Introduction

This Findings at a Glance summarizes results from the 2018 Adult Kentucky Treatment Outcome Study annual report. The Kentucky Treatment Outcome Study (KTOS) is an important part of the Department for Behavioral Health, Developmental, and Intellectual Disabilities, Division of Behavioral Health’s performance-based measurement of treatment outcomes in Kentucky’s communities. Results for this study included analysis of self-report responses for 1,224 clients who participated in publicly-funded substance abuse treatment from July 2015 through June 2016 and then completed a follow-up interview about 12 months later (an average of 313 days). There was a low refusal rate for follow-up participation (0.1%) and a high follow-up rate (76.5%) for those clients who were eligible for follow-up and were randomly selected for the sample. For more information on KTOS or findings from the full report, visit cdar.uky.edu/ktos.

Characteristics of KTOS Clients Included in the Follow-up Sample

Of the 1,224 clients who completed a 12-month follow-up interview:

- About half (53%) were male.
- The majority were White (93%). A minority were African American/Black (5%) and 2% were Hispanic, American Indian, or multiracial.
- They were an average of 35 years old at the time of the intake interview.
- Not quite half (43%) were married or cohabiting at intake.
- Over half of clients (57%) reported they had at least one chronic health problem.
- Chronic pain was reported by 41% of clients.
- Over three-quarters of clients (77%) had health insurance through Medicaid.

Past-12-month Substance Use

The number of clients who reported substance use decreased significantly from intake to follow-up.

- 74% of clients reported any illegal drug use at intake.
- 28% of clients reported any illegal drug use at follow-up.
- 51% of clients reported any alcohol use at intake.
- 28% of clients reported any alcohol use at follow-up.
- 46% of clients reported opioid misuse at intake.
- 12% of clients reported opioid misuse at follow-up.
- 14% of clients reported heroin use at intake.
- 3% of clients reported heroin use at follow-up.

**a** Because being in a controlled environment inhibits opportunities for alcohol and drug use, clients who were incarcerated all 365 days before entering treatment were not included in the substance use analysis (n = 17). In addition, 13 cases were excluded because either the interviewer skipped the question (n = 9) or the client didn’t know (n = 4).

**b** Misuse of opioids other than heroin, including prescription opiates, methadone, and buprenorphine-naloxone.
Trends in Any Alcohol and/or Drug Use in the Past-12-Month for Clients in the Follow-up Sample

The number of KTOS clients reporting alcohol and/or drug use in the 12 months before treatment was consistently high. Overall, at follow-up, the number of clients reporting alcohol and/or drug use has decreased over the years.

How Much Has Use of Specific Illegal Drugs at Intake Changed Over Time for All Clients?

This trend analysis examines trends over time for all clients with completed intake surveys. Specifically, the trends in this graph show the percent of clients who reported misusing prescription opiates/opioids, non-prescribed methadone, non-prescribed buprenorphine-naloxone (bup-nx), heroin, and methamphetamine in the 12 months before entering treatment from FY 2012 to FY 2016.
Trends in Past-12-Month Opioid and Other Drug Classes Over Time for All Clients at Intake

This trend analysis examines trends over time for all clients with completed intake surveys. The trends show that, for each year, more clients reported using opioids in addition to other classes of drugs at intake compared to the number of clients who used opioids only. In addition, more clients reported no opioid use (only other classes of drug use) compared to the number of clients who used opioids only.

Past-12-month Mental Health and Stress

Clients’ mental health symptoms improved significantly from intake to follow-up.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>At Intake</th>
<th>At Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>52%</td>
<td>26%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>51%</td>
<td>31%</td>
</tr>
<tr>
<td>Suicide Ideation</td>
<td>18%</td>
<td>7%</td>
</tr>
<tr>
<td>Mental Health</td>
<td>12.4</td>
<td>5.6</td>
</tr>
<tr>
<td>Poor Health</td>
<td>7.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Substances^d to manage stress</td>
<td>43%</td>
<td>16%</td>
</tr>
</tbody>
</table>

FY 2012 (n = 4,974)   FY 2013 (n = 4,860)   FY 2014 (n = 5,173)   FY 2015 (n = 5,096)   FY 2016 (n = 5,445)

Opioid use only  Opioid use and other classes  No opioid use, only other classes

^ Illegal drugs were broken into 5 classes: 1. Marijuana, 2. Opioids (prescription opiates, Suboxone, heroin, methadone), 3. Stimulants (amphetamines, methamphetamine, prescription stimulants, cocaine), 4. CNS depressants (benzodiazepines, anxiolytics, sedatives, barbiturates, tranquilizers), 5. Other illegal drugs (inhalants, hallucinogens, synthetic drugs).

^ Measure of symptoms in the past 7 days.
The average number of days clients reported their mental health was not good in the past 30 days has increased at intake in the past several years. The average number of days clients reported their mental health was poor in the past 30 days at follow-up has decreased from 9.4 days in FY 2011 to 5.6 days in FY 2016.

<table>
<thead>
<tr>
<th>Year</th>
<th>Intake</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2011</td>
<td>10.6</td>
<td>9.4</td>
</tr>
<tr>
<td>FY 2012</td>
<td>10.8</td>
<td>8.4</td>
</tr>
<tr>
<td>FY 2013</td>
<td>10.6</td>
<td>5.1</td>
</tr>
<tr>
<td>FY 2014</td>
<td>9.7</td>
<td>5.1</td>
</tr>
<tr>
<td>FY 2015</td>
<td>11.5</td>
<td>5.0</td>
</tr>
<tr>
<td>FY 2016</td>
<td>12.4</td>
<td>5.6</td>
</tr>
</tbody>
</table>

KTOS clients showed improvements in economic and living circumstances from intake to follow-up.

- 24% of clients were employed at intake, increasing to 37% at follow-up.
- 41% of clients reported difficulty meeting basic living needs at intake, decreasing to 35% at follow-up.
- 26% of clients reported difficulty meeting health care needs at intake, decreasing to 16% at follow-up.

Gender Differences in Current Employment for Clients in the Follow-up Sample

The number of men who reported they were employed full-time was 1.8 times higher than the number of women at intake and 1.5 times higher at follow-up.

<table>
<thead>
<tr>
<th>Year</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake</td>
<td>30.3%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Follow-Up</td>
<td>43.8%</td>
<td>28.3%</td>
</tr>
</tbody>
</table>

Gender Wage Gap

At follow-up, employed women made only $0.81 for every dollar employed men made. Therefore, the gender wage gap for employed clients was 19¢.
### Trends in Difficulty Meeting Basic Living in the Past 12 Months

The percent of KTOS clients who have reported difficulty meeting basic living needs at follow-up has decreased over time from 53% in the KTOS FY 2011 report to 30% in the KTOS FY 2015. The percent of clients reporting difficulty meeting basic living needs at follow-up increased slightly to 35% in FY 2016.

### Past-12-month Criminal Justice System Involvement

Involvement in the criminal justice system, in terms of being arrested, incarcerated, or under the supervision of the criminal justice system decreased significantly from intake to follow-up.

#### Trends in Any Arrest in the Past 12 Months for Clients in the Follow-up Sample

The number of clients reporting an arrest in the past 12 months at intake has remained stable over the past 10 years with over half of clients reporting an arrest. Between one-quarter and one-third of clients reported an arrest at follow-up since FY 2007.
Past-30-day Recovery Supports

Compared to intake, significantly more individuals reported they had attended mutual help recovery group meetings in the past 30 days at follow-up and had more people they could count on for support.

- 31.1% of clients attended a mutual help recovery group meeting at intake.
- 47.9% of clients attended a mutual help recovery group meeting at follow-up.

Trends in Clients Attending Mutual Help Recovery Meetings in the Past 30 Days for Clients in the Follow-up Sample

With the exception of FY 2007 when the number of clients reporting attending mutual help recovery group meetings was higher at intake than follow-up, more clients reported attending meetings like AA/NA at follow-up compared to intake. Overall, around one-third of clients reported attending meetings at intake and around half reported attending meetings at follow-up.

Quality of and Satisfaction with Life

QUALITY OF LIFE RATINGS

Ratings were from 1 = 'Worst imaginable' to 5 = 'Good and bad parts were about equal' to 10 = 'Best imaginable'.

- Average rating at intake: 6.1
- Average rating at follow-up: 7.6

SATISFACTION WITH LIFE

The lowest possible score is 5 and the highest possible score is 25. Lower scores indicate lower satisfaction and higher scores represent higher satisfaction.

- Average rating at intake: 12.6
- Average rating at follow-up: 17.0

Trends in Clients Attending Mutual Help Recovery Meetings in the Past 30 Days

<table>
<thead>
<tr>
<th>Year</th>
<th>Intake</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2007 (n = 1,086)</td>
<td>44.2%</td>
<td>49.8%</td>
</tr>
<tr>
<td>FY 2008 (n = 1,196)</td>
<td>35.1%</td>
<td>46.3%</td>
</tr>
<tr>
<td>FY 2009 (n = 1,188)</td>
<td>33.6%</td>
<td>51.0%</td>
</tr>
<tr>
<td>FY 2010 (n = 1,224)</td>
<td>35.7%</td>
<td>49.8%</td>
</tr>
<tr>
<td>FY 2011 (n = 1,274)</td>
<td>31.9%</td>
<td>52.2%</td>
</tr>
<tr>
<td>FY 2012 (n = 1,265)</td>
<td>32.8%</td>
<td>48.7%</td>
</tr>
<tr>
<td>FY 2013 (n = 1,286)</td>
<td>28.5%</td>
<td>43.8%</td>
</tr>
<tr>
<td>FY 2014 (n = 1,290)</td>
<td>31.2%</td>
<td>44.9%</td>
</tr>
<tr>
<td>FY 2015 (n = 1,272)</td>
<td>29.5%</td>
<td>43.2%</td>
</tr>
<tr>
<td>FY 2016 (n = 1,214)</td>
<td>31.1%</td>
<td>47.9%</td>
</tr>
</tbody>
</table>
Program Satisfaction

At follow-up, clients were asked to rate their level of satisfaction with the treatment program on a scale from 1 (worst treatment imaginable) to 10 (best treatment).

KTOS clients were satisfied with the overall program service and agreed that:

- **95%** The client was encouraged to talk about and decide their program goals.
- **94%** Staff helped them obtain information so they could take charge of managing their drug/alcohol problems.
- **92%** Clients felt better about themselves as a result of treatment.
- **91%** Even if they had other choices, they would go to the same treatment program again if they needed to.

8.4 Average rating

Cost Savings of Substance Abuse Treatment

Using national estimates of the cost of substance abuse and applying them to clients' substance use before and after program participation, there was an estimated $3.46 return in cost savings for every dollar spent on providing treatment services.

Conclusion

The 2018 KTOS evaluation indicates that publicly-funded substance abuse treatment programs in Kentucky have been successful in facilitating positive changes in clients' lives in a variety of ways, including decreased substance use, decreased mental health symptoms, decreased economic hardship, and decreased involvement with the criminal justice system. Results also show that clients have more support for recovery after participating in treatment. Overall, KTOS clients had significant improvements in key factors that have been associated with facilitating recovery.