<tr>
<td>PsychoEd</td>
<td>15</td>
</tr>
<tr>
<td>Health &amp; Nutrition</td>
<td>15</td>
</tr>
<tr>
<td>Transportation</td>
<td>15</td>
</tr>
<tr>
<td>Psychiatric Services</td>
<td>15</td>
</tr>
<tr>
<td>Case Management</td>
<td>15</td>
</tr>
<tr>
<td>Family Services</td>
<td>15</td>
</tr>
</tbody>
</table>
Figure 6: Linkages with Community Services for Seniors

![Linkages With Community Services For Seniors](image)

Community Services

Figure 7: Program Services to Seniors: Same Age, Mixed Age or Both

![Program Services to Seniors: Same Age, Mixed Age or Both](image)
The results were subsequently published (MacFarland, 2009) and informed the development of pertinent variables for the dissertation in the following areas: services intensity, geographic setting of patients served, tailoring of groups to older adults, screening tools used for older adults, treatment modifications for older adults, use of mixed-age group services vs. same-age services, community services for older adults, and treatment approaches for older adults.
Chapter 4: Key Questions, Principle Aims and Hypotheses

Synopsis and Next Steps

This literature review has provided an in depth exploration of the topic of SUD treatment for age-specific versus mixed-age populations; the provision of age-specific SUD services for older adults appears to be an emerging promising practice offering many benefits. As reflected throughout this literature review, the benefits include: the opportunity for older adults to be among their same age group discussing age specific issues, slower pace, interaction with individuals of similar age to enhance one’s social support network, an opportunity to discontinue self destructive addictive behaviors and enhance quality of life, and treatment services with staff trained in geriatric addictions. Future research should examine treatment outcomes of programs that offer same-age group outpatient treatment to older addicted adults versus mixed-age group treatment (Cummings et al., 2006). According to Schoenfeld and Dupree (1985), common measures of outcome for addiction treatment programs have included: program completion, abstinence, increased social activities, improved relationships, income, employment, and marital status.

This paragraph summarizes the key findings from the literature review that were used to form the independent variables (to be described in detail later). Strong community linkages were found to be important in the literature to improve outcomes (D’Agostino et al., 2006). Harm reduction may be particularly well suited for seniors because they are not mandated to treatment a majority of the time, and so this variable was included. Mixed age vs. same age group was chosen because several studies have suggested this approach to treatment for seniors may be superior (Oslin et al., 2002; Liberto & Oslin, 1995; Kofoed et al., 1987; Beechman 2004). The wide range of services available was
selected because seniors typically have co-occurring mental health and medical disorders that require concomitant treatment. The literature suggested several types of overall strong senior programming that should be most effective for seniors including, CBT (Schonfeld & Dupree, 1995; Rice et al., 1993), age-specific (Blow et al., 2000; Cummings et al., 2006), and case management services (D’Agostino et al., 2006). Health related services was chosen as a variable to explore because older patients (55+) have been found to have significantly greater average number of medical conditions than younger and middle age patients (Lemke & Moos, 2002). The following independent variables were therefore based on these findings and included: strong age-tailored services, strong community linkages, strong comprehensive services (i.e., increasing numbers of age-tailored components of the program), strong health focus, strong harm reduction, and overall strong programming (combining case management with age-tailored services and CBT).

The literature review has illustrated how the problem of addictions for seniors is growing at an unprecedented rate in NYS and nationally. This review has revealed the needs and gaps in outpatient chemical dependency services for seniors, including the lack of defined evidence-based services tailored to this target population. Specifically, there is a need for programming that would address community linkages, same-age group services, and other unique, senior-driven treatments. CBT with a harm reduction emphasis may be particularly helpful according to the literature. Future research could reveal the specific types of services that will improve engagement, retention, length of stay, and goal attainment outcomes for alcohol and/or drug addicted seniors. However, certain
age-tailored strategies remain largely unexplored, such as linkage to senior services and stronger focus on health related services; yet health related services, a wide range of services, same-age group services and services with strong community linkages have all been shown to be important for seniors. In addition, the literature reveals that a harm reduction approach may be uniquely beneficial for seniors.

Key Questions and Specific Aims

In summary, based on the literature reviewed, the following key questions have been raised:

1) What are the age, gender and race differences within the senior population specific to history of criminal justice involvement, employment status, mental illness, medical illness, primary substance used at admission and parental addiction (in the family of origin)?

2) Do same-age addiction services for seniors add significantly to overall goal attainment rates, social goal achievement and discontinued use?

3) Do patients in programs that provide comprehensive services (wide range), specific to seniors, have higher overall goal achievement rates, social goal achievement rates and discontinued use rates when compared to those programs that do not have such a wide range of senior-specific services?

4) Is harm reduction a more effective approach, compared to an abstinence approach, for seniors to accomplish overall goal attainment, social goal achievement and discontinued use goal?
5) Do community linkages, CBT, and/or case management services that specifically target seniors improve overall goal attainment, social goal achievement and discontinued use goal for addicted seniors?

6) Do programs that link seniors to faith-based community groups, senior centers, retired senior volunteer program and other pro-social services have higher overall goal attainment, social goal achievement and discontinued use goal as compared to those that do not routinely offer such linkages (consistent with the productive aging paradigm)?

7) Do patients who participate in programs that provide stronger health-related services (versus those that do not) have higher rates of overall goal achievement, social goal achievement and discontinued use goal?

Figure 8 provides a conceptual model to illustrate the pertinent domains of senior addiction treatment that will be the focus of this study. Specifically, this study considers approaches (harm reduction and abstinence-based models), the degree of community integration, the number and nature of age-tailored services and the research-informed senior-based services. This line of research is focused on identifying the custom-tailored services needed to foster improved treatment outcomes for older addicted adults. This study, building on the research to date, will extend the knowledge of effective approaches for the addicted senior population. This study begins to test the assertions that were identified in the literature review.
Therefore, the following hypotheses were tested:

Hypotheses

1. There will be significant age, gender and race differences within the senior population specific to history of criminal justice involvement, employment status, mental illness, medical illness, primary substance used at admission and parental addiction (in the family of origin).

2. After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients receiving same-age
group services versus those receiving mixed age-group services will have significantly higher rates of overall goal attainment, social goal achievement and discontinued use goal achievement.

3. After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients engaged in programs providing comprehensive (wide-range) of services specific to seniors, compared to those that do not, will have significantly higher overall goal attainment, social goal achievement and discontinued use goal achievement.

4. After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients that have received a harm reduction approach when compared to patients that have received an abstinence only approach will have significantly higher rates of overall goal achievement, significantly higher rates of social goal achievement and discontinued use.

5. After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients within the strong promising approaches condition will have significantly higher rates of social goal achievement, overall goal-achievement and discontinued use.
After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients within programs that have strong community linkages will have significantly higher rates overall goal attainment, social goal achievement and discontinued use goal achievement.

After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients participating in programs with more health related services will have higher rates of overall goal achievement, social goal achievement and discontinued use.

The overall aim of this study was to contribute knowledge that may help to shape the chemical dependency treatment system such that it meets the unique needs of the aging population. In addition, this study resulted in unexpected findings that will help inform the development of new research questions. Ultimately, this study lays the groundwork and provides direction for ongoing research towards the establishment of evidence-based practices and clinical practice guidelines in the area of geriatric addiction treatment.
Chapter 5: Research Design and Methods

Design

This analysis utilized secondary data to explore the effectiveness of geriatric addictions treatment in community-based outpatient clinics across New York State (NYS). Data from a survey that was conducted as part of a pilot study was utilized, as well as secondary data from the Office of Alcoholism and Substance Abuse Services (OASAS) Client Data System (CDS). The Client Data System was developed by OASAS to collect information when clients are admitted to and discharged from treatment. This data is utilized by OASAS for the purpose of reviewing program performance each year. By utilizing this data set in the proposed study, an analysis was conducted after matching the survey data (program level data) to the client data, including demographics and outcomes.

Sample Selection

This study consisted of a sample of 1,456 patients discharged from 22 outpatient chemical dependency programs across New York State during the following time period: 1/1/2008-12/31/2008. There were 34 original programs identified for inclusion in this study. These programs were selected based on the following criteria: 30 or more discharges of seniors (50 years old and older) in 2007 and at least 20 percent of their total discharges consisted of this senior population in 2007. Of the 34 programs, 22 completed an online survey and/or an in-person interview. It was these 22 programs from which the sample was drawn because the survey data and the client data were matched by programs’ surveyed using SPSS to conduct the current study. In addition, all the patients ages 50 and older who were discharged during this time period had the following
selection criteria applied: length of stay of 30 or more days and 4 or more treatment visits during their stay (to ensure those patients included in the study had an adequate does of the treatments under investigations). Therefore, this is a convenience, non-probability sample. Refer to Table 9 for the patient level inclusion and exclusion criteria.

Table 9: Patient Level Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th></th>
<th>Excluded</th>
<th>Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharges (1/1/2008-12/31/2008)</td>
<td>Older adults ages &lt;50 discharged in 2008</td>
<td>Adults age 50 and older discharged in 2008</td>
</tr>
<tr>
<td>Number of treatment visits received during treatment episode</td>
<td>&lt;4</td>
<td>&gt;3</td>
</tr>
<tr>
<td>ACOA/ACOSAs (Parental Addiction)</td>
<td>No SUD</td>
<td>All that had their own SUD</td>
</tr>
<tr>
<td>Days in Treatment</td>
<td>&lt;30 days</td>
<td>&gt;29 days</td>
</tr>
</tbody>
</table>

Sources of Secondary Data

The first source of secondary data was program level data from the survey described in Chapter 3. Accordingly, the distinct services provided within programs were identified in order to develop the independent variables and then matched to the client level data, such that the unique client-level impact of those services could be evaluated. There are several limitations inherent in any survey utilized to conduct research. These limitations can be categorized into three main areas: the issue of reliability in respondents reporting, the actual rate of response from participants, and the instrumentation that is utilized within the survey. The survey was designed in such a way that the questions were easy to understand, terms were well defined (for example, non-intensive was defined to be less than six hours of treatment per week), and close-ended questions were inclusive and clearly delineated. One concern is that certain respondents may have misrepresented responses and/or may have made errors due to careless data entry. In the case of the pilot
survey, there appears to be no reason for programs to misrepresent their responses. However, errors in reports are always possible but unlikely to be systematic and therefore not problematic.

The OASAS Client Data System (CDS), as the second source of secondary data, was also utilized in the proposed study. OASAS requires that every licensed agency complete Client Admission Reports (PAS 44) and Client Discharge Reports (PAS 45). The reports are sent electronically by addictions treatment programs to OASAS. This data is then used in the Integrated Program Monitoring and Evaluation System (IPMES), which allows for the evaluation of program performance. Refer to Appendix D for the admission and discharge forms. The PAS 44 requires that information concerning age, race, gender, and additional demographic data describing circumstances and problems be provided at admission. The PAS 45 requires that information on patient-level summary of achievement, such as length of stay and goal attainment, be provided.

It is an advantage to have such a comprehensive source of secondary data that has already been designed to evaluate the outcomes of patient treatment episodes. In addition, the OASAS data collection system is one of the most sophisticated and wide-reaching in the United States for chemical dependency programs. One past study demonstrated that the use of this data set is valuable for exploring program outcomes for specific populations (Hunter, 2010). Other advantages inherent in using existing secondary data are cost and time savings. In addition, by using existing secondary data for the sample selection it was not necessary to obtain consent from each patient as it would have been if the study had been focused on collecting new data.
There are several limitations associated with a study design utilizing the CDS secondary data source. These limitations can be identified in three main categories: data management, reliability and validity. Preparing the data for analysis is complicated and can require a great deal of time. For example, the variables must be recoded, the two sources of data must be combined, and new variables must be created. In addition, missing data must be addressed systematically and data errors must be identified and addressed.

Reliability and Validity

There were two sources of secondary data. The first to be reviewed is the survey data that provided the program-level data for the study, which was developed from the previously referenced pilot study. The purpose of the pilot study was to obtain responses from survey questions on practices and approaches used in outpatient clinics in NYS catering to high numbers of older addicted adults. After several colleagues and the chair reviewed the survey there were no concerns raised about validity of the items in the survey. There have been no formal reliability or validity studies conducted using this survey. The content validity are supported but not established by the fact that subject matter experts in senior chemical dependency services assisted in the development of the specific questions within the survey and also defined the scope of what the survey should cover. The value of their input was further supported by a comprehensive literature review. Additionally, none of the respondents identified any concerns in the open-ended questions asked at the end of the survey which include the following: What additional services do you feel would help persons 50+ with addiction; is there anything else related
to addictions services for older adults that we have not yet asked that you would like to share? There was no formal reliability or validity testing conducted on this survey.

The second source of secondary data was the OASAS client data system and included client-level admission and discharge data. There are several factors to consider when examining reliability. One main concern associated with reliability of the data is the consistency of how providers input their specific patient information into the electronic reporting system. A second source of error is associated with inter-rater reliability based on differing interpretations of the parameters of some of the variables, such as “most or all goals achieved.” Additionally, errors in data input can occur due to the mundane repetition of completing the required forms. Also, the manner in which the individual completing the form views its value as a tool for evaluating their program may influence the level of accuracy that takes place. Online tutorials as well as data entry system checks offer guidance to providers to help prevent data entry errors. In addition to these technical strategies to avoid errors in the data, OASAS provides routine and as-needed training to chemical dependency providers to convey the value of the data and review data entry procedures.

The outcome variables, such as reduced use, abstinence, and goal attainment, are measured utilizing the PAS 45 form which is not a validated instrument. However, several strategies are implemented to assure the data provided are valid; the first is that the computer data entry forms will not allow data entry that is outside the range of the allowable range and uses logic to create error messages when data are inconsistent. Another strategy is a process of analyzing aggregate data using what OASAS terms the ‘Data Integrity Monitoring and Evaluation’ (DIME) process. The DIME process further
analyzes inconsistencies in the data within and between variables including the patient treatment outcome variables on the PAS 45. The third strategy for ensuring that the data is valid occurs as part of the program recertification process which varies from six months to three years. Specifically, they compare reported data with chart reviews for consistency and accuracy. In addition, the CDS has been successfully utilized in at least one past study to examine addictions treatment outcomes (Hunter, 2010).

Independent, Dependent and Control Variables

The independent, dependent, and control variables are discussed in this section. The independent variables include: strong age-tailored services, strong community linkages, strong comprehensive services (i.e., increasing numbers of age-tailored components of the program), strong health focus, strong harm reduction, and overall strong programming (combining case management with age-tailored services and Cognitive Behavioral Therapy).

The dependent variables originally included: overall goal attainment, social achievement, and discontinued use. The control variables included: age, use severity, race, gender, co-occurring mental Illness, co-occurring medical condition, parental addiction, employment status, legal and length of stay. For a full description of the location, definitions, and coding for each of the independent, dependent, and control variables, refer to Tables 10, 11 and 12.

The independent variables of this study, as previously introduced, are to include: strong community linkages, strong harm reduction (abstinence vs. harm reduction), age-tailored services, strong comprehensive services offered, overall strong senior programming (i.e., CBT, case management, and age-tailored treatment groups), and
health related services. See Table 10 for details illustrating how these variables were explicated for the study. Note, each independent variable is a dichotomous (0, 1) variable, with the exception of strong comprehensive services, which is a continuous variable.

Table 10: Independent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational Definition</th>
<th>Source</th>
<th>Coding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Community Integration (SCI)</td>
<td>Dichotomous variable based on a cut off of the number of community links.</td>
<td>Survey question #17</td>
<td>4 or more =1; 3 or less =0</td>
</tr>
<tr>
<td>Strong Harm Reduction Approach (SHR)</td>
<td>Dichotomous variable based on harm reduction having been selected as a main approach.</td>
<td>Survey question #15</td>
<td>1 if harm reduction selected; 0 if it was not</td>
</tr>
<tr>
<td>Strong Age-Tailored (SAT)</td>
<td>Dichotomous variable inclusive of programs that indicated they offered same age programming only (for those 50 and older) or provided age-tailored groups.</td>
<td>Survey questions #7 and #12</td>
<td>1 if same-age only programming or 1 if age-tailored groups indicated; and 0 for all others</td>
</tr>
<tr>
<td>Strong Comprehensive Services (SCS)</td>
<td>Continuous variable based on a count of the number of senior-focused services provided</td>
<td>Survey question #13</td>
<td>Count of number of services from 0-7</td>
</tr>
<tr>
<td>Strong Promising Approaches (SPA)</td>
<td>Dichotomous variable based on research supported practices including CBT, case management and tailored groups.</td>
<td>Survey questions #13, #15 &amp; #17</td>
<td>1 if two or more practices included; 0 if less than 2</td>
</tr>
<tr>
<td>Strong Health Focus (SHF)</td>
<td>Dichotomous variable based on those programs that indicated they provided health and nutrition services to those ages 50 and older.</td>
<td>Survey question #13</td>
<td>1 if program selected health and nutrition; 0 if not</td>
</tr>
</tbody>
</table>

The dependent and control variables were taken directly from the admission and discharge forms. The control variables each came from the OASAS admission form (PAS 44). These included age, use severity, race, gender, co-occurring mental illness, parental addiction, length of stay, legal status, employment status, and co-occurring medical illness. It was important also to include demographic differences such as age, race, and gender because several studies have identified differences in responses to various
treatments on these bases (Hunter, 2010; Lemke & Moos, 2002; Blow & Barry, 2002). In addition, co-occurring mental illness and medical illness have been found to be important risk factors for seniors (Clay, 2010). Moreover, legal factors and employment status have implications for treatment motivation and were therefore important to include. Finally, parental addiction was included because recent research increasingly points to the importance of the long term sequelae of Adverse Childhood Experiences (Larkin & MacFarland, 2012).

The original dependent variables were to be defined based on the OASAS discharge form data (PAS 45); these included social goal achievement, discontinued use of all substances and overall goal attainment. Refer to Table 11 and 12 for a detailed description of the operational definitions and coding strategies that were used to develop the control and dependent variables. The reason for including social goal achievement was because most recovery programs rely heavily on the addicted individual’s engagement in mutual support for recovery. The literature on seniors suggests that social goal achievement may be even more important for recovery for seniors than for younger addicted adults (Barrick & Connors, 2002). Overall goal attainment was the strongest measure of success available within the OASAS client data system. Figure 13 provides an overview of the control, independent and dependent variables, as well as the predictions of the hypotheses. The dependent variable, discontinued use, could not be coded and therefore was dropped from the analyses (for reasons to be explained later).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational Definition</th>
<th>Source</th>
<th>Coding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>GoalsMet01</td>
<td>This variable is based on discharge status where all goals met is the outcome measure.</td>
<td>PAS 45, p.2</td>
<td>0 indicates less than all goals met; 1 indicates all goals met.</td>
</tr>
<tr>
<td>SocialFunc</td>
<td>This variable is based on full achievement of the social functioning goals.</td>
<td>PAS 45, p.2</td>
<td>0 indicates less than all social functioning goals met; 1 indicates all social functioning goals were fully achieved.</td>
</tr>
</tbody>
</table>
Table 12: Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational Definition</th>
<th>Source</th>
<th>Coding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Age at admission</td>
<td>PAS 44, p.1</td>
<td>Years of age in 5 year increment categories (centered)</td>
</tr>
<tr>
<td>Gender</td>
<td>Female/Male</td>
<td>PAS 44, p.1</td>
<td>0 for Female and 1 for Male</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Defined first by Hispanic Origin such that any adult identified as Hispanic regardless of possible additional race such as White or Black.</td>
<td>PAS 44 Race and Hispanic Origin, p.1</td>
<td>0 for Blacks, 1 for Hispanic, 2 for Other, and 3 for Whites</td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>This is based on the number of indicators of increased severity from 0-4. The indicators were: 1) any days in detoxification treatment in the last 6 months or a referral source of any the detoxification levels of care; 2) a referral source of inpatient rehabilitation, intensive residential program, or chemical dependency community residence; 3) indicated injected substance use within primary secondary or tertiary substances after admission; and, 4) More than two prior OASAS treatment program episodes</td>
<td>PAS 44, p.1-4</td>
<td>Severity is a summative count</td>
</tr>
<tr>
<td>CoOccurMH</td>
<td>This is based on the indication of a co-existing mental health disorder at admission.</td>
<td>PAS 44, p.3</td>
<td>0 for no mental illness and 1 for existing mental illness.</td>
</tr>
<tr>
<td>CoOccurMED</td>
<td>This is based on the indication of a co-existing Medical disorder at admission.</td>
<td>PAS 44, p.3</td>
<td>0 for no medical condition and 1 for existing medical condition.</td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>This is based on the indication of a family history of being a child of an alcoholic or a child of a substance abuser</td>
<td>PAS 44, p.2</td>
<td>0 for no parental addiction and 1 for parental addiction.</td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>This is based on the indication of criminal justice involvement based on any criminal justice status at admission and/or an arrest in the past six months and/or incarceration in the past six months</td>
<td>PAS 44, p. 2</td>
<td>0 indicates none of these three conditions were met; 1 indicates at least one of the three conditions were met.</td>
</tr>
<tr>
<td>Employment</td>
<td>This is based on the indication of any employment, whether full-time or part-time, versus being unemployed, not in the labor force or in other status.</td>
<td>PAS 44, p. 2</td>
<td>0 indicates no employment; 1 indicates any level of employment.</td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>This is based on discharge date minus admission date in days; then categorized in groups of five days (for a total of 24 groupings).</td>
<td>PAS 44, p. 1; PAS 45, p. 1</td>
<td>Each category represents a five day span.</td>
</tr>
</tbody>
</table>
Statistical Analyses

Statistical Product and Service Solutions (SPSS) was utilized to analyze the data. Upon receipt of the data, the PI matched the pilot survey data to the client level data by program using SPSS. The PI recoded the data in preparation for analysis as outlined in Tables 10, 11 and 12. Then an examination of the frequency distributions of all variables took place in order to identify missing data. A strategy that utilizes multiple imputations to predict the missing value for a given variable was going to be used to provide an estimate. However, there were no missing data in the control variables. There were
surveys that were incomplete and therefore there were data missing that prevented the inclusion of certain programs (and their patients) in some of the analyses. In total, there were five programs that were missing program level data that would credit them for one or more of the independent variables. As the independent variables were included in the model, the associated programs (of which there were five) with missing program-data were automatically excluded by SPSS.

Binary logistic regression analyses were used to ascertain the degree to which the independent variables influenced client-level outcomes. This methodology was chosen because it has been used successfully in at least two other studies (Hunter, 2010 and Hunter, Robinson & 2006). In addition, although there was the potential for program level effects, due to the nature of the distribution of the independent variable across multiple programs, a nesting approach such as is used in hierarchical linear modeling (HLM) was unnecessary. As a result, all of the logistic regression models were missing one or more programs in the analysis, thus reducing the overall number in the model. The impact of this will be discussed further in the results and discussion sections. The distribution of each continuous independent, dependent and control variable was examined for normality. Based on the distributions of the variables, the coding schemes were developed to allow for as much variation as possible and were then recoded accordingly by using the SPSS recode function.

The original dependent variables for the analyses were discontinued use, overall goal attainment and social goal attainment. Prior to coding the variables it was discovered that there was a problem with the discontinued use outcome data. Because of the way the data were coded by New York State OASAS, it was impossible to develop a true
discontinued use measure. The OASAS client data system prefilled discharge primary, secondary and tertiary substances used from the admission form, but this approach prevents the documentation of new substances used ("substituting" one substance for another, which is common). The resulting variable would be spurious, and therefore the discontinued use variable could not be used as an outcome variable in this study. There were no other significant issues with the coding of any of the variables.
Chapter 6: Results

Hypothesis I: Population Differences

This chapter provides an overview of the statistical analyses that were completed. Table 14 describes the population demographics including gender, age, ethnicity, primary substance used at admission, parental addiction in the family of origin, mental illness, medical illness, criminal justice system involvement, and employment status. Women were well represented in the sample at 30 percent, as are minorities at 46.9 percent. Of these minorities 56.8 percent were blacks and 39.7 percent were Hispanics. This section describes the variation in unique needs of older addicted adults according to race, gender and age differences. Specifically, it was predicted that there would be significant age, gender and race differences within the senior population specific to history of criminal justice involvement, employment status, mental illness, medical illness, primary substance used at admission and parental addiction (in the family of origin).

Table 14: Phi and Cramer’s V measures of association in chi square statistic showing presenting problem differences by gender, age and race

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>1019</td>
<td>534</td>
<td>52.4</td>
<td>355</td>
<td>34.8</td>
</tr>
<tr>
<td>F</td>
<td>437</td>
<td>348</td>
<td>79.5***</td>
<td>172</td>
<td>39.4</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-64</td>
<td>1197</td>
<td>682</td>
<td>57.0***</td>
<td>470</td>
<td>39.3***</td>
</tr>
<tr>
<td>65+</td>
<td>259</td>
<td>200</td>
<td>77.2</td>
<td>57</td>
<td>22.0</td>
</tr>
<tr>
<td>Race (each compared to all other)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>388</td>
<td>168</td>
<td>43.3***</td>
<td>171</td>
<td>44.1***</td>
</tr>
<tr>
<td>Latino</td>
<td>263</td>
<td>154</td>
<td>58.6</td>
<td>100</td>
<td>38.0</td>
</tr>
<tr>
<td>White</td>
<td>773</td>
<td>544</td>
<td>70.4***</td>
<td>241</td>
<td>31.2***</td>
</tr>
</tbody>
</table>

* p < .05, ** p < .01, *** p < .001

When comparing presenting problem differences (utilizing Phi and Cramer’s V Chi Square analyses) between males and females, Table 14 above illustrates that on a
statistically significant basis females were more likely than males to have a co-occurring mental illness (79.5 percent versus 52.4 percent, p<.001) and a lower alcohol and drug use severity (18.5 percent versus 25.2 percent, p<.05); males were found to be statistically more likely to have a criminal justice history (30.1 percent versus 10.3 percent, p<.001). There was no statistically significant difference in the percentage of those with addicted parents; 34.8 percent of the males and 39.4 percent of the females are ACOA/SAs (i.e., parental addiction). Also, Table 14 illustrates that women were significantly more likely to be unemployed than men (71.6 percent versus 61.4 percent, p<.001).

Again in reference to Table 14, when looking at statistically significant age differences, (i.e. those between 50 and 64 years of age and those 65 and older at admission), the table shows that the older cohort was less likely to have a higher severity of alcohol and drug use (11.2 percent versus 26.1 percent, p <.001) and greater likelihood of having a co-occurring mental illness (77.2 percent versus 57.0 percent, p<.001). The younger cohort was found to have a statistically greater likelihood of having a criminal justice history (27.0 percent versus 11.2 percent, p<.001) and having alcohol or drug addicted parents (39.2 percent versus 22.0 percent, p<.001). With regard to unemployment the older cohort was significantly more likely to be jobless when compared to the younger cohort (94.2 percent versus 58.1 percent, p<.001).

Table 14 also illustrates the differences in presenting problems between races. The comparisons illustrated are between each race compared to all others. Whites when compared to all other races were significantly less likely to have drug use severity (19.1 percent, p<.001), criminal justice history (16.8 percent, p<.001) and unemployment (38.4
percent, p<.05), but whites were significantly more likely to have a co-occurring mental illness at admission (70.4 percent, p<.001). Blacks when compared to all others were significantly more likely to have severe drug use (29.1 percent, p<.01), criminal justice history (30.1 percent, p<.001) and alcohol/drug addicted parents 44.1 percent, p<.001). Latinos when compared to all others were significantly more likely to have criminal justice history (35.0 percent, p<.001) and severe alcohol/drug use (28.1 percent, p<.05).

In summary, there was a great deal of variation in special needs for older addicted adults across age, gender and race. Several of the differences noted were significant and were therefore important to consider in the following statistical analysis, because they suggest the importance of including interaction variables in the models.

Initial Analyses of the Independent Variables

Variance associated with Outcomes

Before creating the full models, a preliminary analysis explored the independent variables and potential interaction variables and their influence on the outcome variables of overall goal achievement and social goal achievement. Table 15 was developed to explore the distribution of independent variables across programs and how they related to overall goal achievement.

Table 15 illustrates programs, patients and overall goal attainment rates associated with each intervention type. There were 22 programs in total, and the independent variables (i.e. those interventions under investigation), are shown to be distributed fairly evenly across the programs, ranging from Strong Community Integration (SCI) within five programs to Strong Promising Approaches (SPA) and Strong Comprehensive Services (SCS), each of the latter represented within ten programs.
Table 15: Programs, patients and overall goal attainment rates associated with each intervention type

<table>
<thead>
<tr>
<th>Program</th>
<th>Number Discharged</th>
<th>Strong Community Integration</th>
<th>Strong Harm Reduction</th>
<th>Strong Age Tailored</th>
<th>Strong Comprehensive Services</th>
<th>Strong Promising Approaches</th>
<th>Strong Health Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>45</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>B</td>
<td>67</td>
<td>M</td>
<td>M</td>
<td>Y</td>
<td>N</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>C</td>
<td>46</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>D</td>
<td>118</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>M</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>E</td>
<td>67</td>
<td>M</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>F</td>
<td>82</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>G</td>
<td>56</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>H</td>
<td>48</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>I</td>
<td>52</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>J</td>
<td>49</td>
<td>N</td>
<td>M</td>
<td>M</td>
<td>N</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>K</td>
<td>52</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>L</td>
<td>27</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>M</td>
<td>95</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>52</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>O</td>
<td>36</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
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<tr>
<td>P</td>
<td>70</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Q</td>
<td>81</td>
<td>M</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>R</td>
<td>47</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>S</td>
<td>115</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>T</td>
<td>77</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>U</td>
<td>98</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>V</td>
<td>35</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Total Programs: 22
Total Patients: 1,415
% Goals Achieved: 31.7
% Social Goals Achieved: 39.4

(M=Missing)

In addition, the distribution of patients in receipt of the interventions is fairly evenly distributed, ranging from 284 receiving the Strong Community Integration (SCI) condition to 591 in receipt of the Strong Comprehensive Services (SCS) condition. The
distribution of goals met between interventions/conditions ranged from 41.1 percent to 68.1 percent; 31.7 percent for the total patient population. The true impact of the interventions, however, will not be known until the variation that is better explained by the control variables is accounted for in the results. This table also illustrates that there was missing data that affected whether or not a program could be credited for having (or not having) the independent variable. These included programs A, B, D, J and Q.

In conclusion, this analysis enables the reader to understand some of the strengths and limitations of the data set. There is missing data across five programs rendering their data unusable in certain models when the associated independent variable is used. This table also illustrates that some programs were credited for no interventions, while others are credited with all of the interventions. Later in this chapter, additional statistical procedures explore any potential anomalies in variance explained due to the missing data and/or number of interventions credited to programs. The other notable result demonstrated in this table, is that the interventions (as credited to specific programs/patients) scored higher in overall goal achievement and social goal achievement than the overall total patient population. However, this result is not meaningful unless the potential other explanatory variables are controlled for. The next section addresses how this study will account for the other potential explanatory variables.

Establishing Interaction Variables

Table 16 below illustrates the results of logistic regression on overall goal achievement inclusive of all control variables and interaction variables. As previously noted, the interaction variables of significance were all in the area of age, which shows
significant interaction with blacks (OR=.606, p<.01), Hispanics (OR=.628, p<.05) and gender (OR=.726, p<.01). The table shows that the odds of overall goal achievement as age increases are significantly worse for both Hispanics and blacks (compared to whites) and significantly worse for females compared to males. Table 16 also illustrates that the odds of overall goal achievement were significantly worse for those with a co-occurring mental illness (OR=.636, p<.01) and those with increasing severity of alcohol and drug use (OR=.736, p<.001). Table 16 also illustrates that as age increased (for each five year increment), the odds of overall goal achievement nearly doubled (p<.001). Lastly, Table 16 illustrates that those who were employed had better odds of overall goal achievement by a factor of 2.8 (P<.001) and those who had a criminal justice history had better odds of overall goal achievement by 49 percent (p<.05).

Because the overall influence of the combined interaction variables can significantly change the overall odds of the outcomes, it is important to consider whether or not the interaction variables as a whole should be included in the model. Table 17 illustrates logistic regression on overall goal achievement inclusive of all control variables, without the interaction variables. The findings without the interaction variables were very similar to the model with these interaction variables included (as noted in Table 16), with a couple of exceptions.
Table 16: Logistic regression on overall goal achievement inclusive of all control variables and interaction variables (Least squares likelihood = 1495.594, .285)

<table>
<thead>
<tr>
<th>N= 1,456</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.054</td>
<td>.731-1.159</td>
</tr>
<tr>
<td>Age</td>
<td>1.991***</td>
<td>1.683-2.354</td>
</tr>
<tr>
<td>Race/Ethnic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>.553</td>
<td>2.57-1.188</td>
</tr>
<tr>
<td>HSP</td>
<td>.950</td>
<td>.432-2.085</td>
</tr>
<tr>
<td>Other</td>
<td>.897</td>
<td>.382-2.105</td>
</tr>
<tr>
<td>DU Severe (Drug Use Severity)</td>
<td>.736***</td>
<td>.639-.848</td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>.636**</td>
<td>.475-.852</td>
</tr>
<tr>
<td>CoOccurMED (Medical)</td>
<td>1.155</td>
<td>.864-1.543</td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>.775</td>
<td>.589-1.020</td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>1.485*</td>
<td>1.096-2.092</td>
</tr>
<tr>
<td>Employment</td>
<td>2.799***</td>
<td>2.068-3.788</td>
</tr>
<tr>
<td>GenXBlack</td>
<td>1.425</td>
<td>.623-3.260</td>
</tr>
<tr>
<td>GenXHSP</td>
<td>.599</td>
<td>.248-1.446</td>
</tr>
<tr>
<td>AgeXBlack</td>
<td>.606**</td>
<td>.451-.815</td>
</tr>
<tr>
<td>AgeXHSP</td>
<td>.628*</td>
<td>.441-893</td>
</tr>
<tr>
<td>AgeGender</td>
<td>.726**</td>
<td>.600-878</td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.115***</td>
<td>1.090-1.141</td>
</tr>
<tr>
<td>Constant</td>
<td>.194***</td>
<td></td>
</tr>
</tbody>
</table>

*P<.05, **p<.01, ***P<.001

Table 17 illustrates that adults whose own parents were drug and alcohol addicted (ACOA/ACOSA) had significantly worse odds of overall goal achievement (OR=.759, p<.05). In order to determine whether or not to include the interaction variables in the model, the chi square difference between the two models was compared. The full model inclusive of the interaction variables (least squares likelihood= 1,496.632) was compared to the model without any interaction terms (least square likelihood= 1,531.584), and the difference was 36, which was found to be significant with 5 degrees of freedom (p<.001) utilizing the Chi Square Table. Therefore, because the interactions add significantly to the overall odds of goal attainment, the interaction variables should be included in the ensuing models.
Table 17: Logistic regression on overall goal achievement inclusive of all control variables (Least squares likelihood = 1531.541, .257)

<table>
<thead>
<tr>
<th></th>
<th>N= 1,456</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.947</td>
<td>.711-1.261</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.467***</td>
<td>1.332-1.615</td>
<td></td>
</tr>
<tr>
<td>Race/Ethnic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>.885</td>
<td>.635-1.233</td>
<td></td>
</tr>
<tr>
<td>HSP</td>
<td>.744</td>
<td>.510-1.085</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>.868</td>
<td>.373-2.021</td>
<td></td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>.730***</td>
<td>.634-.840</td>
<td></td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>.645***</td>
<td>.483-.861</td>
<td></td>
</tr>
<tr>
<td>CoOccurMED (Medical)</td>
<td>1.104</td>
<td>.830-1.470</td>
<td></td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>.759*</td>
<td>.579-.994</td>
<td></td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>1.430*</td>
<td>1.057-1.936</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>2.650***</td>
<td>1.964-3.575</td>
<td></td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.115***</td>
<td>1.090-1.140</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>.236***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P<.05, **p<.01, ***P<.001

Summary of the Initial Analysis of the Independent and Dependent Variables

Dependent Variables

As discussed previously, prior to coding the variables, it was discovered that there was a problem with the discontinued use outcome data. Because of the way the data was coded by New York State OASAS, it was impossible to develop a true discontinued use measure. After consultation with subject matter experts, it was noted that each of the original independent variables would likely have an effect on social goal achievement, so it was determined that the dependent variable social goal achievement merited analysis in relationship to each of the independent variables. Therefore, the final tested hypotheses in the ensuing models included social goal achievement and overall goal achievement as the dependent variables. The hypotheses listed in this section reflect these changes.

Independent Variables in the Model

It was anticipated that each of the independent variables would have significant impact on the odds of overall goal achievement and social goal achievement. After constructing the model for the hypotheses using these two dependent variables (Overall
Goal Achievement and Social Goal Achievement), it was discovered that three of the independent variables did not change the odds of overall goal attainment or social goal attainment in a statistically significant way in any of the models. Of the six original hypotheses, one was not upheld in the model because there were no significant changes in odds associated with the independent variable Strong Health Focus, when placed in the models both with and without interactions. The remaining two independent variables were Strong Promising Approaches (SPA) and Strong Harm Reduction (SHR). Because Strong Harm Reduction (SHR) and Strong Promising Approaches (SPA) approached significance in several models, they were left in the models where appropriate. The following lists the final independent variables that were left in the model: Strong Harm Reduction (SHR), Strong Age-Tailored (SAT), Strong Comprehensive Services (SCS), Strong Community Integrations (SCI) and Strong Promising Approaches (SPA).

Ultimately, because strong health focus independent variable was not upheld in any analysis and added no strength to the model, only six hypotheses remained, each containing two parts. Figure 18 represents the final variables and predicted findings that will be included in this results section.
Testing the Remaining Hypotheses

The remainder of this section presents the results from the logistic regression analyses testing the independent variables that had been left in the model. It should be noted that some of the survey responses that were necessary to formulate the independent variables were missing from a few programs. As a result, those programs and subsequently all of their patients could not be included in some of the analyses. The following models therefore have different values of N due to the absence of such programs ranging from a minimum of 1,039 to a maximum of 1,254. It should also be noted that several of the independent variables had overlapping elements from the survey. For example, Strong Promising Approaches includes the Strong Age-Tailored variables. As a result, certain variable combinations in the same model were not possible.
Hypotheses II through VII address the overall goal achievement dependent variable, and hypotheses VIII through XII address the social goal achievement dependent variable.

Testing Hypothesis II (Overall Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients receiving Strong Age Tailored (SAT) services versus those receiving mixed age-group services will have significantly higher odds of overall goal achievement.

Table 19 below illustrates the results from the model of this study concerned with the independent variables Strong Age-Tailored, Strong Community Services and Strong Harm Reduction and their impact on the odds of overall goal achievement. This model included the independent variables Strong Harm Reduction (SHR) and Strong Comprehensive Services (SCS) because it was believed that these independent variables also contributed to the increased odds of overall goal achievement. The other independent variables, Strong Community Integration (SCI), Strong Promising Approaches (SPA) and Strong Health Focus (SHF) were not included in this main model because they had overlapping elements from the survey used to develop the variables. For example, Strong Promising Approaches (SPA) utilized question number 17, which is the main component of the Strong Age Tailored (SAT) variable. The model results illustrate that those older adults who received same-age services had 2.25 times greater odds (p<.01) of overall goal achievement, when controlling for the identified control variables and the interaction variables. Therefore, Hypothesis II was upheld.
Table 19: Logistic regression on overall goal attainment inclusive of control variables, interaction variables and Independent variables Strong Harm Reduction (SHR), Strong Comprehensive Services (SCS) and Strong Age Tailored (SAT).

<table>
<thead>
<tr>
<th></th>
<th>N= 1,136</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.139</td>
<td>.756-1.714</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.532***</td>
<td>1.264-1.856</td>
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</tr>
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<td>Race/Ethnic</td>
<td></td>
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<td></td>
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<tr>
<td>BL</td>
<td>.321</td>
<td>.085-1.205</td>
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<tr>
<td>HSP</td>
<td>1.284</td>
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<tr>
<td>Other</td>
<td>.561</td>
<td>.187-1.684</td>
<td></td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>.667***</td>
<td>.557-800</td>
<td></td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>.529**</td>
<td>.369-759</td>
<td></td>
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<td>CoOccurMED (Medical)</td>
<td>.964</td>
<td>.668-1.392</td>
<td></td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>.718*</td>
<td>.518-995</td>
<td></td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>1.702**</td>
<td>1.189-2.437</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>2.008***</td>
<td>1.376-2.932</td>
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<td>GenXBlack</td>
<td>2.255</td>
<td>.575-8.840</td>
<td></td>
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<tr>
<td>GenXHSP</td>
<td>.528</td>
<td>.167-1.664</td>
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<td>AgeXBlack</td>
<td>.621*</td>
<td>.421-916</td>
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<td>AgeXHSP</td>
<td>1.087</td>
<td>.686-1.723</td>
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</tr>
<tr>
<td>AgeGender</td>
<td>.781*</td>
<td>.633-964</td>
<td></td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.121***</td>
<td>1.092-1.150</td>
<td></td>
</tr>
<tr>
<td>SCS (Strong Community Services)</td>
<td>1.216***</td>
<td>1.122-1.317</td>
<td></td>
</tr>
<tr>
<td>SAT (Strong Age-Tailored)</td>
<td>2.247**</td>
<td>1.288-3.919</td>
<td></td>
</tr>
<tr>
<td>SHR (Strong Harm Reduction)</td>
<td>.705</td>
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<tr>
<td>Constant</td>
<td>.095***</td>
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<td></td>
</tr>
</tbody>
</table>

*P<.05, **p<.01, ***P<.001

Testing Hypothesis III (Overall Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients engaged in programs providing Strong Comprehensive Services (SCS) specific to seniors will have significantly higher odds of overall goal-achievement as the number of those services increases.

The model results illustrated in Table 19 also shows that those older adults who received Strong Comprehensive Services (SCS) had 21.6 percent improved odds (p<.001) of overall goal achievement, when controlling for the identified control variables and the interaction variables. Therefore, Hypothesis III was upheld. This model
included the independent variables Strong Harm Reduction (SHR) and Strong Age-Tailored (SAT) because it was believed that these independent variables also contributed to the increased odds of overall goal achievement. The other independent variables Strong Community Integration (SCI) and Strong Promising Approaches (SPA) were again not included in this main model because they had overlapping elements from the survey as previously explained.

Testing Hypothesis IV (Overall Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients that have received a Strong Harm Reduction (SHR) approach when compared to patients that have received an abstinence-based approach will have significantly better odds of “overall goal achievement.”

In Table 19 the model results also illustrate that those older adults who received a strong harm reduction approach actually had decreased odds of overall goal achievement (OR = .71, p=.126), when controlling for the identified control variables and the interaction variables. This implies that in fact an abstinence based approach to treatment of older addicted adults may actually increase odds of overall goal achievement but this falls short of statistical significance. Therefore, Hypothesis IV was not upheld. This model included the independent variables Strong Age-Tailored (SAT) and Strong Comprehensive Services (SCS) because it was believed that these independent variables also contributed to the increased odds of overall goal achievement. The other independent variables Strong Community Integration (SCI) and Strong Promising Approaches (SPA) were
again not included in this main model because they had overlapping elements from the survey as previously explained.

Table 20: Logistic regression on overall goal achievement inclusive of control variables, interaction variables and Independent variable SPA.

<table>
<thead>
<tr>
<th>N= 1,254</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.093</td>
<td>.754-1.585</td>
</tr>
<tr>
<td>Age</td>
<td>1.880***</td>
<td>1.578-2.240</td>
</tr>
<tr>
<td>Race/Ethnic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>.740</td>
<td>.310-1.762</td>
</tr>
<tr>
<td>HSP</td>
<td>1.089</td>
<td>.44-2.671</td>
</tr>
<tr>
<td>Other</td>
<td>.739</td>
<td>.282-1.937</td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>.741***</td>
<td>.638-.861</td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>.624**</td>
<td>.458-.850</td>
</tr>
<tr>
<td>CoOccurMED (Medical)</td>
<td>1.139</td>
<td>.839-1.547</td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>.759</td>
<td>.569-1.012</td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>1.380</td>
<td>.996-1.191</td>
</tr>
<tr>
<td>Employment</td>
<td>2.590***</td>
<td>1.862-3.602</td>
</tr>
<tr>
<td>GenXBlack</td>
<td>1.035</td>
<td>.408-2.627</td>
</tr>
<tr>
<td>GenXHSP</td>
<td>.605</td>
<td>.222-1.652</td>
</tr>
<tr>
<td>AgeXBlack</td>
<td>.580**</td>
<td>.413-.816</td>
</tr>
<tr>
<td>AgeXHSP</td>
<td>.794</td>
<td>.527-1.198</td>
</tr>
<tr>
<td>AgexGender</td>
<td>.734**</td>
<td>1.081-1.135</td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.108***</td>
<td>1.081-1.135</td>
</tr>
<tr>
<td>SPA (Strong Promising Approaches)</td>
<td>1.282(p=.103)</td>
<td>.951-1.729</td>
</tr>
<tr>
<td>Constant</td>
<td>.207***</td>
<td></td>
</tr>
</tbody>
</table>

*P<.05, **p<.01, ***P<.001

Testing Hypothesis V (Overall Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients within the Strong Promising Approaches (SPA) condition will have significantly higher odds of overall goal achievement.

The model results illustrate that those older adults who received Strong Promising Approaches (SPA), as defined by the literature review, had increased odds of overall goal achievement (OR= 1.28, p=.103), when controlling for the identified control variables and the interaction variables. However, this falls short of statistical significance, and therefore, Hypothesis V was not upheld. This model excluded all of the other
independent variables because of overlapping elements [(Strong Comprehensive Services (SCS), Strong Community Integration (SCI) and Strong Age-Tailored (SAT)] from the survey as previously explained, and Strong Harm Reduction (SHR) was left out because it did not show a statistically significant effect on the odds of social goal achievement in any model.

Testing Hypothesis VI (Overall Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients within the Strong Community Integration (SCI) condition will have significantly higher odds of overall goal achievement.

Table 21: Logistic regression on overall goal achievement inclusive of control variables, interaction variables and independent variables Strong Harm Reduction (SHR), Strong Comprehensive Integration (SCI) and Strong Age-Tailored (SAT).

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.075</td>
<td>.732-1.577</td>
</tr>
<tr>
<td>Age</td>
<td>1.855***</td>
<td>1.545-2.228</td>
</tr>
<tr>
<td>Race/Ethnic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>.781</td>
<td>.313-1.949</td>
</tr>
<tr>
<td>HSP</td>
<td>1.036</td>
<td>.424-2.532</td>
</tr>
<tr>
<td>Other</td>
<td>.780</td>
<td>.305-1.993</td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>.739***</td>
<td>.630-1.867</td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>.644**</td>
<td>.565-1.891</td>
</tr>
<tr>
<td>CoOccurMED (Medical)</td>
<td>1.083</td>
<td>.780-1.505</td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>.804</td>
<td>.596-1.085</td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>1.360</td>
<td>.967-1.912</td>
</tr>
<tr>
<td>Employment</td>
<td>2.878***</td>
<td>2.042-4.058</td>
</tr>
<tr>
<td>GenXBlack</td>
<td>1.275</td>
<td>.482-3.371</td>
</tr>
<tr>
<td>GenXHSP</td>
<td>.641</td>
<td>.237-1.734</td>
</tr>
<tr>
<td>AgeXBlack</td>
<td>.584**</td>
<td>.411-1.830</td>
</tr>
<tr>
<td>AgeXHSP</td>
<td>.645*</td>
<td>.433-990</td>
</tr>
<tr>
<td>AgeGender</td>
<td>.716**</td>
<td>.585-875</td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.107***</td>
<td>1.079-1.135</td>
</tr>
<tr>
<td>SCI (Strong Community Integration)</td>
<td>1.697**</td>
<td>1.197-2.405</td>
</tr>
<tr>
<td>SAT (Strong Age-Tailored)</td>
<td>1.896*</td>
<td>1.047-3.435</td>
</tr>
<tr>
<td>SHR (Strong Harm Reduction)</td>
<td>.615</td>
<td>.361-1.049</td>
</tr>
<tr>
<td>Constant</td>
<td>.193***</td>
<td></td>
</tr>
</tbody>
</table>

*P<.05, **P<.01, ***P<.001
The model results in Table 21 illustrate that those older adults who were in the Strong Community Integration (SCI) condition had 1.7 times greater odds (p<.01) of overall goal achievement, when controlling for the identified control variables and the interaction variables. Therefore, Hypothesis VI was upheld. This model included the independent variables Strong Harm Reduction (SHR) and Strong Age-Tailored (SAT) because it was believed that these independent variables also contributed to the increased odds of social goal achievement and had no common elements with the other variables. The other independent variable Strong Promising Approaches (SPA) and Strong Comprehensive Services (SCS) were not included in this main model because they had overlapping elements from the survey as previously explained.

Testing Hypothesis VII (Overall Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients receiving the Strong Health Focus (SHF) condition versus those who did not have this condition will have significantly higher odds of overall goal achievement.

The model addressing Strong Health Focus is not included here because there was no significant change in the odds of overall goal attainment attributable to this condition. Therefore, Hypothesis VII was not upheld.

Testing Hypothesis VIII (Social Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients receiving Strong Age-Tailored (SAT)
services versus those receiving mixed age-group services will have significantly higher odds of social goal achievement.

The model results illustrated in Table 22 below show that those older adults who received Strong Age-Tailored (SAT) services had 2.3 times greater odds (p<.01) of social goal achievement, when controlling for the identified control variables and the interaction variables. Therefore, Hypothesis VIII was upheld. This model included the independent variables Strong Harm Reduction (SHR) and Strong Comprehensive Services (SCS) because it was believed that these independent variables also contributed to the increased odds of social goal achievement. The other independent variable Strong Promising Approaches (SPA) was again not included in this main model because it had overlapping elements from the survey as previously explained.

Table 22: Logistic regression on social goal achievement inclusive of control variables, interaction variables and Independent variables Strong Age-Tailored (SAT), Strong Harm Reduction (SHR) and Strong Comprehensive Services (SCS).

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.097</td>
<td>0.733-1.642</td>
</tr>
<tr>
<td>Age</td>
<td>1.465***</td>
<td>1.200-1.789</td>
</tr>
<tr>
<td>Race/Ethnic</td>
<td>1.465***</td>
<td>1.200-1.789</td>
</tr>
<tr>
<td>BL</td>
<td>0.700</td>
<td>0.257-1.907</td>
</tr>
<tr>
<td>HSP</td>
<td>0.825</td>
<td>0.310-2.191</td>
</tr>
<tr>
<td>Other</td>
<td>0.484</td>
<td>0.166-1.408</td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>0.758***</td>
<td>0.648-0.888</td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>0.561**</td>
<td>0.395-0.797</td>
</tr>
<tr>
<td>CoOccurMED (Medical)</td>
<td>0.952</td>
<td>0.670-1.353</td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>0.748</td>
<td>0.546-1.025</td>
</tr>
<tr>
<td>CJ Involved</td>
<td>1.437*</td>
<td>1.012-2.041</td>
</tr>
<tr>
<td>Employment</td>
<td>1.906**</td>
<td>1.319-2.753</td>
</tr>
<tr>
<td>GenXBlack</td>
<td>0.864</td>
<td>0.302-2.475</td>
</tr>
<tr>
<td>GenXHSP</td>
<td>0.720</td>
<td>0.240-2.160</td>
</tr>
<tr>
<td>AgeXBlack</td>
<td>0.546**</td>
<td>0.374-0.797</td>
</tr>
<tr>
<td>AgeXHSP</td>
<td>1.198</td>
<td>0.778-1.844</td>
</tr>
<tr>
<td>AgexGender</td>
<td>0.799*</td>
<td>0.642-0.995</td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.122***</td>
<td>1.094-1.151</td>
</tr>
<tr>
<td>SAT (Strong Age-Tailored)</td>
<td>2.313***</td>
<td>1.315-4.071</td>
</tr>
<tr>
<td>SHR (Strong Harm Reduction)</td>
<td>0.651</td>
<td>0.419-1.011</td>
</tr>
<tr>
<td>SCS (Strong Comprehensive Services)</td>
<td>1.167***</td>
<td>1.081-1.261</td>
</tr>
<tr>
<td>Constant</td>
<td>0.196***</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001
Testing Hypothesis IX (Social Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients engaged in programs providing Strong Comprehensive Services (SCS) specific to seniors will have significantly higher odds of social goal achievement.

The model results in Table 22 also illustrate that those older adults who received Strong Comprehensive Services (SCS) had 16.7 percent improved odds (p<.001) of social goal achievement when controlling for the identified control variables and the interaction variables. Therefore, Hypothesis IX was upheld. This model included the independent variables Strong Harm Reduction (SHR) and Strong Age-Tailored (SAT) because it was believed that these independent variables also contributed to the increased odds of social goal achievement. The other independent variables Strong Community Integration (SCI) and Strong Promising Approaches (SPA) were again not included in this main model because they had overlapping elements from the survey as previously explained.

Testing Hypothesis X (Social Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients that received a Strong Harm Reduction (SHR) approach when compared to patients who received an abstinence-based approach will have significantly higher odds of overall social goal achievement.
The model results illustrate that those older adults who received the Strong Harm Reduction (SHR) approach actually had decreased odds of social goal achievement (OR=.651, p=.097), when controlling for the identified control variables and the interaction variables. This implies that in fact an abstinence based approach to treatment of older addicted adults may actually increase odds of social achievement but this again falls short of statistical significance. Therefore, Hypothesis X was not upheld. This model included the independent variables Strong Age-Tailored (SAT) and Strong Comprehensive Services (SCS) because it was believed that these independent variables also contributed to the increased odds of social goal achievement.

Testing Hypothesis XI (Social Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients within the Strong Promising Approaches (SPA) condition will have significantly higher odds of social goal achievement. The model results in Table 23 illustrate that those older adults who received Strong Promising Approaches (SPA), as defined by the literature review, had increased odds of social goal achievement (OR= 1.31, p=.078), when controlling for the identified control variables and the interaction variables. However, this again falls short of statistical significance. Therefore, Hypothesis XI was not upheld. This model excluded all of the other independent variables because of overlapping elements[Strong Comprehensive Services (SCS) & Strong Age-Tailored (SAT)] from the survey as previously explained, and Strong Harm Reduction (SHR) was left out because it did not show a statistically significant effect on the odds of social goal achievement in any model.
Table 23: Logistic regression on social goal achievement inclusive of control variables, interaction variables and independent variable Strong Promising Approaches (SPA).

<table>
<thead>
<tr>
<th>N= 1,150</th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.053</td>
<td>.725-1.527</td>
</tr>
<tr>
<td>Age</td>
<td>1.745***</td>
<td>1.455-2.093</td>
</tr>
<tr>
<td>Race/Ethnic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>.936</td>
<td>.417-2.101</td>
</tr>
<tr>
<td>HSP</td>
<td>.794</td>
<td>.327-1.924</td>
</tr>
<tr>
<td>Other</td>
<td>.520</td>
<td>.192-1.404</td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>.795**</td>
<td>.691-.915</td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>.588**</td>
<td>.430-804</td>
</tr>
<tr>
<td>CoOccurMED (Medical)</td>
<td>1.056</td>
<td>.778-1.432</td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>.795</td>
<td>.597-1.058</td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>1.292</td>
<td>.930-1.794</td>
</tr>
<tr>
<td>Employment</td>
<td>2.217***</td>
<td>1.595-3.081</td>
</tr>
<tr>
<td>GenXBlack</td>
<td>.631</td>
<td>.262-1.157</td>
</tr>
<tr>
<td>GenXHSP</td>
<td>.724</td>
<td>2.68-1.953</td>
</tr>
<tr>
<td>AgeXBlack</td>
<td>.505***</td>
<td>.358-713</td>
</tr>
<tr>
<td>AgeXHSP</td>
<td>.917</td>
<td>.618-1.360</td>
</tr>
<tr>
<td>AgexGender</td>
<td>.761*</td>
<td>.618-937</td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.119***</td>
<td>1.091-1.147</td>
</tr>
<tr>
<td>SPA (Strong Promising Approaches)</td>
<td>1.314(p=.078)</td>
<td>.970-1.778</td>
</tr>
</tbody>
</table>

*P<.05, **p<.01, ***P<.001

Testing Hypothesis XII (Social Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients within the Strong Community Integration (SCI) condition will have significantly higher odds of social goal achievement.
Table 24: Logistic regression on social goal achievement inclusive of control variables, interaction variables and independent variables Strong Harm Reduction (SHR), Strong Community Integration (SCI) and Strong Age-Tailored (SAT).

<table>
<thead>
<tr>
<th></th>
<th>OR</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.973</td>
<td>.660-1.433</td>
</tr>
<tr>
<td>Age</td>
<td>1.824***</td>
<td>1.500-2.219</td>
</tr>
<tr>
<td>Race/Ethnic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>1.274</td>
<td>.547-2.970</td>
</tr>
<tr>
<td>HSP</td>
<td>.896</td>
<td>.376-2.134</td>
</tr>
<tr>
<td>Other</td>
<td>.556</td>
<td>.211-1.465</td>
</tr>
<tr>
<td>Drug Use Severity</td>
<td>.774**</td>
<td>.663-9.03</td>
</tr>
<tr>
<td>CoOccurMH (Mental Health)</td>
<td>.562**</td>
<td>.403-.784</td>
</tr>
<tr>
<td>CoOccurMED (Medical)</td>
<td>1.011</td>
<td>.728-1.405</td>
</tr>
<tr>
<td>ACOA/ACOSA (Parental Addiction)</td>
<td>.788</td>
<td>.583-1.065</td>
</tr>
<tr>
<td>CJ Involved (Criminal Justice)</td>
<td>1.275</td>
<td>.900-1.805</td>
</tr>
<tr>
<td>Employment</td>
<td>2.566***</td>
<td>1.821-3.167</td>
</tr>
<tr>
<td>GenXBlack</td>
<td>.626</td>
<td>.252-1.553</td>
</tr>
<tr>
<td>GenXHSP</td>
<td>.706</td>
<td>.267-1.864</td>
</tr>
<tr>
<td>AgeXBlack</td>
<td>.584**</td>
<td>.407-.838</td>
</tr>
<tr>
<td>AgeXHSP</td>
<td>.744</td>
<td>.502-.1.102</td>
</tr>
<tr>
<td>AgexGender</td>
<td>.699**</td>
<td>.564-.866</td>
</tr>
<tr>
<td>LOS (Length of Stay)</td>
<td>1.121***</td>
<td>1.092-1.151</td>
</tr>
<tr>
<td>SCI (Strong Community Integration)</td>
<td>1.857**</td>
<td>1.295-2.663</td>
</tr>
<tr>
<td>SAT (Strong Age-Tailored)</td>
<td>1.618</td>
<td>.882-2.968</td>
</tr>
<tr>
<td>SHR (Strong Harm Reduction)</td>
<td>.655</td>
<td>.384-1.116</td>
</tr>
<tr>
<td>Constant</td>
<td>.337***</td>
<td></td>
</tr>
</tbody>
</table>

*P<.05, **p<.01, ***P<.001

The model results illustrated in Table 24 show that those older adults who were in the SCI (Strong Community Integration) condition had 1.9 times greater odds (p<.01) of social goal achievement, when controlling for the identified control variables and the interaction variables. Therefore, Hypothesis XII was upheld. This model included the independent variables Strong harm Reduction (SHR) and Strong Age-Tailored (SAT) because it was believed that these independent variables also contributed to the increased odds of social goal achievement and had no common elements with the other variables. The other independent variable Strong Promising Approaches (SPA) and Strong Comprehensive Services (SCS) were not included in this main model because they had overlapping elements from the survey as previously explained.
Testing Hypothesis XIII (Social Goal Achievement)

After controlling for age, use severity, gender, race, co-occurring mental health disorders, parental addiction, length of stay, co-occurring medical condition, employment, and legal status, patients receiving the Strong Health Focus (SHF) condition versus those who did not have this condition will have significantly higher odds of social goal achievement.

The model addressing Strong Health Focus is not included here because there was no significant change in the odds of overall goal attainment attributable to this condition. Therefore, Hypothesis XIII was not upheld.

Summary

Figure 25 provides a summary of the tested hypotheses and related findings. There were four key findings consistent with the hypotheses. Programs that provided age-tailored services for older addicted adults had better odds of overall goal achievement by a factor of 2.25 ($p<.01$), and for each increase in the number of age-tailored services provided (SCS), programs improved their odds of overall goal attainment by 21.6 percent ($p<.001$). Strong age-tailored services were also associated with 2.3 times greater odds ($p<.01$) of social goal achievement, and each increase in the number of age-tailored services (SCS) led to 16.7 percent improved odds ($p<.001$) of social goal achievement. Finally, Strong Community Integration (SCI) was associated with better odds of overall goal achievement by 70 percent ($p<.01$) and social goal achievement by 90 percent ($p<.01$).

There were two findings that lacked statistical significance. Contrary to the hypothesis, a harm reduction approach compared to an abstinence approach, was shown
to have near statistically significant poorer odds of overall goal achievement and social goal achievement. In addition the combination of approaches supported by the literature review (and represented by variable SPA) appeared to improve the odds of overall social goal achievement but fell short of statistical significance. The strong health focus (SHF) hypothesis was not found to have a statistically significant impact on the odds of overall goal achievement and overall social goal achievement.

Figure 25: Diagram showing interventions and outcomes in terms of significantly improved odds.

Testing the Results

Because the nature of this logistic regression approach involved the development of independent variables based on interventions that were shared across multiple programs, additional analyses were performed to help rule out any unique program effects and effects that may have been caused by the missing data. The first analysis conducted placed a simple count of the number of independent variables assigned to each program (PRU) in the model as the independent variable, which excluded all programs
that had missing data and the two variables (harm reduction and health focus) that were not shown to approach a significant influence as predicted. The Strong Promising Approaches independent variable was kept in the model because its influence approached significance with regard to the odds of overall goal achievement. For each increase in the number of independent variables (from 0-4), the odds of overall goal attainment increased by 65.8% (p<.001). This result supported the added value produced by each increase in the number of independent variables. A similar increase in odds was associated with increased odds of social goal achievement variable (58.2%, P<.001).

Additionally, a between-groups comparison was conducted to determine if and to what degree outcomes differed between the programs that had any missing data, the programs that provided all of the interventions, and the remaining programs (those that were missing no data). The analysis involved grouping the programs and testing them as separate entities in the models, comparing the results between them. The two programs that were credited for having all of the independent variables had better odds of overall goal achievement than each of the other groupings, as expected. The remaining two groupings including those programs that were missing data, contrasted with those programs that had mixed findings, had no significant difference in the odds of overall goal achievement. This analysis served to help rule out any unique outcomes that may have been caused by the missing data.

Finally, each independent variable was tested separately in the model by placing only one independent variable in the model at a time to explore the relative differences in the degree of explanation of the results could be attributed; two stood out as being significant: strong community integration (Cox and Snell r-squared equals .204, p<.01).
and strong comprehensive services (r-squared equals .271, P<.001). The strong age-tailored variable fell short of significance by itself. Next, the r-squared values of different combinations of independent variables that could be put in the model together were compared, and the strongest combinations of independent variables were: strong comprehensive services combined with strong age-tailored (r-squared equaled .268) and strong community integration combined with strong age-tailored (r-squared equaled .276). These findings support the hypotheses. The odds of overall goal achievement significantly increased under the condition of age-tailored services when combined with comprehensive services and as the number of age-tailored services increases (i.e., strong comprehensive services). Also, as previously noted, consistent with the previously stated findings, greater community integration (a higher number of community linkages) also contributed to better odds of overall goal achievement.
Chapter 7: Discussion

The literature review for this dissertation illustrated how the problem of substance use disorders for seniors is growing at an unprecedented rate in NYS and nationally. The literature highlighted certain age-tailored approaches may be more beneficial, such as CBT, same-age treatment groups, slower pace, greater emphasis on psychiatric medication management, and case management. Other, age-tailored strategies remained unexplored, such as linkage to senior services and stronger focus on health related services. Additionally, the review revealed how the needs and gaps in outpatient chemical dependency services for seniors, including the lack of defined evidence-based services tailored to this target population continues to be a concern. In addition, the literature suggested that there is a need for programming that would address community linkages, same-age group services, and other unique, senior-driven treatments. Lastly, the literature review revealed that there are additional gaps of knowledge in the areas of gender differences, age of onset differences and ethnicity differences in response to common treatments.

This doctoral dissertation revealed age, race and gender differences of the older addicted population in terms of mental health problems, legal history, severity of drug use, parental addiction and co-occurring medical issues. In addition, the study focused on revealing the specific types of services that may help improve successful outcomes for alcohol and/or drug addicted seniors. Specifically, this dissertation sought to determine the impact of several key independent variables, namely: age-tailored services, strong comprehensive services (wide range of age-tailored services), strong community
linkages, strong harm reduction and strong promising approaches. This line of research focused on identifying the custom-tailored services needed to foster improved treatment outcomes of older addicted adults. Building on the research to date, it extended our knowledge of effective approaches for the addicted senior population.

Age, Race and Gender Differences within the Older Addicted Population

One important question addressed was: what are the alcohol/drug abuse patterns specific to age, gender and race differences within the senior population? There were a number of presenting problem differences noted that should be acknowledged and discussed. For example, those older addicted adults who are in outpatient treatment that were employed demonstrated almost 50 percent better odds of overall goal attainment than those who were unemployed. This employment finding suggests that having a job may perhaps offer structure and life purpose, and/or unemployment may foster increased use due to unstructured time wherein the drinking/drugging can occur. By having structure in one’s day through employment, an older adult may continue to experience increased socialization, ongoing sense of identity, ongoing stream of income, and consistency in their routine. All of these may play a vital role in their sobriety and/or abstinence. It is also possible simply that those who are employed are generally experiencing overall higher functioning.

Another interesting finding was that for each increase of age by an increment of five years, the odds of improved overall goal achievement increased by more than two and a half times (2.65). This finding is consistent with the literature that suggests that as older adults mature, their physiological makeup prevents them from being able to tolerate
as much alcohol (Osling, 2004). This may lead to higher goal achievement for older addicted adults because their bodies cannot tolerate the same quantity of alcohol thus enhancing motivation to successfully complete treatment.

Another important finding was that the odds of overall goal achievement for those older addicted adults who themselves had addicted parents were decreased by 32 percent when compared to those older addicted adults who did not report having addicted parents. This finding is consistent with the literature that suggests there is a high correlation between adverse childhood experiences (ACEs) and late-life addiction and medical and mental health disorders (Larkin & MacFarland, 2012). One possible reason for this finding may be that older adults who were raised in a home where one or more parental figures struggled with mental illness and/or addiction learned certain patterns of behavior. These patterns coupled with the older addicted adult’s possible lack of healthy role models may limit their ability to be as successful as their fellow group participants who may have had stronger supports and role models who are able to help them during their course or treatment. This would suggest it is worthwhile to provide group work that educates older addicted adults, who themselves had parents who experienced substance use disorders as an integral part of outpatient addictions treatment with the aim of improving their outcomes.

Strong Age-Tailored Services

In NYS, the majority of older addicted adults are receiving mixed-age services. In fact, the NYS OASAS 2011 Statewide Plan reported that only 8 percent of NYS programs serving older adults offered discrete services to older adults. Although it has not been established, presumably a similar proportion of programs nationally are
providing such discrete services. Therefore, a fundamental aim of this study was to explore whether or not same-age addiction services for seniors add significantly to successful outcomes such as overall goal attainment rates. The results of this study supported the assertion that programs that provided age-tailored services for older addicted adults achieved substantially higher odds of social goal achievement and overall goal achievement. It was remarkable to also note that for each increase in an age-specific service offered, there were statistically significant improved odds of social goal achievement and overall goal achievement (as indicated by the strong comprehensive services finding). Consequently, given the burgeoning proportion of seniors anticipated to have alcohol and other substance use disorders nationally (Andrews, 2008; Gfroerer & Epstein, 1999), these findings suggest that all addiction treatment programs may need to adapt and enhance their approaches and services to meet this demand and maximize their potential to be successful by providing age-tailored services, such as grief and loss, psycho-education, health and nutrition, transportation, psychiatric services, case management and family intervention. It may be surmised that older adults enjoy and benefit from being among their same-age group talking about age-related issues. One additional reason may be that older adults share similar life stage challenges and thus are more comfortable with their peers.

**Strong Community Integration**

This study sought to explore whether or not programs that linked seniors to faith-based community groups, senior centers, retired senior volunteer programs and other pro-social services had improved outcomes as compared to those that did not routinely offer such linkages (consistent with the productive aging paradigm). The literature review
suggested that programs treating seniors that linked to other senior-oriented programs in the community would have higher success rates (D’Agostino et al., 2006 and D’Archangelo, 1993). The present study also supports the assertion that programs partnering with other senior-focused community based services will have substantially better outcomes. This finding further suggests that programs should not “work in silos,” but instead seek to educate themselves about the existing senior-focused services in the community and establish collaborative approaches. Aiding older addicted adults by linking them to services in their community may foster a sense of connectedness and decreased isolation. When an older addicted adult engages in the services available in their community, a sense of empowerment to utilize community supports can be fostered, which in turn can be helpful in maintaining ongoing recovery.

Strong Harm Reduction Approach

In a review of 2008 total annual OASAS admission data, it was found that younger adults (those under 50 years of age) are referred to outpatient chemical dependency treatment in NYS from the criminal justice system at a rate of 46.2 percent, in contrast with 29.2 percent for adults age 50 and older (OASAS, 2011). This referral source difference suggests that older addicted adults are less likely to be mandated to treatment than younger addicted adults. Therefore, it was hypothesized that a strong harm reduction approach may be more effective for seniors, because they are less likely to be externally mandated and as such are less likely to have legal consequences for disengagement of treatment prior to goal achievement. An abstinence only approach requires an abrupt change in drinking behavior, whereas the harm reduction approach allows for gradual reduction in substance involvement based on patient readiness.
Therefore, without the external mandate of the criminal justice system and without consequences for leaving treatment prematurely, a more gradual approach may be better suited for retaining older patients in addictions services. However, this was not confirmed in this study; although an abstinence based approach appeared to improve odds of overall goal achievement and social goal achievement, these findings fell short of statistical significance. Future studies might compare the differences in outcomes between seniors referred from the legal system (that may be externally motivated) with other seniors that are not referred from the legal system, relative to a harm reduction versus an abstinence approach.

**Strong Promising Approaches**

The literature suggested several types of overall strong senior programming that should be most effective for seniors, namely: CBT (Schonfeld & Dupree, 1995; Rice et al., 1993), age-specific services (Blow et al., 2000; Cummings et al., 2006), and case management services (D’Agostino et al., 2006). The strong promising approaches (SPA) variable specifically explored this combination of services. Although there appeared to be strong support for this variable, the odds of overall goal achievement and the odds of social goal achievement did not differ at a statistically significant level. One reason for this might be that it is difficult to quantify the individual counselor-level activities such as CBT and case management, as there is likely great variation between counselors within programs. The nature of the survey was such that program services and approaches were more easily gathered, than were individual counselor activities. Therefore any conclusions about the promising approaches should be made cautiously.
Strong Health Focus

Health related services was chosen as a variable to explore because older patients (55+) have been found to have significantly greater average number of medical conditions than younger and middle age patients (Lemke & Moos, 2002). There were no statistically significant findings pertaining to odds ratios associated with the Strong Health Focus (SHF) variable for overall goal achievement and social goal achievement outcomes. One reason why the Strong Health Focus (SHF) appeared to lack influence may be due to variations in how the programs that completed the survey interpreted the “health and nutrition” item (which lacked a clear operational definition). Another reason may be due to older adults relying more on information and advice received from their primary care providers than from chemical dependency providers. Another reason may be that some providers who stated they had a strong health focus actually lacked the expertise to adequately provide such programming. Ultimately, it is impossible to determine why there were not significant findings in this area; future studies should seek to better understand the importance of health related services in addictions treatment programs for seniors.

Study Limitations

One important limitation of a secondary data analysis study is the inability to control for all the threats to internal validity. In particular, it is impossible to be certain that any variable linked to a particular outcome is actually responsible for that outcome. For example, the Strong Community Integration (SCI) variable distinguished between those programs that linked to four or more senior-focused community services and those that linked to less than four. Those programs that linked to four or more senior-focused
community services may simply have been located in areas where senior services were more accessible, and so it might have been simply the accessibility of senior services within a geographic region rather than the function of program linkages (the intended independent variable) that improved the odds of overall goal achievement. However, a wide range of control variables were utilized in this study and served to rule out many potential alternate explanations for the outcomes, such as age, gender and race differences.

Another concern related to threats to internal validity pertains to the assumption that was made in this study which was that each patient who was in a particular program actually received the intervention the program was credited for. For example, we do not know if all of the patients within programs that provided strong comprehensive services actually would have benefited from a program’s available services and interventions. A similar concern is the study did not capture every component of treatment including individual counseling activities and client counselor relationship, and these factors probably had an influence on the independent variables and/or the outcome variables.

Because some of the independent variables had overlapping elements, not all of the independent variables could be placed in the model simultaneously. As a result, it was difficult to ascertain a full understanding of the independent variables unique influence on the odds of overall goal attainment.

Another drawback of secondary data analyses is that the data are older than they would be in a prospective study. In this case, the data are six years old. However, the programming for addicted seniors across New York State remains largely the same, in that there are very few programs that offer discrete services for seniors (OASAS, 2011).
In addition, the demographics and needs of the population under review from six years ago are very similar to those of older addicted seniors seeking services in more recent years (OASAS, 2011).

Another limitation based on the design of the study relates to the selection bias. Programs were chosen based on the number and proportion of seniors they treated. As a result, the services that were studied may have in fact differed from the typical addictions services offered in programs that were structured differently. Another issue related to selection bias pertains to the fact that patients who did not stay 30 days and receive at least four visits were not included in the study. It is possible that these excluded patients, had they been included, may have responded in ways that were different then what was found with the population that was studied.

The dependent variables in this study may be considered a limitation because they lack the scientific reliability and validity that can be associated with tested instruments. Utilizing the discharge form measures (PAS 45) allows for the possibility of having human error and inter-rater discrepancies. However, because only the operational definition of these variables included absolutely affirmative responses (such as “completed treatment: all goals met”), only those patients who were, in the rater’s determination, entirely successful were given credit for that outcome.

Another limitation was that some of the survey responses necessary to formulate the independent variables were missing from a few programs. As a result, several models excluded one or more programs and all of the patients within those programs. However, due to the fact that the N for all the models included one thousand or more, the analyses
could still be conducted with a large number of programs and associated patients; and they did produce statistically significant findings.

The final limitation pertains to the analysis conducted. The logistic regression analysis did provide meaningful results, but a nested model such as hierarchical linear modeling (HLM), would further control for influences at each level. For example, a HLM approach would allow the researcher to control for program level effects such as patient to patient influence. This approach would better account for unbalanced data at any level, while also allowing for all potential relevant sources of variation and co-variation to be included in the analysis.

Implications for Social Work Practice, Policy and Research

A macro-level aim of this study was to help inform the chemical dependency treatment system about the importance of specialized programs and tracks within addiction treatment programs custom-tailored to address the unique needs of the aging population. Specifically, this study suggested that addiction treatment programs may best serve seniors by providing age-tailored services and linking to senior-focused services in their communities. Social workers have the opportunity to enhance the infrastructure of the service delivery system to accommodate the burgeoning numbers of seniors requiring substance use disorder treatment. Collaborative initiatives, inclusive of mental health and auxiliary senior-focused programs, may be essential for effectively addressing the specialized needs of older addicted adults.

Because this study identified that seniors demonstrate improved treatment outcomes when they are provided age-tailored services, it may be necessary to staff addiction treatment programs with seasoned professionals possessing backgrounds in
gerontology, as well as expertise with mental and addiction treatments. This study also found that 80 percent of the women and 52 percent of the men admitted for outpatient addiction treatment had a co-occurring mental illness. Therefore, it may be necessary to have a geriatric psychiatrist and other licensed mental health practitioners with expertise in addiction and mental health. By employing such licensed mental health practitioners with addiction expertise, programs are better positioned for Medicare reimbursement eligibility. This is fiscally prudent when treating a large proportion of older addicted adults covered by Medicare, which requires a higher standard of education and training among their covered providers.

This study suggests that social work practitioners, in their treatment of older addicted adults, should provide services that are sensitive to the unique needs of this vulnerable population. For example, creating groups that are inclusive of same-age patients will likely lead to more patient satisfaction and improved treatment outcomes. In addition, it may also be important to have a slower pace, a cognitive-behavioral focus, and age-related topics. Finally, to achieve effective practices with seniors, it may be vital to incorporate approaches that embrace community integration. For example, connecting an older addicted adult to a senior center may serve to greatly enhance socialization and overall goal attainment.

There is a need for further research in several areas. Research is needed to help determine how to organize the current system of care to be more effective in treating seniors with addictions. For example, future clinical trials should seek to confirm the value of age-tailored services for seniors and identify the most effective treatments for this age group. Special attention should be paid to individual differences within the senior
population including age, race and gender differences, given the interactions between these variables observed in this study. In addition, future studies should explore the potential value of co-locating mental health and substance use disorder services for seniors. Because the OASAS data did not provide information to determine the age-of-onset of the substance use disorder, this dissertation study could not evaluate the statistical significance of early versus late onset of the alcohol or substance use disorder. Therefore, future studies should seek to use data that would provide more detailed information about the onset of the substance use disorder.

In conclusion, this retrospective study supported the existing assertions and extended our understanding of the special needs of addicted seniors. There are several studies discussed in the literature review that suggest age-tailored services for seniors will result in better outcomes as compared to traditional mixed-age services. This study affirmed that programs that provided age-tailored services (SAT) for older addicted adults had better odds of overall goal achievement by a factor of 2.25 (p<.01) This study also suggested additional services and programs that may enhance treatment effectiveness for this vulnerable population, such as linking to community based senior services and providing a wide range of age-tailored services. This dissertation suggests a number of new directions for future research that would lead to the establishment of evidence-based practices and clinical practice guidelines in the area of geriatric addiction treatment. The development of comprehensive and effective chemical dependency services for seniors will depend on policy makers’ success in expanding education, funding, and research in the area of geriatric addictions. The scope of such efforts should be inclusive of classroom education, policy expansion, conference training, service delivery
improvements and program enhancements. To this end, this study will lead to multiple publications, and the findings will be presented at myriad local, state, and national conferences.
References


Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment. (2004). *Substance abuse treatment and family therapy, A Treatment Improvement Protocol (TIP) Series, Number 39*. Rockville, MD.
Appendix A: OASAS Letter Requesting Permission and Granting Permission

Att: Gary Dollard
Director of Evaluation and
Practice Improvement
1450 Western Avenue
Albany, NY 12203

Dear Gary,

I am writing to formally request permission from OASAS to conduct a Ph.D. dissertation of study designed to identify effective treatment approaches for addicted seniors, utilizing OASAS data. Please find copies of the abstract describing the proposed project and the specific aims of the planned research attached.

Contingent upon IRB approval by the social welfare Department of the State University of New York at Albany, I hereby formally request permission to conduct this study. Utilizing the data from my 2008 survey of “A pilot Study of Outpatient Clinics in NYS offering Services to Older Addicted Patients” and client system data for 22 programs from 2007-2008.

In all aspects of this study, I will adhere to OASAS policies with regard to confidentiality to safeguard the privacy of patient information according to Title 42 of the Code of Federal Regulations Part II.

In order to meet the deadline for my proposal defense I would appreciate a letter of permission no later than December 15th, 2011.

In advance, I thank you for your prompt review and response to this time-sensitive request.

Sincerely,

Nicole S. MacFarland, LCSW-R, CASAC
Clinical Director Senior Hope
Doctoral Candidate, University at Albany
School of Social Welfare

Attachments

Dissertation Focus:
Alcoholism and prescriptive drug abuse are of increasing concern among the aging population in the United States. As the baby boomers continue to age, the number of older adults requiring addiction services for alcohol/illicit drug abuse or dependence is expected to grow in unprecedented numbers (Han, Gfroerer & Colliver, 2009).

By utilizing the findings of a completed pilot study (MacFarland, 2009) in combination with client level outcome data from 2008 discharges within the 22 clinics that participated in this survey, the Principle Investigator will address the specific aims described here.

This line of research is focused on identifying the custom-tailored services needed to foster improved treatment outcomes of older addicted adults. Building on the research to date, it will extend the knowledge of effective approaches for the addicted senior population. A macro-level aim is to shape the chemical dependency treatment system such that it would include specialized programs and tracks within addiction treatment programs designed to meet the unique needs of the aging population. This dissertation will lay the groundwork and provide direction for ongoing research toward the establishment of evidence-based practices and clinical practice guidelines in the area of geriatric addiction treatment. Health related services, a wide range of services, same-age group services and services with strong community linkages have all been shown to be important for seniors. In addition, the literature revealed that a harm reduction approach may be uniquely beneficial for seniors. The proposed study will test these assertions that were identified in the literature review. In addition, the proposed study will seek to verify that CBT, Case Management and Age-tailored treatment groups will have significantly improved treatment outcomes when compared to programs that lack this combination of services.

This line of research will ultimately help identify the custom-tailored services needed to foster improved treatment outcomes of older addicted adults. Building on the research to date, it will extend the knowledge of effective approaches for the addicted senior population. A macro-level outcome of this line of study would be to help shape the chemical dependency treatment system such that it would include specialized programs and tracks within programs designed to meet the specialized needs of the aging population.
Appendix B: NYS OASAS Pilot Survey of Treatment Providers

1. Informed Consent Declaration

Title of Project: A Pilot Study of Outpatient Clinics in NYS offering Services to Older Addicted Patients

Principle Investigator: Nicole S. MacFarland, LCSW-R, CASAC  
nmacfarland@nycap.rr.com (518) 489-7777  
Faculty Advisor/Chair: Philip McCallion, Ph.D. (518) 442-5347 Mcclion@albany.edu

Nicole S. MacFarland under the supervision of Dr. Philip McCallion at the University of Albany’s School of Social Welfare is conducting a study that draws data from a sample of licensed OASAS (Office of Alcohol and Substance Abuse Services) chemical dependency outpatient clinics across New York State.

This survey is provided online using Survey Monkey. A secure site has been established and the online survey should take between 10-20 minutes to complete. This survey aims to gather information from outpatient chemical dependency clinics on the services they offer to 'older adults'. For the purposes of this study we define older adults as persons over 50 years of age. There have been relatively few studies focused on older persons, and greater knowledge is needed on this vulnerable population to help educate the community, policy makers, and providers.

1. Your responses to this questionnaire will provide a better understanding of the services that are currently being offered to this cohort of addicted individuals across New York State. Although you may not receive direct benefit from your participation, others may ultimately benefit from the knowledge obtained from this research. We will be forwarding you the results of this study upon its completion. We do not anticipate any risks to your participation in this study, other than that you may become bored or uncomfortable answering certain questions in the survey.

All information obtained in this study is strictly confidential unless disclosure is required by law. In addition, the Institutional Review Board, and the University or government officials responsible for monitoring this study may inspect these records. This project has been approved by the University at Albany Institutional Review Board. Approval of this project only signifies that the procedures adequately protect the rights and welfare of the participants. Please note that absolute confidentiality cannot be guaranteed due to the limited protections of internet access. Please be sure to close your browser when finished so no one will be able to see what you have been doing after completion of the survey.
Your participation in this project is voluntary. Even after you agree to participate in the research or sign the informed consent document, you may decide to leave the study any time without penalty or loss of benefits to which you may otherwise have been entitled. You may choose not to answer any questions and may refuse to complete any portion of the research you do not wish to for any reason without any penalty.

We hope you will agree to participate in this study by having your Senior Clinician, Clinical Director, or Executive Director complete this brief survey by August 8, 2008. If you have any questions about any aspect of this study please feel free to contact Nicole MacFarland at (518) 489-7777 or Dr. Philip McCallion at (518) 442-5347. If you have any questions concerning your rights as a research participant that have not been answered by the investigator or if you wish to report any concerns about the study, you may contact the University at Albany Office of Research Compliance at 518.437.4569, 1-800-365-9139 or orc@uamail.albany.edu.

I have read the description of this research project. Anything that I did not understand was explained to me through contact with Nicole S. MacFarland. All of my questions were answered to my satisfaction.

By checking the "I agree" box below, I am agreeing to participate in this research study. I understand that I may withdraw from this research at any time without any penalty during the duration of the study.

*Please print a copy of this consent form for your records.*

☐ I agree  ☐ I disagree
Pilot Study of Outpatient Clinics

2. Survey- Page 1

* 2. Name of Agency (or PRU number)

3. Please check your position title:
   - [ ] Senior Clinician
   - [ ] Clinical Director
   - [ ] Executive Director
   - Other (please specify)

4. Does this clinic provide non-intensive services (less than six hours per week)?
   - [ ] Yes
   - [ ] No
   - Other (please specify)

5. Geographic setting served: (check all that apply)
   - [ ] Urban
   - [ ] Suburban
   - [ ] Rural

6. How many years have you been working at this clinic?

7. Do you offer any groups specifically tailored to older adults?
   - [ ] Yes
   - [ ] No
Pilot Study of Outpatient Clinics

8. If yes, what groups (check all that apply)
   - [ ] Older Addicted Women's Group
   - [ ] Older Addicted Men's Group
   - [ ] Relapse Prevention For the Older Adult
   - [ ] Co-Occurring Disorders and the Elderly
   - [ ] Psycho-Education Group
   - [ ] Other (please specify)

9. Do you use any special screening tools such as the MAST-G or CAGE to identify addiction problems among your older population?
   - [ ] Yes
   - [ ] No
   - If yes please specify which ones
Pilot Study of Outpatient Clinics

3. Survey-Page 2

10. What, if any, specific modifications in treatment and case management approaches do you offer when working with older adults? (Example: slower pace, age specific groups, group topics relative to older adults such as grief & loss)

Please Explain:

11. Do your staff have any specialization in senior specific training?
   (check as many as apply)
   
   - Certification in Gerontology
   - Coursework on older adults, geriatric Co-Occurring Disorders
   - Geriatric Addictions
   - Continuing education seminars on older addicted adults
   - Routine (annual or more often) in-services relating to older adults

   Other (please specify)

12. Which of the following approaches best describes how you provide group services to the 50+ client at your outpatient clinic?

   - Same age
   - Mixed age group
   - Both

   Other (please specify)
Pilot Study of Outpatient Clinics

13. What services do you provide the 50+ population?

- [ ] Grief and Loss
- [ ] Psycho Education (How alcohol/drugs impact mind/body)
- [ ] Health and Nutrition
- [ ] Transportation
- [ ] Other (please specify)
- [ ] Psychiatric Services
- [ ] Case Management
- [ ] Family Intervention

14. For each service provided, in which the service is tailored specifically to meet the needs of the older adult population, please indicate what modifications have been made to the program:

- [ ] Grief and Loss
- [ ] Psycho Education
- [ ] Health and Nutrition
- [ ] Transportation
- [ ] Psychiatric Services
- [ ] Case Management
- [ ] Family Intervention
- [ ] Other
Pilot Study of Outpatient Clinics

4. Survey- page 3

15. Check the top three approaches that best reflect your approach to treatment for persons 50+.
   - The Twelve Step Model
   - Relapse Prevention
   - Harm Reduction
   - Cognitive Behavioral Approach
   - Psychopharmacology
   - Family Support

   Other (please specify) ____________________________

16. Do you believe the needs of older adults with chemical dependency are adequately met by treatment programs in your community?

_____________________________________________________________________

17. What type of senior services do you utilize in your community to help with your older (50+) addicted population? (Check all that apply)
   - County Offices for the Aging
   - Senior Centers
   - Meal Sites
   - Home Delivered Meals
   - RSVP (Retired Services Volunteer Programs)
   - Nursing Homes
   - Day Treatment Programs
   - Faith Based Community Senior Groups

   Other (please specify) ____________________________

18. What additional services do you feel would help persons 50+ with addictions?

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________
19. Is there anything else related to addictions services for older adults that we have not asked that you would like to share?
Appendix C: Institutional Review Board Approval Letter for Pilot Study

Institutional Review Board: DHHS FWA00001970
Notice of Approval
IRB Protocol Number: 12262-02

Date: October 10, 2013
Incentive? □ Yes  □ No
Principal Investigator: Nicole MacFarland

Title: Outpatient Treatment Approaches, Services and Outcomes for Older Addicted Adults

Review Type: □ Full Committee  □ Expedited  Expedited Review Category #5  IRB00000590

Approval Type: □ Yearly Approval Continuation without Modification Continuation #1

Approval Term: October 9, 2013 through October 8, 2014  Review Cycle: 1 Year

1. Provisions of Approval: n/a

2. Consent Forms: All subjects must receive a copy of the consent form as approved with the University at Albany Institutional Review Board stamp unless a waiver has been granted. Copies of the signed consent form must be kept on file.

3. Adverse Events: Any adverse event(s) or unexpected event(s) that occur in conjunction with this study must be reported to the Office of Research Compliance within 10 calendar days of the occurrence.

4. Research Records: Accurate and detailed research records must be maintained. All research records (including all IRB correspondence) must be kept for a minimum of 3 years after the completion of the research. This research is subject to an audit under the terms of the IRB’s Quality Improvement Program.

5. Changes: No changes in the above referenced study may be initiated without prior IRB review and approval. Changes include (but are not limited to) study personnel, consent forms, protocol, procedures, addition of funding sources.

6. Lapse of Approval: If approval for this project lapses all research must stop IMMEDIATELY until continuation approval is granted. If approval lapses for longer than 30 days, your project must be resubmitted as a new protocol.

7. Yearly IRB Approval Continuation: Approval is valid until the expiration date above. You are required to obtain annual IRB approval continuations prior to your expiration date for as long as the study is active. An annual continuation reminder will be sent to you, but it is your responsibility to ensure that you submit and receive the yearly approval in a timely manner.

8. Funded Research: If your research is funded, you must also submit sponsor information and two copies of the grant/funding application for IRB review with the human subjects section(s) highlighted. This is true whether the source of funding is internal or external.

9. University Permissions: A.) Institutional Research, Planning and Effectiveness (IRPE) permission may be required if your research participants are recruited from the UAlbany Campus. It is the responsibility of the investigator to contact IRPE at (518) 437-4791 for a determination. B.) All UAlbany permissions (e.g., classroom, team or organization permissions) must be kept on file with your research records.

10. Posters or Flyers: All flyers posted to recruit participants must have the IRB stamp. If posters or flyers are to be posted on the UAlbany campus, they must be registered with the Office of Student Involvement and Leadership in Campus Center 130 prior to posting on the academic Podium.

11. External Permissions: All external permissions (e.g., schools, businesses, organizations, etc.) must be kept on file with your research records.

The IRB wishes you success with your research.

cc: Phillip McCallion
Appendix D:
Copies of the PAS 44N Client Admission Report and PAS 45N Client Discharge Report

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<thead>
<tr>
<th>NYS Office of Alcoholism and Substance Abuse Services</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Admission Report</td>
<td></td>
</tr>
<tr>
<td>FOR ADMISSIONS DATED 1/1/2007 AND BEYOND</td>
<td></td>
</tr>
</tbody>
</table>

### Provider Information
- Provider Number
- Program Number
- Provider ID
- Special Project (See instructions):
  - Sex: Male, Female
  - Birth Date
  - Last 4 SSN
  - Last Name First 2 Letters (Birth Name)
  - Admission Date
  - No. of Assessment Visits/Days
  - Significant Other: Yes, No

### Demographic Information
- Race:
  - Alaska Native
  - American Indian
  - Asian
  - Black or African American
  - Hawaiian or other Pacific Islander
  - White
  - Other
  - Hispanic
  - Cuban
  - Mexican
  - Other Hispanic
  - Not of Hispanic Origin

- Primary Language:
  - Arabic
  - Chinese
  - French
  - Greek
  - Hindi
  - Japanese
  - Portuguese
  - Russian
  - Other

### Veteran Status
- Yes, No

### Residence Information
- Zip Code of Residence
- County of Residence

### Type of Residence
- Private Residence
- Homeless, Shelter
- Homeless, No Shelter

### Living Arrangements
- Living Alone
- Living with Non-Related Persons
- Living with Spouse/Relative

### Principal Referral Source
- Self-Referral
- Family, Friends, Other Individual
- AA/NA and Other Self-Help

### Chemical Dependence Treatment
- CD Medically Managed Detoxification
- CD Medically Supervised Withdrawal Outpatient
- CD Medically Monitored Withdrawal
- CD Inpatient Detoxification
- CD Intensive Residential
- CD Residential Chemical Dependency for Youth
- CD Outpatient Chemical Dependency for Youth
- CD Community Residence
- CD Outpatient Clinic
- CD Outpatient Rehab Program
- CD Methadone Treatment
- CD Non-medically Supervised Outpatient

### Preventive/Intervention Services
- Community Education and Intervention
- Youth Education and Intervention (non SAP)
- Student Assistance Program/School Based
- Hospital and Health Care Intervention Services
- Employee Assistance Program
- Other Prevention/Intervention Program

### Criminal Justice Services
- Drinking Driver Referral
- Police
- Family Court/Probation

### Health Care Services
- Developmental Disabilities Program
- Mental Health Provider
- Managed Care Provider
- Health Care Provider
- AIDS Related Services

### Employer/Educational/Special Services
- Employer/Union (Non-EAP)
- School (Other than Prevention Program)
- Special Services (Homeless/Shelters)

### Social Services
- Local Social Services-Child Protect Services/CWA
- Local Social Services Dist-Income Maintenance
- Local Social Services Dist Treatment Mandate/Public Assistance
- Local Social Services Dist Treatment Mandate/Medicaid Only
- Other Social Services Provider

PAS-44N (Revised April 2007)
### Client Admission Report

**FOR ADMISSIONS DATED 1/1/2007 AND BEYOND**

#### Highest Grade Completed
- No education
- 1st
- 2nd
- 3rd
- 4th
- 5th
- 6th
- High School Diploma
- General Equivalency Diploma
- Vocational Cert w/o Diploma/GED
- Some College-No degree
- Associates Degree
- Bachelors Degree
- Graduate Degree

#### Employment Status
- Employed Full Time-35+ hrs/wk
- Employed Part Time-<35 hrs/wk
- Employed in Sheltered Workshop
- Unemployed, In Treatment
- Unemployed, Looking for Work
- Unemployed, Not Looking for Work
- Not employed/Able to Work
- Not in Labor Force, Child Care
- Not in Labor Force, Disabled
- Not in Labor Force, In Training
- Not in Labor Force, Inmate
- Not in Labor Force, Retired
- Not in Labor Force, Student
- Not in Labor Force, Other
- Social Services Work Exp Program
- Unable to Work, Mandated Treatment

#### Primary Source of Income at Admission
- None
- Wages/Salary
- Alimony/Child Support
- Department of Veterans Affairs
- Family and/or Spouse Contribution
- SSI/SSDI or SSA
- Safety Net Assistance (SNA)
- Temp Asst for Needy Families (TANF)
- Other

#### Family History
- Married
- Never Married
- Living as Married
- Separated
- Divorced
- Widowed
- Child of Alcoholic/Substance Abuser
- No
- Both
- Child of Alcoholic(s)
- Child of Substance Abuser(s)
- No. of children
- No. of children living with Client
- No. of Children living in Foster Care
- Case with Child Protective Services
- Yes
- No

#### Criminal Justice Information
- None
- Pre-Court Sentence (non-alt to incarc - ATI)
- Probation – non-alt to incarc
- Correctional-based Setting
- Post Correctional Supervision
- Pre-Court Sentence (alt to incarc – ATI)
- Other Alternative to Incarceration
- No. of Arrests in Prior 30 Days
- No. of Arrests in Prior 6 Months
- No. of Days Incarcerated in Prior 6 Months

#### Primary Substance
- None
- Alcohol
- Cocaine
- Crack
- Marijuana/Hashish
- Heroin
- Buprenorphine
- Non-Rx Methadone
- OxyContin
- Other Opiate/Synthetic
- Alprazolam (Xanax)
- Barbiturate
- Benzodiazepine (Klonopin)
- Catapres (Clonidine)
- Other Sedative /Hypnotic
- Elavil
- Other Hallucinogen
- GHB
- Khat
- Other Tranquillizer
- Methamphetamine
- Ketamine
- ROHYNOL
- Viagra
- Other Stimulant
- PCP
- Ecstasy
- Over-the-Counter
- Other

#### Primary Route
- Inhalation
- Injection
- Oral
- Smoking
- Other

#### Primary Frequency
- No use last 30 days
- 1-3 times last 30 days
- 1-2 times p/week
- 3-6 times p/week
- Daily

#### Primary Age of First Use
- ___

---

**PAS-44N (Revised April 2007)**

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110
### Secondary Substance

<table>
<thead>
<tr>
<th>Substance</th>
<th>OxyContin</th>
<th>Other Opiate/Synthetic</th>
<th>GHB</th>
<th>Other Hallucinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
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</tr>
<tr>
<td>Marijuana/Hashish</td>
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<td></td>
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</tr>
<tr>
<td>Heroin</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Buprenorphine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Rx Methadone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Secondary Route
- Inhalation
- Injection
- Oral
- Smoking
- Other

#### Secondary Frequency
- No use last 30 days
- 1-3 times last 30 days
- 1-2 times p/week
- 3-6 times p/week
- Daily

#### Secondary Age of First Use

### Tertiary Substance

<table>
<thead>
<tr>
<th>Substance</th>
<th>OxyContin</th>
<th>Other Opiate/Synthetic</th>
<th>GHB</th>
<th>Other Hallucinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
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</tr>
<tr>
<td>Non-Rx Methadone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Tertiary Route
- Inhalation
- Injection
- Oral
- Smoking
- Other

#### Tertiary Frequency
- No use last 30 days
- 1-3 times last 30 days
- 1-2 times p/week
- 3-6 times p/week
- Daily

#### Tertiary Age of First Use

### Nicotine
- Smoked tobacco in last week: Yes, No
- Used smokeless tobacco in last week: Yes, No

### Prior Treatment Episodes

Enter the number of prior Substance/Alcohol Abuse treatment episodes __ (Enter 0 to 5).
If the number of prior treatment episodes is greater than 5, use 5.

### Physical Health Related Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing Impairment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobility Impairment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Mental Health Related Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Retardation/Developmental Disability</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Co-existing Psychiatric Disorder</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### History of Mental Health Treatment

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever Treated for Mental Illness Problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever Hospitalized for Mental Illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever Hospitalized 30 or More Days for Mental Illness</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

### Six Months Prior to Admission

<table>
<thead>
<tr>
<th>Condition</th>
<th>Medical</th>
<th>Psychiatric</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Days in Inpatient Detox</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Emergency Room Episodes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason for Hospitalization</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PAS-44N (Revised April 2007)
Orientation to Change (For use only by Residential Rehabilitation for Youth Programs)

Which statement best characterizes this patient’s orientation to change with respect to alcohol/drug use at the time of admission?

☐ Ambivalent
☐ Change Oriented
☐ Planning Change
☐ Active Early Recovery
☐ Ongoing Recovery and Relapse Prevention

Medicaid Claim Data MATS Consent (TRS-2.3)

Consent Granted  □ Yes  □ No  Effective Date: __________

If consent granted, effective date should be date consent is signed. If consent not granted, effective date should be admission date.

Expiration Date: __________  *Pre-filled by CDS. Will be 5 years from effective date if consent is granted.

For Provider Use (Optional)

Signature __________________________ Title __________________________ Date __________________________

PAS-44N (Revised April 2007)
**NYS Office of Alcoholism and Substance Abuse Services**

**Client Discharge Report**

*FOR DISCHARGES DATED 1/1/2007 AND BEYOND*

<table>
<thead>
<tr>
<th>Provider Number</th>
<th>Program Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Provider Client ID**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Birth Date**

<p>| | | | |</p>
<table>
<thead>
<tr>
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<tbody>
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</tbody>
</table>

**Last 4 SSN**

<p>| | | | |</p>
<table>
<thead>
<tr>
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<tbody>
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</table>

**Last Name 2 Letters**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
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</tbody>
</table>

**(Birth Name)**

<p>| | | | |</p>
<table>
<thead>
<tr>
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<tbody>
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</tbody>
</table>

**Date Last Treated**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Education at Discharge** *(If education at admission was entered incorrectly, it must be updated in “Client Management” online)*

<table>
<thead>
<tr>
<th>No education</th>
<th>5th</th>
<th>10th</th>
<th>Vocational Cert w/ Diploma/GED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1st</th>
<th>6th</th>
<th>11th</th>
<th>Some College-No degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd</th>
<th>7th</th>
<th>High School Diploma</th>
<th>Associates Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd</th>
<th>8th</th>
<th>General Equivalency Diploma</th>
<th>Bachelors Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4th</th>
<th>9th</th>
<th>Vocational Cert w/o Diploma/GED</th>
<th>Graduate Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Employment Status**

<table>
<thead>
<tr>
<th>Employed Full Time-35+ hrs/wk</th>
<th>Not employed/Able to Work</th>
<th>Not in Labor Force, Student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Not in Labor Force, Other</td>
</tr>
<tr>
<td>Employed Part Time&lt;35 hrs/wk</td>
<td></td>
<td>Social Services Work Exp Program</td>
</tr>
<tr>
<td>Employed in Sheltered Workshop</td>
<td></td>
<td>Unable to Work, Mandated Treatment</td>
</tr>
<tr>
<td>Unemployed, In Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed, Looking for Work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed, Not Looking for Work</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type of Residence**

<table>
<thead>
<tr>
<th>Private Residence</th>
<th>Single Resident Occupancy</th>
<th>Other Group Residential Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Institution, Other (jail, hospital)</td>
</tr>
<tr>
<td>Homeless, Shelter</td>
<td>MIHRDD Community Residence</td>
<td>Other</td>
</tr>
<tr>
<td>Homeless, No Shelter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Living Arrangements**

<table>
<thead>
<tr>
<th>Living Alone</th>
<th>Living w/ Non-Related Persons</th>
<th>Living w/ Spouse/Relatives</th>
</tr>
</thead>
</table>

**Primary Payment Source**

<table>
<thead>
<tr>
<th>None</th>
<th>Medicare</th>
<th>Private Insurance – Managed Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Pay</td>
<td>DSS Congregate Care</td>
<td>Other</td>
</tr>
<tr>
<td>Medicaid</td>
<td>Department of Veterans Affairs</td>
<td></td>
</tr>
<tr>
<td>Medicaid Managed Care</td>
<td>Private Insurance – Fee for Service</td>
<td></td>
</tr>
</tbody>
</table>

**Mental Health**

| Co-existing Psychiatric disorder | Yes | No |
| Ever Treated for a mental illness problem | Yes | No |
| Ever Hospitalized for mental illness | Yes | No |
| Ever Hospitalized 30 or more days for mental illness | Yes | No |

**Total Treatment Visits** *(For use only by Outpatient Programs (Excluding Methadone Maintenance Programs))*

<table>
<thead>
<tr>
<th>Total Treatment Visits</th>
<th>Individual Counseling Sessions</th>
<th>Group Counseling Sessions</th>
<th>Family Counseling Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Provided by primary counselor)</td>
<td>(Provided by primary counselor)</td>
<td>(Provided by any direct care staff)</td>
</tr>
</tbody>
</table>

**Recent History: Six Months Prior to Discharge** *(or during treatment if stay was less than 6 months)*

<table>
<thead>
<tr>
<th>Number of Arrests</th>
<th>Days Incarcerated</th>
<th>Days in Inpatient Detox</th>
<th>Number of ER Episodes</th>
</tr>
</thead>
</table>

**No. of Arrests in Prior 30 Days** *(or during treatment if stay was less than 30 days)*

---

PAS-45N (Revised April 2007)
Status of Alcohol and Other Drug Use at Discharge

**NYS Office of Alcoholism and Substance Abuse Services**

**Client Discharge Report**

FOR DISCHARGES DATED 1/1/2007 AND BEYOND

<table>
<thead>
<tr>
<th>Status of Problem Substances Reported at Admission</th>
<th>Frequency of Use at Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substances</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Substance(s) reported at admission will be pre-filled on the Client Data System*

**Status of Different Problem Substances Used and Not Reported at Admission (if any)**

<table>
<thead>
<tr>
<th>First Problem Substance</th>
<th>OxyContin</th>
<th>Other Opiate/Synthetic</th>
<th>GHB</th>
<th>Other Hallucinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crack</td>
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<tr>
<td>Buprenorphine</td>
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</tr>
<tr>
<td>Non-Rx Methadone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Route of Administration**: Inhalation, Injection, Oral, Smoking, Other

**Frequency of Use**: No use in last 30 days, 1-3 times last 30 days, 1-2 times p/week, 3-6 times p/week, Daily

<table>
<thead>
<tr>
<th>Second Problem Substance</th>
<th>OxyContin</th>
<th>Other Opiate/Synthetic</th>
<th>GHB</th>
<th>Other Hallucinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
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<tr>
<td>Non-Rx Methadone</td>
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</table>

**Route of Administration**: Inhalation, Injection, Oral, Smoking, Other

**Frequency of Use**: No use in last 30 days, 1-3 times last 30 days, 1-2 times p/week, 3-6 times p/week, Daily

<table>
<thead>
<tr>
<th>Third Problem Substance</th>
<th>OxyContin</th>
<th>Other Opiate/Synthetic</th>
<th>GHB</th>
<th>Other Hallucinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td></td>
<td></td>
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<tr>
<td>Crack</td>
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<tr>
<td>Marijuana/Hashish</td>
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<td>Heroin</td>
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<tr>
<td>Buprenorphine</td>
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<tr>
<td>Non-Rx Methadone</td>
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**Route of Administration**: Inhalation, Injection, Oral, Smoking, Other

**Frequency of Use**: No use in last 30 days, 1-3 times last 30 days, 1-2 times p/week, 3-6 times p/week, Daily

**PAS-45N (Revised April 2007)**
Discharge Reason & Referral Information

**Discharge Status**
- Completed Treatment: All Goals Met
- Completed Treatment: Half or More Goals Met
- Treatment Not Completed: Maximum Benefit/Clinical Discharge
- Treatment Not Completed: Some Goals Met
- Treatment Not Completed: No Goals Met

**Referral Disposition (CHECK ONE)**
- No referral made
- Client not in need of additional services
- Referred back to CD* program
- Referred to other CD* program
- Referred to Mental Health Program
- Referred to non-CD* or non-MH treatment
- Referred to Gambling Program
- Refused referral

*CD=chemical dependence

- Currently Attending 12-Step and Other Self-help Group Meetings (last 30 days)
  - Yes
  - No

**Referral Category (CHECK ONE)**

**Chemical Dependency (CD) Programs**
- CD Methadone Program
- CD Medically Supv. Outpatient
- CD Outpatient Rehab Services
- CD Outpatient Non-Med. Supv.
- CD Outpatient CD for Youth
- CD Residential Methadone
- CD Inpatient Rehabilitation
- CD OASAS Addiction Treatment Center
- CD Intensive Residential
- CD Community Residential
- CD Supportive Living
- CD Medically Managed Detox
- CD Residential CD for Youth
- CD Medically Supervised Withdrawal Inpatient/Res.
- CD Medically Supervised Withdrawal Outpatient
- CD Medically Monitored Withdrawal

**Health Institutions**
- Hospital
- Hospital (Long Term)/Nursing Home
- Nursing Home, Long Term Care
- Group Home, Foster Care

**Mental Health Programs**
- Mental Health Community Residence
- Mental Health Inpatient
- Mental Health Outpatient
- Mental Retardation/Dev Disabilities

**Self-Help**
- AA, NA, Women for Sobriety, SOS, etc.
- Al-Anon, Alateen, Nar-Anon, etc.

- Other Referral
- No Referral Made
- Refused Referral

**Evaluation of Client's Goal Achievement**

**Drug Use**
- Achieved
- Partial Achievement
- Not Achieved
- Not Applicable

**Alcohol Use**
- Achieved
- Partial Achievement
- Not Achieved
- Not Applicable

**Medical Conditions**
- Achieved
- Partial Achievement
- Not Achieved
- Not Applicable

**Social Functioning**
- Achieved
- Partial Achievement
- Not Achieved
- Not Applicable

**Vocational/Educational**
- Achieved
- Partial Achievement
- Not Achieved
- Not Applicable

**Family Situation**
- Achieved
- Partial Achievement
- Not Achieved
- Not Applicable

**Emotional Functioning**
- Achieved
- Partial Achievement
- Not Achieved
- Not Applicable

PAS-45N (Revised April 2007)
Addiction Medications Used During Treatment

(CHECK ALL THAT APPLY)

- Methadone
- Buprenorphine
- Zyban/Wellbutrin
- Naltrexone/Revia
- Antabuse
- Nicotine Lozenges
- Nicotine Gum
- Nicotine Patch
- Campral
- Other Addiction Medications
- None

Orientation to Change (For use only by Residential Rehabilitation for Youth Programs)

Which statement best characterizes this patient’s orientation to change with respect to alcohol/drug use at the time of discharge?

- Ambivalent
- Change Oriented
- Planning Change
- Active Early Recovery
- Ongoing Recovery and Relapse Prevention

For Provider Use (Optional)

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PAS-45N (Revised April 2007)