Telebehavioral Diagnoses and Procedures from March to September 2020 in Five States

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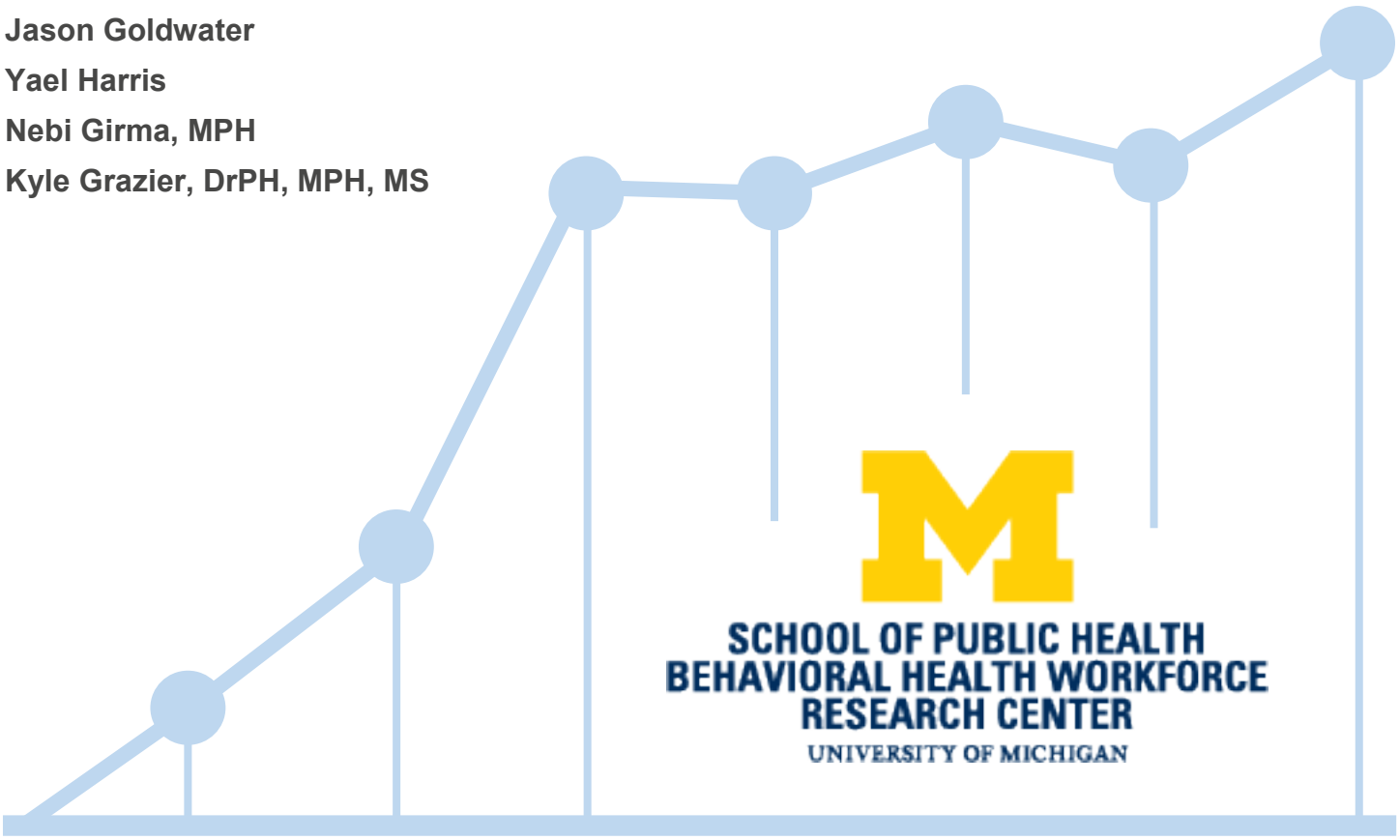
Project Team

Victoria Schoebel, MPH
Jessica Buche, MPH, MA
Isabella Ginsberg
Jason Goldwater
Yael Harris
Nebi Girma, MPH
Kyle Grazier, DrPH, MPH, MS



SCHOOL OF PUBLIC HEALTH
BEHAVIORAL HEALTH WORKFORCE RESEARCH CENTER
UNIVERSITY OF MICHIGAN

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Background

The importance of accessible mental health (MH) services for individuals with symptoms of depression or anxiety has been well documented, with evidence of an additional estimated 80 million adults reporting symptoms of depression or anxiety during the coronavirus disease 2019 (COVID-19) pandemic.[1] A multitude of stressors including isolation, financial limitations, and general anxiety around disease contraction are among the many reasons for increased behavioral health needs since March 2020. The need for accessible MH services has been made more apparent with the onset of the COVID-19 public health crisis, and further illuminates disproportionately impacted populations including healthcare workers, pediatric and adolescent patients, older adults, communities of color, queer communities, and those with pre-existing behavioral health diagnoses.[2] The circumstances of the pandemic have led to greater adoption of telebehavioral health services.

Fundamental to these services is the ability to enact adequate policy changes to make telebehavioral health services more readily available to clients and providers.[3,4] For example, the Centers for Medicare and Medicaid Services allowed providers to bill for both audio-only and video telehealth services.[4] While telebehavioral health services can improve access to care for many, some groups may lack access to telebehavioral health services.[5] For instance, individuals who mistrust technology, have poor digital literacy, or have financial hardships may have limited access to the technology needed for telebehavioral health.[3,5,6]

Methods

To further understand the changes in MH services during the past 2 years and the surrounding policy implementations, the University of Michigan Behavioral Health Workforce Research Center (BHWRC) partnered with Laurel Health Advisors to learn more about where telebehavioral health services are being used during the COVID-19 pandemic. By understanding these experiences, we can begin to examine the circumstances of telebehavioral health utilization during this time of increased social isolation and multifaceted community and workforce stress.

Data Sources

The BHWRC collaborated with Laurel Health Advisors, who houses data from over 1.4 million telehealth encounters collected between March and September 2020. These data were extracted from five healthcare institutions and contains a large array of diagnoses and procedures for which telehealth was used during this time frame. A descriptive analysis was conducted on encounter -level data to demonstrate the number of telehealth visits in each healthcare institution from March to September 2020.

Table 1: Healthcare Systems Included in Data Analysis

Institution / State Name	Location
BJC Healthcare	Missouri
Gundersen Health System	Wisconsin
Northwell Health	New York
University of Mississippi	Mississippi
Arizona Medicaid	Arizona

Findings

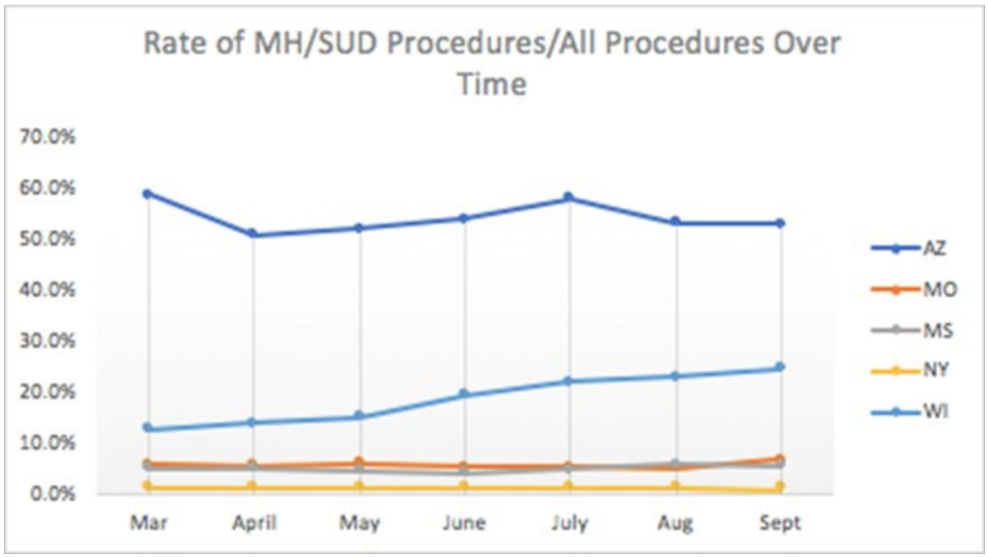
Data Characteristics

Deidentified data provided from Laurel Health Advisors, LLC represent the residents of five states across the US. Arizona, Missouri, Mississippi, New York, and Wisconsin were included in the provided data and state totals for the rate of MH/substance use disorder (SUD) procedures and diagnoses, all procedures, and all diagnoses. County resident population estimates were obtained from the US Census and the estimates are developed from a base that incorporates the 2020 Census, Vintage 2020 estimates, and 2020 Demographic Analysis estimates.

Mental Health and Substance Use Disorder Procedures

States included in the data had low rates of MH/SUD procedures as a proportion of all procedures, with multiple states consistently staying under 10% of all procedures. Arizona was the only state where MH/SUD procedures were regularly over 50% of all procedures during the months March to September. States ranged from New York at 1.3% in September to Arizona at 58.5% in March (Figure 1). Most states' rate of MH/SUD procedures remained relatively consistent over time period with little variation in score. Over the 7-month study period, New York and Missouri ranged from 1.3% to 1.4% and 5.2% to 6.7%, respectively. Wisconsin was the only state to show a consistent increase over the study period, starting at 12.8% in March and ending at 24.7% in September. While consistently higher than the other states, the rate of MH/SUD procedures in Arizona decreased slightly over time, starting at 58.5% in March and ending at 52.9% in September.

Figure 1: Rate of mental health/substance use disorder procedures/all procedures over time

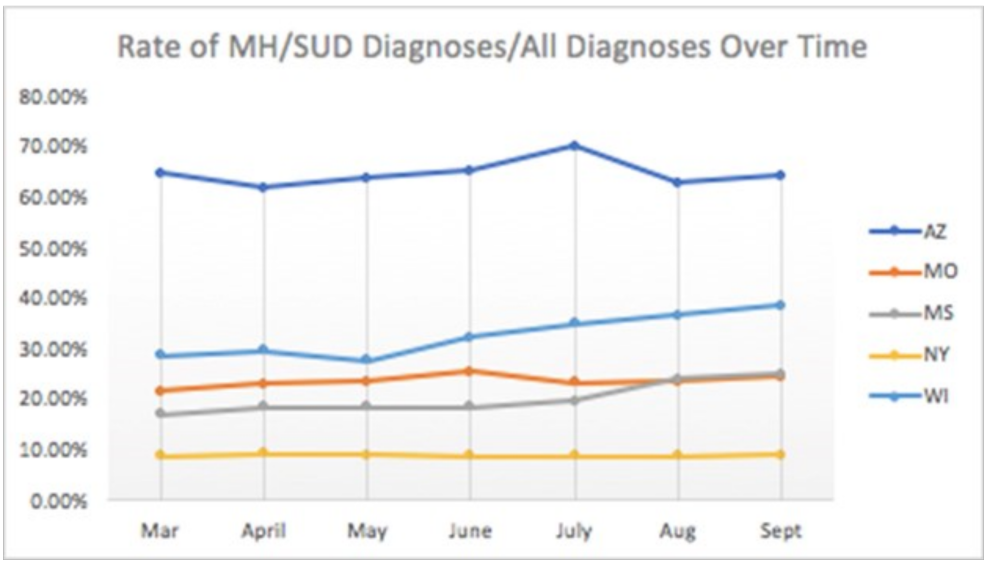


MH, mental health; SUD, substance use disorder

Mental Health or Substance Use Disorder Diagnoses

States included in the data had low rates of MH/SUD as a proportion of all diagnoses with multiple states staying consistently below 30% of all diagnoses (Figure 2). Arizona was the only state where MH/SUD diagnoses were regularly over 60% of all diagnoses during the months March to September. States ranged from New York at 8.9% in March to Arizona at 70.3% in July (Figure 2). Most states' rate of MH/SUD diagnoses remained relatively consistent over time with little variation in score. Over the 7-month study period, New York and Missouri ranged from 8.9% to 9.2% and 21.8% to 25.5%, respectively. Wisconsin and Mississippi were the only states to show an increase over the study period. Wisconsin's MH/SUD diagnoses rate increased by

Figure 2: Rate of mental health/substance use disorder diagnoses/all diagnoses over time



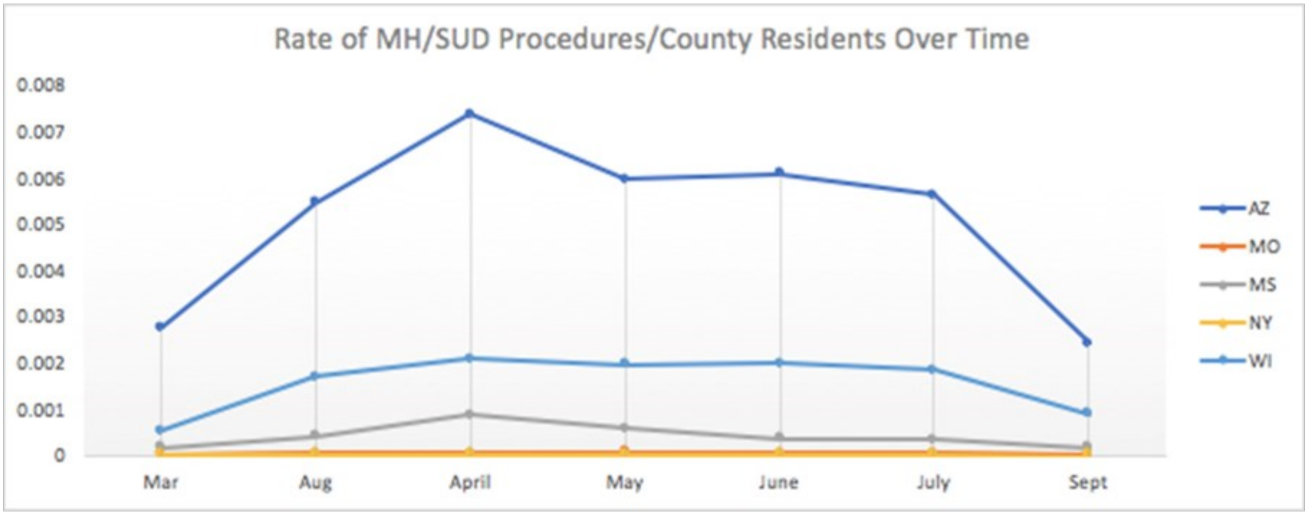
MH, mental health; SUD, substance use disorder

9.9% and Mississippi's increased by 8.04%. While consistently higher than the other states, the rate of MH/SUD diagnoses in Arizona decreased slightly over time, starting at 65% in March and ending at 64.3% in September.

Mental Health or Substance Use Disorder Procedures Over County Residents Over Time

States included in the data had low rates of MH/SUD procedures per county resident populations, with multiple states consistently staying under .003 procedure per county resident (Figure 3). Arizona was the only state where MH/SUD procedures per resident was regularly over .003 during the months March to September. States ranged from New York at .0003 in March to Arizona at .007 in April (Figure 3). Most states' rate of MH/SUD procedures per county residents remained relatively consistent over time with little variation in score over the 7-month study period. Wisconsin was the only state to show a consistent change over the study period being, starting at .003 in March, increasing to .007 in April, and ending at .002 in September. While consistently higher than the other states, the rate of MH/SUD procedures per county residents in Arizona decreased slightly over time.

Figure 3: Rate of mental health/substance use disorder procedures/county residents over time



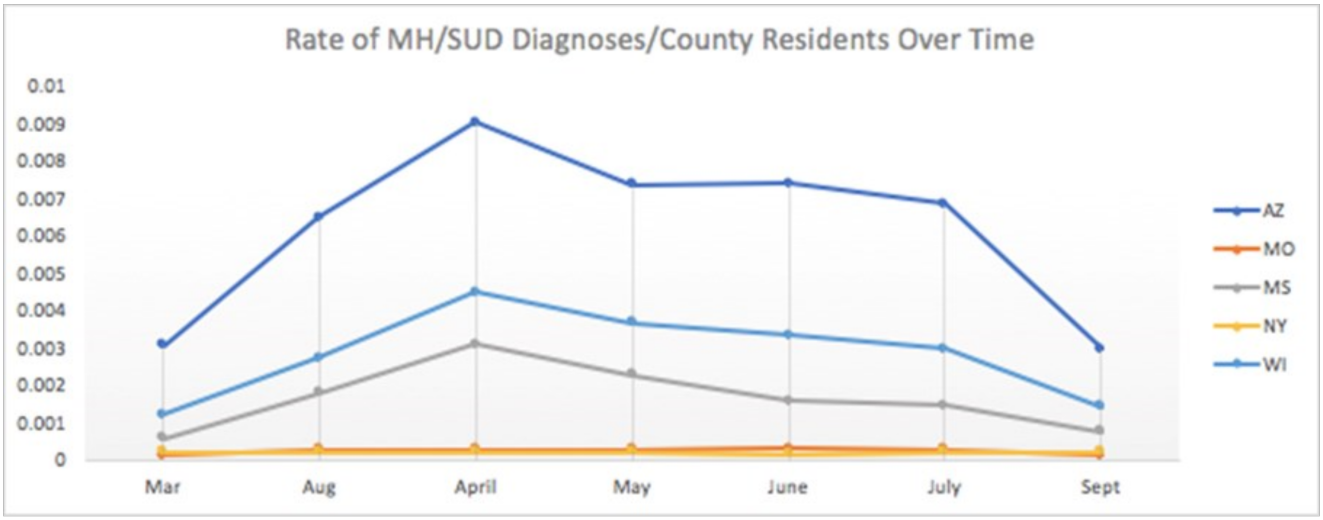
Note: The estimates are developed from a base that incorporates the 2020 Census, Vintage 2020 estimates, and 2020 Demographic Analysis estimates. For population estimates methodology statements, see http://www.census.gov/programs-surveys/popest/technical-documentation/methodology.html.

MH, mental health; SUD, substance use disorder

Mental Health or Substance Use Disorder Diagnoses Over County Residents Over Time

States included in the data had low rates of MH/SUD diagnoses per county resident population, with multiple states consistently staying under .003 procedure per county resident (Figure 4). Arizona was the only state where MH/SUD diagnoses per resident was regularly over .004 during the months March to September. States ranged from New York at .0002 in March to Arizona at .009 in April (Figure 3). Most states' rate of MH/SUD diagnoses per county residents remained relatively consistent over time with little variation in score. The rates in Arizona, Wisconsin, and Mississippi all increased from March to April and then decreased from April to September, finishing near where the rate was in March. While consistently higher than the other states, the rate of MH/SUD diagnoses per county residents in Arizona decreased slightly over time, from .0030 in March to .0029 in September.

Figure 4: Rate of mental health/substance use disorder diagnoses/county residents over time



Note: The estimates are developed from a base that incorporates the 2020 Census, Vintage 2020 estimates, and 2020 Demographic Analysis estimates. For population estimates methodology statements, see http://www.census.gov/programs-surveys/popest/technical-documentation/methodology.html.

MH, mental health; SUD, substance use disorder

Conclusions

We provide descriptive findings summarizing changes in telebehavioral procedures and diagnoses over time using data from March to September 2020. Our data represent five healthcare institutions representing five states. We present our findings both as percentages of all procedures and diagnoses, as well as the county rate of MH and SUD procedures and diagnoses.

Overall, our findings suggest that trends in MH and SUD diagnoses and procedures as a proportion of all diagnoses and procedures remained relatively consistent throughout the 7-month study period. Behavioral health diagnoses and procedures make up less than half of all diagnoses and procedures in all states, though some variation exists. Arizona is the exception, where over half of all diagnoses and procedures are related to behavioral health.

We observe similar findings regarding our results per county population. There is minimal change in the number of behavioral health diagnoses and procedure per county population in all states except Arizona. In these states, rates are consistently lower than 0.004 for both diagnoses and procedures. In Arizona, we observe two important differences. First, the rate is considerably higher. Second, the rate takes an inverted U-shaped distribution. The rate is lowest at the beginning (March) and end of the study period (September). The rate trend increases between March and April before declining between April and September. While increases also occurred in the number of behavioral diagnoses and procedures per county population in Missouri and Wisconsin, the increases are of a smaller magnitude.

Our findings encourage future researchers to examine why Arizona was (and maybe is) a substantial outlier. The trends in Figures 3 and 4 suggest that the onset of the COVID-19 pandemic was associated with an increase in the number of diagnoses and procedures that then diluted to pre-pandemic levels by September 2020, though we have no data on later months. This finding in combination with the lack of a trend observed in the rate per all diagnoses and procedures in Figures 1 and 2 suggests that the COVID-19 pandemic may have impacted the numbers for the overall and behavioral health diagnoses and procedures in similar ways. Thus, the more interesting question is why Arizona was an outlier before the pandemic began. We hope researchers explore this question.

There are a few notable limitations to this study. First, while we examine data from five states, the data are not national. We make no claims that any of the trends observed in this study represent national patterns. Further, as our data come from a single healthcare organization within the state, it may not be represented of the state. Second, we note that a limitation of these data is that we converted the number of MH/SUD diagnoses and procedures from the universe of diagnoses of procedures at the three-digit ZIP code level to the county level for the figures using rate per county population. It is important to note that multiple counties can be in a three-digit ZIP code area, and counties can also be split and in multiple three-digit ZIP codes.

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