

Methamphetamine Use in Iowa

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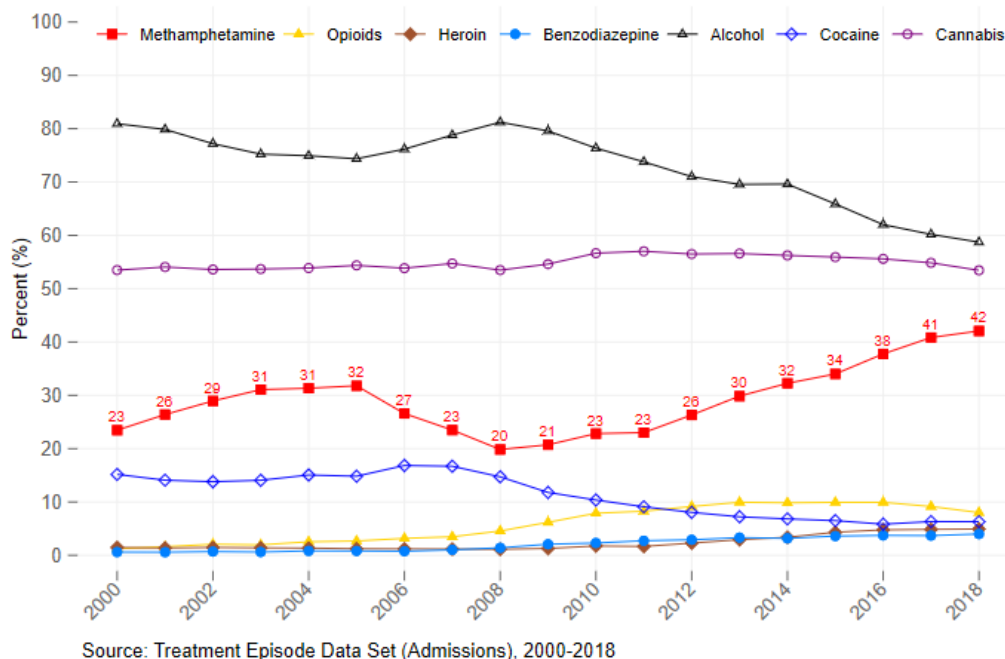
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Overview

Methamphetamine use in Iowa is high, rising, and increasing at a faster rate than in other states. The most recent DEA National Drug Threat Assessment speculates that changes in the chemical profile and supply networks of methamphetamine may have resulted in its penetration into new markets (National Drug Threat Assessment, 2020). We can confirm new markets are emerging in Iowa. Methamphetamine is spreading from rural to urban places, from lower to higher education groups, and from younger to older ages. We provide evidence of rising use among Hispanic and Native American populations, and also among women, including expecting mothers. Homelessness among people who use methamphetamine (PWUM) is more common now than it was in the past, and is higher in Iowa than regionally or nationally. Methamphetamine represents a growing share of all chemicals identified in Iowa drug seizure lab tests, more than doubling from 21% in 2011 to 44% in 2019. Most seriously, overdose mortality attributable to methamphetamine use in Iowa is on the rise.

Figure 1. *Self-Reported Substance Use among People Entering Treatment in Iowa*



Prevalent and Rising

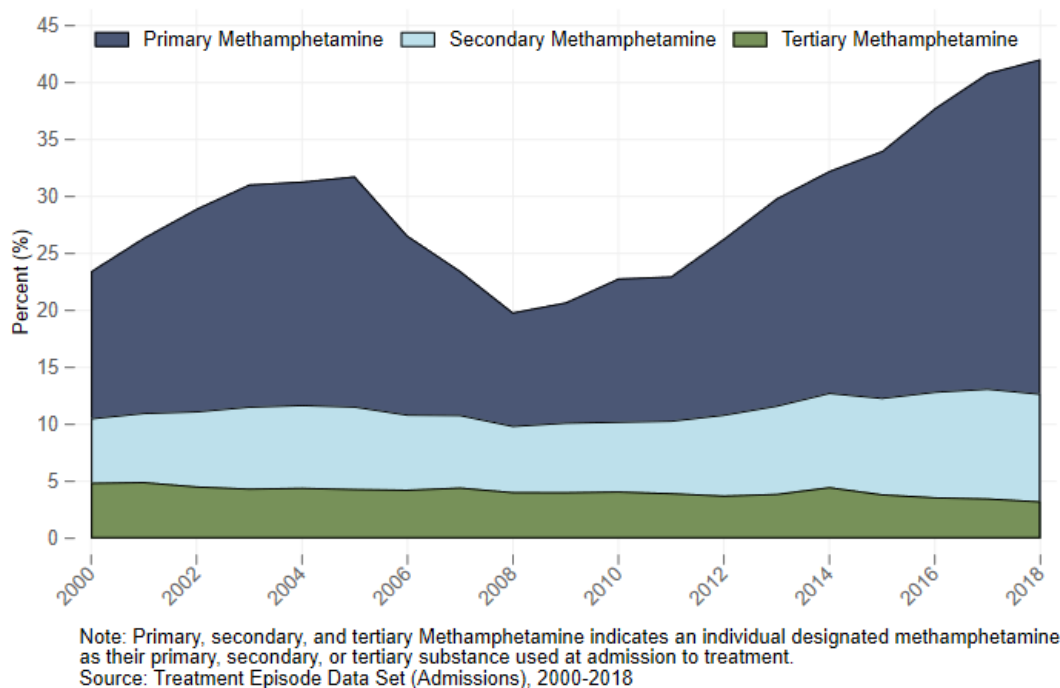
Methamphetamine is the third most commonly cited substance of use at admission to treatment, trailing behind only alcohol and cannabis (see Figure 1). More than 80% of people entering treatment in 2000 cited alcohol on admission forms, but by 2018, that figure had dropped to under 60%. Over the same period, the rate for cannabis remained essentially



unchanged at 53%, while methamphetamine prevalence increased from 23% to 42% of all treatment admissions, constituting by far the largest absolute increase among all reported substances.

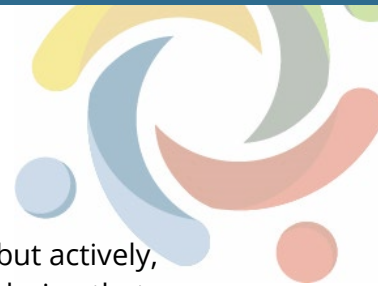
Closer inspection of statewide treatment episode data show that underneath the overall increase in methamphetamine prevalence among people seeking substance use treatment has been a transition from often being a secondary or tertiary drug of choice to the primary substance among all **people who use methamphetamine, or PWUM**. The share of people citing methamphetamine as their third substance declined from 5% in 2000 to 3% in 2018, while the share reporting methamphetamine as their primary-use substance rose from 13% to 29% of all cases by 2018. Methamphetamine is also more commonly cited as a secondary substance at time of admission to treatment (from 6% to 10% between 2000 and 2018). While our public use data do not allow us to know how these trends have changed since 2018, treatment providers suggest methamphetamine cases are not only still commonly seen in treatment, but in in many places, still rising.

Figure 2. *Self-Reported Primary, Secondary, or Tertiary Use of Methamphetamine among People Entering Treatment in Iowa*



Escalating Faster than in Neighboring States

After a brief period in the early 2000s during which methamphetamine use declined for nearly all groups, rates began rising across the country in the late 2000s (see Figure 2). Following in



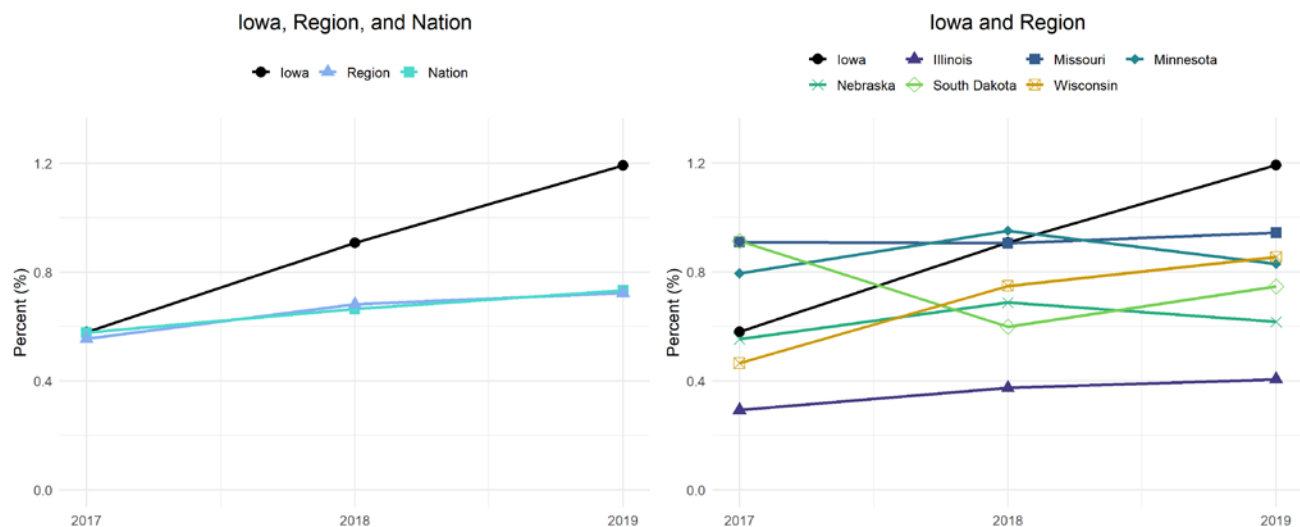
the background of the much more widely documented opioid crisis, the earlier “methamphetamine crisis”, never really went away, but has instead “been quietly, but actively, gaining steam” (Han et al., 2021). Gaining steam may be an understatement, considering that national methamphetamine-related overdose deaths have increased among all major racial and ethnic groups (~500%), with non-Hispanic whites having the second highest rates (9.4 per 100,000) and only trailing usage rates among American Indian/Alaskan Natives (20.9 per 100,000) (Han et al., 2021). Evidence suggests the prevalence of methamphetamine use among American Indians/Alaskan Natives is almost four times higher than any other group (Coughlin, 2021). Non-Hispanic blacks had the largest overdose death rate increase over the 2011-2018 period (Han et al., 2021). The rise in methamphetamine use extends far beyond racial and ethnic groups: Usage is increasing in urban and rural places, across all census regions, and across all but the youngest age groups.

When we compared methamphetamine treatment prevalence rates in Iowa to neighboring states and to the country as a whole, we found that Iowa leads the region (defined here as states sharing a border with Iowa), and also far exceeds the national methamphetamine treatment prevalence rate. In Iowa, the share of people coming into treatment for methamphetamine use has been higher than the national rate since at least 2000. In contrast to the primary methamphetamine use rate of 29% in Iowa in 2018, the regional rate was a much lower 19% and the national rate was an even lower 10% (see Figure 3). Reported rates of secondary and tertiary methamphetamine use were proportionally lower regionally and nationally too, meaning that rates in Iowa exceed regional and national rates among primary, secondary, and tertiary use (authors’ calculations).

Analysis of data collected as part of the National Drug Use and Health Survey, or NSDUH, also show the methamphetamine prevalence rate rising *in the general population* and confirmed that Iowa has the highest estimated population prevalence rate among its six border states (see Figure 4). As recently as 2017, the adult population prevalence rate put Iowa in the middle of the regional pack at about 0.6%, meaning less than 1% of the adult population was estimated to have used in the last year. Over the next two years, the prevalence rate in Iowa doubled to 1.2%, catapulting Iowa to the top of the regional leaderboard (authors’ calculations). Over this same period, the national rate also increased, but at a much slower pace. Putting these trends into a national context allows us to note that methamphetamine rates have always been unequally distributed across the country, with far higher rates in the west and Midwest than in either the south or northeast, though rates are rising in the northeast (Anglin et al., 2000; Jones et al., 2020; Rawson et al., 2002). Higher methamphetamine use west of the Mississippi river continues to be an essential feature of substance use in the US and it is widely understood that the dominance of the west coast and southwest, including Mexico, in the production and distribution of methamphetamine is largely responsible for higher use rates in these areas.



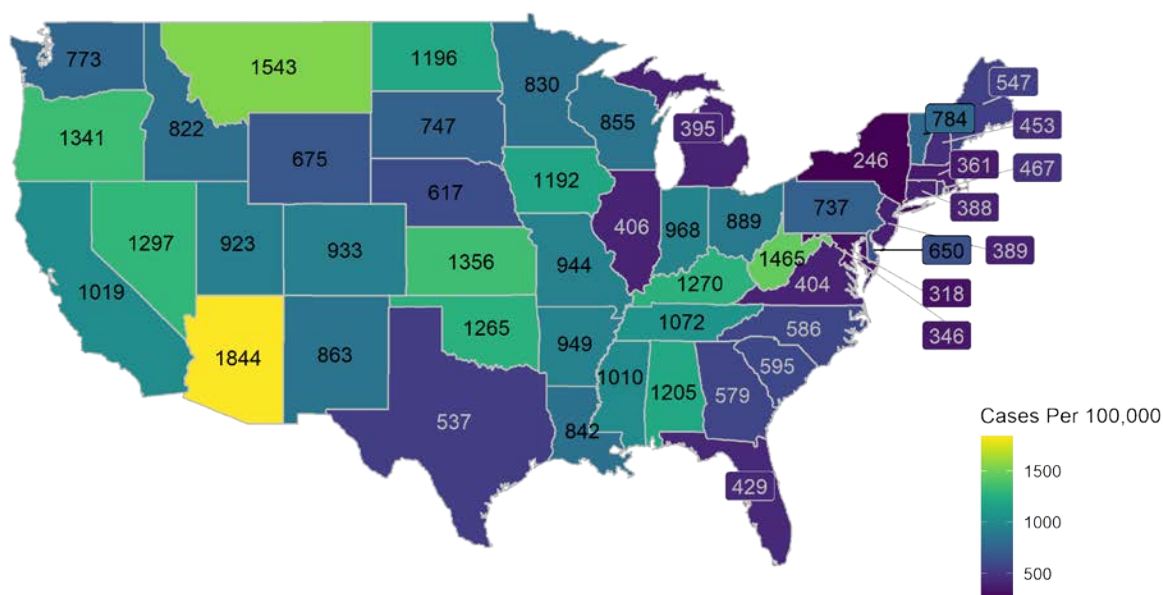
Figure 4. Past Year Methamphetamine Use among Adults (18+) in Iowa, Region, and Nation



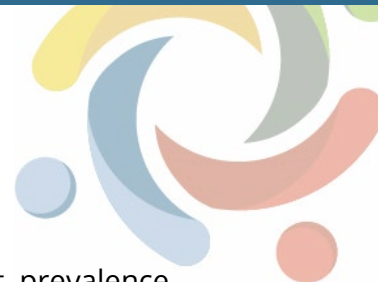
Note: Regional states are defined as the states that share a border with Iowa, including Illinois, Iowa, Minnesota, Missouri, Nebraska, South Dakota, and Wisconsin

Source: National Survey on Drug Use and Health, 2017-2019. American Community Survey, 2017-2019

Figure 3. Number of Adults per 100,000 Reporting Methamphetamine Use in the Past Year: 2019



Source: National Survey on Drug Use and Health, 2019

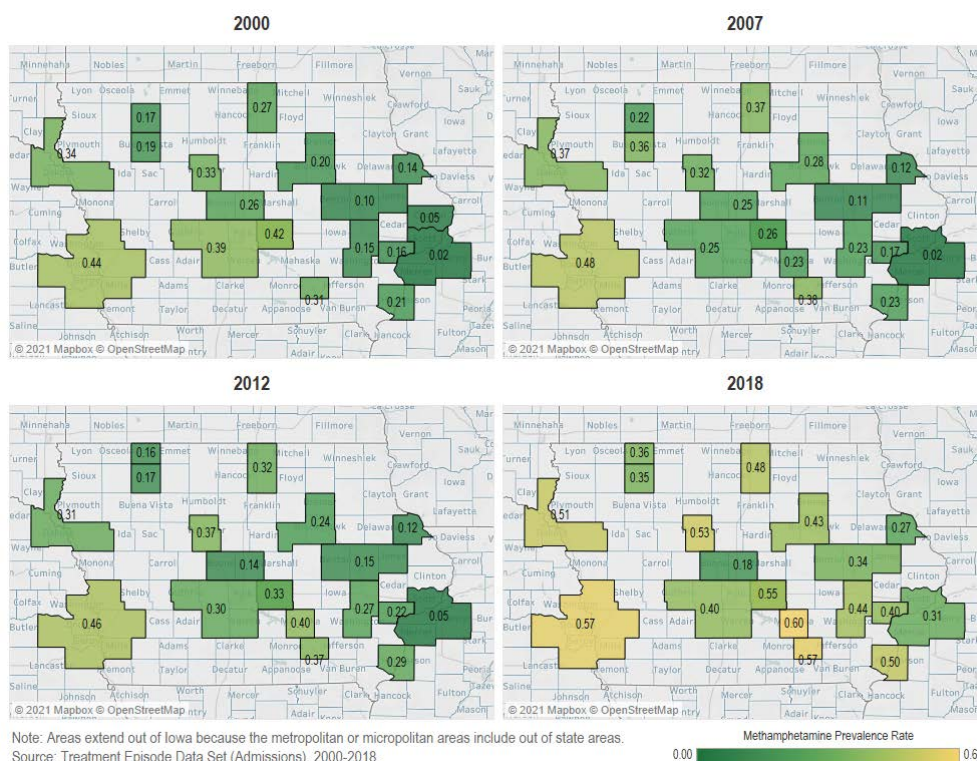


Spreading Geographically

Two fundamental geographic patterns define methamphetamine use in Iowa. First, prevalence rates among people seeking treatment have historically been highest in the west and south areas of the state (especially along the Missouri River), and lowest in counties in the east and north part of the state. Second, rates are increasing in every metropolitan and micropolitan area, reflecting a statewide increase in methamphetamine cases admitted to Substance Use Disorder (SUD) treatment.

The west-to-east and south-to-north pattern can be seen in the following maps, which show the proportion of people entering treatment who report using methamphetamine for each of the Census Bureau Statistical Areas, or CBSAs (see Figure 5). CBSAs often extend beyond state boundaries. The large CBSA in the southwest corner of Iowa is the Omaha-Council Bluffs Metropolitan statistical area, where prevalence rates have hovered at over 50%, except for a brief period in the mid-2000s, when rates temporarily dropped across Iowa. Pivoting to the opposite side of the state, we find the Quad Cities CBSA, where rates were close to zero for much of the last 20 years, but recently skyrocketed to 31% of all admissions cases. Inspection of rate changes within any one CBSA tells the same story: More people are entering treatment for methamphetamine across the state and the largest increase in recent years has been in the central and eastern counties.

Figure 5. *Methamphetamine Prevalence Rates among All Treatment Center Admissions, by Year and Census Bureau Statistical Area (CBSA)*



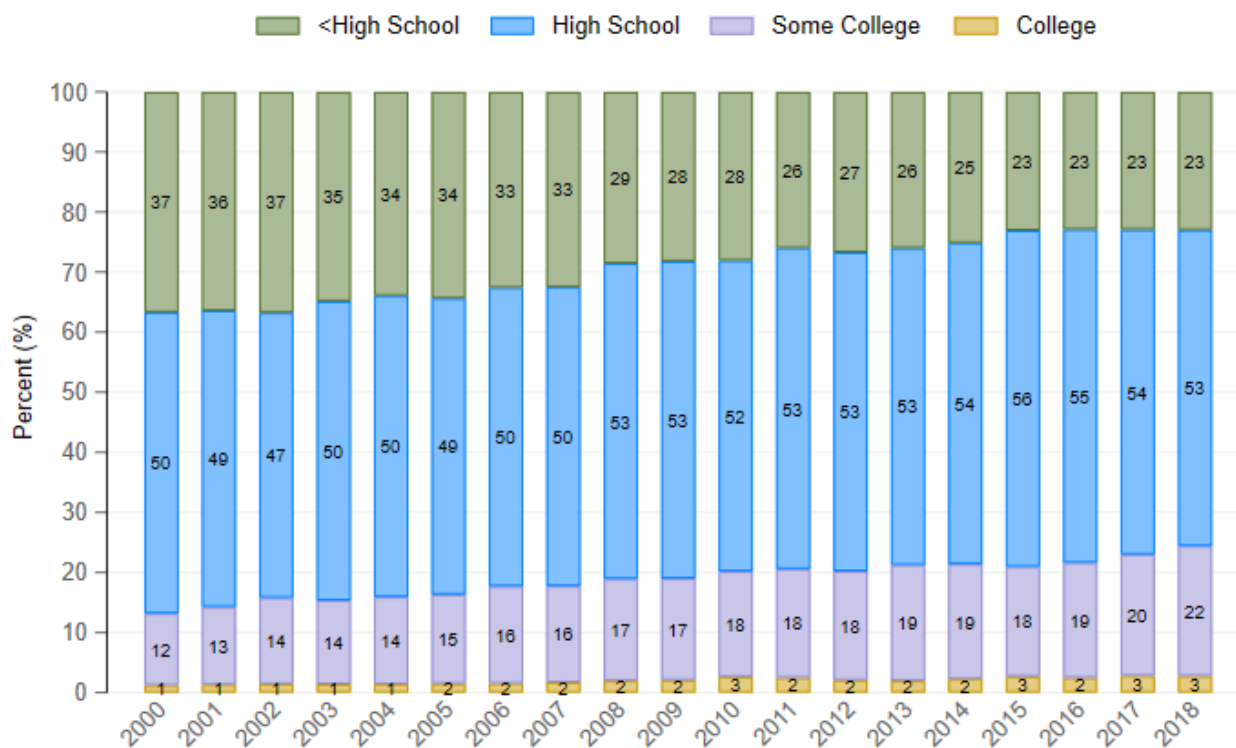


Penetration into New Markets

Rural to Urban

Although methamphetamine use has long claimed rural areas as its ancestral home (King et al., 2019), this is changing. From the late 1990s to the early 2000s, methamphetamine use was highest in rural places, but around 2015, when the chemical profile of methamphetamine was changing and fentanyl was introduced, Iowa began to see more people entering treatment for a methamphetamine use disorder from semi urban and urban places. **By 2018, treatment prevalence rates were higher among people hailing from Iowa's micropolitan areas (10,000-50,000 people) and metropolitan areas (>50,000 people) than in the rural areas** (authors' calculations). More broadly, the data provide a warning to public health: The statewide increase in methamphetamine use is due in part to its spread into urban locales across the state, where most of the state's population resides and where population growth is highest.

Figure 6. Educational Attainment among PWUM Entering Treatment in Iowa



Source: Treatment Episode Data Set (Admissions), 2000-2018



Lower to Higher Education

Methamphetamine prevalence rates have been high among people with limited education, with education post high school as somewhat of a protective factor (Brecht et al., 2006; Vangeest & Johnson, 2002a). It is unclear exactly how education protects against methamphetamine use, but theoretical explanations that may describe this include the extension of adolescence during college years, increased parental oversight, or positive selection into college among those with more social and economic resources. Further, education is often used as a proxy for social class, and methamphetamine use is linked to lower socioeconomic status. Or, as one PWUM put it, “Meth is poor man’s coke [cocaine]”.

We find that while people in treatment with a high school degree continue to constitute the largest share of all methamphetamine cases in Iowa (~50%), this is changing. The share of people entering treatment for methamphetamine increased among those with ‘some college’ or with a college degree, while the share of those with a high school degree (or less) represent a declining share of all cases. We find that among people with some college who enter treatment programs in Iowa, the percentage reporting methamphetamine use increased from 12% in 2000 to 22% in 2018. Methamphetamine prevalence increased from one to three percent among college degree holders. Together, these data show that **more people are entering Iowa treatment programs for methamphetamine use at all educational attainments**, but in relative terms, there has been a steady shift from lower to higher education among PWUM in treatment that aligns with the demographic shift from rural to urban places (see Figure 6).

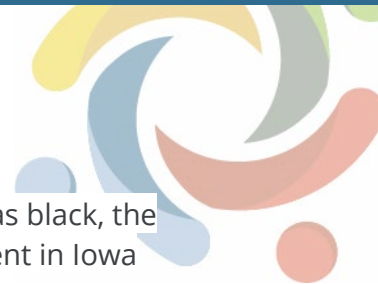
Because of the large prevalence rate increase among those with “some college” or a college degree, we suggest that **public health coordinate its prevention, treatment and outreach efforts with college campuses to better support this growing at-risk population**.

Coordinated effort could include the expansion of campus treatment and recovery services, such as collegiate recovery programs, and more general amphetamine prevention efforts (e.g. Adderall prescription misuse).

White to Hispanic and Native American

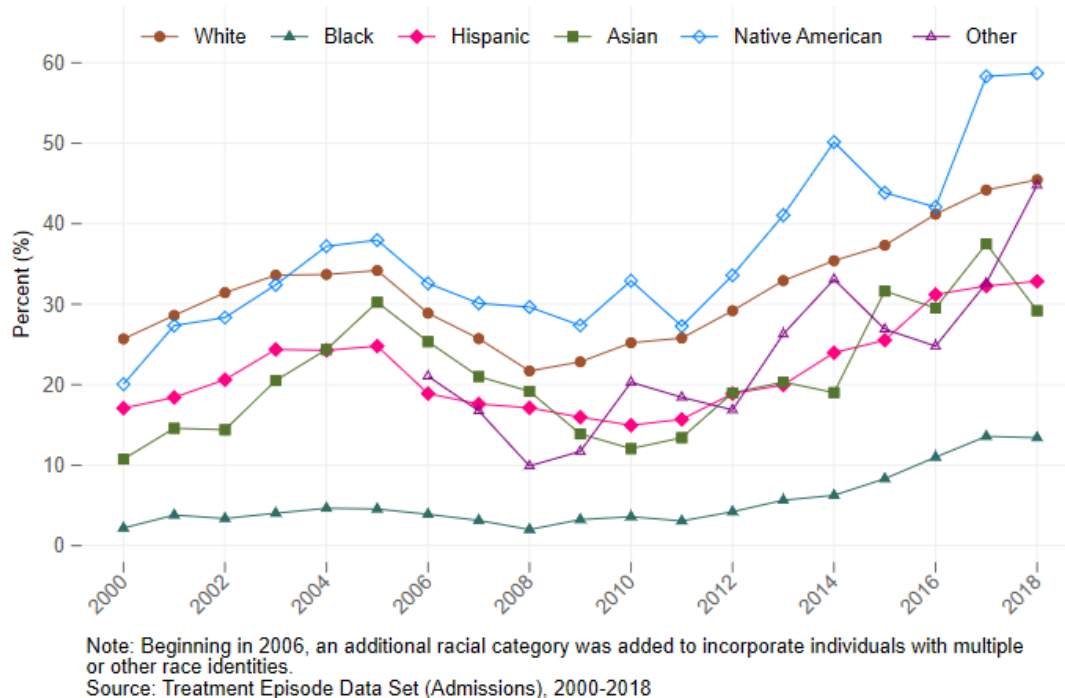
Although methamphetamine use continues to predominantly be a white, working class drug, it is spreading to other groups, with rates increasing among all reported racial/ethnic communities (Weidner, 2009). In our analysis, the largest race/ethnicity of PWUM entering treatment was and is white, reflecting the large proportion of the state population this group represents. There has also been a steady increase in methamphetamine prevalence among minority PWUM entering treatment, both nationally and in Iowa.

Native Americans constitute the fastest growing racial/ethnic group reporting methamphetamine use at admission to treatment, rising from 20% to nearly 60% between 2000 to 2018 (see Figure 7). The methamphetamine rate among self-identified Hispanics



entering treatment rose from 18% to 33%, and among people who self-identified as black, the rate rose from just 2% in 2000 (meaning, only 2% of black people entering treatment in Iowa reported using methamphetamine) to 13% in 2018.

Figure 7. Race and Ethnicity among PWUM Entering Treatment in Iowa



The racial and ethnic category of Other included every other identity not previously discussed and those reporting two or more races. Prevalence rates of methamphetamine use among people in this group rose from 10% in 2008 to 45% in 2018. The rising prevalence of methamphetamine use among minority groups seeking treatment may be associated with the shift from rural to urban discussed above. Additionally, methamphetamine availability and affordability may also be contributing to increases among these populations.

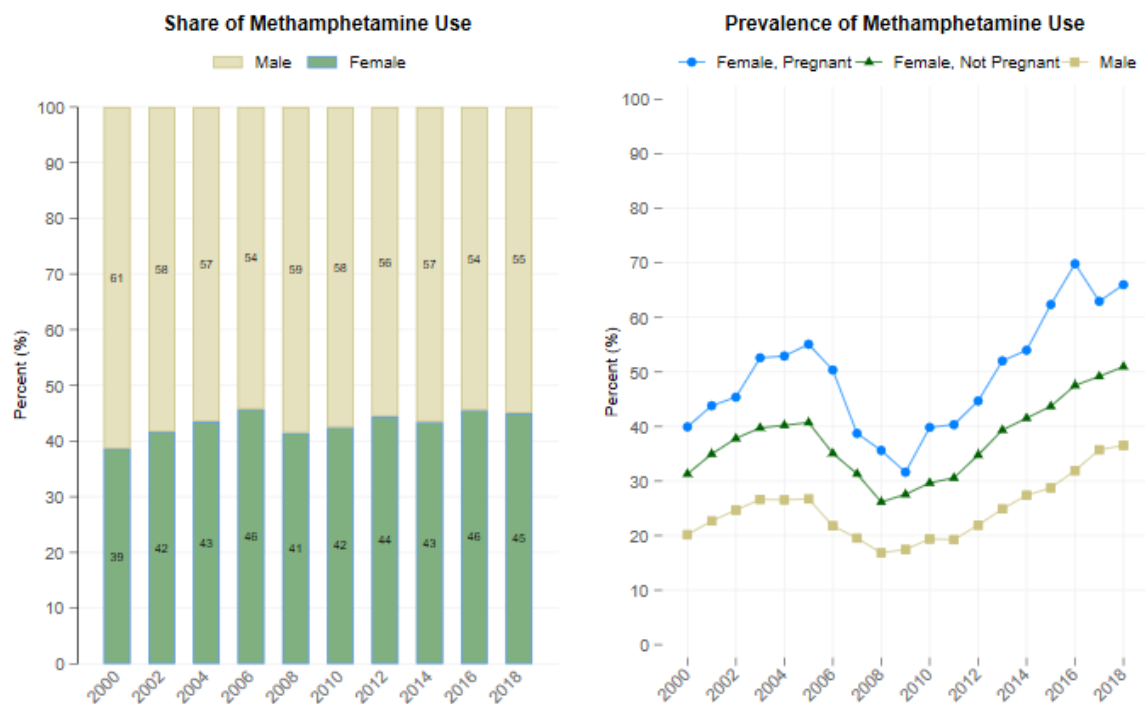
Men to Women, Including Pregnant Women

Nationally, adolescent boys are more likely to report substance use, including methamphetamine, than girls (Svensson, 2003) and over the life course, men are about 50% more likely than women to have ever used methamphetamine (Jones et al., 2020; King et al., 2019). According to recent national NSDUH data, two-thirds of PWUM were men (Shearer et al., 2020). A steady increase in use among women has some arguing that methamphetamine has become somewhat 'gender blind', with usage rates between men and women beginning to converge because of **a sharp increase in use among women** (Gonzales et al., 2010; Brecht et al., 2004; Palamar et al., 2020). A similar gender pattern exists in Iowa, with a greater share of



men reporting methamphetamine use at admission to treatment than what is observed among women (see Figure 8, right panel). Despite women comprising a smaller share of all people in Iowa's treatment programs, over half of them report methamphetamine use compared to just over a third of men. This reflects that while fewer women in Iowa use drugs compared to men, when they do use, women are much more likely to use methamphetamine than men (see Figure 8, left panel). Between 2000 and 2018, the gender gap in methamphetamine prevalence at admission to treatment increased from 11% to 14%. An even larger gap between men and pregnant women opened up over this same time period. As the proportion of women using methamphetamine rises, so too has the incidence of methamphetamine among pregnant women. Among women who were pregnant at admission, two-thirds of pregnant women reported methamphetamine use in 2018 (from 40% of all women in 2000, to 66% in 2018).

Figure 8. Gender of PWUM Entering Treatment in Iowa



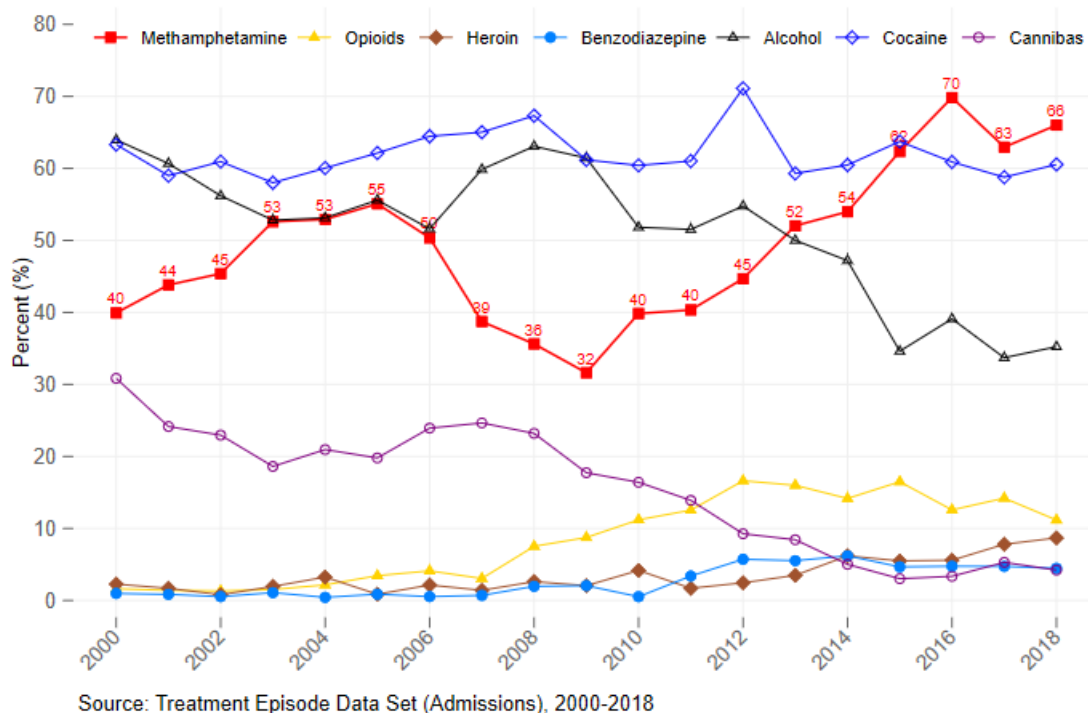
Source: Treatment Episode Data Set (Admissions), 2000-2018

The statewide increase in methamphetamine use among pregnant women is even more stark when we compared trends across substances (see Figure 9). The cannabis rate among pregnant women has been *stable* at about 60% since 2000. Conversely, there have *declines* in cocaine and alcohol use among soon-to-be-mothers entering treatment. In sharp contrast, the number of pregnant women entering treatment for methamphetamine, opioids, heroin, and benzodiazepine is *increasing*, with the highest observed rates among pregnant women who use methamphetamine.



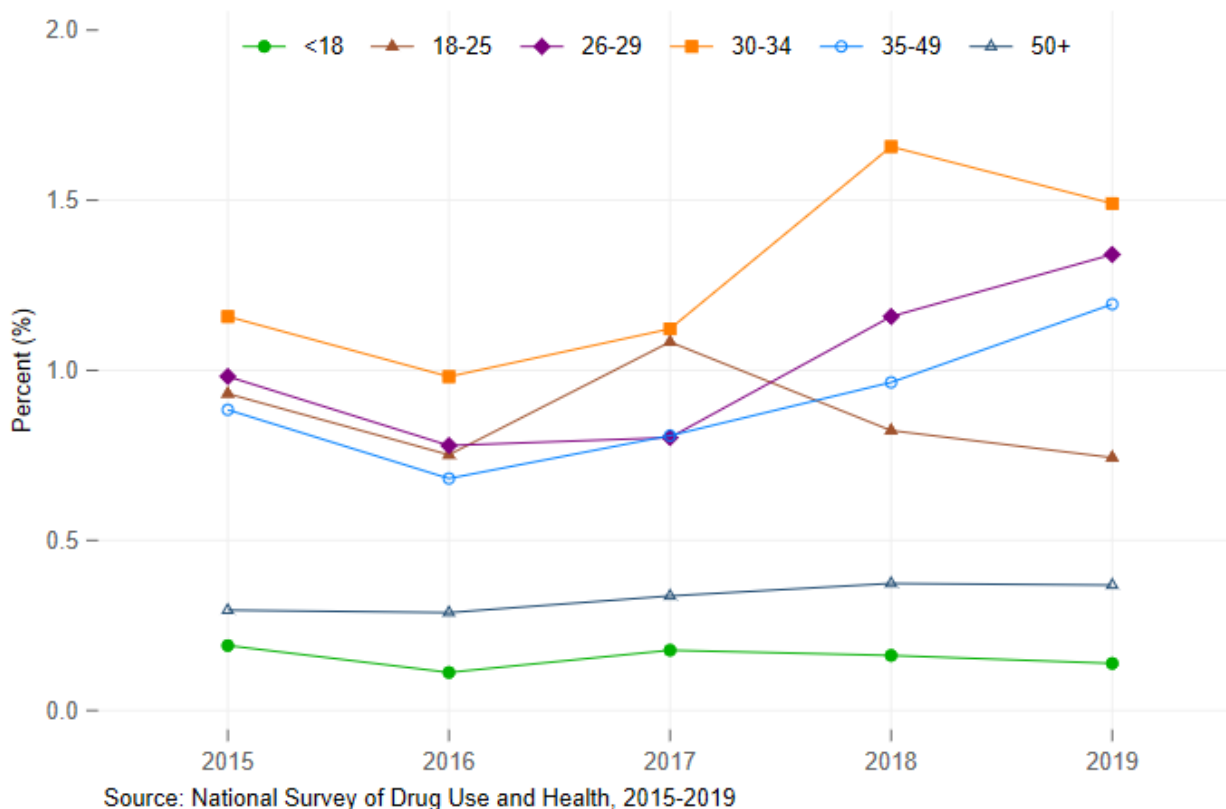
Since 2000, pregnant women who enter treatment for methamphetamine are increasingly likely to have a higher number of prior treatment episodes and dual diagnosis (SUD and mental health disorder) (authors' calculation). We also observe an increase in homelessness among pregnant women entering treatment for methamphetamine use. Collectively these facts about pregnant women point to a clear need for targeted interventions for mothers, including expecting mothers. Whole person, integrated wrap-around services that address mental health, self-esteem, and chronic resource scarcity are recommended.

Figure 9. Substance Use Rates among Pregnant Women Who Also Use Methamphetamine at Admission to Treatment in Iowa



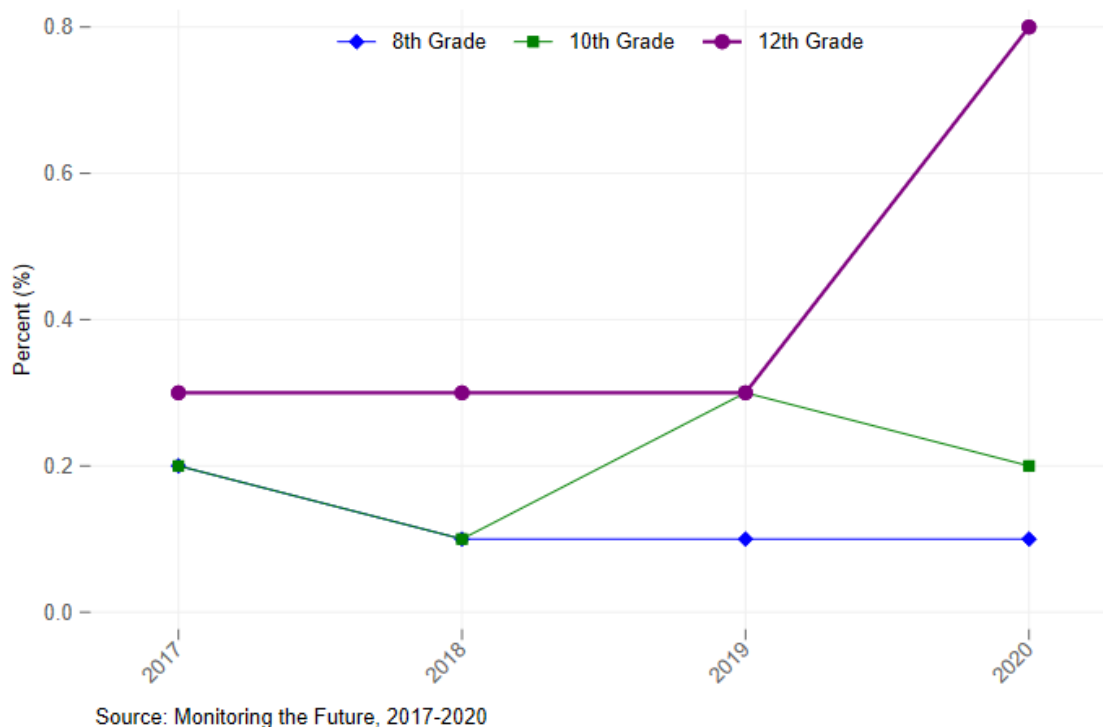
Younger to Older Ages

National estimates from NSDUH indicate that the average age of a person reporting past-year methamphetamine use increased by 1.6 years between 2015 and 2019, from 36.6 to 38.2 (see Figure 10). The national trend is being driven by *fewer* younger people (<26) using in 2019 than in 2015, and *more* people between the ages of 26-49 using (there has also been a very slight uptick among the 50+ ages). Broadly, methamphetamine use is most common among people aged 26-49, with very low usage among minors (Jones et al., 2020; Larson et al., 2019). Between 2015 and 2018, there was a 30% national increase in methamphetamine use among people aged 26-34 (Palamar et al., 2020).

**Figure 10.** Age-Specific Patterns of Past Year Methamphetamine Use, National Estimates

High quality data collected as part of the Monitoring the Future survey (MTF), which has been tracking substance use rates among 8th, 10th, and 12th graders across the country for many decades, suggest that methamphetamine use may also be re-emerging among young people (see Figure 11). According to MTF national estimates, past month methamphetamine use more than doubled from the 2019 to the 2020 senior graduating cohort, rising from a 0.3% to 0.8%. While this is a comparatively low figure, the sharp increase from 2019 to 2020 is cause for concern and close attention by prevention and treatment service providers.

In Iowa, the median age in the general population rose from 37 to 39, reflecting population aging that is also happening nationally. But among PWUM in Iowa's treatment program, the average age rose much more rapidly than the population as a whole, increasing from 29 to 35 years of age. In line with the national trend, fewer young people in Iowa are reporting methamphetamine use at entry into substance use treatment. Prevalence rates have been highest, and continue to be so, among people aged 25-44. In the early 2000s, rates were highest in Iowa among 25-29-year-olds, reflecting some of methamphetamine uses association with young adult party culture. Between 2005 and 2009, the gap in prevalence rate among the treatment seeking population ages 25-34 and 34-44 closed, and now, prevalence rates are about the same from age 25 to 44.

**Figure 11.** Past Month Methamphetamine Use among Teenagers in the United States

In Figure 12, we report methamphetamine prevalence rates by age and year among people entering treatment programs in Iowa. The cells in each row are shaded so that high prevalence rates are bright yellow (that's bad), and low prevalence rates are in colored dark blue (that's good). The figure shows that since the early 2000s, treatment **prevalence rates have steadily declined among children and young adults and sharply increased among people over 44**. Whereas methamphetamine use in Iowa was historically concentrated almost exclusively within the 18-44 age categories, with very few people over 44 entering treatment for methamphetamine, beginning in about 2009, we have seen a sizable increase of people over 44 entering treatment for methamphetamine use. These patterns are consistent with the argument that methamphetamine use is becoming more prevalent among older users, but it is also consistent with continued use among high risk birth cohorts. People born in the 1970s and early 80s were entering treatment in Iowa for methamphetamine use at the higher rates than for any other birth cohort. Fast forward to 2018, and the mid-70s to late-80s birth cohorts had the highest rates. While it is still true that the risk of methamphetamine use among older people is rising, **Iowan's born in the 1970s and 1980s had the highest methamphetamine prevalence rates in the early 2000s AND among the highest prevalence rates as recently as 2018**. Public health officials should consider cohort-specific interventions to address the durability of methamphetamine use within this distinctive, high-risk population.

Figure 12. *Methamphetamine Prevalence Rate by Age and Year*

Age	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
12-14	0.11	0.10	0.11	0.12	0.12	0.09	0.05	0.03	0.02	0.04	0.03	0.04	0.02	0.04	0.05	0.03	0.02	0.02	0.04
15-17	0.16	0.15	0.18	0.19	0.17	0.19	0.11	0.08	0.04	0.06	0.06	0.05	0.07	0.10	0.08	0.10	0.09	0.10	0.08
18-20	0.25	0.29	0.31	0.30	0.30	0.30	0.23	0.17	0.12	0.11	0.13	0.12	0.16	0.19	0.22	0.21	0.22	0.20	0.22
21-24	0.30	0.33	0.36	0.37	0.37	0.37	0.31	0.27	0.20	0.20	0.21	0.20	0.22	0.27	0.30	0.31	0.36	0.37	0.37
25-29	0.36	0.38	0.42	0.43	0.42	0.42	0.38	0.32	0.28	0.28	0.30	0.31	0.36	0.38	0.41	0.43	0.46	0.49	0.51
30-34	0.32	0.36	0.37	0.41	0.43	0.44	0.35	0.34	0.31	0.32	0.35	0.34	0.39	0.42	0.45	0.47	0.50	0.53	0.55
35-39	0.25	0.30	0.32	0.35	0.36	0.36	0.34	0.30	0.28	0.32	0.34	0.32	0.37	0.40	0.42	0.44	0.51	0.54	0.54
40-44	0.19	0.22	0.26	0.29	0.30	0.32	0.27	0.27	0.24	0.25	0.28	0.31	0.34	0.36	0.39	0.40	0.43	0.49	0.49
45-49	0.11	0.14	0.15	0.19	0.20	0.22	0.20	0.19	0.19	0.20	0.23	0.24	0.26	0.30	0.30	0.32	0.36	0.41	0.44
50-54	0.06	0.06	0.07	0.11	0.12	0.12	0.12	0.12	0.11	0.15	0.16	0.18	0.20	0.27	0.26	0.29	0.30	0.32	0.35
55-64	0.01	0.02	0.02	0.03	0.04	0.05	0.04	0.06	0.06	0.06	0.07	0.10	0.10	0.11	0.16	0.16	0.21	0.25	0.25
65+	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.04	0.01	0.05	0.03	0.04	0.05	0.11	0.09

Notes: Bright yellow areas highlight high rates and dark blue areas identify low prevalence rates. Source: Iowa Treatment Episode Data Set (Admissions), 2000-2018.



Where Iowa differs from the national trend, at least in terms of people entering treatment, is that we are seeing an increase in prevalence among *every* age group past the early 20s, and this increase also includes people of retirement ages. The most dramatic change in the age distribution, as reported in statewide treatment episode data, is **an increase from 1% to 23% among people 55 and older**. Importantly, these patterns align with the stories we heard in ethnographic interviews and focus groups with PWUM: Methamphetamine use was common among older family members, including parents, aunts, uncles, and grandparents. We heard similar reports in discussions with leaders in harm reduction, recovery housing provision, access center administration, the delivery of SUD clinical care, and community-based recovery organizations. From a historical perspective, the increase among older people is new and concerning.

The key finding illustrated in Figure 12 is that Iowa is experiencing a delay in the “aging out” of methamphetamine use, whereby people report that they stopped using because they “just got tired” of chronic, harmful use. Instead, PWUM are continuing to use into older ages than at any time in the last 20 years. Our qualitative findings suggest that the lacing of methamphetamine with other drugs, most especially fentanyl, is principally responsible for the rising age pattern since a typical high doesn’t last as long these days. Among the people we interviewed, most that reported early initiation of methamphetamine (younger than 18), indicated that the family context was where first use began. And according to Iowa treatment episode data, the average age at first use for methamphetamine is younger than every substance but alcohol and cannabis.

Persistent and High Homelessness

Homelessness among people who use methamphetamine (PWUM) is rising nationally, regionally, and within Iowa (see Figure 13). Homeless is more common among PWUM entering treatment in Iowa than in the region or country as a whole. A third of people in Iowa who report homelessness when entering treatment also report methamphetamine use, compared to 22% nationally, and 18% regionally. Following several years of low homelessness among the treatment seeking population in Iowa, the rate nearly tripled among PWUM from 8% to 22% between 2006 and 2007¹ and has increased and stabilized at around 33% since 2014.

Homelessness among users of other substances also increased, but the relative increases were lower than among PWUM. Although homelessness has been increasing among PWUM all across the state, some areas (e.g. Clinton, Iowa City, & Sioux City) had an especially large increase over the last decade in the number of people experiencing homelessness when entering treatment. The rise in homelessness continued until 2011 where homelessness prevalence has remained

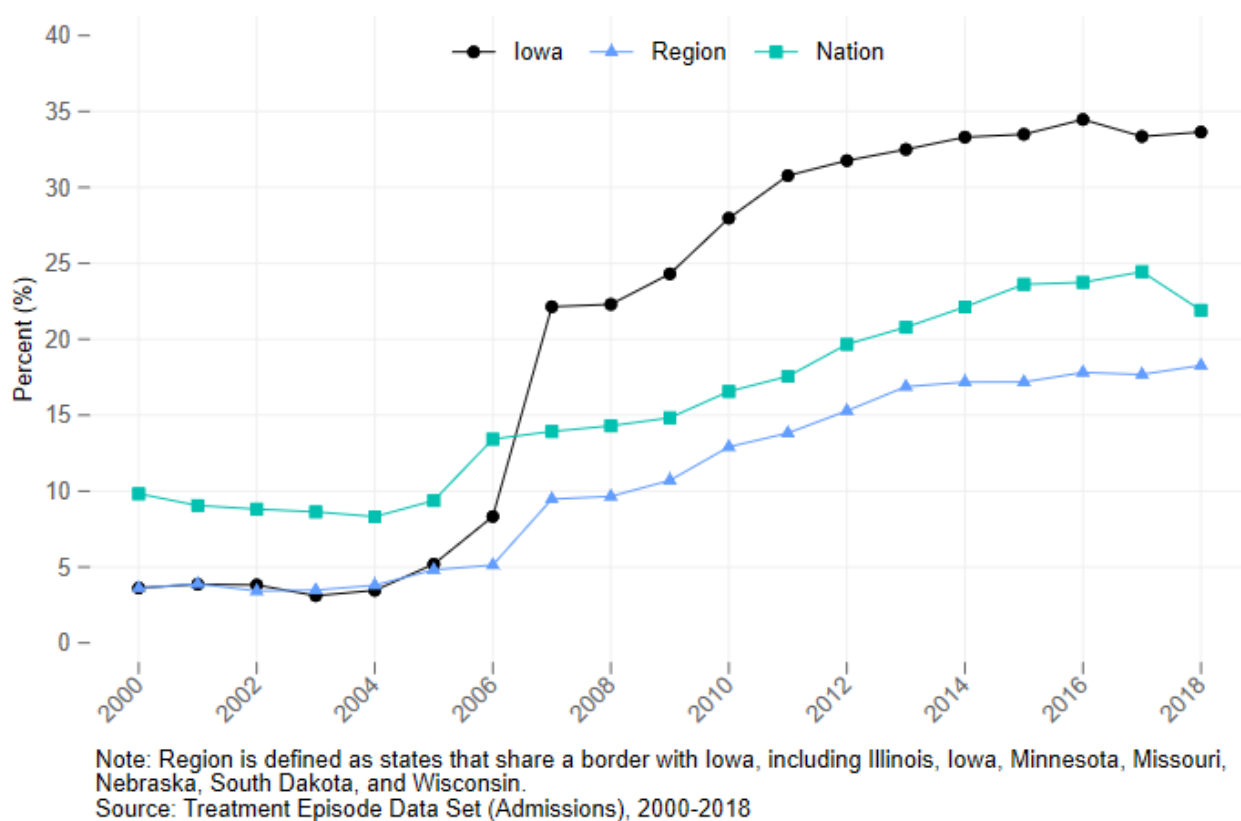
¹ We have yet to find an explanation for the sharp increase, and note that a similarly large increase was not observed in other states. We speculate that the level change may be due to a change in measurement in Iowa, notwithstanding the large increase from 2006 to 2007, our key finding still holds: homelessness is increasing among treatment seeking PWUM in Iowa.



persistently at about 40% of PWUM who inject methamphetamine, 35% of all PWUM, and 27% of those who use other substances.

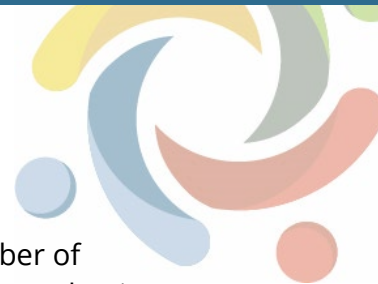
In addition to geographic variability, there has been a rise among all sociodemographic groups, although unevenly. About 40% of those aged 18-34 who reported being homeless also reported methamphetamine use, up from 25% just ten years earlier. Almost half of Native Americans who were homeless also report methamphetamine use and two in five PWUM who were homeless also reported intravenous use. Persistent protective factors against homelessness among PWUM include being married, working full-time, and having a college degree.

Figure 13. Homelessness among PWUM in Iowa, Region, and Nation



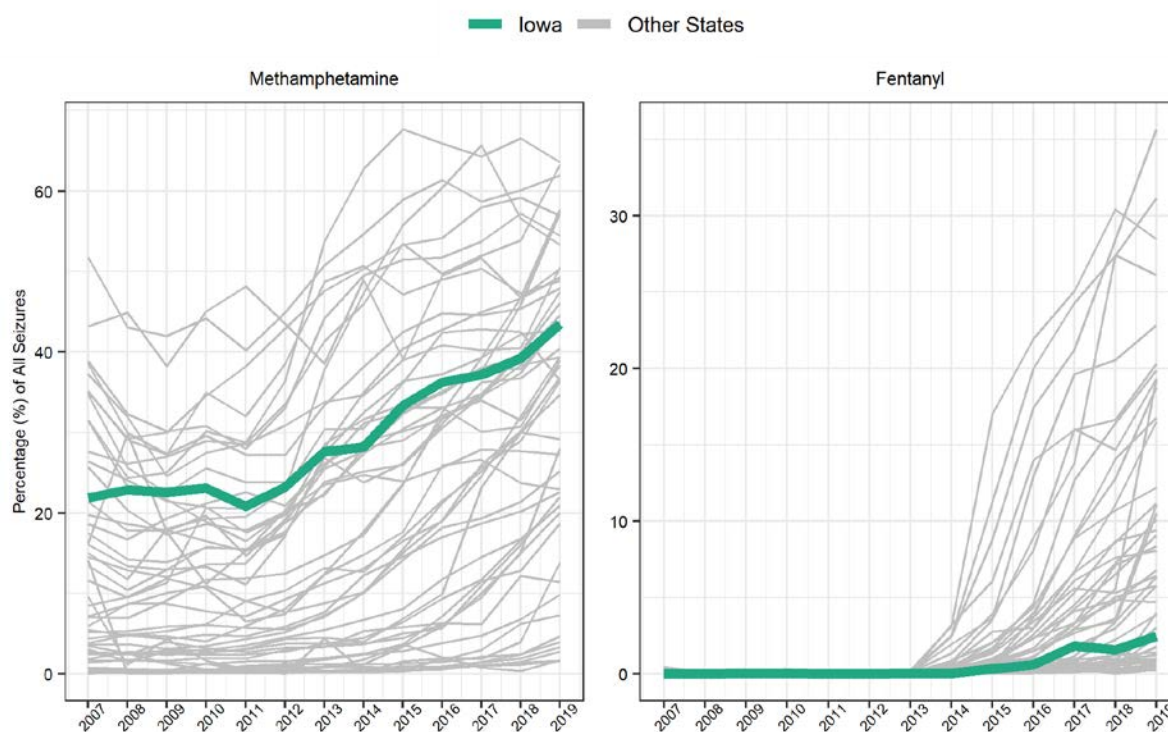
Larger Share of All Substances

Between 2000 and 2004, the number of domestic clandestine methamphetamine laboratories found by law enforcement rose nearly 40% from 9,064 to 23,703 (Drug Enforcement Administration, 2019). The enactment of the federal Combat Methamphetamine Epidemic Act of 2005 led to the restriction of sales of over the counter substances such as pseudoephedrine from cold medicines (National Institute on Drug Abuse, 2019). The effect of the law was immediately apparent, with a one year reduction of 27% in clandestine methamphetamine



laboratory seizures and an additional drop of 50% in the following year. (Drug Enforcement Administration, 2019). There was a considerable increase in the number of law enforcement lab seizures between 2007 and 2010 but that trend has since reversed to just 1,568 labs seized in 2018. During this period, methamphetamine production shifted from domestic labs to labs in Mexico that began using a new production process (National Institute on Drug Abuse, 2019). This new process does not require the use of pseudoephedrine and the resulting methamphetamine is much purer and more potent. Additionally, the scale of production in ‘super-labs’ has so radically increased that the cost fell by nearly 20% between 2013 and 2017.

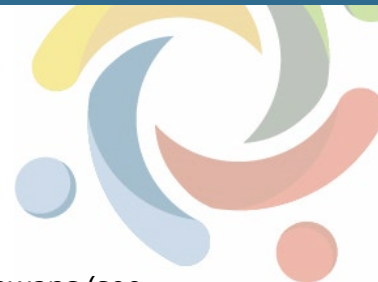
Figure 14. *Seizures of Methamphetamine and Fentanyl by State as a Percentage of Total Seizures in a Given Year*



Note: Fentanyl trend line includes Fentanyl, Acetylfentanyl, Valeryl-fentanyl, Carfentanil, Acrylfentanyl, Cyclopropylfentanyl, Fluoroisobutyrylfentanyl, Furanylfentanyl, and Methoxyacetylfentanyl.

Source: National Forensic Laboratory Information System (NFLIS), 2007-2019

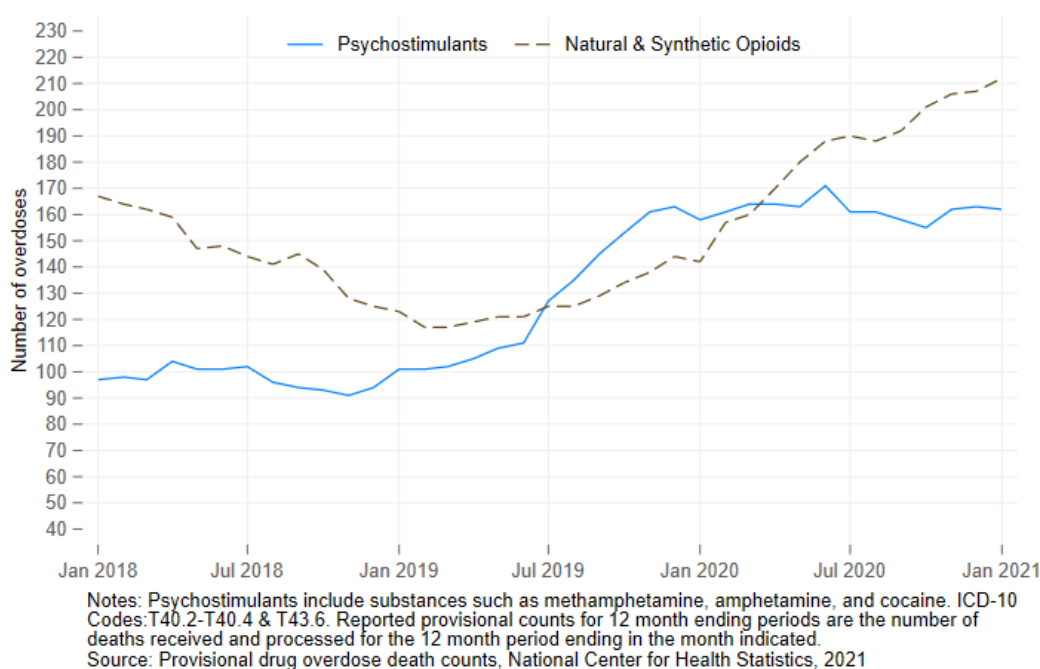
In 2015, fentanyl and fentanyl analogues started appearing in the domestic methamphetamine supply (see Figure 14). It is unknown what share of the methamphetamine supply has been mixed with fentanyl but it appears to be tied to increasing overdose rates. Between 2008 and 2017, there was an 874% increase in the number of psychostimulant drug poisoning deaths in the United States (Drug Enforcement Administration, 2021). Methamphetamine represents a growing share of all drugs seized in Iowa, more than doubling from 21% in 2011 to 44% of all lab tests in 2019.



Increased Overdose Mortality

Perhaps most importantly, methamphetamine is contributing the death of more Iowans (see Figure 15). From January 2018 to January 2021, the number of overdoses from psychostimulants including methamphetamine rose considerably in Iowa. In fact, the psychostimulant overdoses rose from about 100 in January of 2019 to 160 in January of 2020. Since January 2020, the twelve-month ending provisional count of psychostimulant overdoses averaged 162 people in Iowa, representing a plateau in the number of overdoses. Conversely, overdoses of natural and synthetic opioids in Iowa continued to rise from about 120 in January 2019 to more than 2000 in January 2021. The COVID-19 pandemic impacted supply of illicit drugs, particularly opioids, but other factors impacted rising opioid overdose deaths (Mason et al., 2021; Slavova et al., 2020). In Iowa, providers and PWUM reported varying impact on supply of methamphetamine related to COVID-19 within their communities and personal networks, provisional data from the National Center for Health Statistics showed a plateau of psychostimulant overdose deaths during 2020. There were varying trends of psychostimulant overdoses nationally. Nationally, the number of psychostimulant overdoses rose by 50% during the pandemic. Conversely some regions in the country had evidence of a similar slowing of psychostimulant overdoses while the national incidence rose (Appa et al., 2021). There is not enough data available to decisively identify which mechanisms affected the psychostimulant overdose deaths in Iowa during the COVID-19 pandemic.

Figure 15. *Twelve Month Provisional Count of Overdose Death Counts in Iowa, January 2018-January 2021*



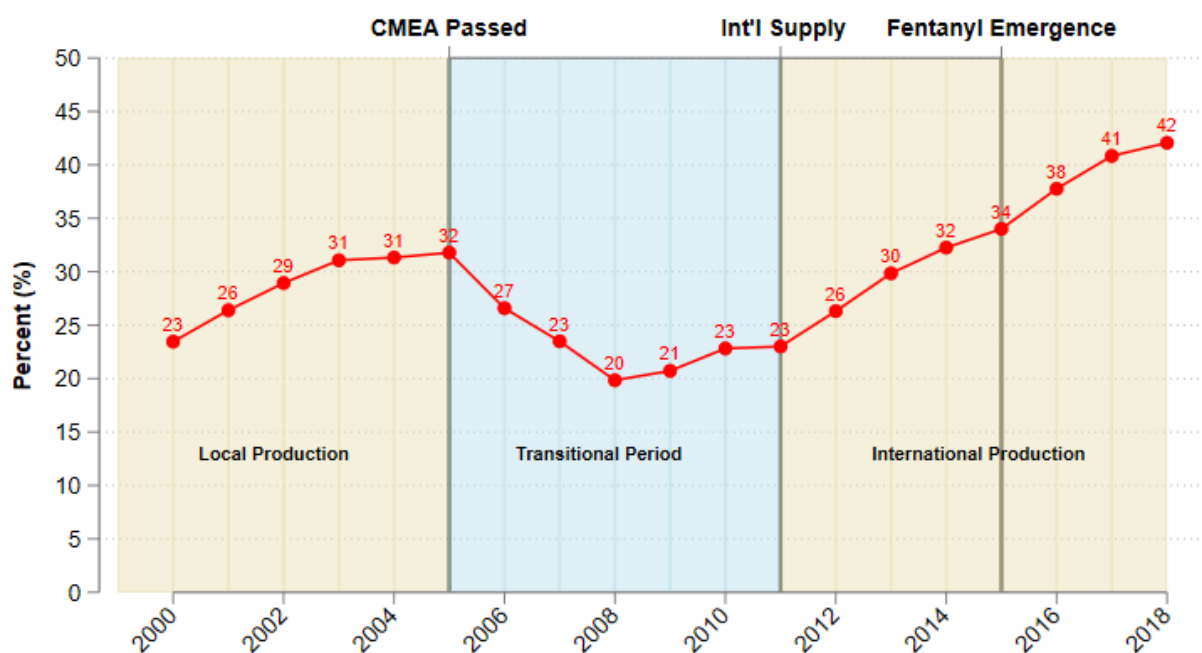


Availability, Purity, Potency, and Price

"I think that meth is a lot more dangerous now...they've done a very good job of stopping the homegrown labs. But with that, the big super labs in Mexico and stuff are making it, and they're making [it] different, and I think it's more dangerous and more unpredictable than what it was when we were younger." -Long-term Methamphetamine User

Many of the people we spoke with had been using methamphetamine for decades, and they discussed how the composition, purity, potency, and addictiveness of methamphetamine had changed during their use history. Much of this can be traced to differences in where and how the methamphetamine was created (see Figure 16). From the 1980s through early 2000s, methamphetamine was manufactured locally in small labs (referred to colloquially as Annie, shake and bake, or one pot), similar to the popularized Iowa narrative documented in *Methland* (Reding, 2010). Police enforcement and lab seizures were effective at disrupting local production in the mid-2000s, and as a result, the 'local' supply from 2011 onwards mostly comes from international drug cartels, especially from Mexico in the form of Ice, shards, or crystals (Drug Enforcement Administration, 2019; Copes et al., 2018).

Figure 16. *Methamphetamine Prevalence Rates Reported at Admission to Treatment in Iowa, by Historical Era*



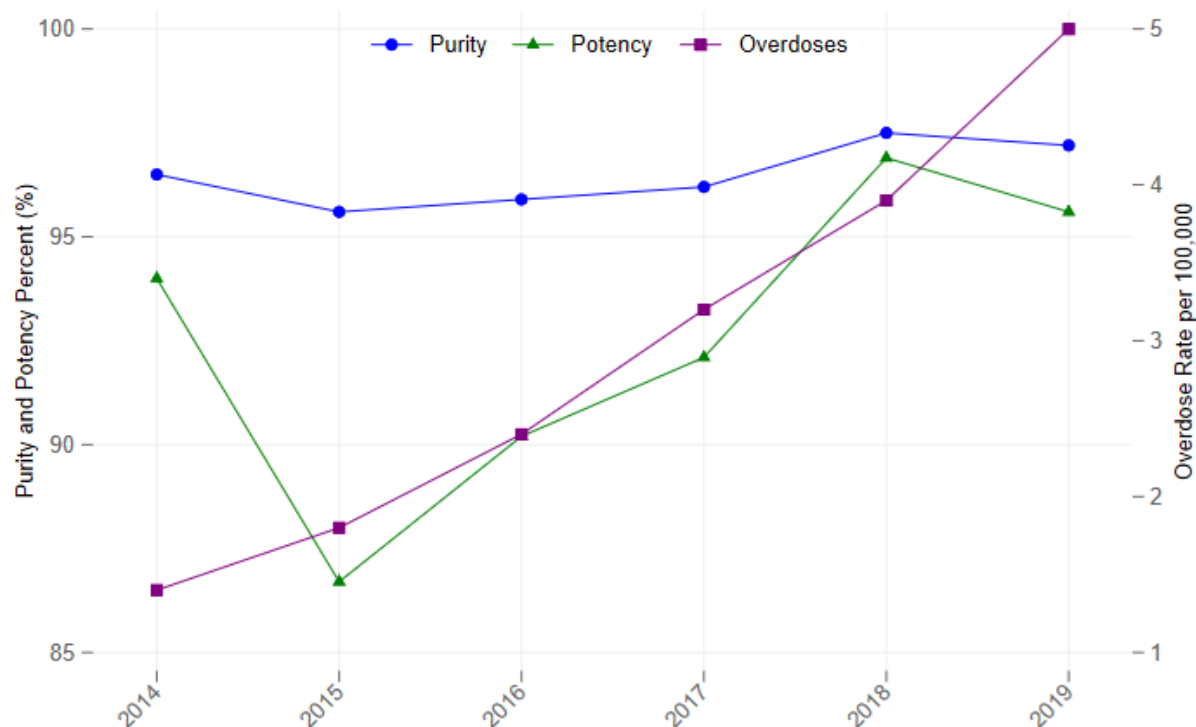
Note: Prior to the passage of the Combat Methamphetamine Epidemic Act (CMEA), the domestic methamphetamine supply was primarily produced in small clandestine laboratories across the country. The Transitional Period represents the period following the enactment of the CMEA when domestic methamphetamine laboratory production was disrupted and began to lose market share. International laboratories accounted for a growing, and ultimately majority, share of methamphetamine in the US after 2011.

Source: Treatment Episode Data Set (Admissions), 2000-2018



As production and distribution nationalized and globalized, methamphetamine became more pure, more potent, and more deadly (see Figure 17). As of 2019, purity stood at 97% and potency at just over 95%. Overdoses rose from just over one per 100,000 to five per 100,000, representing a five-fold increase.

Figure 17. *National Estimates of Methamphetamine Purity, Potency, and Overdose Rates*



Source: National Health Statistics, Vital Statistics Registry, 2014-2021. National Drug Threat Assessment, 2020

These national trends align with what is also happening in Iowa. People with lived experience and local treatment providers independently corroborated that about 5 years ago 'meth changed' and became more addictive and began to affect PWUM differently. People started having more negative side effects, including more psychosis and paranoia, shorter highs (lasting hours rather than multiple days), and stronger addictions. One woman shared:

I started using when I was 15 and I'm 41 now. And there wasn't really ever a time that I stopped using...The way [meth] affected me back when I was younger...it gave me energy and I, we, could go for road trips all night long, singing, music all that. It, like, it was fun...but the older I got, I noticed it did change only because when I used it, I ended up developing psychosis with it. You can definitely tell there was a chemical switch in it, um just the taste, the color...then it was more of a, like, a yellowy mush...and now it's just these clear crystals or shards. Um so, it's definitely, it's definitely become different.



A middle-aged man, in sharing his story of long-term use, similarly describing how methamphetamine has become more addicting:

Like 20 years ago I started with Annie—anhydrous meth—and I could quit it. And, but this Ice stuff, it's like it's more addicting, like they're putting something in it ...of course, the fentanyl, but a lot of people are adding heroin to it now...It's making it really, really, really hard to kick. I mean it's almost like crack, you know? Cuz I remember when I first started doing meth, you could, you could do a line and you're up for two or three days.

The new variant that combines methamphetamine with fentanyl, heroin, or other opioid is increasingly referred to as 'sleepy dope' because the additive cuts short the multi-day high (often to just several hours or a day) and induces lethargy and sleepiness. This also means that while methamphetamine is now cheaper and more potent (a fact that dealers we talked to said was a strategic business decision they made to increase profits), the user community ends up spending more time and money acquiring methamphetamine now than previously, owing to the substantially reduced duration of the high. Several people with lived experience made the comparison between the addictiveness of modern methamphetamine and crack cocaine, noting that in both cases the highs were short and required more regular use to achieve the same effects. The opioid additives increase its addictive potential and bring with it much more harmful withdrawal symptoms, both of which increase demand. It's a successful business model for distributors, but one with often devastating effects on individuals and families.

Along with the above noted chemical changes, methamphetamine is also being distributed in a greater variety of forms that enable more frequent and public use. One participant told us *"[Meth] is in vapes a lot cuz you can do that anywhere and not nobody's gonna know."* For pipe users, *"you don't have to worry about the cops finding your tin foil cuz you can just break a pipe on the ground... (and) you don't have to worry about all the noise you're making with the tin foil."* In line with recent reporting from the United States Drug Enforcement Administration (Drug Enforcement Administration, 2019), we also heard stories of methamphetamine appearing in pill form. In some of our lived experience focus groups, we heard mention of methamphetamine infused lollipops, the most discrete form to-date and aligned with drug seizures in other states.

Intravenous Rates on the Rise

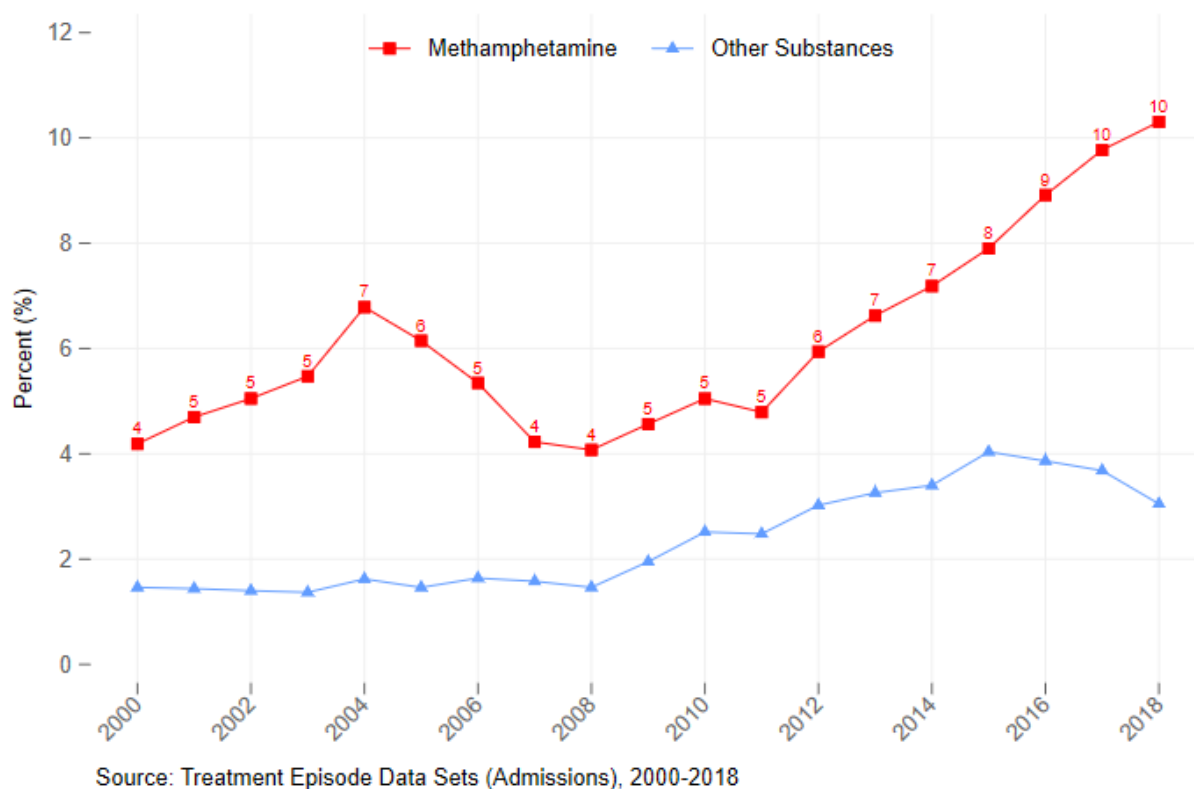
Beyond the chemical changes to methamphetamine, an emerging pattern of concern is the much higher rate of intravenous methamphetamine use in Iowa, compared to the national average (10% versus 5%, respectively) (authors' calculation; see Figure 18). Intravenous methamphetamine use is often associated with a greater number of harms, and according to our interviews with PWUM, typically signals an important turning point in their use, often coinciding with very harmful addiction. It has also been referred to as the 'ultimate high', far



exceeding the dopamine rush that can be achieved by other methods of use (Boeri et al., 2009).

The growth among some groups has been much more than others. Among those aged 50 and older, a 4% overall rise in intravenous methamphetamine use reflected a nearly 600% relative increase, which has been tied to greater need for surgical procedures, mechanical ventilation, and other intensive medical interventions (Benham et al., 2021). Previously established protective factors such as educational attainment or being married appear to have lost some effectiveness. At the same time, individuals who have a co-occurring mental health and substance use disorder are much more likely to use methamphetamine intravenously than those that do not. Most concerning has been growth of intravenous methamphetamine use among women who are pregnant. One in five pregnant women who enter treatment also report intravenous methamphetamine use. Methamphetamine use during pregnancy has been associated with decreased gestational ages and birth weights (Wright et al., 2015).

Figure 18. *Intravenous Drug Use at Admission to Treatment*



According to treatment admissions data, intravenous methamphetamine use is rising throughout the state, but is growing fastest in the Iowa City, Des Moines, and Waterloo metropolitan areas. For example, Cedar Rapids (Iowa City metropolitan area) had a nearly 120% annual rate change growth and Waterloo with a 94% annual rate change growth occurring



between 2000 and 2018. Smaller micropolitan areas also have reported large increases in intravenous methamphetamine use, including Fort Dodge, Mason City, Burlington, and Ottumwa.

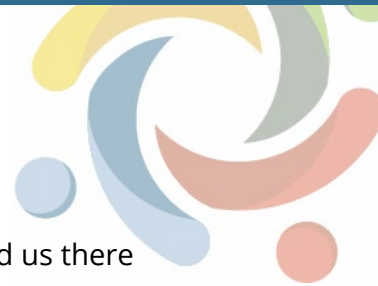
Intravenous substance use has been associated with serious health effects including infective endocarditis, hepatitis C, and HIV (Jarlais et al., 2012; Keeshin & Feinberg, 2016; Zibbell et al., 2015). In addition to these conditions, additional STIs such as syphilis have been associated with injection methamphetamine use (Kidd et al., 2013). The relationship between syphilis and injection methamphetamine use has been established in domestic and international settings and can be used to identify early outbreaks of methamphetamine use (Kidd et al., 2019; Liao et al., 2013). Needle exchange programs have been established as the most effective mitigation strategies available both domestically and internationally to reduce the impact of intravenous use (Ball, 2007; Vearrier, 2019; Wilson et al., 2015).

One final comment on method of use warrants discussion. In interviews with people who currently use methamphetamine who have been chronic users for many decades, we heard mention of ‘railing’ and ‘hot railing’. These are two slightly different ways to snort methamphetamine that have been associated with somewhat lower risks and harms than injection use. Hot railing may be a viable feature of harm reduction among IV users in Iowa because it still produces an especially strong, sudden high, but without some of the added risks of injection use. Further research is needed to assess the implications of such a strategy.

Changes in ‘Meth Culture’

In addition to its changing chemical composition, respondents shared stories of how methamphetamine *culture* has also changed as a result of the globalization of production and attendant changes in local distribution. Many of the people we spoke with described the “old school rules” that flowed from local production. These ‘rules’, which are more accurately described as a collection of norms, helped to govern and regulate who could buy, sell, and use methamphetamine, fostered norms of trust and reciprocity within the using community, and normalized myriad harm reduction strategies associated with chronic methamphetamine use. As told by someone whose partner had been their hometown ‘cooker’:

When I was younger, there was definite rules we had, where we didn’t let, we didn’t sell it to kids, we didn’t sell it to younger people. There was a, there was a standard, even the drug labs have standards [laughs]. And that’s not there anymore, that, it’s just everywhere. They don’t even care about who they give it to or sell it to, how young they are, how...It’s the, the, the drug culture is become, with, I’m not saying that getting away from the local person is a bad thing, but with that, the lack of control over who gets [meth], and how they get, and what stuff is there, has made it more dangerous and, more, it’s more accessible than it was before, and it’s cheaper. It is so cheap.



In the 1990s and early 2000s, when methamphetamine use was more common in rural areas and small communities with a single producer and supplier, people told us there were stronger norms governing distribution and use. One person described it this way:

When it was local and like there was a ... main cook in town... like he had his own rules and if you broke those, you know what I'm sayin', you were cut off and that was your supplier. And so, yeah, and now that just anybody and everybody is selling it, you know, no matter what you do, you can get it somewhere else.

The culture around trading valuables for methamphetamine has also changed, and not for the better. A mother we spoke with noted: *"People are selling, like pawning their kids' stuff, and back then—when there was actually a main cook—that stuff didn't happen... they would, you know, make sure your kids still had their stuff."*

Another middle-aged woman described how some of the old rules for methamphetamine sale and distribution that were enforced by local cooks were designed to reduce harm to PWUM, their families, the community, and the distributors too. Refusing to accept food stamps as payment, for example, was understood to ensure that methamphetamine sale did not come at direct cost to children's access to food:

Well, they [the dealers] were probably related to you, first of all [laughs], by some point, or at least where I came from, they were, you know. Uh, I mean drug culture can be messed up and love gets skewed and is not healthy love, but there is some real bond there that they're not going to sell you fentanyl. They're not going to take your kids' food stamps or maybe they're not gonna, ... take other people's stolen stuff because they don't want stolen stuff at their house cause they don't want to go to prison for you being stupid and bringing somebody's shit to their house.

The norms around children using methamphetamine were so strong historically, that several people described growing up in homes where methamphetamine was cooked and sold, but never having used themselves until they were no longer minors. When discussing his current parenting practices, one participant reflected on his own childhood: *"I was exposed to drugs as a kid growing up, right? I was sitting in the room with my mom and aunts and cousins as they were smoking and I would pass it for them, but I never partook until my mom left. But I would never expose my children to that whatsoever."*

Current norms around children were also noted, with several people describing their 'dealer parents' as encouraging them to seek treatment because their use was getting destructive. Nearly everyone we spoke to talked about hiding their own use from their children, and many shared that they never wanted their children to start down the path of methamphetamine use. To prevent this from happening, people generally took one of two approaches, they either openly talk with their children about their own use and try to 'scare them straight', or, they hide their use and try to keep their children from ever coming into contact with methamphetamine.



For the previous participant, he found that keeping drugs as far from his child as possible was the best route for himself and his family:

I never used in front of my child. He didn't even know what drugs are. Oh, he wasn't allowed in my room in case I drop something on the ground. He wasn't allowed in my bedroom. That's the one room that we ever did it in, was the bedroom. Just for the fact that, I don't want him to step on a little piece of shard, have open skin, and before he knows it, he's positive. You know, I- It's always the bedroom. And he wasn't allowed in. You know it sounds kind of mean cuz him and his mom were really close. But he wasn't allowed in my room. I said if you want to cuddle like you do, you take the living room or his bedroom. He's not allowed past my door. And he knew that rule.

Use and non-use norms extend beyond children and their parents to 'expecting parents'. Methamphetamine culture in Iowa has widely understood norms around methamphetamine use during pregnancy. One mother shared that she was careful with who she told about her recent pregnancy because she was afraid other people who use methamphetamine would limit her access: *"I was pregnant for, like, probably two months and was hiding it from people. You know I was very picky about who I chose to say that to cuz I didn't want to be known as the girl who's pregnant using meth cuz I didn't want them to stop sharing it with me."* Eventually she began to 'show' and her fear was realized. She described a group of people smoking methamphetamine together and the person next to her said: *"You're pregnant aren't ya? And I'm like yeah. And she's like, well okay, I'm going to pass it to the next person. And I was kinda like, uhuh, but...I'm grateful for that now."*

Although many of the harm-reductive features of 'old' methamphetamine culture appear to be in retreat as production globalizes, supply increases, and local dealers cede ground to a large number of new dealers, they are not altogether gone. Our interviews show that knowledge of the old norms is still prevalent, and based on our interactions, that they are still valued. Revisiting and expanding these sorts of norms (e.g. never sell to, or use in front of children, refuse to use during pregnancy or share with/sell to an expecting mother) can go a long way toward reducing methamphetamine harm.

Rising Polysubstance Use

Eighty-four percent of people who seek treatment for methamphetamine in Iowa report using a combination of substances. The intentional mixing of methamphetamine with other substances—either by consuming two or more substances at the same time or in rapid succession—is a long-standing public health concern known as polydrug, or polysubstance, use (Anglin et al., 2000). Between 2000 and 2018, methamphetamine related polysubstance use rose by 13%, igniting concern among local and state health officials.



Health experts characterize polysubstance use as a serious problem because it increases the likelihood of harmful substance use, including, overdose, dependence, withdrawal, and addiction for each drug consumed. Furthermore, combining substances can place a significant burden on one's cardiovascular and respiratory systems, leading to overdose, coma, cardiac complications, or even death (Vertava Health, 2021). One reason polysubstance use jeopardizes health is when people mix stimulants such as methamphetamine or cocaine (associated with increased alertness, attention, energy, and wakefulness) with depressants such as alcohol, opioids/heroin, or benzodiazepines (associated with euphoria, depression, sedation, and pain-relief), their brains and central nervous system are receiving conflicting, simultaneous messages that can tax the heart and create a false sense of stability whereby a person does not necessarily feel the effects of each of the drugs even though the body is working overtime to process them (Vertava Health, 2021). Likewise, when people use two or more stimulants, there is a significant burden on the heart and respiratory system that can be acute or have long-term and cumulative negative impacts on health (MedlinePlus, 2021). Because some drugs, like cannabis, are categorized as both stimulants and depressants depending on dosage and type, combining methamphetamine with cannabis can have mixed impact (Vertava Health, 2021).

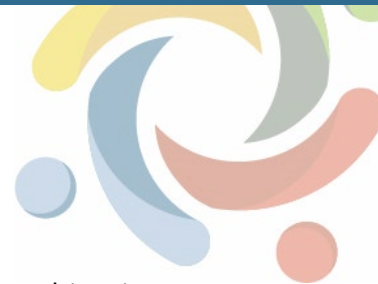
Across almost all of the polysubstance use patterns reported, Iowans who use methamphetamine tend to pair it with at least one depressant (e.g., alcohol, opioids, heroin, and benzodiazepines) (see Table 1). Rarely, is methamphetamine paired with only other stimulants (e.g., cocaine). In particular, people who report methamphetamine as their primary substance at admission to treatment were nearly four times more likely to report also using cannabis and two times more likely to report also using alcohol or heroin (Wang et al., 2017).

Table 1. *Top Ten Most Frequent Methamphetamine-Related Substance Use Patterns at Admission to Treatment in Iowa*

Rank	Substance Use Pattern	Frequency	Percent	Cumulative Percent	Absolute Change	Relative Change
1	Alcohol, Cannabis, Methamphetamines	54,605	35.1	35.1	-18.2	-75.6
2	Cannabis, Methamphetamines	30,943	19.9	55.0	5.9	24.3
3	Methamphetamines	24,591	15.8	70.9	7.7	36.6
4	Alcohol, Methamphetamines	17,550	11.3	82.1	1.0	9.7
5	Cannabis, Cocaine, Methamphetamines	5,406	3.5	85.6	-4.6	-242.6
6	Alcohol, Methamphetamines, Cocaine	4,954	3.2	88.8	-3.1	-212.9
7	Cannabis, Methamphetamines, Opiates	3,354	2.2	91.0	2.6	88.0
8	Methamphetamines, Opiates	2,032	1.3	92.3	1.8	89.8
9	Methamphetamines, Cocaine	1,794	1.2	93.4	-0.7	-84.3
10	Alcohol, Methamphetamines, Opiates	1,749	1.1	94.6	1.7	97.2

Notes: Data are calculated from sub1, sub2, and sub3 variables. Substance use patterns were calculated based on co-occurrence of each combination, regardless of the order of client preference.

Source: Treatment Episode Data Sets (Admissions) 2000-2018

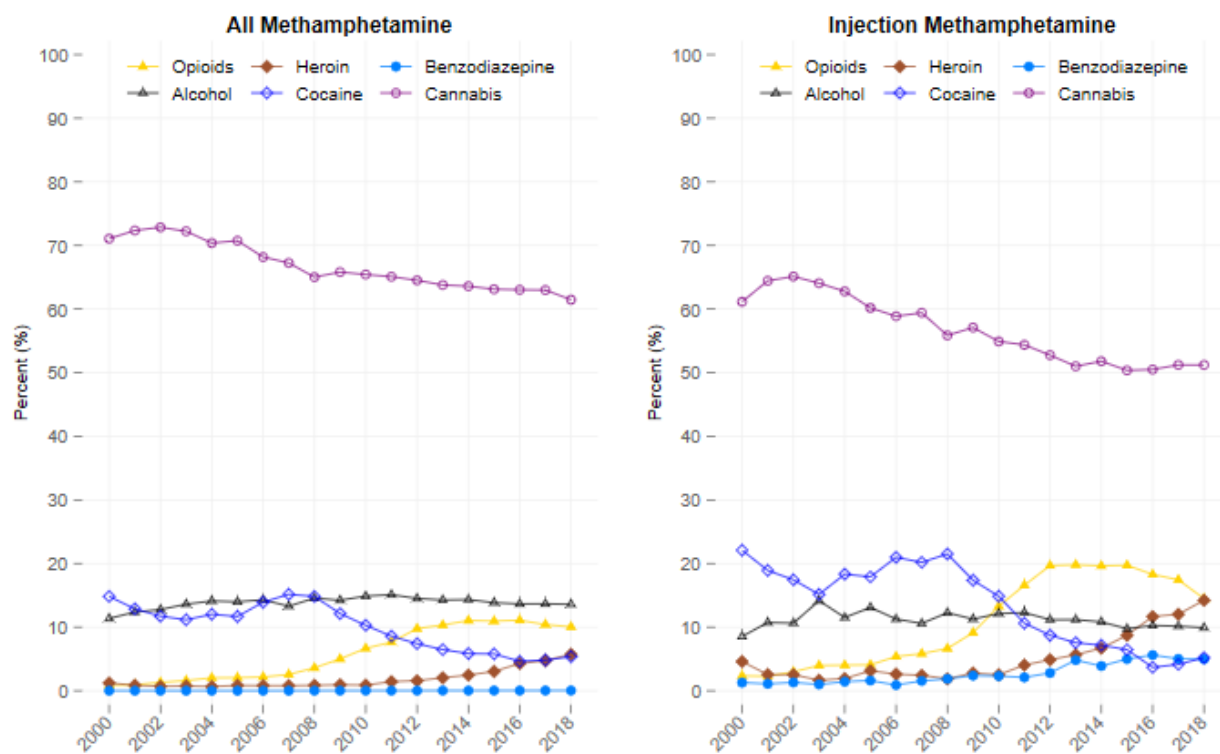


As noted in the table above, **four substances account for roughly 80% of all methamphetamine related polysubstance use in Iowa from 2000 to 2018: alcohol, cannabis, cocaine, and opioids.**

Sixty percent of all methamphetamine combinations include cannabis, 50% include alcohol, and the three-way combination of alcohol, cannabis, and methamphetamine was reported by 35% of all people entering treatment. This 'triple-threat' of methamphetamine, cannabis and alcohol was also repeatedly mentioned in focus groups with treatment providers. One provider noted: *"it's pretty rare when [patients] only use methamphetamine...typically they use something previously, if that was alcohol, if that was marijuana, if that was whatever."* Another provider speculated that the legalization of cannabis in some Midwestern states was driving up polysubstance use in Iowa:

I would say the [other substance used with methamphetamine] is marijuana, whereas it used to be, maybe alcohol. And we're still getting a few alcohol folks in randomly, but most of our gals, their secondary is marijuana, and I think that's just because of the accessibility of that drug.

Figure 19. Co-Occurring Substance Use Rates among PWUM Entering Treatment in Iowa



Source: Treatment Episode Data Set (Admissions), 2000-2018



From 2000 to 2018, **cocaine-methamphetamine combinations saw the largest relative declines** among the top 10 patterns (Figure 19, left panel). Though small in absolute occurrence, methamphetamine cases involving **opioids had the largest relative increase**, doubling from 5 to 10% between 2008 and 2013, and then holding steady at about 10% for the rest of the decade. Additionally, the prevalence of polysubstance use involving heroin and methamphetamine rose considerably during the same period from less than 1% to nearly 6%.

We spoke with providers of treatment services, people with lived experience and harm reduction advocates to better understand what was driving the high levels of methamphetamine and cannabis combinations. We heard a consistent explanation for the patterns reported in Figure 19: **the combination of cannabis and methamphetamine is viewed by PWUM as a harm reduction strategy to mitigate the negative impact of “coming down” from a methamphetamine high.** In particular, people with lived experience told us they use cannabis to lessen the anxiety and paranoia that are common side effects from using methamphetamine. We reached out to harm reduction advocacy groups in Iowa to get a better understanding of this practice. Advocates of harm reduction acknowledged awareness of this polysubstance use practice, and voiced support for using cannabis to reduce psychological harm associated with methamphetamine use, particularly among people with co-occurring methamphetamine and mental health disorders who were reluctant to seek professional treatment. Although this practice is not approved by the Iowa Department of Public Health, Bureau of Substance Abuse as a harm reduction strategy, it appears to be widely believed and practiced by many methamphetamine users in Iowa. More work is needed to understand the efficacy and long-term impacts of this developing approach.

In contrast to the high rates of co-occurring methamphetamine and cannabis use, the prevalence of polysubstance use involving methamphetamine and cocaine, heroin, other opioids is more variable, with cocaine and heroin about equal in their co-occurrence with methamphetamine, at roughly 15% of the total cases. It should be noted that there was a *decline* in the share of PWUM reporting opioid use starting in 2016 while there was a concurrent *rise* in heroin use, indicating that although opioid and heroin levels are relatively similar, they are moving in different directions.

There are many possible reasons why most opioid-methamphetamine combinations have been in decline while heroin-methamphetamine combinations are on the rise among people who inject methamphetamine. Academics have suggested that this change may reflect the reduced availability of prescription opioids resulting from the attention received by the opioid epidemic and the increased use of heroin as a readily available alternative (Mars et al., 2014). Alternately, people with lived experience told us that methamphetamine was a useful tool for curbing opioid withdrawal symptoms:



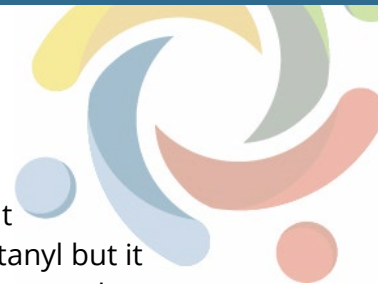
I tried meth for the first time when I was about twenty-two...and I, I liked it, but not as much as I liked opiates. But the one thing I noticed was that if I would do a whole bunch of meth, my opiate withdrawals would pretty much go away. Like I would still want opiates, but I wouldn't feel the withdrawal. You know what I mean? Opiate withdrawals are horrible. It's like the flu times ten. They're just horrible to put up with. Um, so that was my biggest drive to start doing meth.

A third explanation for the increase in methamphetamine and heroin combinations was noted by treatment providers who shared that risky polysubstance use might flow from heroin to methamphetamine (and vice versa) among people who used substances intravenously. Several treatment providers reflected on conversations they had with patients who had a history of using both intravenous heroin and methamphetamine. They reported that some intravenous methamphetamine use was initiated because it was easier for the person to access methamphetamine than heroin. One provider shared: *"With people who use needles, I've had patients tell me that they use meth when they can't find heroin because meth is easy to find and you know, the needle is almost as much of the addiction as the substances."* Another treatment provider described the opposite chain of events: *"It seemed like what I would work with the patient that was an IV drug user or very heavily involved with methamphetamine, if they were not able to get that for anytime they would use heroin."* Whether the intravenous methamphetamine use begins or ends with heroin, this polysubstance use pattern calls for close monitoring, given its association with a high rate of injectable use, communicable disease transmission, and mortality risk.

Unintentional Polysubstance Use

Thus far, we have focused our polysubstance use on the intentional mixing of methamphetamine with other substances. However, the lacing of methamphetamine with fentanyl, bath salts, heroin or other drugs has been reported by people with lived experience and treatment providers as a largely involuntary and concerning trend. According to self-reports among people entering treatment programs in Iowa and the providers who oversee their treatment, unintentional polysubstance use was unwanted, dangerous, and scary. One local treatment provider shared *"a lot of our patients come in positive for meth and fentanyl, so their meth has fentanyl in it. Just a little bit, but it's there, and it scares patients."* One PWUM shared: *"You can still get it just everywhere like you could before. Only, there's...dangers to what you're getting in it, whether it's fentanyl, to whether it's meth, whether it's bath salts."* Another person described, *"Now with the opiate epidemic going on, they're adding the fentanyl to [meth], even heroin. I've had stuff that's had heroin in it before. Didn't realize it till after I did it."*

Treatment providers describe how methamphetamine laced with fentanyl has become especially common in the urine tests conducted at the time of treatment admission, and this trend was confirmed through reports to the National Forensic Laboratory Information System (NLFIS) and by academics who study this topic (Nolan et al., 2019). In 2015, fentanyl and



fentanyl analogues started appearing in the domestic methamphetamine supply. It is unknown what share of the methamphetamine supply has been mixed with fentanyl but it may be tied to increasing overdose rates. One study found that nearly 10% of urine samples that tested positive for methamphetamine also had a positive fentanyl test (LaRue et al., 2019).

Researchers suggest that increasing shares of methamphetamine laced with fentanyl might be due to deliberate contamination of drug trafficking organizations to create greater dependence on the combination drug without the knowledge of the end consumer (Nolan et al., 2019). However, scholars note that it is also likely that some users may be actively seeking out the drug combination for the combined effects of a depressant and a stimulant, even though the risk of overdose is particularly heightened among stimulant users without a previously established opioid tolerance (Nolan et al., 2019).

We asked several **methamphetamine dealers** in Iowa why they thought methamphetamine in Iowa is being cut with other drugs at such high rates. We were told that methamphetamine arriving from Mexico was relatively pure, but cutting it with fentanyl can nearly triple profits. As such, many dealers saw this as an easy way to improve revenue. One dealer explained it this way:

Fentanyl is super cheap on the streets. Like, you can get a kilo for way less than you can get a half pound of dope. And then you [add] that [fentanyl] into what you're already getting for Ice, and you're melting it down and you're rocking it into, you know, a street bag, and you're making, probably 275% cash flow.

But not every dealer cuts methamphetamine for profit. One middle-aged father we spoke with has been actively selling methamphetamine for over twenty years and refused to add fentanyl or heroin to his product out of a self-described sense of responsibility to his customers. Speaking of his peers, he said: *"They all make me mad. Because, um, meth, it's going to destroy your life but it, it's not going to kill you. You still have tomorrow. Unlike heroin, fentanyl, you may not have an hour from now, you know, and we shouldn't be out there, trying to kill each other."*

Interestingly, none of the people we spoke with talked about intentionally buying fentanyl or heroin laced methamphetamine. Instead, many expressed concerns about their being fentanyl in their drugs and stated that if they had access to test strips, they would use them to be more safe and reduce the chances of an overdose. Beyond the fear of overdose, many people described not liking the way the combination changed the methamphetamine-using experience.

In the narratives described above and in unreported comments from people we interviewed, fentanyl-laced methamphetamine was viewed as a serious concern. People indicated that this new mix appeared about five years ago, or around 2015-2016, and that it has become more common over that time. Put differently, people we talked to indicate that while methamphetamine is "everywhere" and "easy to get", finding it unmixed, without opioid-class



additives such as fentanyl or heroin, is becoming harder. Our analysis of National Forensic Laboratory Information System data for Iowa (NFLIS), supports the stories we heard. The prevalence of methamphetamine in lab tests has been rising since at least 2011, but much more so since 2016, and now constitutes the most common substance in Iowa lab tests. Prior to 2015 there were no documented cases of fentanyl in crime lab tests. Fentanyl prevalence has increased every year since.

Drivers of Polysubstance Use

A major driver of intentional polysubstance use was **party settings** where substances were widely available. In interviews with PWUM, some respondents expressed a desire to “*try almost everything*”. People described mixing barbiturates, cannabis, and alcohol with their methamphetamine to improve their party experience or to satisfy curiosity:

I think a lot of it for me, was, I was drinking a lot. So like you know at parties or something. They bring it so I wouldn't be so drunk. So I'd wake up and then I'm like, okay I like this stuff and try it by itself, it was more. It was like better. So, I don't know. For me a lot of my drug experience was like curiosity and just partying.

While some people used more than one drug simultaneously to improve the party experience, others used multiple drugs at the same time to **modify or mitigate the impacts** of their primary drug. Several PWUM described creating cocktails of three or more drugs in order to get high, fall asleep, avoid negative feelings or anxiety, and curb aches and pains associated with coming down from the stimulant high:

Respondent A: Like if I was doing meth I mean I'd smoke weed. Everything, I would do everything all together, like, whatever I can find, whatever was around. I do it. Um, coke, crack. I mean at the end there I was like smoking crack, doing heroin and meth together. So it was just like you know, I just wanted, I didn't want to be sober, clearly. But yeah it was just to **counteract how I was feeling in the moment** too, like if I need to go to sleep I had to smoke all kinds of weed, drink so that I could go to sleep or if I needed to wake up I had to smoke meth to wake up.

Respondent B: Yeah, smoked weed, meth. Every once in a while I would come down real hard, you know, take a Xanax [benzodiazepine], doing just, put me right back to sleep so I didn't have to **deal with the aches and tiredness** of coming down.

Respondent C: I mean I kind of fell into the, like the speedball, meth-heroin thing. I got, it sounds really unhealthy cuz it is, but, uh, that was my thing. And then, uh, drinking too, for sure. And then I feel like I'm a pretty anxious person. So whenever I do meth, I have to have like a benzo or some type of **balance me out**, so that didn't go very well for me. But um, that was my thing.



Respondents whose primary substance was something other than methamphetamine sometimes mixed substances to mitigate the painful effects of **withdrawal from other drugs**. The relative increase among people who use heroin and methamphetamine together may be driven by increases in heroin use across Iowa, which in turn increases methamphetamine use:

My alcohol withdrawals were way worse than meth withdrawals and I'm prescribed Xanax [benzodiazepine] too so that kind of sucked. They wouldn't let me have my medication or anything like that but yeah I, uh, every day for a year and a half... I would drink and then I would do drugs. If I got too high, I would have to drink to bring me down and then I would get high.

Polysubstance Use and Recovery

Increasingly frequent experiences of polysubstance use make traditional abstinence focused treatment and recovery programs complicated. One treatment provider indicated how newer ideas surrounding harm reduction were difficult to translate between generations:

The **harm reduction's kind of new concept for our field**, it's not new to many of us as practitioners. We just had to comply with the agency's expectations or guidelines over the years by, you know, noting what was success and what wasn't success. But we knew as you all, every, clinician carries their own, we call it flair. You know, you have your own way of managing and doing things, but it was abstinence or nothing. I mean, there was not talk about harm reduction. And the meth use is what, that and opioid is really changing, that's what started this starting. We need to be talking about if a person is going to come in and **what would that look like if we did harm reduction with such an addictive substance. And then you throw marijuana in there**, and that just blew us, we don't know where we stand on it. But in terms of harm reduction in a treatment setting for meth use that one, still going to be a really tricky thing for me, because **I just don't see yet safe limits on when you can and cannot use** just based on the population. Like I talked about people, working heavy equipment, driving, moms and kids, dads with kids. I'm just not sure where I stand, but I'm so old school. That's why I'm so glad [name of another participant] is on with me because she brings some new, different, young, fresh perspective.

But to me, but harm reduction in working with youth for the full 20 you know, some of years that I did before it, that's truly what the agency said, **abstinence, that was my goal**. It's always what I hoped for, but we did harm reduction for a hundred years before that because kids are not ready to say forever, I'm never going to forever do this. And so, **we had to come up with some very creative ways that we did off the record for a lot of the years, because it wasn't appropriate to be documenting**, that you would encourage the kids. You drink responsibly, call an Uber. If you're going to smoke



marijuana what risks that might be or mean to you. **To even talk about it was a big no-no. But I'm not sure, honestly as a clinician right now, how to have these conversations about harm reduction with methamphetamine.**

Opioid I'm getting better, with that reality and how it's gonna work. It probably shouldn't be a lot different but for some reason **I'm just not there yet.**

Respondents who used methamphetamine also shared conflicting perspectives on using cannabis or alcohol while in recovery. One respondent, who had used methamphetamine between ages 17 and 19 and then quit, shared his desire to continue to use cannabis:

I'll probably smoke [weed] the next chance I get. But like, I shouldn't because it's illegal, but I mean like, man it just like ... I worry a lot, and like yeah, they say like, "You can go get these pills [to deal with anxiety]." But like, I don't know, pills don't, don't sound appealing to me. So like, I don't know, I just focus a lot better, like when I relax and I'm a little stoned and I don't worry as much.

Others shared this sense, indicating that while they used methamphetamine in the past, they would continue to drink alcohol socially. *"I think that's something that a lot of us don't know how to [do] that balance. Because we can't have a drink and not get hammered. Some people can do that. Because of a lot of us here, we, we don't know how to have moderation and control our drug problem."*

Gendered Drivers of Use

When people with lived experience were asked: *"What's the appeal of meth?"*, we heard a range of responses including body image management, productivity, pleasure, and the ability to numb pain. As each answer was given in focus groups, other respondents called out *"yes"*, *"that's true"*, and *"for sure,"* enthusiastically affirming common motivations. These same motivations were reiterated in extended interviews as well as discussions with treatment providers. Although these common drivers were described by both men and women, the motivations underlying each often differed depending on the lived experience, life stage, and gendered norms and expectations of the speaker. The treatment providers we spoke with affirmed that motivations for use are often gendered in nature, even if men and women describe using for similar reasons. For example, weight loss was cited as a motivation to use methamphetamine, but *only* among the women we spoke with, and there was nearly universal agreement that methamphetamine helped women to maintain or lose weight and improve self-esteem. However, the men we interviewed did not identify image management as a rationale for use, but rather described how methamphetamine use negatively impacted their appearance and self-perception. Conversely, men and women alike describe using methamphetamine for pleasure, either seeking a high or the purpose of having sex while under



the influence. Similarly, men and women both report using methamphetamine to increase productivity, or to numb the effects of physical pain and trauma. We explore each of these drivers in more detail below.

Driver #1: Body Image

Interviewer: Think about all the drugs that you have used or known other people to use, what's the worst drug?

Respondent: In my whole life? Probably food. Yeah, that's what I was most traumatized by in my life before drugs. Because I was obese, and it caused me a lot of problems... and it made me feel very unloved, and, and um, that's why—part of why—I have to have a hard time with walking away from meth. Because I got pregnant and I'm gaining all of this weight and I'm like, "I'm not going to be sober and fat at the same time!" It's not fair. And so I do have some apprehensive feelings about leaving it [meth].

Many of the **women we spoke with talked about methamphetamine as a miracle drug for weight loss** that helped them look nice and meet societal expectations of feminine beauty. When discussing why so many women and mothers used methamphetamine, we were told: *"You know, the woman has to look nice. Or there's a lot of pressure on women to look nice, to impress. [Second woman: To do everything.] So yeah, I think that's a good [reason for using]."* A third woman shared that she lost nearly one hundred pounds as a methamphetamine user, going from *"obese to wearing a size zero"* with almost no effort. A fourth added she never felt more confident then when she was using meth:

You think everything looks better when you're on meth. Everything, every person ever—even yourself in the mirror. Cuz I was always, God, **I've never felt so beautiful in my life**, but according to everybody else, I didn't look that great. [laughs] But I really thought that I did, and I had a false sense of confidence about that.

One woman described the phenomenon of meth-inspired confidence as **"meth goggles"** which helped you to feel beautiful, even if other people were concerned about your appearance. A mother shared how people treated her better after she lost weight, and it was only during treatment that she began to see the toll on her body:

I feel like to maintain my weight, [meth] was the only thing that ever worked my whole life cause I always been bigger, and nothing works. I had tried meth and I was like, "Holy shit, pounds are just dropping off"... I thought at the time I looked good because I never had been skinny. And then I got skinny and was like "Wow this is awesome, I can fit in little clothes! I feel like I'm skinny people! People like me!" And then I got off the road and I realized, you know what? I don't even have tits. I don't have an ass. [Laughter] Sorry. But I mean, it was like, I was too skinny, and it started, like my skin was gray and it's, **you**



don't see that when you're using, because I don't know why. I don't know why you don't see that when you're using, maybe because you just look past all that.

For many of the women we met, being thin was a way to boost their self-esteem, attract men, and potentially find a partner with whom they could trade sex for drugs or housing:

I lost seventy-five pounds when I started using meth. I always thought that I would be huge, and I always thought that no dude would ever love me. So, then I got with some guy, and I lost 75 pounds and I felt so much better about myself and I would get like all of this attention from dudes and I didn't really realize how much that was affecting me like to, to keep doing it [using meth]. Because I'm like well, now that I'm thinner, I felt, I mean, it did make me feel kind of more normal. I felt like I wasn't like outcasted as being an obese person anymore. And, and, um, **if I didn't stay thin... then I wouldn't have the access to all these dudes** who were like, I needed a place to stay all the time. And if I was bigger, I don't think that would have happened as easily.

Significantly, most of the women we visited in the treatment facilities told us that 'getting clean' caused them to gain weight. One mother shared: *"I really got what I used to call the **dope diet**. I didn't feel like I really lost weight until coming to treatment and now none of my clothes fit, and my stomach's hanging and now, I'm more conscious of my weight than ever."* This weight gain and the subsequent body image issues were described as triggers for future use:

The downfall is, is when you do get sober, and you do start eating again then you gain it all back and gain it back fast and ten times harder. And then there's that, there's that **trigger for women** that, "Well if I just go do a little bit of the meth, guess what, I'll lose some more weight and then I won't feel this heavy weight on me, this fat" ... I mean you could literally go smoke a little bit, **do a little bit of meth and you look like a goddess**, you know. Your hair's perfect, your make-up is perfect, and maybe it's not, but to you it is. And it **boosts your self-esteem**.

Another woman shared a story of weight-related relapse, and how she was trying to address her weight with exercise during her new treatment program. She found a connection between substance use treatment and physical fitness and hoped combining the two would lead to sustained abstinence.

I've struggled with weight my whole life, and so, meth helped me a lot with that. I was 212 pounds the first time I ever tried meth and I went down to 130 pounds in like four months. Yeah, and I thought I looked fantastic... I wanted to keep losing weight. You know, the first time I went to treatment, inpatient treatment...and then when I started gaining weight again, it was like that was a huge trigger for me. [She relapsed and is now in another treatment program]. So, I mean, it's been a struggle, but now, I'm in the gym, every single, like, every night I can, when I'm not working. It's been amazing for me to



work on my body and going to gym for the first time ever. Because it's always been something that caused me to go back to dope.

Notably, the appeal of methamphetamine to improve one's body image was never mentioned by any of the men we interviewed. Though it may be an important driver for some men, this was not reflected in the stories men shared during our extended interviews and focus groups. Some men even reported feeling worse about themselves and their appearance while using methamphetamine: *"I feel like meth always made me feel like shit about myself. It wasn't like I'm gonna do meth and get sexy. [laughter] No I, it makes you look ugly, like aged twenty years."*

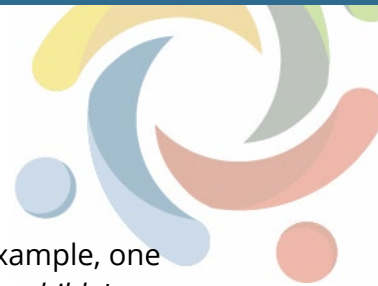
Driver #2: Productivity

Provider: Other reports that I get from...the workers are [meth is] really readily available at the job site. Even the foremen or the supervisors...People have been asking, "But don't we drug test because we're running heavy equipment?" And we've asked the same, like, these used to be jobs that you would think, like, that's quite dangerous driving and using heavy equipment. They say, they don't drug test anymore now either because too many of their employees would test positive.

Among former and methamphetamine users of all genders, many reported using methamphetamine to meet the high demands of their job. Others reported being introduced to methamphetamine at a job site, and developing their addiction within the context of their colleagues and peer group. Treatment providers shared stories of methamphetamine use starting as a rational plan for workers, including seasonal workers, who believe they can 'quit' when job demands change:

Their plan is, **their plan is to use [meth] and work as many hours out of the day as they can and make as much money as they can.** And then I believe they're thinking then in the off season not only would they stop doing that intensive labor, but they're under the misconception that then they'll to stop using [meth] probably at that time too.

Some people are looking for more energy to make it through their long shifts, while others are parents trying to manage a household. One provider noted: *"Like for parents, I've heard kind of the same thing. It gives me the energy to get the things done that I need to because without it, I may lack the motivation, or I don't get as much done as I would when I use."* For some the display of productivity was a key reason for their usage. One woman with lived experience described how her need to appear productive was learned as a child: *"I'm a pretty high functioning addict. I keep a job; I keep a home... **I was taught growing up if you look right, you don't really have to be right, as long as you look right.**"* The pressure to 'look right', have a clean house, hold down a job, be an excellent parent, and maintain high energy can cause people toward methamphetamine use: *"I mean we're trying to raise kids, sometimes work too, and for energy to get through the day of working, and then coming home and taking care of household, you know. I think that has a lot to do with it."*



Although it may seem contradictory to outside observers, many of the women we spoke with told us methamphetamine helped them feel like better mothers. For example, one woman shared: *"I just felt like meth helped me be a **supermom**. Instead of avoiding the child, I was like 'let's get the shoes shined up, let's get things done, let's do the dishes.'*" Another woman recalled telling a social worker that she was "still put together" even though she was "high on meth": *"I get up every day. We have a routine. My house is clean. I'm clean. My kids are clean. My kids are happy. We go places. We do stuff."* After working through treatment, she no longer agreed with her initial assessment: *"I was ashamed of myself for saying that anything was put together while I was high on meth, because you're not."*

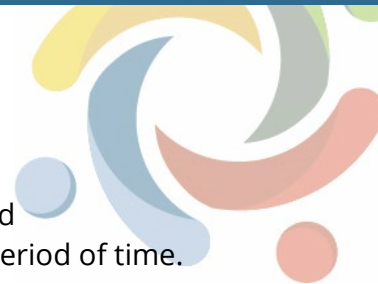
For women who use methamphetamine as a productivity boost, the efforts needed for successful recovery can seem even more daunting. Their daily demands—once were supported by meth-induced energy—remain a challenge, but now they must learn how to do everything they did before plus their treatment regime without chemical help. This can be overwhelming, according to a treatment provider we spoke with:

We see a lot of like **single moms** now coming in that are, you know, methamphetamine users. If you think about all the normal stuff we have on a daily basis, we have bills, we have our house to keep, we have XYZ. On top of that, you got a kid or more. And then on top of that, you have your addiction, and or your recovery. That's all, you know, never-ending stuff, it's a 365 day a year job essentially. So, it's just that much more that's piled on top of them? In addition, in addition to making amends, you know with their family members, and that type of stuff is just it's a lot to deal with.

The desire for productivity extends beyond motherhood. Among participants of all genders, reports of a lack of energy are considered common. When participants of one focus group were asked why they used meth, the entire group agreed that overcoming fatigue was one of the strongest motivations for use. One male participant explained the relationship between energy and methamphetamine made it difficult for him stop using, and was the cause of a series of **relapses**, *"Like, with my past relapses, I noticed I just got kind of tired, and I was like, alright how can I kinda compensate for my lack of energy so I think that's for me, anyways."* For him, using methamphetamine was a way to generally gain more energy and get through the day, and treatment had not yet provided him a counter to meet this need. As long as meth is the 'thing' that keeps him productive, he fears a relapse will always be on the horizon.

Driver #3: Pleasure

Many people who use methamphetamine cite the powerful and pleasurable highs as a primary reason for using. Since methamphetamine is a stimulant, it facilitates the release of norepinephrine and dopamine through nerve terminals while also blocking reuptake. This causes an increase in dopamine and norepinephrine levels with the goal of increased alertness and energy, elevated mood, and decreased appetite (Gonzales, R., et al., 2010). With these



effects, methamphetamine can be widely used to heighten feelings of pleasure and allow a person to participate in energetic activities, such as partying, for a longer period of time.

There are many forms of pleasure that can be derived from methamphetamine use. For some, the thrill of using it socially with friends was enough of a reason, *"I was just a party girl, so I just partied whatever came with it, I did."* For others, the thrill of the effects that can occur during use, even when alone, attracted them to the drug: *"I liked to get twisted. I like to hear voices, see things. That's how I know I was high. Seeing things, going nuts. One line of that will wake you up and make you twist."*

In these situations, the motivation behind using methamphetamine was not claimed to be a deeper, more nuanced issue—although those very well could be underlying motivations—the thrill of the methamphetamine on its own is enough to give some people reason to use. Whether that be through partying or the effects of the drug, methamphetamine has a dangerous driving force of pleasure. We asked focus group participants if they thought decriminalization might curb methamphetamine use (given their insights into 'thrill seeking' as a rationale for use). In response we heard: *"If you could take the thrill out of it alone that would help. You know what I'm saying? If **some people just like it for the thrill, the excitement, the danger of it all.** So, if you take that out, you're going to take some people out of it."*

Beyond the partying and thrill seeking, the most common methamphetamine-related pleasure reported was more appealing sex for men and women. This powerful feature of the drug was a significant reason for relapse as well as initiation. For one male participant with a history of methamphetamine use, he said that sex was *"what keeps drawing me back to it [methamphetamine],"* later continuing to describe the experience as *"it's almost, almost spiritual."* The participant told a story about maintaining sobriety after falling in love with his romantic partner, but found that the connection between methamphetamine and sex ultimately caused him to relapse following an extended period of sobriety. Although he is in treatment, he worries that the high he experiences during sex may still pull him back into use in the future. In a separate focus group, another participant echoed a similar sentiment regarding sex: *"Well my ex and I did it for sex, to like help. And then when we didn't do it, it was like, gross, get away from me."* Another female respondent shared that her methamphetamine use was closely connected with sex, and that sex became a trigger for use once she became sober: *"So, once I had sex a few times while I was high and there was like a huge, huge, huge connection between the two. And yeah, kind of hard to like, **sex became a trigger for me whenever I was trying to get sober.**"* The connection between methamphetamine use and sex was so strong, that several women advised that you should never do methamphetamine around a person you don't intend to sleep with, *"If you shoot dope, like **I wouldn't be around somebody that I didn't want to do it with.**"*

This advice is particularly relevant when methamphetamine is used intravenously, also known as 'banging'. One woman shared: *"Because **if you're banging it, you're getting horny.** That's what I mean. It hits the area first, warms it up and all. [laughter] I mean, and that's it."* Another added:



*"Well, it wasn't a primary driver for me, but it was when I was with the boyfriend. Anytime that we would bang together [intravenous use] we would be banging in 5 minutes [having sex]. So, it was almost like a routine. **If we shot dope together, we were having sex right after.**"*

The connection between methamphetamine use and risky sex may be a growing concern for public health, as there has been both a 19% overall increase (80% relative increase) in methamphetamine use between 2000-2018 and a 119% relative increase in intravenous use over the same period. Further, the type of sex most likely engaged in as part of the methamphetamine high is reported as being less protected and with a larger variety of partners. One focus group participant described his own experience with unprotected sex over his years of use, *"I'm 47 years old and **I've never wrapped it.** And I slept with a lot [of people]."* Then, several other participants in a separate focus group shared a similar experience. One told us, *"I think, when you're high on meth with it, when it comes to risky sex, you just **feel that you're untouchable** and it's not going to happen to you, and so you're not going to take precautions."* Another said: *"Your boyfriend can **last a lot longer.**"* A fourth added: *"You kinda just have this **carefree attitude**, like who cares?"* This idea was expounded upon by a fifth participant:

You're usually in relationships with people that are kind of untrustworthy or you're unsure of, cause when you're both using you're both in environments where sex and drugs are easily [accessible]. Yeah, and I didn't trust my boyfriend, and I know he was cheating on me, and I was like, I came in here and I was like, I'm going to the doctor. So, if I find anything out [that she has an STD], I'm gonna be mad, but that's the reality of a lot of it. **There's a lot of cheating and shady stuff that goes on."**

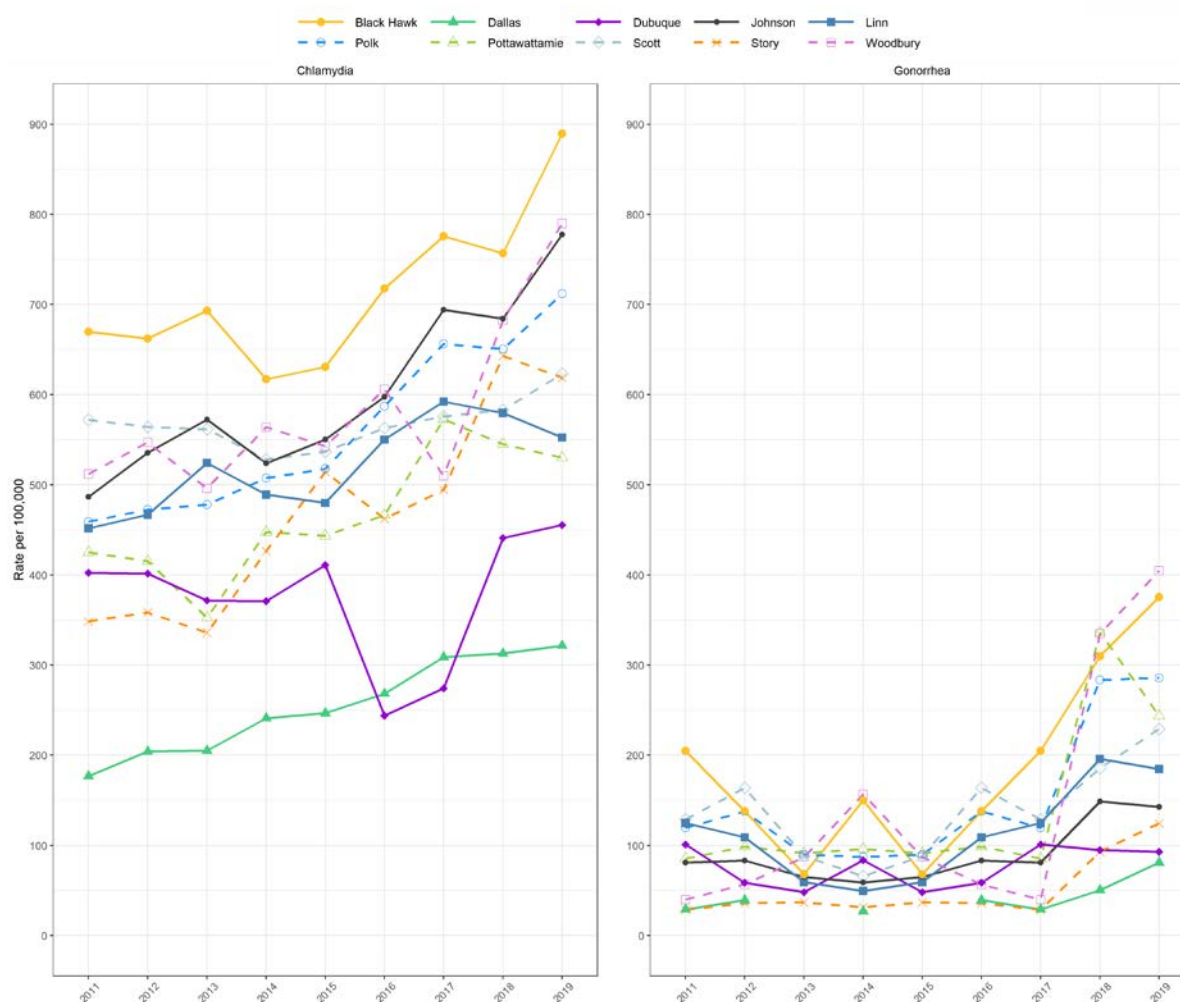
Other respondents shared that methamphetamine makes them less concerned about consequences of unprotected sex, even though rates are on the rise.

It's just like **getting caught up in the moment** and not having the foresight to think, you know, about the STDs or the consequences, the pregnancies, whatever. Or maybe the, **"it won't happen to me attitude."** Or just not even, it not even being a thought you know, until they're faced with that consequence.

Analysis of county-level data on sexually transmitted infections, or STIs, show that STIs are on the rise in Iowa's largest counties (see Figure 20). These are much the same places where methamphetamine rates are also rising. In the following figures, we report trends for the 10 largest counties in Iowa, where more than half of its people live. STI rates are rising in all 10 counties, led by an especially high chlamydia rate in Blackhawk County and gonorrhea rate in Woodbury County. The highest STI rates are in Iowa's most populous counties. These are much the same places where methamphetamine rates are also rising and align with the strong and consistent messaging we heard about risky sex. We recommend the Department of Public Health increase attention to STI prevention and treatment among PWUM and facilitate closer coordination between Iowa's Bureaus of HIV/Hepatitis C and Substance Abuse.



Figure 20. Sexually Transmitted Infection Rates in Iowa's Ten Largest Counties in Iowa



Driver #4: Numb Mental, Physical, and Emotional Pain

Provider: What I tell the guys is that the problem isn't meth, like that was the outcome of something. The problem was what happened before that, and I would say **90% of the people come in, they come in with that childhood trauma**, whether it was their parents were using, or they experienced some kind of trauma in their life or they were assaulted or something at school. You know, they didn't have friends at school, they were very withdrawn, teachers not reaching out to them when they knew that their home life wasn't well. Um, you know, abusive fathers, their parents being incarcerated, you know, it's often times that trauma...set off this problem for them, and then they never knew how to heal from it. And so, in turn [they think] "I'm going to find a way, right, to survive. I'm going to find a way to get through it. I'm going to find a way to get numb. And this [drug use], this is what I've learned will do that for me." And so, they just



live on these survival behaviors of what's going to protect me the most and in their mind; "using is going to protect me from, from these things that I feel like I can't live with.

Trauma can be a powerful motivation for methamphetamine use, as people attempt to cope and navigate difficult times. However, this does not mean that every person who uses methamphetamine has experienced trauma, although providers noted this is by far the most likely case. In our extended interviews with people with lived experience, every man and woman we spoke with described a traumatic event as the basis for their initial use. Treatment providers noted that these traumas are often interwoven into key family and partner relationships:

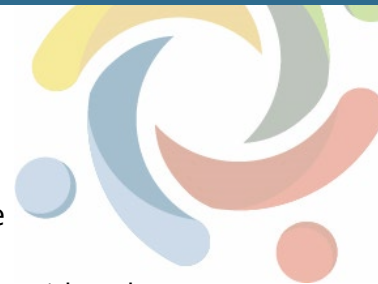
The women that come here, they have a lot of trauma, a lot of them, their family used that drug of choice. It seems like it's easily accessible. It's cheap a lot of times, they're using with their partner, sometimes their partner introduces them to the substance, um, but yeah, **I think it's kind of a combination of trauma introduced through family or through a partner.** Yeah, it's pretty common.

For women, sexual violence can also be a commonly reported source of trauma. For some, it may not even be clear how severe the trauma is until they enter treatment, when they attempt to cope with their experiences and address their addiction:

And a lot of times, they, **they would connect their substance use with these traumatic sexual experiences that they had**, that these PTSD episodes they were having, they were continuing to use the substances to cope with these things that had happened in their life. And a lot of the women that I spoke with, you know, sometimes their sexual trauma would come from **violent relationships**. But in speaking with them sometimes when they would describe these, these relationships, sometimes I would come to the realization that they were involved in **sex trafficking**, and they didn't even realize that that's what that was. And we had...[professionals] that would come in and speak with our patients and talk to them about domestic violence and, you know, everything that comes with that also. But I was noticing that these women were starting to pick up on, you know, hey, maybe this did happen to me, maybe, maybe this wasn't my boyfriend, maybe this was, maybe I was in a trafficking situation, you know?

While this example focuses on women, it is important to note that trauma both prior to use and during use is not exclusive to one gender and both men and women can be victimized:

When I was in coed programming with adults... and when working with youth [patients] would disclose that their...mom was a meth user. And **their sexual trauma comes from being used, being sold, or used to provide sex for their mom's dealer** in order for mom to obtain substances, or for whatever reason during mom's use, so, which led the patients on their own active addiction and trauma.



In its entirety, trauma, whether sexual or otherwise, affects a wide scope of people who use methamphetamine. As noted above, trauma can often lead people to escalate their use. For sexual trauma, this may include methamphetamine being considered a necessity during sexual interactions for people who use it. According to one long-term treatment provider:

I would guesstimate probably 90-95% of the clients that we serve here have a past history of trauma, and with that I would say **half or more have a history of sexual trauma**. And so, you know, I think the two are definitely correlated. And going back to the utilizing methamphetamine in sexual experience, I do believe that relates to a past history of traumas as well. I'm thinking of two particular gentlemen that I worked with for an extended period of time. Both were incestual sexual trauma survivors and both could not physically perform sex acts without the help of methamphetamine. It wasn't a mental, it was a literal physical [thing]. Physiologically they just could not perform a sex act without having a methamphetamine on board.

For other people who use methamphetamine who have experienced trauma, their use may be more about coping with their trauma through the act of numbing. Since methamphetamine has the ability to numb, it can become attractive to people who are experiencing grief or other psychological impacts from trauma. Brad, one of the focus group participants, cited his own personal appeal, ***"It numbs you. Physical pain, mental pain, emotional pain...I think all of us have been through something that has messed with us, and we use that to numb."***

Traumatic experiences can be incredibly powerful and as a result, people may find the need to turn to methamphetamine when they do not have the tools in place to cope with the grief. The providers we talked with suggested that the co-occurrence of addiction and trauma needed to be a joint focus of recovery and prevention. While there are no perfect solutions to addressing trauma throughout the life course, teaching grief strategies earlier on in people's lives can act as an intervention (e.g. prevention programs in schools), and offering mental health treatment in tandem with treatment for addiction (e.g., inpatient treatment services) can offer help for people who need both treatment services at once. As one provider shared, this dual approach could have a significant impact: *"That could be a jumping-off point where some people could actually, I don't want to say to be saved but, maybe not take the road that so many people have taken."*



Impact of COVID-19

COVID-19 affected virtually all aspects of individual lives between March 2020 and the conclusion of our focus groups in August 2021. Although the day-to-day impacts of COVID-19 varied across the country during this time period due to changing local, state, and national public health measures, the Centers for Disease Control noted increased negative mental health symptoms of anxiety and depression, substance use, and increased suicidal ideation associated with the pandemic as of June 2020 (Czeisler et al., 2020). Evidence of increased substance use deaths was also found in an examination of excess deaths between March and August 2020, where researchers found substantially higher than expected deaths from drug overdoses accounting for nearly 13% of all non- COVID-19 excess mortality (Faust et al., 2021). This increase in overdose deaths has also been cited in every state in the country as of August 2021, including Iowa (American Medical Association, 2021). Iowa also saw an increase in opioid-related deaths in 2020, with poly use from opioids and psychostimulants including methamphetamine contributing to 13% of overdose deaths in 2020 (Krebs, 2021).

Considering substance use and overdose deaths have been reported as increasing locally and nationally since the start of the pandemic, we anticipated that stories of COVID-19 would be interwoven in the responses we received from participants in our focus groups. At the time of this project's data collection, providers and people who use methamphetamine had been experiencing the societal impacts of COVID-19 for over one year. Despite living through a global pandemic that seemed to touch nearly every aspect of American life, COVID-19 was not a main source of concern reported by either the statewide treatment provider network or people who use methamphetamine. On the contrary, COVID-19 was subtly cited across focus groups with varying themes. Some providers noted the positive impacts of COVID-19 which included ability to engage with families virtually and quarantine times that allowed clients additional detox time, while others referenced how COVID-19 had disrupted services in their agencies, led to staffing shortages, and impacted methamphetamine supply. People who used methamphetamine also commented about how COVID-19 impacted the methamphetamine market in their communities and several providers hypothesized that COVID-19 was leading to increased methamphetamine use.

COVID-19 Related Benefits

One of the most frequently cited topics to emerge in our discussions around COVID-19 was how the pandemic expanded opportunities for virtual engagement that allowed providers and clients to engage family members in treatment in novel ways. For example, one provider noted how family members from across the country were able to engage in treatment virtually. This type of access allowed families to participate in treatment in a way they were unable to previously: ***"The nice thing about COVID is we've been able to do it virtually. So, we have people from like California that are like joining in that normally wouldn't be able to even you know, access our group, on a normal basis. So COVID kind of worked in our favor that way."***



Another positive note about COVID-19 was that some agencies required **mandatory quarantine** times before clients were required to enter treatment. Providers shared that this was a policy the agency kept in place, even after it was no longer required, as they saw many positive benefits for their clients. One provider shared that this time allowed for clients to get caught up on sleep, eat, and generally rest before they were required to start treatment, a particularly useful change for methamphetamine users:

We're residential, so we were requiring three days of quarantine due to COVID. Well then once the agency said we don't have to do that three day quarantine anymore, patients can go right into group, we kept it as an option. So, if you need to sleep and eat and rest and chill, you can use your three days quarantine in the apartment before you have to come to group. **So it's been a little bit of a perk of COVID because they get a minute to relax.**

COVID-19 Related Drawbacks

Although treatment providers noted several positive changes associated with COVID-19, others described how the pandemic was disruptive to the programs that they had normally scheduled. This disruption was noted as a barrier to engaging clients in recovery resources:

One of the things that our organization has done is use something called *Bridging the Gap*, where we actually have AA [Alcoholics Anonymous] and NA [Narcotics Anonymous] speakers come to both our residential, and our outpatient programming. [They] kind of **give an introduction to the different meetings that are in town and put faces to names and different things like that. So that's been really, really helpful I think, and with COVID-19 we had to stop all of that**, which is super unfortunate and we've just now, I just talked to a gentleman from AA who's going to be coming back into our outpatient program next week for the first time in over a year. So I think ...if you can connect people up to that community, I think it can be, can really... make or break a person getting involved... in the recovery community in the area.

Another consequence of COVID-19 noted by providers was an observation of staff shortages that providers suspected may be related to COVID-19. Staff shortages not only present a safety concern if there is not enough staff to provide general care, but also impact the overall effectiveness of treatment as one provider noted it requires a skilled clinician with substance use specific training to effectively deliver substance use treatment:

Staffing issues have been a big thing... [The] pandemic started it, then it was derecho and then it started like post-pandemic, and we're still just, it's not just us we know that other companies and agencies across the nation are struggling with the workforce right now....I mean the availability of having skilled clinicians, offer them enough training, we tend to get people employed and then we're just, you're running right away. So, **making**



sure that the staff get the ample training and the care and time that it takes to train people.

Disruptions in Supply and Price Gouging

Another consequence of COVID-19 related to the mixed reports on how the pandemic impacted general supply and demand for methamphetamine in their area. For example, one provider noted that COVID-19 led to difficulty bringing substances into the state, and that many clients in their center reported a difficult time finding their substances of choice:

I've heard of a lot of different sources whether it's from outside of their own communities, whether it's sourced here in Iowa or it's coming from out of Iowa. I do know that COVID actually has played a huge role, when last year anyways, when everybody was quarantined, **there was a lot of inability to get substances into the state.** People were having a really hard time finding it among other substances as well, so I heard that quite a bit.

While another provider shared that they had not heard about the pandemic impacting anyone's ability to obtain substances in their part of the state: *"I never heard anything about people struggling to get drugs during COVID, but **we didn't see shortage of that here.**"*

The issue of supply and demand as it relates to COVID-19 may be unique to a community, neighborhood, or an individual's network as mixed reports of methamphetamine supply also came from people with a history of methamphetamine use. One focus group participant noted:

Well, when Corona, the price went up for a while. Everybody said it was harder to get, I didn't think it was any harder today, last year, during Corona, personally, I mean, **I always had dope, and all I had to do is pick up the phone. The price went up a little.** I mean, it went up a lot for some people. During Corona, I was getting grams for \$20. But I wasn't necessarily doing anything big, cuz I was just getting high. I ended up, I guess I kind of trapped up in my mom's apartment after she passed, I was numbing myself, and I wanted to be around people, invited the people I knew. So, we got high. I mean. It was harder for some people. For me, no. **I had it the whole time through Corona.**

And on the other hand, another participant noted purchased 'fake dope' because of supply lows in his area:

Oh well, I was going to say during the COVID break out. And then **there was a big drug drought and I got sold a lot of fake dope and that was kind of scary.** And really like what do we do, the world is ending. That's how it felt because we couldn't get it anywhere. And people were charging like \$200 a gram.



Increased Treatment Needs

In addition to drawbacks and benefits related to treatment, and geographically-specific issues around supply, several providers noted a surge in clients entering treatment for methamphetamine use:

Provider A: I think higher rates for sure, and undetected higher rates. DHS had tests and things. Maybe there weren't as frequent UAs [urinary analysis] with us or as frequent testing through systems like DHS or probation, but **somebody who was not on our radar at all about methamphetamine would then test positive for it** and be like, oh that's not, I didn't see that coming. So, I think a lot of it really because the window of time that it's metabolized in the system, they really could have been using the whole time and just not disclosing it. But I think that definitely was undetected, increase in use. And now that things are opening back up and we have more involvement. Now, **we're seeing an increase in the office of the number of referrals** that we're getting that have, at least if it's not the primary, it's going to be secondary or tertiary, at least some use, some involvement with more people than I've been seeing. **We're seeing a trend up.**

Provider B: **I've definitely seen that like an uptick in things....**And now I feel like a large majority of the people that I see on my schedule is like DOC, is methamphetamine. **It's not uncommon right now for me to have people who are on meth like, I probably have more of that than anything else.** I know that there have been, like, an increase in like, it used to be that ice was brought in from other places, like Chicago, but they're kind of going some places in the counties, like actually going back to making meth, which wasn't how it was prior to COVID, I don't know if it's a correlation, but. That's kind of, yeah, **it just seems like everyone else was staying home, and the people who didn't have stable living environments were trying to find where they could, which sometimes was with people who were actively using, and so then that introduced them to use as well. Or increased their use even more due to being isolated.**

And finally, one provider noted a looming fear about the potential long term effects of COVID-19, with specific fear about how the substance using population may increase due to family trauma related to COVID-19 and that there will not be enough staff to support a growing methamphetamine using population:

I don't think we're doing enough [to address COVID-19 isolating in unsafe environments]. I don't think we've begun to scratch the surface of the family trauma that's occurring. I think, um, you add to that. I don't even want to begin to think. Maybe I'll be retired before the long-term effects of COVID come into play. I mean, we're beginning to see it already, but I think in children we haven't even begun to see. Um,



we're hearing from school districts that there is, that they are at wit's end on how to deal with, um, the challenges they're seeing in schools. And, and that it's not just COVID, it's vaping of marijuana. It's the access to drugs on campus, um. **And so, you've got this combination of family is going through more trauma than they've ever experienced in their life. And there's not a system of care that can address that on a broad scale. There's just not enough, I don't want to say resources, there's just not a system of care that can address that.** And so, I'm actually really nervous about where we're headed and, uh, whether we're going to have enough long-term, I mean **we already have a problem with workforce in order to treat these folks, there's not enough people, there's not a psychiatrist, there's not enough therapists. There's not enough people who have substance use treatment experience. What if the population doubles?** Then we really find out the real population comes into play. And I think that's...maybe I'm a worrywart but that's what I think is to come.

Treatment Providers Respond to Methamphetamine Use in Iowa

Interviewer: What's worked and what hasn't worked in terms of treatment?

Respondent: I want to say... nothing. [laughs]. Only because I've been to a lot of treatments. And I've been to some of them more than once and I ended up right back in if not a year later, or before. But so, so I've been asking myself that same question. What is gonna work? What isn't gonna work? And I have a huge team of people behind me. I have a recovery coach, I probably have the biggest team I've ever had right now....I've never been successful, so I'm going to try it this time.

A core goal of our evaluation and analytics was to assess the landscape and efficacy of methamphetamine treatment in Iowa. Through our analysis of interviews with members from the Iowa Treatment Provider Network, people who use methamphetamine (PWUM), and people who use drugs (PWUD) as well as site visits and analysis of Treatment Episode Data on admissions (TEDS) and the National Survey of Drug Use and Health (NSDUH), we discovered four key themes. One, that people entering treatment for methamphetamine use is increasing and the demographics of people that use are changing, two, PWUM have unique needs, three, successful treatment completion has been decreasing, and four, treatment is becoming more difficult and less successful.

Greater Demand for Treatment

Participants from our focus groups included substance use treatment providers, including residential counselors, executive and clinical directors, clinical supervisors, and addiction counselors from settings ranging from outpatient, youth and prevention services, inpatient,



residential, and transitional housing settings. These providers spoke clearly to the changing composition of PWUM entering treatment and validated many of the core trends observed in the TEDS data. For example, there is an increase in the number of clients entering treatment for methamphetamine use, especially among adults aged 30 plus. Treatment providers in our focus groups noted: *"There's not a lot of data showing that youth are using but we do have data showing that those coming in even for treatment are **30 plus**, more often than, than any others."* Another shared: *"I feel like we have a **lot more coming in for meth use, or meth misuse**, than anything right now."* A third added: *"I'm going to say three-quarters of our gals that come in it's, it's meth is their drug of choice. Followed by marijuana perhaps. But **it's always been meth for us.**"*

These sorts of observations among the providers with whom we spoke are supported by empirical data, which shows roughly one in every three people entering treatment in Iowa these days is there for methamphetamine use (authors' calculations). And, while just 17% of the total treatment population is older than 44, 25% of those entering treatment with five or more treatment episodes are 45 years or older, which points to a cluster of adults that have been using for a large part of their adult lives.

Unique Needs of Clients

With a large share of the treatment population entering treatment for methamphetamine use, providers noted that clinical needs are greater for people who use methamphetamine than for clients entering treatment for other substances. For example, several providers spoke to the especially high level of harm and dysfunction that resulted from methamphetamine use: *"They burn their life down—for lack of a, um, better, uh, term—behind meth much quicker in a much greater fashion. **A lot more destruction behind meth than versus other substances of abuse.**"* Noting, *"**The level of dysfunction happens so much quicker in meth than it does in... marijuana...[or] pills...the level of...destruction is so much faster with meth than other substances which is why we see more of it.**"* A second confirmed: *"**The level of destruction going on with the methamphetamine, like, it's a quicker, um, demise than alcohol or marijuana.**"*

This was similar to the narratives that emerged from the life histories we collected among PWUD who described their personal use as ultimately becoming a vicious, destructive cycle. We heard a very similar story of destruction in discussions with an assisted housing provider who works to maintain safe and stable housing for people experiencing chronic poverty and homelessness, as well as mental health and substance use disorders. This provider noted how chronic use often causes extreme paranoia and anxiety, leading to behaviors that make it difficult to house PWUM. When paranoia runs high, tenants have been known to break-enter their own front doors, remove drawers and bedroom/bathroom doors, pull up the carpet, barricade outer doors and windows, and accumulate easily sellable commodities (such as bicycles) that, along with personal effects, begin to spill out into public spaces. This kind of excessive property harm and



recurring complaints from neighbors about the damage and general safety concerns makes it more difficult for providers of vulnerable housing units to maintain leasing with real estate partners.

In short, PWUMs are among the most difficult tenants to keep in stable housing, which helps to explain the rise in homelessness among people entering treatment for methamphetamine use. This was also mentioned by treatment providers who shared that clients often required support **putting the pieces of their lives back into place**, upon entering treatment, in addition to support with housing.

Provider A: **We do a lot of stabilizing**,....a lot of them are homeless, a lot of them are, um you know really just starting to address some of the issues and consequences that they're use has caused. So whether that's getting them a phone or helping them figure out how they're going to pay for [a phone]. Or, um, you know, DHS isn't going to let your kids go home, if you don't have a home to put them in, type of thing. So, it's just a lot, a lot of stabilization...when they first come [into treatment].

Provider B: And a lot of times when patients come to us, they've lost their medications. They miss their appointments...their provider won't see them anymore, so they need to get re-established with that....**I can't tell you how many guys have walked through that door, who don't have their wallet, they don't have any identification, you have no birth certificate, no social security card.** You can't even get a job if you don't have that social security card.

Aside from stabilization noted above, many providers noted that PWUM entering treatment have a variety of physical health needs that require additional time and resources. This often includes clients experiencing disturbances in sleep, intense cravings, and malnourishment. One provider succinctly described the condition of a typical PWUM when she noted that *"they come in very **malnourished**, now they've been up for days, weeks sometimes."* Other providers made similar statements, such as:

Provider C: I've noticed a lot more with methamphetamine use that sleep disturbance is also a factor. ... **they tend to not sleep or sleep too much.** Um cravings are big factor. It seems like they crave more often for longer periods of time. And I do think the mental health aspect is definitely a factor there too.

Provider D: A lot of my patients recently came in, **they'd been up for two days.** So when they come in, that takes a lot of time too, is when we finally get them to see a prescriber, they're finally on some sleep meds, getting back to a normal sleep pattern, they sleep for days. And you're right, they're up, they eat and they're right back down. So that takes, I mean, **that can be a week to two**



weeks for them to even adjust to getting back to a normal sleep pattern and their body's just playing catch-up.

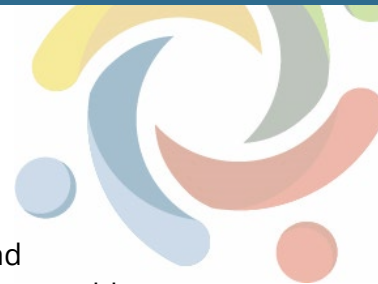
As noted above, providers were concerned about how physical health factors, such as chronic sleeplessness, poor diet, and malnutrition were interconnected with poor health and trauma. For example, one woman told us:

I think that they either sleep a lot or because of trauma associated with their addiction, or their childhood or some aspect of trauma...**probably because their body's trying to restore itself to kind of a different functioning.** They have nightmares but that I think is more associated with trauma than anything. And sometimes that's why they're using, is because they don't want to feel the feelings that they're feeling or have the memories that they're having. And so they're using numbs that and so it helps them to either sleep, they're using methamphetamine to get up and they're using marijuana to kind of calm down or, to go to sleep, or prescription pills over the counter medication, um. But yeah, there's a lot of sleep problems.

So you have anxiety and depression. So we got to look at "How do we treat that anxiety and depression?", but we also have to treat the methamphetamine or the other addictions that are going on too. And so, you know, and then looking at how those addictions correlate with their depression or anxiety...and **most of the guys are incredibly affected by their traumas.**

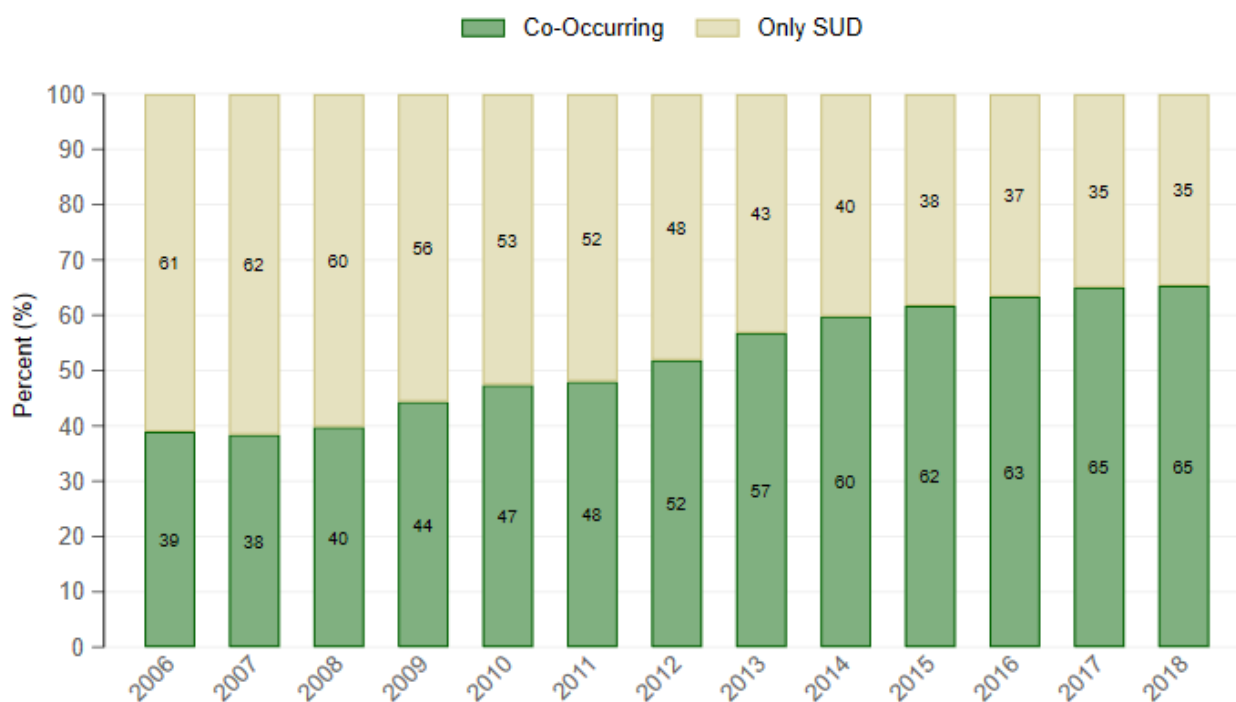
The Twin Epidemic: Methamphetamine and Mental Health

Across our conversations with treatment providers, interviews and focus groups with PWUM, and statistical analysis of statewide treatment episode data, we saw a clear pattern emerge: Dual-diagnosis of methamphetamine and mental health disorder are on the rise in Iowa. In 2000, one in three self-reported methamphetamine users was diagnosed with a mental health disorder and a substance use disorder. By 2018, **nearly two in three people who use methamphetamine were diagnosed with both a mental health and substance use disorder** (see Figure 21). In reflecting on how methamphetamine's impacts have changed throughout one's career as a treatment provider, one woman shared: *"Their mental health tends to be more severe, um you know? ...There tends to be a lot more significant mental health issues, whether that was induced from them using or was there before. But their mental health tends to be more severe."* Although it is a somewhat open question as to *why* dual diagnosis among PWUMs is rising, people with lived experience and treatment providers believe that changes in the chemical composition of the drug itself are chiefly responsible.



Given the growing need to treat dual-diagnosis, clients and providers face competing demands during treatment. Choosing between devoting scarce time and resources to rebuilding clients' physical health, mental health, and basic functioning or address the substance disorder itself. Because these competing needs require a variety of interventions and care, providers frequently noted that stabilizing clients required significant resources that took away from the time that was intended for their substance use programming. One person told us: ***"You lose so much, um, treatment time to the detox"***. Another said: ***"Medicaid, they want to kick them out in 30 days. My gosh, they don't even freaking know reality until day 14 or 15!"*** In every conversation we had with PWUM or their treatment providers, we heard the need for longer and more comprehensive interventions to address the twin-epidemic of methamphetamine and mental health.

Figure 21. Co-Occurring Substance Use and Mental Health Disorders among All PWUM Entering Treatment in Iowa



Notes: Includes all people that report methamphetamine use at entry to treatment. SUD = Substance Use Disorder.

Source: Treatment Episode Data Set (Admissions), 2000-2018

Declining Completion Rates

When someone is dealing with long-term, harmful use, many providers noted that the traditional 30-day treatment time frame is not enough: ***"But as I said with meth, a lot of time that***



*first time didn't happen until you were 30 years or older ... flipped that switch and the use disorder started, and **you just can't flip that switch back. It takes a lot of work, a lot of tools, and a lot of support.***" As the provider above noted, recovery from methamphetamine is not a switch that can be turned on or off, especially when a client has been living with substance use disorder and its consequences for decades. Rather, we were told repeatedly that real changes in people's life trajectories require time to reorient PWUM to **a recovery attitude and lifestyle**, and without additional time to focus on underlying concerns, treatment success is unlikely:

Somebody that's been using methamphetamine for 15-20 years without having really any sustained sobriety in that time period, being allowed to be in inpatient treatment for three weeks, that's not really enough time to even detox, let alone get your hands wrapped around, you know, recovery goals and making any progress. And so that's a major issue. **I feel why we see a lot of people rolling around in and out of our services, a lot of people walk out of inpatient and within two days, get high. And that's because they haven't been able to get the tools that they need in order to sustain [recovery].**

Another reason why people may be leaving treatment early is because of the need to receive intensive detoxification support prior to receiving SUD treatment. One provider hypothesized:

[People who use methamphetamine] need to have a very quiet place to just get caught up on sleep, eating and get through those initial withdrawals that can last up to a week sometimes. I mean **some of them are checking in with like, 7 days they've been up straight**, they're delusional, they're psychotic, and then you want them just to start treatment. I mean that doesn't make any sense. So, they start treatment, they freak out, and they, oh, now they feel like 'I'm just a loser. I can't even freaking do treatment right'.

This sentiment was also supported by statewide survey data of people entering treatment, which show that program completion rates have been dropping since 2008 (authors' calculations). As of 2018, only 37% of PWUM completed their treatment program. While treatment completion rates have been in decline across all primary substances of use, the steepest decline has been among PWUM, where rates declined by 56% between 2008 and 2018 (see Figure 22). Compared to alcohol, which has the highest treatment completion rate, only heroin and opioids have lower completion rates than methamphetamine.

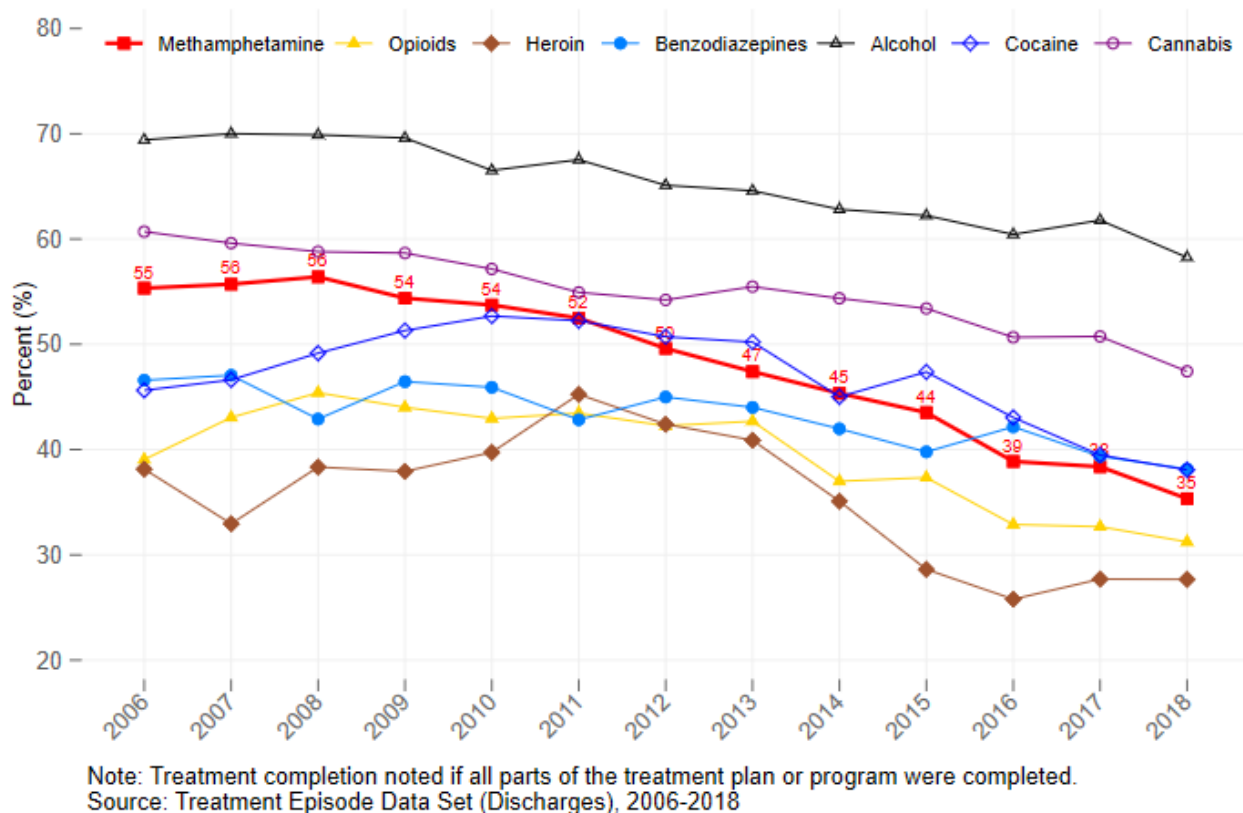
But why do some methamphetamine using groups have high treatment completion rates and others low rates? Our analysis of treatment episode data indicates that people with higher education are more likely to complete treatment than individuals with lower education, and those that were retired, disabled, employed part-time or unemployed also had lower completion rates than their counterparts. The relationship between employment and higher treatment drop-out rates requires additional inquiry, but focus group and ethnographic



interview participants appear to think that unemployment is often an outcome of chronic, harmful methamphetamine use, rather than the other way around.

In addition to the attributes listed above, treatment referral source matters, as people who were referred to treatment by someone in healthcare (e.g. a doctor) had higher odds of successful treatment than those who self-refer or are referred to treatment by another individual such as a friend or family member. Counterintuitively, those who experience the longest wait to enter treatment tend toward higher treatment completion rates. In fact, PWUM who wait in excess of 31 days are nearly twice as likely to complete treatment as PWUM who don't have to wait. How or why this is the case is unclear and warrants further inquiry.

Figure 22. *Treatment Completion Rates among PWUM Discharging from Treatment in Iowa*



Much of the overall, statewide decline in the share of successful treatment may be due to the rising prevalence of methamphetamine use, which manifests as one of the most difficult substances to treat. We call this a compositional effect. There has been an increase in the share of people entering treatment for methamphetamine and PWUM have very high drop-out rates. Put differently, treatment providers are seeing more hard-to-treat cases. Given the substantial changes in production and distribution of methamphetamine that make it more addictive, more accessible, more affordable, and consequently, more frequently used, we might echo the



question asked by one treatment provider we interviewed, who said, “Why do we treat everything the same?”

I'm not quite sure who chose how long it took to be able to overcome an addiction, to something, so difficult to quit...my thought is that I wish there was just more we could do to provide because **not every addiction is the same** as with alcohol, or marijuana or cocaine, or meth. And so, we treat everything the same. And so, then that adds to when we have our stigmas, that adds to that you know, it's difficult to address this piece and not have the means to address this piece.

Another consideration related to the decrease of in program completion rate for PWUM may be related to discharge planning barriers, as several providers reported that clients' need safe housing, employment, a support system, a plan for continued treatment, and to be meeting the expectations of the Department of Human Services where applicable to be ready for discharge:

We want to see a patient have safe housing, have employment, meeting DHS expectations, almost always for us. Have a support system. Yeah, I think when we see those kinds of things, and when we feel like they can live in the community and have outpatient level of care and that be enough for them. That's when we see them leaving residential, anyway.

Although the providers of SUD treatment services that we spoke with were able to identify key resources and goals for their clients to prepare them for discharge, many also noted that those resources were either not available in their communities, or were rife with troublingly long wait lists. This was particularly true for mental health services. One providers captured the sentiment we heard from many of our focus group participants, when they stated, *“The biggest struggle that we find with the transition is finding them mental health services. That is the biggest struggle, **the wait lists for mental health are so long.**”* We also heard that these concerns were not tied to geography: *“**It doesn't matter if they're in a rural area or if they're going into a city, finding them mental health that is going to be able to take them is so difficult and that's oftentimes the missing, the piece that they need and the piece that is missing is that waitlists are so long.**”* Related, we were told: *“I would say that's the most difficult piece is that the **lack of mental health services** that are available to our patients, who have so many mental health needs really makes it difficult.”*

A similar sentiment was shared when providers commented on how difficult it was to find housing, particularly safe housing that would support their clients to discharge from residential or inpatient settings: *“**It can be hard to find affordable housing, um, that is in a safe area [in Sioux City] that they're not going to be exposed to a lot of drug use. There's a lot of drug use [in Sioux City].**”* Another shared how these issues were magnified when children were involved:

I think it's really hard especially when women have their children. There's not a lot of places for them to discharge to in the state of Iowa and they have to stay in



Iowa typically cuz they're DHS involved. There's a few halfway houses, there's a few transitional housing, but **really there's not a lot of places for people to go and the waiting lists are pretty hefty**. Um, so that's a huge factor. Sometimes they had to get their own apartment and as [was] mentioned, **it's kind of hard finding an apartment that's in a safe spot that they can afford** and where it, where do you put these women and their children. Can't just put them on the street and it's really hard to find those resources. Especially if they aren't willing to go to another area.

Others echoed the idea that stable housing is critical to long-term, sustainable recovery:

Provider A: **Recovery housing is a huge need in the state...**How can we develop more recovery housing, so that you can move from residential treatment, halfway house, to recovery housing and then have all the supportive services, so that...somebody can be in recovery housing for two years, and really become stable, and have support services. Then they can find their own place and it's a whole different world at the end of two years.

Provider B: We can connect them to all kinds of stuff. But all the housing resources and everything in the community have mile long waitlists. Transitional housing is so in need. And effective programming that comes with that, you know...I've seen transitional housing programs that aren't very well-managed, I guess you could say, you know, and because of the way that they were unfortunately set up there, there's loopholes and so you got these patients that are actively using and living in these trans, transitional housing programs... **I'm supposed to be living in a sober community, but all my neighbors upstairs are getting high at the same time, you know?**

The need for housing or mental health services to support clients transition echoed providers comments about how it was challenging to successfully treat and prepare clients for discharge with limited treatment times, as many providers noted: ***"It's just hard when, when they're only here a short period of time to, to get all those things that need to be in place before they leave. And having good resources is important."*** We were also told:

It's a lot of work...it's a struggle. We have women and kids here, they're mostly homeless when they come in. **It's a lot to get in place before they leave** and they're a lot of times coming from a relationship and, you know, they had someone providing for them, you know, they had someone there providing structure for them. What felt like structure, it wasn't healthy and then they leave addict here and there, you know I you know, ideally leaving a relationship there, getting a place to live on their own, they're single parenting on their own, they're,

you know, just alone that's a whole bunch and then you add on top of that recovery.

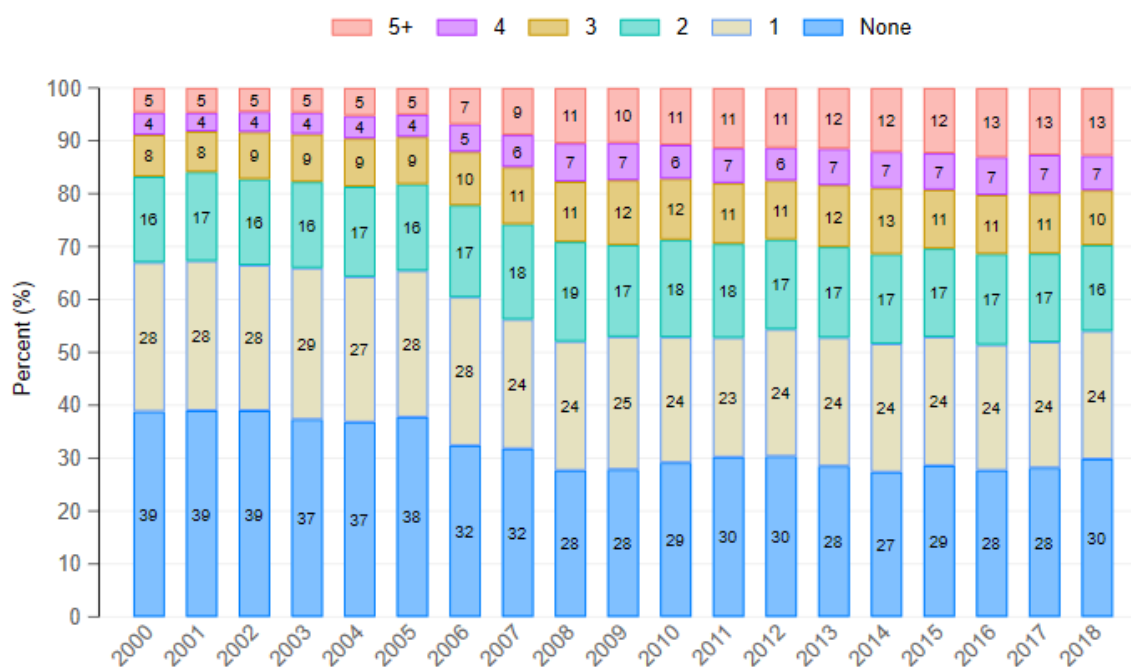


Treatment is a Revolving-Door

There was a clear appetite among treatment providers for novel approaches and extended residential treatment to more effectively meet the needs of PWUM. When we contrast what we heard from treatment providers with what we observe in statewide treatment episode data, we find substantial agreement and further clarity. As was noted by treatment providers, treatment is not only becoming more difficult, but more frequent.

If we consider the number of prior treatment episodes among PWUM, the data show that a growing share have had three or more prior episodes (see Figure 23). This suggests a 'revolving door' for treatment, in which PWUM who have multiple prior episodes are at especially high risk of another treatment episode. Among the PWUM we spoke to, many reported 10 or more prior treatments, especially among those in middle age (35+). There are a number of possible explanations for this trend, which we briefly discuss below.

Figure 23. Number of Prior Treatment Episodes among People Entering Treatment for Methamphetamine in Iowa



Note: Includes any methamphetamine use (primary, secondary, or tertiary substances.)
Source: Treatment Episode Data Set (Admissions), 2000-2018



In several of our ethnographic interviews and focus groups among people with lived experience, we heard stories of PWUM lying about having ever been to treatment before, or seeking treatment from different providers in order to keep hidden the fact that this was not their first time in treatment. In this discussion, one focus group participant with lived experience suggested that there was less stigma associated with methamphetamine use, which encourages more PWUM to seek treatment, including people with multiple prior episodes. These changes in the cultural and social landscape give them the courage to seek treatment a third, fourth, or tenth time without shame or fear of being denied service. These kinds of stories illustrate how stigma around multiple prior treatment episodes serves as a barrier to recovery. Another explanation for the increase in prior treatment episodes among PWUM might be related to their view of treatment as a much-needed wellness retreat. Several participants described treatment as a chance to regroup, catch up on sleep, get some decent food, and otherwise stabilize for a week or two before returning to methamphetamine use and the many life stressors that go with it.

Others talked about their prior episodes as earnest attempts at sobriety that just didn't work out. We also heard many stories about how the **embeddedness of methamphetamine use in families across generations** was making it harder for people to transition to recovery. In our discussions with treatment providers, PWUM, and various members of the system of care that support PWUD, another explanation emerged: Changes in the production and distribution of methamphetamine were 1) keeping PWUM in the using game for longer (largely attributed to fentanyl) and 2) expanding methamphetamine use out of its ancestral user base into the heroin and opioid population where multiple prior treatment episodes are also more common due to their more addictive nature and rapidly emerging harmful effects.

Each new treatment episode drives up financial costs to taxpayers and insurance companies, social costs to communities and families, and human costs of caregiver burnout and a sense of hopelessness among patients. On the other hand, each new treatment episode is an opportunity for hope and a life transformation. One woman with whom we spoke shared that she had 14 prior treatment episodes over the past two decades, including both inpatient and outpatient interventions, and still exhibited hope and optimism about recovery. The question is, ***"How can we help this woman sooner, and perhaps reduce the number of intervention points to only one or two?"***

When we asked this question to people with lived experience, we heard about the value of being held accountable, incorporating structure into daily living, getting basic needs met, and dealing with complex emotional problems. Meeting basic needs was pivotal in many of the personal stories of recovery. One woman who had been homeless prior to treatment told us: *"I had all my basic needs met when I got here and I was really shocked about how easy it was for me to not desire [methamphetamine] so much once I had all my basic needs met. I had a place to sleep, I was warm, I didn't have to leave anywhere. Um, I was fed and that helped a lot."*



Beyond the basics, people described needing to ‘dig deep’ and understand the trauma and experiences that shape their drug use. One mother shared how a treatment program focused on addressing the big issues can lead to a total transformation:

The difference about this facility is...we can have our kids here and they gear us towards family and everything else. But they also focus on, you know... your self-esteem, your image, your parenting. Just, um, your life as a whole. And [it] gives you a safe environment to figure out what healthy relationships are, what they look like, what they don't look like, how to set boundaries with people, how to maintain those boundaries with people. Um, I mean, **it's kinda like you need entire life rehab...**A lot of us go into a 30-45 day treatment program. **We don't get that time to heal.** Yeah, we may heal on a few things that come up, but when it comes down to the nitty-gritty, the deep dark stuff that gets us to use nine times outta ten, 30-45 day treatment, you're not going to heal from that...And some of us may stay sober and for the rest of our lives and some won't, because they haven't addressed those issues on why.

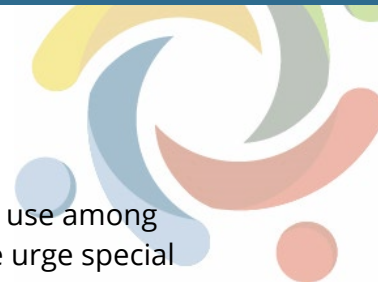
In every focus group we held among treatment providers and people with lived experience, we heard about the crucial need for extended stays in residential treatment. To address the observed decline in treatment completion rates, we suggest altering treatment offerings, including additional resources devoted to detox and inpatient, residential treatment. We also suggest that the introduction of a harm reduction paradigm might also improve treatment outcomes.

What Can be Done?

Target Prevention Interventions and Resources

There is an *“urgent need to develop culturally tailored, gender-specific prevention and treatment strategies for methamphetamine use disorder to meet the unique needs of those who are most vulnerable to the growing overdose crisis”* (National Institute on Drug Abuse, 2021). At risk populations have cultural strengths that can be leveraged to prevent use and improve health outcomes. *“Leveraging traditions may offer a unique and culturally resonant way to promote resilience to help prevent drug use”* (NIDA, 2021). We concur that culturally appropriate and community-based prevention, treatment, and recovery resources are needed.

This report identifies several ‘at-risk’ populations that public health, community organizations, and other groups working to mitigate the harms of methamphetamine use can target for prevention efforts. For example, prevention programming aimed at young adults is high value, given the strong association between early-age first use and later harmful use of methamphetamine (see Figures 10 -11). There is also a clear need for gender-specific

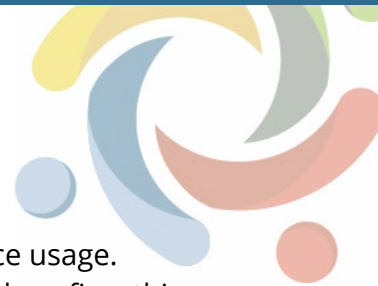


prevention services and outreach, given the substantially different motivations for use among men and women (see Figures 8 – 9 and the “Gendered Drivers of Use” section). We urge special attention to paid to the increasing rates among Native American and Hispanic populations (see Figure 7), and careful consideration to the dramatic increases in homelessness among people who use methamphetamine (see Figure 13). Our research also found that the family context is deeply interwoven with methamphetamine use, with many people describing multi-generational family histories of use and often first use involving family members. For these reasons, family-specific programming is recommended to be made a staple of prevention efforts in Iowa. Preventing overdose deaths is critically important, which points to the need for prevention programming to address polysubstance use, especially as it involves opioids, including heroin (see Figures 15 and 19). We also identified high risk neighborhoods for future methamphetamine use (see Figure 24). We suggest that community-based efforts to mitigate the harms of adverse childhood experiences, or ACES, should also be considered as part of the state’s prevention programming.

The people we spoke with encouraged the development of prevention strategies that started in early childhood, were community driven, population specific, and culturally sensitive. As an example of how prevention services might be developed at the community level to provide culturally-specific support of our most vulnerable residents, we point to the Indian Country Methamphetamine Initiative (ICMI) established in 2007. The Indian Health Service invested 4 million dollars in the population-specific prevention and intervention programs for Native American tribes. ICMI included new treatment programs, public education and mobilization, and law enforcement strategies. Review of the initiative indicated that ICMI *“achieved reasonable value-for-money in supporting innovative and ongoing community development and prevention services against [methamphetamine abuse] in Indian Country”* (Walker et al., 2011). The model’s effectiveness in both reducing community substance use, as well as being cost-efficient highlights the positive benefits of including community knowledge in substance use prevention efforts. Some treatment providers highlighted their own community prevention efforts, often taking the form of community readiness surveys, followed by specific prevention efforts. Efforts should be taken to expand community specific approaches throughout the state and to leverage what is known about methamphetamine culture in Iowa (see section “Changes in Meth Culture” for more details).

Reduce Stigma

Stigma around substance use – experienced at the personal, community, and structural levels – has been shown to contribute to poor health outcomes (Livingston & Boyd, 2010), risky behaviors (Simmonds & Coomber, 2009), non-completion of treatment (van Olphen et al., 2009), and delayed recovery (Brenner et al., 2010). Both treatment providers and people who use substances identified stigma and discrimination in healthcare settings as barriers to recovery. Participants with a history of methamphetamine use report receiving lower quality care from



physicians after indicating their methamphetamine history to healthcare professionals, compared to the treatment they received before reporting substance usage. Numerous treatment providers who have accompanied their clients to the hospital confirm this is a consistent and serious problem. People who use methamphetamine indicated they are less likely to seek care because of this discrimination. Further, women who use methamphetamines told us they would not seek regular physicals, birth control, or well child visits because of the discrimination they faced when working with medical professionals. Reducing risky sex and unintended pregnancies are important goals of public health, and stigma reduction for PWUM are necessary to meet these goals in the future.

Interventions designed to reduce feelings of stigma among healthcare providers have been shown to be effective. Similarly, instructive and interactive crisis intervention skills training programs for police officers were shown to be effective at reducing attitudes of stigma (Bahora et al. 2008). The benefit of addressing stigma is pro-health returns can be observed all across the continuum of care, including prevention, treatment, and recovery.

Refocus Enforcement

As noted previously, the sources for methamphetamine have changed (see Figure 16). During Iowa's first wave of methamphetamine use in the late 1990s and early 2000s, most methamphetamine was produced within the United States with commercially available chemical components. Research on enforcement actions at this time indicate criminal justice interventions reduced supply, increased price, and reduced associated criminal activity. However, studies indicate that these enforcement activities had only a temporary impact on price and no long-term impact on trends of use. Reviews indicate that reductions from one supplier (e.g., domestic methamphetamine labs) were replaced by production in other parts of the United States and internationally, with a particularly large group coming from Mexico. This temporary reduction in supply is consistent with broader research on enforcement which indicates that public, brief, and aggressive intervention tactics like crackdowns, raids, and joint task forces are ineffective at reducing the long-term supply.

Since the methamphetamine supply—despite frequent fluctuation in where and how methamphetamine is being produced—has continued to be distributed throughout Iowa, cutting down the supply itself may not be the correct route for reduction of use. Rather, it may be more crucial and ultimately more effective to examine the people in the area and offer recovery supports, especially since methamphetamine began as small production in Iowa initially. Demand focused approaches may have more durability in reducing methamphetamine abuse than regional supply focused interventions. Research indicates that the most substantial evidence for policing that durably reduces community substance use are partnerships like Problem Oriented Policing and individualized approaches like diversion programs (Mazerolle et al. 2007).



Support Transition-Oriented Treatment

People who use methamphetamine and local treatment providers noted common features of substance use treatment within Iowa. Providers and participants alike commented on rethinking short treatment stays, the need for additional time to detox, and the desire for wraparound transition-oriented services (see section “Treatment Providers Respond to Methamphetamine Use in Iowa”).

A 2020 review of non-pharmacological interventions for methamphetamine use disorder sought to examine the effectiveness of the range of common substance use treatments (AshaRani et al., 2020). The systematic review showed that psychosocial interventions, in particular Contingency Management, Cognitive Behavioral Therapy, and exercise, demonstrated clear efficacy in reducing methamphetamine use and thus should continue to be the first line of treatment for methamphetamine dependence in the absence of effective pharmacotherapy. These types of interventions, particularly Contingency Management and exercise, help patients develop routines and behavioral skills necessary for independent living post-treatment.

Some of these interventions, such as Contingency Management, are currently being utilized by treatment providers in Iowa. Contingency Management (CM) is an intervention based on the idea of “conditioning” and utilizes positive reinforcement to reward a desired behavior: in this context, abstinence from methamphetamine (Carrol, 2014). Within the substance use context, CM has four major principles: monitoring drug use to quickly identify an abstinence or substance use period, use positive reinforcement when abstinence is identified, substance use results in loss of reinforcement, and reinforcement should be developed over time. Many CM programs incorporate 12-step frameworks, and utilize a sponsor system as part of the reward and reinforcement framework (Halkitis, 2009). One treatment provider in particular noted the success of using incentive-based models in her treatment facility, and hoped it could be expanded upon in other treatment settings:

Provider: If you sign up and your candidate [has] this type of diagnosis...if you did medication-assisted treatment...health care, dental care, hygiene supplies, wellness activities. There are incentives for providing UAs [urinary analysis] showing us no presence of substance. It can be incentives for coming to five groups in a row, or a combination of sessions and group together. I wish ...incentives were available for every patient, [it] would just be so ideal, but at least with this particular population [methamphetamine users]...it will be more challenging, similar to opioid dependent patients. And so to include them in this incentivize treatment options, I think is going to [get] some good results for us.

Interviewer: Can you say more about the incentives provided for this behavior?

Provider: Like you'll get a gas card. So, if transportation is an issue for you...we can provide Lyft, Uber, or bus tickets there as way for you to get the treatment. If you develop a



*sponsorship and you want to maybe start going to some recovery groups, we can get your transportation there. Those other incentives could just be like \$10 or \$25 gift cards for groceries. They (directors] kind of love the gas station [gift cards] because it stays right there on there, you know, it can't be redeemed for tobacco, lottery tickets, or any alcohol or tobacco. But, you know, just walk out of the gas station and get a soda or, or get something fun, like gas station Take & Bake pizzas for home... **And finding the things that they like, getting input from patients about like when they begin mentoring, or when they've been sober for a period of time, what made the change? What made the difference for them? Because I am all about feedback informed treatment.** And so, I want to pick the brains of those who have gone through it and who am I to know? But they do, you know and don't tell me like no one goes there but that's again... and I think that type of feedback from this particular population would really help us get the incentives. It's not huge amounts, you know, anybody going out and buying drugs with it, but it's enough to just be like, you matter. And what you did with it is important, and here's a small token of appreciation for your efforts to do something different.*

According to this provider, this type of Contingency Management treatment helps support clients to make positive decisions, and have autonomy over their choices. At the same time, treatment providers are reporting from the field that people need contexts in which to develop positive life skills, in addition to psychosocial interventions and pharmacotherapy. This treatment modality can support clients' transitions out of treatment by practicing positive behaviors that will be necessary to sustain sobriety when people transition back into 'the real world'.

Another element of treatment reform involves wraparound services and transition planning. We heard from treatment providers that short treatment times often force them to begin transition planning on a client's first day in treatment. Yet, many treatment facilities do not have the resources to support a client's transition out of treatment, and back into independent living. People who use methamphetamine indicate that they have difficulties securing safe housing, employment, and healthcare after treatment. Treatment providers affirmed that they wished they had increased capacities to support transition services, but lack the financial resources and structural support.

Move from Data to Action

The Public Science Collaborative has developed data resources to support public health leaders and those who work in Iowa's substance use space to more effectively target methamphetamine interventions for the people in greatest need of support. Geographic 'hot spots' of people at risk for methamphetamine use were first predicted based on analysis of extensive administrative data. Then, the predictions of risk were overlaid with Census data and mapped to geographically depict communities in greatest need of support. As a result, program leaders have an opportunity to visually identify areas of concern and align services and

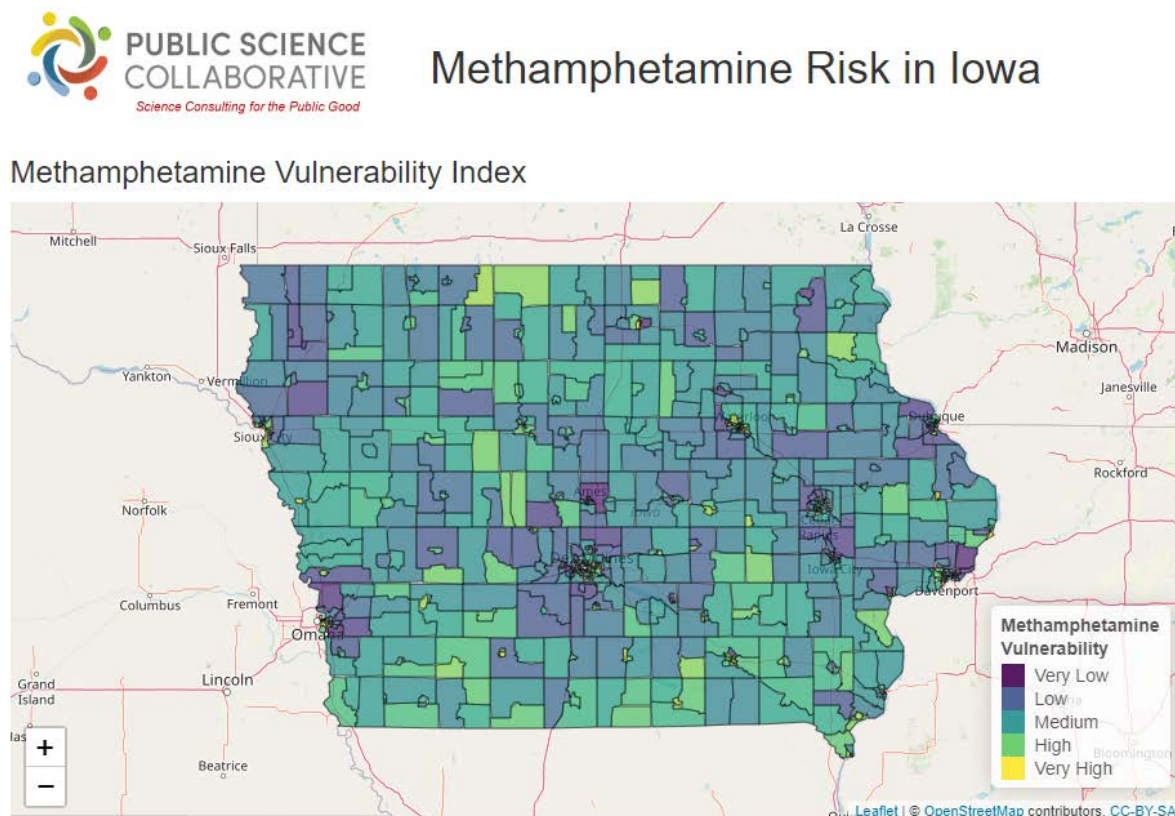


resources to best meet the needs of Iowa communities. The goal of the prediction and alignment process is to eventually reduce or prevent methamphetamine use in these communities.

Our population risk index can strengthen public health's ability to monitor vulnerable populations and coordinate the delivery of prevention, treatment, and recovery resources and interventions. Knowing *where* this high-vulnerability population is at the neighborhood level allows for a very granular application of prevention messaging, mobile clinical and treatment services, and community recovery resource investments, among other outreach efforts. A static example of the dynamic dashboard is presented as Figure 24.

We encourage you to go to the dashboard and explore where high concentrations of at-risk communities live and work in Iowa. You can look at the combined risk assessment prediction at the top of the page, as well as individually visualize underlying risk factors with the pull-down menu at the bottom of the page. The website allows users to zoom in and out to get very granular viewpoints of communities, down to the neighborhood level, where data is available. With tools such as these, Iowa's Substance Abuse Bureau will be better positioned to prioritize resources and programming that help support some of our most vulnerable and at-risk residents: https://publicsciencecollaborative.shinyapps.io/methamphetamine_vulnerability/.

Figure 24. *Methamphetamine Vulnerability Index*





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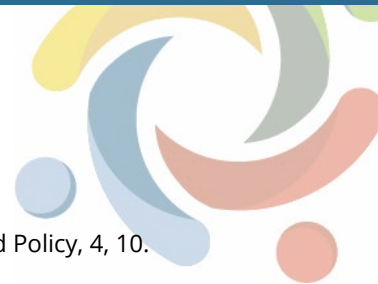
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