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Behavioral and Physical Health Complexity at Foster Care Entry

Compared to Complexity Six Months After Foster Care Entry

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Overview

This data brief analyzes the medical and behavioral health conditions of Health First Colorado (Colorado's Medicaid program) children and youth with foster care involvement at first entry to foster care compared to six-months later.

All children and youth (defined as those under 18 at the time of entry into foster care) with at least one month of health insurance coverage under Health First Colorado from July 2011 through March 2020 and a first date of entry into foster care from July 2011 through October 2019 were included. This analysis, conducted by the University of Colorado School of Medicine (CUSOM) in partnership with the Colorado Department of Health Care Policy & Financing (Department), supports greater understanding of the distinctive behavioral and physical health conditions of children and youth in foster care and in particular, how these conditions can become known within six months of initial entry into foster care. This information is intended to support Colorado's efforts to improve the health and well-being of children and youth in foster care.

Key Findings

During the study period of July 2011 through March 2020:

- The presence of behavioral health conditions was higher six months after foster care entry than at foster care entry. The presence of these conditions was higher for males than for females both at entry and six months after entry, although the rate of increase was nearly identical for males and females over the six months after entry.
- The rates of behavioral health complexities for all age/sex groups were higher after six months in foster care than at the time of entry: the increase was greatest for children who entered foster care at a younger age but the highest rates overall were for children and youth who enter in adolescence (approximately one in two have a diagnosed behavioral health condition six months after entry).
- The presence of all body-system specific physical health conditions for which there was sufficient data increased during the six months following entry into foster care. Pulmonary/respiratory conditions had the highest presence. There was a two-fold or more increase for any malignancy, craniofacial, musculoskeletal, neurologic, otologic, and renal conditions.
- Health First Colorado (Colorado's Medicaid Program) children and youth in foster care had increased medical complexity with and without consideration of behavioral health conditions from entry into foster care to six months after: the rate with behavioral health conditions included increased from 23.0% at entry to 36.5% after six months and the rate without consideration of behavioral health conditions increased from 14.6% at entry to 23.0% after six months.
- There were sex-based and age-based differences in medical complexity: males were more likely to have medical complexity at foster care entry and at 6 months post-entry and, in general, the older the child or youth was at age of entry the more likely they were to be classified as medically complex.

This analysis reveals that health status and medical complexity are dynamic for children and youth in foster care and that transitions are particularly vulnerable periods. As such, early, frequent and comprehensive assessments after entry into foster care are needed to identify complexities that may have been present but were undiagnosed before or at entry or were exacerbated by the trauma of the transition. These additional assessments can support development of appropriate care plans that account for these later-identified conditions. Parsing out to what extent these complexities were present but not identified or exacerbated during the early months of foster care is needed and findings will be provided in subsequent reports. These children already had higher presence of behavioral and physical health conditions[1] at entry compared to non-foster care Health First Colorado children and youth and the increasing health complexity over the subsequent six-month interval magnifies these complexity differences. Finally, these results underscore that transitions into foster care are particularly vulnerable periods for children and youth and they emphasize the importance of expanded cross-system collaborations to serve children and youth in foster care and improve their health outcomes and overall well-being.

Introduction

It is well documented that children and youth in foster care have more physical, mental and developmental conditions compared to non-foster peers, are less likely to have received preventative care prior to placement,[2,3] have more unmet health needs, and face multiple challenges accessing health care while in foster care.[4]

As such, children and youth in foster care have distinctive health needs with resultant health disparities that manifest in higher presence of and risks for chronic physical,[5-8] developmental,[9] and mental health[7] conditions. There is less research, however, on how the identification and presence of these conditions may change over time after entry into foster care; what does exist is based on caregiver report rather than medical diagnoses and may be subject to response and recall bias.

To this end, CUSOM analyzed Health First Colorado claims data to assess changes in the diagnosed health conditions of children and youth entering foster care compared to that at six months after foster care entry. This approach also allows for analysis of need during transitions in care – placement changes including entry to foster care and changes to living arrangement during placement – which are particularly vulnerable periods for children and youth in foster care as health care information may not be transferred and underlying health issues may not be addressed.[10,11] Examining this critical gap is necessary not only to improve the foster care system, but also to develop new policies to address distinctive needs and disparities for children and youth in foster care.

This brief addresses five research questions:

1. Did the diagnosed presence of behavioral health conditions for children and youth with an initial foster care placement change between time of entry into foster care and six months after foster care entry among Health First Colorado members? Were there differences in any changes by sex?
2. Did the presence of behavioral health conditions differ by age and sex among children and youth in foster care at time of entry into and at six months after foster care entry among Health First Colorado members?
3. Did the presence of body-specific health conditions differ between children and youth with foster care placement at time of entry into and at six months after foster care entry among Health First Colorado members?
4. Did the presence of medical complexity differ between children and youth with foster care placement at time of entry into and at six months after foster care entry among Health First Colorado members?
5. Did the presence of medical complexity at time of entry and six months after entry differ by sex and age for Health First Colorado children and youth in foster care?

Using the Department's foster-specific aid codes (provided in the definition section at the end of this document), children and youth with foster care placement were differentiated from children and youth without foster placement. Only children and youth with initial foster care entry between July 2011 and October 2019 and prior to their 18th birthday who also were matched to a non-foster care Health First Colorado member, using the matching process described in the data and methods section at the end of this document, were included in this analysis.[1] This resulted in 28,465 children and youth, 53.8% of whom were male. Foster care children and youth were then grouped into one of four age groups according to their age in the month they initially entered foster care. Table 1 summarizes the number of children and youth by sex and age at the time of entry into foster care.

Table 1: Number of Children and Youth in Foster Care by Sex and Age at Entry to Foster Care

Age	Female (n=13,205)	Male (n=15,260)	Total (n=28,465)
0-2 Years	4,408	5,024	9,432
3-6 Years	3,004	3,344	6,348
7-12 Years	3,152	3,419	6,571
13-17 Years	2,641	3,473	6,114

To identify children and youth with medical complexities, the Pediatric Medical Complexity Algorithm (PMCA) was applied. The PMCA is a publicly available algorithm that identifies children and youth with medical complexities with good sensitivity and high specificity.[12] Using either hospital discharge or claims data, the PMCA identifies body-system specific health conditions (including mental health conditions) to classify children and youth into one of three categories:

- Complex chronic disease (C-CD) which impacts two or more body systems (organized groups of tissue that forms a particular function, i.e. digestive, circulatory, respiratory)
- Noncomplex chronic disease (NC-CD) which afflicts one body system
- No chronic disease (no CD) which indicates either acute, non-chronic disease or the absence of acute or chronic disease

The PMCA was applied to the foster care population identified above using all available medical claims and behavioral health encounters with dates of service between July 2011 and March 2020 up to and including the month of initial entry into foster care and six months following entry.

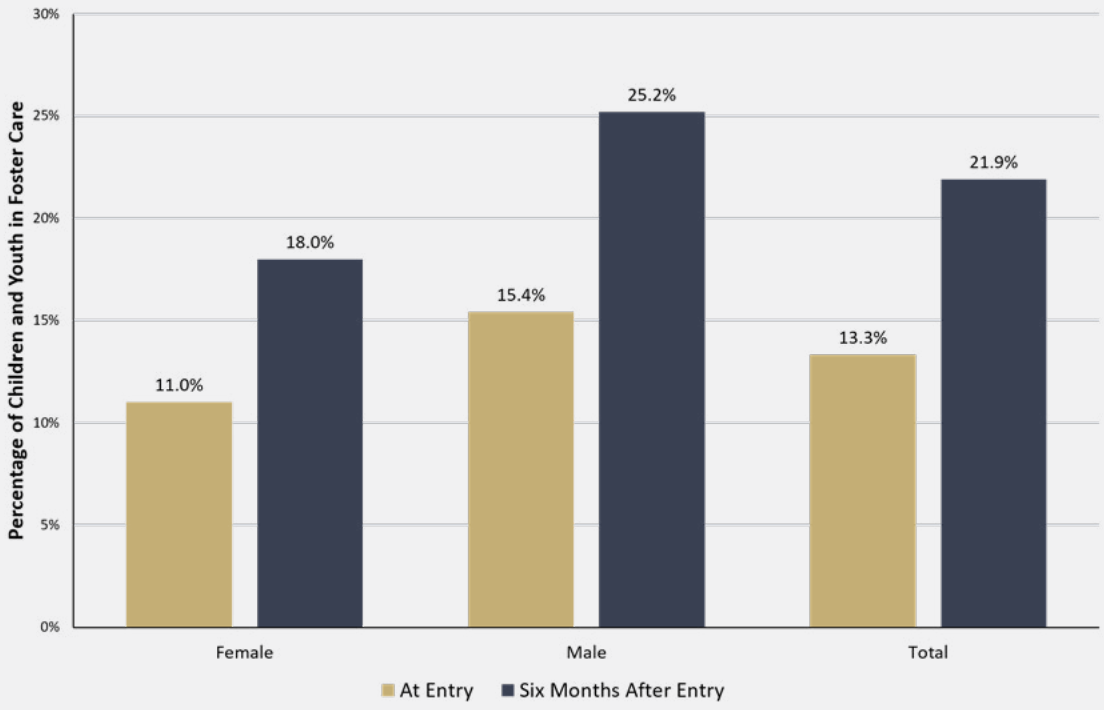
1 The analysis is limited to children that were matched to align with analyses in other briefs that compare utilization and costs of children and youth with foster care involvement to other Health First Colorado children and youth.

Research Questions and Findings:

1 Did the diagnosed presence of behavioral health conditions for children and youth with an initial foster care placement change between time of entry into foster care and six months after foster care entry among Health First Colorado members? Were there differences in any changes by sex?

The diagnosed presence of behavioral health conditions was 8.6 percentage points higher after six months in foster care than it was at the time of entry. This finding is consistent with past literature which has also found that rates of mental health conditions among children and youth in foster care differ from rates at foster entry.[13-15]

Figure 1: Presence of Behavioral Health Conditions among Children and Youth in Foster Care at Entry and Six Months After Entry, By Sex



As Figure 1 above shows, males had higher rates than females at entry and after six months in foster care. While the magnitude of the increase was larger for males (9.8 percentage points for males and 7.0 percentage points for females), the percentage increase in the diagnosed presence of behavioral health conditions between entry and six months later is the same for males (63.6%) and females (63.6%).

2 Did the presence of behavioral health conditions differ by age and sex among children and youth in foster care at time of entry into and at six months after foster care entry among Health First Colorado members?

Figure 2 and Table 2 show an increase in the diagnosed presence of behavioral health conditions for older children and youth that enter foster care; this trend held at both time of entry and after six months in foster care for all age groups and for both males and females. The highest rates overall were for children and youth who enter foster care in their teenage years where approximately one in two have a diagnosed behavioral health condition six months after entry.

Figure 2: Presence of Behavioral Health Conditions among Children and Youth in Foster Care by Sex and Age at Entry

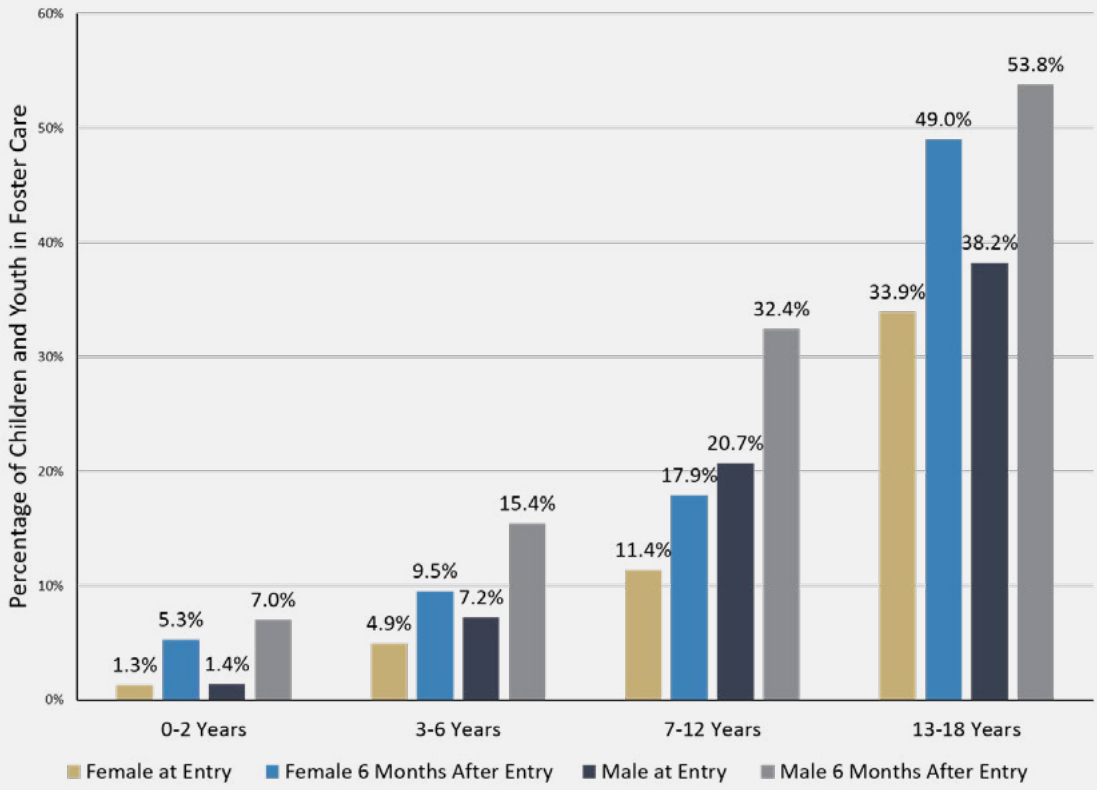


Table 2: Presence of Behavioral Health Conditions among Children and Youth in Foster Care at Entry and 6 Months After Entry by Sex and Age at Entry

Age at Entry	Female at Entry (n=13,205)		Female 6 Months After Entry (n=13,205)		Male at Entry (n=15,260)		Male 6 Months After Entry (n=15,260)	
	N	%	N	%	N	%	N	%
0-2 Years	55	1.3%	234	5.3%	69	1.4%	350	7.0%
3-6 Years	146	4.9%	286	9.5%	241	7.2%	514	15.4%
7-12 Years	358	11.4%	565	17.9%	708	20.7%	1,109	32.4%
13-17 Years	894	33.9%	1,294	49.0%	1,325	38.2%	1,869	53.8%

While the rates for all age/sex groups were higher after six months in foster care than at the time of entry, the larger percentage increases were for children who entered foster care at a younger age. For example, males who entered foster care at 2 years of age or younger had a 400.0% increase in the diagnosis of a behavioral health condition after six months and females of the same age had a 307.7% increase. In contrast, males who entered foster care between 13 and 17 years of age had a 40.8% increase in diagnosed behavioral health conditions and females of the same age had a 44.5% increase.

3 Did the presence of body- specific health conditions differ between children and youth with foster care placement at time of entry into and at six months after foster care entry among Health First Colorado members?

As reported in an accompanying PMCA Data Brief (2020) comparing foster care and non-foster care Health First Colorado members, children and youth in foster care had a higher presence of nearly all body system-specific health conditions compared to non-foster care children and youth Health First Colorado members. Table 3 below shows the presence of the body-specific conditions included in the PMCA at the time of entry and six months later for children and youth in foster care.

Table 3: Presence of Body System-Specific Health Conditions for Foster Care Children and Youth at Entry and After Six Months

	At Entry (n=28,465)		Six Months After Entry (n=28,465)	
Health Condition	N	Rate	N	Rate
Any malignancy	36	0.1%	54	0.2%
Any progressive	900	3.2%	1,348	4.7%
Cardiac	430	1.5%	629	2.2%
Craniofacial	65	0.2%	112	0.4%
Dermatologic	-*	-*	33	0.1%
Endocrinologic	180	0.6%	280	1.0%
Gastrointestinal	171	0.6%	317	1.1%
Genetic	109	0.4%	203	0.7%
Genitourinary	120	0.4%	184	0.7%
Hematologic	65	0.2%	90	0.3%
Immunologic	60	0.2%	80	0.3%
Metabolic	186	0.7%	270	1.0%
Musculoskeletal	376	1.3%	796	2.8%
Neurologic	908	3.2%	1,961	6.9%
Ophthalmologic	457	1.6%	848	3.0%
Otologic	92	0.3%	227	0.8%
Otolaryngolic	-*	-*	-*	-*
Pulmonary/Respiratory	1,930	6.8%	2,692	9.5%
Renal	89	0.3%	167	0.6%

** Number suppressed because fewer than 30 individuals were identified with the presence of the condition.*

For every body system specific health condition for which there was sufficient data, there was an increase in presence of the condition after six months. Notably:

- Among Health First Colorado members entering foster care, pulmonary/respiratory conditions were the most common condition (6.8%). Pulmonary/respiratory conditions were also the most frequently occurring condition after six months (9.5%).
- Only one other condition had a rate higher than 5% – neurologic at six months (6.9%).
- There was a two-fold or more increase in the presence of six of the 17 conditions which had sufficient data between entry to foster care and six months after entry. These conditions were any malignancy, craniofacial, musculoskeletal, neurologic, otologic, and renal.

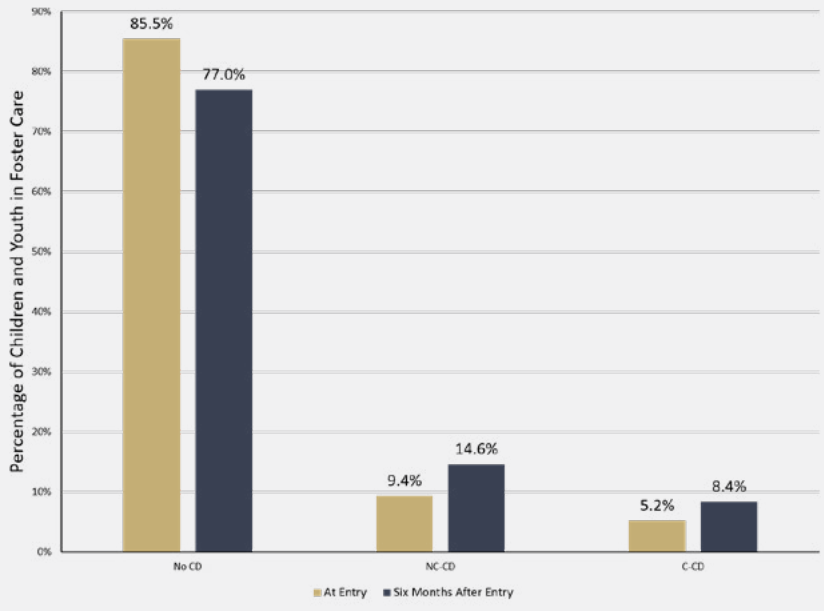
These rates are similar to those found in the literature; however, while previous studies have noted high presence of obesity[5] and dental caries[16] upon foster care entry, the PMCA algorithm includes only severe or morbid obesity and does not include diagnostic codes for dental caries.

4 Did the presence of medical complexity differ between children and youth with foster care placement at time of entry into and at six months after foster care entry among Health First Colorado members?

The increases in diagnosed behavioral health and body-specific conditions suggest that the overall medical complexity of children and youth entering foster care will also increase over the 6 months after they enter. Figures 3 and 4 and Table 4 show the percentage of foster care children and youth in each of the three PMCA complexity categories: no chronic diseases (No CD), noncomplex chronic disease (NC-CD) and complex chronic disease (C-CD). Figure 3 presents the percentages in each category with the inclusion of behavioral health conditions and Figure 4 presents the percentages when only including the body system-specific conditions listed in Table 3 (e.g. no inclusion of behavioral health conditions). These figures and the table show:

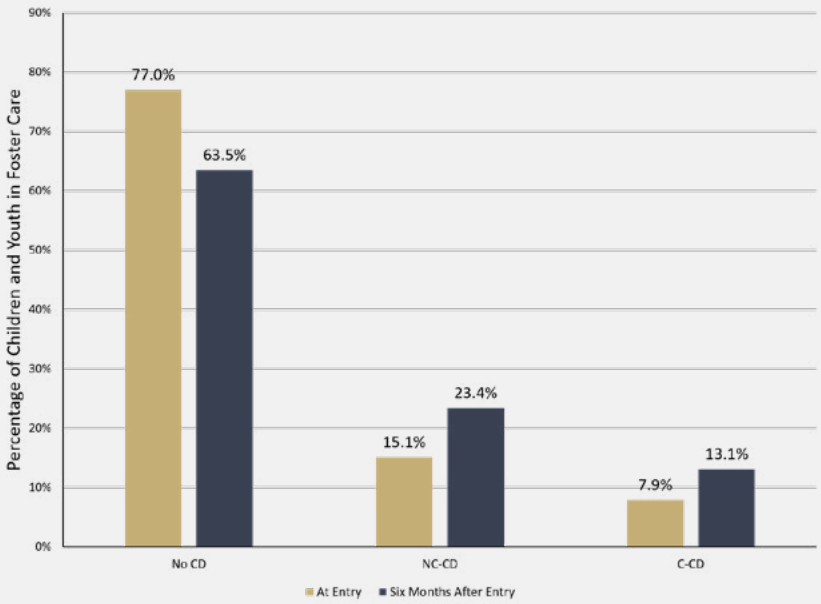
- The rate of medical complexity (complex and noncomplex) including behavioral health conditions increased from 23.0% at entry to foster care to 36.5% after six months.
- The rate of medical complexity (complex and noncomplex) without consideration of behavioral health conditions increased from 14.6% at entry to foster care to 23.0% after six months.

Figure 3: Percentage of Foster Care Children and Youth Assigned to PMCA Complexity Categories with Consideration of Behavioral Health Conditions at Foster Care Entry and at Six Months after Foster Care Entry



Note: percentages may not total to 100 due to rounding.

Figure 4: Percentage of Foster Care Children and Youth Assigned to PMCA Complexity Categories without Consideration of Behavioral Health Conditions at Foster Care Entry and at Six Months after Foster Care Entry



Note: percentages may not total to 100 due to rounding.

Table 4: Percentage of Foster Care Children and Youth Assigned to PMCA Complexity Categories without and with Consideration of Behavioral Health Conditions at Foster Care Entry and at Six Months after Foster Care Entry

PMCA Category		At Entry (n=28,645)	Six Months After Entry (n=28,645)
With Behavioral Health	No chronic disease	77.0%	63.5%
	Noncomplex chronic disease (NC-CD)	15.1%	23.4%
	Complex chronic disease (C-CD)	7.9%	13.1%
Without Behavioral Health	No chronic disease	85.5%	77.0%
	Noncomplex chronic disease (NC-CD)	9.4%	14.6%
	Complex chronic disease (C-CD)	5.2%	8.4%

The literature suggests that increasing medical complexity during the first six months of foster care can be interpreted in three ways.

1 **Children and youth who exit neglectful and/or abusive settings and enter a more nurturing environment may receive care for previously unidentified physical, behavioral and developmental health problems. There is an extensive literature that supports this interpretation not only for physical health, but also, for mental and developmental health conditions.**[3,5,13,14,16-19]

2 **Entry into foster care entails separations, moves and losses, introduces new uncertainty and insecurity and is traumatic.3 Coupled with prior neglect and/or abuse, foster care entry may produce behavioral health conditions detected in months following entry but resolve over time.**[20]

3 **Removal-induced trauma may be synergistic not only with past abuse and/or neglect but also with negative systemic factors within foster care to produce greater complexity.**[5,13] **Specific to Colorado, youth in foster care were four times more likely to remain in Department of Human Service care, ten times more likely to experience institutional abuse and six times more likely to be involved with Department of Youth Corrections compared to youth in kinship care.**[21]

5 Did the presence of medical complexity at time of entry and six months after entry differ by sex and age for Health First Colorado children and youth in foster care?

As demonstrated in Figures 3 and 4 and Table 4, the majority of Health First Colorado members entering foster placement and at six months post entry were categorized as having no chronic disease regardless of behavioral health inclusion or exclusion. However, the presence of chronic conditions (NC-CD and C-CD) was higher at six months after entry than at the time of entry to foster care. This held for both females and males as demonstrated below in Figure 5 and Table 5.

Figure 5: Percentage of Foster Care Children and Youth Assigned to PMCA Complexity Categories with and without Consideration of Behavioral Health Conditions at Foster Care Entry and at Six Months after Foster Care Entry, by Sex

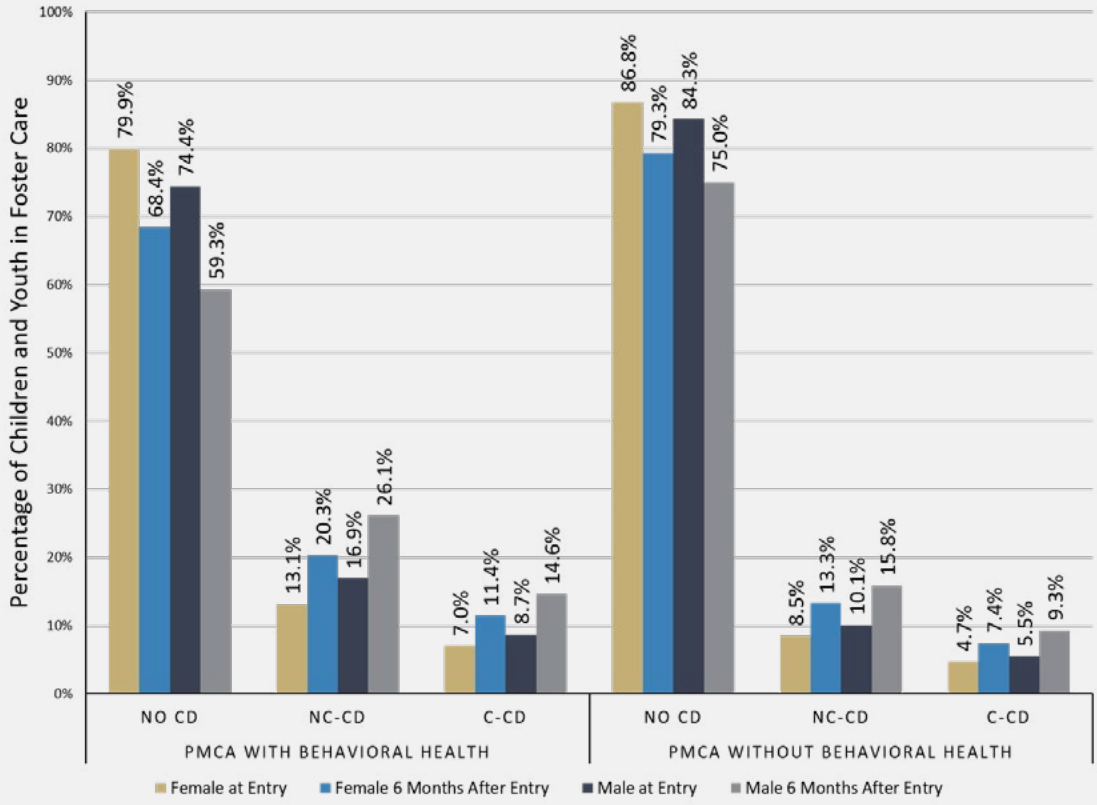


Table 5: Percentage of Foster Care Children and Youth Assigned to PMCA Complexity Categories with and without Consideration of Behavioral Health Conditions at Foster Care Entry and at Six Months after Foster Care Entry, by Sex

		Female (n=13,205)		Male (n=15,260)	
	PMCA Category	At Entry	Six Months After Entry	At Entry	Six Months After Entry
With BH	No chronic disease	79.9%	68.4%	74.4%	59.3%
	Noncomplex chronic disease	13.1%	20.3%	16.9%	26.1%
	Complex chronic disease	7.0%	11.4%	8.7%	14.6%
Without BH	No chronic disease	86.8%	79.3%	84.3%	75.0%
	Noncomplex chronic disease	8.5%	13.3%	10.1%	15.8%
	Complex chronic disease	4.7%	7.4%	5.5%	9.3%

Consistent with Figure 1, the percentage increases between entry and six months after entry were fairly consistent across females and males when behavioral health conditions were included in the categorization of medical complexity. Specifically, the percentage increases in the NC-CD and C-CD categories were 55.0% and 62.9%, respectively, for females when considering behavioral health conditions, and were 54.4% and 67.8%, respectively, for males. In contrast without consideration of behavioral health conditions, the percentage increases in the NC-CD and C-CD categories for female were 56.5% and 57.4%, respectively, compared to 56.4% and 69.1%, respectively, for males. Overall, with and without consideration of behavioral health conditions, males in foster care were categorized as having complexities at higher rates than females in foster care. These findings regarding greater medical complexity among males in foster care are consistent with the existing literature.[22,23] In addition, the literature also documents that male children and youth have higher rates for the presence of special health care needs (SHCN),[24] which would most likely be categorized as C-CD in the PMCA.

Table 6. Percentage of Foster Care Children and Youth Assigned to PMCA Complexity Categories of Non-Complex Chronic Conditions and Complex Chronic Conditions with Consideration of Behavioral Health Conditions at Foster Care Entry and at Six Months after Foster Care Entry, by Age and Sex

PMCA Category	Non-Complex Chronic Conditions				Complex Chronic Conditions			
	Female (n=13,205)		Male (n=15,429)		Female (n=13,205)		Male (n=15,260)	
Age Category	At Entry	Six Months After Entry	At Entry	Six Months After Entry	At Entry	Six Months After Entry	At Entry	Six Months After Entry
0-2 Years	5.1%	12.3%	7.3%	17.2%	4.3%	9.2%	6.0%	12.8%
3-6 Years	9.4%	15.7%	12.1%	19.1%	5.6%	8.3%	6.8%	12.5%
7-12 Years	15.2%	21.9%	20.9%	30.5%	6.3%	9.0%	9.9%	14.4%
13-17 Years	28.3%	36.8%	31.3%	41.4%	13.9%	21.2%	13.4%	19.6%

Table 2 showed differences in the presence of diagnosed behavioral health conditions by age at entry and six months after entry into foster care for females and males. Table 6 presents the corresponding differences in the percentage classified as NC-CD and C-CD including behavioral health conditions for these same age groups by sex at entry and six months after entry into foster care. With the inclusion of behavioral health conditions, Table 6 shows that children and youth who enter foster care at older ages were much more likely to be classified in the NC-CD and C-CD categories than children and youth who were younger at age of entry, both at entry and six months after entry. The oldest age group,13 to 17 years of age at entry, had the highest percentages classified in the NC-CD and C-CD categories for both females and males both at entry and six months after entry.

Comparing the percentages in the PMCA category at entry to six months after entry in Table 6 shows that the largest percentage increases were for the youngest age group (2 years of age and younger) for both female and male children and youth in foster care. The percentages in each PMCA category for this age group all increased more than 100% from entry to six months after entry. With the exception of the oldest age group for the C-CD category, the percentage increases get smaller with age for both categories. The exception for the C-CD category for ages 13 to 17 years of age at entry increased by 52.5% and 46.3% for females and males, respectively, compared to the corresponding percentage increases for ages 7 to 12 of 42.9% for females and 45.5% for males.

Table 7. Percentage of Foster Care Children and Youth Assigned to PMCA Complexity Categories of Non-Complex Chronic Conditions and Complex Chronic Conditions without Consideration of Behavioral Health Conditions at Foster Care Entry and at Six Months after Foster Care Entry, by Age and Sex

PMCA Category	Non-Complex Chronic Conditions				Complex Chronic Conditions			
	Female (n=13,205)		Male (n=15,260)		Female (n=13,205)		Male (n=15,260)	
Age Category	At Entry	Six Months After Entry	At Entry	Six Months After Entry	At Entry	Six Months After Entry	At Entry	Six Months After Entry
0-2 Years	4.7%	10.9%	6.9%	15.4%	4.2%	8.0%	5.7%	11.3%
3-6 Years	8.4%	12.5%	9.7%	15.3%	4.4%	6.2%	5.1%	8.5%
7-12 Years	10.1%	13.2%	12.6%	16.2%	4.0%	5.7%	5.4%	7.7%
13-17 Years	13.2%	18.3%	12.6%	16.4%	6.9%	9.6%	5.9%	8.5%

Similar patterns emerge in examining the percentages classified into the NC-CD PMCA category at entry when excluding consideration of behavioral health conditions, as shown in Table 7, although the differences across age groups was less pronounced compared to those shown in Table 6. However, the percentages classified into the C-CD PMCA category at entry did not systematically increase with age in Table 7. The patterns in the percentage increases between entry and six months after entry into foster care shown in Table 7 were similar to those in Table 6 with the youngest age groups having had the largest percentage increases of the four age groups. However, the percentage increases in the C-CD category from entry to six months later are lower for all age and sex groups when excluding behavioral health conditions.

Summary and Discussion

A companion brief, PMCA Data Brief (2020) comparing Health First Colorado children and youth in foster care and all non-foster care children and youth Health First Colorado members, found higher presence of behavioral and physical health conditions, as well as overall medical complexity for children and youth in foster care. The analysis in this brief demonstrates that children and youth in foster care exhibited increasing health complexity over the subsequent six- month interval, thereby magnifying the health complexity differences between foster care and non-foster care Health First Colorado members.

There are several relevant findings for clinical, child welfare and policy audiences interested in early and comprehensive support for children and youth in foster care.

- First, children and youth in foster care are diagnosed with the presence of behavioral health conditions frequently. After six months of foster care, 21.9% of all children and youth in foster care were diagnosed with behavioral health conditions using the PMCA algorithm. These findings are consistent with established literature, though they may underestimate the true presence of mental health conditions as children and youth in foster care may have their diagnoses delayed more than 6 months.[25]
- Secondly, health status and medical complexity are dynamic for children and youth in foster care. During this study period, a greater proportion of Health First Colorado children and youth in foster care were classified in the non-complex, chronic (NC-CD) and complex, chronic (C-CD) categories at six months after entry compared to the time of entry to foster care. This suggests that early and frequent comprehensive assessments of children and youth shortly after entry into foster care are needed to identify medical complexities that may have been present but undiagnosed before or at entry to develop appropriate care plans for these Health First Colorado members.
- Finally, the results underscore that transitions are particularly vulnerable periods for children and youth entering foster care. Recent health and child welfare policy reform enable expanded cross-system collaboration aimed at mitigating poor health outcomes for children and youth in foster care.[26] While such cooperation would benefit all children and youth in foster care, adolescents approaching emancipation from child welfare custody are an important group to study not only to better understand medical complexity and behavioral health conditions but also to enhance prevention and intervention services designed to ameliorate poor outcomes.[13]

Definitions:

Complex, chronic disease: Presence of significant chronic conditions which effect two or more (≥2) body systems can include either a physical, mental or developmental condition that is expected to persist at least one year, to use more healthcare resources compared to a healthy child; to require treatment for control; and, to debilitate frequently or consistently or a progressive condition or require continuous, technologic support or metastatic or progressive malignancies limiting daily living.

Foster Care Population: Health First Colorado members with at least one month of Medicaid eligibility assigned to a foster care aid code between July 2011 and October 2019 excluding members who had foster care aid codes on or prior to July 1, 2011. Eight Foster Care Aid codes were used: Subsidized and Non-Subsidized Adoptions; Supplemental Security income – Foster Care; Child Welfare – Foster Care; Foster Care – removed by CT/AF; Subsidized Adoption Foster Care; Foster Care – Voluntary; and, Division of Youth Corrections (DYC) Without Regard to Income and Child Welfare Without Regard to Income. (10, 11, 12, 13, 19, 20, 23, and 70)

No chronic disease: Presence of an acute, non-chronic physical, mental or developmental condition which may lead to increased healthcare utilization for <12 months or the absence of an acute or a chronic condition.

Noncomplex, chronic disease: Conditions, limited to one (1) body system, which persist for more than one year but are not progressive and may resolve by natural history or intervention. Health care utilization varies according to varied severity with intervals of good health between exacerbations.

Progressive condition: A medical condition which leads to deteriorating health and shorter life expectancy in adulthood (defined as death in the fourth to fifth decade, e.g. cystic fibrosis, malignancy, complex congenital heart disease).

Data Source and Methods:

The analyses used administrative, medical fee-for-service claims and behavioral health data provided by the Department of Health Care Policy and Financing from July 2011 through July 2020. Foster care-specific aid codes (10, 11, 12, 13, 19, 20, 23, and 70) were used to identify 34,971 children and youth in foster care with their first foster care entry between July 2011 and July 2020. Two additional exclusions resulted in the 28,465 Health First Colorado children and youth with an initial entry into foster care used in the analyses. First, members with their first entry into foster care after October 2019 were excluded to build in time for processing of claims and encounters that occurred six months post-entry. Second, to enhance the comparability of the foster care population to similar non-foster care Health First Colorado members, foster care members that were not able to be matched to a non-foster care member were excluded. Foster care children and youth were matched to the non-foster care Health First Colorado members by age, sex, presence of a behavioral health complexity as determined by the PMCA and the PMCA category (No CD, NC-CD and C-CD) without consideration of behavioral health complexities.

Pediatric Medical Complexity Algorithm: The Pediatric Medical Complexity Algorithm (PMCA) (version 3.0) is a publicly available algorithm that validly identifies children with varying medical complexity and was developed and tested in Medicaid population of children 0 to 18 years old. The PMCA originated from the Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN) effort to assess disparities in care for children with special health care needs. Since initial publication in 2014, the PMCA has been validated through use of Medicaid claim data[27] and modified to incorporate International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9/10-CM) codes for children with at least one emergency department, day surgery and/or hospital encounter.[28] The algorithm categorizes children and youth using administrative medical and behavioral/mental health claims into three categories: (1) no chronic health disease (no CD); (2) noncomplex, chronic disease (NC-CD); and, (3) members with complex, chronic disease (C-CD).

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