



# Substance Use Disorder and Mental Health Diagnoses among Medicaid-Enrolled Youth before the Pandemic

## Findings from Massachusetts

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### Key Takeaways

- Medicaid is the largest single funder of health services for youth—about two-fifths of adolescents and one-quarter of young adults in the United States are enrolled in Medicaid, and behavioral health-related services are a critical need. However, little detail exists on youth behavioral health conditions—specifically substance use disorders (SUDs) or mental health conditions—at the state, county, or city level.
- We find that about one in four (about 79,000) youth Medicaid enrollees in Massachusetts had a SUD or mental health diagnosis in 2018, corroborating findings of substantial issues with youth behavioral health conditions even before the pandemic and underscoring the urgent need to increase behavioral health prevention and treatment services and attend to systemic drivers of youth well-being.
- We find that the extent and types of behavioral health diagnoses varied across geographic areas and demographic categories within Massachusetts, pointing to the importance of having community stakeholders, including youth, help shape culturally effective approaches to prevention and treatment.
- That about half of Massachusetts youth enrollees with co-occurring SUD and mental health diagnoses and about one in three with only a SUD diagnosis (no mental health diagnosis) had at least one emergency department (ED) visit suggests EDs may be an important place to identify and intervene for youth currently experiencing or at risk of experiencing behavioral health conditions.

- Most Massachusetts adolescent enrollees with behavioral health conditions did not get Medicaid-paid health services in schools during the year, indicating Massachusetts schools may need to substantially scale up and/or introduce new services if they get new funds to provide behavioral health services.
- Pursuing strategies that would equitably strengthen individuals, families, and communities and expand outreach about and access to high-quality prevention and treatment of behavioral health conditions could have long-term implications for Massachusetts youth experiencing behavioral health disorders and promote overall youth well-being—an imperative that has become even more critical because of the pandemic.

## Introduction

It is well known that there is an ongoing crisis in youth behavioral health in the US and that the COVID-19 pandemic has exacerbated the crisis (see accompanying report *Substance Use Disorder and Mental Health Diagnoses among Medicaid-Enrolled Youth before the Pandemic: Summary of Findings from Four States and the District of Columbia*). However, little detail exists on youth behavioral health conditions at the state, county, or city level. Because the prevalence and type of SUD and mental health condition vary over time, place, and populations (Mokdad et al. 2016; Substance Abuse and Mental Health Services Administration 2020, Miech et al. 2023), providing communities with information about prevalence and characteristics of youth with behavioral health issues that is as specific to their communities as possible is a critical component of shaping the most appropriate responses. Given the impact of pandemic mitigation on young people and people with low incomes, and the fact that Medicaid is the largest single funder of behavioral health services for youth, it is also important to disseminate information about the prevalence and characteristics of youth with behavioral health conditions insured by Medicaid from before, during, and after the pandemic. This information can help stakeholders better assess how these issues are evolving in their states and communities and design responsive policy.

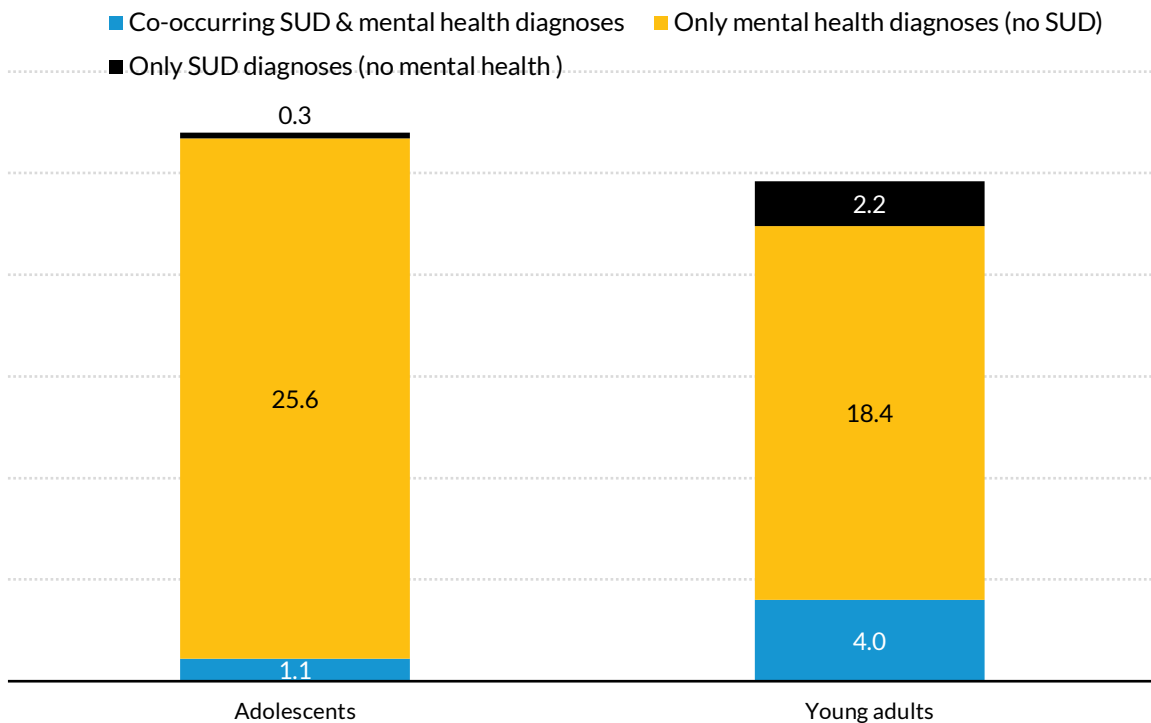
In this brief, we provide descriptive statistics to show the prevalence of behavioral health diagnoses among Massachusetts Medicaid-enrolled youth and characteristics of youth with these diagnoses before the pandemic. We focus on Medicaid-enrolled adolescents (ages 12 to 18) and young adults (ages 19 to 25), hereafter “youth.” Medicaid is the largest single funder of health services for youth—about two-fifths of adolescents and one-quarter of young adults in the United States are enrolled in Medicaid—and many states are innovating their Medicaid programs to improve behavioral health-related services, including services tailored to youth (National Academies of Sciences, Engineering, and Medicine et al. 2022).<sup>1</sup> We focus on youth with a behavioral health diagnosis because we rely on Medicaid claims data and can only see those youth with a behavioral health condition who have a record indicating they have a behavioral health diagnosis. We provide estimates of the characteristics of enrolled youth with co-occurring diagnoses of SUD and a mental health condition, a SUD diagnosis only (and no mental health condition), a mental health condition diagnosis only (and no SUD), and no SUD or mental health diagnosis. We primarily compare youth with SUD and mental health diagnoses with youth with neither diagnosis. For additional detail on our motivation see our brief summarizing findings for California, Colorado, Massachusetts, New Mexico, and Washington, DC (Lynch and Clemans-Cope

2023). For additional detail on our methods, including the limitations of our data and analysis, see our methodology appendix (Lynch and Edwards 2023).

## Results

About one in four adolescent (27.0 percent) and young adult (24.6 percent) Medicaid enrollees in Massachusetts had a SUD or mental health diagnosis in 2018 (figure 1), representing nearly 79,000 Massachusetts youth enrollees. This excludes the likely substantial number of enrolled youth with an undiagnosed SUD or mental health condition, who, for example, did not get health care, were not asked about behavioral health, or did not report symptoms (Barocas et al. 2018; Garnick et al. 2019).

**FIGURE 1**  
**Share of Adolescent and Young Adult Massachusetts Medicaid Enrollees with Either a SUD or Mental Health Diagnosis Alone or Co-occurring SUD and Mental Health Diagnoses, 2018**



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**Source:** Massachusetts Transformed Medicaid Statistical Information System data from 2018.

**Note:** SUD = substance use disorder.

Though adolescent and young adult enrollees had similar levels of any behavioral health diagnoses, young adults were more likely than adolescents to have a SUD diagnosis and less likely to only have a mental health diagnosis (i.e., without SUD). However, mental health diagnoses without SUD were

substantially more prevalent than SUD diagnoses (either alone or co-occurring) among both young adults (18.4 versus 6.2 percent) and adolescents (25.6 versus 1.4 percent).

## SUD Diagnoses and No Mental Health Diagnoses

Among Medicaid-enrolled youth in Massachusetts, those with SUD diagnoses only were older and more likely to be male than youth with no SUD or mental health diagnoses (table 1). Distributions across the 10 most-populous Massachusetts counties and all other counties combined show variation. For example, adolescents with only SUD diagnoses were more likely to reside in Essex and Suffolk counties and outside the 10 most populous Massachusetts counties than were adolescents with no SUD or mental health diagnoses. Young adults with only SUD diagnoses were more likely to reside in Bristol county and outside the 10 most populous Massachusetts counties.

**TABLE 1**  
**Demographic Characteristics of Medicaid-Enrolled Adolescents and Young Adults in Massachusetts, by Behavioral Health Diagnoses, 2018**  
*Percent of Study Population*

|                               | Adolescents                                   |                                |                   |                                      | Young Adults                                  |                                |                     |                                      |
|-------------------------------|---|--------------------------------|-------------------|--------------------------------------|---|--------------------------------|---------------------|--------------------------------------|
|                               | Co-occurring SUD and mental health<br>n=1,920 | Mental health only<br>n=43,363 | SUD only<br>n=557 | No SUD or mental health<br>n=123,824 | Co-occurring SUD and mental health<br>n=5,434 | Mental health only<br>n=24,640 | SUD only<br>n=2,898 | No SUD or mental health<br>n=101,217 |
| <b>Age</b>                    |   |                                |                   |                                      |   |                                |                     |                                      |
| 12                            | 1.3   | 15.5                           | n.s.              | 16.0                                 |   |                                |                     |                                      |
| 13                            | 3.7   | 15.3                           | 2.1               | 14.9                                 |   |                                |                     |                                      |
| 14                            | 6.9   | 14.6                           | 4.5               | 14.2                                 |   |                                |                     |                                      |
| 15                            | 13.2  | 14.6                           | 11.7              | 13.8                                 |   |                                |                     |                                      |
| 16                            | 21.7  | 14.1                           | 16.9              | 13.7                                 |   |                                |                     |                                      |
| 17                            | 27.9  | 13.6                           | 27.8              | 13.6                                 |   |                                |                     |                                      |
| 18                            | 25.1  | 12.4                           | 36.5              | 13.8                                 |   |                                |                     |                                      |
| 19                            |   |                                |                   |                                      | 9.3   | 17.6                           | 8.0                 | 17.4                                 |
| 20                            |   |                                |                   |                                      | 11.0  | 15.9                           | 9.5                 | 17.0                                 |
| 21                            |   |                                |                   |                                      | 11.6  | 14.5                           | 12.4                | 15.5                                 |
| 22                            |   |                                |                   |                                      | 13.2  | 12.5                           | 12.5                | 13.4                                 |
| 23                            |   |                                |                   |                                      | 14.9  | 12.7                           | 15.7                | 12.6                                 |
| 24                            |   |                                |                   |                                      | 18.6  | 13.3                           | 18.6                | 12.2                                 |
| 25                            |   |                                |                   |                                      | 21.3  | 13.5                           | 23.3                | 11.9                                 |
| <b>Sex</b>                    |   |                                |                   |                                      |   |                                |                     |                                      |
| Female                        | 47.8  | 47.0                           | 39.7              | 49.2                                 | 50.3  | 60.7                           | 44.9                | 53.8                                 |
| Male                          | 52.2  | 53.0                           | 60.3              | 50.9                                 | 49.7  | 39.3                           | 55.1                | 46.2                                 |
| <b>Race/ethnicity</b>         |   |                                |                   |                                      |   |                                |                     |                                      |
| American Indian/Alaska Native | n.s.  | 0.3                            | n.s.              | 0.2                                  | 0.4   | 0.4                            | 0.4                 | 0.3                                  |
| Asian                         | 3.1   | 2.9                            | n.s.              | 5.4                                  | 2.2   | 2.8                            | 1.7                 | 5.4                                  |
| Black/African American        | 11.1  | 9.1                            | 15.6              | 13.3                                 | 10.0  | 9.9                            | 10.6                | 12.9                                 |

|                                      | Adolescents                                |                            |                |                                   | Young Adults                               |                             |                  |                                   |
|--------------------------------------|--|----------------------------|----------------|-----------------------------------|--|-----------------------------|------------------|-----------------------------------|
|                                      | Co-occurring SUD and mental health n=1,920 | Mental health only n=43,36 | SUD only n=557 | No SUD or mental health n=123,824 | Co-occurring SUD and mental health n=5,434 | Mental health only n=24,640 | SUD only n=2,898 | No SUD or mental health n=101,217 |
| Hispanic                             | 13.8                                       | 19.1                       | 22.9           | 23.2                              | 10.6                                       | 14.8                        | 12.2             | 17.6                              |
| Native Hawaiian/<br>Pacific Islander | n.s.                                       | n.s.                       | n.s.           | n.s.                              | n.s.                                       | n.s.                        | n.s.             | n.s.                              |
| White                                | 41.2                                       | 35.4                       | 29.2           | 27.7                              | 48.9                                       | 37.0                        | 45.0             | 32.2                              |
| Multiracial                          | n.s.                                       | n.s.                       | n.s.           | n.s.                              | n.s.                                       | n.s.                        | n.s.             | n.s.                              |
| Missing                              | 30.1                                       | 33.0                       | 30.3           | 29.9                              | 27.3                                       | 34.4                        | 29.5             | 33.2                              |
| <b>Disability</b>                    |  |                            |                |                                   |  |                             |                  |                                   |
| Yes                                  | 20.0                                       | 25.5                       | 7.0            | 6.6                               | 23.6                                       | 31.8                        | 8.8              | 11.9                              |
| <b>County</b>                        |  |                            |                |                                   |  |                             |                  |                                   |
| Barnstable                           | 3.3  | 2.6                        | 2.2            | 2.3                               | 3.9  | 2.7                         | 2.9              | 2.4                               |
| Bristol                              | 12.0                                       | 10.6                       | 8.6            | 10.0                              | 12.4                                       | 10.6                        | 13.1             | 9.9                               |
| Essex                                | 15.1                                       | 11.8                       | 19.0           | 14.0                              | 11.1                                       | 11.8                        | 12.4             | 13.3                              |
| Hampden                              | 8.4  | 15.7                       | 8.3            | 12.0                              | 12.8                                       | 14.7                        | 12.9             | 12.6                              |
| Hampshire                            | 1.6  | 2.0                        | n.s.           | 1.4                               | 1.8  | 2.0                         | 2.0              | 1.6                               |
| Middlesex                            | 18.5                                       | 14.4                       | 12.2           | 14.9                              | 13.9                                       | 14.4                        | 12.8             | 14.8                              |
| Norfolk                              | 5.0  | 5.6                        | 4.1            | 6.1                               | 6.4  | 6.3                         | 5.0              | 6.6                               |
| Plymouth                             | 7.4  | 6.3                        | 7.9            | 7.1                               | 7.1  | 6.5                         | 7.1              | 7.0                               |
| Suffolk                              | 10.3                                       | 13.1                       | 18.9           | 15.3                              | 11.1                                       | 12.9                        | 10.9             | 15.2                              |
| Worcester                            | 14.1                                       | 13.7                       | 13.3           | 13.5                              | 14.2                                       | 13.6                        | 13.8             | 13.3                              |
| Less populous counties               | 4.3  | 4.1                        | 4.7            | 3.3                               | 5.4  | 4.5                         | 7.1              | 3.4                               |
| Missing                              | n.s.                                       | 0.1                        | n.s.           | 0.1                               | n.s.                                       | 0.1                         | n.s.             | 0.1.                              |
| <b>Rural-urban commuting area</b>    |  |                            |                |                                   |  |                             |                  |                                   |
| Metropolitan                         | 97.1                                       | 97.2                       | 97.7           | 97.9                              | 96.1                                       | 96.8                        | 95.2             | 97.8                              |
| Micropolitan                         | 2.2  | 2.1                        | n.s.           | 1.5                               | 3.3  | 2.4                         | 3.7              | 1.5                               |
| Small town                           | n.s.                                       | 0.4                        | n.s.           | 0.4                               | 0.4  | 0.4                         | 0.5              | 0.4                               |
| Rural                                | n.s.                                       | 0.3                        | n.s.           | 0.3                               | 0.3  | 0.4                         | 0.5              | 0.3                               |
| Missing                              | n.s.                                       | n.s.                       | n.s.           | n.s.                              | n.s.                                       | n.s.                        | n.s.             | n.s.                              |

**Source:** Authors' estimates derived from the 2018 Massachusetts Transformed Medicaid Statistical Information System Analytic Files.

**Notes:** SUD = substance use disorder. n.s. = data not shown; we suppressed statistics in cells that relied on fewer than 11 cases, per guidance from the Centers for Medicare and Medicaid Services. Blank cells indicate the column heading does not apply.

Female youth with only a SUD were substantially more likely to be pregnant or recently pregnant than those with no SUD or mental health diagnoses. Among female youth with only a SUD, one in three young adults and one in 10 adolescents were pregnant or recently pregnant, compared with 12.9 percent of young adults and 1.0 percent of adolescents with no SUD or mental health diagnoses (table 2).

Marijuana use disorder was the most prevalent diagnosed SUD among adolescents with a SUD only, with roughly 6 in 10 (64.5 percent) having a marijuana use disorder diagnosis (table 2). More than one in

five adolescents (21.2 percent) and young adults (29.6 percent) with only a SUD had an alcohol use disorder diagnosis. Among youth with only a SUD, opioid use disorder and cocaine were more prevalent among young adults (42.2 percent and 9.2 percent) than adolescents (4.5 percent and too rare to report).

**TABLE 2**  
**Types of Substance Use Disorder and Mental Health Diagnoses among Medicaid-Enrolled Adolescents and Young Adults in Massachusetts, by Behavioral Health Diagnoses, 2018**  
*Percent of Study Population*

|   | Adolescents                                   |                                |                   |                                      | Young Adults                                  |                                |                     |                                      |
|---|---|--------------------------------|-------------------|--------------------------------------|---|--------------------------------|---------------------|--------------------------------------|
|   | Co-occurring SUD and mental health<br>n=1,920 | Mental health only<br>n=43,363 | SUD only<br>n=557 | No SUD or mental health<br>n=123,824 | Co-occurring SUD and mental health<br>n=5,434 | Mental health only<br>n=24,640 | SUD only<br>n=2,898 | No SUD or mental health<br>n=101,217 |
| <b>Pregnancy/recent birth among females</b> |   |                                |                   |                                      |   |                                |                     |                                      |
| Yes   | 5.5   | 1.6                            | 10.0              | 1.0                                  | 25.2  | 15.9                           | 33.3                | 12.9                                 |
| <b>Type of SUD diagnosis</b>                |   |                                |                   |                                      |   |                                |                     |                                      |
| Alcohol                                     | 17.6  |                                | 21.2              |                                      | 35.5  |                                | 29.6                |                                      |
| Cocaine                                     | 3.3   |                                | n.s.              |                                      | 19.0  |                                | 9.2                 |                                      |
| Marijuana                                   | 73.2  |                                | 64.5              |                                      | 49.3  |                                | 32.9                |                                      |
| Opioid                                      | 6.2   |                                | 4.5               |                                      | 38.3  |                                | 42.2                |                                      |
| Tobacco                                     | 6.3   | 0.2                            | n.s.              | n.s.                                 | 23.0  | 2.0                            | 6.8                 | 0.4                                  |
| Other                                       |   |                                |                   |                                      |   |                                |                     |                                      |
| psychostimulant                             | 2.3   |                                | n.s.              |                                      | 3.9   |                                | 1.2                 |                                      |
| Other specified                             |   |                                |                   |                                      |   |                                |                     |                                      |
| SUD   | 10.0  |                                | 5.4               |                                      | 14.5  |                                | 6.1                 |                                      |
| Unspecified SUD                             | n.s.  |                                | n.s.              |                                      | 3.0   |                                | 2.4                 |                                      |
| <b>Type of mental health diagnosis</b>      |   |                                |                   |                                      |   |                                |                     |                                      |
| Anxiety                                     | 66.5  | 46.7                           |                   |                                      | 70.7  | 55.4                           |                     |                                      |
| Bipolar                                     | 35.5  | 11.3                           |                   |                                      | 36.5  | 15.9                           |                     |                                      |
| Depressive                                  | 56.9  | 32.5                           |                   |                                      | 60.1  | 42.8                           |                     |                                      |
| Personality                                 | 10.4  | 5.5                            |                   |                                      | 10.1  | 5.9                            |                     |                                      |
| Posttraumatic stress                        | 32.2  | 13.6                           |                   |                                      | 27.4  | 14.0                           |                     |                                      |
| Psychotic                                   | 12.6  | 3.1                            |                   |                                      | 20.7  | 6.9                            |                     |                                      |
| Suicidality                                 | 23.3  | 5.2                            |                   |                                      | 24.8  | 5.2                            |                     |                                      |
| Autism                                      | 2.7   | 9.9                            |                   |                                      | 1.9   | 8.0                            |                     |                                      |
| Conduct                                     | 53.3  | 45.3                           |                   |                                      | 20.7  | 17.8                           |                     |                                      |
| Development                                 | 1.7   | 3.5                            |                   |                                      | 0.5   | 1.7                            |                     |                                      |
| Intellectual                                | 1.4   | 3.5                            |                   |                                      | 1.4   | 5.2                            |                     |                                      |
| Learning                                    | 2.2   | 5.0                            |                   |                                      | 0.6   | 1.5                            |                     |                                      |
| Other                                       | 11.8  | 9.4                            |                   |                                      | 9.0   | 8.6                            |                     |                                      |

Source: Authors' estimates derived from the 2018 Massachusetts Transformed Medicaid Statistical Information System Analytic Files.

Notes: SUD = substance use disorder. n.s. = data not shown; we suppressed statistics in cells that relied on fewer than 11 cases, per guidance from the Centers for Medicare and Medicaid Services. Blank cells indicate the column heading does not apply.

Among youth with only a SUD diagnosis, the ED was a common setting for receiving care, with 32.3 percent of adolescents and 39.2 percent of young adults having at least one ED visit (table 3). By comparison, among youth with no SUD or mental health diagnoses, 10.6 percent of adolescents and 12.9 percent of young adults had at least one ED visit. The share of youth with office-based care was also high among those with only a SUD diagnosis (80.6 percent among adolescents and 69.1 percent among young adults). The share of youth with inpatient hospital care was relatively high among those with only a SUD diagnosis (7.7 percent among adolescents and 27.1 percent among young adults) compared with youth with no behavioral health diagnosis (1.0 percent among adolescents and 4.7 percent among young adults). Medicaid-paid school-based care was rare among adolescents with only a SUD diagnosis (5.4 percent) and even rarer among young adults with only a SUD diagnosis (too rare to report). We observe little care at SUD treatment centers. Telehealth services were too rare to report.

**TABLE 3**  
**Setting of Health Care Services Received by Adolescent and Young Adult Massachusetts Medicaid Enrollees, by Behavioral Health Diagnoses, 2018**  
*Percent of Study Population*

|                                     | Adolescents                                   |                                |                   |                                      | Young Adults                                  |                                |                     |                                      |
|-------------------------------------|---|--------------------------------|-------------------|--------------------------------------|---|--------------------------------|---------------------|--------------------------------------|
|                                     | Co-occurring SUD and mental health<br>n=1,920 | Mental health only<br>n=43,363 | SUD only<br>n=557 | No SUD or mental health<br>n=123,824 | Co-occurring SUD and mental health<br>n=5,434 | Mental health only<br>n=24,640 | SUD only<br>n=2,898 | No SUD or mental health<br>n=101,217 |
| Clinic                              | 0.9   | 1.0                            | n.s.              | 0.7                                  | 2.6   | 1.6                            | 0.9                 | 0.6                                  |
| Community mental health             | 31.0  | 16.3                           | 5.0               | 0.5                                  | 18.9  | 9.1                            | 5.2                 | 0.1                                  |
| Emergency department                | 49.5  | 22.0                           | 32.3              | 10.6                                 | 60.0  | 29.7                           | 39.2                | 12.9                                 |
| Inpatient                           | 42.3  | 7.6                            | 7.7               | 1.0                                  | 56.2  | 14.1                           | 27.1                | 4.7                                  |
| Laboratory                          | 17.2  | 9.0                            | 11.3              | 5.7                                  | 31.7  | 16.6                           | 21.7                | 8.3                                  |
| Mobile van                          | 26.7  | 9.8                            | n.s.              | 0.2                                  | 16.8  | 4.1                            | 1.2                 | 0.2                                  |
| Nonresidential SUD treatment center | n.s.  | n.s.                           | n.s.              | n.s.                                 | 0.5   | n.s.                           | n.s.                | n.s.                                 |
| Office                              | 91.4  | 93.5                           | 80.6              | 75.1                                 | 85.1  | 85.5                           | 69.1                | 52.0                                 |
| Outpatient hospital                 | 34.0  | 28.5                           | 24.2              | 15.2                                 | 41.5  | 31.2                           | 26.4                | 12.1                                 |
| Psychiatric hospital                | 32.5  | 16.5                           | 5.0               | 0.5                                  | 21.1  | 9.3                            | 5.4                 | 0.1                                  |
| Residential SUD treatment center    | 2.7   | n.s.                           | n.s.              | n.s.                                 | 3.6   | n.s.                           | 1.8                 | n.s.                                 |
| School                              | 17.3  | 16.9                           | 5.4               | 1.4                                  | 1.0   | 2.1                            | n.s.                | 0.2                                  |
| Telehealth                          | n.s.  | n.s.                           | n.s.              | n.s.                                 | n.s.  | n.s.                           | n.s.                | n.s.                                 |
| Urgent care center                  | 5.5   | 4.2                            | n.s.              | 2.4                                  | 8.9   | 6.8                            | 6.1                 | 3.4                                  |

**Source:** Authors' estimates derived from the 2018 Massachusetts Transformed Medicaid Statistical Information System Analytic Files.

**Notes:** SUD = substance use disorder. n.s. = data not shown; we suppressed statistics in cells that relied on fewer than 11 cases, per guidance from the Centers for Medicare and Medicaid Services.

## Mental Health Diagnoses and No SUD Diagnoses

The demographic characteristics of youth with mental health diagnoses only (and no SUD diagnoses) were generally similar to the characteristics of youth with no SUD or mental health diagnoses (table 1). However, differences between these groups were substantial by disability status: 25.5 percent of adolescents and 31.8 percent of young adults with mental health diagnoses only experienced disability compared with 6.6 percent of adolescents and 11.9 percent of young adults with no SUD or mental health diagnoses. This may stem in part from some mental health conditions being reported as a functional limitation or being the condition that qualifies an individual for disability-based Medicaid eligibility.

Among adolescents with mental health diagnoses only, anxiety disorders (46.7 percent), depressive disorders (32.5 percent), conduct disorders (45.3 percent), and posttraumatic stress disorders (13.6 percent) were the most prevalent diagnoses (table 2). Their rate of diagnosed suicidality (5.2 percent) was also notable, involving more than 2,250 adolescent enrollees in this group in 2018. For young adults with mental health diagnoses only, anxiety disorders (55.4 percent), depressive disorders (42.8 percent), and conduct disorders (17.8 percent) were the most prevalent diagnoses.

Youth with mental health diagnoses only were substantially more likely to receive care in the ED (22.0 percent of adolescents and 29.7 percent of young adults; table 3) than youth with no SUD or mental health diagnoses (10.6 percent of adolescents and 12.9 percent of young adults). However, youth with mental health diagnoses only were substantially more likely to have an office visit than an ED visit. School-based care was not highly prevalent but was more prevalent among adolescents with a mental health diagnosis only (16.9 percent) than among adolescents with only a SUD diagnosis (5.4 percent) or no SUD or mental health diagnoses (1.4 percent). Telehealth services were too rare to report.

## Co-occurring SUD and Mental Health Diagnoses

Youth with co-occurring SUD and mental health diagnoses were similar to those with only SUD in a number of ways:

- They were more likely to be older and male when compared with youth with no behavioral health diagnoses (table 1).
- Female youth with co-occurring diagnoses were more likely to be pregnant or recently pregnant than those with no SUD or mental health diagnoses (e.g., 5.5 percent of adolescents with co-occurring diagnoses versus 1.0 percent of adolescents with no behavioral health diagnoses; table 2).
- Marijuana use disorder was by far the most prevalent SUD among youth with co-occurring conditions (table 2).

Youth with co-occurring diagnoses had higher or similar rates of SUD as youth with only a SUD (table 2). Similarly, youth with co-occurring diagnoses generally had higher rates of the mental health diagnoses we studied than did youth with only a mental health condition (exceptions included learning disorders among adolescents and intellectual disorders among young adults). Among adolescents with co-occurring diagnoses, anxiety disorders (66.5 percent), depressive disorders (56.9 percent), and conduct disorders (53.3 percent) were the most prevalent mental health diagnoses. These adolescents also had a high rate of diagnosed suicidality (23.3 percent), representing more than 440 adolescents. Among young adults with co-occurring diagnoses, anxiety disorders (70.7 percent), depressive disorders (60.1 percent), and bipolar disorders (36.5 percent) were the most prevalent mental health diagnoses. Suicidality (24.8 percent) was also substantial and involved more than 1,340 young adults with co-occurring diagnoses.

Adolescents and young adults with co-occurring diagnoses were also more likely to experience a disability (20.0 percent among adolescents and 23.6 percent among young adults; table 1) than adolescents and young adults with no SUD or mental health diagnoses (6.6 and 11.9 percent).

A majority of youth with co-occurring diagnoses had at least one ED visit and one office-based visit (table 3). Fewer than one in five (17.3 percent) adolescents with co-occurring diagnoses received care in a school setting. Inpatient hospital care was prevalent (42.3 percent among adolescents and 56.2 percent among young adults), as was inpatient psychiatric care for adolescents (32.5 percent and 21.1 percent among young adults). Telehealth services were too rare to report.

## Discussion

We find that about one in four (about 79,000) youth Medicaid enrollees in Massachusetts had a SUD or mental health diagnosis in 2018. This corroborates findings of substantial issues with behavioral health conditions even before the pandemic and underscores the urgent need to increase behavioral health prevention and treatment services and attend to systemic drivers of youth well-being.

Systemic drivers of youth well-being are not fully understood, but experts generally agree that social connectedness and well families and communities are important factors (National Academies of Sciences, Engineering, and Medicine et al. 2022). Policies and programs that invest in families and communities have been found to have longer-term effects and to be more cost effective than services provided only to children because they affect a broader population of children and the adults in their lives (Hoagwood et al. 2018). These include programs and policies that address parent needs, support family relationships, and invest in schools and communities (National Academies of Sciences, Engineering, and Medicine et al. 2022).

That large numbers of youth had mood and other mental and substance use disorders suggests many youth were not well situated for the isolation and instability associated with COVID-19 mitigation. School closures during the pandemic may have been especially destabilizing for the adolescent Medicaid enrollees with mental health diagnoses who saw health service providers at school

and for the roughly 2,700 adolescent and 2,630 young adult Massachusetts enrollees whose conditions were acute enough to be diagnosed with suicidality during the year before the pandemic started (National Academies of Sciences, Engineering, and Medicine et al. 2020).

Geographic and other demographic variation in rates of SUD and mental health diagnoses points to the importance of having community stakeholders, including youth, help shape culturally effective approaches to prevention and treatment. That female enrollees with behavioral health diagnoses alone were more likely to be pregnant or recently pregnant highlights the importance of access to noncoercive family planning and identification and parent-friendly treatment of behavioral health conditions before, during, and after pregnancy. It also raises questions about (1) the extent to which pregnancy is potentially a unique time when individuals may be more likely to seek care for SUD and/or mental health conditions (Wright et al. 2016) and (2) the extent to which providers may be more likely to seek to identify these conditions during pregnancy. We observe racial and ethnic variation in SUD and mental health diagnoses in Massachusetts. However, given the large levels of missing race and ethnic data we do not make inference from the findings.

That majorities of youth with co-occurring SUD and mental health diagnoses and large shares of youth with SUD diagnoses only and mental health diagnoses only had at least one ED visit suggests EDs may be an important place to identify and intervene for youth currently experiencing or at risk of experiencing SUD and mental health conditions and to refer them to and have them begin treatment. EDs in California and elsewhere have innovative initiatives under way focused on adults with opioid use disorder, which can be looked to for examples of ED models for providing recommended behavioral health services (Antezzo and Manz 2022; D’Onofrio et al. 2015; Herring et al. 2021). However, EDs often lack the resources, including staffing, to identify and manage youth with behavioral health issues, and fewer than one in five youth presenting to an ED with a mental health issue see a mental health provider (Hoge et al. 2022; Kalb et al. 2019). That large majorities of youth receive care in other outpatient settings indicates that youth with behavioral health diagnoses can also be reached in other health care settings.

Most Massachusetts adolescents with behavioral health conditions did not get services in schools, indicating that Massachusetts schools may need to substantially scale and/or introduce new services if they get new funds to provide behavioral health services.

## Conclusion

Pursuing strategies that would equitably strengthen individuals, families, and communities and expand outreach about and access to high-quality prevention and treatment of behavioral health conditions could have long-term implications for Massachusetts youth experiencing behavioral health disorders and promote overall youth well-being—an imperative that has become even more critical because of the pandemic.

## Notes

- <sup>1</sup> Xavier Becerra and Miguel A. Cardona, “Key Policy Letters Signed by the Education Secretary or Deputy Secretary,” July 29, 2022, <https://www2.ed.gov/policy/gen/guid/secletter/220729.html>, a joint letter from the secretary of the US Department of Health and Human Services and the secretary of the US Department of Education to governors regarding current and upcoming federal resources to help better support the mental health of students; and Daniel Tsai, “Information on School-Based Services in Medicaid: Funding, Documentation and Expanding Services,” August 18, 2022, <https://www.medicaid.gov/federal-policy-guidance/downloads/sbscib081820222.pdf>.

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