



Special Report:
State of Iowa
Opioid Treatment Admissions
2010-2015

THE IOWA CONSORTIUM FOR SUBSTANCE ABUSE RESEARCH AND EVALUATION

Special Report:
Opioid Admissions in Iowa
2010 - 2015

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Research and Evaluation



Special Report: Opioid Admissions in Iowa 2010 - 2015

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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 Project (OMS). The OMS project provides an independent evaluation to gather data on substance use disorder treatment outcomes in Iowa for clients receiving publicly funded treatment. This report, however, includes all admissions for clients reporting an opioid as the primary substance in calendar years 2010 through 2015, regardless of payment source. The purpose is to establish Iowa-based characteristic trends in opioid admissions over the past six years.

Key Findings

- While the number of opioid admissions has increased between 2010 and 2015, much of the increase was due to the higher readmission rates among opioid clients.
- Considering other substances, females are over represented in the opioid admissions.
- There is a trend for increasing percentages of males each year.
- The overwhelming majority of opioid admissions were White clients.
- Latinos only accounted for 2.5% of opioid admissions, but showed a 373.7% increase over the period.
- Opioid admissions were concentrated in the 21 through 35-year old age range and showed the largest percentage growth over the period.
- Although only a small group, the oldest group, 65+ years of age, showed a very large increase from 2010 (15 admissions) to 2015 (52 admissions), a 347% increase.
- Seventy-five percent of the opioid admissions reported their first use was at age 18 or before.
- The majority of opioid admissions also had mental health problems consistently throughout the years.
- Substance-use related hospitalizations are somewhat more frequent among opioid clients and admissions.
- Reported arrests are less frequent among opioid clients and admissions and show a decline over the 2010-2015 period.
- Opioid admissions also tended to use other drugs more so than non-opioid admissions.
- Intravenous injection of opioids is proportionally increasing, accounting for 46.2% in 2015 up from 32.2% in 2010.
- Among all opiates, heroin admissions showed the largest increase over the years.
- Methadone was planned in only 7.7% of admissions.
- The most often and fastest growing treatment discharge reason is "client left" for opioid admissions.
- Opioid admissions with planned methadone at admission stayed in treatment nearly three times longer than admissions without a methadone plan.

Suggestions:

- More closely investigate the readmission rate of opioid using clients. These readmissions are, in large part, driving the increasing admissions among these clients.



While the readmission rate may be a function of these clients use of multiple substances, mental health problems, or other clinical factors, efforts should be made to engage clients in treatment and minimize barriers.

- Maintain or increase the use of methadone planning (or perhaps other medication assisted treatment). Methadone was associated with a strong effect on length of stay in treatment.
- Consider tracking other medication assisted treatments in addition to methadone in I-SMART/CDR databases.
- Launch prevention, education, and screening efforts among Latino populations. Latinos were the race/ethnic group showing dramatic increases in opioid treatment admissions.
- Launch prevention, education, and screening efforts among those aged 65 years and older. This age group showed a marked increase in opioid treatment admissions.
- Target increased evidence based opioid use prevention efforts towards youth 18 years or younger. The majority of those entering treatment for opioid use disorder began using early in life.
- Increase outreach to community mental health centers to screen and refer clients with opioid use disorders for treatment. Over half of opioid admissions have co-occurring mental health problems yet the number of referrals from community mental health centers has decreased over the past six years.



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BACKGROUND

Project Overview

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 Project (OMS). The OMS project provides an independent evaluation to gather data on substance use disorder treatment outcomes in Iowa. The Consortium randomly selects clients receiving IDPH-funded treatment from 22 treatment agencies. The Consortium contacts the selected clients for follow-up interviews approximately six months after their discharge from treatment. This report, however, includes admissions for clients reporting an opioid as the primary substance in calendar years 2010 through 2015, regardless of payment source. The purpose is to establish Iowa-based characteristic trends in opioid admissions over the past six years.

Data

The Central Data Repository, developed by IDPH, was queried for all admissions for substance use disorder treatment during the years 2010 through 2015. There were 172,561 treatment admission records with client information. Of these admissions, 172,257 (99.8%) reported a primary problem substance and were included in the following analyses.

Admissions were categorized based on their primary problem substance. A primary substance of heroin, non-prescription methadone, other opiates and synthetics, or Oxycontin (oxycodone) was regarded as an opioid. All other substances were non-opioid.

Of special note, the data for this report pertains to admissions rather than clients, since clients can have more than one admission in the period, reflecting relapses or transfers to a different treatment agency. Some analyses were done with clients, allowing only one admission per client. These are labeled as client findings as opposed to admissions. Where appropriate, the correct statistical analyses were used to reflect possible multiple admissions by the same clients. There were significant differences between clients admitted for opioids in their number of admissions.¹ Clients reporting opioids as their primary substance tended to have more treatment admissions than clients reporting non-opioids as their primary substance.

TRENDS IN OPIOID TREATMENT ADMISSIONS

Number of Opioid and Non-opioid Admissions

Figure 1 shows the number of admissions over the six years. Opioids reported as the primary substance has steadily increased, ranging from 5.4% of 2010 admissions to 8.5% of 2015 admissions. While there is no statistically significant trend for the total number of admissions or for the number of non-opioid admissions², there is a significant increase in the number of opioid admissions.³

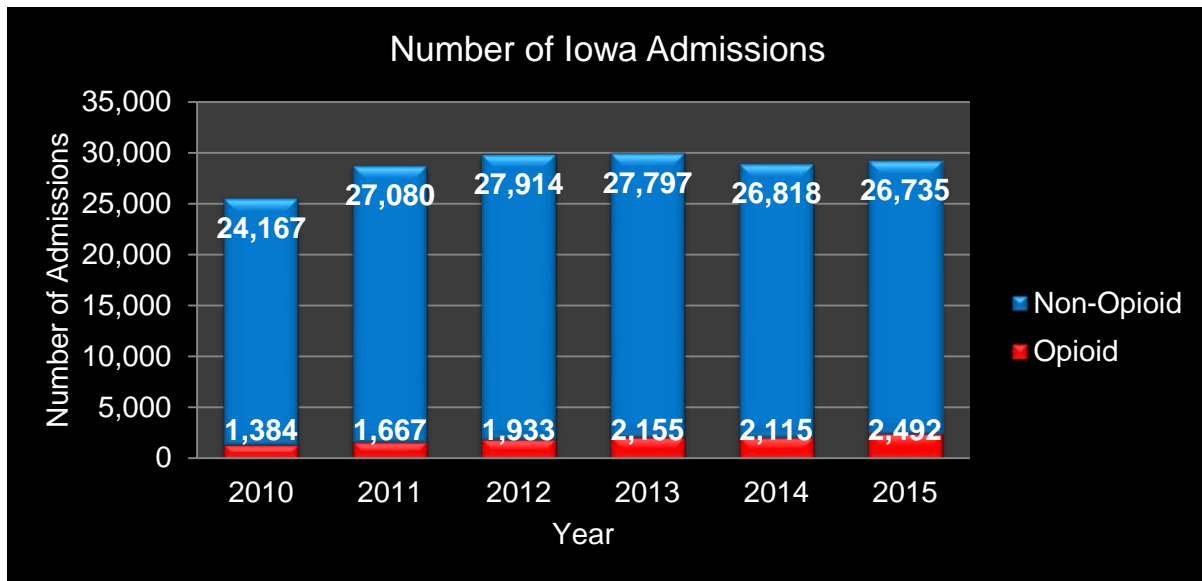
¹ Mann-Whitney $z = -20.09$, $p < 0.0001$ based on clients.

² Mann-Kendall $\tau = 0.467$ (total) and -0.0667 (Non-opioid), $p > 0.25$.

³ Mann-Kendall $\tau = 0.867$, $p < 0.025$.



Figure 1: Number of Opioid and Non-Opioid Treatment Admissions



As shown in Figure 1, the number of opioid treatment admissions increased from 1,384 in 2010 to 2,492 in 2015. This represents an 80% increase over the years or an average of 222 additional admissions per year.

Figure 2 shows the number of new client admissions (incident admissions). The number of new cases in 2010 was 420 and increased to 571 in 2015, a 36% increase. The average increase was 30 new cases per year. The difference between Figure 1 and Figure 2 reflect increasing multiple treatment admissions by clients, possibly due to increased transfers, recidivism, or relapse among the opioid admissions.

Figure 2: Number of New Opioid and Non-Opioid Client Treatment Admissions

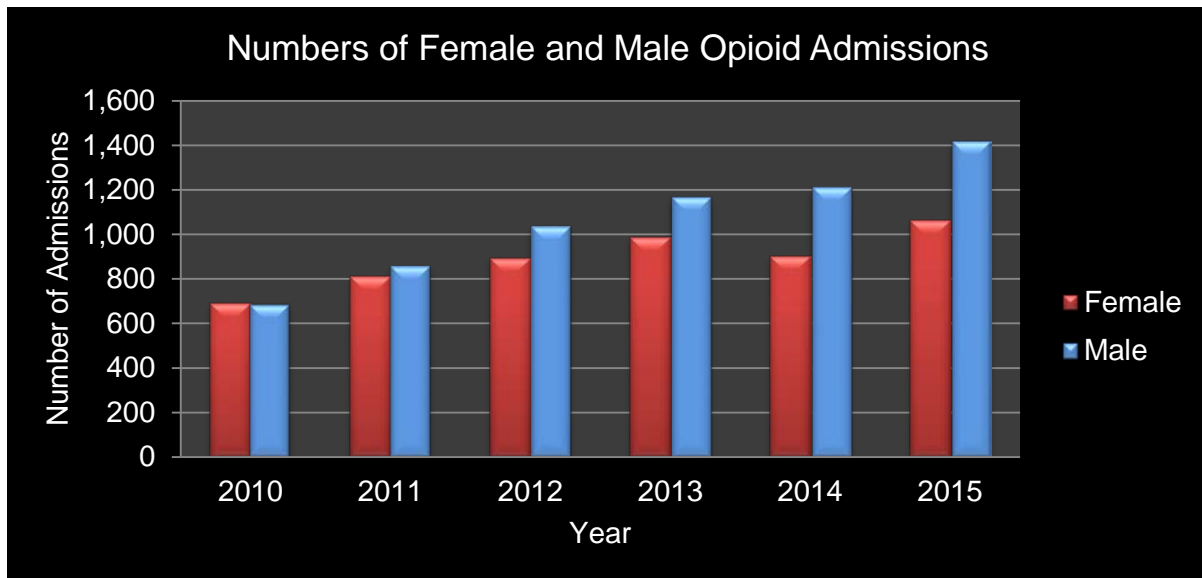


Basic Demographic Changes

Sex

Client sex has shown a definite trend over the years in opioid admissions. Figure 3 shows the growth in both male and female admissions. However, the highest increase is in male admissions.⁴ In 2010, females and males were about equal. The divergence, showing more males than females, becomes more apparent each year.

Figure 3: Number of Female and Male Opioid Treatment Admissions



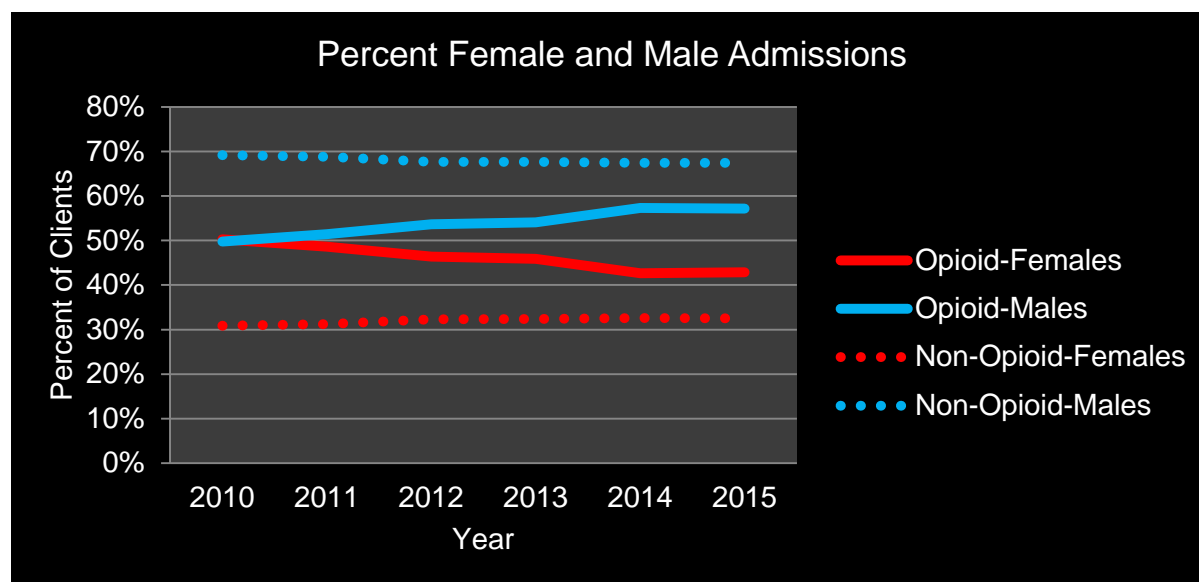
The trend for sex does not appear in the non-opioid admissions. Figure 4 shows the percentage of female and male clients each year for both opioid and non-opioid admissions. There is a slight but significant trend for higher percentages of females in the non-opioid admissions.⁵ This is opposite the trend in the opioid admissions. Compared to all other substances, females are over represented in the opioid admissions, however, the trend is for higher percentages of males each year. In 2010, the ratio of male to female opioid admissions was approximately 50/50. In 2015, the ratio was 57/43.

⁴ Cuzick trend $z = -5.55, p < 0.0001$

⁵ Cuzick trend $z = 5.07, p < 0.0001$



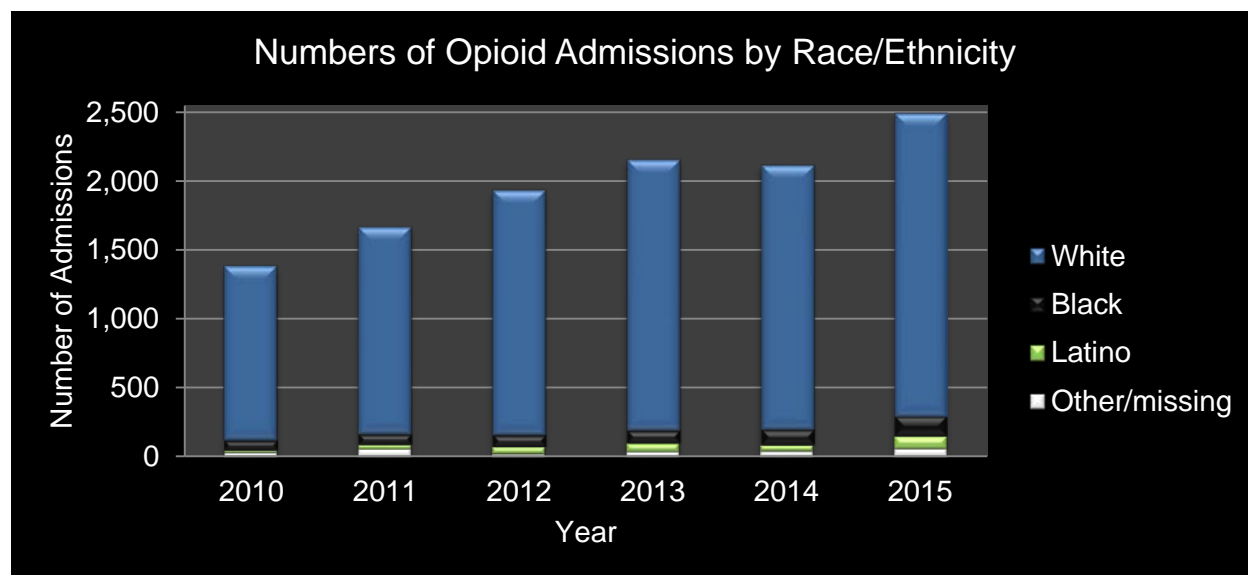
Figure 4: Percent of Female and Male Treatment Admissions



Race and Ethnicity

Race and ethnicity differs between opioid and non-opioid admissions. While 81.7% of non-opioid admissions are White, 90.4% of opioid admissions are White. Viewed differently, 7.5% of White admissions were for opioids while Black and Latino admissions were approximately half that for opioids, 3.8% and 3.3%, respectively. Figure 5 shows the number of opioid admissions per year broken down by race and ethnicity.

Figure 5: Number of Opioid Treatment Admissions by Race and Ethnicity



Whites are the overwhelming majority of admissions and the driving force in the increase over time. Further analyses of these data, however, reveal that although Latinos make up only 2.5%



of all opioid admissions, they are increasing at a faster rate than whites.⁶ Over the period, White opioid admissions increased 74.2% from 2010 to 2015 and Latino opioid admissions increased 373.7%. Black and Other race groups did show increases that were consistent with the increase in White admissions.

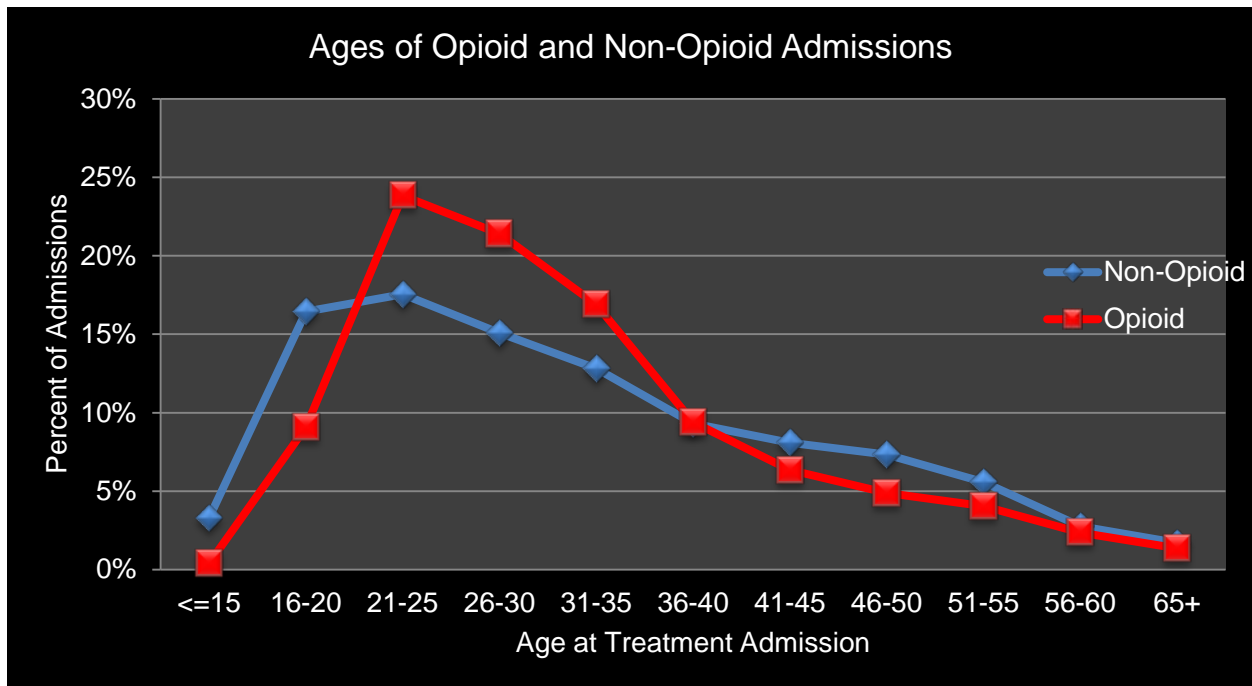
Education

There were small differences between opioid and non-opioid admissions in years of education (12 years versus 12.4 years for non-opioid and opioid admissions, respectively). The difference becomes pronounced classifying education into less than high school, high school, and at least some college. A little over a quarter (26.3%) of all non-opioid admissions had attended college; however, over a third (36%) of opioid admissions had at least one year of college. There were no statistically significant trends in education over the period 2010 to 2015 for opioid admissions.⁷

Age

Averaged over all years, the average age for opioid (31.8 years) was nearly the same as the average age of non-opioid admissions (32.1 years). Viewing the distribution of age groups provides a slightly different picture as seen in Figure 6. Opioid admissions appear to concentrate in the 21 to 35 years of age range. Over three out of five (62%) opioid admissions were between 21 and 35 years of age while less than half (46%) of non-opioid admissions were in this same age range.

Figure 6: Age of Opioid and Non-Opioid Treatment Admissions



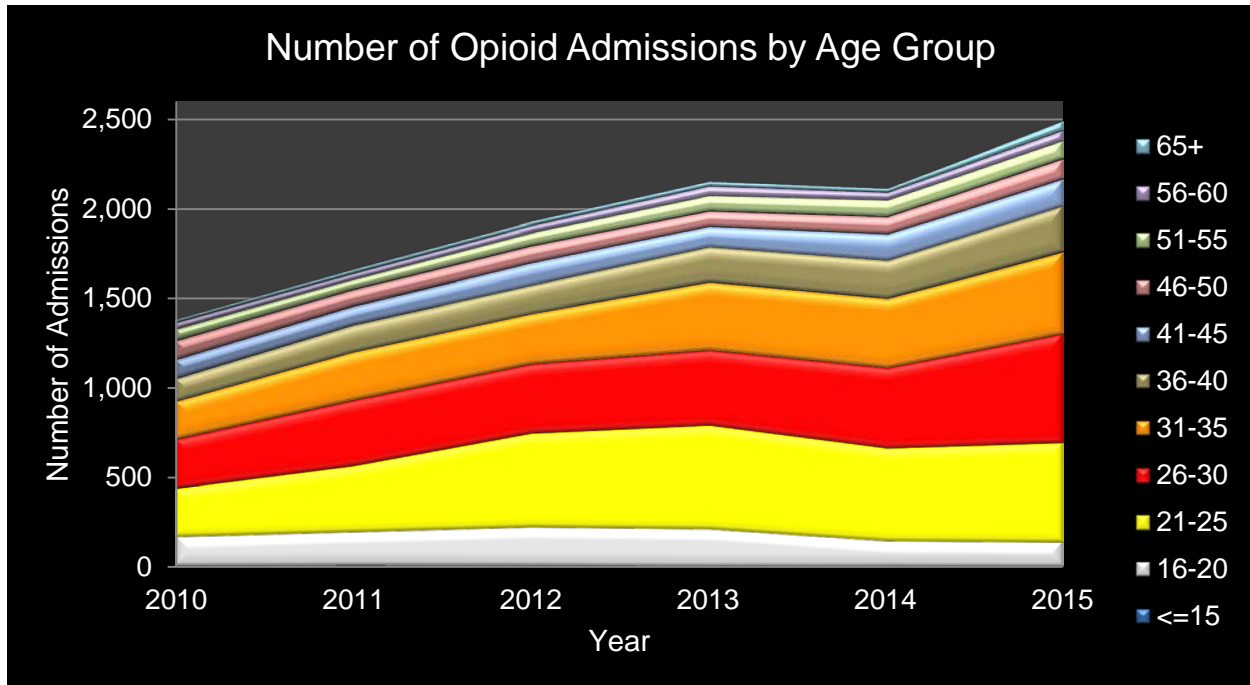
⁶ Negative Binomial Regression, incident rate ratio = 1.15, 95% CI: 1.06, 1.24, z = 3.36, p < 0.001.

⁷ Negative Binomial Regression, interaction of education and time $\chi^2 = 1.91$, df = 2, p > 0.38.



Figure 7 shows the trends in age groups at treatment admission for opioid admissions from 2010 to 2015. The age group with the largest annual average growth was 26 – 30 year olds with an average increase of 66.6 clients per year. This is a 24% average annual increase based on 2010 admissions. The 21 – 25 year old group increased an average of 57 clients (21%) per year followed by the 31 – 35 year old group with an annual increase of 48.8 clients (23%). There was a decreasing trend for those admissions under the age of 21. Although only a small group, the oldest group, 65+, showed a very large increase from 2010 (15 admissions) to 2015 (52 admissions), a 347% increase.

Figure 7: Number of Opioid Treatment Admissions by Age Group

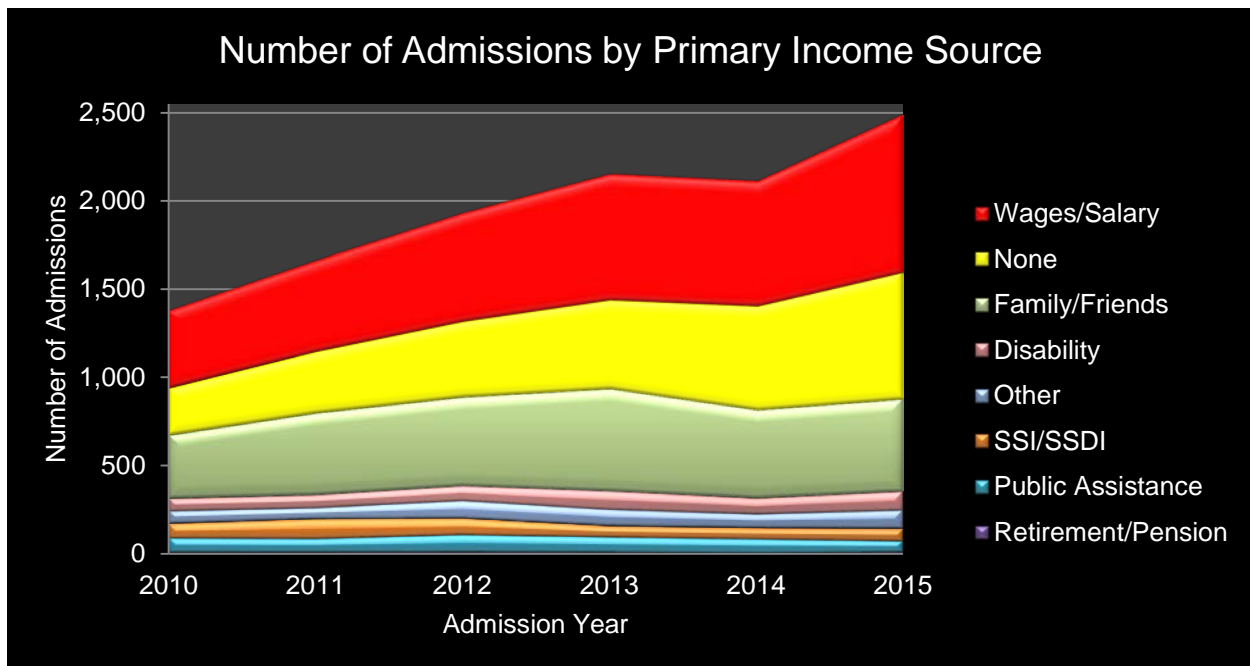


Primary Income Source

The most notable difference between the non-opioid and opioid admissions for primary income source was in the percentage of clients reporting wages and salary. Over all years, 40.5% of non-opioid clients indicated wages and salary as their primary income compared to 33.1% of the opioid admissions. More opioid admissions listed "none" as their primary income source (24.4%) than the non-opioid admissions (21.5%). There were, however, sharp trends in income source over the period for opioid admissions. Figure 8 shows the changes over time. The fastest increasing groups were wages and salary as well as "none". The SSI/SSDI, retirement/pension, public assistance groups are relatively infrequent and relatively stable.



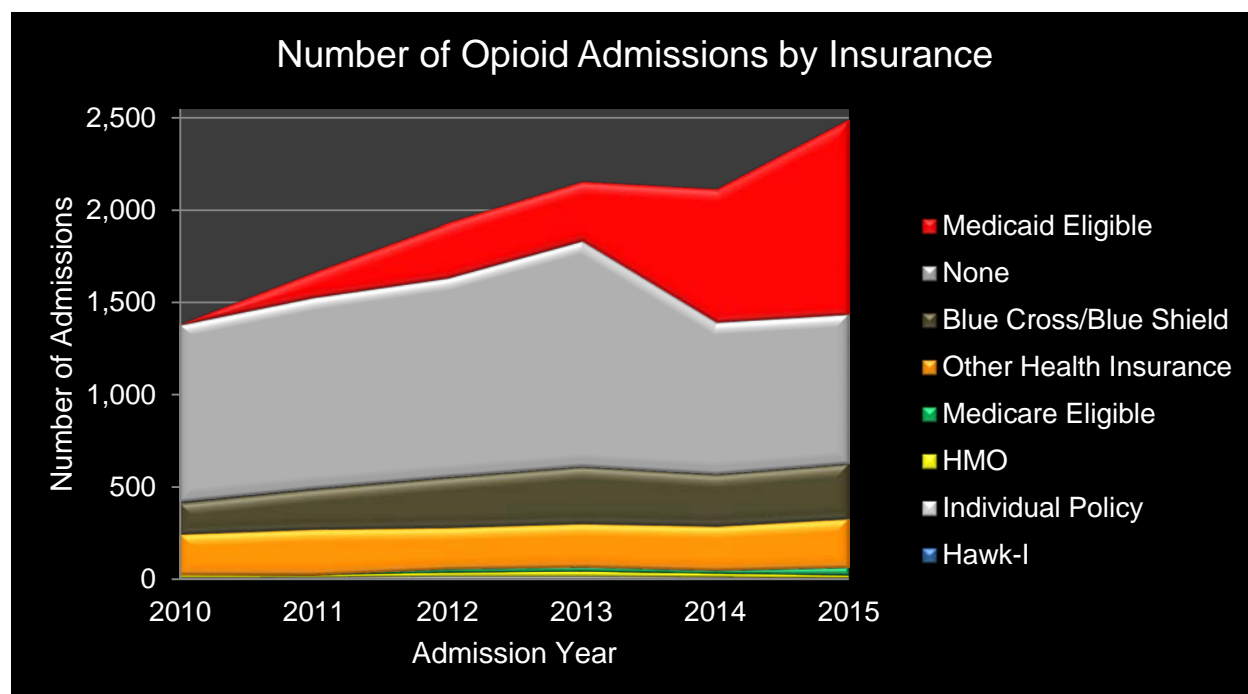
Figure 8: Number of Opioid Treatment Admissions by Primary Income Source



Insurance

There have been substantial changes in the client's insurance between 2010 and 2015 as shown in Figure 9. The largest group initially was no insurance, accounting for 69.4% of all admissions in 2010. In 2015, the no insurance group comprised 32.5% of admissions. Medicaid eligible clients accounted for less than 1% of 2010 admissions, but increased to 42.3% in 2015. The marked shift in 2013-2014 appears to be caused by increased Medicaid eligible coverage in this population.

Figure 9: Number of Opioid Treatment Admissions by Type of Insurance



Clinical Changes

Age of First Use and Duration of Use of Opioids

Among the opioid admissions, the median age of first use for opioids was 16 years of age. Seventy-five percent of the opioid admissions reported their first use was at age 18 or before. The median duration of use (admission age minus age of first use) was 12 years, although 25% of the admissions reported 22 or more years of use. Analyses offered no clear sign that the age of first use changed over the period, 2010 to 2015. However, there was some evidence that the duration of use has changed.⁸ The median duration of use in 2010 was 11 years. When analyzing admissions this increased to 13 years of use by 2015, suggesting that individuals may be getting to treatment later rather than earlier. Looking only at the client's first admission in the period, the increase was reduced. A client's successive admissions will have correspondingly increased duration of use, consequently, the increases in the duration of use can be caused by increased multiple admissions.

Number of Treatment Admissions

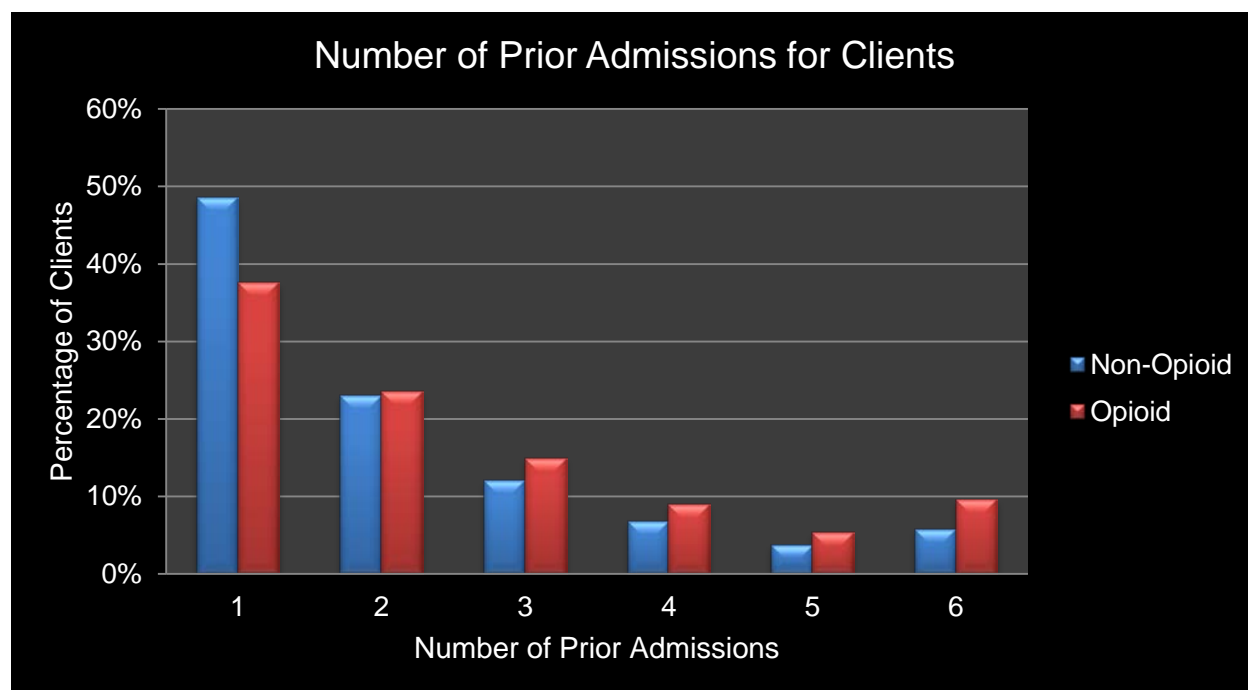
Clients reporting opioids as their primary problem substance had higher numbers of previous admissions to treatment.⁹ Figure 10 shows this difference based on the clients' last admission in the period. While 48.6% of the non-opioid clients had only one admission during 2010 to 2015, 37.6% of the opioid clients only had one admission.

⁸ Spearman $r = 0.055$, $p < 0.0001$, based on client's first admission.

⁹ Mann-Whitney $z = 20.04$, $p < 0.0001$, based on client's last admission in period.



Figure 10: Number of Prior Admissions Based On Clients' Last Admission in 2010-2015



Co-occurring Mental Health Problems

Over the entire period, clinicians reported mental health problems in nearly three out of five (59.3%) clients. In contrast, only 46.2% of the non-opioid admissions had mental health issues. There were no appreciable trends for increasing or decreasing mental health problems over the period.¹⁰ The percentage of opioid admissions with a mental issue was 57.2% in 2010 and 58.6% in 2015.

Substance Use Related Hospitalizations

A higher percentage of admissions with opioid as the primary substance reported a substance use related hospitalization (18.8%) in the six months prior to treatment admission compared to those with non-opioids as the primary substance (11.6%). Considering clients rather than admissions gave the same pattern: 15.4% clients reporting opioids and 8.2% clients reporting a non-opioid substance. The same pattern is repeated when analyzing the number of substance use related hospitalizations. The mean number of hospitalizations for non-opioid clients was 0.12 while for opioid clients it was 0.23.¹¹ There was also a significant trend over time for opioid clients.¹² The mean number of hospitalizations related to substance use went down over time. The mean in 2010 was 0.34 and in 2015 the mean number was 0.22. Among opioid clients' first admission, the percentage of clients having at least one substance use hospitalization was 19.4% in 2010 and 13.1% in 2015.

¹⁰ Spearman $r = 0.01$, $p > 0.32$, based on clients' first admissions.

¹¹ Mann-Whitney $z = -15.6$, $p < 0.0001$, based on clients' first admissions.

¹² Negative binomial regression coefficient for year of first admission $z = -3.10$, $p < 0.002$.



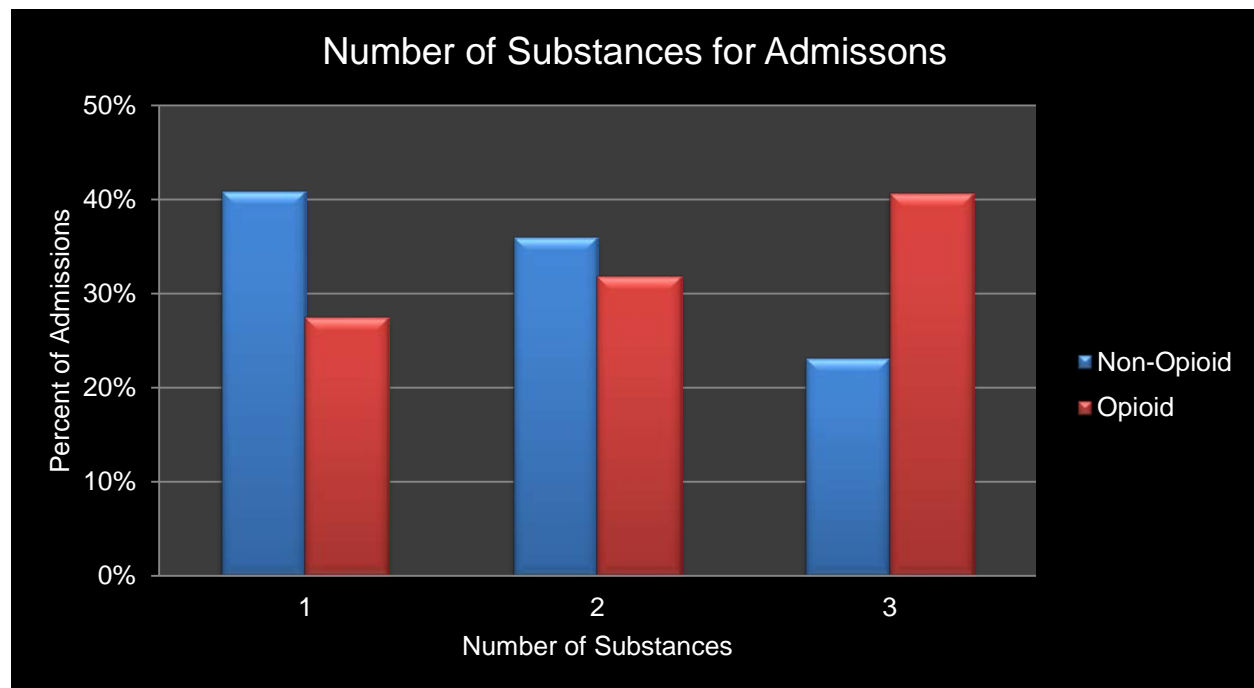
Arrests

Admissions with opioid as the primary substance less often reported arrests in the previous twelve months, 37% versus 56% for non-opioid admissions. The effect was slightly more pronounced when considering clients' first admissions, 31% versus 57%.¹³ While all types of arrests were reduced in the opioid clients, the largest reduction was in "Operating While Intoxicated" arrests. There was also a trend over time among the opioid clients, with fewer clients being arrested in recent years. In 2010, 33.7% of opioid clients reported an arrest while 23.4% such clients reported an arrest in 2015.

Number of Problem Substances

Figure 11 shows a clear difference between non-opioid and opioid admissions in the number of problem substances reported. The number of problem substances reported by clients at treatment admission can range from one to three. Opioid admissions tend to have a larger number of problem substances. Among the non-opioid admissions, most report only one substance (40.9%). Among the opioid admissions, most report three substances of use (40.7%).

Figure 11: Number of Problem Substances for Treatment Admissions



As might be expected, there was a fairly strong and significant positive association between the number of substances and the number of prior treatment admissions.¹⁴ Therefore, when looking at admissions, the larger number of client admissions in the opioid group may artificially inflate the number of substances. However, when the graphic was made using clients rather than admissions, the effect is relatively unchanged. Opioid clients and admissions tend to have more problem substances.

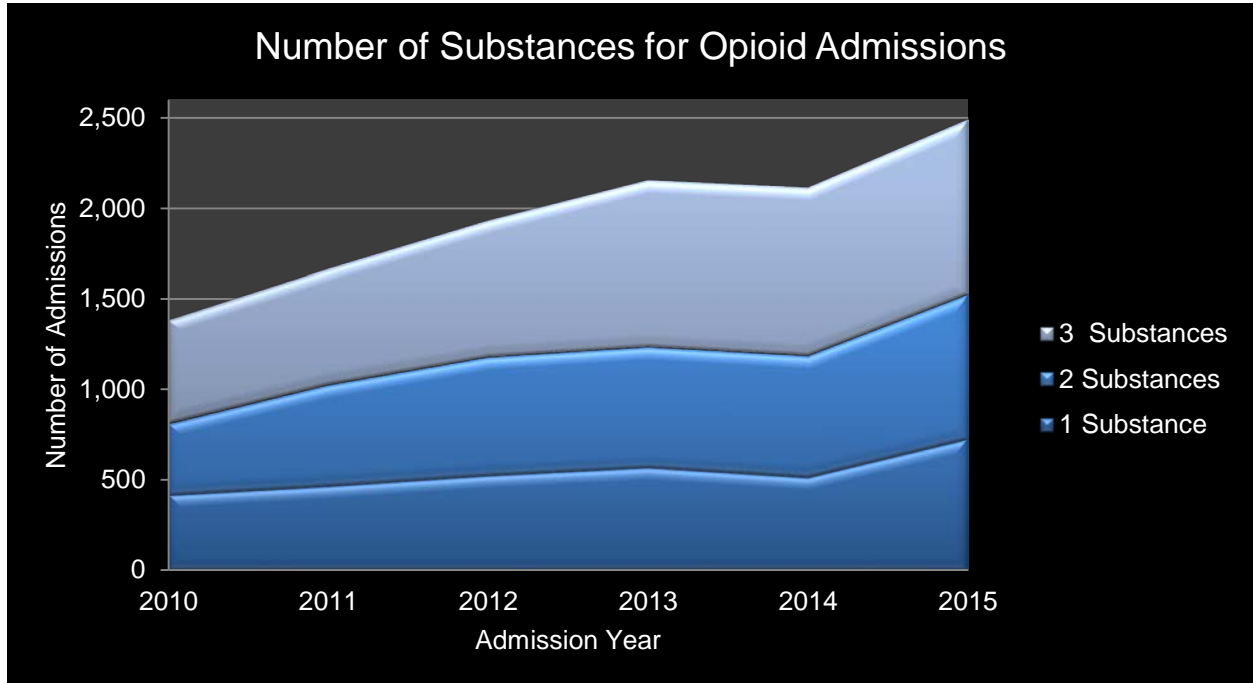
¹³ $\chi^2 = 1580.18, df = 1, p < 0.0001$

¹⁴ Spearman $r = 0.19, p < 0.0001$, based on client's last admission.



There were no strong trends in the number of substances over the 2010 to 2015 period as seen in Figure 12. The relative proportions of admissions with one, two, or three problem substances were somewhat stable with perhaps a slight increase in the two-problem substances category.

Figure 12: Number of Problem Substances for Treatment Admissions over the Period

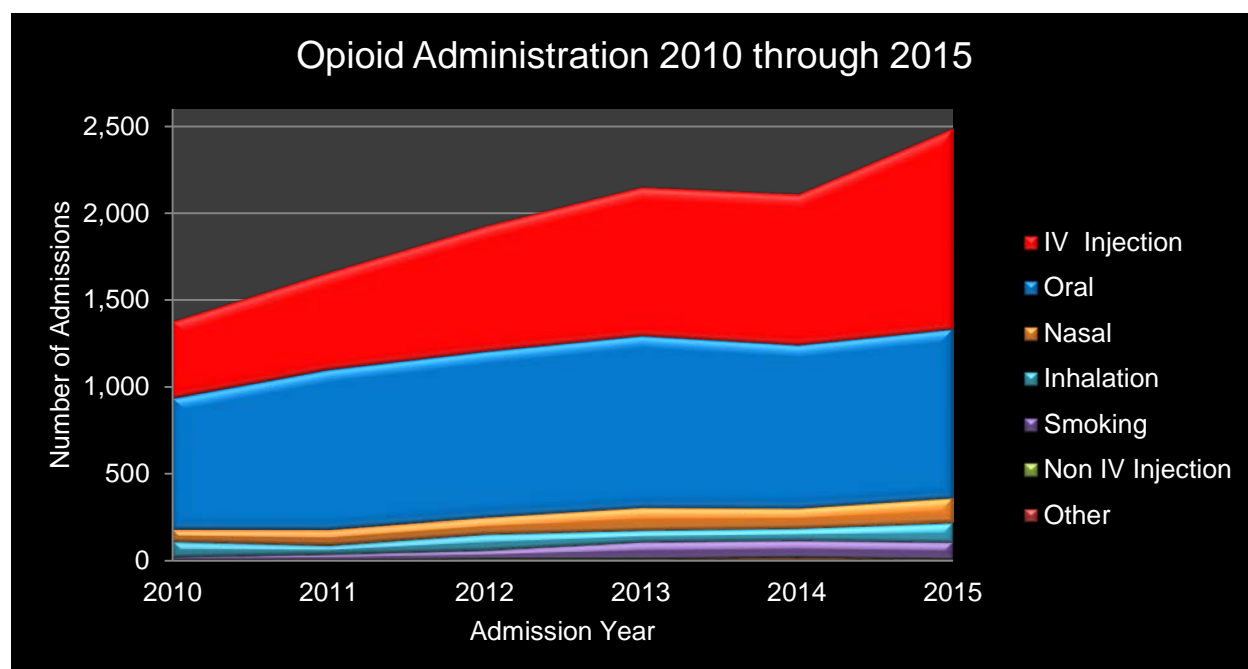


Route of Opioid Administration

In 2010, the most often reported route of administration was oral use reported by 54.2% of the admissions. The most frequently reported route of administration in 2015 was intravenous (IV) use, 46.2%. This increased from 32.2% in 2010. Figure 13 shows the shift over time.



Figure 13: Route of Opioid Administration over the Period



Clients with primary opioid admissions using IV injection had more problem substances¹⁵ and reported more prior admissions.¹⁶ For example, 78.2% of IV opioid clients had two or more problem substances while 68.9% of non-IV opioid clients had two or more. Over three-quarters (76.2%) of IV opioid clients reported more than one previous substance use disorder treatment episode during the last ten years, while only 55.2% of the non-IV opioid clients had previous treatment admissions in the past ten years.

Type of Opioid

Figure 14 shows the trend in the type of opioid when it is the primary problem substance. Non-prescription methadone appears as a thin green line suggesting little use of this substance throughout the period. While use of both “other” and synthetic opioids as well as heroin is increasing, the proportional increase in heroin is dramatic. In 2010, there were 271 such admissions, which increased to 904 in 2015, an increase of 233.6%.

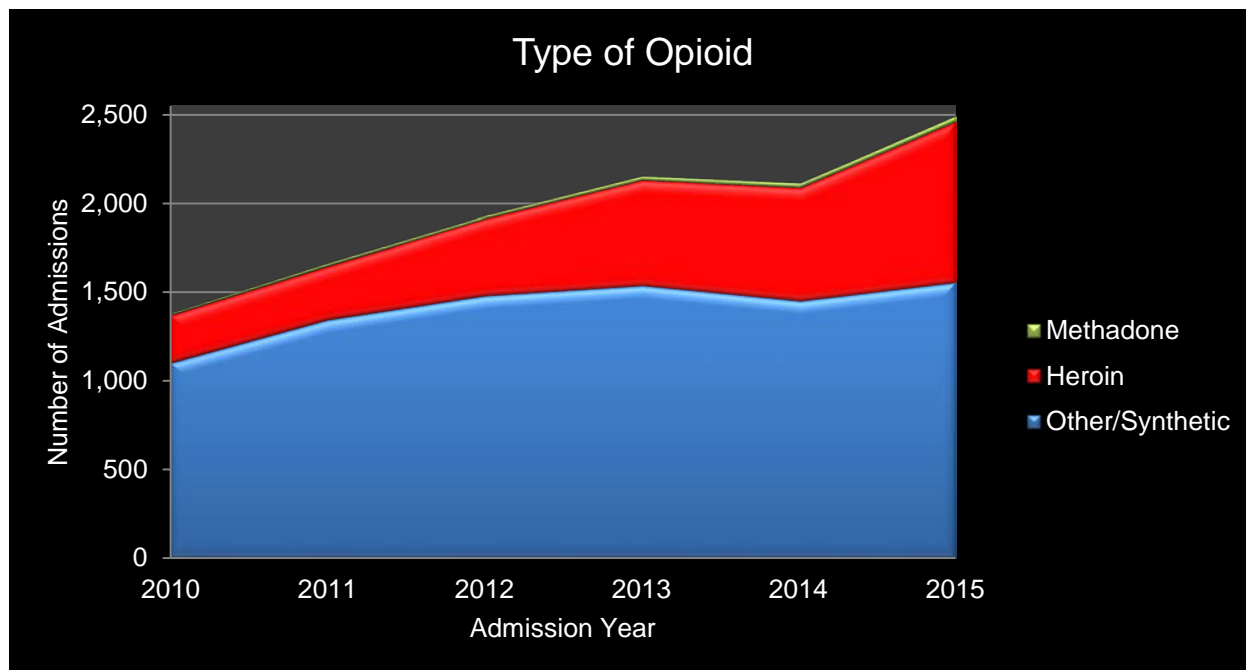
Inspecting clients with repeated admissions for opioids, 589 clients were identified as heroin users on their most recent admission. Of these clients, 63.8% had been treated for heroin (as a primary problem substance) on their first admission and a few (0.8%) were seen for nonprescription methadone. However, 35.3% (n = 208) of those who were treated for heroin at their most recent admission had originally been admitted for other opiates and synthetics. The pattern of switching among the types of opioids was not symmetrical. Of those clients last seen for other opiates and synthetics, only 5.8% were originally seen for heroin as a primary problem substance. Of those who switched opioids, over two out of three (68.4%) went from other opiates and synthetics to heroin.

¹⁵ Mann-Whitney $z = -10.19, p < 0.0001$, for clients' last admission.

¹⁶ Mann-Whitney $z = -20.41, p < 0.0001$, for clients' last admission.



Figure 14: Type of Opioid Reported as Primary Substance over the Period



Referral Source

Table 1 shows the numbers of clients admitted to treatment in 2010 and 2015 broken down by referral source. The table's last column also provides the average annual increase/decrease in referred admissions. The largest increase were "self" referrals with over 100 additional admissions per year. The second largest increases came from alcohol/drug abuse providers. Other sources showed increases that were more modest. For example, yearly increases from health care providers (16.2), other individuals (13.4), and state probation (9.6) totaled together only added an additional 39.2 admissions per year. Some sources showed a decline in referrals, such as, community mental health clinics.



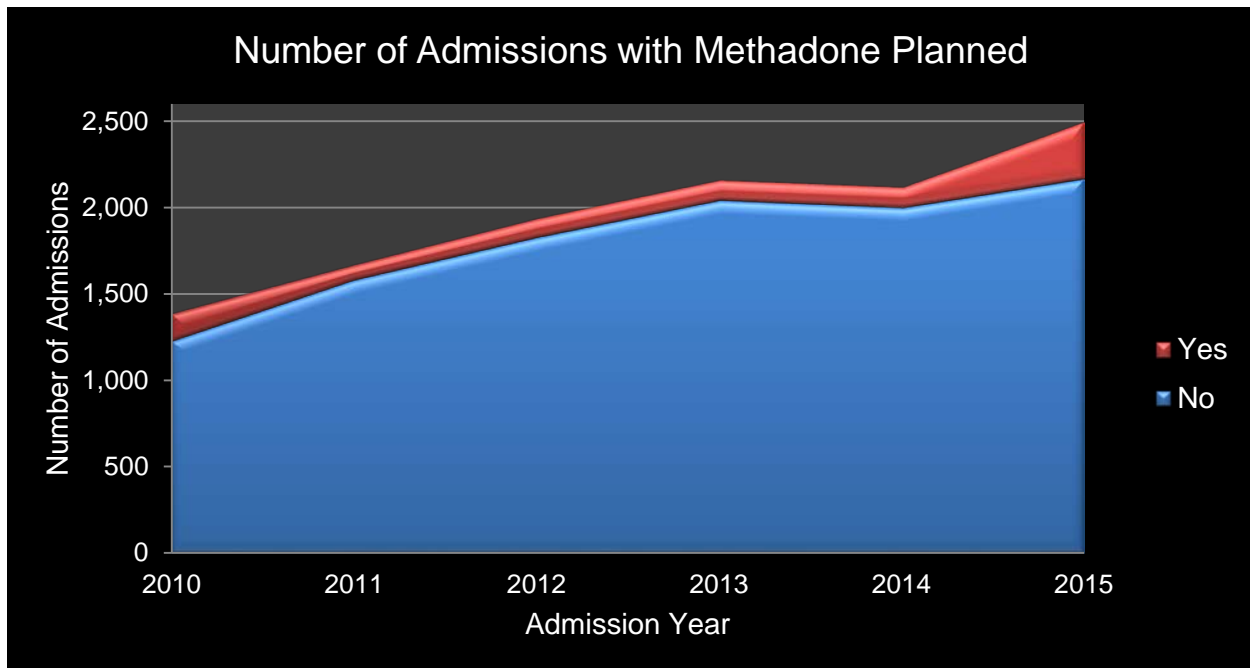
Table 1. Referral Sources for Opioid Admissions

Number of Opioid Admissions			
Referral Source	Opioid Referrals 2010	Opioid Referrals 2015	Average Per Year Increase/Decrease
Alcohol/Drug Abuse Provider	161	430	+53.8
Civil Commitment	76	86	+2.0
Community Mental Health Clinic	22	16	-1.2
DHS Child Abuse	2	7	+1.0
DHS Child Welfare	18	30	+2.4
DHS Drug Endangered Child	16	15	-0.2
DHS Other	14	41	+5.4
Division Of Vocational Rehabilitation	0	0	0.0
Drug Court	14	20	+1.2
Employer/EAP	6	10	+0.8
Federal Probation	6	9	+0.6
Health Care Provider	122	203	+16.2
Other Community	24	49	+5.0
Other Criminal Justice/Court	141	195	+10.8
Other Individual	79	146	+13.4
OWI	12	23	+2.2
Parole Board	3	27	+4.8
School	0	3	+0.6
Self	630	1,131	+100.2
State Probation	61	109	+9.6

Methadone

The only medication assisted treatment noted consistently in the Central Data Repository is whether or not the admission record included a plan for methadone treatment. Figure 15 shows the number of opioid admissions including mention of planned methadone. Over all years, 910 admissions out of all 11,746 (7.7%) opioid admissions indicated a plan of methadone in the treatment admission record. The number of planned methadone admissions in 2010 was 158, declined in 2011 to 2014, but increased to 328 in 2015.

Figure 15: Number of Opioid Treatment Admissions with Planned Methadone Treatment



TRENDS IN OPIOID TREATMENT OUTCOMES

Discharge Status

Table 2 shows the percentages of admissions that had a discharge record broken down by discharge status. The pattern of discharge status appears strikingly different for non-opioid and opioid admissions. The discharge status most often reported for non-opioid admissions was “successfully completed treatment” (52.9%). The discharge status most often indicated for opioid admissions was “client left” (42.5%).



Table 2. Discharge Status for Non-Opioid and Opioid Treatment Admissions

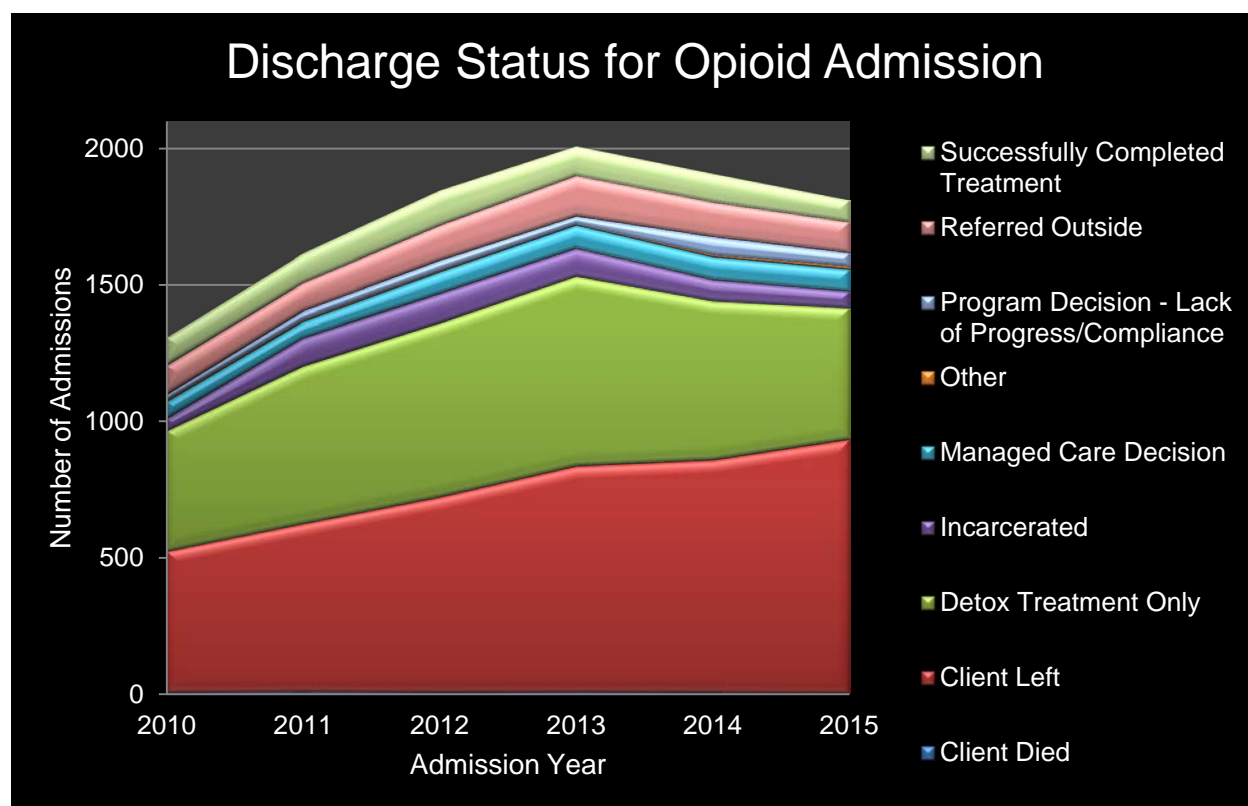
Discharge Status	Percent of Treatment Admissions	
	Non-Opioid	Opioid
Successfully Completed Treatment	52.9%	32.4%
Client Left	29.6%	42.5%
Program Decision Due to Lack of Progress/Compliance	5.0%	6.9%
Referred Outside	4.6%	6.0%
Incarcerated	3.7%	4.2%
Other	2.1%	2.3%
Detox Treatment Only	1.7%	4.8%
Managed Care Decision	0.3%	0.4%
Client Died	0.2%	0.4%

Note: Treatment completed with "treatment plan completed" and "substantially completed" were combined into "*Successfully Completed Treatment*"

Figure 16 shows a trend in discharge status from 2010 to 2015 for opioid admissions. In 2010, only 39.5% of opioid admissions ended with "client left". Also that year, 33.7% of opioid admissions successfully completed treatment. In 2015, the percentage of admissions ending with "client left" had risen to 51.4%. In 2015, a successful discharge for opioid admissions was down to 26.4%.



Figure 16: Discharge Status Trends for Opioid Admissions



Of note, the previous graphics regarding discharge status only include admissions that had an associated discharge record. While 2.4% of the non-opioid admissions were "still in treatment" (missing a discharge record), 10.5% of the opioid admissions were "still in treatment". However, even considering those still in treatment, the percent of "client left" was higher (38.0%) among opioid admissions compared to non-opioid admissions (28.9%).

Length of Stay (LOS)

Analyzing length of stay (LOS) posed complications since admissions later in the period may still be in treatment and therefore not have a discharge date. Consequently, more recent years would appear to have shorter a LOS since only short stays would be included. Additionally, more opioid admissions than non-opioid admissions were "still in treatment". Consequently, time in treatment was estimated using survival analysis tools.¹⁷

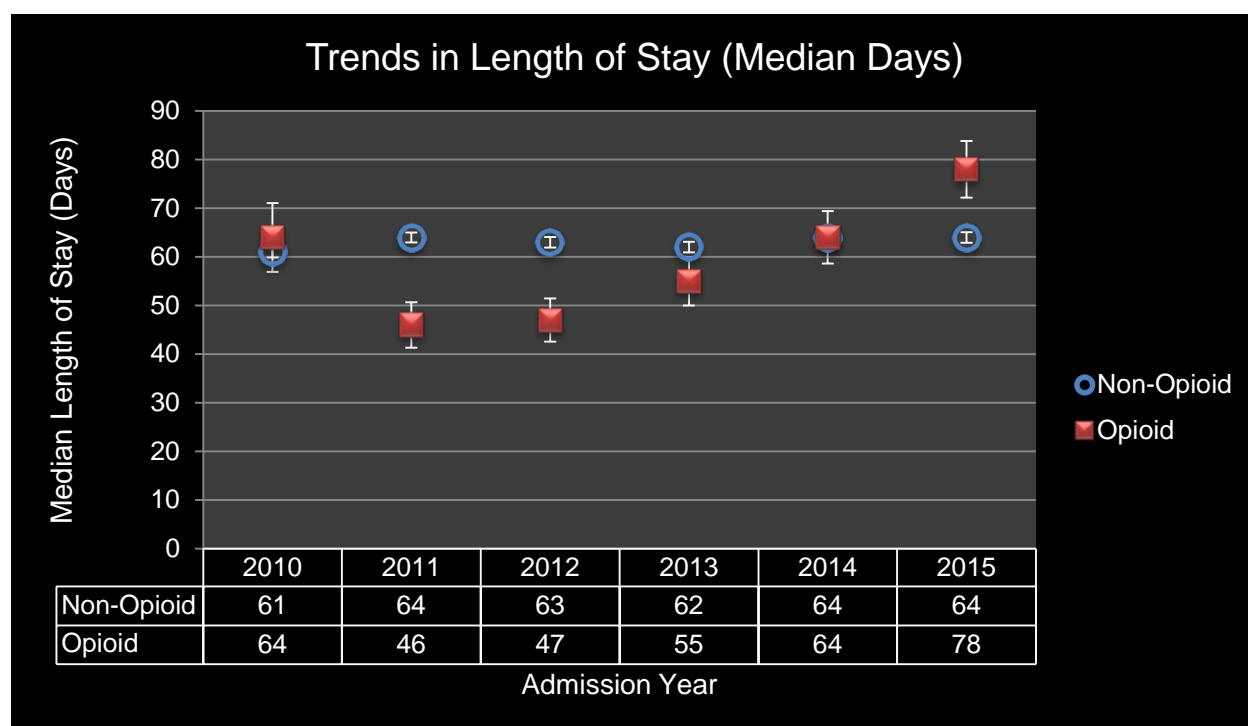
As shown in Figure 17, the median LOS for opioid admissions was nearly the same or shorter than non-opioid admissions for all years except 2015. In 2015, the median LOS for opioid admissions was 78 days. This was two weeks longer than the 2015 non-opioid admissions (median 64 days).

Of interest, opioid clients with planned methadone at admission had a median LOS of 161 days. This was nearly three times longer than opioid admissions with no planned methadone (55 days).

¹⁷ Kaplan-Meier estimates using the last admission date as the final date for censored discharges.



Figure 17: Trends in Length of Stay: Non-Opioid and Opioid Admissions



CONCLUSIONS

Summary:

There has been a marked increase in the number of opioid admissions in Iowa between 2010 and 2015. New opioid clients entering in the substance use disorder treatment system slightly contribute to the increase. The readmissions of opioid using clients, however, are giving rise to the dramatic increase in yearly admissions. The number of new cases of opioid use entering treatment, while increasing, is increasing only at a modest rate, approximately 30 additional new opioid clients per year. In contrast, admissions have increased by an average of 222 per year. Perhaps related to the increasing readmissions, there are decreasing numbers of successful treatment completions and increasing numbers of clients leaving treatment prematurely.

The characteristics of clients using opioids have also been changing over time. At the beginning of the period, the ratio of males to females was 50/50, however, male admissions have been increasing since 2010. While the race/ethnicity of opioid admissions are overwhelmingly White, the percentage of Latinos increased 373.7% from 2010 to 2015. There is also a marked increase in opioid clients between the ages of 21 and 35. Income and insurance coverage has also changed over time. Most notably, far more admissions were Medicaid eligible in 2015 compared to 2010.

While several clinical characteristics have changed during the period, some have remained stable. The percentage of opioid admissions with co-occurring mental health problems is higher than other substance admissions, but has remained somewhat stable over the six year period. There is a similar pattern for the number of problem substances reported by clients. Numbers

of problem substances are higher among opioid admissions and relatively stable. First use of opioids appears to be at or before age 18 and has remained stable over the period. The route of administration does show a troubling trend, with a dramatic increase in intravenous injection. IV was the most often used route in 2015. Heroin was also the fastest growing opioid during the period.

While the data did not include all forms of medication assisted treatment, planned methadone treatment was tracked on admission records. Only 7.7% of admissions had planned methadone. There was an increase of planned methadone admissions in 2015. Interestingly, methadone was associated with a nearly three times longer length of stay in treatment.

Regarding treatment completion, as mentioned, there were more instances of "client left" for opioid admissions than non-opioid admissions. This effect was true even considering clients without a discharge record (e.g., still in treatment). While there might be many reasons for a client leaving treatment, the tendency to leave treatment early may explain the increased number of readmissions noted earlier.

Suggestions:

- More closely investigate the readmission rate of opioid using clients. These readmissions are, in large part, driving the increasing admissions among these clients. While the readmission rate may be a function of these clients use of multiple substances, mental health problems, or other clinical factors, efforts should be made to engage clients in treatment and minimize barriers.
- Maintain or increase the use of methadone planning (or perhaps other medication assisted treatment). Methadone was associated with a strong effect on length of stay in treatment.
- Consider tracking other medication assisted treatments in addition to methadone in I-SMART/CDR databases.
- Launch prevention, education, and screening efforts among Latino populations. Latinos were the race/ethnic group showing dramatic increases in opioid treatment admissions.
- Launch prevention, education, and screening efforts among those aged 65 years and older. This age group showed a marked increase in opioid treatment admissions.
- Target increased evidence based opioid use prevention efforts towards youth 18 years or younger. The majority of those entering treatment for opioid use disorder began using early in life.
- Increase outreach to community mental health centers to screen and refer clients with opioid use disorders for treatment. Over half of opioid admissions have co-occurring mental health problems yet the number of referrals from community mental health centers has decreased over the past six years.

