

The Intersection of Criminal Justice Involvement and Medicaid in Oregon

ISSUE BRIEF

December 2021

CENTER FOR HEALTH SYSTEMS EFFECTIVENESS



STEPHANIE RENFRO, MS
ANNA LEVY, MPH
CHRISTINA CHARLESWORTH, MPH
SIOBHAN MCALISTER, MS
KELLY OFFICER, MS
CARRIE GLASER, MS

Prepared for:

Oregon Criminal Justice Commission



We are CHSE

The Center for Health Systems Effectiveness at Oregon Health & Science University is a research organization that uses economic approaches and data to answer pressing questions about health care delivery. Our mission is to provide the analyses, evidence, and economic expertise to build a more sustainable health care system.

CHSE's publications do not necessarily reflect the opinions of its clients and funders.

www.ohsu.edu/chse | CHSE-info@ohsu.edu | [@OHSU_CHSE](https://twitter.com/OHSU_CHSE)

This Issue Brief was commissioned by the Oregon Criminal Justice Commission

Cite as: Renfro S, Levy A, Charlesworth C, McAlister S, Officer K, and Glaser C. *The Intersection of Criminal Justice Involvement and Medicaid in Oregon*. Center for Health Systems Effectiveness, Oregon Health & Science University; 2021.



Table of Contents

Introduction	4
Policy Context	5
Approach	6
Section A: Demographic characteristics	8
Section B: Medicaid enrollment among individuals with criminal justice involvement	9
Section C: Behavioral health conditions among Medicaid members with criminal justice involvement ...	12
Section D: Communicable disease among Medicaid members with criminal justice involvement	13
Section E: Healthcare utilization among Medicaid members with criminal justice involvement	14
Section F: Healthcare spending among Medicaid members with criminal justice involvement	15
References	16
Appendix A: <i>Methods</i>	17

Introduction

Adults with criminal justice involvement (CJI) have higher behavioral health treatment needs (e.g., for mental illness or substance use disorder) and higher rates of communicable diseases (e.g., Hepatitis C, tuberculosis) than the general population. In Medicaid expansion states like Oregon, many adults with CJI are eligible for enrollment in Medicaid when they are no longer incarcerated.¹

This collaboration between the Center for Health Systems Effectiveness (CHSE) at Oregon Health & Science University and the Statistical Analysis Center (SAC) at the Oregon Criminal Justice Commission seeks to improve the state's understanding of health care needs among Oregonians with CJI, as well as to lay the groundwork for future investigation of questions at the intersection of health and the criminal justice system.

ACRONYMS

AHRQ – Agency for Healthcare Research and Quality

BH – Behavioral Health

BM110 – Ballot Measure 10

CCSR – Clinical Classification Software Refined

CHSE – Center for Health Systems Effectiveness

CJI – Criminal Justice Involvement

DOC – Department of Corrections

ED – Emergency Department

HCV – Hepatitis C

HIV – Human Immunodeficiency Virus

IMPACTS – Improving People's Access to Community-based Treatment

NPI – National Provider Identifier

PH – Physical Health

SAC – Statistical Analysis Center

SMI – Serious Mental Illness

SNAP – Supplemental Nutrition Assistance Program

SSI – Supplemental Security Income

SUD – Substance Use Disorder

TANF – Temporary Assistance for Needy Families

Policy Context

Prior studies have examined criminal justice and health outcomes separately in Oregon, while efforts to integrate data across the health and criminal justice sectors have been few and limited.^{2,3,4} However, integrated health and criminal justice data have become increasingly important in light of several recent policy changes in Oregon, for example:

- Oregon Governor Kate Brown signed legislation in July 2019 that created the Improving People's Access to Community-based Treatment, Supports and Services (IMPACTS) grant program. The program is designed to support counties and tribal nations in developing stronger community-based continuums of care.⁵ Specifically, the program is intended to address the shortage of comprehensive community supports and services for individuals with behavioral health disorders, leading to involvement with the criminal justice system, hospitalizations and institutional placements.⁶ Robust data collection and integration across the health and criminal justice sectors is required for program operations, as well as ongoing tracking and program evaluation.
- Oregon voters also passed Ballot Measure 110 (BM110) in November 2020, decriminalizing the personal possession of small amounts of illicit drugs and reducing penalties for larger amounts, as well as redirecting savings and other revenue sources to addiction treatment and recovery services.⁷ These changes will result in fundamental shifts in the composition of the criminal justice-involved population in Oregon, as well as the mechanism by which provision of treatment occurs for individuals with substance use disorder.

While this report doesn't evaluate the impact of these policy changes, it does lay the groundwork for future rigorous policy evaluations, and sets a baseline for our understanding of the intersection of criminal justice involvement and behavioral health treatment needs. In addition, this report is an initial step to address the challenges of combining criminal justice data and health care service use information. This analysis is not comprehensive, and some findings may identify key opportunities for further investigation.

Approach

This retrospective, descriptive analysis included Oregon residents ages 18-64, who were enrolled in Oregon's Medicaid program anytime from 2016 to 2019. For these individuals, we received linked administrative data from three sources:

- **Medicaid enrollment and claims data.** These data include basic demographic and coverage information for members enrolled in the Oregon Health Plan, along with information about health care services and diagnoses received by covered members. Data were provided by the Oregon Health Authority.
- **Administrative corrections records.** These data include information on individuals with any felony and some misdemeanor convictions, along with corresponding sentences. Only misdemeanor convictions where the individual was supervised by the county community corrections department were included, for example, misdemeanor drug possession and some domestic violence offenses. The data do not include information for individuals who were only convicted of less serious misdemeanor offenses, or those who were arrested and not convicted. Data were provided by the Oregon Department of Corrections.
- **Self-sufficiency program caseload data.** These data include forecasting caseload information for the Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance for Needy Families (TANF). Data were provided by Integrated Client Services, at the Oregon Department of Human Services.

We aimed to:

- 1 Describe the population of Medicaid enrollees with CJ, compared to Medicaid enrollees without CJ.
- 2 Among Medicaid enrollees with CJ, compare changes in Medicaid enrollment, select health conditions and healthcare utilization and spending in the year prior to their sentence with the year following release or end of supervision.

For Aim #2, we restricted our cohort to criminal justice involved individuals who began a felony probation sentence or were incarcerated on or after January 1, 2017, and whose sentence ended on or before December 31, 2018. This ensured we had sufficient lookback and look-forward periods (12 months on each side) to observe enrollment patterns. Among qualifying sentences, the sentence associated with the most serious conviction was retained, with incarceration considered more serious than local control (jail), and local control more serious than felony probation.

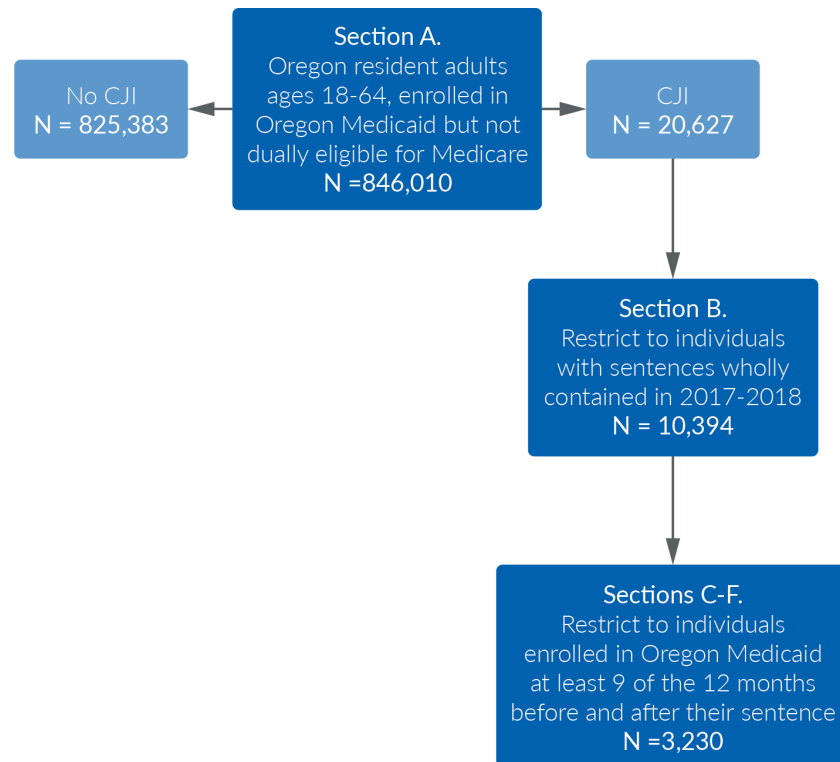
For analysis of health conditions and healthcare utilization and spending, we further restricted this group to individuals enrolled in Oregon Medicaid at least 9 of the 12 months preceding and following their sentence. This provided reasonable assurance that outcomes of interest would be observable in the data if they did occur, and also excluded short enrollment periods that can exhibit a high degree of variability in healthcare spending that is uncharacteristic of typical Medicaid utilization.

Study Population

See Figure 1 for a visual depiction of inclusion/exclusion criteria, and the populations included in our various analyses.

For more detailed information on our analytic methods, please see *Appendix A*.

Figure 1. Study inclusion criteria varied by report section, to accommodate a range of analyses



Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

CJI = Criminal justice involvement

Demographic Characteristics

Among adult Oregon residents enrolled in Medicaid between 2016 and 2019, individuals with CJI are on average 1.6 years younger and 57 percent more likely to be male than members without CJI. In addition, they are slightly more likely to live in rural counties, and 70 percent more likely to receive SNAP or TANF program benefits.

Table 1. Oregon Medicaid members with criminal justice involvement are typically younger, more likely to be male and live in rural counties, and more likely to receive SSI benefits

	NO CJI % N = 825,383	CJI % N = 20,627 ^a
Age (years, mean)	37.4	35.8
Gender		
Male	45.0	70.7
Female	55.0	29.3
Race/ethnicity^b		
Asian/Hawaiian/Pacific Islander	3.4	1.2
American Indian/Alaska Native	5.0	8.1
Black	2.9	4.8
Hispanic	11.9	7.1
White	54.8	64.9
Unknown	22.0	13.8
Geography		
Rural	38.8	40.6
Urban	61.2	59.4
Primary language^b		
English	87.1	98.0
Spanish	8.2	1.1
Other/undetermined	4.6	1.0
Annual Medicaid enrollment (months, mean)	3.7	3.8
Any SSI	47.8	81.6
SNAP	47.7	81.5
TANF	4.1	7.1

N = 846,010. Includes Oregon resident adults enrolled in Medicaid between 2016 and 2019. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

^a Includes 2,265 individuals with parole only.

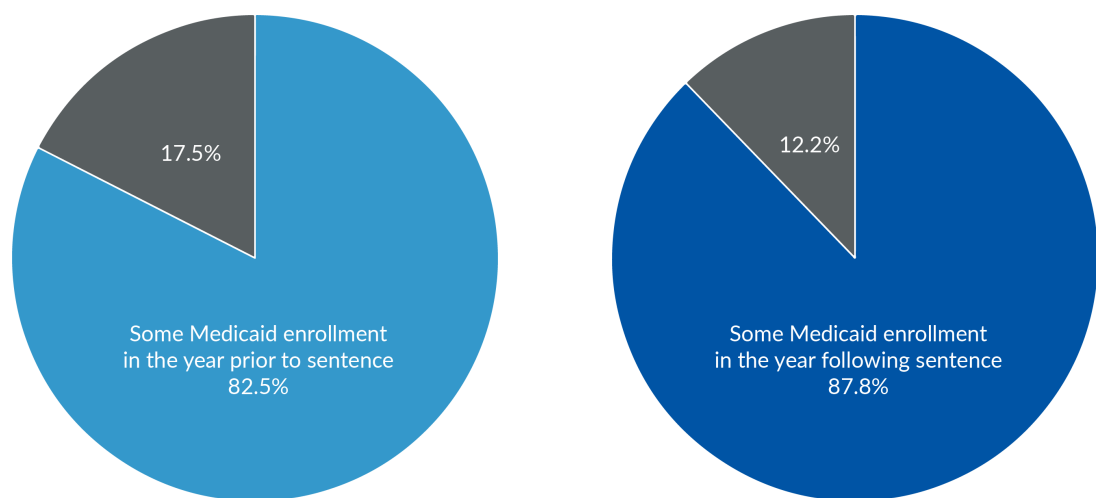
^b Comparisons between populations are not advised, due to discrepant missingness in the underlying data.

CJI = Criminal justice involvement
 SNAP = Supplemental Nutrition Assistance Program
 SSI = Supplemental Security Income (SNAP/TANF)
 TANF = Temporary Assistance for Needy Families

Medicaid enrollment among individuals with criminal justice involvement

Individuals with CJJ were more likely to be enrolled in Oregon Medicaid for at least one month during the year following their sentence (87.8 percent) than during the year prior (82.5 percent).

Figure 2. Oregon Medicaid enrollment is more prevalent in the year following a sentence than in the year prior

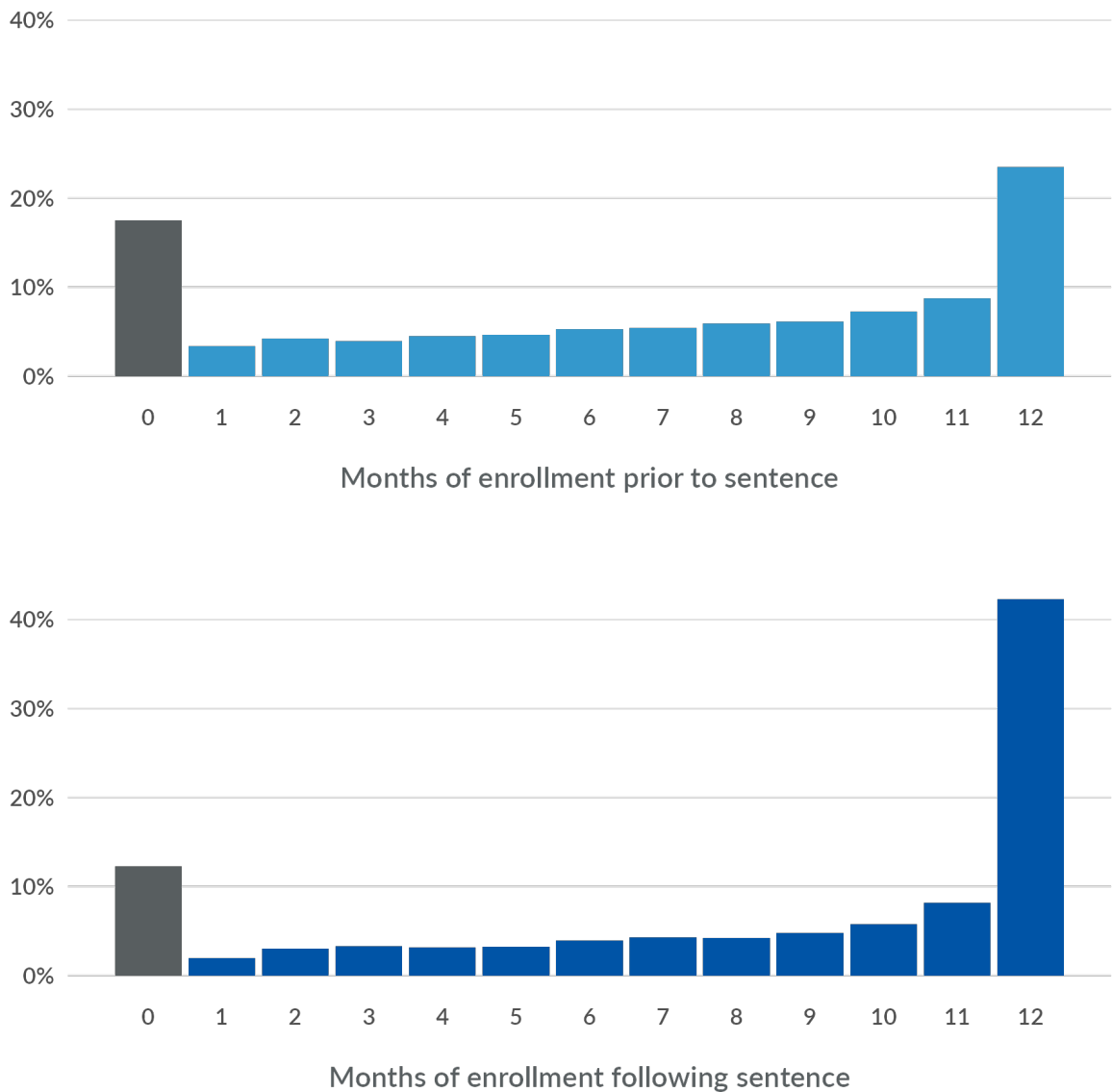


N = 10,394. Includes individuals enrolled in Medicaid between 2016 and 2019, with sentences starting and ending within 2017-2018. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

■ Proportion of individuals with no Medicaid enrollment

Individuals were enrolled more consistently in Oregon Medicaid during the year following their sentence than during the year prior. Among individuals with at least some enrollment (colored bars in Figure 3), nearly half (48 percent) were enrolled all 12 months following their sentence, compared with a quarter (28 percent) during the year prior.

Figure 3. Medicaid enrollment was more consistent in the year following sentences, than in the year prior



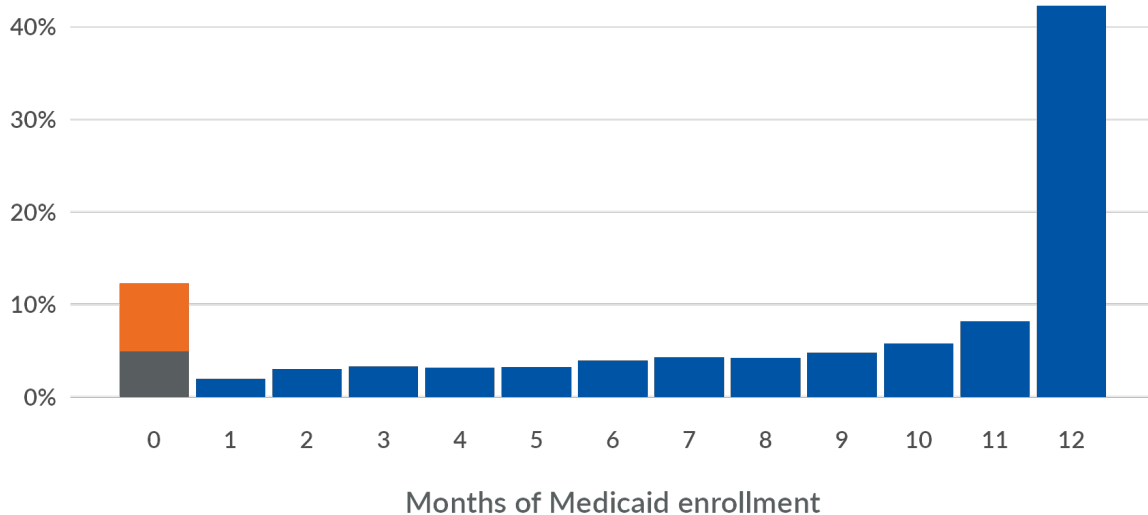
N = 10,394. Includes individuals enrolled in Medicaid between 2016 and 2019, with sentences starting and ending within 2017-2018. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

- Proportion of individuals with no Medicaid enrollment
- Proportion of individuals enrolled in Medicaid prior their sentence
- Proportion of individuals enrolled in Medicaid following their sentence

Among the 12 percent of individuals that did not enroll in Oregon Medicaid in the year following their sentence, 3 in 5 were enrolled during the quarter prior to their sentence start date. These may represent individuals who were likely to have been eligible for Medicaid benefits following their sentence, that did not enroll in the program.*

* The data available for this analysis did not allow us to definitively assess Medicaid eligibility among individuals that did not enroll.

Figure 4. Of those individuals who did not enroll in Oregon Medicaid in the year following their sentence, as many as 3 in 5 were likely eligible for the program

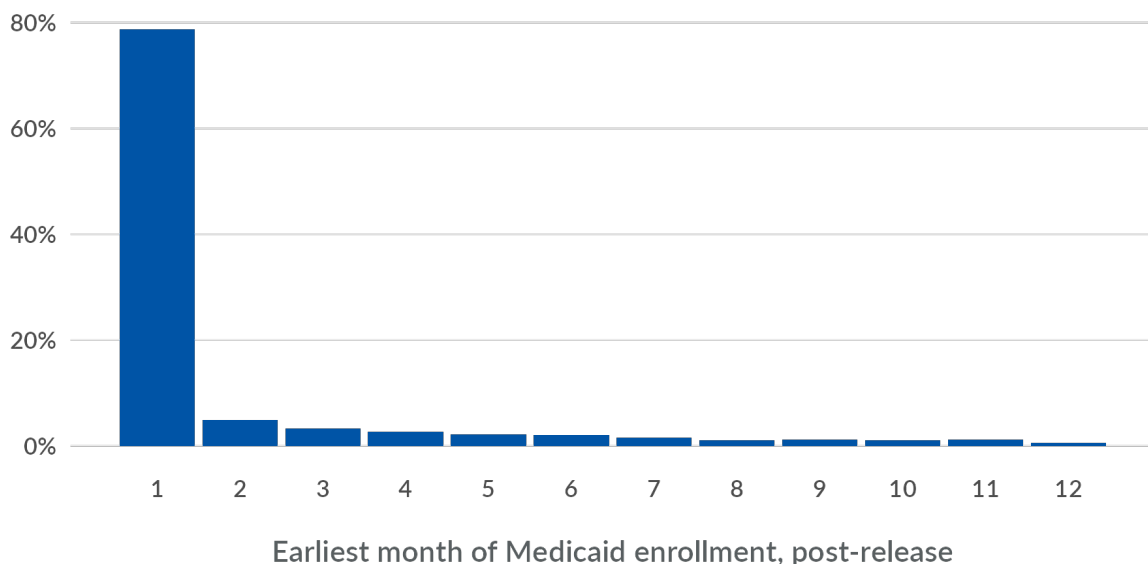


N = 10,394. Includes individuals enrolled in Medicaid between 2016 and 2019, with sentences starting and ending within 2017-2018. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

- Proportion of individuals with no Medicaid enrollment in the year following their release, who were enrolled in Oregon Medicaid in the quarter before their sentence began
- Proportion of individuals with no Medicaid enrollment in the year following their release
- Proportion of individuals enrolled in Medicaid following their sentence

Among individuals who were enrolled in Oregon Medicaid in the year following their sentence, the majority (79%) were enrolled within the first month of release or end of supervision.

Figure 5. Most members were enrolled in Oregon Medicaid during the first month following their sentence



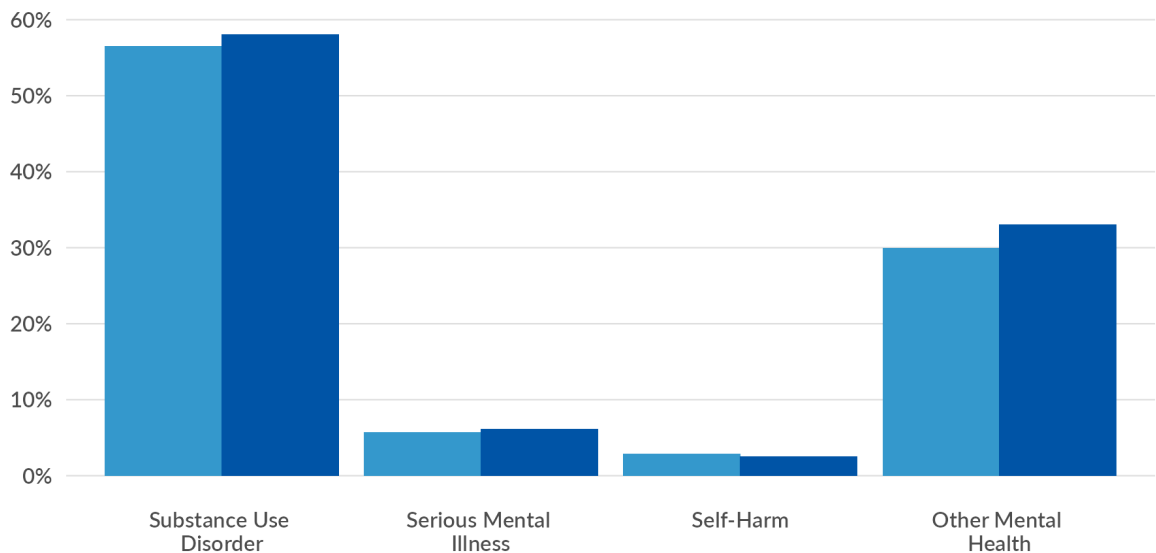
N = 9,123. Includes individuals with sentences starting and ending within 2017-2018, who enrolled in Medicaid in the 12 months following release or end of supervision. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

Behavioral health conditions among Medicaid members with criminal justice involvement

The prevalence of a substance use disorder (SUD) diagnosis was high in this population, perhaps reflecting the types of crimes associated with shorter sentences included in this analysis. The proportion of members with a SUD diagnosis increased by 1.5 percentage points (from 56.5 to 58.0 percent) in the year following a sentence compared with the year preceding it. Diagnosis of serious mental illness also increased slightly during that time, while diagnosis of other mental health conditions increased by 3.2 percentage points (from 29.9 to 33.1 percent).

These rises in observed prevalence may reflect increased access to care and corresponding diagnosis of existing behavioral health conditions in the year following a sentence.

Figure 6. Oregon Medicaid members were more likely to be diagnosed with a substance use disorder or mental health condition in the year following involvement with the criminal justice system than in the year prior



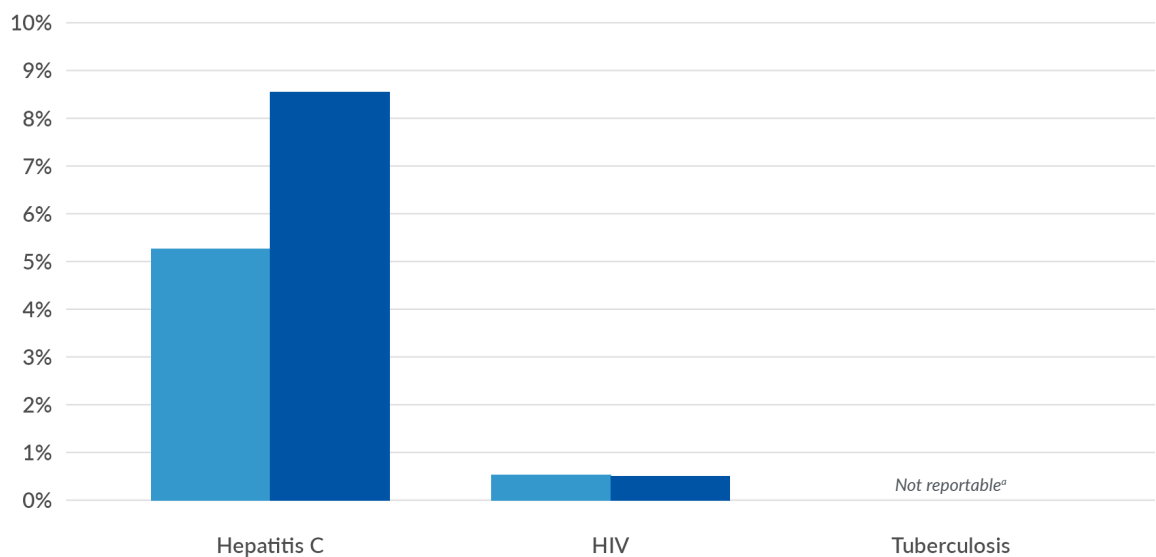
N = 3,230. Includes individuals with sentences starting and ending within 2017-2018, who were enrolled in Medicaid for at least nine months before and after their sentence. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

■ Prevalence of a diagnosis prior to a sentence
■ Prevalence in the year following release or end of supervision

Communicable disease among Medicaid members with criminal justice involvement

Rates of Hepatitis C diagnosis rose 3.3 percentage points (from 5.3 to 8.5 percent) in the year following a sentence compared with the year preceding it. HIV prevalence remained relatively flat, and the rate of tuberculosis was too low to report in this population.

Figure 7. Diagnosis of Hepatitis C was higher in the year following a sentence than in the year prior



N = 3,230. Includes individuals with sentences starting and ending within 2017-2018, who were enrolled in Medicaid for at least nine months before and after their sentence. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

^a In accordance with data use agreements, results are not reported if they do not meet minimal reporting thresholds: at least 10 individuals in the numerator (cases) and at least 50 individuals in the denominator.

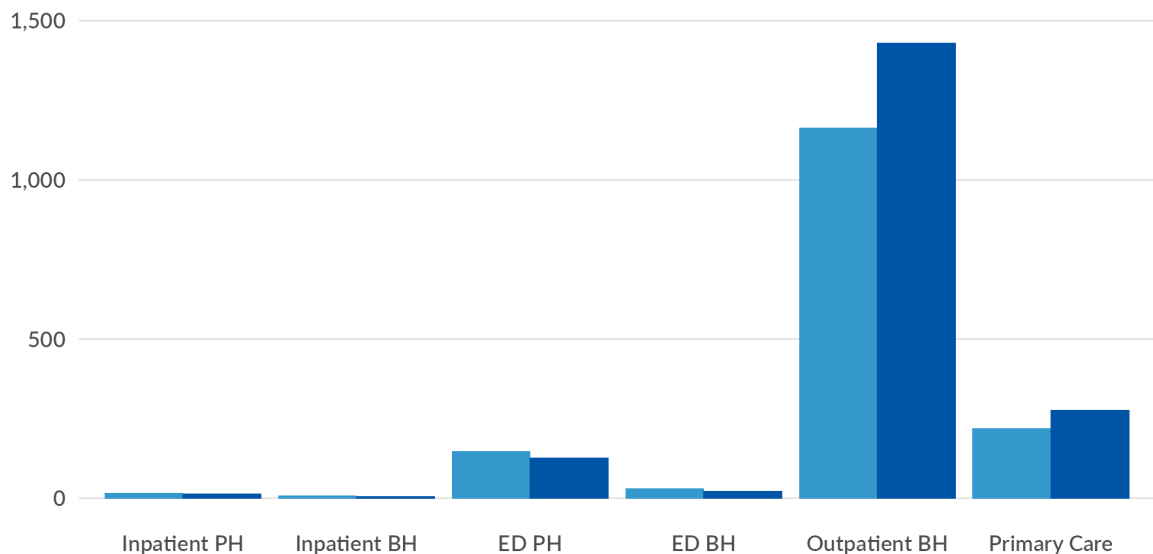
■ Prevalence of a diagnosis prior to a sentence
■ Prevalence in the year following release or end of supervision

Healthcare utilization among Medicaid members with criminal justice involvement

Utilization of outpatient behavioral health services was high in this population, and increased markedly in the year following a sentence compared with the year preceding it (from 1,164 to 1,430 visits per 1,000 member months). These types of health services include some care that may be required as a condition of post-release supervision, such as counseling for alcohol and drug dependence and behavioral health counseling.

Primary care visits also increased between those timeframes, while emergency department (ED) visits for both physical and behavioral health needs declined.

Figure 8. Access to primary and outpatient behavioral health care increased in the year following a sentence compared with the year preceding it, while visits to emergency departments declined



N = 3,230. Includes individuals with sentences starting and ending within 2017-2018, who were enrolled in Medicaid for at least nine months before and after their sentence. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

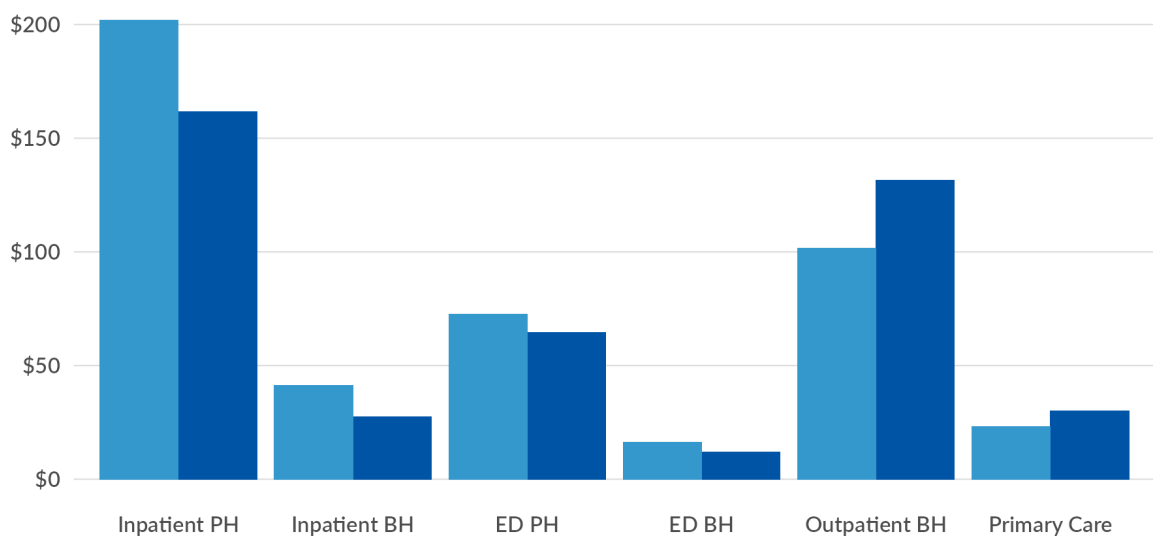
■ Healthcare utilization (per 1,000 Medicaid member months) in the year prior to a sentence
■ Utilization in the year following release or end of supervision
 BH = Behavioral Health
 ED = Emergency Department
 PH = Physical Health

Healthcare spending among Medicaid members with criminal justice involvement

Spending on care in an inpatient (hospital) setting declined for both physical and behavioral health conditions (by approximately 20 percent and 34 percent, respectively) in the year following a sentence compared with the year preceding it. Spending on emergency department (ED) visits also fell, by about 12 percent for physical health conditions, and 27 percent for behavioral health conditions. Meanwhile, spending on outpatient behavioral health services and primary care increased between these timeframes.

These patterns mirror the trends observed in healthcare utilization, and could similarly indicate increased access to preventive care.

Figure 9. Spending on inpatient and emergency department visits fell in the year following a sentence compared with the year preceding it, while spending on outpatient behavioral health services and primary care increased



N = 3,230. Includes individuals with sentences starting and ending within 2017-2018, who were enrolled in Medicaid for at least nine months before and after their sentence. Based on analysis of linked Oregon Medicaid and Department of Corrections administrative data.

■ Medicaid spending on healthcare (per member per month) in the year prior to a sentence
■ Spending in the year following release or end of supervision
 BH = Behavioral Health
 PH = Physical Health

References

- 1 Medicaid and the Criminal Justice System. (2018). MACPAC.
- 2 Mallik-Kane K, Liberman A, Dubay L, and Jannetta J. *Prison Inmates' Prerelease Application for Medicaid: Take-up Rates in Oregon*. Urban Institute; 2014. Accessed <https://www.urban.org/sites/default/files/publication/33831/413199-Prison-Inmates-Prerelease-Application-for-Medicaid.PDF>
- 3 Allen S, Warney C, Barbee A. *Behavioral Health Justice Reinvestment in Oregon: Presentation to the Steering Committee [PowerPoint presentation]*. The Council of State Governments, Justice Center; 2018. Accessed <https://csgjusticecenter.org/wp-content/uploads/2020/10/OR-Launch-Presentation.pdf>
- 4 Needham Waddell E, Baker R, Hartung D, Hildebran C, Nguyen T, Collins D, Larsen J, Stack E, and the ROAR Protocol Development Team. Reducing overdose after release from incarceration (ROAR): study protocol for an intervention to reduce risk of fatal and non-fatal opioid overdose among women after release from prison. *Health Justice*. 2020 Jul 10;8(1):18. doi: [10.1186/s40352-020-00113-7](https://doi.org/10.1186/s40352-020-00113-7)
- 5 Oregon Health Authority. (2020). OHA, CJC announce nearly \$10 million in funds to improve criminal justice, behavioral health outcomes. Retrieved from [https://www.oregon.gov/oha/ERD/Pages/OHACJCAnnounceNearly\\$10MillionInFundsToImproveCriminalJusticeBehavioralHealthOutcomes.aspx](https://www.oregon.gov/oha/ERD/Pages/OHACJCAnnounceNearly$10MillionInFundsToImproveCriminalJusticeBehavioralHealthOutcomes.aspx)
- 6 Oregon Health Authority. (n.d.). *IMPACTS Grant Program Overview*. Retrieved from <https://www.oregon.gov/cjc/impacts/Pages/default.aspx>
- 7 Oregon Health Authority. (2021). Drug Addition Treatment and Recovery Act. Retrieved from <https://www.oregon.gov/oha/HSD/AMH/Pages/Measure110.aspx>
- 8 Agency for Healthcare Research and Quality: Healthcare Cost and Utilization Project. (n.d.). *Clinical Classification Software Refined*. Retrieved from https://www.hcup-us.ahrq.gov/toolssoftware/ccsr/ccs_refined.jsp

Methods

Study population

This analysis included Oregon residents ages 18-64, who were enrolled in Oregon's Medicaid program anytime from 2016 to 2019. Members were excluded if they had dual enrollment in Medicare, since Medicare claims were not available and to ensure a comprehensive view of healthcare utilization.

Identifying criminal justice involvement

Individuals were identified as criminal justice involved if they served a felony probation sentence or were incarcerated during 2016 to 2019, according to combined sentence and offense administrative data provided by the Oregon Department of Corrections (DOC). Individuals who were only convicted of less serious misdemeanor offenses, or who were arrested but not convicted, were not identified as criminal justice involved.

Of individuals with CJ, the sentence associated with the most serious conviction was retained, with incarceration considered more serious than local control (jail), and local control more serious than felony probation.

Identifying health conditions

This analysis identified the reported health conditions using Medicaid enrollment and claims data provided by the Oregon Health Authority. It also utilized Clinical Classification Software Refined (CCSR) definitions⁸ developed and published by the Agency for Healthcare Research and Quality (AHRQ). Members are counted as diagnosed with the reported health conditions if they meet following criteria:

- **Substance use disorder (SUD).** Any claim with a primary diagnosis corresponding with CCSR categories MDB017-MDB025 or MDB028-MBD032 during the year preceding or following a sentence.
- **Serious mental illness (SMI).** Any claim for an inpatient hospitalization, partial hospitalization in a psychiatric facility, or psychiatric residential care with a primary diagnosis of SMI in the year preceding or following a sentence. SMI diagnoses were defined as schizophrenia (F20, F25), bipolar I (F30, F31.0-F31.78), major depressive disorders (F32.2, F32.3, F33.2, F33.3), and other schizophrenia spectrum or psychotic disorders (F28).
- **Self-harm.** Any claim with a primary diagnosis corresponding with CCSR categories MBD012, MBD027 or EXT021 in the year preceding or following a sentence.
- **Other mental health conditions.** Does not meet the criteria for SMI, but has any claim with a primary diagnosis corresponding with CCSR categories MBD001-MBD011 or MBD013 in the year preceding or following a sentence.
- **Hepatitis C (HCV).** Any claim with a diagnosis code for chronic HCV (B182), or at least two claims with a diagnosis code for unspecified or acute HCV (B1920, B1921, B1710, B1711)

on different dates of service in the same measurement period (either the year preceding or following a sentence).

- **HIV.** Any of the following qualify:
 - Any inpatient claim with a diagnosis corresponding with CCSR category INF006.
 - At least 2 outpatient claims with a diagnosis corresponding with CCSR category INF006, spaced at least 30 days apart in the same measurement period (either the year preceding or following a sentence).
 - Any outpatient claim with a diagnosis corresponding with CCSR category INF006 on a day when an HIV screening test was not performed. HIV screening defined as:
 - A claim with a CPT code in: 86689, 86701, 86703, 87389, 87390, 87534, 87535, 86702, 87391, 87537, 87538, 87539, 87536, 87806 or
 - A claim with a HCPC code in: G8500, G0475, S3645, G0432, G0433, G0435
- **Tuberculosis.** Our cohort included fewer than ten individuals with a diagnosis corresponding with CCSR category INF001, so a definition for this condition was not fully implemented.

Identifying healthcare utilization

This analysis identified reported healthcare utilization and spending measures using Medicaid enrollment and claims data provided by the Oregon Health Authority.

Utilization measures were calculated by applying the following mutually exclusive logic (i.e. any claim that qualified for the following definition of an inpatient visit was excluded from all subsequent definitions):

- **Inpatient behavioral health.** Unique inpatient discharges that include any claim with a primary diagnosis of any behavioral health condition defined above (substance use disorder, serious mental illness, self-harm, or another mental health condition)
- **Inpatient physical health.** Unique inpatient discharges that do not include any claim with a primary diagnosis of any behavioral health condition defined above (substance use disorder, serious mental illness, self-harm, or another mental health condition)
- **Emergency department behavioral health.** Unique emergency department visits that did not result in an inpatient admission and include any claim with a primary diagnosis of any behavioral health condition defined above (substance use disorder, serious mental illness, self-harm, or another mental health condition)
- **Emergency department physical health.** Unique emergency department visits that did not result in an inpatient admission and do not include any claim with a primary diagnosis of any behavioral health condition defined above (substance use disorder, serious mental illness, self-harm, or another mental health condition)
- **Outpatient behavioral health.** Unique visits (based on member ID, service date, and NPI) that include any claim with a primary diagnosis of any behavioral health condition defined above (substance use disorder, serious mental illness, self-harm, or another mental health condition), and a procedure code for evaluation and management or psychotherapy.

- **Primary care.** Unique visits for primary care excluding claims with a primary diagnosis of any behavioral health condition defined above (substance use disorder, serious mental illness, self-harm, or another mental health condition)

Calculating healthcare spending

Spending was calculated using the same category definitions defined for utilization estimates, however the unit of analysis for this portion was the individual claim rather than the visit. Therefore, multiple claims that were counted as part of a single visit for the reported measures of utilization could fall into different categories when estimating spending.

Spending information was not always evident from the administrative claims data; for example, providers with a capitated contract may receive a fixed, pre-arranged payment from a member's health plan in lieu of payments for specific services. In these cases, spending was imputed as the average cost for a given service, according to the setting in which it was rendered (inpatient, emergency department, outpatient, professional, pharmacy, and other). Through imputation, we attached the same "price" to similar services, disregarding any differences in actual amounts paid by a given health plan. The spending measures, which sum across these repriced claims, can thus be considered "price-weighted volume-of-care" measures. Expenditures are higher with greater utilization of services, or with services that, on average, cost more.

Limitations

- This analysis relied on the accuracy and availability of administrative data, which were not collected for research purposes.
- This analysis does not stratify outcomes, or otherwise attempt to assess whether observed outcomes are consistent across the study population.
- This analysis only included individuals enrolled in Oregon Medicaid for some duration of 2016-2019; findings may not be generalizable to all members or members of other state Medicaid programs.
- This analysis only included individuals with sentences that fall entirely during 2017-2018; findings may not be generalizable to all individuals with CJJ, particularly those with longer sentences.
- This analysis is not comprehensive, and some findings may identify key opportunities for further investigation.