HEALTHY MINDS POLICY INITIATIVE

The Impact of COVID-19 on Oklahoma Mental Health

Behavioral health trends since the onset of the pandemic

As the pandemic spread in early 2020, Healthy Minds Policy Initiative's researchers analyzed the potential mental health impacts of widespread fear about the virus, loss of friends and family members, unemployment and social isolation as a result of virus mitigation policies. These impacts, we predicted, would include heightened anxiety, depression and substance use, as well as up to 260 new adult deaths statewide from suicide and substance abuse.

Eighteen months after the first COVID case appeared in Oklahoma, we examine the observed impacts of the pandemic on behavioral health conditions, mental health-related deaths, levels of unmet need and changes in how Oklahomans access mental health treatment as a result of the pandemic. We also offer recommendations to mitigate the ongoing mental health realities of the virus as local and state policymakers move to combat the pandemic's overall impacts.

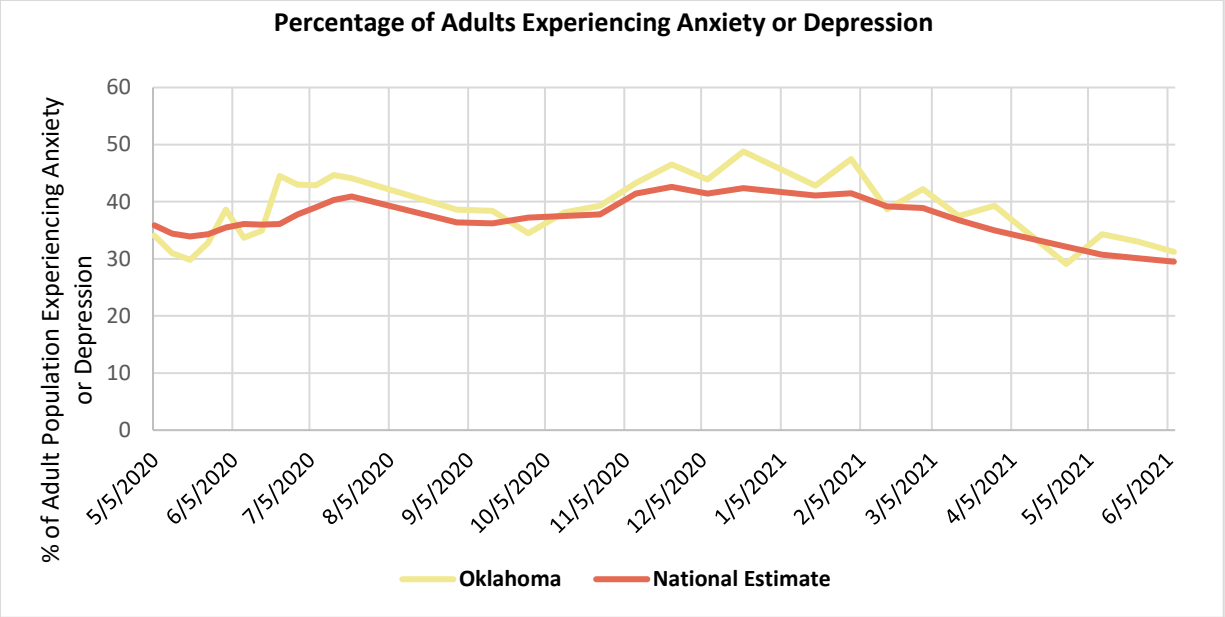
Key Takeaways

- **Both anxiety and depression increased dramatically**, with Oklahoma rates during some periods of the pandemic reaching nearly four times higher than in 2019.
- Oklahoma suicides increased 8% to 10% in 2020, and **rural areas had a 27% increase**.
- **Overdoses are back to 2017 levels and rising**, as more than 2 years of improvements in the death rate have been erased so far. Fentanyl and substance use under age 25 are among the drivers.
- Telehealth increasingly has been used to help ensure access to behavioral health services, and for people with commercial insurance, **telehealth has become the top method for accessing mental health services**.
- Access remains challenging for many, and **just as many people with a perceived need for therapy do not receive it as receive it**. Workforce challenges will continue to pose a barrier to meeting behavioral health needs.

Summary of findings

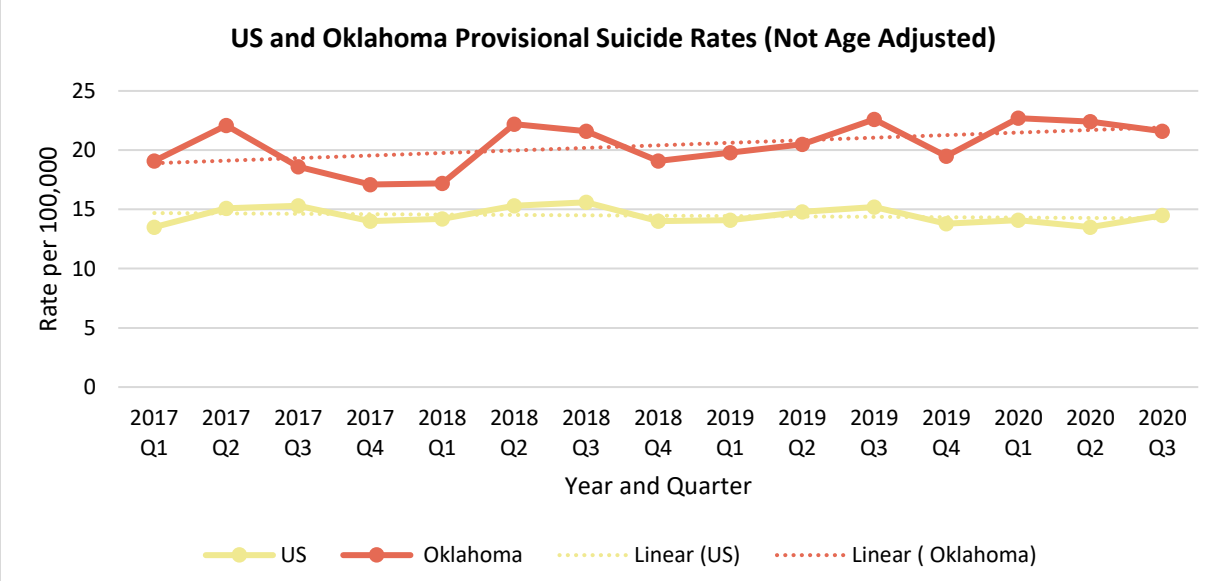
Anxiety, depression and prevalence trends

There has been a significantly higher prevalence of anxiety, depression and substance use among the general adult population in Oklahoma before, during and after the COVID-19 period.[1] Oklahoma's baseline rate for any mental illness was around 20% pre-pandemic, but **COVID-era stressors led to a peak of nearly 45% in late 2020 for depression and anxiety symptoms**.



Suicide and suicide ideation

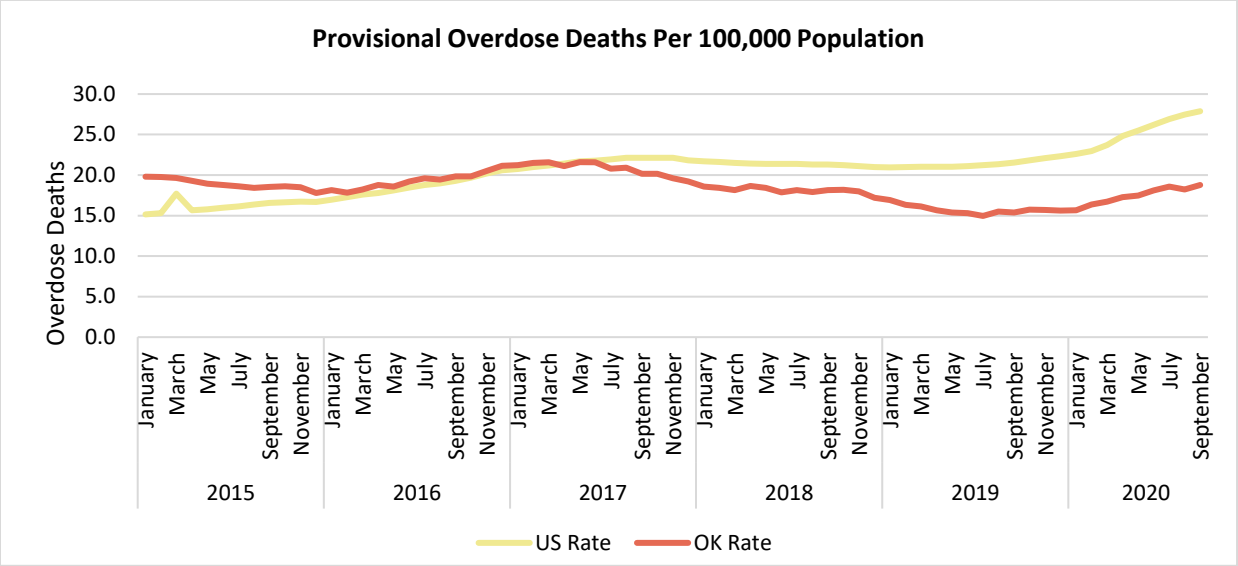
Amid increasing depression and anxiety, Oklahoma's suicide rate has increased to its highest level in recent years. **Rural suicides have increased by 27% during the pandemic, and the rate of suicides increased 8% to 10% statewide**. In 2019, the annual rate for Oklahoma was 20.6 deaths per 100,000 people. In the third quarter of 2020, that had increased to 22.3.



Substance use disorder and overdose

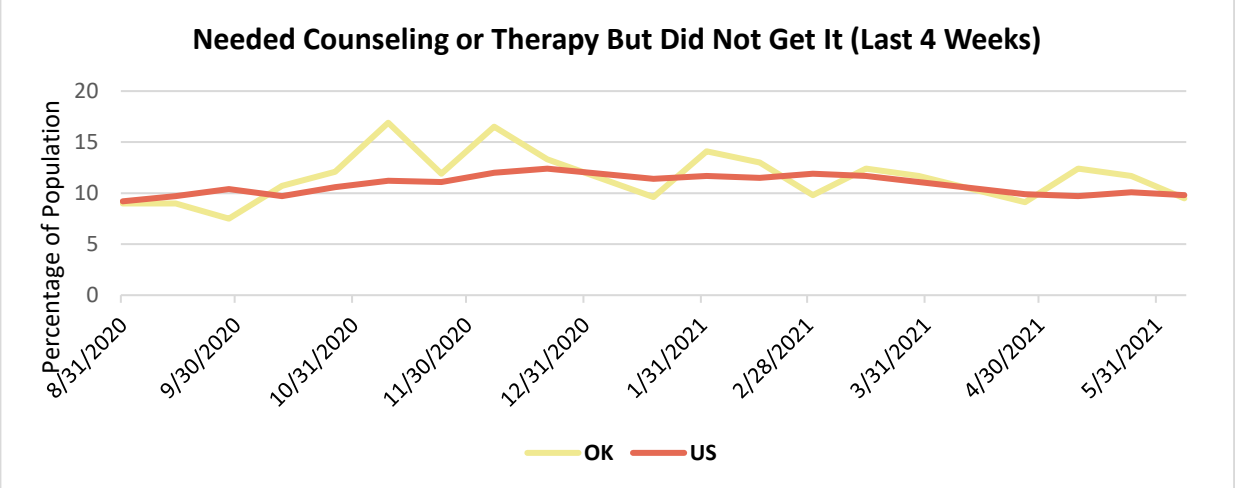
The increase in accidental drug overdose deaths from 2019 to 2020 matches predictions made at the beginning of the pandemic. **New increases in the death rate bring Oklahoma back to**

2017 overdose death levels, the last time the state's trend line began to decline. The largest increases were for the under 25 and over 64 age groups, with rates approximately double the 2018–2019 rates. These deaths may have primarily been the result of fentanyl (synthetic opioid) use.[2] The overdose death rate in Oklahoma rapidly increased with the onset of COVID-19 in early 2020 through October and was nearing 20 deaths per 100,000 in the population.[3]



Care access changes

After an initial decline in help-seeking early in the pandemic, behavioral health services were accessed at a higher rate as the pandemic progressed and telehealth services became more accessible. **However, the percentage of Oklahomans with unmet need has remained on par or higher than the national average**. The level of unmet need for counseling or therapy remains between 10% and 12% of the adult population. Although telehealth has increased providers' capacity to provide some forms of counseling remotely, the shortage of behavioral health workers will continue to limit access to care.[4]



Implications for Oklahoma

The massive increases in behavioral health problems associated with the pandemic dissipated somewhat over the course of the pandemic. However, behavioral health needs that were exacerbated by the pandemic will remain for some time because of the association between "long-term COVID" and more behavioral health issues; the lingering effects of unemployment and the loss of loved ones for significant subgroups in the population and the unfortunate likelihood that new COVID-19 variants, such as Delta, will continue to disrupt life. To mitigate these impacts, we offer recommendations for policymakers.

Recommendations for the Future

- **Boost the behavioral health workforce**: To meet the heightened need for behavioral health services, Oklahoma will need to bolster its behavioral health workforce in ways Healthy Minds described in the behavioral health workforce studies released earlier this year, including shifting medical training and professional incentive resources to specialty care professions, such as psychiatry. Funding the Oklahoma Mental Health Loan Repayment program is a key example.[5]
- **Integrate behavioral health into primary care**: The state will need to disseminate and incentivize the adoption of integrated behavioral health in primary care settings, where the vast majority of Oklahomans are likely to receive most of their health services. Universal screening and the integration of behavioral health expertise in primary care can help ensure that people receive the services they need early in the process of developing anxiety, depression, substance use and other behavioral health issues and conditions, rather than after it is too late to significantly reduce suffering and prevent a decline in quality of life. See our detailed recommendations here.
- **Ensure compliance with mental health parity laws**. Oklahoma mental health providers earn, on average, 27 percent less for similar billing codes compared to other providers. Full compliance with SB 1718, passed by the Oklahoma Legislature in 2020, would ensure transparency in how insurers are complying with existing parity laws.
- **Expand crisis services**: The Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) is leading efforts to transition the National Suicide Hotline to a new three-digit phone number (988) that would connect to local enhanced crisis services. Investment in Urgent Recovery Centers (URC), expanded mobile crisis programs and inter-agency data-sharing and referrals are necessary next steps. The Legislature appropriated funds to ODMHSAS in 2021 for this purpose, and consideration should be given to additional investment as the process reveals needs.
- **Target stigma**: Stigma around mental health and addiction remains a significant barrier to help-seeking for individuals in need. Robust anti-stigma efforts, including public awareness of stigma and mental health resources, could help ensure treatment reaches the Oklahomans who need it.

Discussion

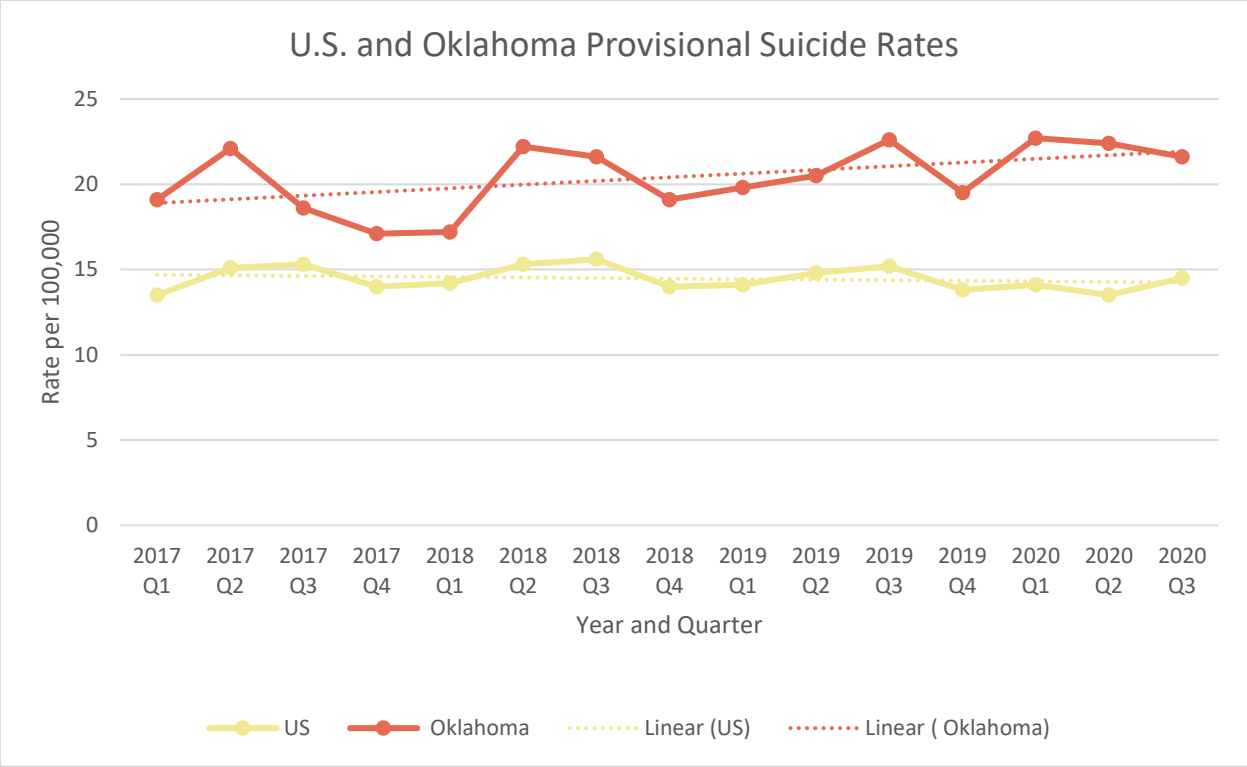
As the pandemic spread in early 2020, Healthy Minds Policy Initiative (Healthy Minds) had concerns about the behavioral health impact of the COVID-19 pandemic, given both the disease itself and the public health measures used to limit its spread. COVID-19 had the potential to cause elevated levels of anxiety and depression because of concerns about infection and the loss of friends and family members to the disease. Social distancing measures also led to higher levels of unemployment and social isolation, both of which have the potential to harm people's behavioral health.

Among these early concerns, the most severe potential behavioral health outcomes for adults were large increases in suicide and overdose deaths. Healthy Minds released estimated up to 260 extra adult deaths in Oklahoma based on economic dislocation alone. This report reexamines these early projections and discusses the information and data now available about the number of adult deaths related to behavioral health conditions and the increases in behavioral health conditions that occurred during the pandemic to date.

The pandemic appears to have precipitated changes in the utilization of behavioral and physical health care, including crisis emergency department and inpatient hospitalization. During early stages of the pandemic, in-person use of all health resources decreased because of concerns about infection, whereas telehealth utilization increased by several magnitudes. This report describes these changes, including evidence of higher utilization of behavioral health crisis services and the frequency of people needing but not receiving behavioral health treatment.

Pandemic-Related Suicide Deaths

The Centers for Disease Control and Prevention reports official counts of suicide deaths with a time lag and as such, as we went to press, the final, confirmed data on deaths by suicide were not yet available from the CDC for 2020. Provisional suicide counts are available on a quarterly basis through October 2020, for all ages combined. (Age breakouts were not available.) We are using the provisional data in this report, for two reasons: First, the confirmed data from the CDC do not include data from the period of Covid-19. Second, we observed that from 2017 to 2019 the provisional and confirmed data are very similar and therefore assumed that 2020 confirmed data will likely be similar to the provisional data.



As the graph above shows, Oklahoma suicide rates increased from 2017 through the third quarter of 2020; the quarterly data from 2020 show a continued, modest upward trend.[6] In 2019, the annual suicide rate for Oklahoma was 20.6 deaths per 100,000 people in the population. For the first three quarters of 2020, the combined data predict an annual rate of 22.2 per 100,00 people, an increase of almost 8% over 2019.[7] In contrast, the provisional national data show a plateauing of adult suicide rates.

Using state medical examiner data, the *Tulsa World* recently reported an almost 10% increase in suicides from 2019 to 2020.[8] In the article, it was reported that 875 deaths from suicide occurred in 2020.[9] Given the overall population of Oklahoma in 2020, we calculated a rate of 22.3 per 100,000 people, which is very close to the 22.2 figure that was cited in the paragraph above, based on provisional data. Notably, the state medical examiner's data further indicated that the metropolitan counties (Oklahoma County and Tulsa County) had a small reduction in suicide deaths (2%), whereas the more rural counties in the state had a 27% increase in deaths from suicides.

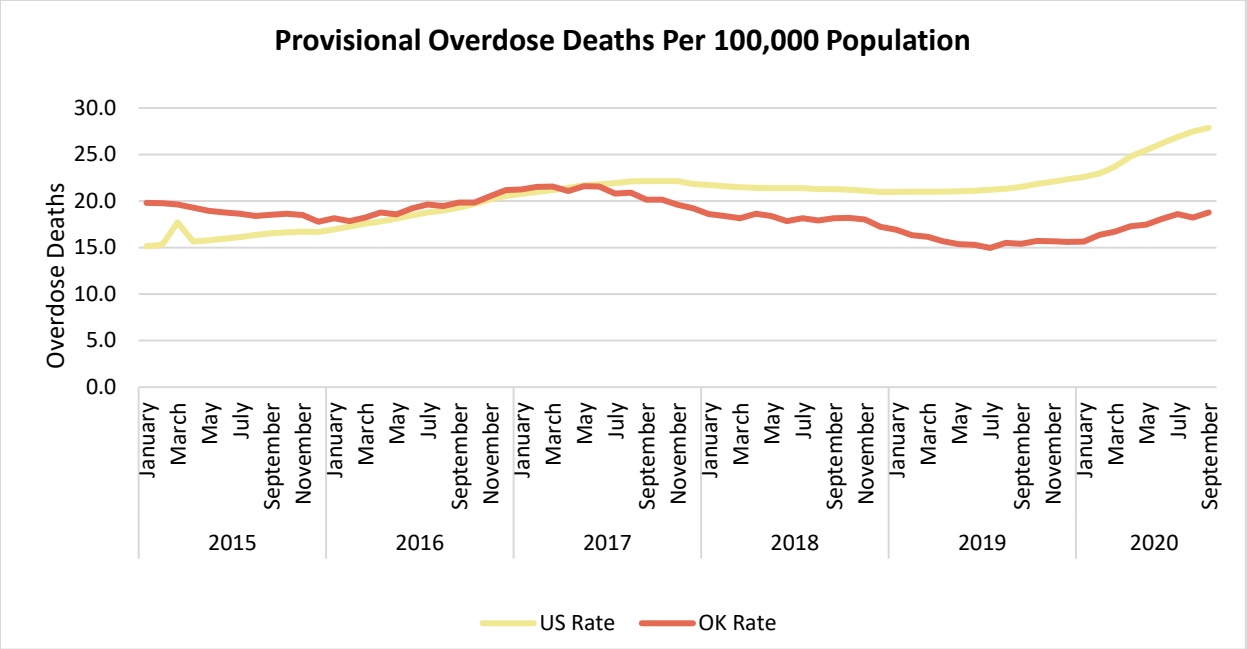
In summary, available data appear to show a continuation of previous trends with continued increases in Oklahoma's suicide rate, but not the large acceleration we predicted based on early estimates of unemployment. There are several features of this economic downturn that made it different than previous recessionary periods. Although the unemployment rate increased to levels not seen since the Great Depression, the duration of that extremely elevated rate was

brief. Recently, the number of open job positions was at a historic high.[10] During the period of elevated unemployment, unemployment benefits were increased to the point that the majority of unemployed workers were eligible for benefits greater than their lost wages.[11] If lost wages were largely responsible for higher suicide rates in the past (as opposed to the non-financial aspects of becoming unemployed), then the robust replacement income that the government made widely available during the COVID-19 pandemic could help explain the finding that suicide rates did not increase as much during this recession as they have in the past. (The COVID-19-precipitated recession also was relatively short compared to past recessions.)

In modeling the impact of COVID-19 unemployment on suicide rates, we used unemployment as a proxy for the broader economic dislocation that usually occurs during a recession, such as decreases in home values and loss in retirement portfolios. But this recession did not follow the usual pattern. In the case of home values, prices increased sharply during the COVID-19 pandemic, with median existing-home prices in May 2021 up 23.6% from the previous year.[12] Although broader equity markets did decline early in the pandemic, the recovery was rapid, with equity markets currently at record values. Again, it is possible that because employment and wealth did not suffer the same type of shocks as in previous recessions, the relationship between suicide and recession was attenuated during the COVID-19 pandemic.

Pandemic-Related Overdose Deaths

The second type of behavioral health mortality predicted to increase during the COVID-19 pandemic was overdose deaths. Overdose death data are subject to the same limitations as suicide data: there is always a lag in the official reporting of data, and the provisional data do not allow for breakouts by both state and age.[13] The pattern over time in Oklahoma for all ages resembles the national pattern, with a peak in overdose deaths in 2017 followed by declining rates until late 2019. With the onset of COVID-19 in spring 2020, the overdose rates show a rapid increase through October. Nationally, the number of overdose deaths per month hit new highs almost immediately after the start of the pandemic. In Oklahoma, the monthly rate in October 2020 was approaching its 2017 high.



Because of lags in reporting, more detailed data on overdose deaths are only available from state-level sources. Currie et al. (2021) report on medical examiner data from Ohio available through October 2020.[14] The Ohio pattern matches the national and Oklahoma patterns, with rising deaths as the pandemic unfolded. These deaths were primarily the result of highly potent fentanyl and analogue overdoses. Currie et al. also report rates by age group, calculated as a proportion of the corresponding rates in 2018 and 2019. Large increases in overdoses occurred for each age group, but the largest increases were for the under 25 and over 64 age groups, with rates approximately double the 2018–2019 rates.

This pattern of increasing overdose deaths matches predictions made at the beginning of the pandemic. Although it is not possible to demonstrate a direct causal relationship between the pandemic and rising overdose rates, the increase in overdose deaths is consistent with the combination of expanded access to fentanyl, enforced idleness by unemployed workers and students, increased cash savings from reductions in some types of consumption (restaurant meals, travel) and increased income from unemployment compensation.

Changes in the Prevalence of Mental Health Conditions

Fear of COVID-19 infection had the potential to increase the prevalence of mental health conditions, especially those related to anxiety and depression. Public health pandemic response measures, such as social distancing requirements and business closures, further increased risk factors for mental health conditions because of economic dislocation and increased social isolation. Unlike suicide rates, which showed moderate changes, changes in the prevalence of mental health conditions confirm initial projections of rising needs.

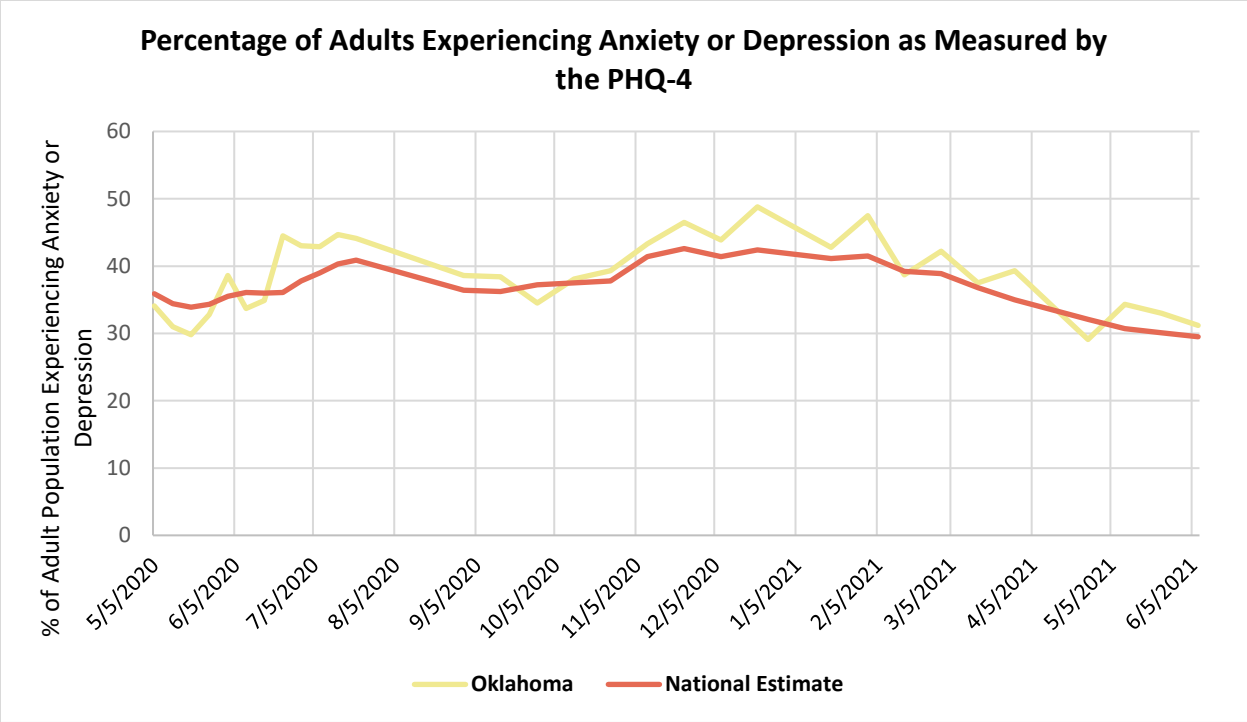
Anxiety Conditions

In 2019, household surveys were used to estimate the annual prevalence rate of anxiety conditions (8.1%) and depressive conditions (6.5%) in U.S. adult populations. With the onset of the pandemic, the U.S. Census Bureau and the National Center for Health Statistics began state and nationally representative weekly surveys (the Household Pulse Survey)[15] that included behavioral health questions. Estimated national prevalence rates of anxiety conditions from the Pulse Survey were 30.8% during the week of April 23 through May 5, 2020, which is 3.8 times the 2019 rate. The Oklahoma adult rate during this same period was 28.6%.[16] Both the national and Oklahoma rate varied during the subsequent months, with a national high of 37.2% in November and an Oklahoma high of 44.2% in December, followed by falling anxiety rates in April 2021. By the time of the May 26 through June 7 2021 Pulse survey, the national prevalence rate for anxiety had fallen to 25.4%, and the Oklahoma rate had fallen to 26.5%.

Depressive Conditions

The prevalence of depression followed a similar pattern. Pulse Survey data revealed that the national rate in April 2020 was 23.5%, which was 3.6 times the 2019 rate. The Oklahoma adult rate from the first Household Pulse Survey (April 2020) was 20.8%. By December 2021, the national rate had increased to 30.2%, whereas the Oklahoma rate had increased to 35.9%. These rates declined throughout spring 2021, and at the end of May the national rate had fallen to 20.8% and Oklahoma's depression rate had fallen to 22.2%. Although these rates are lower than the highs of late fall 2020, they are still nearly three times the 2019 rate.

The following time series graph shows the rate at which adults experience anxiety or depression as measured by the PHQ-4, a commonly used screening tool included in the Household Pulse Survey. (Recall that the pre-pandemic 12-month prevalence estimates for depression and anxiety were 8.1% and 6.5%, respectively.) The experience of Oklahoma adults closely matches national patterns, although for most periods the Oklahoma rates of anxiety or depression exceeded the national rate. The time path of these higher prevalence rates approximately matches COVID-19 infection and hospitalization rates, with the highest rates in December 2019 and January 2020.



COVID-19 patients experienced even larger increases in the prevalence of mental health conditions. Taquet et al. (2020) used anonymized electronic health records covering tens of millions of patients, primarily U.S. residents, to compare the incidence of behavioral health conditions in patients diagnosed with COVID-19 to the incidence of behavioral health conditions in patients diagnosed with a range of other health events. They found that within the first 90 days after diagnosis, the risk[17] of a first psychiatric diagnosis was 2.1 times higher for COVID-19 patients than a matched sample of influenza patients.[18] The elevated risk was greatest for patients with anxiety conditions, insomnia and dementia. The incidence of any psychiatric diagnosis within 90 days after COVID-19 diagnosis was 18.1%. A psychiatric diagnosis in the previous year also increased the risk of a COVID-19 diagnosis; patients with a previous psychiatric diagnosis had 1.65 times the risk[19] of contracting COVID-19 as compared to those without a psychiatric diagnosis.

Using a longer follow-up period of six months, Taquet et al. (2021) found that the incidence of any neurological or psychiatric diagnosis for COVID-19 patients was 33.6%.[20] And for patients admitted to an intensive care unit, the incidence was 46.4%. Risk of any diagnosis was 1.44 times higher than for similar patients with influenza. Infection by COVID-19 appears to result in a substantial increase in the prevalence of psychiatric diagnoses.

Changes in the Prevalence of Substance Use Disorders

With the substantial increase in overdose deaths, we would expect to observe an equivalent increase in the prevalence of substance use disorders (SUD). The Household Pulse Survey data

did not include items related to substance use, and we are therefore dependent on other sources. Czeisler et al. (2020, 2021) conducted nationally representative surveys of adults in June and September 2020, including questions related to anxiety and depression, suicidal ideation and substance use.[21]

In the June survey, 13.3% of responding adults started or increased substance use in response to the COVID-19 pandemic, with substance use defined as "alcohol, legal or illegal drugs, or prescription drugs that are taken in a way not recommended by your doctor."[22] Younger adults (ages 18–24 and 25–44); black non-Latinx adults; Latinx adults of all races; adults with lower levels of education and adults previously treated for anxiety, depression or post-traumatic stress disorder all reported above-average levels of substance initiation or use.

Respondents with identified substance use conditions were contacted again in September (Czeisler et al. 2021) to determine whether these conditions were transitory, and the authors reported that the elevated rates continued through September 2020.[23]

Based on the June data, Czeisler reported elevated substance use rates primarily for younger adults, with only 7.7% of respondents ages 45–64 and 3% of respondents ages 65 or greater indicating initiation or increase in substance use. Eastman et al. (2021) confirmed that for adults aged 55 or older, about 80% of the sample did not change their weekly alcohol consumption, whereas the remainder was evenly divided between adults who increased or decreased consumption.[24] Symptoms of mental illness increased the probability of increased consumption.

Weerkaoon et al. (2020) confirmed the association between mental illness in U.S. adults and increased alcohol consumption early in the pandemic.[25] This study also confirmed that binge drinkers were more likely to increase alcohol consumption and that longer periods spent at home also increased the likelihood of binge drinking.

Although elevated levels of SUD occurred in conjunction with the social isolation required by COVID-19 public health policy, infection with COVID-19 also independently increased the risk of SUD. Above, we summarized the elevated mental health risk for COVID-19 patients using results from Taquet et al. (2021). This same study also tracked SUD outcomes six months after COVID-19 infection and found that the risk of developing an SUD was 1.22[26] times that of a similar patient diagnosed with influenza.

As with mental health conditions, the prevalence of SUD not only increased with the onset of COVID-19, but SUD also increased the probability of infection with COVID-19 and, for infected patients, resulted in worse outcomes. Wang et al. (2020) used anonymized records from a large compilation of hospital electronic health records in June 2020 to retrospectively measure the additional risk of infection for patients with SUD. Patients with an SUD diagnosis within the past

year had a substantially higher risk of infection with COVID-19 as compared to patients without an SUD diagnosis. This risk was greatest for patients with an opioid use disorder. The probability of both hospitalization and death for patients with SUD was also much higher. For COVID-19 patients with SUD versus COVID-19 patients without SUD, the percentage hospitalized was 41% versus 30.1%. The percentage dying from COVID-19 was 9.6% versus 6.6%.[27]

Changes in the Utilization of Behavioral Health and Medical Services

The onset of the pandemic resulted in a shift in the utilization of health care resources to treat COVID-19 patients. The reduced availability of outpatient, emergency department (ED) and inpatient resources, combined with patient concerns about infection, resulted in declining use of both medical and behavioral health services for non-COVID-19 conditions. The magnitudes of these declines are well documented in a Milliman White Paper, *Behavioral Healthcare Utilization Changes During the COVID-19 Pandemic*, commissioned by the Well Being Trust.[28] This study used claims data from January 2019 through August 2020 to summarize changes that occurred in both behavioral health care claims and medical claims.

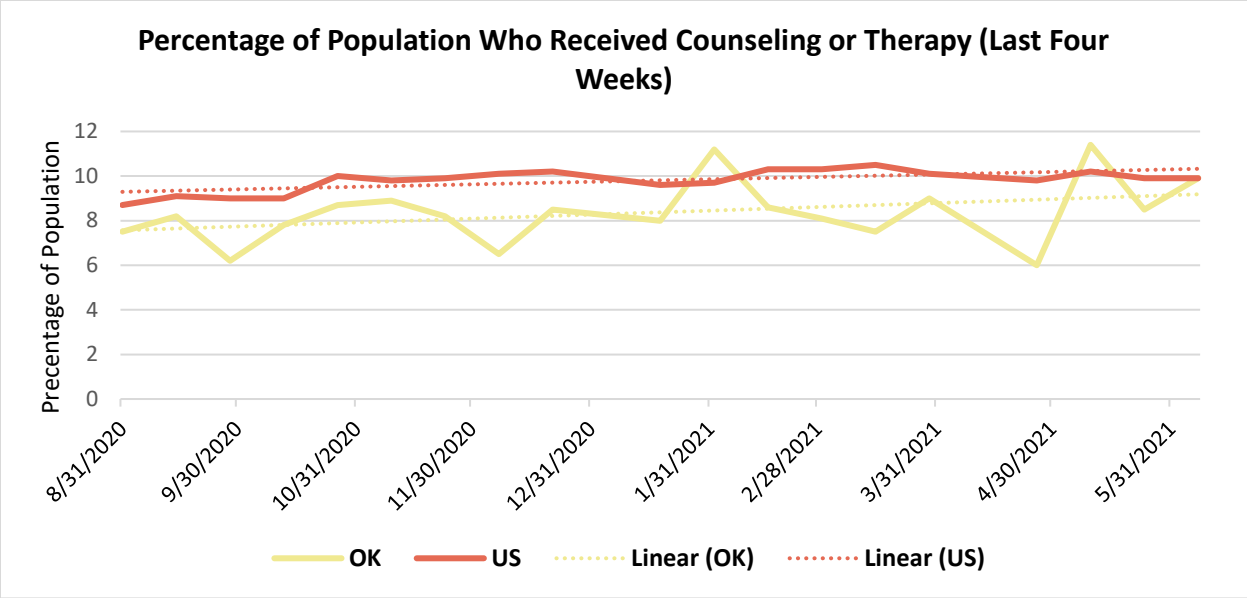
Changes in Utilization of Behavioral Health Services Relative to the Corresponding Month in 2019, by Insurance Type			
Insurance Type	**April 2020**	**July 2020**	**August 2020**
Change in Mental Health and Substance Use Disorder Inpatient Visits			
Commercial	-34%	23%	5%
Medicare	-25%	-10%	-30%
Medicaid	-30%	19%	42%
Change in Emergency Department Visits for Behavioral Health Conditions			
Commercial	-41%	-13%	-5%
Medicare	-42%	-11%	17%
Medicaid	-34%	7%	36%
Change in In-Person Behavioral Health Professional Visits			
Commercial	-67%	-56%	-48%
Medicare	-55%	-56%	-7%
Medicaid	-25%	-11%	-3%
Change in In-Person and Telehealth Behavioral Health Treatment			
Commercial	1%	14%	25%
Medicare	-9%	-19%	20%
Medicaid	5%	9%	21%

For combined mental health and substance use condition inpatient episodes, Milliman reports year-over-year changes broken out by payer type: commercial insurance, Medicare and Medicaid. As can be seen in the table above, in April 2020, changes were -34%, -25% and -30%, respectively. By July 2020, the corresponding changes were +23%, -10% and +19%. This trend continued with August 2020 values of +5%, -30% and +42%. In summary, Medicare beneficiaries had a substantial year-over-year drop in behavioral health hospitalizations, and that trend continued through August 2020 (the end of the study). Commercial and Medicaid beneficiaries also experienced drops, but by August 2020 behavioral health hospitalizations were above 2019 levels for both. This pattern also matches the total of non-COVID-19 hospital admissions. As cited in Birkmeyer et al. (2020), admissions declined 42% in April 2020 but were only 16% below 2019 levels by July 2020.[29]

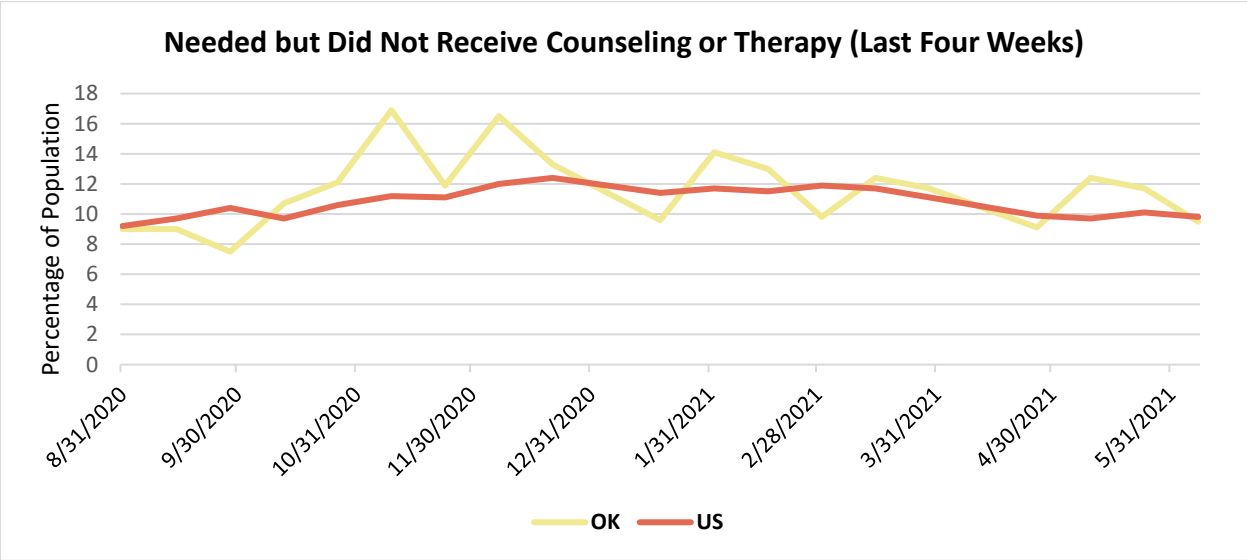
Milliman (2021) reports that ED visits for behavioral health conditions followed a similar pattern, with year-over-year changes in April 2020 of -41%, -42% and -34% (commercial insurance, Medicare and Medicaid). By August 2020, ED behavioral health visits had year-over-year changes of -5%, +17% and +36%. In this case, commercial insurance had not yet returned to 2019 levels. As with inpatient behavioral health admissions, Medicaid beneficiaries experienced a substantial increase in ED visits for behavioral health conditions by August.

In-person behavioral health professional office visits experienced similar large declines in April 2020 (-67%, -55% and -25%), which continued below 2019 levels for all payer types through August 2020. In that month, commercial in-person visits remained very low (-48%), whereas Medicare and Medicaid volumes were close to the previous year (-7% and -3%). The combination of in-person and telehealth behavioral health visits followed a different pattern because the use of telehealth services for behavioral health treatment increased by many orders of magnitude. Total in-person and telehealth behavioral health professional visits declined by 9% in April for Medicare beneficiaries but increased slightly for both commercial and Medicaid beneficiaries. By August, all payer types experienced at least a 20% increase in these visits (25%, 20% and 21%). Before the COVID-19 pandemic, the proportion of behavioral health professional visits conducted by telehealth was 1% or less for all payer types. By August, the proportions were 58%, 23% and 20% (commercial, Medicare and Medicaid).

Milliman's report uses claims data through August 2020. The Household Pulse Survey data allows us to observe receipt of outpatient behavioral health services from August 2020 through the week ending June 7, 2021.[30] Unlike Milliman's claims-based analysis, these data series are based on self-reports, not insurance claims.



Both in Oklahoma and the U.S., receipt of counseling or therapy maintained the high levels observed in the Milliman data in August 2020 and, in fact, increased through June 2021. For most of the period, the percentage of the Oklahoma adult population receiving counseling was below that of the national average. The Pulse data series from August onward also includes a question about needing but *not receiving* counseling or therapy.



Note that the percentage of the population who *needed and did not receive counseling* was similar to the percentage of the population who *received counseling*. The level of unmet need in Oklahoma reached its highest levels between October and December 2020 and has been slowly declining since that time. The level of unmet need remains between 10% and 12% of the adult population in the most recent data.

Several significant constraints limit the mental health system's ability to expand the volume of services to meet this level of unmet need. During the beginning of the pandemic, many in-person counseling services were forced to close because of social distancing requirements. Interviews with leaders of community mental health centers confirmed that many therapists and clients were unwilling to meet face to face because of the risk of COVID-19 infection. As demonstrated in the claims data, many providers switched to using telehealth. But despite regulatory flexibility, this transition took until August 2020 to exceed 2019 volumes of service.

There are also workforce constraints to expanding capacity sufficiently to meet the increased prevalence of anxiety and depression. Healthy Minds' *Workforce Briefs* document the pre-pandemic shortages of behavioral health workers.[31] Despite large increases in funding from SAMHSA for mental health services, community mental health centers have faced challenges in expanding staffing to use these funds.

In summary, the start of the pandemic in March and April 2020 resulted in declines in all types of behavioral health services, including outpatient, ED and inpatient. By August, utilization generally increased for all service settings and payer types. The largest change was the use of telehealth for outpatient services. The percentage of Oklahoma's population receiving outpatient services continued to expand from August to the present, yet an equally large percentage of Oklahomans need but do not receive services. Although telehealth has increased providers' capacity to provide some forms of counseling remotely, the shortage of behavioral health workers will continue to limit access to care.

ODMHSAS-Funded Services Utilization

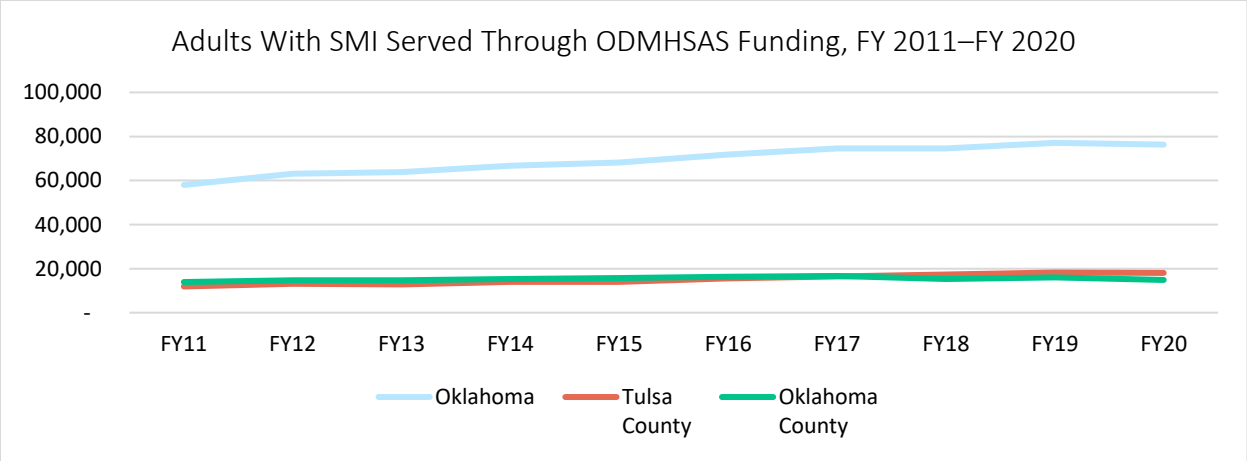
During the pandemic, among the most vulnerable sub-populations are adults with SMI and children and youth with SED funded by ODMHSAS. The Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) maintains utilization data for all adults, children and youth who use services, including adults with serious mental illnesses (SMI) and children and youth with serious emotional disturbances (SED). These populations typically have more limited resources and more serious behavioral health conditions, including co-occurring substance use. ODMHSAS-funded utilization data cover fiscal year (FY) 2011 to FY 2020. FY 2021 data are not yet available. Thus, the impact of the pandemic on utilization for all these populations is not fully known. However, after steady progress in prior years, there are some indications of decreases in utilization in some areas of the state for adults with SMI and children and youth with SED in 2020.

ODMHSAS Adult SMI Services Utilization

During the period of FY 2011 to FY 2020, there is a steady increase in adults' utilization of services, with the exception of FY2020, which saw a slight decrease statewide and in the two

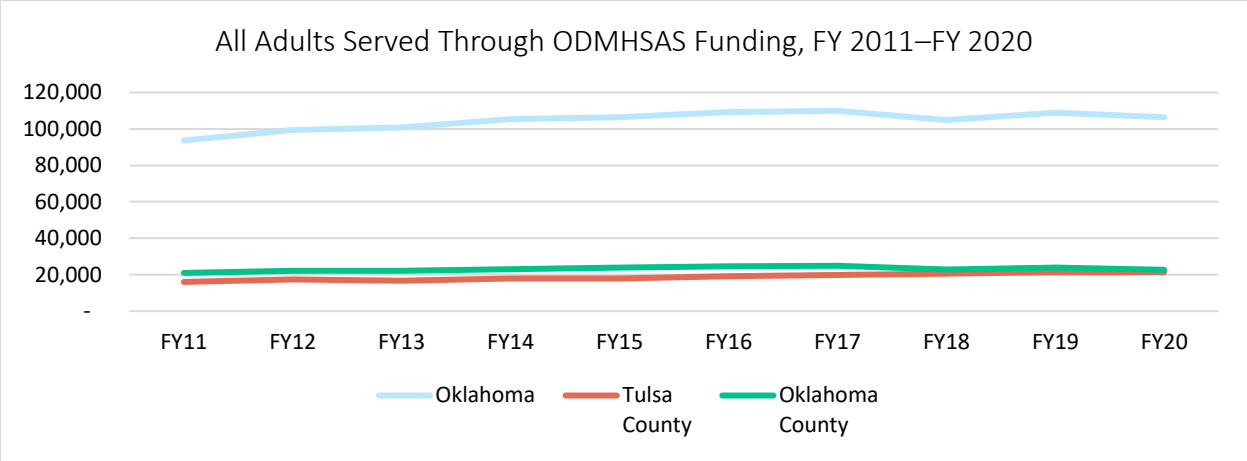
metropolitan counties. In Oklahoma County, utilization for individuals with SMI began declining in FY 2018, with a significant decrease in FY 2020. The decrease in FY 2020 could possibly be related to the pandemic, but because FY2020 only includes half of calendar year 2020, more data are needed.

Adults With SMI Served Through ODMHSAS Funding, FY 2011–FY 2020			
Year	**Oklahoma**	**Tulsa County**	**Oklahoma County**
FY 2011	57,983	11,897	13,913
FY 2012	63,013	13,154	14,677
FY 2013	63,832	12,843	14,690
FY 2014	66,697	13,960	15,349
FY 2015	68,166	14,046	15,780
FY 2016	71,814	15,622	16,242
FY 2017	74,561	16,414	16,665
FY 2018	74,507	17,383	15,283
FY 2019	77,089	18,224	15,979
FY 2020	76,299	18,057	14,824



As was mentioned above, the table and charts below indicate steady increases in service utilization for all adults with any behavioral health condition served through ODMHSAS funding between FY 2011 and FY 2020—except in FY 2020, when there was some decline across the state.

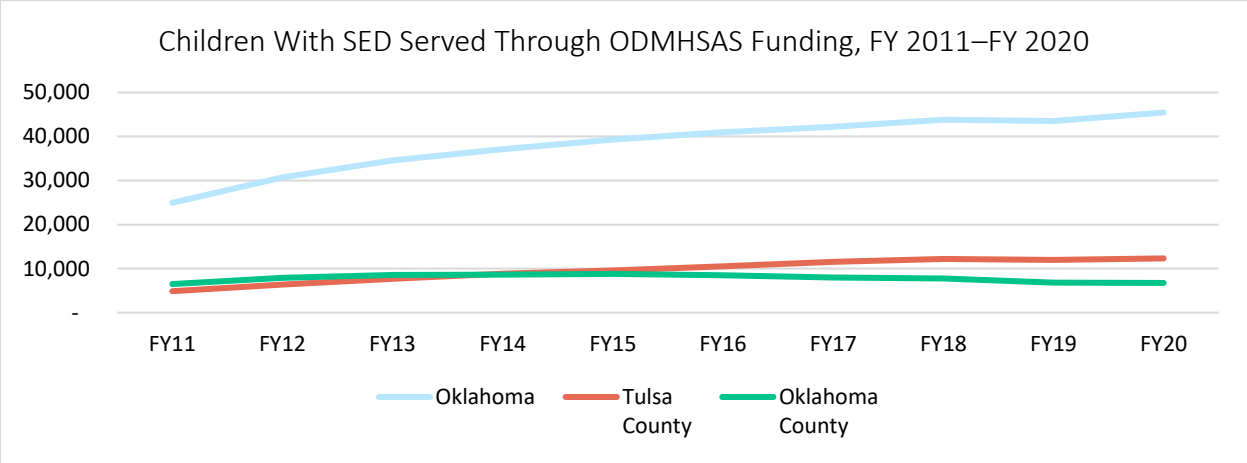
All Adults Served Through ODMHSAS Funding, FY 2011–FY 2020			
Year	**Oklahoma**	**Tulsa County**	**Oklahoma County**
FY 2011	93,669	16,052	20,978
FY 2012	99,498	17,359	22,193
FY 2013	100,831	16,728	22,142
FY 2014	105,303	17,999	23,110
FY 2015	106,412	17,911	23,960
FY 2016	109,337	19,253	24,634
FY 2017	109,935	19,823	24,905
FY 2018	104,839	20,587	22,776
FY 2019	108,837	21,453	23,945
FY 2020	106,404	21,383	22,716



ODMHSAS Children and Youth With SED Service Utilization FY 2011 to FY 2020

The tables and charts below indicate service utilization for children and youth with SED steadily increased during the past decade, with a slight decrease for Oklahoma at large between 2018 and 2019, a steady increase for Tulsa County throughout the period, and a decrease starting in 2018 for Oklahoma County (commensurate with decreases in this county's SED population). As discussed further in the forthcoming Healthy Minds COVID-19 report on children and youth, the pandemic has increased the needs of children and youth with SED and their families and has highlighted system gaps.[32]

Children With SED Served Through ODMHSAS Funding, FY 2011–FY 2020			
Year	**Oklahoma**	**Tulsa County**	**Oklahoma County**
FY 2011	24,947	4,868	6,492
FY 2012	30,755	6,370	7,926
FY 2013	34,600	7,654	8,578
FY 2014	37,119	8,874	8,620
FY 2015	39,334	9,598	8,799
FY 2016	40,974	10,538	8,501
FY 2017	42,207	11,522	8,005
FY 2018	43,821	12,172	7,721
FY 2019	43,525	11,975	6,807
FY 2020	45,455	12,319	6,764



References

[1] United States Census Bureau. (2021, May 19). *Household Pulse Survey data tables*. https://www.census.gov/programs-surveys/household-pulse-survey/data.html

[2] Currie, J. M., Schnell, M. K., Schwandt, H, & Zhang J. (2021) Trends in drug overdose mortality in Ohio during the first 7 months of the COVID-19 pandemic. *JAMA Network Open,* 4(4), Article e217112. https://doi.org/10.1001/jamanetworkopen.2021.7112

[3] Counts of overdose deaths are converted to rates per 100,000 by using annual Census ACS population estimates. United States Census Bureau. (n.d.). *Annual estimates of the resident population: April 1, 2010 to July 1, 2019*. https://data.census.gov/cedsci/table?q=population&tid=PEPPOP2019.PEPANNRES. 2020 populations are from United States Census Bureau. (n.d.). *State population by characteristics: 2010–2020.* https://www.census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates/2020-evaluation-estimates/2010s-state-detail.html

[4] Healthy Minds Policy Initiative. (2020, December 15). *Health Minds launches workforce policy series*. https://www.healthymindspolicy.org/workforce/

[5] Healthy Minds Policy Initiative. (2020, December 15). *Health Minds launches workforce policy series*. https://www.healthymindspolicy.org/workforce/

[6] Healthy Minds Policy Initiative. (n.d.) *Adult suicide data.* https://www.healthymindspolicy.org/data-dashboard/suicide-adults/

[7] Each quarterly data point indicates what the projected annual rate of suicide per 100,000 people in the population would be, if all other quarters in that same calendar year had the same number of suicide deaths as the quarter in question.

[8] Killman, C. (2021, July 12). *State sees rise in suicides during pandemic with rural areas seeing greater increase*. Tulsa World. https://tulsaworld.com/news/local/state-sees-rise-in-suicides-during-pandemic-with-rural-areas-seeing-greater-increase/article_49b0d1a6-e00b-11eb-9b2c-9bdaa42c650c.html

[9]Enid News & Eagle – August 22
Bryen, W. Oklahoma suicides climb to highest point since 2006. (August 22, 2020). *Enid News & Eagle.* https://www.enidnews.com/news/covid19/oklahoma-suicides-climb-to-highest-point-since-2006/article_65b80c8c-022c-11ec-b446-074b5b9bb063.html

[10] Bureau of Labor Statistics. (2021, June 8). *News release: Job openings and labor turnover—April 2021.* https://www.bls.gov/news.release/pdf/jolts.pdf

[11] Ganong, P., Noel, P. J., & Varra, J. S. (2020, May). *US unemployment insurance replacement rates during the pandemic*. National Bureau of Economic Research working paper 27216, revised August 2020. https://www.nber.org/papers/w27216

[12] Simmons, Q. (2021, June 22). *Existing-home sales experience slight skid of 0.9% in May*. National Association of Realtors. https://www.nar.realtor/newsroom/existing-home-sales-experience-slight-skid-of-0-9-in-may

[13] Counts of overdose deaths are converted to rates per 100,000 by using annual Census ACS population estimates. United States Census Bureau. (n.d.) *Annual estimates of the resident population: April 1, 2010 to July 1, 2019*. https://data.census.gov/cedsci/table?q=population&tid=PEPPOP2019.PEPANNRES. 2020 populations are from United States Census Bureau. (n.d.) *State population by characteristics: 2010–2020*. https://www.census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates/2020-evaluation-estimates/2010s-state-detail.html

[14] Currie, J. M., Schnell, M. K., Schwandt, H, & Zhang J. (2021) Trends in drug overdose mortality in Ohio during the first 7 months of the COVID-19 pandemic. *JAMA Network Open,* 4(4), Article e217112. https://doi.org/10.1001/jamanetworkopen.2021.7112

[15] United States Census Bureau. (2021, May 19). *Household Pulse Survey data tables*. https://www.census.gov/programs-surveys/household-pulse-survey/data.html

[16] Centers for Disease Control. (2021). *Anxiety and depression: Household Pulse Survey*. National Center for Health Statistics. https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

[17] Reported as a hazard ratio.

[18] Taquet, M., Luciano, S., Geddes, J. R., & Harrison, P. J. (2020, November 9). Bidirectional associations between COVID-19 and psychiatric disorder: Retrospective cohort studies of 62,354 COVID-19 cases in the USA. *The Lancet, 8*(2), 130–140. https://doi.org/10.1016/S2215-0366(20)30462-4

[19] Reported as relative risk.

[20] Taquet, M., Geddes, J. R., Husain, M., & Luciano, S. (2021, April 6). Six-month neurological psychiatric outcomes in 236,379 survivors of COVID-19: A retrospective cohort study using electronic health records. *The Lancet, 8*(5), 416–427. https://doi.org/10.1016/S2215-0366(21)00084-5

[21] The mental health results from Czeisler et al.'s study match those of the Household Pulse Survey (approximately threefold increase in anxiety and depression).

[22] Czeisler, M. E., Lane, R. I., Petrosky, E., Wiley, J. F., Christensen, A., Njai, R., Weaver, M. D., Robbins, R, Facer-Childs, E. R., Barger, L. K., Czeisler, C. A., Howard, M. E., & Rajaratnam, S. (2020, August 14). Mental health, substance use, and suicidal ideation during the COVID-19 pandemic: United States, June 24–30, 2020. *Morbidity and Mortality Weekly Report, 69*(32), 1049–1057. http://dx.doi.org/10.15585/mmwr.mm6932a1

[23] Czeisler, M. E., Lane, R. I., Wiley, J. F., Czeisler, C. A., Howard, M. E., & Rajaratnam, S. (2021, February 19). Follow-up survey of US adult reports of mental health, substance use, and suicidal ideation during the COVID-19 pandemic, September 2020. *JAMA Network Open, 4*(2), Article e2037665. https://doi.org/10.1001/jamanetworkopen.2020.37665

[24] Eastman, M. R., Finlay, J. M., & Kobayashi, L. C. (2021, April 16). Alcohol use and mental health among older American adults during the early months of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health, 18*(8), 4222. https://doi.org/10.3390/ijerph18084222

[25] Weerakoon, S. M., Jetelina, K. K., & Knell, G. (2020, December 7) Longer time spent at home during COVID-19 pandemic is associated with binge drinking among US adults. *The American Journal of Drug and Alcohol Abuse, 47*(1), 98–106. https://doi.org/10.1080/00952990.2020.1832508

[26] Reported as a hazard ratio.

[27] Wang, Q. Q., Kaelber, D. C., Rong, X., & Volkow, N. D. (2020, September 14) COVID-19 risk and outcomes in patients with substance use disorders: Analyses from electronic health records in the United States. Molecular Psychiatry 26, 30–39. https://doi.org/10.1038/s41380-020-00880-7

[28] Davenport, S., Melek, S., & Gray, T. J. (2021, February). *Behavioral healthcare utilization changes during the COVID-19 pandemic: An analysis of claims data through August 2020 for 12.5 million individuals*. Milliman, Commissioned by Well Being Trust. https://wellbeingtrust.org/wp-content/uploads/2021/03/Milliman-COVID-BH-Impact-2021-02-17.pdf

[29] Birkmeyer, J. D., Barnato, A., Birkmeyer, N., Bessler, R., & Skinner, J. (2020, September 24). The impact of the COVID-19 pandemic on hospital admissions in the United States. *Health Affairs, 39*(11). https://doi.org/10.1377/hlthaff.2020.00980

[30] Centers for Disease Control and Prevention. (2021). *Anxiety and depression: Household Pulse Survey*. National Center for Health Statistics. https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

[31] Healthy Minds Policy Initiative. (2020, December 15). *Health Minds launches workforce policy series*. https://www.healthymindspolicy.org/workforce/

[32] Healthy Minds Policy Initiative. (September 2021). *An update on the impact of Coronavirus disease on children and youth with mental health conditions.*