

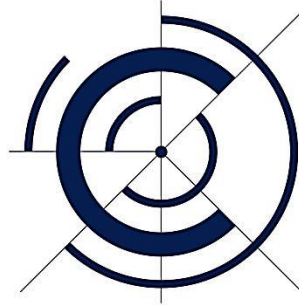


State of Iowa Outcomes Monitoring System

THE IOWA CONSORTIUM FOR SUBSTANCE ABUSE RESEARCH AND EVALUATION

**Year 18
Annual Outcome Evaluation Trend Report
November 2016**

With Funds Provided By:
Iowa Department of Public Health,
Division of Behavioral Health,
Bureau of Substance Abuse



**THE IOWA
CONSORTIUM**
FOR SUBSTANCE ABUSE RESEARCH AND EVALUATION

**State of Iowa
Outcomes Monitoring System**

**Year 18 Annual Outcome Evaluation Trend Report
November 2016**

**Suzy Hedden, BS
Evaluation Coordinator**

**Stephan Arndt, PhD
Director**

Citation of references related to this report is appreciated. Suggested Citation:

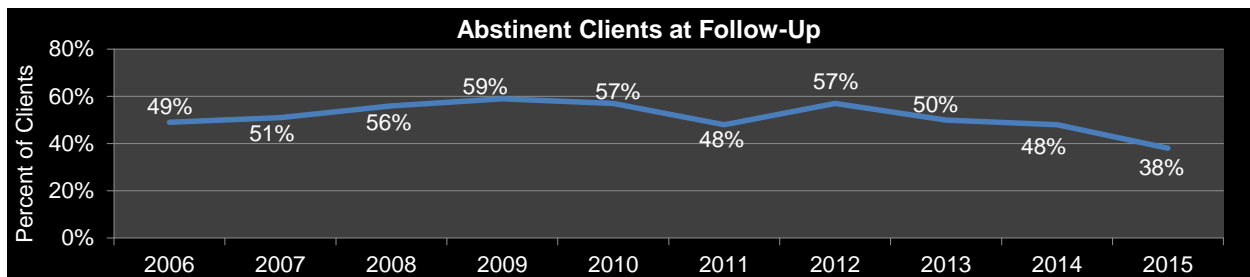
Hedden, S. & Arndt, S. (2016). State of Iowa Outcomes Monitoring System: Year 18 Annual Outcome Evaluation Trend Report. (Iowa Department of Public Health contract #5885YM50). Iowa City, IA: Iowa Consortium for Substance Abuse Research and Evaluation.
<http://iconsortium.subst-abuse.uiowa.edu/>

EXECUTIVE SUMMARY

The Iowa Consortium for Substance Abuse Research and Evaluation (Consortium) is under contract with the Iowa Department of Public Health (IDPH) for the Outcomes Monitoring System (OMS) project. The OMS project provides an independent evaluation regarding substance use disorder treatment outcomes in Iowa. The Consortium conducts follow-up interviews with randomly selected clients from IDPH-funded treatment agencies. The interviews occur approximately six months after discharge from the treatment program and provide follow-up data to determine outcomes as well as analyze changes between admission and follow-up. The Consortium has provided ongoing client sampling, recruitment, tracking, data collection, data analysis, and reporting since 1999. This Year 18 OMS trend report examines outcomes for clients admitted to substance use disorder treatment over a ten-year period between January 1, 2006 and December 31, 2015. Data for the most recent years, particularly 2015, have the potential to change as more follow-up interviews are completed.

Abstinence

The following figure presents the percentages of clients who reported no substance use during the follow-up period (the six months between discharge from treatment and the follow-up interview). Abstinence from all substances at follow-up has ranged from 38% to 59% over the ten years. Although abstinence increased by 10 percentage points from 2006 to 2009 (from 49% to 59%), in recent years from 2012 to 2015 abstinence decreased by 19 percentage points (from 57% to 38%). Over the ten-year period, there has been a significant decrease in abstinence at follow-up (Wald Chi Square, $p < 0.001$).

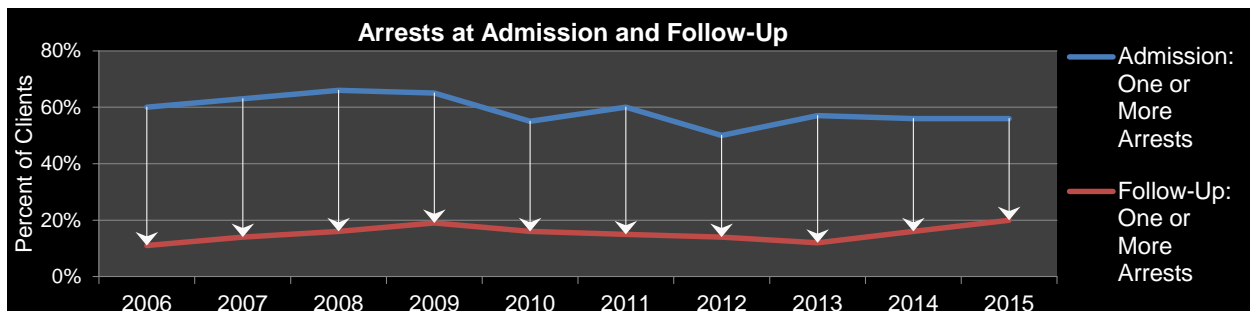


Primary Substance

The most often reported primary substance at admission and follow-up in all ten years was alcohol. Marijuana is the second most common primary substance reported at follow-up through the years, except in 2013 and 2014 when higher percentages of clients reported methamphetamine as the primary substance compared to marijuana.

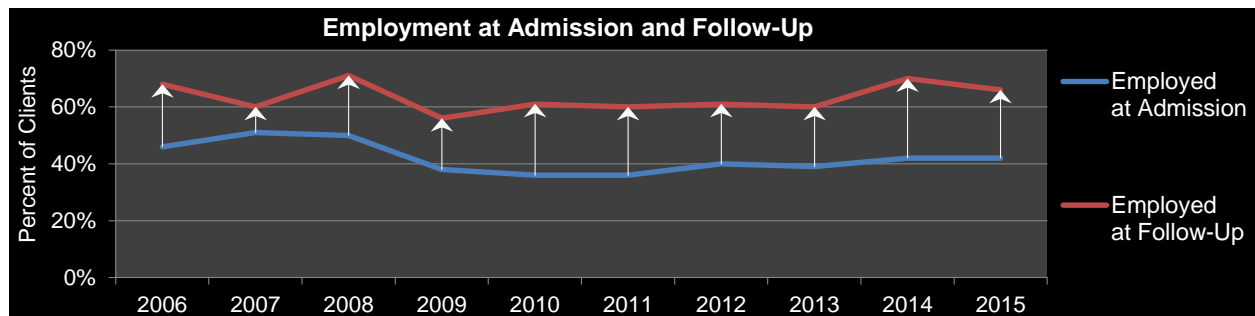
Arrests

For the question regarding arrests, the admission response refers to the 12 months prior to admission and the follow-up response refers to the six months following discharge. Clients reporting arrests at admission ranged from 50% of clients in 2012 to 66% in 2008. Over the ten-year period, 20% or fewer of clients reported arrests six months following treatment discharge. There was no evidence that arrests at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).



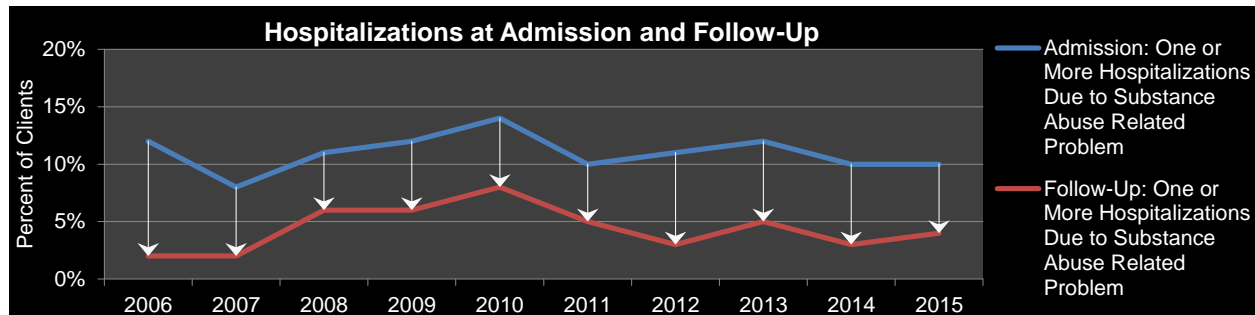
Employment

Compared to admission, more clients were employed (full or part-time) six months following discharge from treatment. Over the ten years, an average of 63% of clients reported employment at follow-up compared to an average of 42% indicating employment at admission. There was no evidence the percentage of clients reporting employment at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).



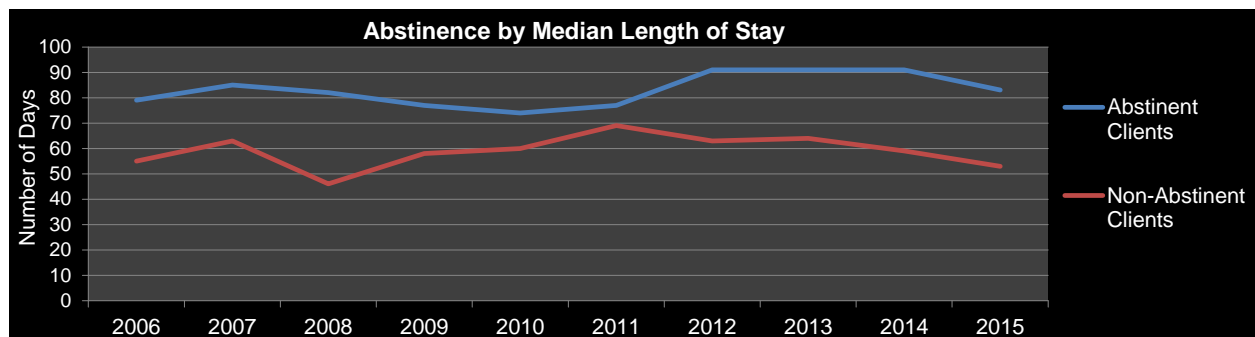
Hospitalizations Due to Substance Use Related Problems

Hospitalizations after treatment due to substance use related problems were reduced to nearly one-third (4%) of the pre-treatment hospitalization rate (11%). There was no evidence the percentage of clients reporting hospitalizations due to a substance use related problem at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).



Length of Stay

In all years except 2010 and 2011, there were significant differences between length of stay and abstinence at follow-up (Jonckheere-Terpstra Tests, $p < 0.05$).



Abstinence, Arrests, and Employment at Follow-Up by Discharge Status

Over the ten-year period, clients who were successfully discharged were more likely to be abstinent during the six-month period from discharge to the follow-up interview (Wald Chi Square, $p < 0.001$), more likely to not have been arrested during the follow-up period (Wald Chi Square, $p < .0001$), and more likely to be employed at follow-up (Wald Chi Square, $p < 0.01$).

TABLE OF CONTENTS

Background.....	1
Description of Clients	2
Table 1. Age at Admission	2
Table 2. Sex.....	2
Table 3. Race.....	2
Table 4. Ethnicity.....	3
Recruitment and Follow-Up	3
Table 5. Recruitment.....	3
Table 6. Follow-Up.....	3
Table 7. Incarceration	3
Changes from Admission to Follow-Up.....	4
Figure 1. Primary Substance at Admission	4
Figure 2. Primary Substance at Follow-Up	5
Figure 3. Secondary Substance at Admission	6
Figure 4. Secondary Substance at Follow-Up.....	7
Figure 5. Change in Frequency of Use of Primary Substance: Clients Indicating Use of Same Primary Substance at Both Admission and Follow-Up.....	8
Figure 6. Arrests at Admission and Follow-Up.....	9
Figure 7. Hospitalizations Due to a Substance Use Related Problem at Admission and Follow-Up	9
Figure 8. Employment (Full or Part-Time) at Admission and Follow-Up	10
Figure 9. Not Employed at Admission and Follow-Up.....	10
Figure 10. Change in Employment Status from Admission to Follow-Up	11
Figure 11. Months Employed at Admission and Follow-Up	11
Figure 12. Change in Taxable Monthly Income from Admission to Follow-Up	12
Figure 13. Attendance at Voluntary Recovery Support Meetings at Admission and Follow-Up	12
Figure 14. Days of Work or School Missed Due to a Substance Use Problem at Admission and Follow-up	13
Figure 15. Primary Source of Financial Support at Admission and Follow-Up	13
Figure 16. Relationship Status at Admission and Follow-Up	14
Figure 17. Education Level at Follow-Up	15
Outcomes: Abstinence.....	15
Figure 18. Abstinence at Follow-Up	15
Figure 19. Primary Substance at Admission by Abstinence at Follow-Up	16
Figure 20. Arrests at Follow-Up by Abstinence at Follow-Up.....	17
Figure 21. Employment at Follow-Up by Abstinence at Follow-Up	17
Figure 22. Voluntary Recovery Support Meetings Attended at Follow-Up by Abstinence at Follow-Up	18
Outcomes: Sex	19
Figure 23. Primary Substance at Admission by Sex.....	19
Figure 24. Abstinence at Follow-Up by Sex	20



Outcomes: Length of Stay and Discharge Status	20
Figure 25. Abstinence at Follow-Up by Median Length of Stay	20
Table 8. Primary Substance at Admission by Median Length of Stay	21
Figure 26. Length of Stay: Alcohol as Primary Substance at Admission	21
Figure 27. Length of Stay: Marijuana as Primary Substance at Admission	22
Figure 28. Length of Stay: Methamphetamine as Primary Substance at Admission	22
Figure 29. Length of Stay: Cocaine as Primary Substance at Admission	23
Figure 30. Abstinence at Follow-Up by Discharge Status.....	23
Figure 31. No Arrests at Follow-Up by Discharge Status.....	24
Figure 32. Employment at Follow-Up by Discharge Status.....	24



BACKGROUND

The Iowa Consortium for Substance Abuse Research and Evaluation (Consortium) is under contract with the Iowa Department of Public Health (IDPH) for the Outcomes Monitoring System (OMS) project. The OMS project provides an independent evaluation regarding substance use disorder treatment outcomes in Iowa. The Consortium conducts follow-up interviews with randomly selected clients from IDPH-funded treatment agencies. The interviews occur approximately six months after discharge from the treatment program and provide follow-up data to determine outcomes as well as analyze changes between admission and follow-up. The Consortium has provided ongoing client sampling, recruitment, tracking, data collection, data analysis, and reporting since January 1999.

OMS samples are drawn from the population of publicly funded clients admitted to substance use disorder treatment. When comparing changes between project years, it is important to note in 2006 through 2012, the sample size was approximately 8% of the population of clients who receive IDPH-funded drug or alcohol treatment in one of the following environments: medically monitored residential, clinically managed residential, intensive outpatient, or outpatient. In January 2013, the sample size was increased from approximately 8% to 10% of the available admission records for the adult and adolescent client population admitted to treatment in a month. In September 2013, the sample size was increased from 10% to 15% and the sampling process changed to a completely random sample (not stratified). In July 2014, the sampling process was changed to pulling a sample of 15% or 120 clients, whichever is greater. Data collected prior to September 2013 were obtained through stratified random sampling procedures and are weighted to adjust for this process. Records pulled through a completely random sampling scheme are not weighted. Additionally, when comparing changes between project years, conservative analyses were performed and it was determined a change of seven percentage points or greater for the weighted OMS data should be considered a significant change. Due to rounding, percentages may not add up to exactly 100%.

This trend report examines outcomes for clients admitted to substance use disorder treatment during a ten-year period between January 1, 2006 and December 31, 2015. Data are reported by year of treatment admission, rather than year sampled or date the follow-up interview was completed. Data in trend reports are updated yearly and may differ from previous annual and trend reports. Factors contributing to differences include the collection of additional follow-up data (particularly for recent years), weighting adjustments, and changes and updates to IDPH data collection systems.

The statistical method used for analyses of some variables (e.g. abstinence, employment, hospitalizations) is logistic regression. This method assesses whether a variable, such as year of admission, relates to an increase or decrease in the outcome's chance of occurring. Logistic regression can also include other variables to "control" for changes. For example, to assess if arrests at follow-up goes up or down over time controlling for whether or not the clients were abstinent. This type of analysis utilizes the Wald Chi Square test.

Additional information about the OMS project including an overview of sampling procedures, client participation data, recruitment, tracking, and follow-up information can be found in annual reports for each respective year.



DESCRIPTION OF CLIENTS

Tables 1 through 4 on the following pages present demographic information for clients in the OMS sample by year of admission. Data represent clients who provided answers to the questions. The actual number of clients may vary from question to question because some clients may not have responded to the question, data are missing, or data are coded as not collected or unknown.

Table 1. Age at Admission

Over the past ten years, the median age of clients in the OMS sample has ranged from 28 to 33 years of age. Analyses indicate the median age of clients in the OMS sample is not increasing or decreasing over the ten-year period (Spearman's Correlation, $p > 0.05$). The percent of adolescent clients (age 17 and younger) in the OMS sample has ranged from 1% in 2013 and 2014 to 6% in 2006, 2008, and 2009.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Median Age (years)	30	30	28	29	30	32	32	33	31	30
Adult	94%	95%	94%	94%	97%	97%	98%	99%	99%	98%
Adolescent	6%	5%	6%	6%	3%	3%	2%	1%	1%	2%

Table 2. Sex

Over the ten-year period, on average 72% of clients in the OMS sample were male and 28% were female.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male	68%	70%	75%	73%	71%	73%	70%	70%	75%	77%
Female	32%	30%	25%	27%	29%	27%	30%	30%	25%	23%

Table 3. Race

Table 3 presents race reported at admission for clients in the OMS sample who had responses for the question. The "other race" category includes clients who report Alaskan Native, Asian, Hawaiian or Pacific Islander, or anyone who indicates they are multi-racial.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Caucasian/White	90%	84%	89%	87%	88%	87%	88%	89%	85%	85%
African American/Black	7%	11%	9%	10%	8%	8%	9%	8%	9%	10%
American Indian	1%	2%	1%	1%	1%	2%	1%	1%	2%	2%
Other Race	2%	1%	1%	1%	0%	1%	1%	1%	1%	1%

Note: Due to rounding and coding variations, percentages may not add up to exactly 100%.

Table 4. Ethnicity

Table 4 presents ethnicity reported at admission for clients in the OMS sample.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Not Hispanic or Latino	94%	94%	96%	96%	95%	95%	96%	94%	93%	92%
Puerto Rican	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Mexican	4%	4%	3%	2%	3%	4%	1%	4%	4%	5%
Other Hispanic or Latino	2%	2%	1%	2%	2%	1%	3%	2%	3%	3%

Note: Due to rounding and coding variations, percentages may not add up to exactly 100%.

RECRUITMENT AND FOLLOW-UP

Table 5. Recruitment

The recruitment rate is calculated using a denominator consisting of those individuals who were recruited, those who declined participation, and non-recruited clients whom staff were unable to locate. Over the ten years, recruitment averages 67%. Clients declining participation in the OMS project averages 9% over the ten years.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Recruited Clients	71%	75%	76%	77%	70%	74%	67%	57%	49%	57%

Table 6. Follow-Up

The number of follow-up interviews completed with clients ranges from 348 to 500 during the ten-year period. The follow-up rate is based on recruited clients and consists of all clients who completed the follow-up interview, recruited clients who could not be located when their interview was due, and those who decided not to take part in the interview after initially agreeing to do so. The follow-up rate averages 79% over the ten years.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Follow-Up Interviews Completed	452	466	500	441	429	458	379	398	348	419
Follow-Up Rate	82%	83%	87%	84%	84%	78%	76%	68%	66%	79%

Table 7. Incarceration

The percentage of clients who are incarcerated at the time their follow-up interviews are due averages 8% over the ten years. Consortium staff do not interview incarcerated clients.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Incarcerated Clients	8%	8%	8%	6%	8%	6%	8%	9%	11%	9%



CHANGES FROM ADMISSION TO FOLLOW-UP

The figures in this section present admission and follow-up responses from clients who completed the follow-up interview. The follow-up interviews occur approximately six months after the client is discharged from treatment; therefore, the follow-up period refers to the six months between the client's discharge from treatment and the follow-up interview. Admission and follow-up data are client self-reported. Comparisons are only made for clients who had a response at both admission and follow-up. The number of clients may vary from question to question because some clients may not have responded to the question at admission or follow-up.

Figure 1. Primary Substance at Admission

Alcohol has been the most commonly used primary substance at admission during the past ten years. In nearly all years, marijuana is the second most commonly reported primary substance at admission. In 2014, the percentages of clients reporting methamphetamine and marijuana as the primary substances were similar (24% and 23% respectively). However, in 2013, higher percentages of clients reported methamphetamine as their primary substance compared to marijuana; nearly one-quarter of clients (24%) reported methamphetamine as the primary substance at admission and 17% of clients indicated marijuana was their primary substance. The percentage of clients reporting alcohol as the primary substance at admission ranges from 38% in 2015 to 57% in 2009. From 2013 to 2015, there was a thirteen percentage point decrease in clients indicating alcohol as their primary substance at admission (from 51% to 38%). During this same time period, there was an eleven percentage point increase in clients indicating marijuana as the primary substance at admission (from 17% in 2013 to 28% in 2015). The percentage of clients reporting methamphetamine as the primary substance at admission has increased in recent years, ranging from a low of 11% in 2007 and 2008 to a high of 26% in 2015. Cocaine as the primary substance at admission ranges from a low of 1% recently in 2014 and 2015 to 7% in 2006.

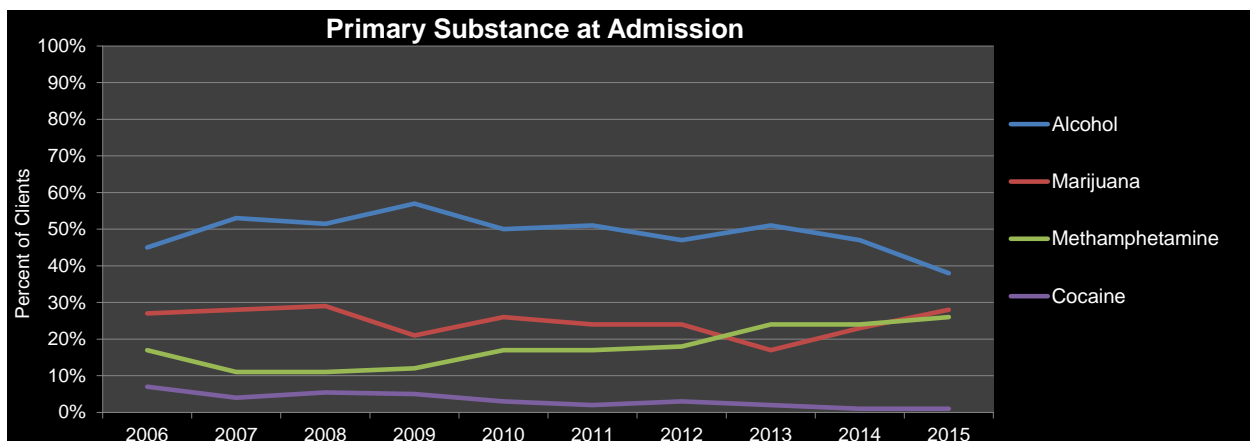


Figure 2. Primary Substance at Follow-Up

In nearly all years, clients most often reported abstinence at follow-up. In 2015, 38% of clients reported abstinence at follow-up and 39% of clients reported alcohol as their primary substance. Of the clients reporting substance use at follow-up, alcohol is the most common primary substance in all years. Marijuana is the second most common primary substance reported at follow-up in all years except 2012 and 2013. In 2012, 6% of clients reported methamphetamine as the primary substance compared to marijuana (4%); in 2013 the same percentage of clients (8%) reported marijuana and methamphetamine as their primary substance.

From 2012 to 2015, there was a nineteen percentage point decrease in clients reporting abstinence at follow-up (from 57% to 38%). During this time (2012 to 2015), there was a ten percentage point increase in clients indicating alcohol as their primary substance at follow-up (from 29% to 39%). There was also an eight percentage point increase in clients reporting marijuana as their primary substance at follow-up (from 4% to 12%) during this same time period from 2012 to 2015.

Over the ten-year period, there has been a gradual increase in clients reporting methamphetamine as their primary substance at follow-up (1% in 2006 to 9% in 2015). In all years, fewer than 3% of clients reported cocaine. Over the ten-year period, the likelihood of marijuana and methamphetamine as the primary substance of use at follow-up significantly increased (Wald Chi Squares, $p < 0.01$ and $p < 0.001$ respectively). The likelihood clients reported abstinence at follow-up significantly decreased over the ten-year period (Wald Chi Square, $p < 0.001$). There was no evidence that the use of alcohol or cocaine as the primary substance at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).

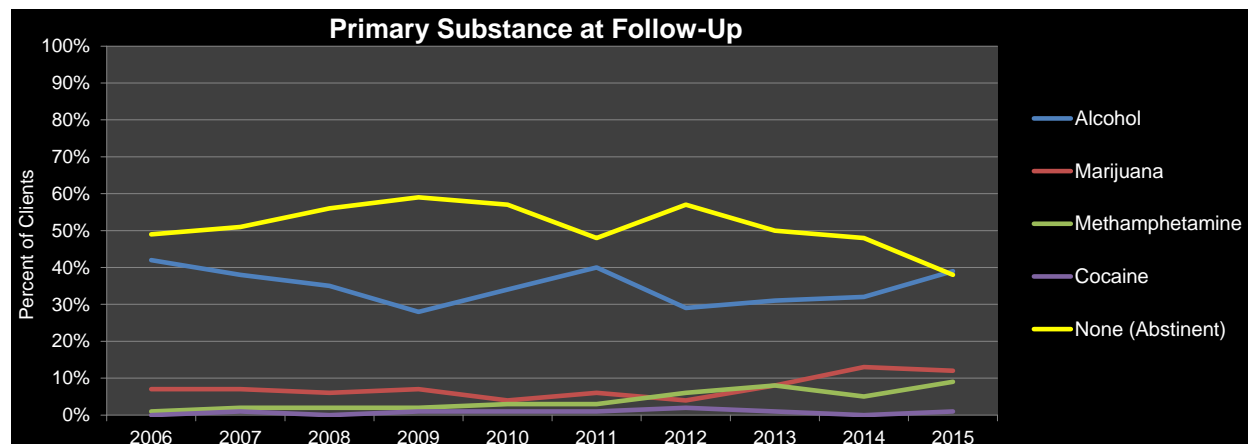


Figure 3. Secondary Substance at Admission

During the ten-year period, more than half of the clients (ranging from 52% in 2011 to 63% in 2007) reported a secondary substance at admission. Marijuana was the most commonly used secondary substance, with use at admission ranging between a low of 22% in 2011 to a high of 29% in 2009 and 2010. This was closely followed by alcohol, which fluctuated between 13% in 2013 to 22% in 2015. The percentage of clients reporting methamphetamine or cocaine as secondary substances at admission remained under 10% each year.

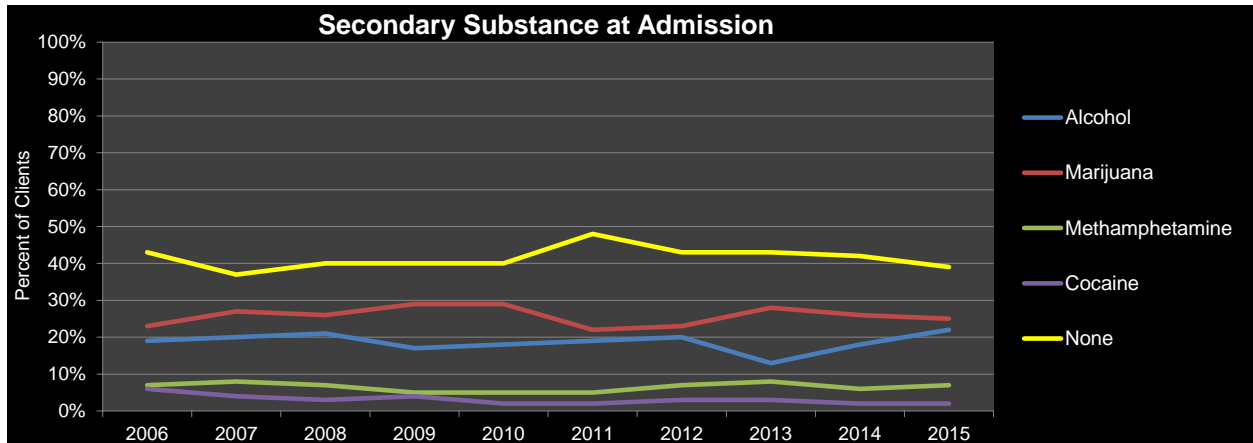
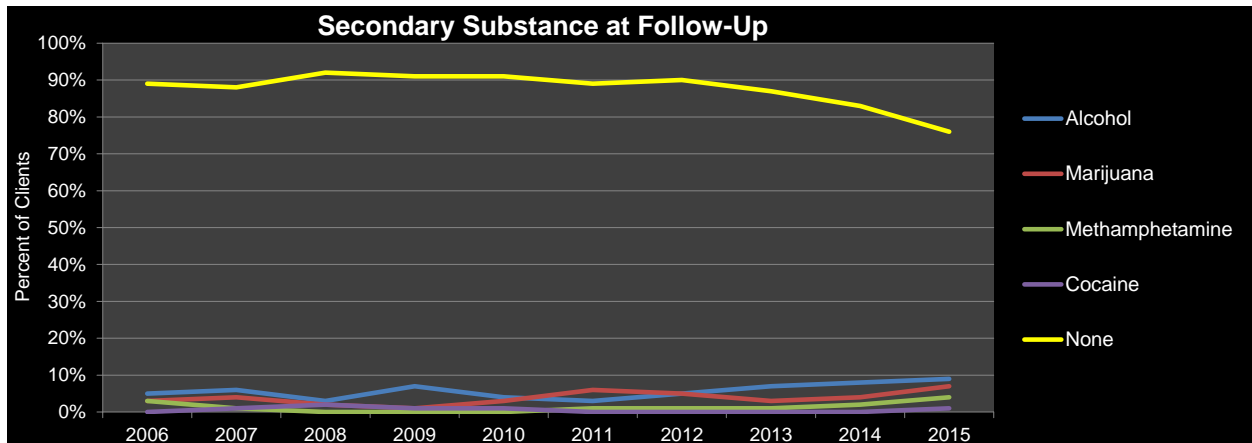


Figure 4. Secondary Substance at Follow-Up

Over the ten-year period, the majority of clients did not report a secondary substance at follow-up, ranging from 76% in 2015 to 92% in 2008. Thus, clients reporting use of a secondary substance at follow-up ranged from a high of 24% recently in 2015 to a low of 8% in 2008. Recently, from 2012 to 2015, the percentage of clients reporting use of a secondary substance at follow-up increased from 10% to 24%. Of clients who indicated use of a secondary substance at follow-up, alcohol was most commonly reported in eight of the ten years: 2006 through 2010 and 2013 through 2015. However, in 2011 marijuana was the secondary substance most often indicated by clients. In 2012, the same percentage of clients reported alcohol and marijuana as their secondary substance at follow-up. Over the ten-year period, the likelihood of clients reporting alcohol as the secondary substance at follow-up significantly increased (Wald Chi Square, $p < 0.001$). Although the percentage of clients reporting methamphetamine and cocaine as a secondary substance at follow-up remained under 5% each year, over the ten-year period, the likelihood of marijuana and methamphetamine as the primary substance of use at follow-up significantly increased (Wald Chi Squares, $p < 0.001$ and $p < 0.01$ respectively). There was no evidence that the use of cocaine as the secondary substance at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).



Changes in frequency of use provide additional information regarding client outcomes following treatment. Since a client’s primary substance may change from admission to follow-up, a simple comparison of frequency may not be a good representation (e.g. having one drink three to six times per week versus smoking methamphetamine three to six times per week). Therefore, Figure 5 presents data for a subset of the total group of clients who completed the follow-up interview who report using the same primary substance at both admission and follow-up. For example, a client may report using alcohol daily at admission and at follow-up indicate they used alcohol one to three times in the past month, representing a decrease in their frequency of use. The “Increased Use” category presents the percentage of clients who indicated using their primary substance with more frequency at follow-up than reported at admission. For example, a client may report using alcohol one to three times in the past month at admission and at follow-up report daily use, representing an increase in their frequency of use. “Maintained Same Use” represents clients reporting the same frequency of use of their primary substance at admission and follow-up. “Decreased Use” presents the percentage of clients who reported using their primary substance with less frequency at follow-up than indicated at admission.

Figure 5. Change in Frequency of Use of Primary Substance: Clients Indicating Use of Same Primary Substance at Both Admission and Follow-Up

In six of the ten years (2007, 2009, 2011, 2012, 2014, and 2015) clients who reported use of the same primary substance at admission and follow-up most commonly indicated a decrease in use of their primary substance at follow-up compared to admission. In three of the ten years (2006, 2008, and 2013) clients reported using their primary substance more frequently at follow-up compared to admission. In 2010, clients most commonly reported the same frequency of use of their primary substance at both admission and follow-up. There are no significant differences across categories over the ten-year period (Jonckheere-Terpstra Test, $p > 0.05$).

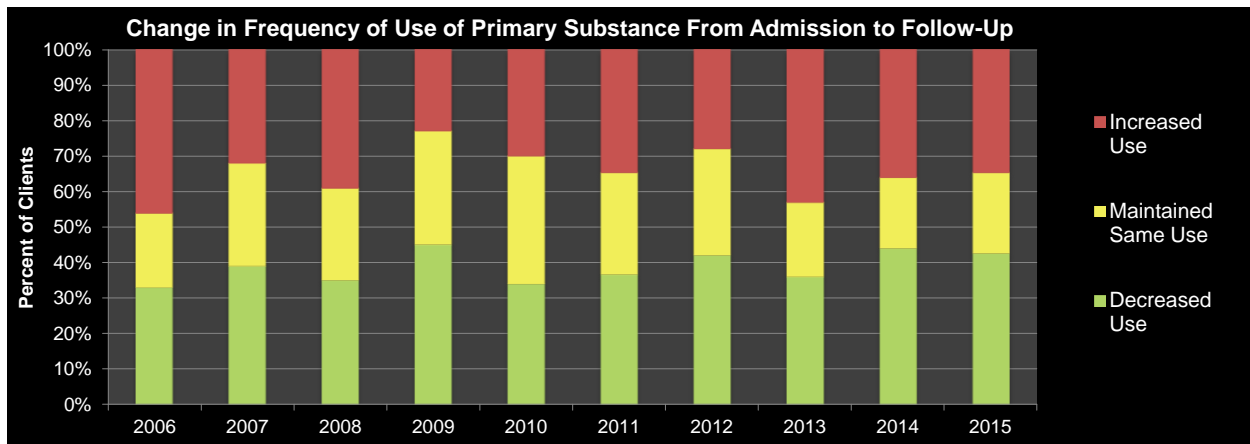


Figure 6. Arrests at Admission and Follow-Up

For the question regarding arrests, the admission response refers to the 12 months prior to admission and the follow-up response refers to the six months following discharge. Clients reporting arrests at admission ranged from 50% of clients in 2012 to 66% in 2008. Although 20% or fewer of clients reported arrests at follow-up each year, there was an eight percentage point increase from 2013 to 2015 in clients reporting arrests at follow-up (from 12% to 20%). There was no evidence that arrests at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).

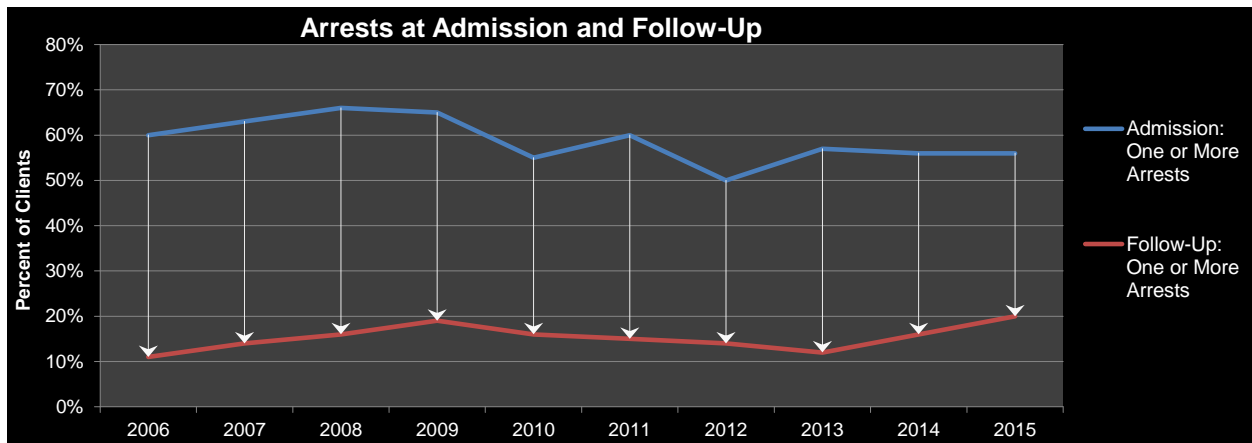


Figure 7. Hospitalizations Due to a Substance Use Related Problem at Admission and Follow-Up

In all ten years, fewer clients reported substance use related hospitalizations at follow-up compared to admission. The percentage of clients reporting substance use related hospitalizations at admission ranged from 8% in 2007 to 14% in 2010. The percentage of clients who indicated in follow-up interviews that they had been hospitalized for a substance use related problem during the six-month period from discharge to follow-up ranged from 2% in 2006 and 2007 to 8% in 2010. There was no evidence the percentage of clients reporting hospitalizations due to a substance use related problem at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).

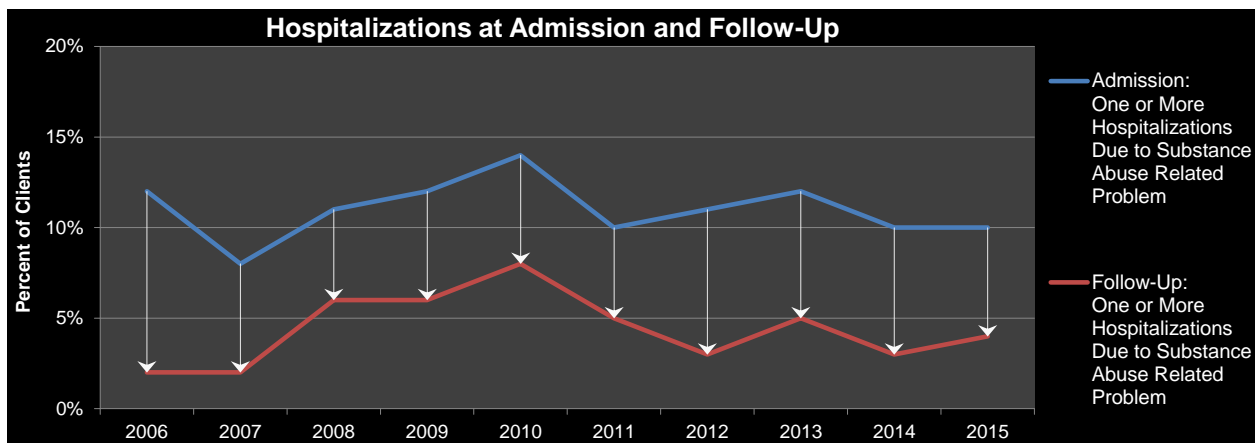


Figure 8. Employment (Full or Part-Time) at Admission and Follow-Up

Compared to admission, more clients were employed full or part-time six months following discharge from treatment in all ten years. Fewer than 52% of clients reported employment at admission, ranging from 36% in 2010 and 2011 to 51% in 2007. Clients reporting employment at follow-up ranged from 56% in 2009 to 71% in 2008. Over all years, an average of 63% of clients indicated employment at follow-up compared to an average of 42% of clients reporting employment at admission. From 2006 to 2015, there was no evidence the percentage of clients reporting employment at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).

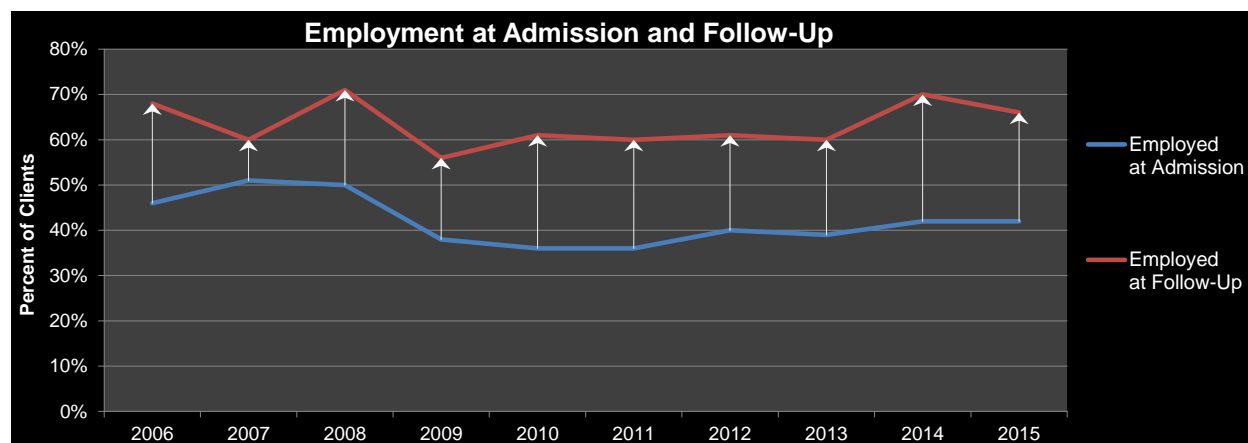


Figure 9. Not Employed at Admission and Follow-Up

Figure 9 includes clients who report they were unemployed and looking for work, as well as clients reporting they were not in the labor force (which could include students, homemakers, disabled, or retired clients). Over all years, the percentage of clients reporting they were not employed at follow-up is lower compared to those who indicated they were not employed at admission. The percentage of clients who indicated they were not employed at follow-up remained steady from 2009 to 2013 (approximately 41%); however, in 2014 clients reporting they were not employed at follow-up decreased to 30%.

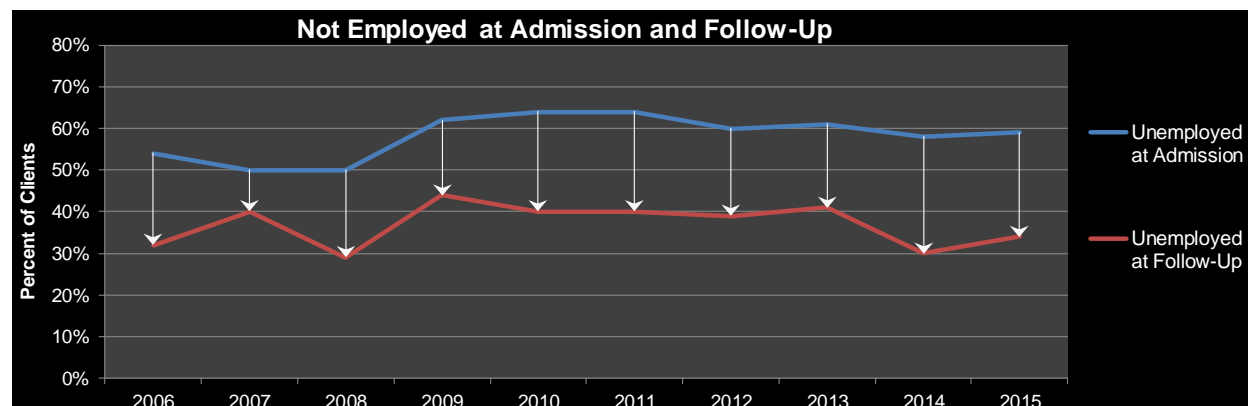


Figure 10. Change in Employment Status from Admission to Follow-Up

Figure 10 presents the change in employment status from admission to follow-up. Increased employment includes clients who changed from not being in the labor force or were unemployed at admission to having any employment at follow-up, or those who changed from being employed part-time at admission to full-time at follow-up. Decreased employment includes clients who changed from having any employment at admission to being unemployed or not in the labor force at follow-up, or those who changed from being employed full-time at admission to part-time at follow-up. Over the ten years, an average of 44% of clients maintained the same employment status, an average of 16% decreased their employment status, and an average of 40% increased their employment status.

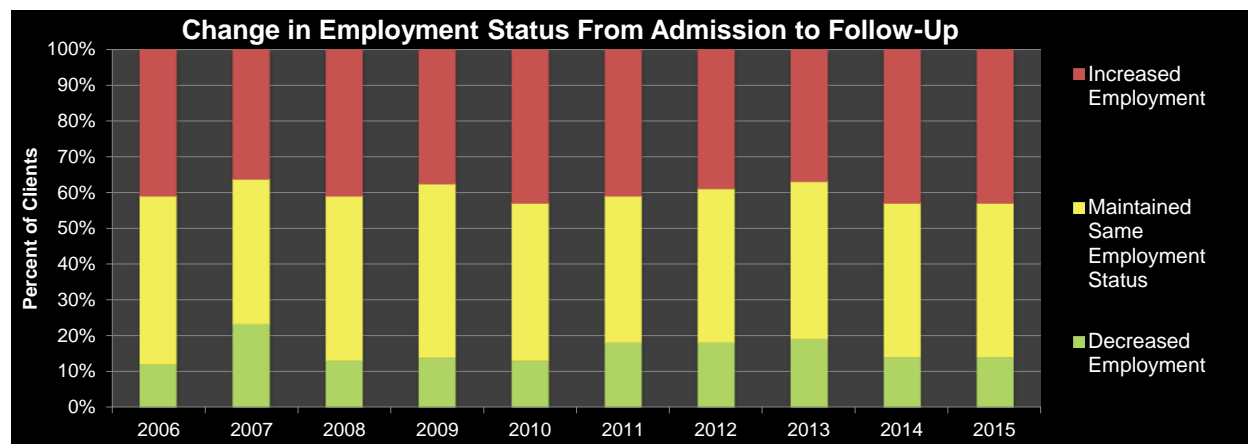


Figure 11. Months Employed at Admission and Follow-Up

During the ten years, more clients indicated they were employed four months or more at follow-up compared to admission. From 2006 to 2015, an average of 58% of clients reported employment of four or more months at follow-up. An average of 40% of clients indicated they had not been employed in the six months prior to treatment admission over the ten years, with a high of 48% in 2010. At follow-up, approximately one-quarter of clients (26%) reported not being employed since treatment discharge over all ten years, with a high of 37% in 2009.

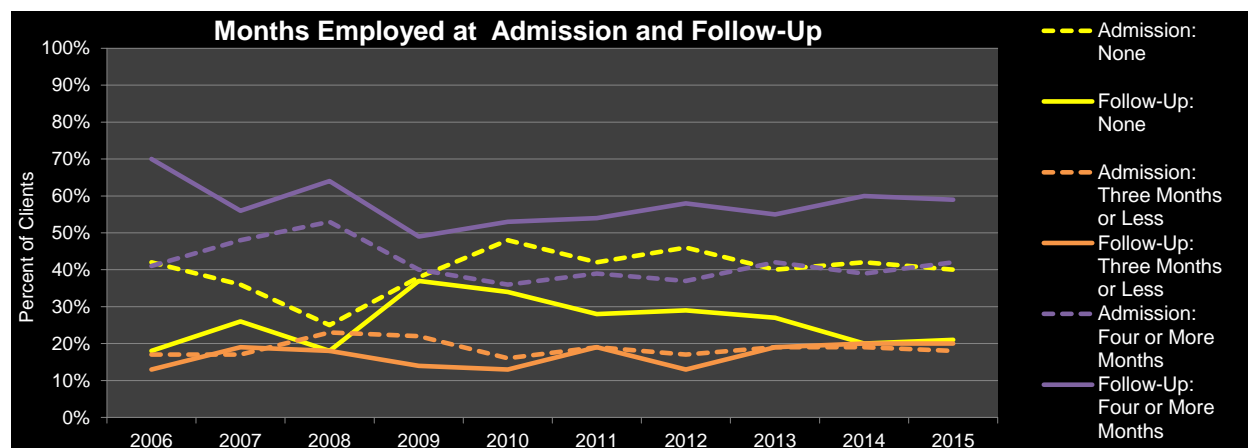


Figure 12. Change in Taxable Monthly Income from Admission to Follow-Up

Figure 12 presents the change in taxable monthly income from admission to follow-up. There are five income categories: no income, \$500 or less, \$501 to \$1000, \$1001 to \$2000, and over \$2000. “Increased Monthly Income” indicates clients moved from a smaller income category at admission to a larger income category at follow-up. “Decreased Monthly Income” represents clients who moved from a larger income category at admission to a smaller income category at follow-up. Over the ten years, an average of 44% of clients who completed follow-up interviews increased their income from admission to six months post-treatment discharge, an average of 38% maintained the same monthly income category, and an average of 18% decreased their monthly income.

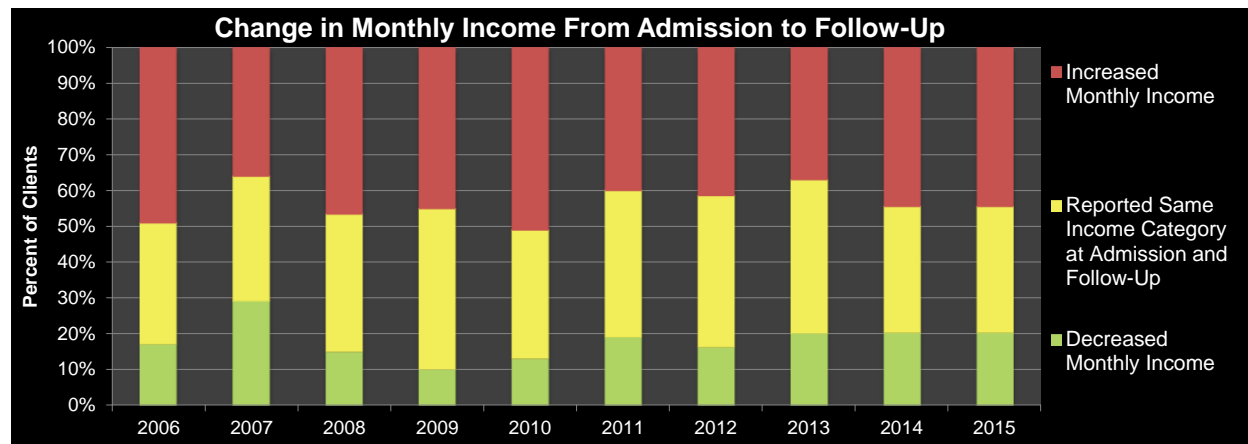


Figure 13. Attendance at Voluntary Recovery Support Meetings at Admission and Follow-Up

During the ten-year period, more clients reported attending voluntary recovery support meetings in the six months following treatment discharge compared to the six months prior to treatment admission. An average of 20% of clients over the ten-year period indicated they had attended at least one Alcoholics Anonymous (AA), Narcotics Anonymous (NA), or similar voluntary meeting per month in the six months prior to admission. At follow-up over all years, an average of 44% of clients reported attending meetings during the six months following discharge from treatment. There was no evidence the percentage of clients reporting attendance at voluntary recovery support meetings at follow-up showed an increase or decrease over the ten-year period (Wald Chi Square, $p > 0.05$).

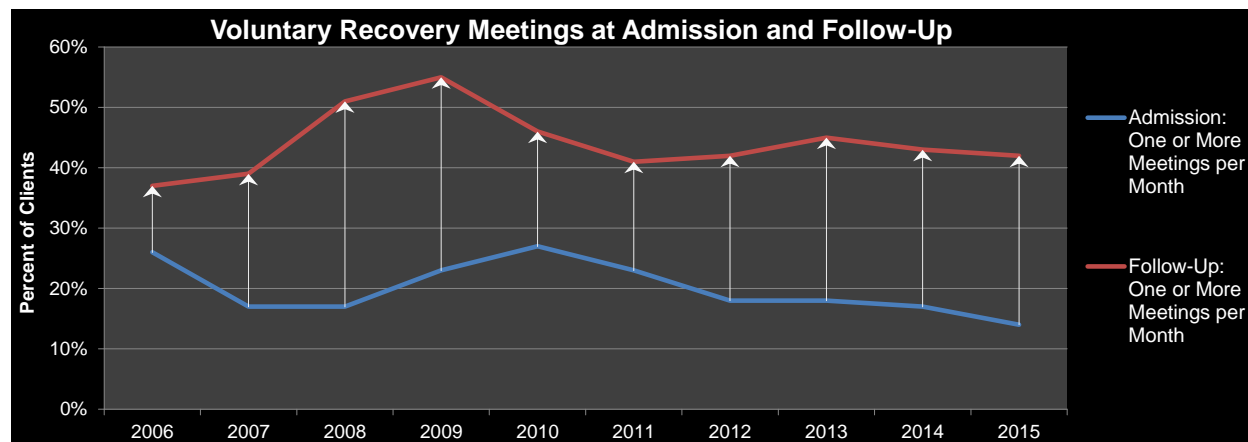


Figure 14. Days of Work or School Missed Due to a Substance Use Problem at Admission and Follow-up

In all ten years, fewer clients reported missing days of work or school due to substance use issues at follow-up compared to admission. The percentage of clients reporting they missed days of work or school for substance use related problems at admission ranged from 8% in 2010 to 17% in 2009; the range at follow-up was 1% in 2009 and 2010 to a high of 12% in 2006. The variability may be due to differences in the state’s employment rates through the years. From 2006 to 2015, there was no evidence of a significant trend in the percentage of clients reporting days missed of work or school at follow-up (Wald Chi Square, $p > 0.05$).

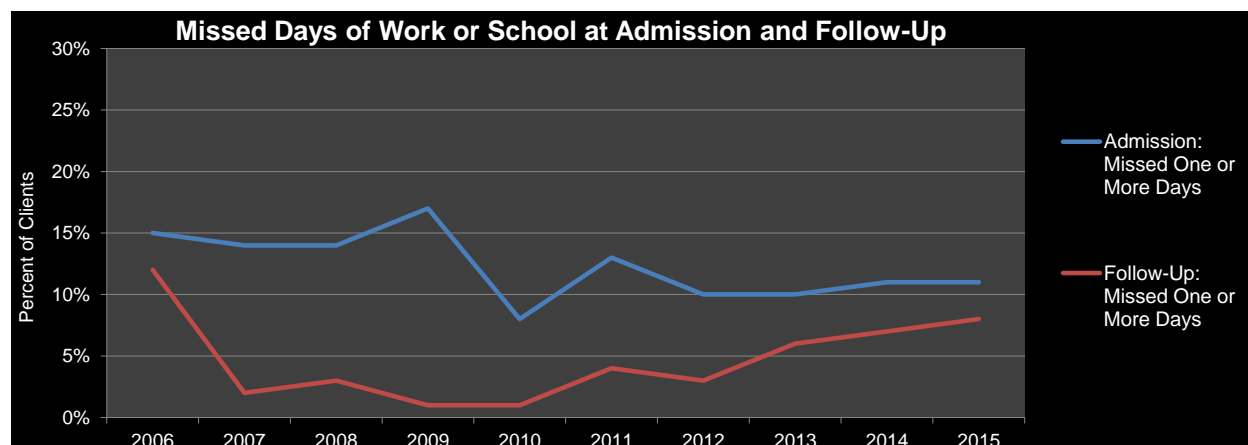


Figure 15. Primary Source of Financial Support at Admission and Follow-Up

Figure 15 presents the three most commonly reported primary source of financial support categories indicated by clients at admission: none, wages or salary, and family and friends. Over the ten-year period, at admission and follow-up, clients most often reported wages or salary as the primary source of support, indicated by an average of 45% of clients at admission and an average of 57% of clients at follow-up over the ten years. Over all ten years, an average of 22% of clients reported relying on family and friends at admission and an average of 26% reported this at follow-up. There is a seven percentage point drop in clients reporting no income source at admission from 2010 to 2015 (from 28% to 21%). The percentage of clients who indicated no income source at follow-up has remained at 3% or below.

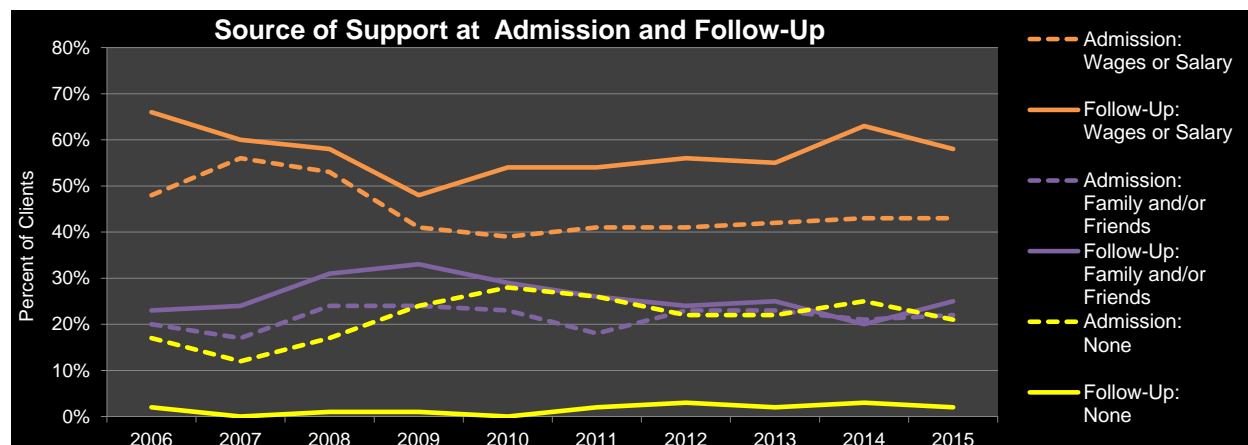


Figure 16. Relationship Status at Admission and Follow-Up

Figure 16 presents the four most common relationship statuses reported by clients at admission and follow-up: single, married, divorced, and cohabitating. Each year, single was the most common relationship status reported at admission and follow-up. During the ten years, clients indicating they were married at admission ranged from a low of 9% in 2011 to 17% in 2013 and 2014; results for clients reporting marriage at follow-up were similar ranging from 10% in 2008 and 2011 to 20% in 2014. Clients reporting divorce at admission fluctuated between 14% in 2006 and 2008 to a high in 2013 of 23%. Clients indicating divorce at follow-up ranged from 10% in 2007 to a high of 23% in 2008 and 2013. Over all years, the percentage of clients reporting cohabitation has averaged 9% at admission and 14% at follow-up.

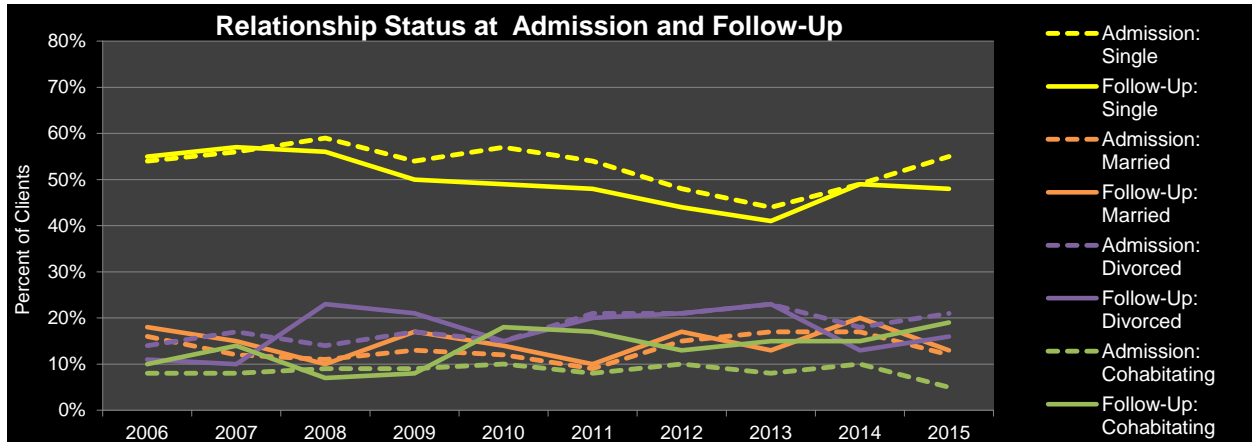
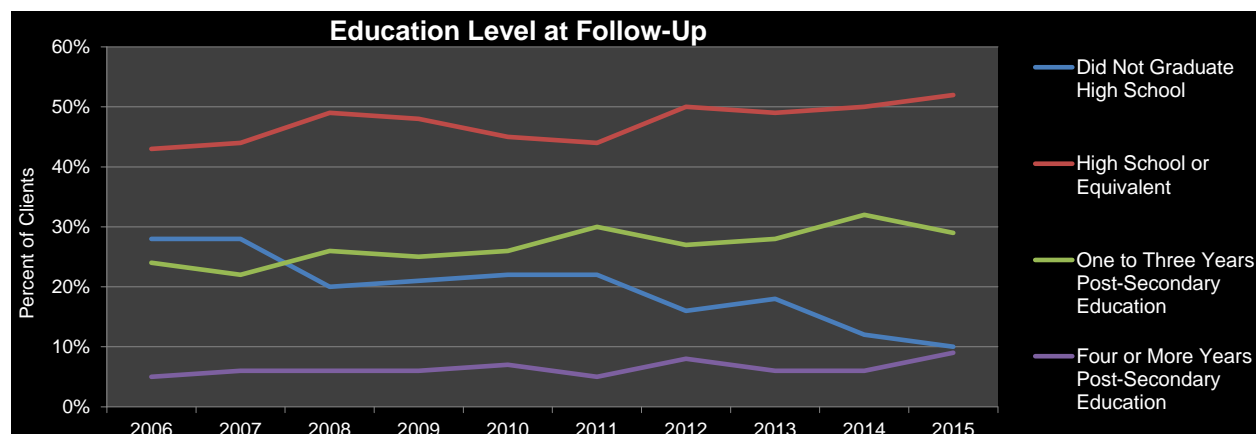


Figure 17. Education Level at Follow-Up

Admission data are not included in Figure 17 since not all admission datasets provide a response category for a General Education Degree (GED). Therefore, admission and follow-up comparisons cannot be made because the GED question is specifically asked at follow-up. At follow-up each year, between 43% and 52% of clients reported a high school or equivalent level of education. The percentage of clients who indicated they had not graduated from high school ranged from a high of 28% in 2006 and 2007 to a low of 10% recently in 2015. Over the ten-year period, there was a statistically significant decrease in the percentage of clients reporting they had not graduated from high school (Wald Chi Square, $p < 0.001$). Clients reporting an education level beyond high school at follow-up has steadily increased from 29% in 2006 to 38% in 2014 and 2015.

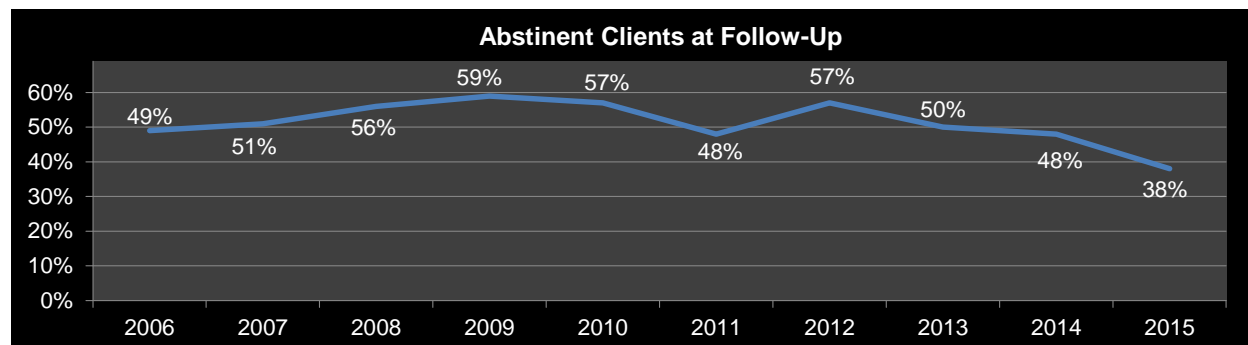


OUTCOMES: ABSTINENCE

The follow-up interviews occur approximately six months after the client is discharged from treatment; therefore, the follow-up period refers to the six months between the client's discharge from treatment and the follow-up interview. Abstinence refers to abstinence from all substances in the previous six months (follow-up period).

Figure 18. Abstinence at Follow-Up

Abstinence at follow-up ranged from 38% to 59% and significantly decreased from 2006 to 2015 (Wald Chi Square, $p < 0.001$).



Figures 19 through 22 examine abstinence at follow-up in relation to other variables at admission and follow-up.

Figure 19. Primary Substance at Admission by Abstinence at Follow-Up

Figure 19 presents the three most commonly reported primary substances reported at admission (alcohol, marijuana, and methamphetamine) and abstinence at follow-up. Other substances are excluded from this figure due to the low frequency of clients reporting these as their primary substance at admission. Substances used in low frequencies were combined into one group for the statistical analyses and excluded from Figure 19. In Figure 19, the percentages represent the number of abstinent clients at follow-up out of the number of total clients who indicated each listed primary substance at admission. Regardless of primary substance reported at admission, there were statistically significant differences in abstinence at follow-up over time (Wald Chi Square, $p < 0.0001$). The effect of the primary substance at admission on abstinence at follow-up varies by the type of substance. Clients reporting marijuana as their primary substance of use reported less abstinence at follow-up over the decade (Wald Chi Square, $p < 0.01$). A similar trend was found for clients reporting methamphetamine as the primary substance at admission, there was a decrease in abstinence at follow-up from 2006 to 2015 (Wald Chi Square, $p < 0.01$). There was no evidence to suggest an increasing or decreasing trend in abstinence at follow-up for clients reporting alcohol as their primary substance at admission (Wald Chi Square, $p > 0.05$).

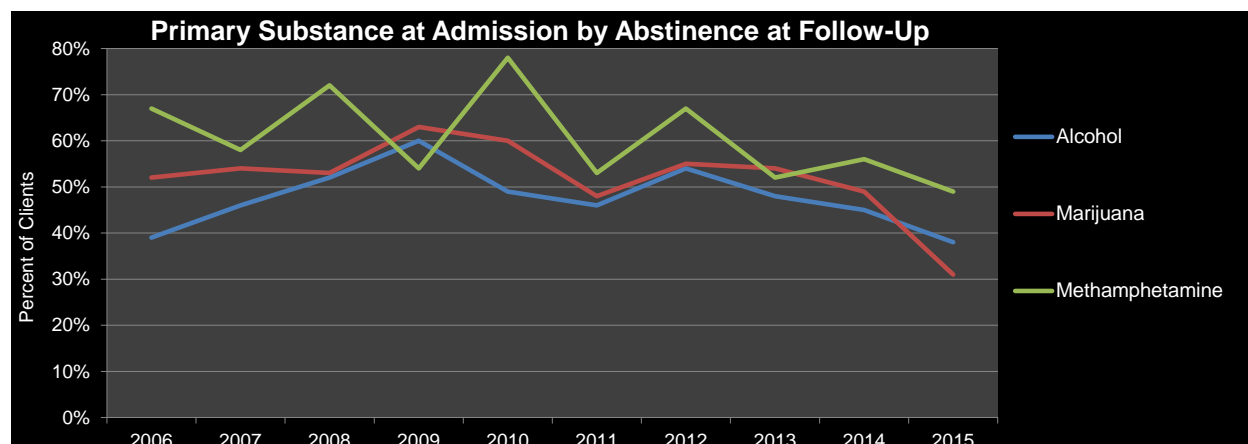


Figure 20. Arrests at Follow-Up by Abstinence at Follow-Up

In Figure 20, the percentages represent abstinent clients at follow-up who indicated they had been arrested since treatment discharge and non-abstinent clients who reported arrests at follow-up. There was no evidence to suggest either an increasing or decreasing trend over the ten-year period for arrests at follow-up (Wald Chi Square, $p > 0.05$). However, clients who were abstinent at follow-up were less likely to be arrested during the follow-up period (Wald Chi Square, $p < 0.0001$).

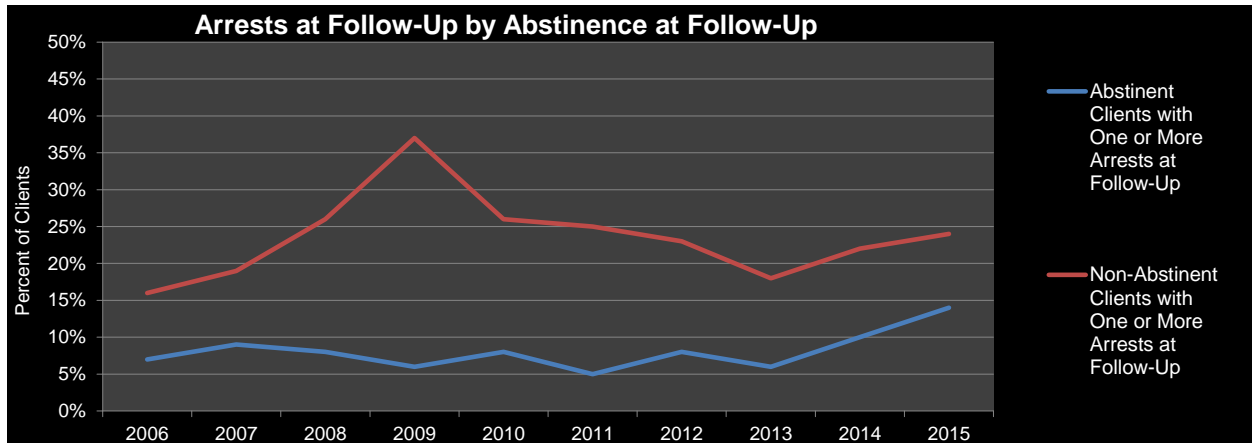


Figure 21. Employment at Follow-Up by Abstinence at Follow-Up

In Figure 21, the percentages represent abstinent clients reporting employment (full or part-time) at follow-up out of the total number of abstinent clients at follow-up. Also represented are non-abstinent clients reporting employment at follow-up out of the total number of non-abstinent clients. There was no evidence to suggest either an increasing or decreasing trend over the ten-year period for employment at follow-up (Wald Chi Square, $p > 0.05$). From 2006 to 2015, employment at follow-up was not associated with clients' abstinence (Wald Chi Square, $p > 0.05$).

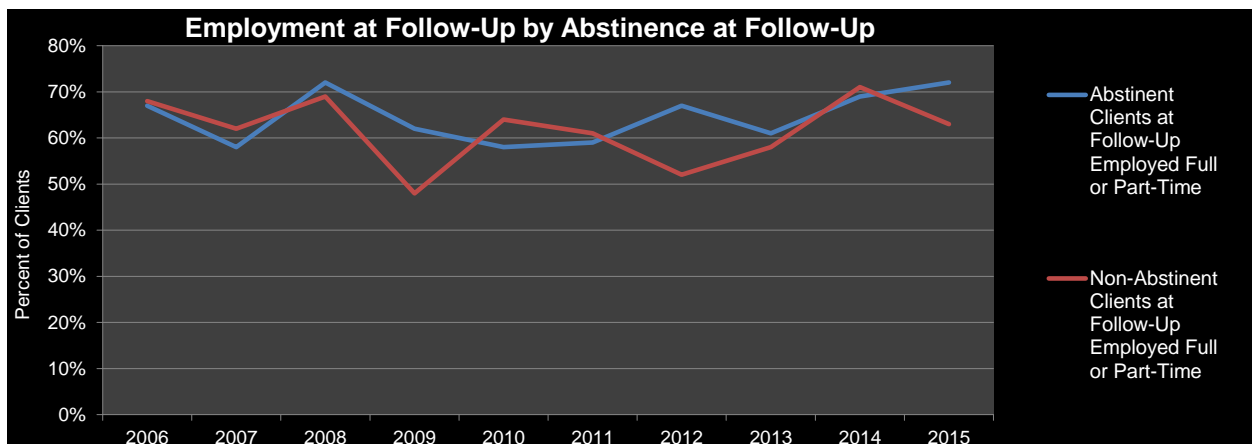
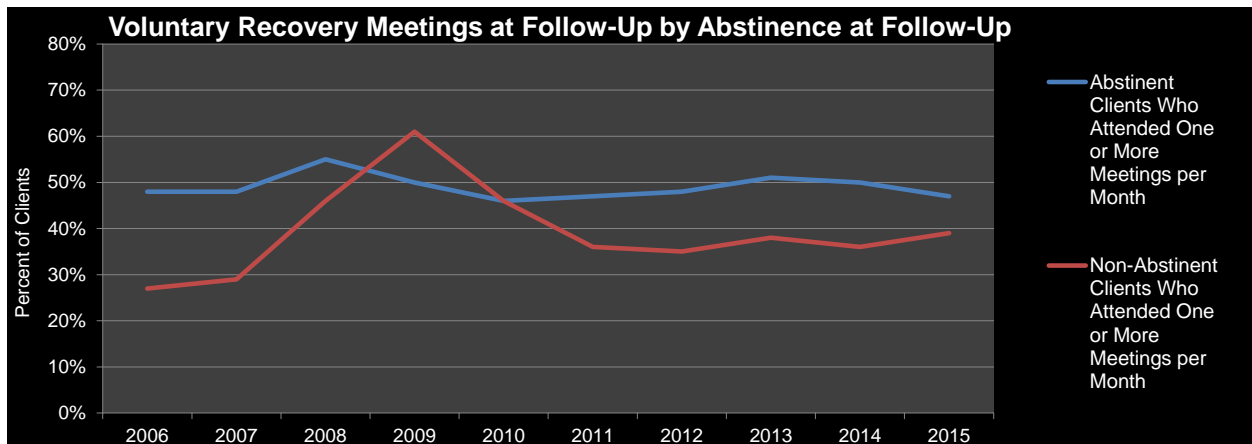


Figure 22. Voluntary Recovery Support Meetings Attended at Follow-Up by Abstinence at Follow-Up

In Figure 22, the percentages represent abstinent clients at follow-up who indicated they had attended at least one voluntary recovery support meeting per month since discharge out of the total number of abstinent clients. Also represented are non-abstinent clients at follow-up who indicated they had attended at least one recovery support meeting since discharge out of the total number of non-abstinent clients. Regardless of abstinence or not at follow-up, there was no evidence to suggest either an increasing or decreasing trend over the ten-year period for clients reporting attendance at voluntary recovery support meetings at follow-up (Wald Chi Square, $p > 0.05$). However, clients who were abstinent at follow-up were more likely to have attended voluntary recovery support meetings (Wald Chi Square, $p < 0.0001$).



OUTCOMES: SEX

Figures 23 and 24 present the primary substance reported at admission and abstinence at follow-up by sex.

Figure 23. Primary Substance at Admission by Sex

The three primary substances clients reported most often were alcohol, marijuana, and methamphetamine. Figure 23 shows the percentage of males and females reporting these three substances at admission each year.

Over all ten years, males reported alcohol as the primary substance at admission more often than any other substance, ranging from 38% in 2015 to 59% in 2007. Females indicating alcohol as the primary substance at admission fluctuated between 33% in 2006 to 57% in 2009. In recent years, there has been a decrease for both sexes reporting alcohol as the primary substance at admission: an 18 percentage point drop for males from 2013 to 2015 (from 56% to 38%) and a 14 percentage point drop for females from 2014 to 2015 (from 49% to 35%).

During the ten-year period, marijuana as the primary substance at admission ranged from 18% to 33% for males and 14% to 31% for females. From 2013 to 2015, there have been increases for both sexes: an increase of 13 percentage points from males (from 18% to 31%) and a seven percentage point increase for females (from 15% to 22%).

In recent years, there has been an increase in the percentage of males reporting methamphetamine as their primary substance at admission, with 13% of males reporting this in 2012 to 24% of males indicating this in 2014 and 23% in 2015. There was an increase of nine percentage points for females reporting methamphetamine as their primary substance from 2014 to 2015 (from 25% to 34%).

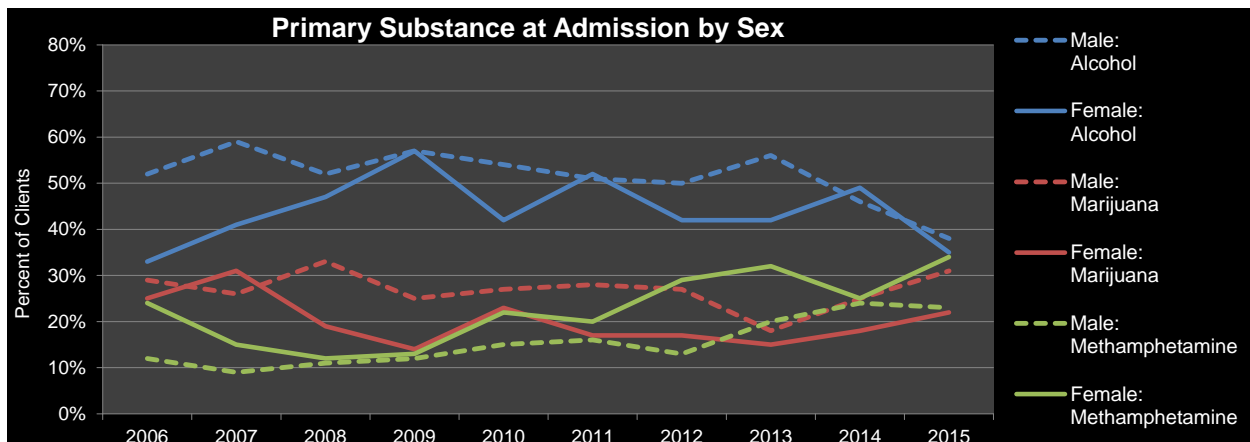
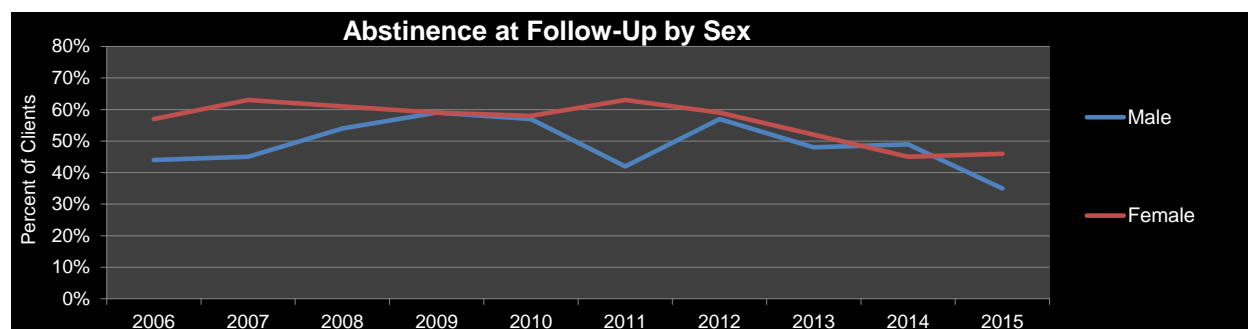


Figure 24. Abstinence at Follow-Up by Sex

In most years, more females reported abstinence at follow-up than males. Abstinence for males at follow-up ranged from 35% recently in 2015 to 59% in 2009. Females reporting abstinence at follow-up fluctuated between 45% in 2014 to 63% in 2007 and 2011. The largest disparity between males and females occurred in 2011 when there was a 21 percentage point difference with 42% of males and 63% of females reporting abstinence at follow-up. Over the ten-year period, there is a decreasing trend in abstinence (Wald Chi Square, $p < 0.001$). There is a significant difference between males and females (Wald Chi Square, $p < 0.001$); females report abstinence at follow-up more often than males (57% and 49% respectively).

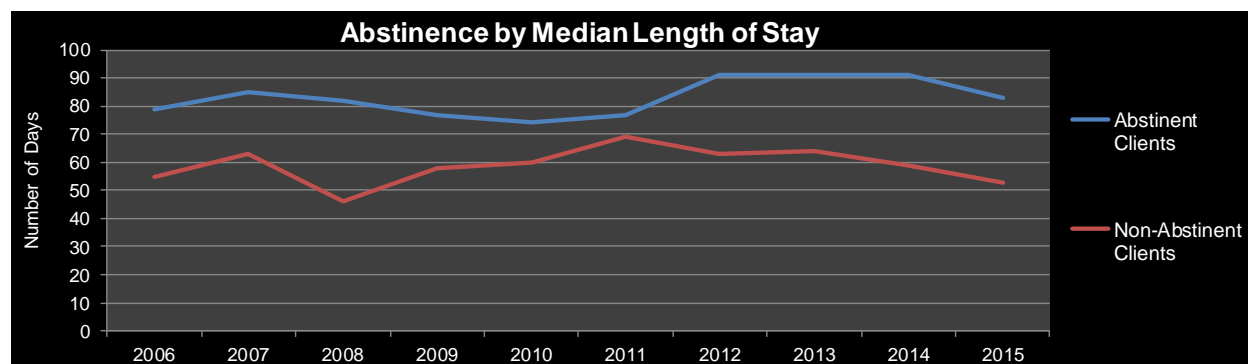


OUTCOMES: LENGTH OF STAY AND DISCHARGE STATUS

Length of stay is defined as the number of days from admission to treatment through discharge. Figure 25 examines length of stay related to abstinence at follow-up.

Figure 25. Abstinence at Follow-Up by Median Length of Stay

In all years except 2010 and 2011 there were significant differences between length of stay and abstinence at follow-up (Jonckheere-Terpstra Tests, $p < 0.05$).



Unlike Figure 25 on the previous page that includes data only from clients who completed follow-up interviews, data in Table 8 and Figures 26 through 29 are drawn from all discharged clients who were in the OMS sample for whom discharge data have been received.

Table 8. Primary Substance at Admission by Median Length of Stay

Table 8 presents the median length of stay (in days) for all discharged clients in the OMS sample, as well as for the most often reported primary substances at admission by year. Results for recent years, particularly 2015, may change as more clients are discharged from treatment.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All Clients in OMS Sample	63	62	53	63	64	69	77	69	65	63
Alcohol	62	60	49	51	61	63	74	71	64	64
Marijuana/Hashish	68	63	58	76	70	65	86	69	70	70
Methamphetamine	69	71	57	77	75	85	77	70	63	56
Cocaine/Crack	64	54	57	70	44	62	64	42	37	59

Figures 26 through 29 on the following pages present the percentage of clients in each length of stay category for the four most frequently reported substances at admission. It is important to note as more clients who were admitted in 2015 are discharged from treatment, the length of stay results for 2015 may change.

Figure 26. Length of Stay: Alcohol as Primary Substance at Admission

There are statistically significant differences between length of stay for clients who reported alcohol as the primary substance at admission compared to clients who reported other primary substances at admission in one of the ten years: 2009 (Jonckheere-Terpstra Tests, $p < 0.05$).

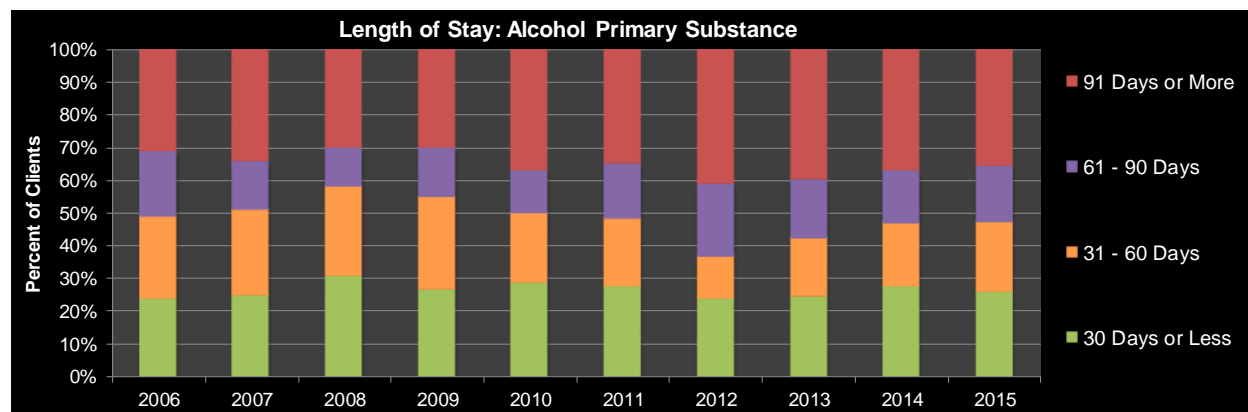


Figure 27. Length of Stay: Marijuana as Primary Substance at Admission

There are statistically significant differences between length of stay for clients who reported marijuana as the primary substance at admission compared to clients who reported other primary substances at admission in two of the ten years: 2009 and 2015 (Jonckheere-Terpstra Tests, $p < 0.05$).

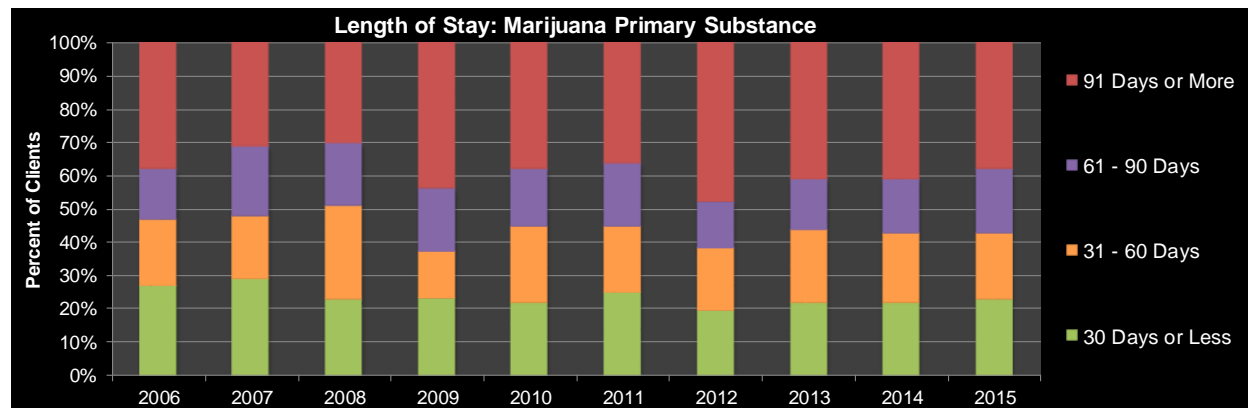


Figure 28. Length of Stay: Methamphetamine as Primary Substance at Admission

There are not statistically significant differences between length of stay for clients who reported methamphetamine as the primary substance at admission compared to clients who reported other primary substances at admission in any of the ten years (Jonckheere-Terpstra Tests, $p > 0.05$).

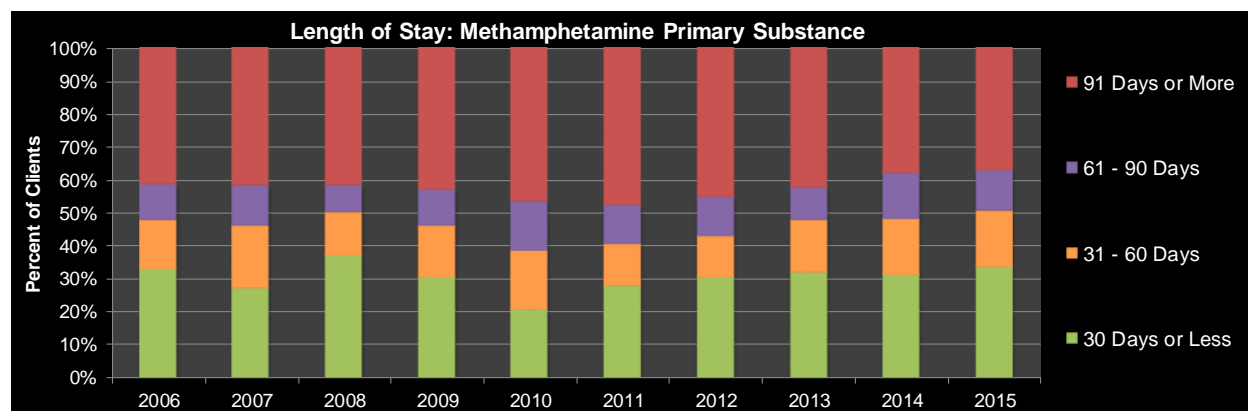
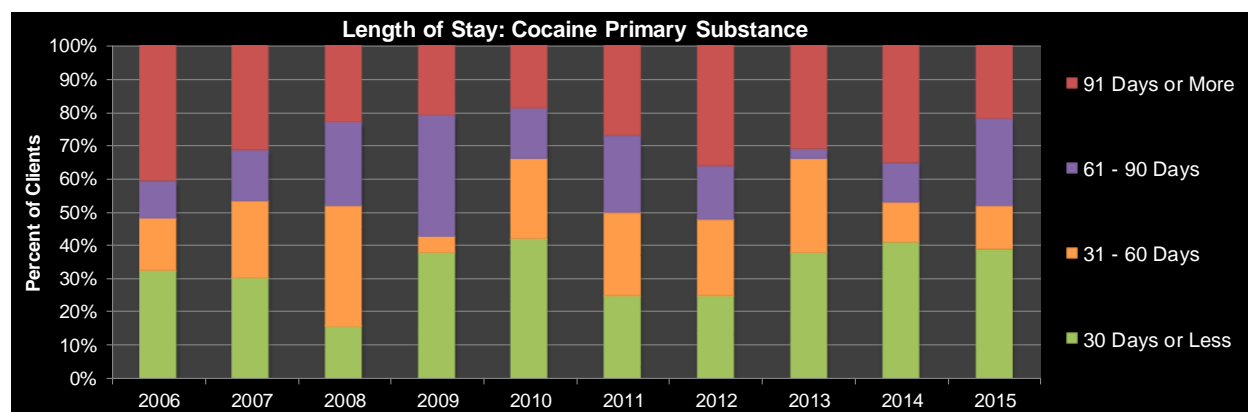


Figure 29. Length of Stay: Cocaine as Primary Substance at Admission

There are statistically significant differences between length of stay for clients who reported cocaine as the primary substance at admission compared to clients who reported other primary substances at admission in one of the ten years: 2010 (Jonckheere-Terpstra Tests, $p < 0.05$). The variability in length of stay for clients reporting cocaine as the primary substance at admission may be due to the lower number of clients in the OMS sample reporting cocaine as the primary substance at admission; numbers range from a high of 71 in 2006 to a low of 17 in 2014. Caution is advised when interpreting these results.



Figures 30 through 32 show three outcome variables for the follow-up interview (abstinence, no arrests, and employment) by treatment discharge status. There are three discharge categories: successful completion; terminated (clients discharged from the program due to noncompliance, lack of treatment progress, or client leaving); and neutral (this category includes, but is not limited to, referral to another program, incarceration, or death). Data for neutral discharges are not included in the figures due to the low number of clients (fewer than 9% of clients each year) in the neutral discharge category with completed interviews. It is important to note clients who were successfully discharged comprise the majority of the clients interviewed in all ten years. Results for recent years, particularly 2015, may change as more follow-up interviews are completed with clients.

Figure 30. Abstinence at Follow-Up by Discharge Status

Over the ten-year period, clients who were successfully discharged were more likely to be abstinent at follow-up (Wald Chi Square, $p < 0.001$). Over the ten-year period, there was no evidence to suggest either an increasing or decreasing trend in abstinence at follow-up for successfully discharged clients and clients who were terminated (Wald Chi Square, $p > 0.05$).

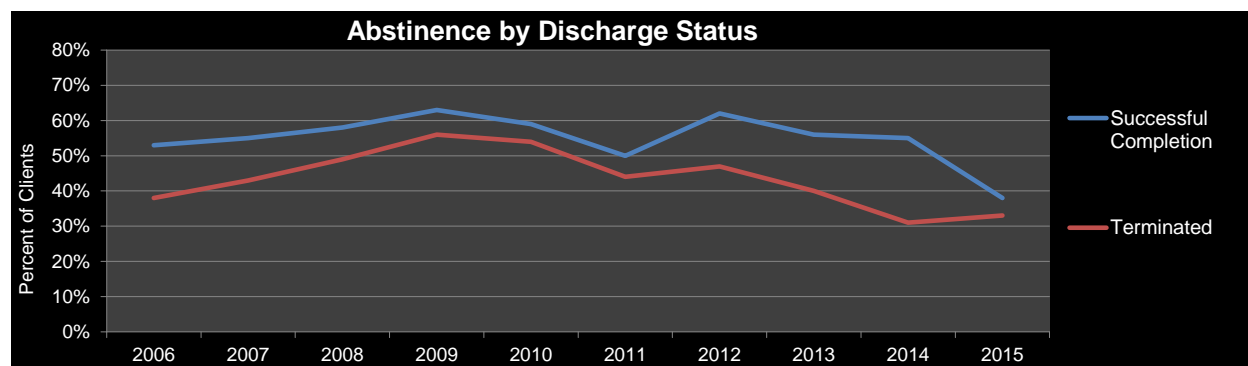


Figure 31. No Arrests at Follow-Up by Discharge Status

Over the ten-year period, clients who were successfully discharged were more likely to not have been arrested in the follow-up period (Wald Chi Square, $p < .0001$). There was no evidence to suggest either an increasing or decreasing trend in arrests at follow-up for successfully discharged clients and clients who were terminated over the ten-year period (Wald Chi Square, $p > 0.05$).

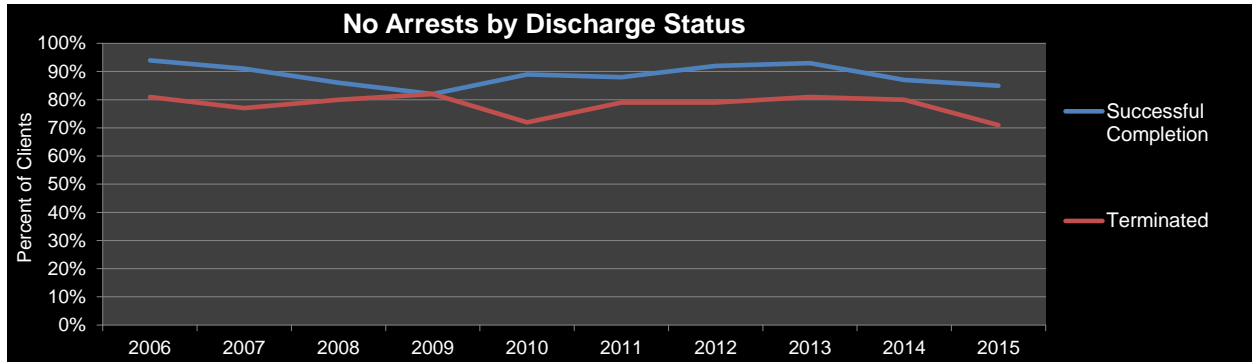


Figure 32. Employment at Follow-Up by Discharge Status

Clients who were successfully discharged were more likely to be employed at follow-up (Wald Chi Square, $p < 0.01$). Over the ten-year period, there was no evidence to suggest either an increasing or decreasing trend in employment at follow-up for successfully discharged clients and clients who were terminated (Wald Chi Square, $p > 0.05$).

