Pregnant Women Entering Substance Abuse Treatment for the First Time: 10 Year Trends

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Summary

The following analyses focus on pregnant women in Iowa and their first time admissions to substance abuse treatment from 2000 to 2009. Slightly less than 4% of the women clients were pregnant. Pregnant clients were less likely to live with their parents than non-pregnant women, despite their younger age. The pregnant clients were less likely to be in treatment for alcohol than non pregnant women. There have been dramatic reductions in methamphetamine and cocaine mentions by both pregnant and non pregnant women over the last 5 years. Length of stay was not significantly different comparing pregnant versus non pregnant women. Despite having a similar length of stay, pregnant women were less likely to successfully complete treatment than non-pregnant women.

Suggestions:
- Continue to focus on alcohol abuse prevention efforts among women of childbearing age
- Closely monitor percentage of pregnant women reporting alcohol, opiates, and benzodiazepines over time
- Promote the importance of substance abuse screening among women's health professionals
- Increase the length of stay for pregnant women
- Investigate the barriers to pregnant clients remaining in treatment and the barriers to successful treatment completion, initially using focus groups, case histories, or interviews
- Integrate prenatal care, substance abuse treatment, and screening for maternal (pre and post partum) depression early in the treatment process

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Substance abuse problems among pregnant females can produce a number of difficulties for both the mother and the child. For example, medical problems can result for both during the pregnancy and delivery[1]. Cognitive effects of the substance can lead to poor decision-making capabilities in the mother, affecting both the mother and child. There is evidence that many women who use alcohol stop using when pregnant.[2] There is also evidence from national surveys that women often return to using alcohol and binge drinking after birth.

The following analyses focus on pregnant mothers in Iowa and their first time admissions to substance abuse treatment from 2000 to 2009. During that period, there were 115,080 first time admissions, including 35,307 females (30.7%). Of the females, 1,268 (3.6%) were pregnant at their admission. The percent of females admitted varied from 28.3% (2000) to 32.3% (2004) with a significant but slight increase over the 10 years[3], however there was no general trend for the percent pregnant.

Figure 1: Percent of pregnant first time admissions to treatment among all female clients (2000 – 2009).
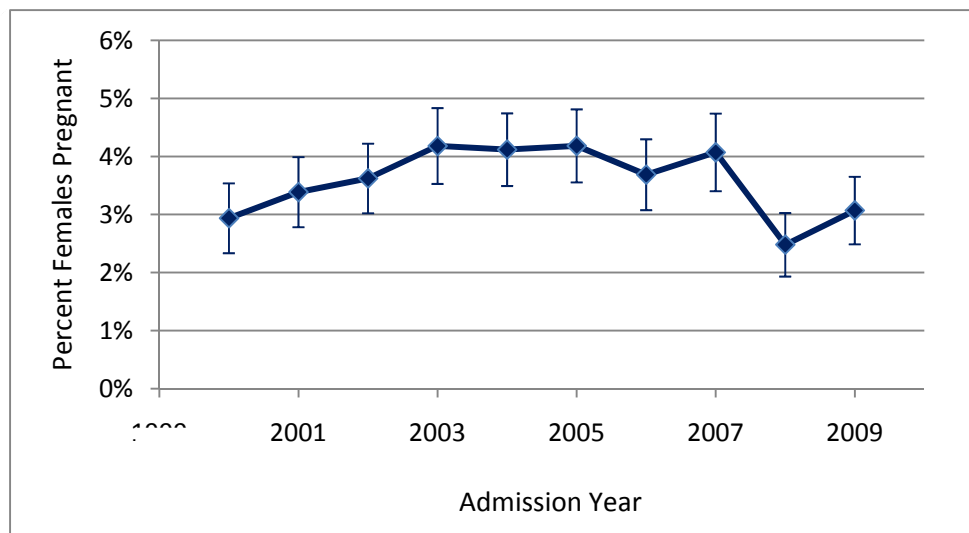
Demographic differences between pregnant and non-pregnant female clients

The pregnant women were considerably younger (mean age = 23) than the non-pregnant women (mean age = 29) on average. Among the pregnant women, 85.2% were under 30 years of age. Among the non-pregnant women, 57.6% were under 30.

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[1] Pinto, S. M., Dodd, S., Walkinshaw, S. A., Siney, C., Kakkar, P., & Mousa, H. A. Substance abuse during pregnancy: effect on pregnancy outcomes. European Journal of Obstetrics & Gynecology and Reproductive Biology, 150(2), 137-141.

[2] Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (May 21, 2009). *The NSDUH Report: Substance Use among Women During Pregnancy and Following Childbirth.* Rockville, MD

[3] Jonckheere-Terpstra z = 4.32, p < 0.0001

Demographic differences between the pregnant and non-pregnant females are shown in Table 1. Many of these differences are also related to the pregnant women's younger age.

Table 1: Demographic Characteristics for Pregnant versus Non-Pregnant Women

	Pregnant n = 1,268	Non-Pregnant Females n = 44,267
Race*		
White	87.5%	92.5%
Black	9.3	5.5
American Indian	2.7	1.5
Ethnicity		
Hispanic//Latino	4.8%	3.6%
Education*		
< High School	41.5%	37.7%
High School	41.8	36.9
Some College	15.3	20.3
College	1.1	3.7
Post Graduate	0.4	1.5
Relationship Status*		
Single	60.0%	54.9%
Married/Cohabitating	27.2	23.8
Separated/Divorced	12.2	19.8
Widowed	0.1	1.5
Employment Status*		
Employed full time	15.6%	24.7%
Employed part time	15.5	17.0
Unemployed-looking	28.4	20.0
Not in labor force	40.5	38.2

*Statistically significant at p < 0.0001.

In many aspects, the pregnant and non-pregnant women resembled one another with respect to other demographic variables, although there were some notable exceptions. Pregnant women were less likely to live with their parents (22.6%) than non-pregnant women (28.6%), despite their younger age.[4] More women that were pregnant listed their income source as "None" (21.9%) than non-pregnant women (16.1%).[5] Pregnant women were less apt to have medical insurance than pregnant women (82.8% versus 62.4%, without medical insurance).[6]

The pregnant women (54.2%) slightly more frequently reported arrests than the non-pregnant group (50.1%).[7] However, the kinds of arrests provided more interesting detail. Pregnant women were less likely to report an arrest for operating a motor vehicle while intoxicated (OWI) (14.1% versus 18.5%) but more likely to report a non-drug or alcohol-related crime while under the influence (8.2% versus 5.9%) and more likely to report non-drug or alcohol-related crime while not under the influence (13.2% versus 9.1%). Pregnant women were also more likely than non-pregnant women to report a drug crime (28.1% versus 24.5%).

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[4] χ^2 = 21.2, df = 1, p < 0.001
[5] χ^2 = 29.9, df = 1, p < 0.001
[6] χ^2 = 158.8, df = 1, p < 0.0001
[7] χ^2 = 8.2, df = 1, p < 0.001

Further analyses indicated that the primary source of the excess percent of pregnant women reporting arrests was caused by their younger age. Controlling for age, all of the significant differences became nonsignificant except for the reduced OWI effect. Thus, given their age, pregnant women were less likely to report an OWI[8] and no different than non-pregnant women for reporting other arrests.

Pregnant and non-pregnant women differed in their referral sources.[9] Pregnant women were less likely than non-pregnant women to have a self referral (11.7% versus 15%) or OWI (10.8% versus 13.1%). They were more likely to have referrals from another alcohol/drug abuse provider (9.8% versus 6.2%), "Other Criminal Justice/Court" (30.4% versus 26.6%), and other community referrals (14.5% versus 9.2%). Of note is that few pregnant women received referrals from health care providers (6.9%), even fewer than non-pregnant women (9.6%). Only 1.2% of the pregnant women had referrals from community mental health clinics.

While not exhaustive, analyses seem to indicate that the demographic differences and similarities between pregnant and non-pregnant women remained relatively constant over the 10 year period. Thus, the analyses uncovered no obvious trends.

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[8] Wald χ^2 = 6.1, df = 1, p < 0.014
[9] χ^2 = 155.0, df = 15, p < 0.001

Substance use profile

There were no differences between pregnant and non-pregnant women in the age of initiation to their primary problem substance or to any mentioned substance. The median age of initiation was in their mid-teens, 16 years old. There were substantial and significant[10] differences between the two groups of women regarding their problems with alcohol, drugs, or drugs and alcohol. Figure 2 shows the pattern of alcohol versus illicit drug problem use for the pregnant and non-pregnant female clients.

Figure 2: Problem substance use pattern (drugs and alcohol) for pregnant and non-pregnant female first time admissions over 10 years.
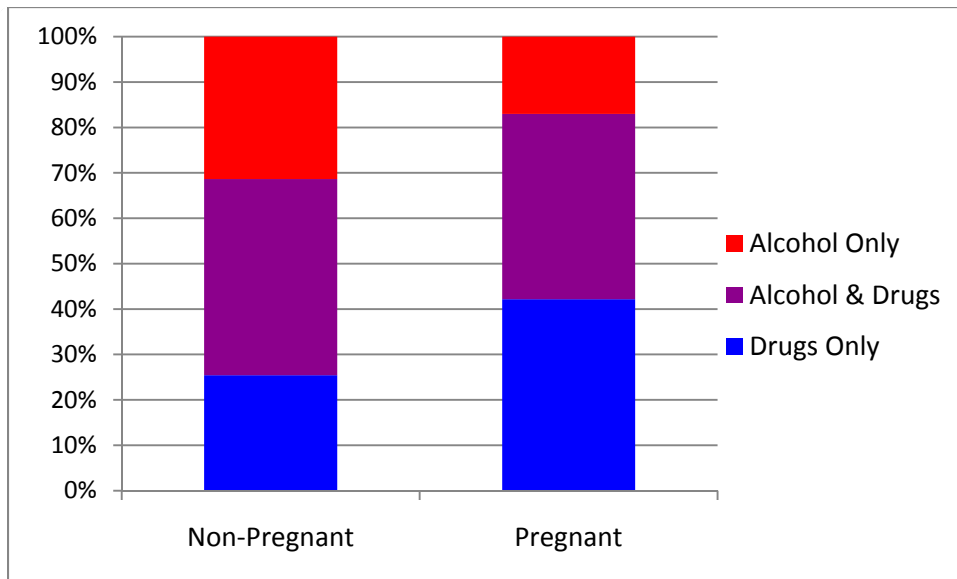
Pregnant clients were more likely to report illicit drugs (42.2%) as their problem substance compared to non-pregnant clients (25.4%). Issues with alcohol and drugs were about the same, 40.8% and 43.2%, for pregnant and non pregnant women, respectively. Alcohol only was less common among the pregnant women (17.0%) than non-pregnant women (31.3%). This effect remained significant even when the analysis considered age.

Analyses indicate that the differences between pregnant and non-pregnant females over the 10 year period has shown no divergence. While there have been some trends in the mention of alcohol and some drugs, pregnant and non pregnant females seem to react similarly to the trends. The following analyses focus on substances mentioned by more than 1% of the pregnant women in, at least, one year. The figures are shown only if there is a significant (p < 0.01) difference between the pregnant and non pregnant females or if there was evidence of a trend of more or fewer mentions.

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[10] $\chi^2 = 214.1$, df = 2, p < 0.0001

Substance use profiles over a decade

Figure 3: Alcohol mentions in first time pregnant and non pregnant female admissions

Pregnant women, in all years, were less likely to report alcohol as a problem substance.[11] While there is a significant increase[12] over the ten years, the graph suggests a reduction of alcohol mentions during the early part of the decade, then an increase during the last 4 years.
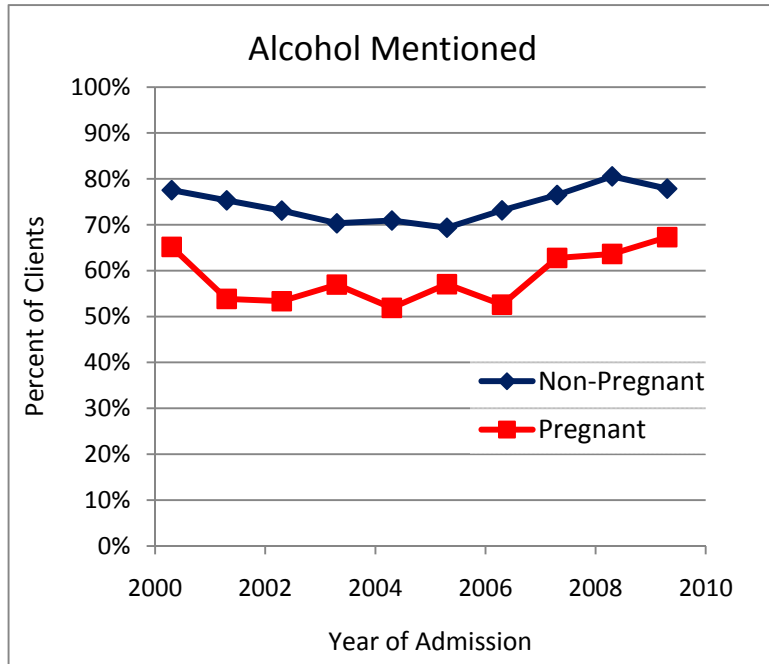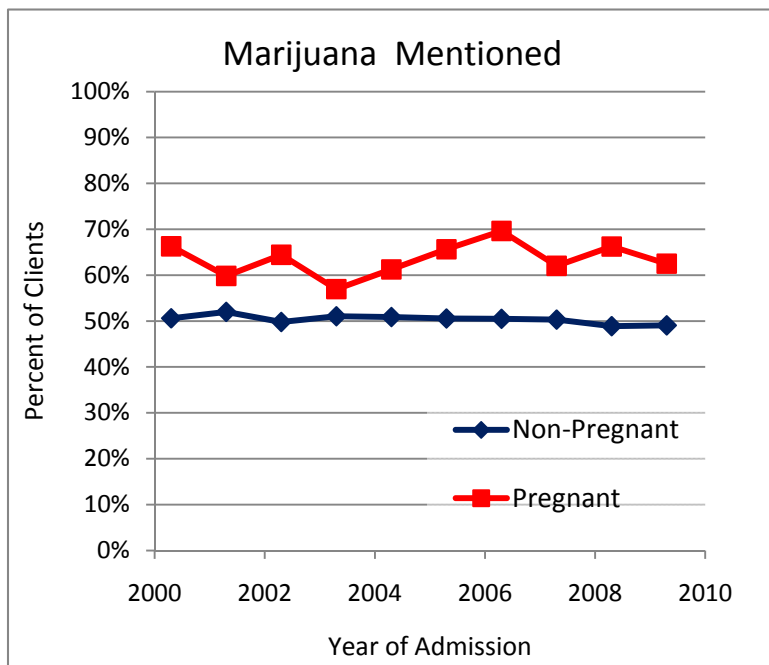

Figure 4: Marijuana mentions in first time pregnant and non pregnant female admissions

While marijuana has shown a very marginal decrease over time in women, pregnant women are significantly more likely to mention this drug as a problem.[13]

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[11] Wald χ^2 = 214.1, df = 165.65, p < 0.0001
[12] Wald χ^2 = 23.72, df = 1, p < 0.0001
[13] Wald χ^2 = 79.16, df = 1, p < 0.0001

Methamphetamine has shown a clear and significant drop in mentions over the 10 years, particularly since 2005. Pregnant females were consistently more likely to mention this substance on first time admission to treatment.

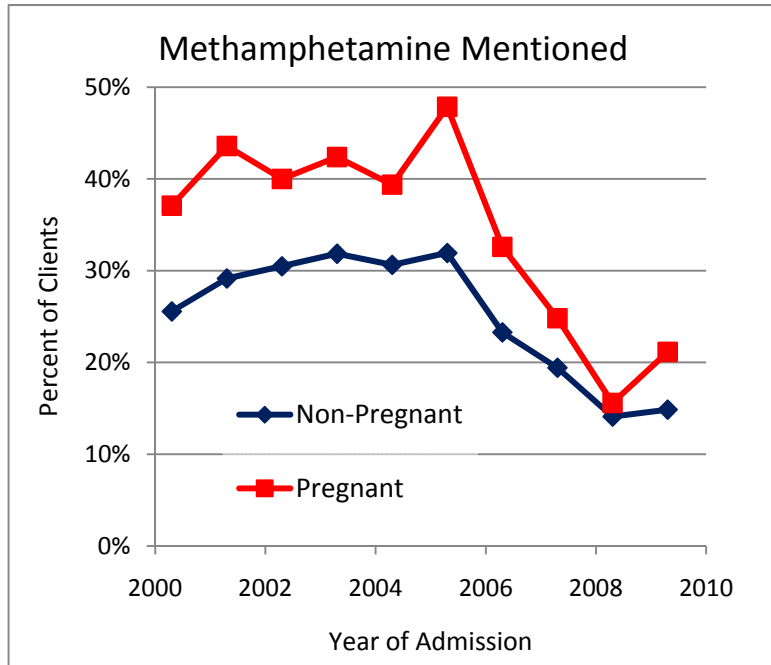Figure 5: Methamphetamine mentions in first time pregnant and non pregnant female admissions

Methamphetamine Mentioned

The percentage of first time admissions with cocaine mentions has been declining over the 10-year period although there was a brief upswing around 2006.[14] Pregnant females were not significantly different from other females.[15]

Figure 6: Cocaine mentions in first time pregnant and non pregnant female admissions

Cocaine Mentioned

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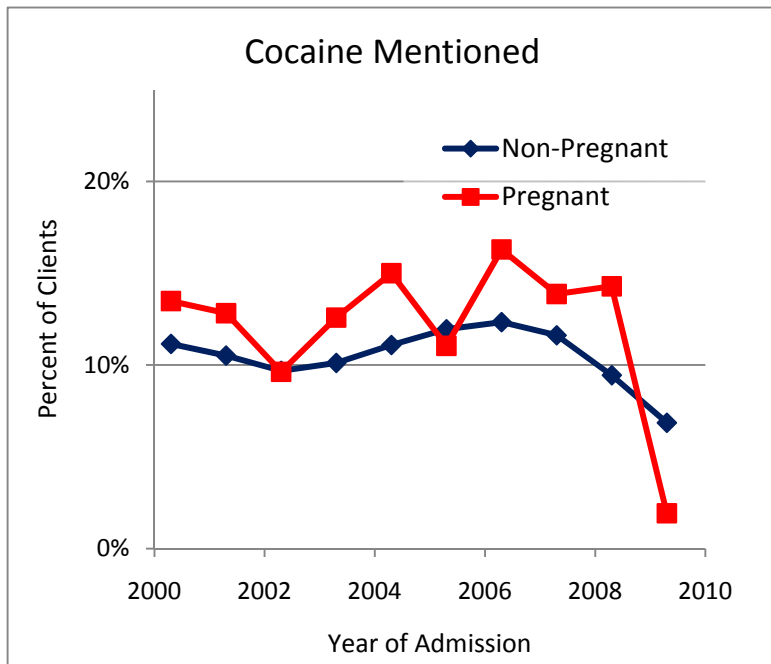
[14] Wald χ^2 =8.71, df =1, p < 0.004
[15] Wald χ^2 = 3.76, df =1, p > 0.052

Although opiates were relatively infrequently mentioned (< 2%) in 2000, the percentage of mentions among pregnant and non-pregnant females has been increasing markedly over the 10 years.[16] There has been almost a 5-fold increase over the period.

Figure 7: Opiates mentions in first time pregnant and non pregnant female admissions

Opiates Mentioned

Percent of Clients vs. Year of Admission
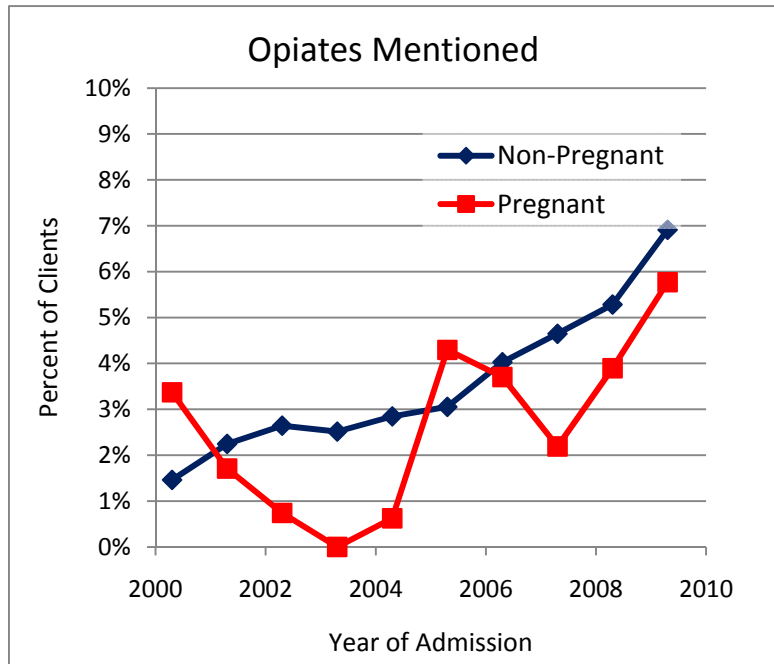
Benzodiazepines are infrequently mentioned. There is evidence that the percent of mentions is increasing.[17] However, the sharp drop among the pregnant group may be instability due to the sample size.

Figure 8: Benzodiazepines mentions in first time pregnant and non pregnant female admissions

Benzodiazepines Mentioned

Percent of Clients vs. Year of Admission

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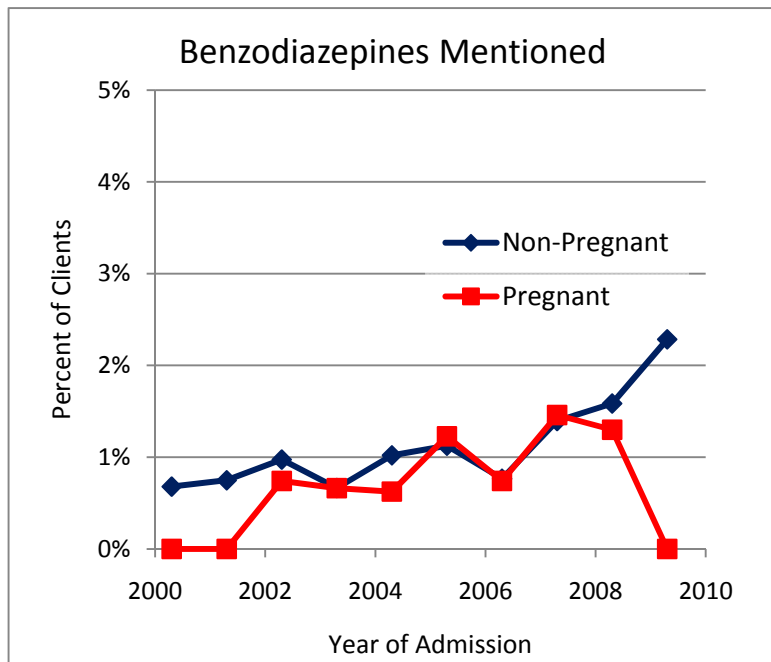
[16] Wald χ^2 = 204.10, df =1, p < 0.0001
[17] Wald χ^2 = 45.39, df =1, p < 0.0001

Other drugs such as hallucinogens, heroin, and other tranquilizers were very infrequently mentioned and decreased in mentions over time. Other analgesics and ecstasy were very infrequently mentioned but showed marginal evidence of increases. Both of the drugs that are increasing represent less than 1% of all women. There were no differences between pregnant and non-pregnant women in their mentions of these drugs.

Pregnant women did not significantly differ from non-pregnant women in their age of first use of their primary drug. They also did not differ in the age of first use of any mentioned substance. The age of first use was 16 years of age for both groups for both primary and any substance.

Treatment completion, length of stay, wait-time, and abstinence for pregnant clients

Pregnant women tended to be admitted to treatment more quickly than non pregnant women although the median wait time was 1 day for both groups.[18] Within 1 day, 57.4% of the pregnant and 51.0% of the non-pregnant women entered treatment. Within 1 week, 80.3% of the pregnant and 75% of the non-pregnant women entered treatment. While most women entered quickly, slightly more women that were pregnant entered at a faster pace.

Length of stay was not significantly different when comparing pregnant (median days = 51) to non pregnant women (median days = 49). Despite having a similar length of stay, pregnant women (57.4%) were less likely to successfully complete treatment than non-pregnant women (62.2%). This effect remained after adjusting for client age. Figure 9 shows the chance of successful completion over months of stay.

Figure 9: Percent successful completions for first time female admissions to substance abuse treatment.

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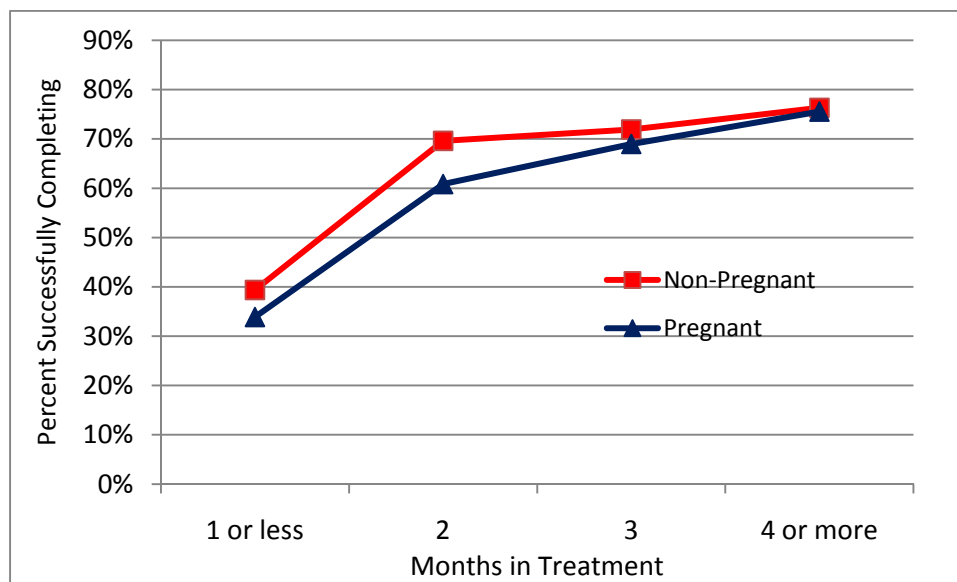
[18] Mann-Whitney z = 4.88, p < 0.0001

Post treatment follow-up data were available for 19 of the pregnant women and 692 of the non pregnant women using data from the Outcomes Management System.[19]. Given the small sample size for pregnant women, a statistical comparison will lack power and accuracy. However, 9 of the 19 pregnant women (47.4%) were abstinent 6 months post discharge. Because of the small sample size, the confidence interval around this percent is large, going from 28.8% to 75.6%. Among the 692 non-pregnant women, 358 were abstinent (51.7%). Sample sizes were too small to allow for additional analyses.

Conclusions

The proportion of pregnant females entering treatment for the first time seems to be remaining fairly constant over a decade of admissions, roughly between 3% and 4% or about 1 out of 30 first time female admissions. The pregnant clients are usually single, frequently economically disadvantaged, and only about 1 in 5 have medical insurance. Health professionals refer few of these women. The pregnant clients are far less likely to enter treatment with an alcohol only problem. While pregnant females mention alcohol less often than non-pregnant females, more than half mention alcohol as a problem substance. Pregnant females are more likely to report illegal drugs than are non-pregnant women. There is evidence of a slightly increasing percent of alcohol, opiates, and benzodiazepine admissions among females in general. There are substantial decreases in cocaine and methamphetamine mentions occurring.

Suggestions:
- Continue to focus on alcohol abuse prevention efforts among women of childbearing age
- Closely monitor percentage of pregnant women reporting alcohol, opiates, and benzodiazepines over time
- Promote the importance of substance abuse screening among women's health professionals

While treatment agencies are performing well in reducing the wait time for pregnant women, the length of stay was roughly the same as non pregnant women and the percent of pregnant women successfully completing treatment was less.

Suggestions:
- Increase the length of stay for pregnant women
- Investigate the barriers to pregnant clients remaining in treatment and the barriers to successful treatment completion, initially using focus groups, case histories, or interviews
- Integrate prenatal care, substance abuse treatment, and screening for maternal (pre and post partum) depression early in the treatment process

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[19] Koch, N., Clayton, R., & Arndt, S. (2009). Iowa outcomes monitoring system: Year 11 Report. (Iowa Department of Public Health contract #5889NA01). Iowa City, IA: Iowa Consortium for Substance Abuse Research and Evaluation Iowa Department of Public Health. Available at: http://iconsortium.subst-abuse.uiowa.edu/downloads/IDPH/OMS%20Year%2011%20Final%20Report%202009.pdf