CENTER FOR COMMUNITY RESEARCH & SERVICE

February 2022

UNIVERSITY OF DELAWARE

BIDEN SCHOOL OF PUBLIC POLICY & ADMINISTRATION

SUBSTANCE USE DISORDER AMONG DELAWARE MEDICAID CLIENTS

ANNUAL PREVALENCE REPORT

2014-2019

CENTER FOR COMMUNITY RESEARCH & SERVICE

UNIVERSITY OF DELAWARE

BIDEN SCHOOL OF PUBLIC POLICY & ADMINISTRATION

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Executive Summary

Delaware's Division of Medicaid and Medical Assistance (DMMA) was awarded a planning grant (ending in September 2021) from the Centers for Medicare and Medicaid Services (CMS) under section 1003 of the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act. The intent of the grant is to increase the capacity of Medicaid providers who deliver substance use disorder (SUD) treatment or recovery services, in part by assessing the treatment needs of Medicaid beneficiaries.

Key Findings:

- **Delaware Medicaid enrollees have a high rate of SUD prevalence.** From 2014 to 2019, there were 313,287 unique individuals, age 12 and over, enrolled in Medicaid for at least one month in a full benefits aid category. In each individual year, the number of clients range from just under 180,000 to just over 190,000. Nearly one in five Delaware Medicaid clients (18.9%) had a SUD claim during at least one year. Opioid use disorder (OUD) was the most common type of SUD, followed by alcohol, cannabis, and cocaine or stimulant. Tobacco is not included in this

prevalence rate. According to CMS' SUD Databook[1], in 2018—the most recent year of data available—Delaware was tied with Oregon for the 5th highest rate of SUD among Medicaid beneficiaries in the United States.

- **The rate of SUD among Delaware Medicaid enrollees increased 43% from 2014 to 2019, with the fastest rate of increase among beneficiaries with opioid use disorder.** The prevalence of SUD in individual years increased steadily from 10.6% in 2014 to 14.7% in 2019. The share of clients with OUD-related claims increased over 70% during the same time frame, from 5.6% in 2014 to 9.6% in 2019, representing the fastest rate of increase for any type of SUD among Delaware Medicaid enrollees. According to CMS' SUD Databook, in 2018, Delaware had the 3rd highest rate of OUD among Medicaid beneficiaries in the United States.

- **Delaware Medicaid enrollees with SUD tend to be a complex, high-needs population**. Approximately a third of clients with SUD claims had polysubstance use, indicating SUD claims related to more than one type of substance. Among clients with OUD, over a third also had claims related to another type of SUD, with cocaine or stimulants and alcohol representing the most common types of substances used in addition to opioids. According to CMS' SUD Databook, in 2018, Delaware had the 2nd highest rate of polysubstance use among Medicaid beneficiaries in the United States. In 2019, 64.2% of clients with SUD also had at least one co-occurring mental illness diagnosis, with anxiety being the most common, followed by depression.

- **Pregnant and postpartum women with SUD are a critical area of concern in Delaware.** In 2019, more than 20% of pregnant and postpartum women enrolled in Medicaid had a SUD diagnosis. OUD was most common, with 10.6% of pregnant/postpartum women having an OUD diagnosis in 2019. The CMS SUD Databook indicates that the national average of SUD for the "pregnant women" eligibility category was 8.6% in 2018, and that Delaware had the 5th highest rate of pregnant women with SUD in the United States at 16.0%. Pregnant women with untreated SUD face a high risk of poor neonatal outcomes, such as having preterm labor or having a newborn with neonatal abstinence syndrome (NAS) and have an increased risk of overdose during the postpartum period.[2] In each year of the study, Delaware had approximately 300 infants diagnosed with NAS. This corresponds to an NAS prevalence of over 5% in each year from 2014-2019 among infants covered by Medicaid.[3] These estimates align with data recently published by CMS, which found that Delaware had the 3rd highest rate of NAS in 2019, at 5.7%.[4]

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[1] https://www.medicaid.gov/medicaid/data-systems/macbis/medicaid-chip-research-files/transformed-medicaid-statistical-information-system-t-msis-analytic-files-taf/index.html

[2] https://store.samhsa.gov/sites/default/files/d7/priv/sma18-5054.pdf

[3] The rate of NAS in Delaware as published in this report is higher than some other published data (e.g. *Neonatal Abstinence Syndrome and Maternal Opioid-Related Diagnoses in the US, 2010-2017:* https://jamanetwork.com/journals/jama/fullarticle/2774834). This is due to methodological differences, such as: (1) the data in this report applies only to individuals enrolled with Medicaid, a group demonstrated to have higher rates of NAS than those covered by other types of health insurance; (2) NAS was identified by analyzing all Medicaid claims and encounter data at any point during the calendar year associated with the infant's birth; and (3) the definition for NAS in this report includes provider use of NAS-related diagnosis codes at any point during the calendar year of birth, whereas other studies used hospital discharge data and a more restrictive definition of NAS limited to diagnosis during initial hospitalization. The broader definition used in this report may include some infants who had substance exposure in utero but may not have had NAS symptoms recognized during hospitalization.

[4] See "Rate of NAS per 1,000 births in newborns whose deliveries were covered by Medicaid or CHIP, 2017 – 2019." Available at: https://data.medicaid.gov/dataset/0563d88c-8fe5-42a8-9d69-f67fd21c0e91/data. The NAS estimates include data from 42 states without serious data quality issues as identified by CMS.

- **OUD is increasing most rapidly among racial minorities.** The OUD prevalence rate increased most rapidly among Black, non-Hispanic individuals, increasing 147% from 2014 to 2019, compared to 56% for White, non-Hispanic individuals. The OUD prevalence rate also doubled from 2014 to 2019 for Asian, non-Hispanic individuals, though overall prevalence remained low for this group (less than 2%). OUD among pregnant women also increased most among non-Hispanic Black women, increasing 181% (prevalence of 2.6% in 2014 to 7.3% in 2019) compared to a 27% increase in the prevalence rate among non-Hispanic White women (13.8% in 2014 to 17.5% in 2019).
- **Delaware has opportunities to enhance provider capacity in targeted geographic areas.** While county-level prevalence rates were similar across Delaware, zip code level data displayed a range from below 8% to above 20% for SUD prevalence, and a range of below 4% to above 15% for OUD prevalence, suggesting an opportunity for targeted provider and service expansion. Areas with the highest rates of OUD include Harrington (19952), Marydel (19964), Wilmington area (19801, 19804) and the Delaware City area (19706).
- **Prevalence rates for SUD and OUD may be underestimated and do not account for changes in need or utilization due to the COVID-19 pandemic**. Prevalence rates for SUD and OUD are likely underestimated, as only enrollees in the full benefit aid category were included in the analysis. In addition, because this is a claims-based analysis, Medicaid clients would not be included in the report if they did not present themselves at a medical setting and/or have a doctor indicate a diagnosis of SUD. The impact of the COVID-19 pandemic on SUD prevalence is not included in the analysis due to lack finalized claims data for 2020 and beyond. However, the pandemic may have made it more difficult for clients to seek routine care, receive SUD treatment, and likely exacerbated issues such as mental illness and substance use. Conversely, COVID-19 may have expanded access to care in certain cases due to the increased use of telehealth. Delaware's relatively stable number of Medicaid beneficiaries may also have increased during the pandemic due to unemployment, financial hardships, and/or maintenance of eligibility requirements.

Introduction

Delaware's Division of Medicaid and Medical Assistance (DMMA) was awarded a planning grant (ending in September 2021) from the Centers for Medicaid and Medicaid Services (CMS) under section 1003 of the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act. The intent of the grant is to increase the capacity of Medicaid providers who deliver substance use disorder (SUD) treatment or recovery services, in part by assessing the treatment needs of Medicaid beneficiaries. The first step in understanding the scope of the need for SUD treatment in Delaware is estimating the prevalence of SUD among Medicaid beneficiaries in recent years. Estimating the need via prevalence rates will help indicate the need for SUD treatment. To accomplish this, Medicaid claims and encounter data from 2014-2019 were analyzed.

The report is organized in the following way: methodology & data definitions are presented first, followed by a results section focused on overall SUD trends in Delaware. Subsequently, a deeper analysis of results related to opioid use disorder (OUD) and neonatal abstinence syndrome (NAS) is presented. Finally, the report concludes with a brief overview of mental illness diagnoses among Medicaid clients generally, and clients with SUD. All tables are included in Appendix A; figures are

included in the discussion of results. Appendix B includes lists of codes used to describe and categorize Medicaid clients, and to identify SUD types.

Methodology & Data Definitions

The first step in understanding the scope of the need for SUD treatment in Delaware is estimating the prevalence of SUD among Medicaid beneficiaries in recent years. To accomplish this, claims and encounter data from 2014-2019 were analyzed. SUD types included opioid use disorder (OUD), as well as claims related to alcohol, cannabis, sedatives, cocaine/stimulants, and hallucinogens. Tobacco use was not included as a type of SUD, so all SUD prevalence numbers reflect non-tobacco related claims.

The starting point for establishing whether a client had a SUD was the diagnostic definition outlined in the U.S. Department of Health and Human Services' "T-MSIS Substance Use Disorder (SUD) Data Book: Treatment of SUD in Medicaid, 2018," and a methodological approach specified as "SUD Tool 1" and developed by CMS.[5] In SUD Tool 1, first, individuals had to be full Medicaid beneficiaries to be included in the analysis. We maintained this eligibility threshold, and therefore included clients in the analysis if they were eligible in a full-benefits aid category for at least one month during a year. In SUD Tool 1, a beneficiary is identified as having a SUD if he or she had one qualifying inpatient claim for SUD treatment, two outpatient (including home health) or long-term care claims for SUD treatment on different days, or one pharmacy claim for medications for addiction treatment (MAT); the SUD data book notes that this likely provides an underestimate of clients in need of treatment.[6] The diagnostic definition of SUD (per the SUD data book) relies on WHO diagnosis criteria: ICD10 codes F1x.0 – F1x.9[7] and corresponding ICD9 codes.

We relaxed the diagnostic criteria by not requiring two outpatient claims, instead including clients who may have had only one claim. We also included claims with revenue codes for detoxification, residential treatment or halfway house, drug/alcohol rehabilitation, and codes for overdose or poisoning by drugs or alcohol. Tobacco was excluded in this analysis. The SUD data book method only relies on primary and secondary diagnosis codes to identify SUD; in contrast, we used all diagnostic variables were used to construct our SUD prevalence metric, not just primary and secondary diagnoses (each claim record in the Delaware Medicaid medical encounter data has up to a maximum of 17 diagnostic codes).

Over the course of the six years analyzed to date (2014-2019), there were 313,287 unique clients enrolled in Medicaid who met the inclusion criteria. Most of the clients were enrolled during more than one year. In each individual year, the number of clients range from just under 180,000 to just over 190,000. This is the denominator used to determine prevalence of the six SUD types (and polysubstance

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[5]Report to Congress. T-MSIS Substance Use Disorder Data Book: Treatment of SUD in Medicaid, 2018. January 2021. U.S. Department of Health and Human Services. https://www.medicaid.gov/medicaid/data-systems/downloads/2018-sud-data-book.pdf

[6]This is the same description as in the SUD Data Book (p.17). They note in the SUD Data Book that this approach "does not identify all Medicaid beneficiaries who had a SUD in 2017 because the algorithm used to identify beneficiaries treated for a SUD is based on claims data. It can therefore identify only the beneficiaries who were treated for a SUD … Beneficiaries with a SUD often do not seek treatment because of factors such as the stigma associated with having a SUD and the difficulty of locating a treatment provider. The research literature indicates that only one in five individuals with a SUD received [sic] treatment. Because this SUD Data Book reflects information provided by states for Medicaid beneficiaries who were treated for a SUD, our methods are therefore likely to underestimate the overall number of Medicaid beneficiaries with a SUD."

[7] https://www.who.int/substance_abuse/terminology/ICD10ClinicalDiagnosis.pdf?ua=

use). In Chart 1 below, the inclusion criteria and categories of analysis are presented briefly. The full list of procedure, diagnostic, revenue, and prescription codes related to SUD is provided in Appendix B.

Chart 1: Inclusion Criteria and Analytical Categories/Variables

Categories / Variables	Definitions

Medicaid Population	• Inclusion criteria (denominator):
	    o Eligible for at least one month in a full-benefits Medicaid aid category
	    o Excludes dual eligible and CHIP clients

SUD Definition	• Inclusion criteria (numerator, for SUD prevalence rates):
	    o Has one of the following:
	        ▪ qualifying inpatient claim
	        ▪ qualifying outpatient claim
	        ▪ medications for addiction treatment (MAT) pharmacy claim
	    o Utilizes expanded version of SUD data book diagnostic criteria
	    o Uses all diagnosis fields (up to 17 possible per record) and procedure code fields (up to 7) – not just primary and secondary codes

Types of SUD	• Categories of SUD:
	    o Opioid use disorder (OUD)
	    o Alcohol
	    o Cannabis
	    o Sedatives
	    o Cocaine/Stimulants
	        ▪ This category includes cocaine & amphetamines
	    o Hallucinogens
	    o Multiple substances

Mental Illness	• Diagnostic codes (at least one claim) were used to identify clients with the following types of mental illness: o Anxiety, depression, bipolar disorder, psychosis, personality disorders, obsessive disorders

Payment Type	• Categories of payment of encounters related to SUD:
	    o Managed Care Organization (MCO)
	    o Fee for Service (FFS)

Sex	• Male or Female
Age	• Inclusion criteria: 12 years old and older
Race/Ethnicity	• White, non-Hispanic; Black, non-Hispanic; Hispanic; Asian; Native American; Other • *Note: Medicaid enrollment data related to race/ethnicity is not considered fully reliable, especially regarding potential under-counting of the Hispanic population*
Pregnancy & Postpartum	• Pregnancy and postpartum status were determined using standardized code lists from the Office of Population Affairs • Women were designated as pregnant if they had a pregnancy-related claim during the analytic year or a live birth claim through June of the following year • Women were designated as postpartum if they had a live birth at any time during the calendar year, or in the final two months of the prior calendar year • For the purposes of this analysis, pregnant & postpartum women were analyzed together
NAS	• Infants with neonatal abstinence syndrome were determined by analyzing all claims and encounter data from the calendar year associated with the infant's birth to assess for the presence of relevant diagnosis codes
County	• County of residence was determined using client enrollment file

Categories / Variables	Definitions

	○ New Castle
	     ○ Kent
	     ○ Sussex

Zip Code	• Delaware zip codes range from 19701 to 19980 • Sample size must be at least 11 clients for reporting of aggregate data within a zip code

Limitations

This analysis has several potential limitations, some related to common issues with administrative data and Medicaid enrollment data, and others unique to the ongoing Covid-19 pandemic. Key limitations related to Medicaid data generally include several factors. First, prevalence rates over 2014-2019 are most likely under-reported, for the following reasons: (1) Medicaid beneficiaries who are dual-enrolled (covered by both Medicaid and Medicare) are not included in this analysis and may have had a SUD or OUD diagnosis; (2) prevalence rates are based on demand for services; in other words, a Medicaid client will not be included in the count if they did not present themselves at a medical setting and had a doctor indicate a diagnosis of SUD and/or mental illness; and (3) the increase in the prevalence rates may be an indicator of clinicians expanded awareness of SUD. Other data-related limitations include that there is known lack of reliability among the race and ethnicity data, particularly related to designation of enrollees of Hispanic ethnicity. As a result, the race/ethnicity designation of Medicaid clients is likely to undercount Hispanic clients.

Further, there are several limitations related to the impact of the COVID-19 pandemic that could impact the usefulness of 2014 through 2019 data to extrapolate Medicaid client SUD treatment needs in 2020 and beyond. First, the U.S. has been in a public health emergency (PHE) since January 31, 2020, and the U.S. Department of Health and Human Services had indicated that the PHE will last through at least the end of 2021; during this time, states must maintain enrollment for beneficiaries through the end of the month in which the PHE ends (even if they technically no longer meet eligibility requirements) so less churn is likely in the Medicaid population.[8] DMMA has preliminary evidence demonstrating that the Medicaid population in Delaware has increased due federal maintenance of eligibility requirements. Second, Delaware's relatively stable number of Medicaid beneficiaries may increase if unemployment and/or financial hardship increased due to the impact of the pandemic, affecting Medicaid eligibility. The pandemic may also have made it more difficult for clients to seek routine care, receive SUD treatment, and/or may have exacerbated issues such as mental illness and substance use. Prevalence rates may appear artificially low in 2020 if clients had more difficulty than usual seeing care providers and thus incurring associated claims for SUD. Conversely, COVID-19 may have expanded access to care in certain cases due to the increased use of telehealth. The full impact of COVID-19 on healthcare utilization, including SUD treatment, will not be understood until several years after the pandemic.

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[8] See Medicaid.gov/federal-policy-guidance/downloads/sho20004.pdf

Results Section 1: General Overview of SUD trends in Delaware

## Enrollment Trends among Medicaid Clients, with and without SUD

During the years 2014-2019, we identified 313,287 unique individuals who met the eligibility criteria for the analysis. With regard to age of clients in the first year they are included in the data, we observe that clients in general skew towards a younger age, with the 12 to 21-year-old Medicaid enrollee age category representing nearly one third of the clients. This reflects Medicaid's importance as coverage for families with children. Less than 10% of the clients were over the age of 60. This is likely due in part to including only clients with full-benefit coverage; those over 65 with Medicare will have been excluded. (See Appendix A, Table 1, for demographic characteristics of Medicaid enrollees in this analysis.)

Among unique clients included in the analysis, one in five (20%) had a diagnosis of SUD at some point during the five years analyzed. However, there were distinct differences by sex and age. Among women aged 22-59, nearly one in four had a SUD diagnosis; among men aged 30-59, about one in three had a SUD diagnosis. (See Appendix A, Table 2, for demographic characteristics of Medicaid enrollees with a SUD diagnosis in any year, versus those without a SUD diagnosis.) We included clients in the analysis if they were enrolled in at least one month of a year in a full benefits aid category. However, most clients were enrolled for a significantly longer period of time. Overall, we observed that the average time enrolled in Medicaid for all clients was just over 34 months out of a possible maximum of 72 months during 2014-2019. On average, clients were present in over three years of data. However, clients with a SUD diagnosis appear to have been enrolled significantly longer; sixteen months longer on average. In total, nearly half of clients with a SUD diagnosis were eligible for all six years of analysis, versus only about 20% of clients who did not have a SUD diagnosis. Nearly 20% of clients who had a SUD diagnosis present in all 72 months of data, versus less than 10% of clients without such a diagnosis.

Gaps in eligibility were defined as a client being present in multiple years of data, but with an apparent break in eligibility between those years. Analysis of Medicaid claims does not allow us to understand reasons for gaps in coverage, but possibilities include fluctuations in employment of income impacting eligibility (leading, for instance, to transitions between private insurance and Medicaid); time covered by partial-benefits aid categories, instead of full; moving out of state, then back; or incarceration. Overall, only 7.4% of clients had such a break in eligibility. Approximately 9.5% of clients with SUD had a break in eligibility, versus 6.9% of clients without such a diagnosis. Clients present in more years of data were more likely to have had an apparent gap in eligibility during the time period analyzed. (See Appendix A, Tables 3, 4, and 5 for length of time enrolled in Medicaid and eligibility gaps by SUD status.)

While the race/ethnicity designation in Medicaid client enrollment data is considered potentially unreliable, especially with respect to identification of Hispanic clients, it does appear that there is a higher prevalence of SUD among non-Hispanic White Medicaid clients. The highest rates of SUD appear to be among non-Hispanic white men, with 1 in 4 individuals having a diagnosis of SUD. Non-Hispanic white women also had the highest rates of SUD, at 21%. Hispanic clients had consistently lower SUD prevalence, as did Asian clients. Over the course of all six years of data, white clients appeared to be over-represented and Hispanic clients under-represented in terms of having SUD diagnoses (Figure 1).

Figure 1. Distribution of Race/Ethnicity Among Clients With and Without an SUD Diagnosis
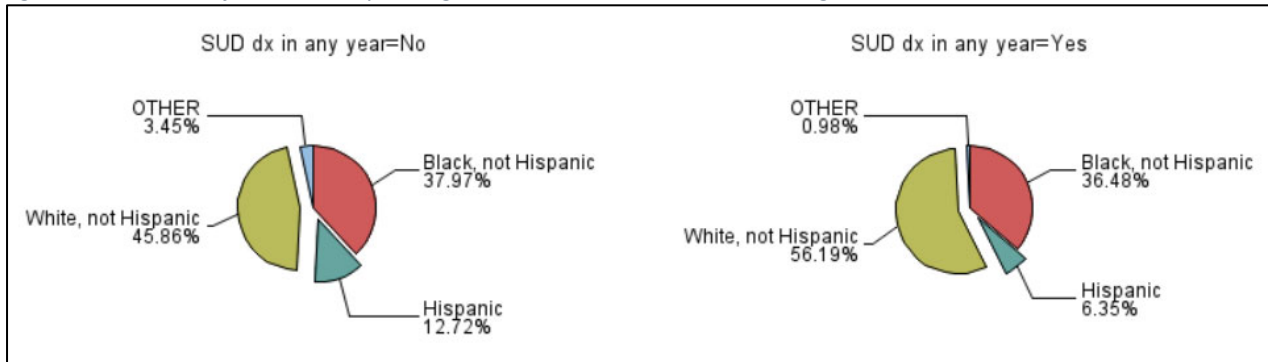
Statewide Prevalence of SUD, 2014-2019, by Demographics

This section of the report presents trends for Delaware Medicaid clients with any type of SUD. The number of clients in each year allows for the examination of trends in SUD diagnoses without suppression by race/ethnicity or age category. The statewide prevalence of SUD among Medicaid clients increased steadily from 10.6% to 14.7% from 2014 to 2019 (see Figure 2). While men had higher rates of SUD overall, the rate of increase among men and women was very similar (see Figure 3). (See Appendix A, Tables 6 and 7 for the number and percent of Delaware Medicaid enrollees with SUD by year and across all demographic categories.)

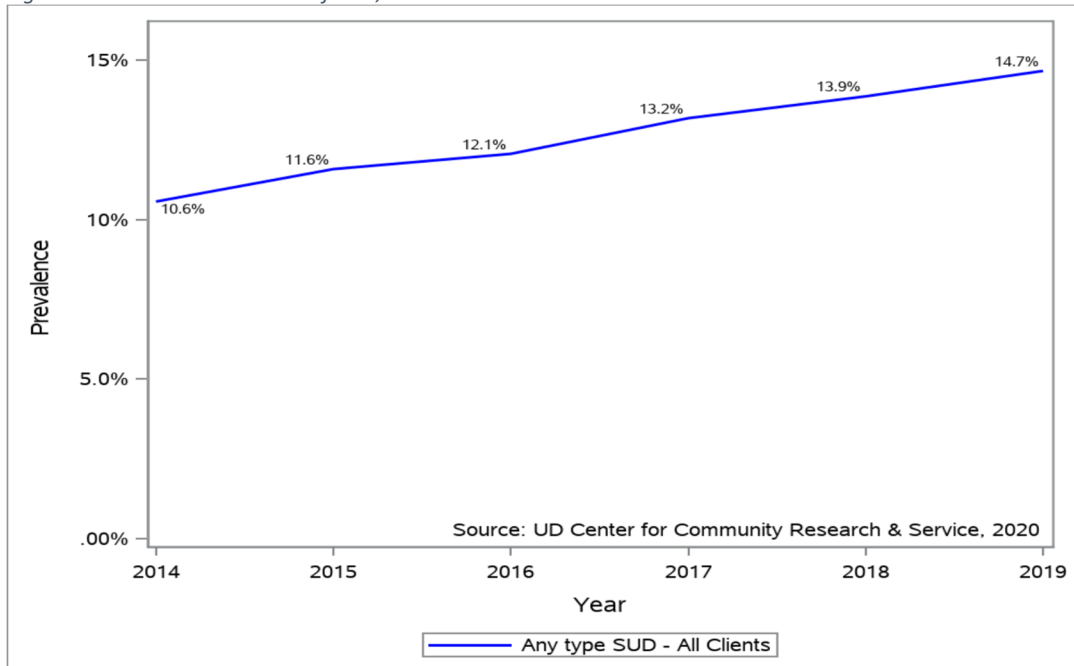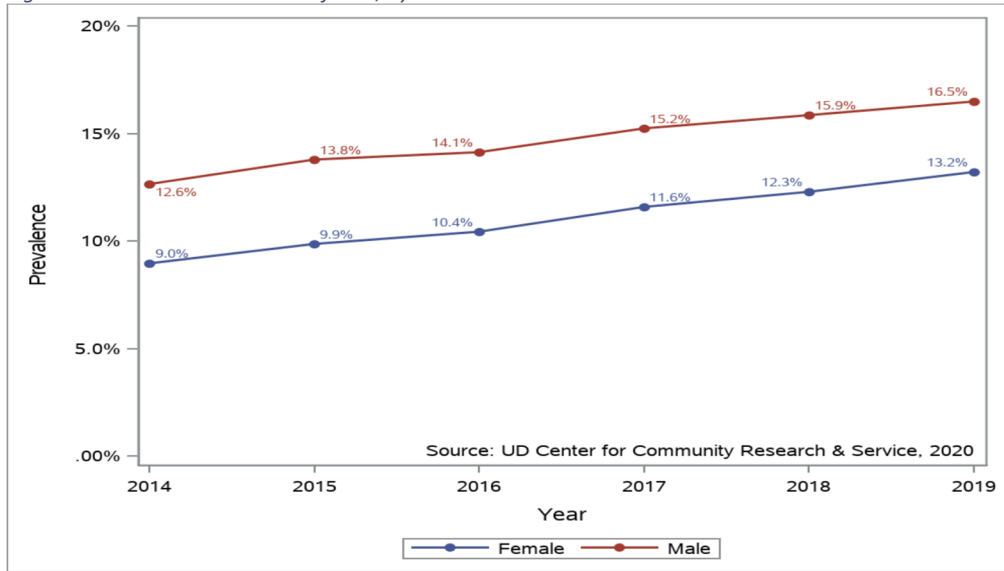*Figure 2. Statewide Prevalence of SUD, All Clients*

Figure 3. Statewide Prevalence of SUD, by Sex

With respect to age, SUD prevalence rates were highest (and steadily increasing) among clients aged 30 to 39, 40 to 49, and 50 to 59 (see Figure 4, and Appendix A, Tables 6 & 7). While the oldest clients in the analysis (aged 60 or higher) had lower rates than this middle-aged group, rates of SUD were increasing among older adults as well. Age groups showing a decline in SUD prevalence over the time period examined included 12 to 21-year-old clients and, from 2018 to 2019, a slight decrease among 22 to 29-year-old clients was also observed. It should be noted that the true prevalence rate among clients over the age of 65 may be different from these estimates, because most older Delawareans would not be covered by Medicaid.

Figure 4. Statewide Prevalence of SUD, by Age Category
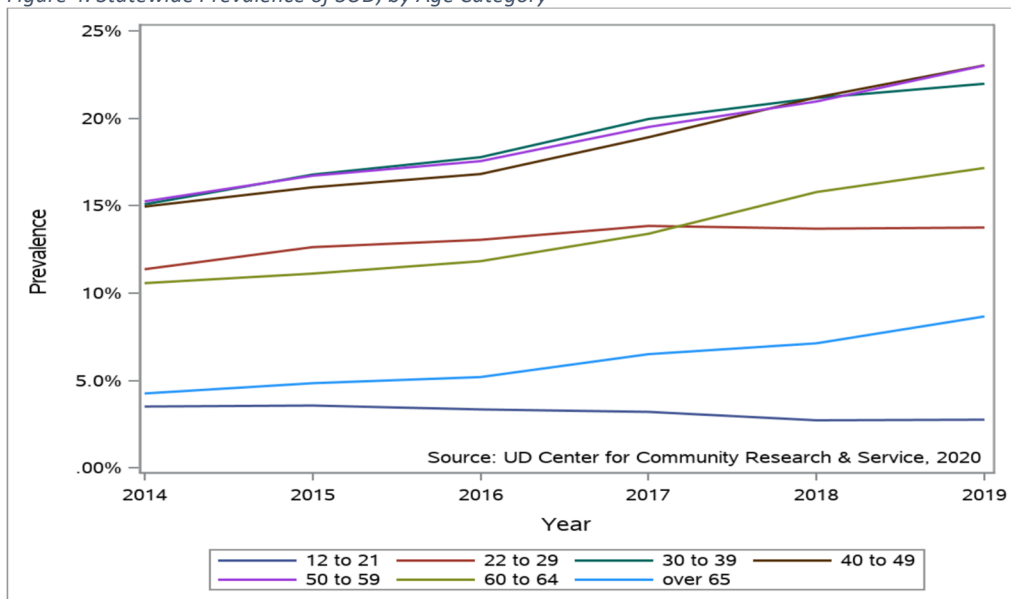
Opioid use disorder (OUD) was the most common type of SUD, followed by alcohol, cannabis, and cocaine or stimulant (see Figure 5). While sedative and hallucinogen related claims were also observed,

the number and share of clients with these diagnoses was relatively small. SUD prevalence rates were generally increasing across all types of substances, and the share of Delaware Medicaid clients with claims related to more than one type of SUD increased from 3.5% to 4.6% from 2014 to 2019. (See Appendix A, Table 8 for the prevalence of each SUD type across all clients from 2014 through 2019.)

Figure 5. Statewide Prevalence of All SUD Types
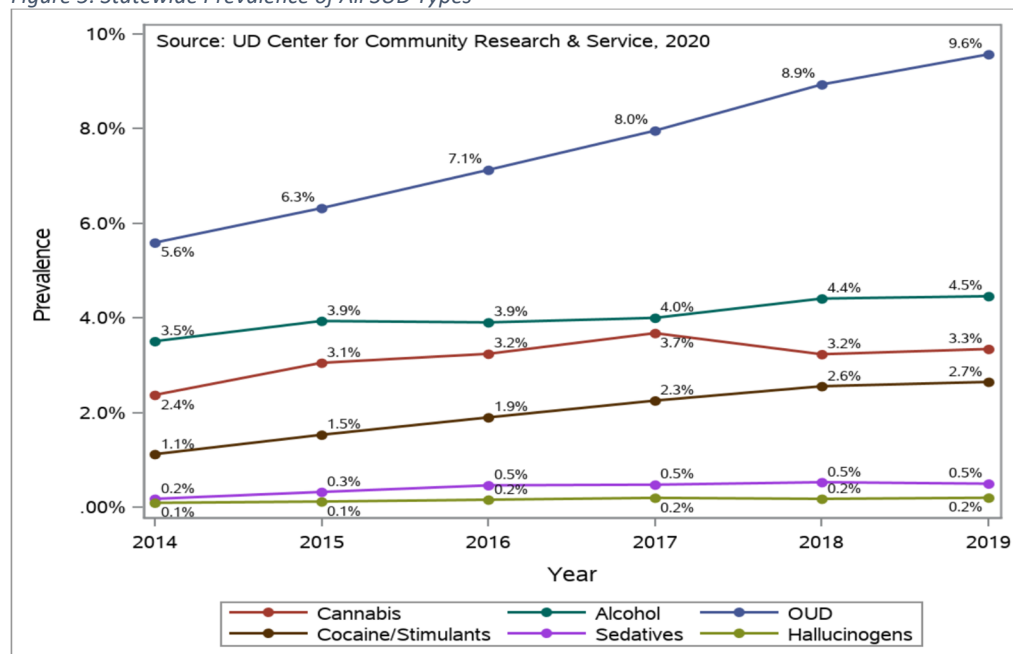
In each year, clients with SUD were, on average, four years older than clients without such a diagnosis. The age difference was most pronounced for claims related to alcohol. Prevalence of alcohol-related claims peaked among clients in their 50s, while prevalence of opioid-related claims peaked among clients in their 30s. Cannabis and hallucinogens were the only SUD types where we observe that average age of clients with the diagnosis is younger than clients without the diagnosis. (See Appendix A, Table 9 for the mean and standard deviation of client age, by SUD type.)

While the race/ethnicity designation of Medicaid clients is considered somewhat unreliable, analysis suggests that non-Hispanic white clients had the highest prevalence of SUD (see Figure 6). In 2019, non-Hispanic white clients comprised 46.1% of the clients overall, but 58.9% of the clients with SUD. While the prevalence was lower among non-Hispanic Black clients, it was increasing at a similar rate to non-Hispanic white clients; notably, both the prevalence and the change in rates was lower and less volatile among Hispanic clients. Statewide, Asian and Native American clients also had reportable number (at least 11) of clients with SUD.

Figure 6. Statewide Prevalence of SUD, by Race/Ethnicity
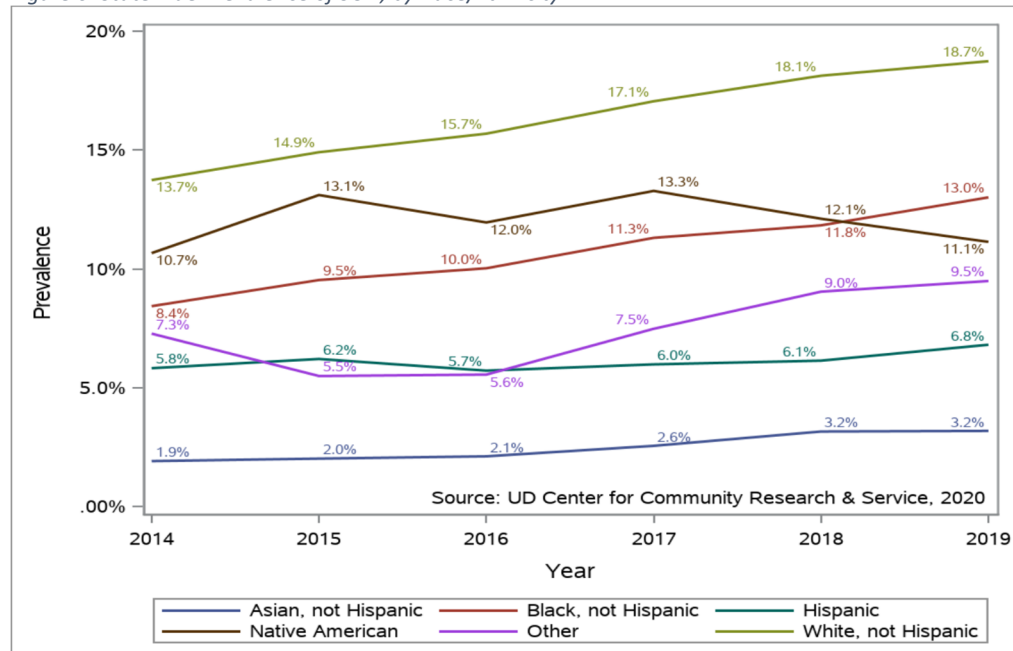
Pregnant and postpartum women represent a special population of concern among Delaware Medicaid enrollees. Among all pregnant/postpartum women, the prevalence of SUD exceeded 20% from 2016 through 2018 but appeared to vary greatly by race/ethnicity; among white women, nearly 30% had a SUD diagnosis in 2018, versus just under 20% of non-Hispanic Black women and less than 10% of women with other race/ethnicities (other includes Hispanic, Asian, and other race/ethnicities). In the context of the potential unreliability of the race/ethnicity designation of Medicaid clients, especially with suspected under-reporting of Hispanic ethnicity, these results should be considered exploratory. The trend in SUD prevalence among pregnant/postpartum women, by race/ethnicity, is shown in Figure 7. (See Appendix A, Tables 10 and 11, for the number and percent of pregnant women with SUD, by county, race/ethnicity, and age category, from 2014 through 2019.)

Figure 7. Prevalence of SUD (Any Type), Among Pregnant Women
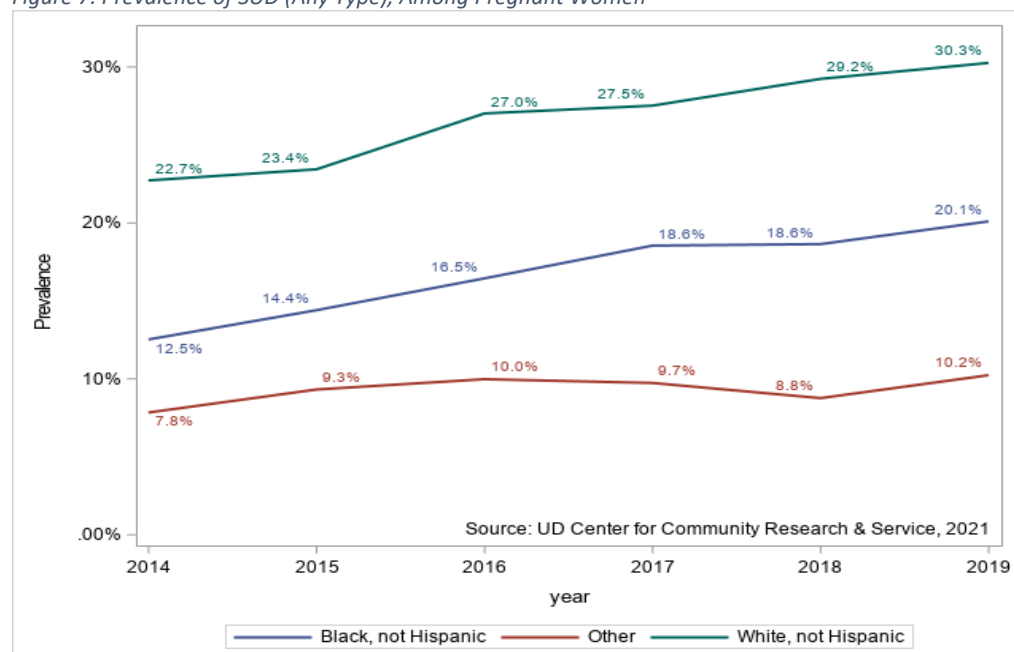
Coverage Status

DMMA currently offers Medicaid benefits on both a fee-for-service (FFS) basis and through two managed care organizations (MCOs): AmeriHealth Caritas and Highmark Health Options. As of July 2019, 97% of Delaware's Medicaid population overall was enrolled with an MCO, while 3% received benefits only through the FFS system and were not enrolled in MCOs.[9] Among clients with SUD claims, a strong majority had claims paid by MCO, but a small share (~13%, in 2016-2018) also had claims paid by FFS. Only a small number of clients in each year (ranging from 5.3% to 9.8%) had SUD-related claims paid solely by FFS; this share declined overall from 2014 to 2019. (See Appendix A, Table 12, for share of clients with SUD with services paid by a MCO, FFS, or both, from 2014 through 2019.)
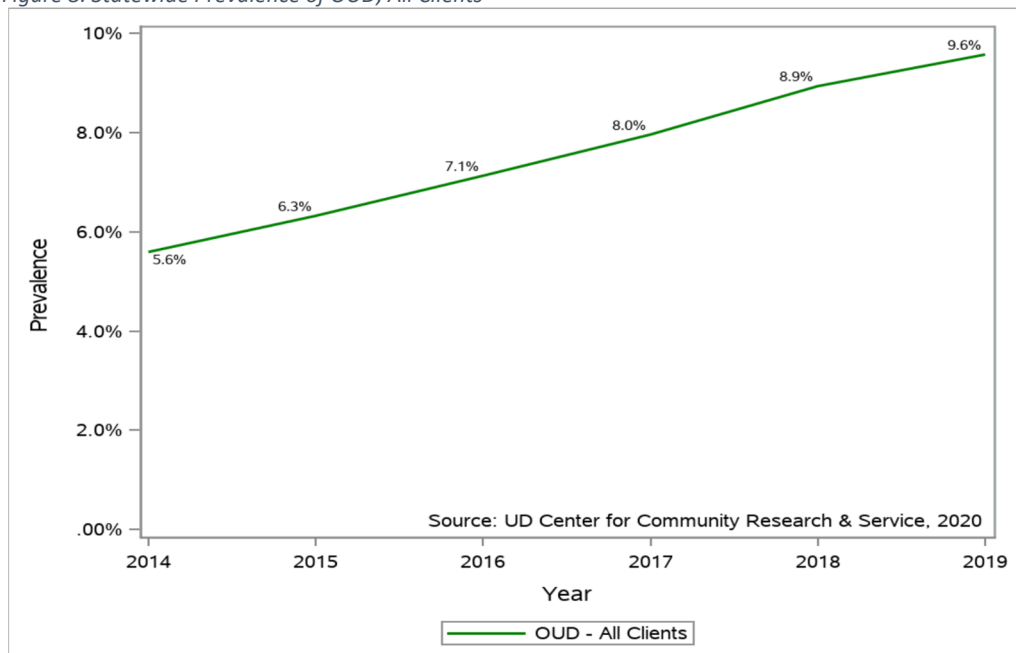
Results Section 2: Opioid Use Disorder in Delaware

OUD by Demographics: Sex, Age, and Race/Ethnicity

This section of the report presents trends for Delaware Medicaid clients with OUD, which represented the most common and fastest growing type of SUD observed among Medicaid clients in the state, and the focus of the SUPPORT Act Planning Grant. The statewide prevalence of OUD increased from 5.6% in 2014 to 9.6% in 2019 among all Delaware Medicaid clients included in this analysis (see Figure 8).

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[9] https://www.kff.org/medicaid/state-indicator/share-of-medicaid-population-covered-under-different-delivery-systems/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

*Figure 8. Statewide Prevalence of OUD, All Clients*

OUD prevalence by sex and age categories were similar to rates observed for SUD overall, which is unsurprising given that OUD was the most frequently observed type of SUD. While the prevalence of OUD among men was higher, prevalence increased at a similar rate among males and females (see Figure 9).

Figure 9. Statewide Prevalence of OUD, by Sex
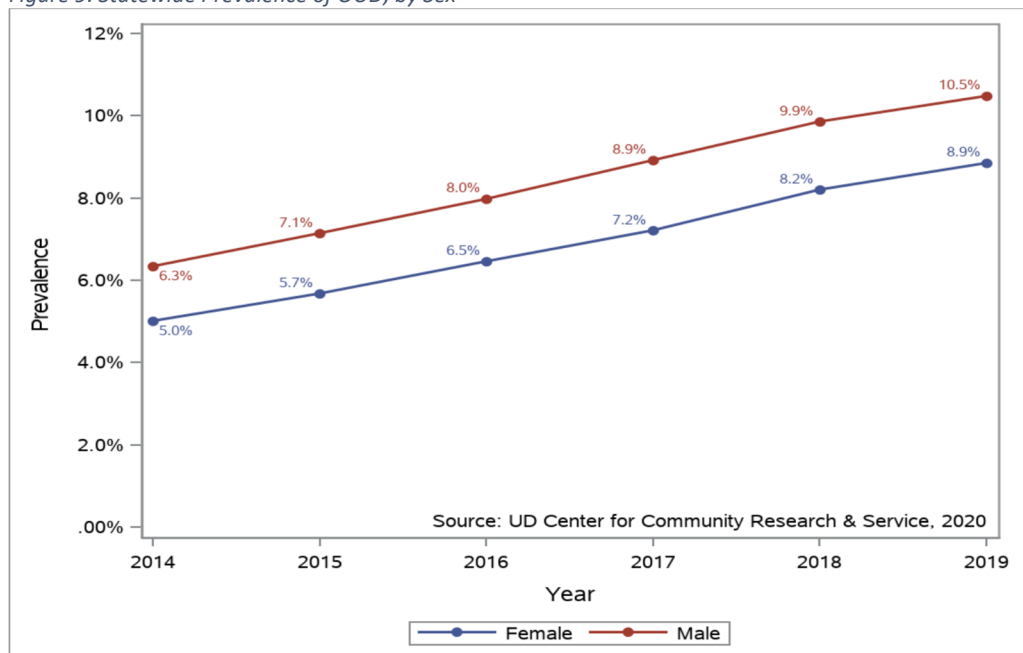
In terms of OUD prevalence by age category, OUD was increasing in all age categories except for 12 to 21-year-old Medicaid enrollees (see Figure 10).

Figure 10. Statewide Prevalence of OUD, by Age Category
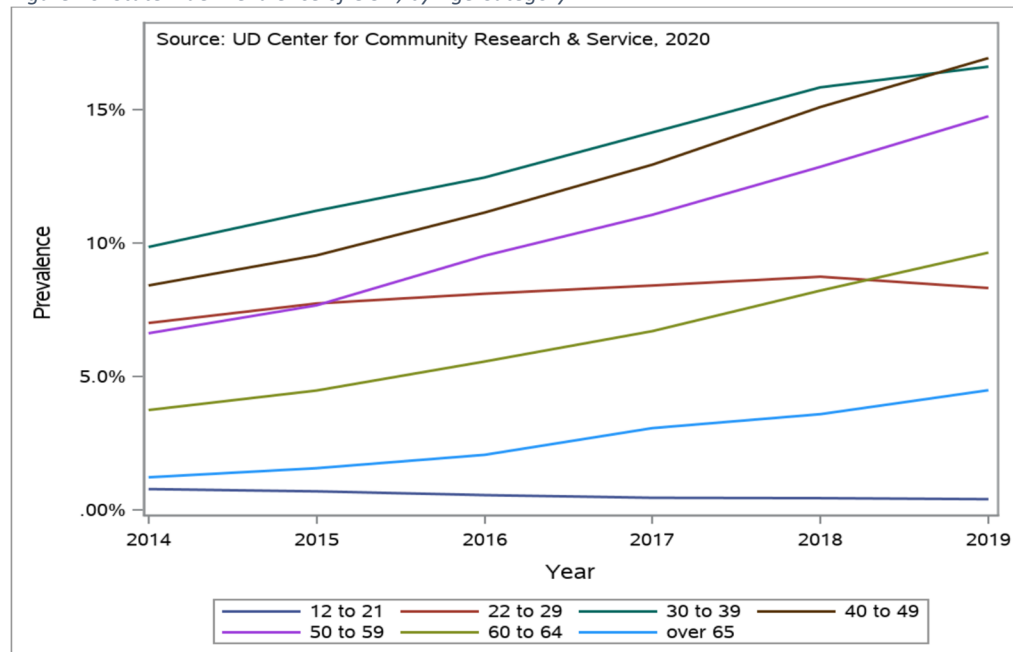

With the understanding that race/ethnicity data in Medicaid client enrollment files is considered somewhat unreliable, especially regarding potentially under-counting Hispanic clients, it remains valuable to explore potential trends in OUD by race/ethnicity. Non-Hispanic white clients had the highest, and most steadily increasing, prevalence of OUD (see Figure 11). This is consistent with national data, which reports white Americans represent approximately 80% of opioid overdoses.[10] However, the OUD prevalence rate grew most rapidly among Black, non-Hispanic individuals, increasing 147% from 2014 to 2019, compared to 56% for White, non-Hispanic individuals. The OUD prevalence rate also doubled from 2014 to 2019 for Asian, non-Hispanic individuals, though overall prevalence remained low for this group (less than 2%). (See Appendix A, Table 13, for OUD prevalence among Delaware Medicaid enrollees, by year, and across demographic categories.)

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[10] Kaiser Family Foundation, kff.org/other/state-indicator/opioid-overdose-deaths-by-raceethnicity

Figure 11. Statewide Prevalence of OUD by Race/Ethnicity
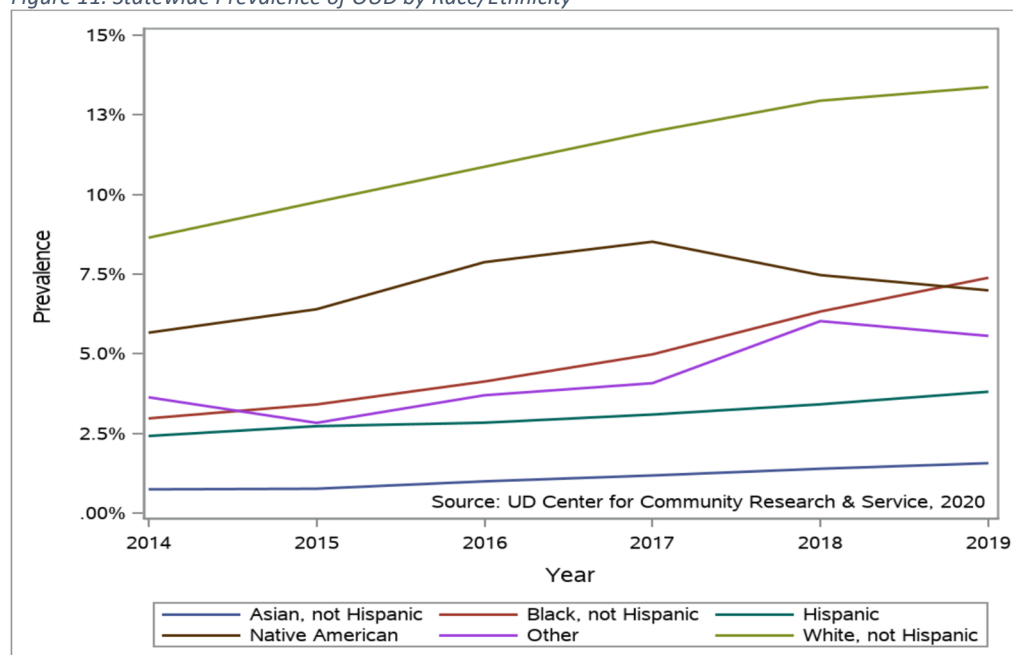
OUD among Pregnant/Postpartum women

Due to the potential negative outcomes associated with untreated OUD among pregnant/postpartum women, assessing OUD rates among these women is of considerable importance. Pregnant women with untreated OUD face a high risk of poor neonatal outcomes, such as having preterm labor or having a newborn with neonatal abstinence syndrome (NAS).[11] Among all pregnant/postpartum women, the overall prevalence of OUD increased from 7.1% in 2014 to 10.6% in 2019 (Table 15). Sussex County appears to have higher rates of OUD among pregnant or postpartum women than in New Castle County or Kent County (Table 15). OUD among pregnant women increased most among non-Hispanic Black women, increasing 181% (prevalence of 2.6% in 2014 to 7.3% in 2019) compared to a 27% increase in the prevalence rate among non-Hispanic White women (13.8% in 2014 to 17.5% in 2019) (See Appendix A, Tables 14 and 15, for the number and percent of pregnant/postpartum women with OUD, by county, race/ethnicity, and age category, from 2014 through 2019).

Neonatal Abstinence Syndrome

As noted above, OUD during pregnancy is associated with poor infant outcomes, including NAS.[12] In each year of the study, there were approximately 300 infants diagnosed with NAS among Delaware Medicaid enrollees. This number peaked in 2016, with 351 infants diagnosed with NAS, and declined to 289 in 2019. This corresponds to an NAS prevalence of over 5% in each year from 2014 to 2019 among

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[11] https://www.macpac.gov/wp-content/uploads/2020/06/Chapter-6-Substance-Use-Disorder-and-Maternal-and-Infant-Health.pdf

[12] While the terms NAS and NOWS (neonatal opioid withdrawal syndrome) are often used interchangeably, and NAS is commonly understood to mean NOWS, because opioids are the most common drug associated with NAS; there is not a specific ICD-10-CM diagnosis code to differentiate NOWS from NAS. See cdc.gov/mmwr/volumes/68/wr/mm6801a2.htm. A limitation of this analysis is therefore that the code recommended for use of identifying NOWS may also capture withdrawal from other types of SUD by the mother, and over-estimate the number of infants affected by maternal OUD specifically.

infants covered by Medicaid, a rate that appears to be notably higher than the rate of NAS in other states. [13] While the rate of OUD prevalence among pregnant/postpartum women has steadily increased from 2014 through 2019, the rate of NAS peaked in 2016, and has slightly declined since then (see Figure 12).

Figure 12. OUD Prevalence Among Pregnant/Postpartum Women and NAS Prevalence Among Infants (All Race/Ethnicities)
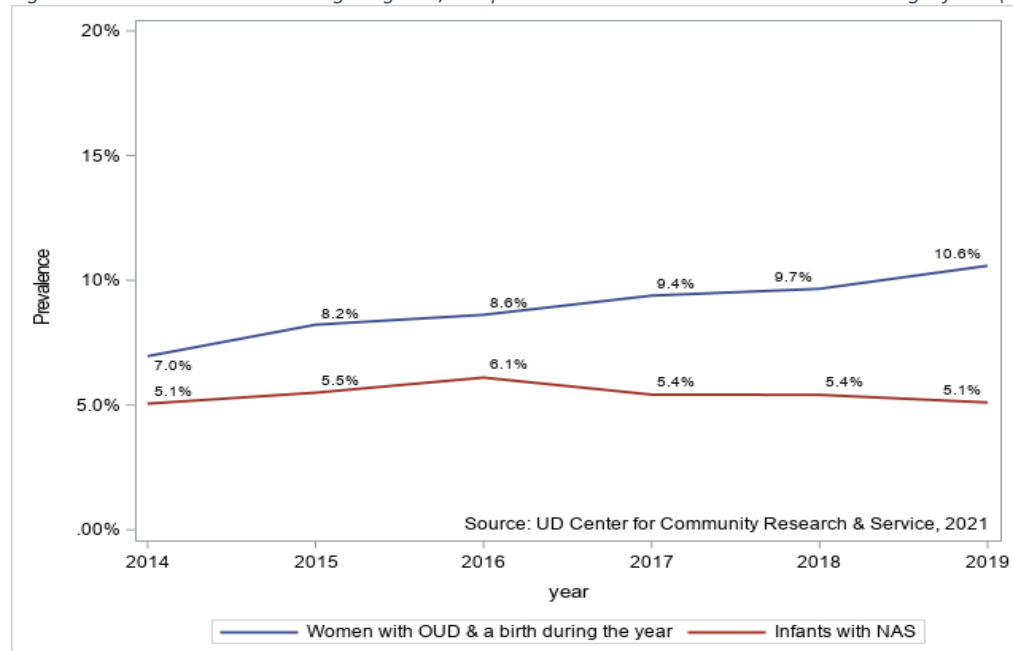
The prevalence of NAS among white infants enrolled in Medicaid was approximately 10% in each year, significantly higher than for Hispanic or non-Hispanic Black infants. This is to similar findings from national data.[14] Figures 13 and 14 below display the contrast between rates of OUD and NAS among non-Hispanic white women and their infants, and the much lower rates of OUD and NAS among non-Hispanic Black women and their infants. The percentage of NAS among both groups has flattened between 2017 and 2019, even while the OUD prevalence rate has increased, perhaps indicating better treatment for women with OUD during their pregnancy. (See Appendix A, Tables 16-20, for NAS numbers and prevalence by county, sex, and race/ethnicity.)

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[13] The rate of NAS in Delaware as published in this report is higher than some other published data (e.g. *Neonatal Abstinence Syndrome and Maternal Opioid-Related Diagnoses in the US, 2010-2017:* https://jamanetwork.com/journals/jama/fullarticle/2774834). This is due to methodological differences, such as: (1) the data in this report applies only to individuals enrolled with Medicaid, a group demonstrated to have higher rates of NAS than those covered by other types of health insurance; (2) NAS was identified by analyzing all Medicaid claims and encounter data at any point during the calendar year associated with the infant's birth; and (3) the definition for NAS in this report includes provider use of NAS-related diagnosis codes at any point during the calendar year of birth, whereas other studies used hospital discharge data and a more restrictive definition of NAS limited to diagnosis during initial hospitalization. The broader definition used in this report may include some infants who had substance exposure in utero but may not have had NAS symptoms recognized during hospitalization.

[14] ahrq.gov/data/infographics/neonatal-abstinance-syndrome.html

Figure 13. OUD Prevalence among Pregnant/Postpartum Non-Hispanic White Women, and NAS Prevalence among Non-Hispanic White Infants
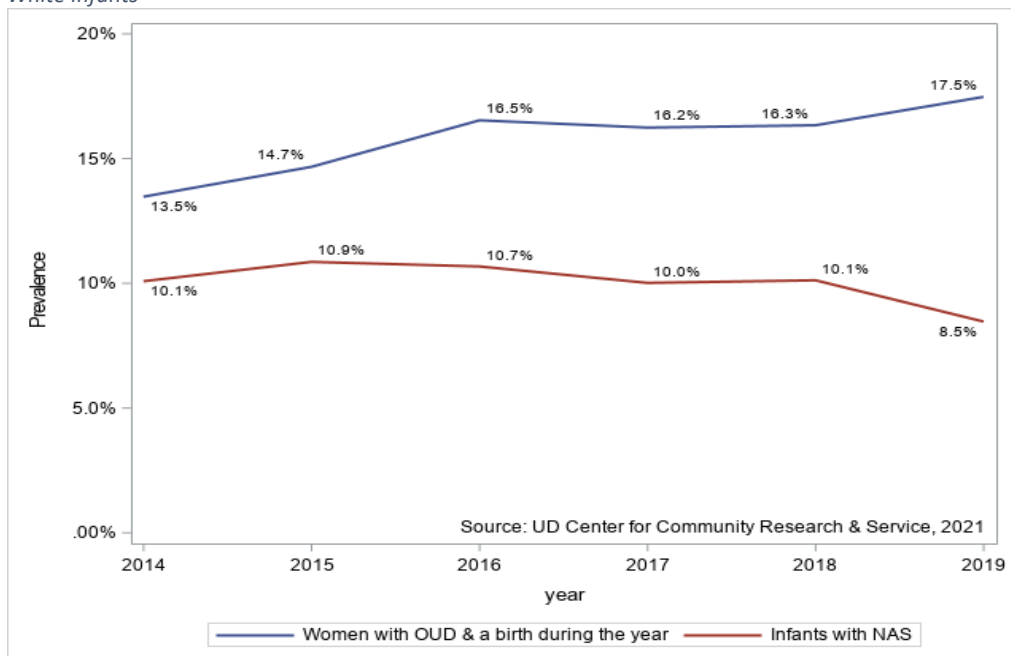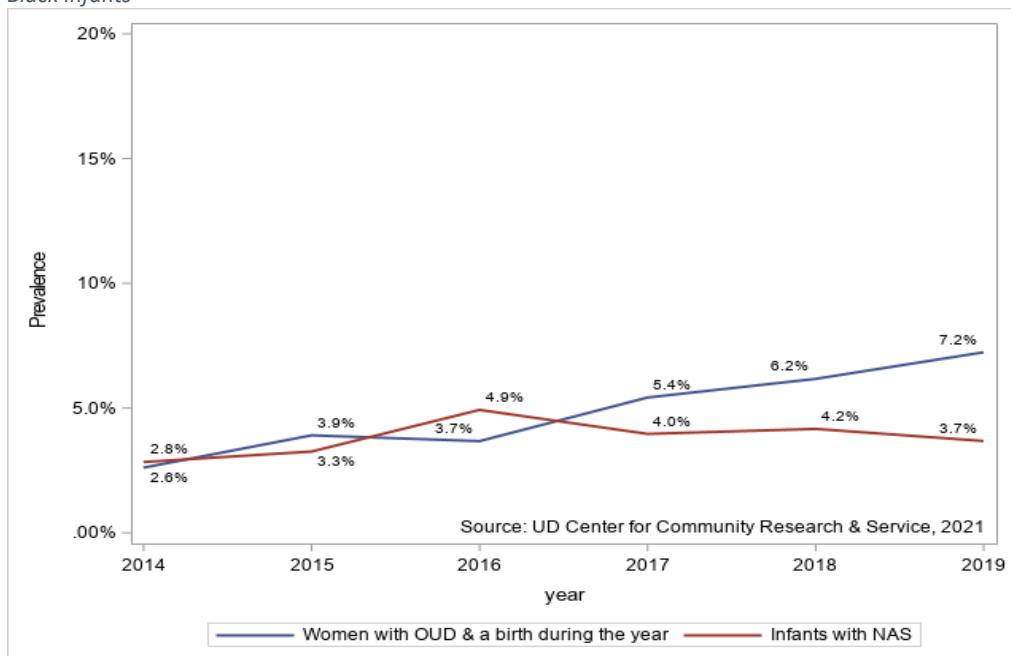

Figure 14. OUD Prevalence Among Pregnant/Postpartum Non-Hispanic Black Women, and NAS Prevalence among Non-Hispanic Black Infants
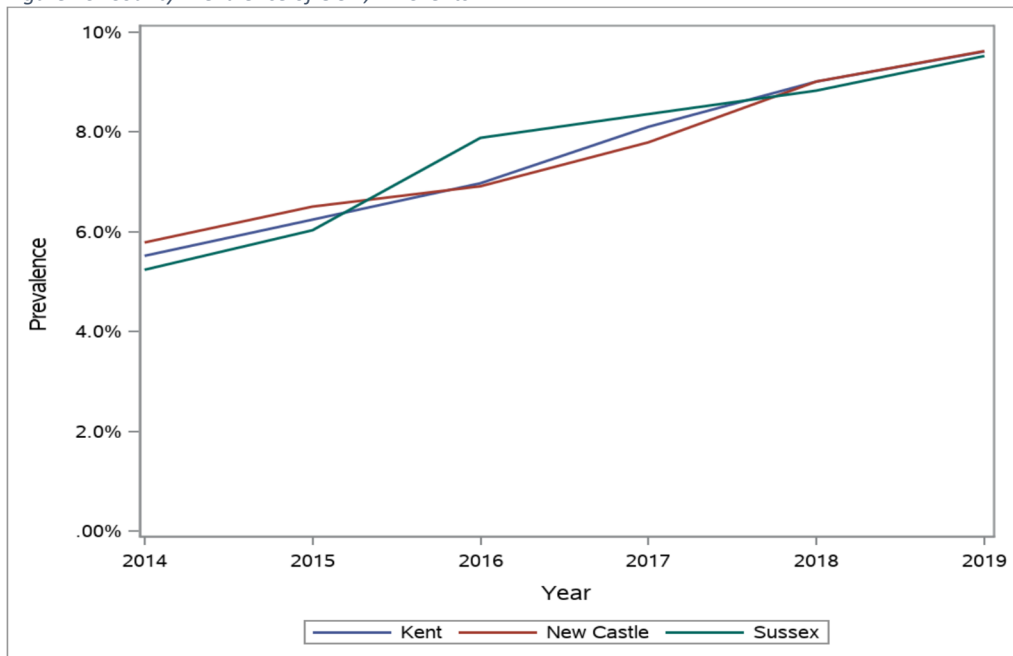

OUD by County

Rates of OUD were very similar, and steadily increasing, across Delaware's three counties: Kent, New Castle, and Sussex. By 2019, nearly one in ten Medicaid clients had a claim related to OUD in all three counties. Patterns of OUD prevalence across age groups were similar, but Sussex County had the highest OUD prevalence among the 30-39 age group – approaching 20%, or one in five adults in this age group,

in 2019. (Appendix A, Tables 21-26, present county-level client data including the number of OUD clients and prevalence by age category, sex, and race/ethnicity, from 2014 through 2019.)

Figure 15. County Prevalence of OUD, All Clients

OUD by Zip Code

While county-level OUD prevalence rates were similar across Delaware, zip code level data displayed a wider variance, ranging from below 4% to above 15% (see Figure 16). Areas with the highest rates of OUD include Harrington (19952), Marydel (19964), Wilmington area (19801, 19804) and the Delaware City area (19706). (Appendix A, Tables 27-30, contain the number and percent of clients with OUD by zip code, from 2014-2019.)

Figure 16. Map of Zip Code Level OUD Prevalence
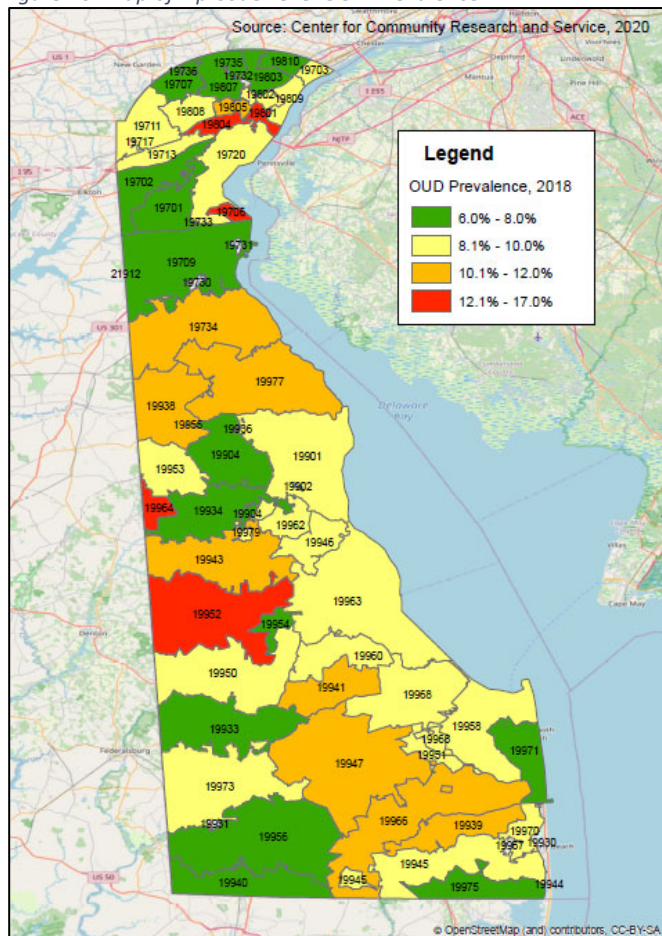
OUD and Polysubstance Use

Among clients with OUD, over a third also had claims related to another type of SUD within the same year. Most commonly, the claims were related to alcohol; approximately 20% of clients with OUD also had alcohol-related claims, and this estimate was fairly stable from 2014 to 2019 (see Figure 17). Co-occurring cocaine or stimulant use in conjunction with OUD increased fairly steadily from 2014 to 2019, becoming the most common co-occurring type of substance use among individuals with OUD by 2019. By 2019, 21% of clients with an OUD-related claim also had a cocaine or stimulant-related claim. This was nearly double the rate of co-occurring cocaine or stimulant use of 11.6% in 2014. The third most common co-occurring substance used in conjunction with OUD was cannabis; while the rate varied, between 13.6% and 17.8% of clients with OUD also had cannabis-related claims. Sedative and hallucinogen claims were also present in reportable numbers as co-occurring SUD among clients with OUD claims, but were much less commonly observed than cocaine, alcohol, or cannabis. According to CMS' SUD Databook, in 2018, Delaware had the 2nd highest rate of polysubstance use among Medicaid beneficiaries in the United States. (Appendix A, Table 31, contains the prevalence of co-occurring SUD, by substance type and year, among individuals with OUD.)

*Figure 17. Prevalence of Co-Occurring SUD Types, Among Clients with OUD*
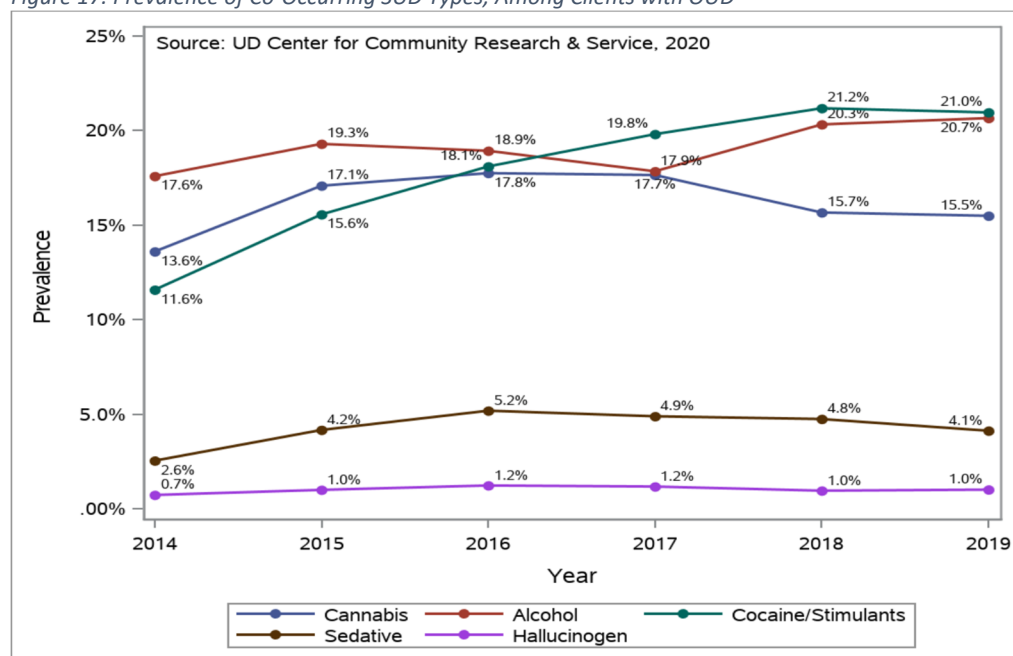
Results Section 3: Mental Illness and Substance Use Disorder

Prevalence of Mental Illness among all Medicaid clients

Among Medicaid clients overall, the share with claims related to mental illness was estimated using ICD-10 codes from 2016 through 2019. For the purposes of this report, mental illness diagnoses include anxiety, depression, bipolar disorder, personality disorder, and psychotic disorders.[15] For the overall Delaware Medicaid population included in this analysis, approximately 25% had claims related to mental illness (see Figure 18). The most common types of mental health diagnoses among Delaware Medicaid clients overall were anxiety and depression. (See Appendix A, Table 32, for the overall prevalence of mental illness among the entire Delaware Medicaid population, by diagnosis category, from 2016 to 2019.)

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[15] For the purpose of this report, mental illness is defined using the diagnoses codes as identified by New York State to define Medicaid Health Home eligibility. See:
https://www.health.ny.gov/health_care/medicaid/program/medicaid_health_homes/docs/smi_definition_for_health_home_eligibility.pdf

Figure 18. Statewide Prevalence of Mental Illness, by Diagnosis Type, All Clients
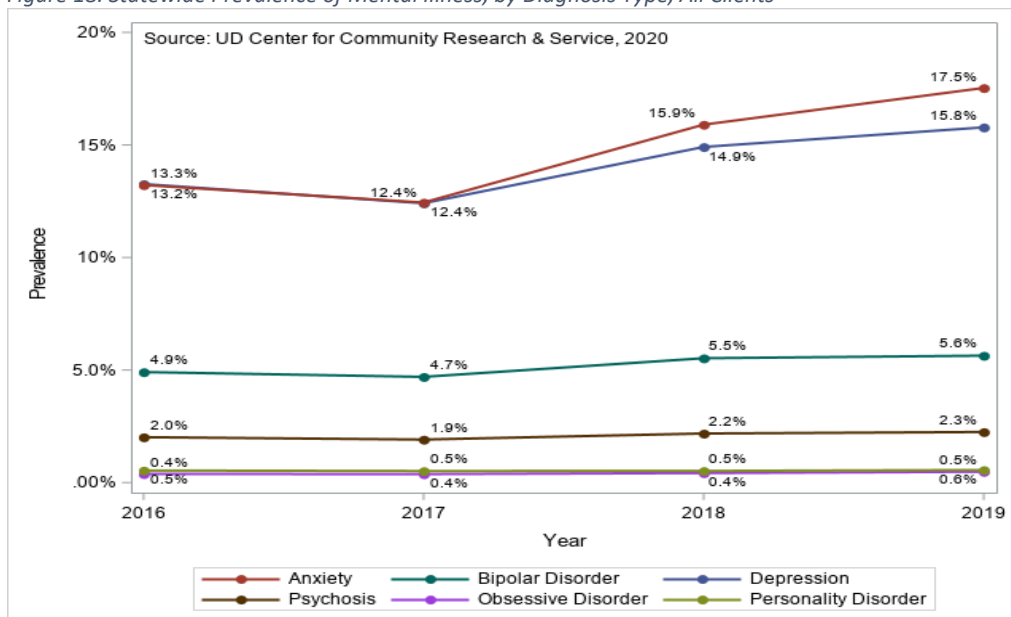


Prevalence of Mental Illness among clients with SUD

The rate of mental illness was higher among clients with SUD-related claims than for the Delaware Medicaid population overall. In 2019, 64.2% of clients with SUD also had at least one diagnosis related to mental illness. Anxiety and depression were the most common types of mental illness among Delaware Medicaid enrollees with SUD (see Figure 19). The share of clients with SUD who were diagnosed with anxiety increased from 34.6% in 2016 to nearly 50% in 2019. One in five clients with SUD had diagnoses related to bipolar disorder.

Figure 19. Statewide Prevalence of Mental Illness, by Type, Among Clients with SUD
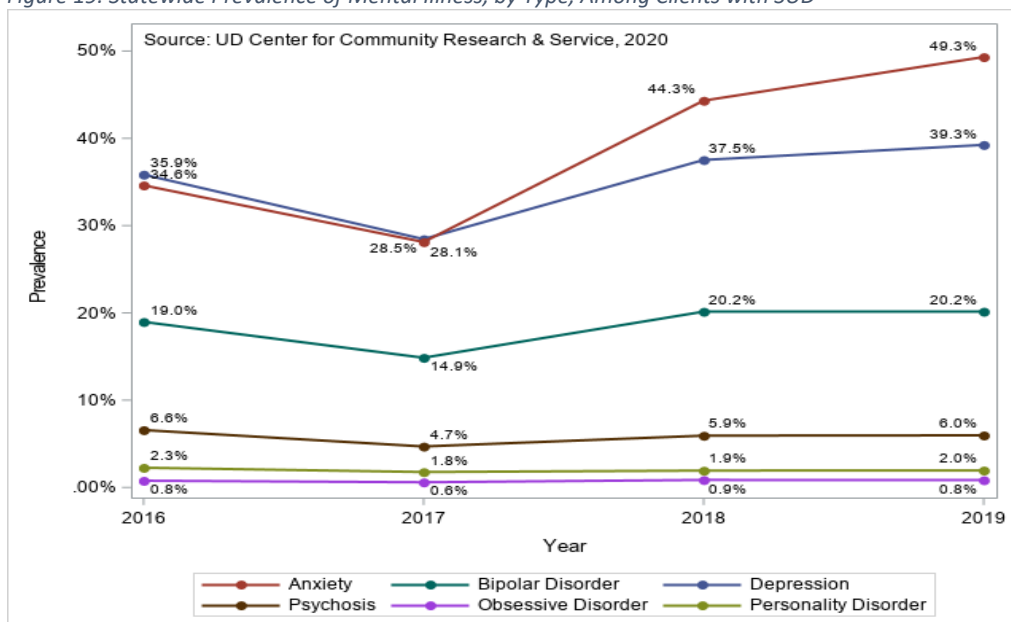
Among clients with mental illness who had a SUD diagnosis, the most prevalent type was OUD (see Figure 20). By 2019, one in four clients with a mental illness diagnosis also had an OUD diagnosis, an increase from 17.9% in 2014. The prevalence of other SUD types among clients with a mental illness diagnosis was lower and more stable.

Figure 20. Prevalence of SUD Types Among Clients with Mental Illness
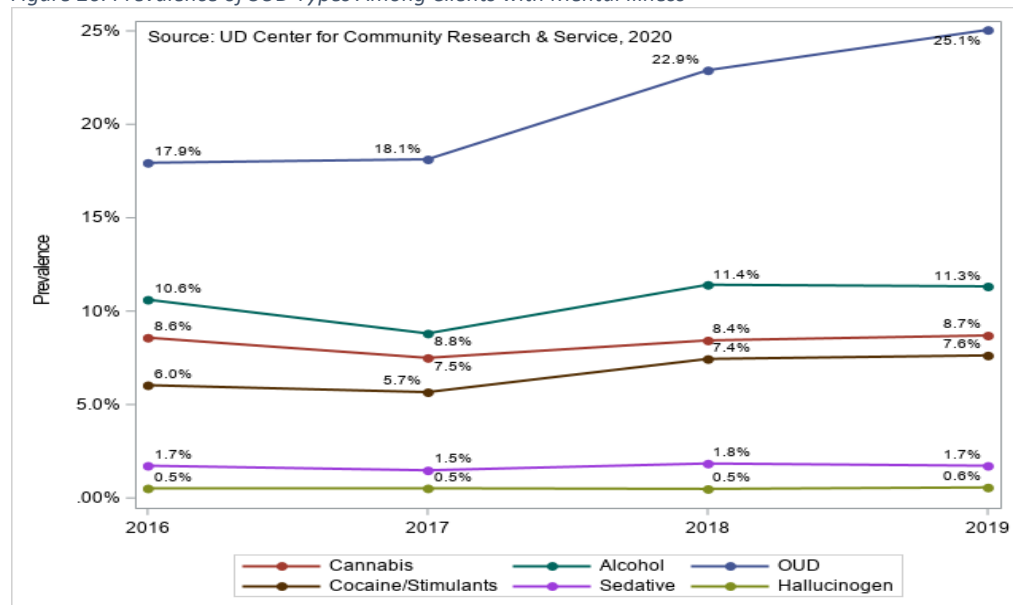
Conclusions

In conclusion, Delaware Medicaid enrollees have a high and growing rate of SUD prevalence, with the fastest rate of increase among beneficiaries with OUD. Delaware Medicaid enrollees with SUD also appear to be a complex, high-needs population, with high rates of co-occurring mental illness and polysubstance use. Pregnant and postpartum Medicaid enrollees also represent a critical population of concern for the state, as the rate of SUD and OUD among this population appears much higher than average, along with high rates of NAS among infants. This study underscores that Delaware has various opportunities to enhance provider capacity, both for special populations and within specified geographic areas.

Acknowledgements