



Psychotropic Medication Use Among Young Adult Health First Colorado Members:

Differences in Utilization Between Youth Emancipating from Foster Care and their Peers

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Key Findings

- Young adults who emancipate from foster care use more psychotropic medications than their peers both before and after the emancipation/reference month, even with similar medical complexity.
- There is a larger decrease in psychotropic medication use among those who emancipate (particularly for antidepressant, antipsychotic, and stimulant medications) compared to their peers after the emancipation/reference month.
- Individuals with chronic behavioral health diagnoses experience the greatest reductions in psychotropic medication use.

Purpose

This brief examines trends in psychotropic medication use among young adults who emancipated from foster care and a cohort of their peers who never experienced foster care. The analysis compares average medication claims in the 12 months before and after the emancipation/reference month for both groups and by four categories of medical complexity, defined as no chronic conditions, chronic physical health only, chronic behavioral health only, and both.

Overview

Psychotropic medications, including stimulants and antipsychotics, are used to treat and manage a range of behavioral health disorders. In 2011, approximately 5% of non-disabled children without disabilities enrolled in Medicaid in the United States used psychotropic medications, accounting for 16 million medication claims (9.1 per user per year). Nationally, 24% of children who were eligible for Medicaid through child welfare involvement used psychotropic medications with an average of 16 claims per child per year.¹ Children and youth in foster care are prescribed psychotropic medications at a higher rate than other children with Medicaid coverage, and are more likely to experience overprescribing, polypharmacy, off-label use, and higher than recommended doses—all of which can have poor outcomes.²⁻⁶ While psychotropic medications offer therapeutic benefits, they can be costly and require consistent management and monitoring to minimize side effects and align with clinical quality guidelines.⁷ In addition to medical complexities, children in foster care are more likely to have experienced trauma and other social complexities such as poverty that are multifactorial and may exacerbate overall health status.⁸

Previous research has shown that young adults who emancipate from foster care engage in riskier health behaviors^{9,10} and have poor social and health outcomes.¹¹ A survey-based study of young adults with foster care experience in California found that psychotropic medication use decreases between the age of 17 and 19 years.¹²

In Colorado in 2020, nearly 200 young adults emancipated from foster care, though they remain eligible for Medicaid coverage. Emancipation from foster care represents a transition to more autonomous medical decision-making for those young adults but also uncertainty around their ongoing need for behavioral health care and pharmaceutical interventions, as well as their preparation for and ability to manage their ongoing, complex medical needs.

The Farley Health Policy Center at the University of Colorado School of Medicine, in collaboration with the Colorado Departments of Health Care Policy and Financing (HCPF) and Human Services (CDHS), analyzed health care utilization trends among more than 3,000 young adult Health First Colorado members, including individuals who emancipated from foster care and a matched comparison peer group of Health First Colorado members without foster care experience. Using CDHS data, we identified 1,658 young adults who emancipated from foster care between January 2014 and June 2021 and were enrolled in Health First Colorado (Emancipation Cohort). Those individuals in the Emancipation Cohort were matched to young adult peers also enrolled in Health First Colorado who had never experienced foster care and had similar sex, age, income, Medicaid-eligibility, and medical complexity (Peer Cohort). Foster care experience was derived using data from the CDHS statewide automated child welfare information system (Trails). All other demographic characteristics and health and medical variables were extracted from Health First Colorado enrollment and claims files. Medical complexity was defined using the Pediatric Medical Complexity Algorithm, version 3.0 (PMCA)¹³ according to chronic physical and behavioral health complexity, assessed as of the emancipation/reference month, and grouped into four categories:

- 1 **No Chronic Physical or Behavioral Health Condition (Non-Chronic, No BH)**
- 2 **Chronic Physical Health Condition and No Chronic Behavioral Health Condition (Chronic, No BH)**
- 3 **No Chronic Physical Health Condition and a Chronic Behavioral Health Condition (Non-Chronic with BH)**
- 4 **Both Chronic Physical and Behavioral Health Conditions (Chronic with BH)**

This analysis assessed trends in psychotropic medication use for both the Emancipation and Peer Cohorts, stratifying across each of the four categories of medical complexity to account for differing levels of need. The study period for each youth was 25 months surrounding the emancipation/reference month including the month of emancipation (or reference month for peers), as well as the 12 months before and after the emancipation/reference month. Findings are presented as mean per member per month prescription claims for the 12-month period before the emancipation/reference month and the 12-month period after the emancipation/reference month. We also provide the percentage change in psychotropic prescription claims from the pre- to the post-period to highlight differences in the magnitude of change for each group.

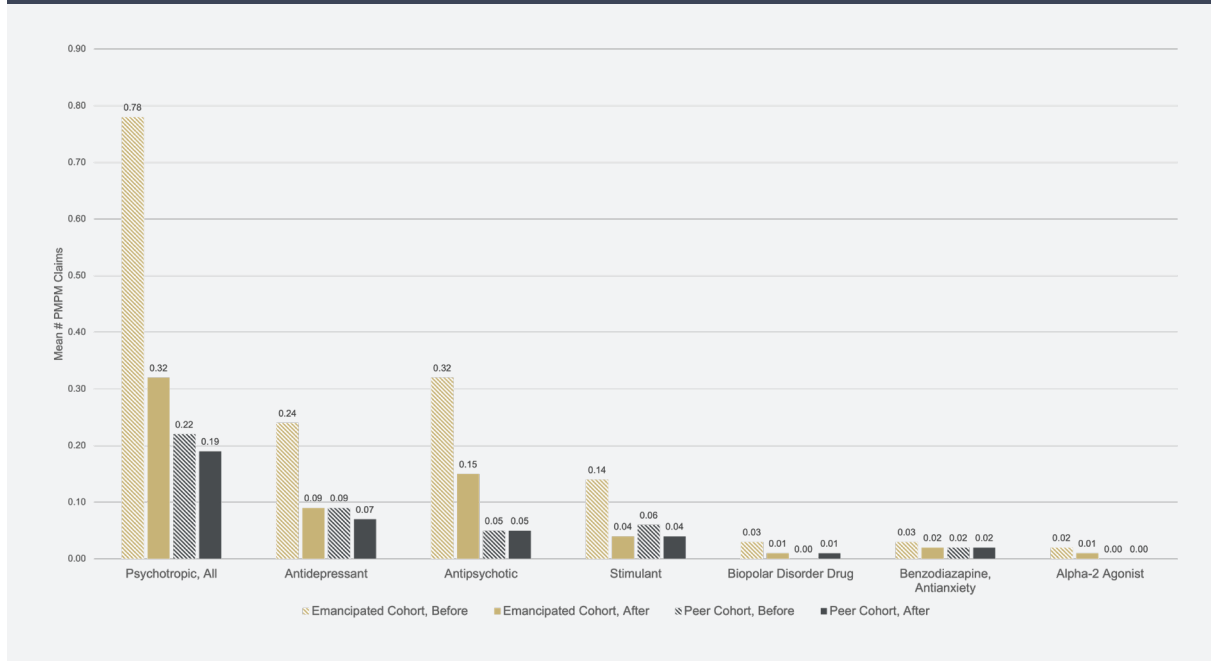
Research Questions and Findings:

- 1 **How does psychotropic medication use differ in the year before and year after emancipation for Medicaid-covered young adults in foster care and a peer comparison group enrolled in Health First Colorado?**
- 2 **How does psychotropic medication use change after emancipation and does it vary by psychotropic drug classification?**
- 3 **Are there differences in psychotropic medication use and changes over time related to medical complexity?**

Results

Overall and across all psychotropic medication classes, young adults who emancipate from foster care have higher medication use in both the pre-emancipation and post-emancipation periods compared to peers, with a difference of 0.56 per member per month (PMPM) psychotropic claims prior to emancipation and 0.13 in the post-emancipation period. Those who emancipate also experienced a larger decrease (-0.46 PMPM psychotropic claims, -38%) in claims from pre- to post-emancipation compared to peers (-0.03 PMPM psychotropic claims, -14%). (See Figure 1.)

Figure 1. Mean PMPM Psychotropic Medication Claims Before and After Emancipation/Reference Month, Young Adults who Emancipate Compared to Peers



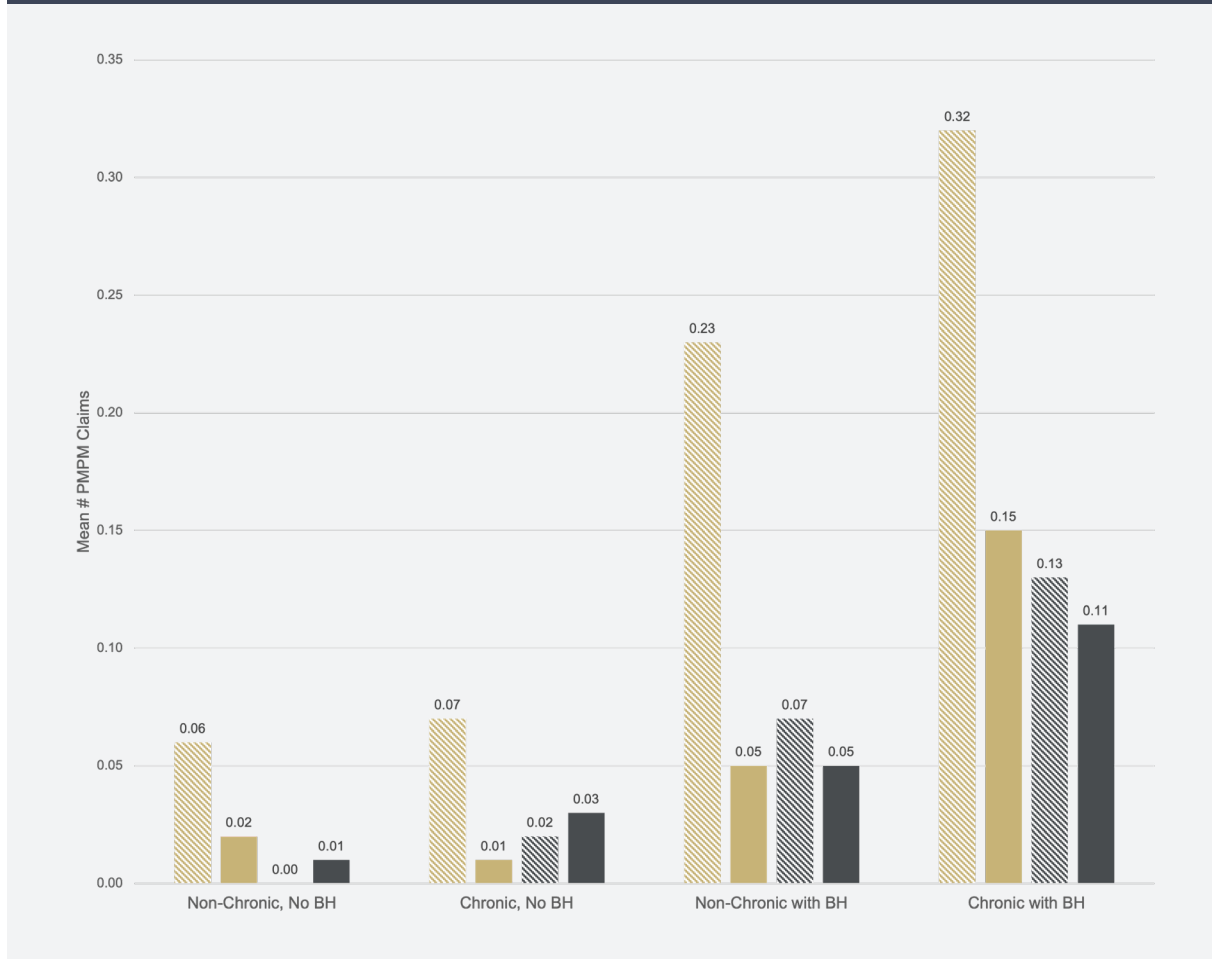
Changes in Per Member Per Month Mean Number of Pharmaceutical Claims Before and After Emancipation or Peer Reference Month Raw Change in Average PMPM Claims (Percentage Change)

Cohort	Psychotropic, All	Anti-depressant	Anti-psychotic	Stimulant	Bipolar Disorder Drug	Benzo-diazepine, Antianxiety	Alpha-2 Agonist
Emancipated Cohort	-0.46 (-59%)	-0.15 (-63%)	-0.17 (-53%)	-0.010 (-71%)	-0.02 (-67%)	-0.01 (-33%)	-0.01 (-50%)
Peer Cohort	-0.03 (-14%)	-0.02 (-22%)	0.00 (0%)	-0.02 (-33%)	0.01 (n/a)	0.00 (0%)	0.00 (0%)

The largest reductions in psychotropic use were for those with a behavioral health complexity regardless of physical health status. (See Figure 2.) Differences vary by drug classification with most attributable to antidepressants, antipsychotics, and stimulants, which show substantial differences between the emancipated and peer groups. In each of these drug classes, use is higher and the decrease between the pre and post periods is larger for those with a behavioral health complexity in the emancipated group.

Antidepressant use in the Emancipated Cohort decreased by 0.17 (-53%) and 0.18 (-78%) PMPM prescription claims for those with both behavioral and physical health complexity and those with behavioral health complexity only, respectively. This is compared to a 0.02 PMPM claim reduction for peers in both groups (-15%, -29%). There is a consistent decrease in antidepressant use among those who emancipate without behavioral health complexities, and a slight increase in antidepressant use among their peer comparison groups. (See Figure 2.)

Figure 2. Antidepressant Medication Use: Mean PMPM Pharmaceutical Claims Before and After Emancipation/References Month, Young Adults who Emancipate Compared to Peers

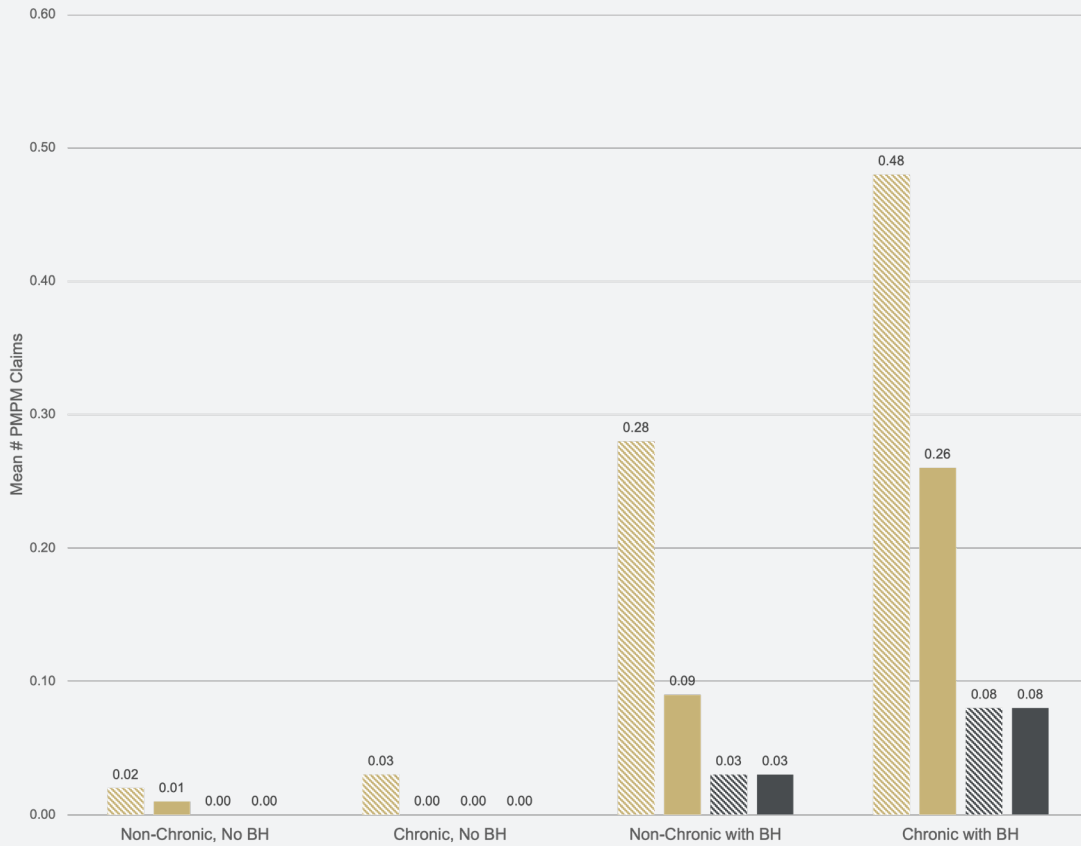


Changes in Per Member Per Month Mean Number of Antidepressant Medication Claims Before and After Emancipation or Peer Reference Month, Raw Change in Average PMPM Claims (Percentage Change)

Cohort	Non-Chronic, No BH	Chronic, No BH	Non-Chronic with BH	Chronic with BH
Emancipated Cohort	-0.04 (-67%)	-0.06 (-86%)	-0.18 (-78%)	-0.17 (-53%)
Peer Cohort	0.01 (n/a)	0.01 (50%)	-0.02 (-29%)	-0.02 (-15%)

Figure 3 summarizes results for antipsychotic medications. The analysis shows a reduction of 0.22 antipsychotic medication PMPM claims, which represents a 46% decrease in the PMPM claims for these medications from the pre to post period among those who emancipate and have both a behavioral and physical health complexity. In contrast, we observe no reduction among peers with the difference in reduction between the two groups statistically significant (CI 0.16-0.27, p<0.001). The pattern is similar for those with only a behavioral health complexity.

Figure 3. Antipsychotic Medication Use: Mean PMPM Pharmaceutical Claims Before and After Emancipation/References Month, Young Adults who Emancipate Compared to Peers

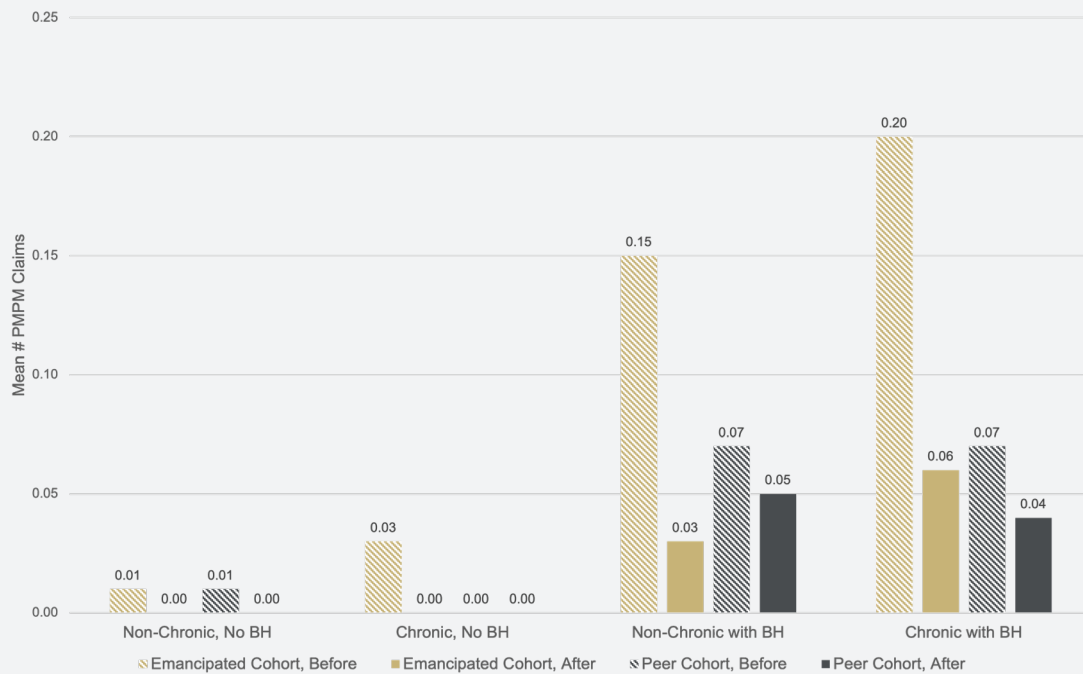


Changes in Per Member Per Month Mean Number of Antipsychotic Medication Claims Before and After Emancipation or Peer Reference Month, Raw Change in Average PMPM Claims (Percentage Change)

Cohort	Non-Chronic, No BH	Chronic, No BH	Non-Chronic with BH	Chronic with BH
Emancipated Cohort	-0.01 (-50%)	-0.03 (-100%)	-0.19 (-68%)	-0.22 (-46%)
Peer Cohort	0.00 (n/a)	0.00 (n/a)	0.00 (0%)	0.00 (0%)

A similar pattern holds for stimulant medication use. Among young adults who emancipate, we find decreases for those with chronic behavioral health conditions regardless of their physical health complexities, whereas there are smaller reductions among their peers. (See Figure 4.)

Figure 4. Stimulant Medication Use: Mean PMPM Pharmaceutical Claims Before and After Emancipation/References Month, Young Adults who Emancipate Compared to Peers



Changes in Per Member Per Month Mean Number of Stimulant Medication Claims Before and After Emancipation or Peer Reference Month, Raw Change in Average PMPM Claims (Percentage Change)

Cohort	Non-Chronic, No BH	Chronic, No BH	Non-Chronic with BH	Chronic with BH
Emancipated Cohort	-0.01 (-100%)	-0.03 (-100%)	-0.12 (-80%)	-0.14 (-70%)
Peer Cohort	0.01 (-100%)	0.00 (n/a)	0.02 (-29%)	0.03 (-43%)

The analysis revealed few differences in the other medication classes—benzodiazapines and anti-anxiety drugs, alpha-2 agonists, and bipolar medications—and small sample sizes that limit statistical comparisons. Descriptive data on claims for these medications by medical complexity are available in Supplementary Table 1.

Implications for Policy, Practice, and Research

Emancipation from foster care is associated with decreased use of psychotropic medications, largely driven by reduction in use of antidepressants, antipsychotics, and stimulants among those with a behavioral health complexity. This is a trend not observed among matched peers with similar behavioral health complexity, suggesting drivers of use and medical decision-making other than clinical need for medication intervention.

Even with similar health coverage, medical diagnoses, and presumed health needs, young adults who emancipate from foster care are reducing use of psychotropic medications more than other young adults who also likely assume more independence in their medical decision-making. These disparities could be driven by many factors including possible overprescribing while in foster care, initiation of other non-medication interventions such as psychosocial therapy after emancipation, or those young adults who emancipate expressing their independence by reducing or eliminating health care services and/or medication use due to personal preferences and beliefs. This could also be driven by workforce related challenges, including a limited number of behavioral health providers in the state who are available to serve adults or transition children into adult care, and limited capacity of pediatric providers to continue seeing adult patients.

Youth nearing foster care emancipation may benefit from additional supports and tools to maintain use of needed medications as they assume responsibility for their medical decision-making. Strategies to support young adults in connecting with adult medical providers trained in behavioral health, developing medical decision-making skills, and weighing tradeoffs of discontinuing pharmaceutical or other therapies are warranted but may need additional evidence for implementation in the population of young adults with foster care experience. Our prior work on [health care service utilization](#) among young adults with foster care experience also demonstrates need for support in transitioning from pediatric to adult health care. Additional investigation into high rates of psychotropic prescribing among children in foster care may offer insight into opportunities for non-pharmaceutical management of behavioral health conditions or provider-level interventions.

Supplemental Table 1. Mean Per Member Per Month Claims for Psychotropic Medications

	Statistical Tests, Comparisons of Emancipated Group vs. Peer Group						
	Emancipated, Before	Emancipated, After	Peers, Before	Peers, After	Pre-Period Differences	Post-Period Differences	Pre to Post Changes
Psychotropics, All							
Non-Chronic, No BH	0.10	0.04	0.01	0.02	**	*	*
Chronic, no BH	0.13	0.02	0.02	0.04	**	n/s	**
Non-Chronic with BH	0.70	0.18	0.19	0.16	***	n/s	***
Chronic with BH	1.12	0.55	0.32	0.28	***	***	***
Antidepressants							
Non-Chronic, No BH	0.06	0.02	0.00	0.01	**	n/s	*
Chronic, no BH	0.07	0.01	0.02	0.03	*	n/s	**
Non-Chronic with BH	0.23	0.05	0.07	0.05	***	n/s	***
Chronic with BH	0.32	0.15	0.13	0.11	***	*	***

**Statistical Tests, Comparisons of
Emancipated Group vs. Peer Group**

	Emancipated, Before	Emancipated, After	Peers, Before	Peers, After	Pre-Period Differences	Post-Period Differences	Pre to Post Changes
Antipsychotics							
Non-Chronic, No BH	0.02	0.01	0.00	0.00	n/s	n/s	n/s
Chronic, no BH	0.03	0.00	0.00	0.00	n/s	n/s	n/s
Non-Chronic with BH	0.28	0.09	0.03	0.03	***	**	***
Chronic with BH	0.48	0.26	0.08	0.08	***	***	***
Stimulants							
Non-Chronic, No BH	0.01	0.00	0.01	0.00	n/s	n/s	n/s
Chronic, no BH	0.03	0.00	0.00	0.00	n/s	n/s	n/s
Non-Chronic with BH	0.15	0.03	0.07	0.05	***	*	***
Chronic with BH	0.20	0.06	0.07	0.04	***	n/s	***
Benzodiazapines and Antianxiety Drugs							
Non-Chronic, No BH	0.01	0.01	0.00	0.00	n/s	n/s	n/s
Chronic, no BH	0.00	0.00	0.00	0.01	n/s	n/s	n/s
Non-Chronic with BH	0.02	0.01	0.01	0.01	*	n/s	**
Chronic with BH	0.04	0.03	0.03	0.03	n/s	n/s	n/s
Alpha-2 Agonists							
Non-Chronic, No BH	0.00	0.00	0.00	0.00	n/s	n/s	n/s
Chronic, no BH	0.00	0.00	0.00	0.00	n/s	n/s	n/s
Non-Chronic with BH	0.01	0.01	0.00	0.00	n/s	n/s	n/s
Chronic with BH	0.06	0.03	0.01	0.01	***	***	n/s
Bipolar Drugs							
Non-Chronic, No BH	0.00	0.00	0.00	0.00	n/s	n/s	n/s
Chronic, no BH	0.00	0.00	0.00	0.00	n/s	n/s	n/s
Non-Chronic with BH	0.01	0.01	0.00	0.00	n/s	n/s	n/s
Chronic with BH	0.03	0.02	0.00	0.00	***	*	***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, n/s=non-significant

Appendix - Study Design

Our historical, observational study used linked child welfare and Medicaid administrative data, including all FFS claims and capitated BH encounter data, for young adults in Colorado, aged 17 to 23 years old, from January 2014 through June 2021. Using child welfare data, we identified 2,059 young adults who emancipated from foster care using one of three mutually exclusive child welfare categories: 1) emancipated; 2) living with another (non-parental) relative; and 3) runaway. We excluded those individuals who lacked Medicaid-eligibility in the month of and month following emancipation to ensure we had information on health care utilization before and after the emancipation month. We matched young adults who emancipated to peers by the following characteristics: (1) age (within a six month window), (2) the young adult member's income relative to the Federal Poverty Limit (FPL) in the first month after the emancipation/reference month, (3) monthly Medicaid-eligibility pattern in the 12 months preceding the emancipation/reference month, the emancipation/reference month and the following month, and (4) presence or absence of chronic physical and BH complexities calculated using the PMCA through all FFS claims and capitated BH encounter data available prior to the emancipation/reference month. A total of 401 young adults who emancipated were excluded from the analysis for the following reasons: (1) lack of Medicaid-eligibility in the month of (N=113) or month following emancipation (N=220); and (2) insufficient monthly Medicaid-eligibility information, inadequate PMCA categorization, or unresolvable data quality issues (N=68). Table A-1 presents the demographic characteristics of our study population. All statistical tests reported in this brief test for the significance of the difference in the outcome reported between the Emancipation Cohort and the Peer Cohort.

Characteristic	Emancipation Cohort N=1,658 (%)	Peer Cohort N=1,658 (%)
Age		
17 – 18	63.6	63.4
19	20.6	20.8
20	10.4	11.6
21+	5.4	4.2
Sex		
Female	41.1	41.1
Race and Ethnicity*		
American Indian/Alaska Native; Asian; Native Hawaiian/Other Pacific Islander	2.1	3.1
Black/African American	12.0	5.1
White/Caucasian	41.5	41.6
Hispanic/Latino	19.4	32.7
Other People of Color	6.7	5.2
Other Unknown Race	7.8	5.6
Not Provided	10.6	6.8
Income Relative to Federal Poverty Level		
Up to 40%	65.9	65.9
41-100%	30.8	30.8
101%+	3.4	3.4
Medical Complexity		
Non-Chronic, no BH	15.3	15.3
Non-Chronic, with BH	33.1	33.1
Chronic, no BH	6.4	6.4
Chronic, with BH	45.2	45.2

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