Utilization of Emergency Department Services

by Children and Youth in Foster Care with Health First Colorado Insurance Coverage

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Overview

In an average month, Health First Colorado (Colorado's Medicaid Program) provides health insurance coverage for almost twenty-thousand children and youth (younger than 18) with current and past involvement in foster care.[1]

It is widely recognized that these children and youth have more physical, mental and developmental conditions compared to other Medicaid enrolled children and youth; that they have more unmet health needs; and face multiple challenges accessing health care. It is assumed that these factors result in more visits to the emergency department (ED) for conditions that are more appropriately treated in primary care. To test this assumption, researchers at the University of Colorado School of Medicine, in collaboration with the Colorado Department of Health Care Policy & Financing, examined utilization of ED services by children and youth in foster care over a 25-month period (the month of entry into foster care – referred to as the reference month, the 12 months preceding the reference month, and the 12 months following the reference month). Their utilization was compared to a matched cohort of non-foster care children and youth enrolled in Health First Colorado.

Key Findings

The analysis found that during the study period of July 2011 – March 2018:

- Children and youth enrolled in Health First Colorado (Colorado's Medicaid Program) with foster care involvement utilized emergency department (ED) services at higher rates in the 12 months before entry into foster care compared to the 12 months following entry into foster care.

- Children and youth enrolled in Health First Colorado who entered foster care had higher ED utilization rates (at the 1% level of significance) in the 12 months before entry into foster care compared to non-foster care children and youth enrolled in Health First Colorado that had similar demographic characteristics and health complexities. These differences, however, diminished in the 12 months following entry into foster care.

- Utilization of ED services started increasing for Health First Colorado members at least three to four months before entry into foster care, most notably for members 7 years of age and older, potentially providing a leading indicator of placement into foster care.

- Utilization of ED services for emergent conditions did not differ between foster care and similar non-foster care Health First Colorado members who visited a University of Colorado Health or Children's Hospital of Colorado ED from June 2013 to March 2018.

- Over this same period, utilization of ED services for emergent conditions increased with age across all measures of emergent conditions examined.

Introduction

From July 2011 through March 2018, in an average month, Health First Colorado (Colorado's Medicaid program) provided health insurance coverage for over 19,000 children and youth with current and past involvement in the foster care system and more than 400,000 other children and youth.

It is widely recognized that children and youth served by the foster care system have more physical, mental and developmental conditions compared to other Medicaid enrolled children and youth.[2,3] In addition, those served by the foster care system are recognized as having more unmet health needs and face multiple challenges accessing health care during their foster care stay.[4] As such, there is a commonly held view that children and youth in foster care utilize emergency department (ED) services more frequently and for conditions that are more appropriately treated in primary care compared to other children and youth with Medicaid coverage. However, there is sparse evidence behind this view and very few recent analyses comparing ED use of children and youth in foster care with similar Medicaid members.[5,6] A recently published analysis of data from Pennsylvania by Bennet *et al.* compared ED utilization of children and youth in foster care with a comparison group of Medicaid members matched on age, race/ethnicity and zip code and reported 20% greater utilization of ED services by those in foster care.[7] The authors also reported even higher utilization of ED services for those in foster care that had existing health complexities, which suggests their findings are likely confounding higher foster care ED use with higher prevalence of health complexities among foster care children and youth. Transforming policies and program regulations to better meet the health care needs of children and youth in foster care requires a richer understanding of their utilization of ED services compared to children and youth with similar demographics and health complexities. To enrich this understanding, we addressed three questions:

1   **Did children and youth involved in the foster care system utilize ED services at higher rates compared to their non-foster care peers?**

2   **Did children and youth involved in the foster care system utilize ED services for emergent conditions at lower rates compared to their non-foster care peers?**

3   **Did utilization of ED services for emergent conditions vary by age at the time of entry into foster care?**

To minimize the potential of confounding differences in ED utilization related to health complexities with involvement in foster care, we compared the utilization of ED services by children and youth with foster care involvement (foster care cohort) to a matched non-foster care cohort. Foster care involvement was defined as having at least one month of Health First Colorado coverage with a foster care aid type code between July 2011 and March 2018. To focus on a member's initial involvement with the foster care system, we identified the first month a member had a foster care aid code after June 2012 for members that did not have a foster care aid code before July 2012. Using this approach, we identified 23,213 members in our foster care cohort as a result of current and past involvement. Recognizing that foster care members have higher incidence of health complexities, we identified 23,213 members that did not have a foster care aid code before April 2018 with similar age, sex, months of Health First Colorado coverage, physical health complexities, and mental health complexities as a matched non-foster care cohort. Physical and mental health complexities were measured using Pediatric Medical Complexity Algorithm (version 3.0).[8]

The analysis examined utilization of ED services in a reference month for each foster care and matched non-foster care member dyad, the 12 months preceding the reference month and the 12 months following the reference month. The reference month of this 25-month horizon for the foster care cohort member was the calendar month of initial involvement in foster care. The reference month for the matched non-foster care cohort member was the same calendar month as the matched foster care member's reference month.

The matching process ensured that the matched foster care and non-foster care members have the exact same calendar months of Health First Colorado coverage in the reference month, the 12 months before and the 12 months after the reference month. For this analysis, reference months ranged from July 2012 through March 2018, which provided availability of ED utilization data for the full 12 months preceding the reference month. Figure 1 illustrates the 25-month analysis period for an example foster care and matched non-foster care cohort member.


Figure 1: Example of Analysis Period For Child in Foster Care and Matched Comparison
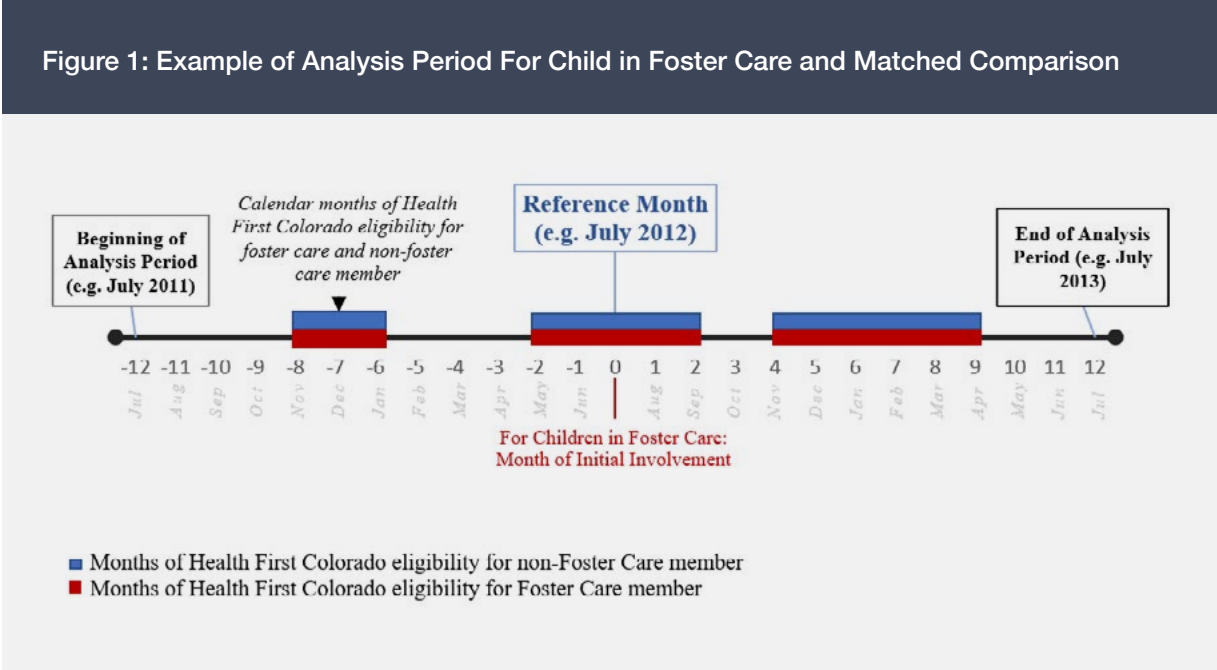
Research Questions and Findings

1   Did children and youth involved in foster care utilize ED services at higher rates compared to their non-foster care peers?

Figure 2 presents the percentage of the foster care and matched non-foster care cohorts with Health First Colorado coverage in a month with an ED encounter over each month of the 25-month horizon centered on the reference month. The number of members in both cohorts with Health First Colorado coverage in a month varies because of changes in Medicaid eligibility or the reference month is after March 2017. However, as a result of the matching, the same number of foster care and non-foster care members were covered in each month over this 25-month horizon. For example, there were 23,213 members covered in each cohort in the reference month (Month 0), 11,293 members covered in each cohort in Month -12, and 16,641 members covered in each cohort in Month 12.

Figure 2: Percentage of Health First Colorado Members with an ED Encounter in a Month for Foster Care and Matched Non-Foster Care Cohorts
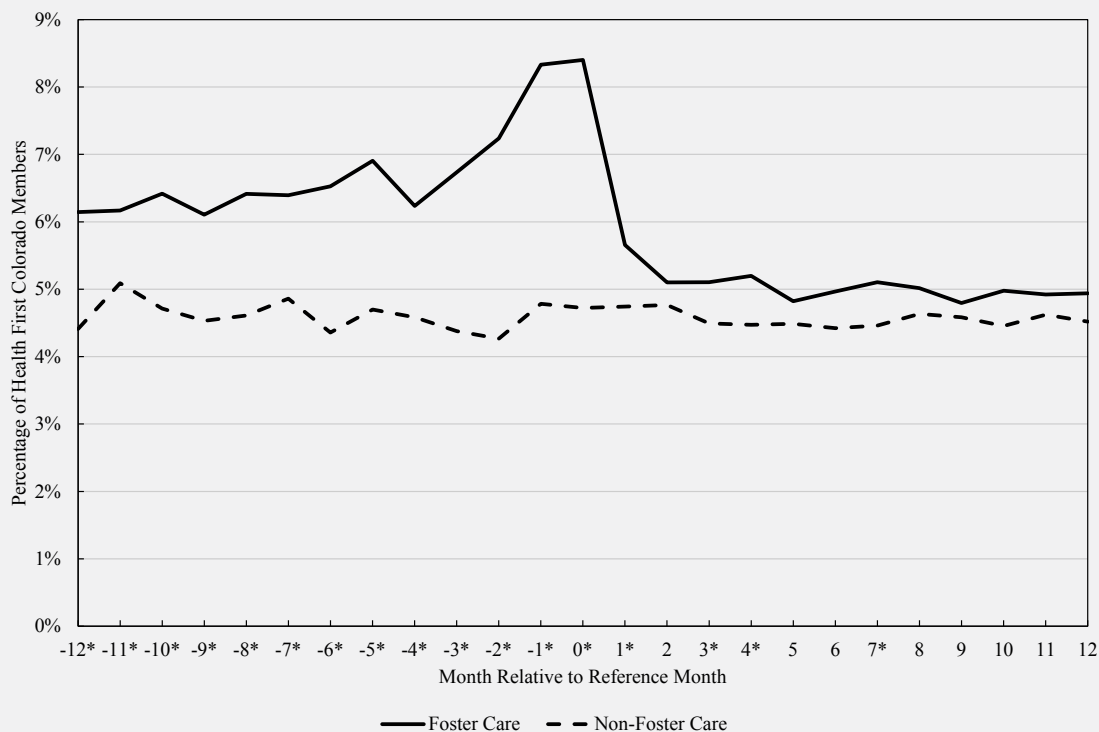
*Months indicated with a * indicate the difference between the foster care and non-foster care cohorts in that month is statistically significant at the 1% level of significance.*

As illustrated by the solid black line in Figure 2, approximately 6% to 7% of the foster care cohort with Health First Colorado coverage utilized an ED service in months -12 to -4 before entering foster care. This percentage increased slightly over the four months from -8 to -5 and increased more rapidly over the four months from -3 to the reference month (month 0) reaching over 8% in the month immediately prior to entering foster care and the first month of foster care involvement. Utilization of ED services quickly dropped to approximately 5% per month for the 12 months following entry into foster care – a rate that is similar to the matched non-foster care members' relatively constant percentage of between 4% and 5% over the full 25-month analysis period. This pattern is in contrast to the findings reported in the literature that children and youth in foster care use the ED more than other Medicaid members of the same age and sex. This finding suggests that the reported higher utilization of ED services in the literature may be potentially confounding the higher incidence of health complexities among foster care children and youth with the relationship between ED utilization and participation in foster care.

In comparing the utilization of ED services between the foster care and the matched non-foster care cohorts in each month, Figure 2 shows that the differences were statistically significant in the reference month and every month of the 12 months prior to the reference month. The differences were significant in only 4 of the 12 months after the reference month. In Figure 2, an * indicates the months in which this difference was statistically significant at the 1% level of significance.

To further investigate the increasing utilization of ED services for the foster care cohort in the months leading up to the month of the first entry into foster care (the reference month), we examined the patterns for four groups based on age in the reference month:

• 2 years of age and younger,

• 3 to 6 years of age,

• 7 to 12 years of age, and

• 13 to 16 years of age.

An examination of the trends in ED utilization before entry into foster care by age group indicates that this increasing utilization pattern starts earlier and is most prominent for the two older age groups. Figure 3 presents the ED utilization percentages over the same 25-month horizon for the 2 older cohorts (the 5,211 youth that first entered foster care at ages 7 through 12 and the 4,491 that first entered foster care at ages 13 through 16, and their matched non-foster care members).

This figure shows that ED utilization for the foster care cohort ages 13 through 16 increased from about 6% to 8% for months -12 to -7, modestly increased in months -6 through -4, and then sharply increased to more than 11% over the next three months. ED utilization for this foster care cohort age group then sharply decreased to below 8% one month after entry into foster care and was relatively constant between 6% and 8% for the next 11 months. While the trend for foster care cohort youth ages 7 through 12 was less pronounced, there was a modest increase from generally under 5% over the 8 months from -12 to -4 followed by a modest increase to over 6% in months -3 to the reference month. This age group also showed a rapid decline in the percentage with an ED encounter the month following foster care entry to rates below their utilization before entry. In comparing ED utilization between the foster care and non-foster care cohorts, utilization of ED services by the 13 to 16 year old foster care cohort was statistically significantly higher in every month over the 25-month horizon. However, for the 7 to 12-year old cohorts the foster care cohort had statistically significantly higher utilization from months -12 through 1 and remained only slightly above the ED utilization for the non-foster care cohort with non-significant differences in 9 of the last 11 months.

Figure 3: Percentage of Health First Colorado Members with an ED Encounter in a Month for Foster Care and Matched Comparison Cohorts for Ages 7-16
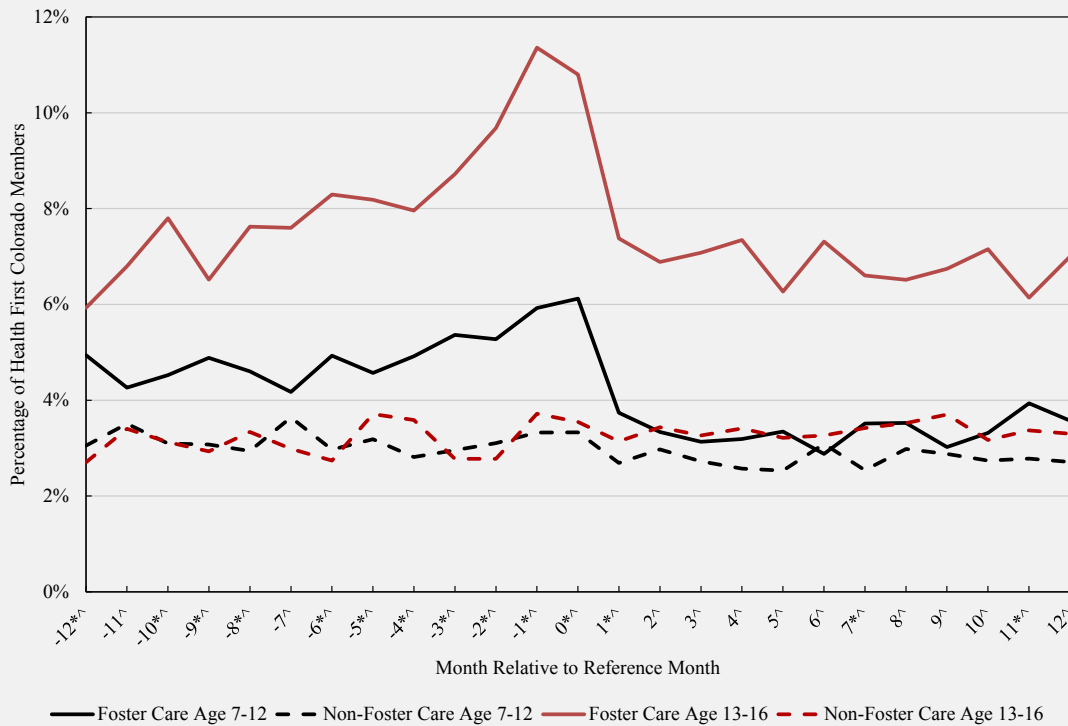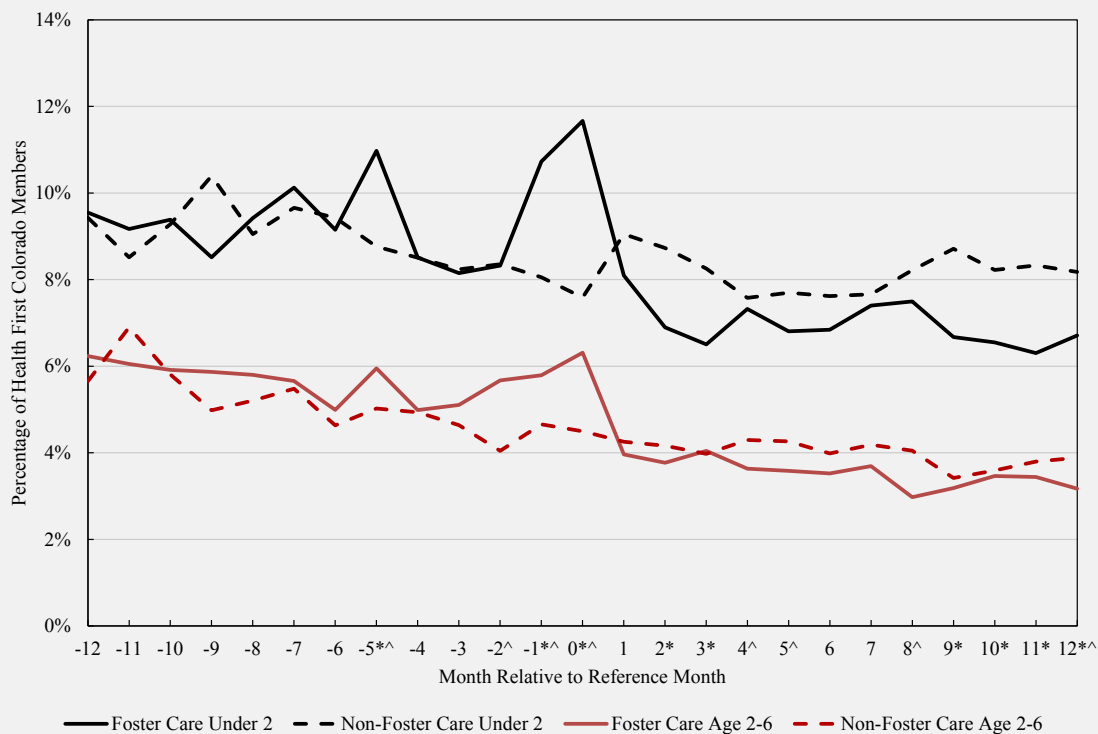

Months indicated with a * indicate the difference between the age 7-12 foster care and non-foster care cohorts in that month is statistically significant at the 1% level of significance.

Months indicated with a ^ indicate the difference between the age 13-16 foster care and non-foster care cohorts in that month is statistically significant at the 1% level of significance.

The two younger age groups displayed a general reduction over time in the ED utilization for both foster care and the matched non-foster care cohorts. Figure 4 presents the ED utilization percentages over the same 25-month horizon for the 2 younger cohorts (the 5,152 children that first entered foster care when they were under 2 years of age and the 6,982 that first entered foster care at ages 2 through 6, and their matched non-foster care members). In contrast to the two older cohorts, the ED utilization of the two younger foster care cohorts is generally the same as their matched non-foster care cohort in the months from -12 through -3. While there is a sharp increase in ED utilization for the foster care cohort under 2 in the month immediately preceding the reference month and in the reference month, there is only a slight increase for the foster care cohort ages 2 through 6 for the 3 months from month -2 to the reference month. Similar to the older cohorts, there is a rapid decline between the reference month and the first month following entry into foster care and in contrast to the older cohorts these two foster care cohorts have lower ED utilization in months 1 through 12 compared to the matched non-foster care cohorts.

Figure 4: Percentage of Health First Colorado Members with an ED Encounter in a Month for Foster Care and Matched Comparison Cohorts for Ages 0-6

Months indicated with an * indicate the difference between the under 2 age group foster care and non-foster care cohorts in that month is statistically significant at the 1% level of significance.

2 Did children and youth involved in the foster care system utilize ED services for emergent conditions at lower rates compared to their non-foster care peers?

Use of ED services to treat conditions that can be appropriately treated in primary care settings has been highlighted as one way to lower cost while maintaining or improving quality of care. Reducing use of ED services for non-emergent conditions for foster care children and youth is a potentially cost saving and quality improving approach. While there have been several attempts to use claims data to identify ED encounters as urgent, preventable, or optimally treated in an ED,[9] these algorithms are viewed as inadequate to assess whether an ED encounter is associated with an emergent versus non-emergent condition.[10] Another method is for knowledgeable clinicians to conduct medical record chart reviews to categorize ED encounters as emergent or non-emergent. Conducting chart reviews is a resource intensive approach and infeasible to scale up for large numbers of ED encounters.[11] An alternative approach is to develop algorithms that use data extracted from an electronic health record (EHR) linked with claims data to categorize ED encounters. EHR extracts potentially provide the clinical information that is used in a chart review and develop automated algorithms to assess whether an ED encounter is for an emergent or non-emergent condition. However, algorithms that use data extracted from EHRs for this purpose are lacking in the literature and we were unable to identify any for children and youth. In the absence of an accepted algorithm, we developed and examined seven algorithms using linked EHR-claims data to assess whether or not an

ED encounter involved an emergent condition. These seven algorithms have not been validated and should not be used for purposes beyond assessing if there are differences between similar groups in ED utilizations for emergent conditions.

To develop these algorithms we linked the Health First Colorado claims data with data in the Health Data Compass EHR data warehouse, which includes EHR data from Children's Hospital Colorado, University of Colorado Health and CU Medicine, for the foster care and non-foster care cohorts. We identified 7,135 foster care and matched non-foster care member dyads in the Health Data Compass EHR data warehouse out of the 23,213 dyads analyzed above. For the 7,135 foster care cohort members we identified and extracted clinical information for 3,465 ED encounters between June 2013 and March 2018. For the matched non-foster care cohort we identified and extracted clinical information for 3,631 ED encounters for the same time period.

Given the lack of a standardized definition of an emergent condition and the absence of accepted algorithms to identify ED encounters for emergent conditions, the seven algorithms we developed and used ranged from a "narrow" specification to a "broad" specification. The two narrowest specifications can be applied to claims data as they only use specific Current Procedural Terminology (CPT®) codes to classify an ED encounter for an emergent condition. To broaden the specifications, additional criteria were added to CPT® codes that included one or more of the following clinical information extracted from EHRs to classify an ED encounter as involving an emergent condition:

1. At least one pharmacy prescription for a therapeutic linked with emergent conditions

2. At least one lab result outside of the normal range

3. At least four lab or non-lab procedures ordered and performed

4. At least three vital sign readings outside the normal range

5. A time of encounter outside of regular office and urgent care hours.

The specification of these seven algorithms is provided below in the Definitions section.

We compared the percentage of ED encounters for an emergent condition for foster care and non-foster care members for each of the seven algorithms for the 12 months before the reference month, the reference month, and the 12 months following the reference month. Overall, the findings indicate that there are no significant differences, using a 1% level of significance, between the percentages for the foster care cohort compared to the matched non-foster care cohort for each of the seven algorithms. Figure 4 presents the percentage of ED encounters for emergent conditions using the algorithm that adds pharmacy prescriptions (criterion 1) to the CPT® codes (algorithm 3) and the algorithm that includes criteria 1-4 in addition to the CPT® codes (algorithm 6).

Figure 5: Percentage of ED Encounters Classified as Emergent Using Algorithm 3 and Algorithm 6 for Foster Care and Non-Foster Care Cohorts
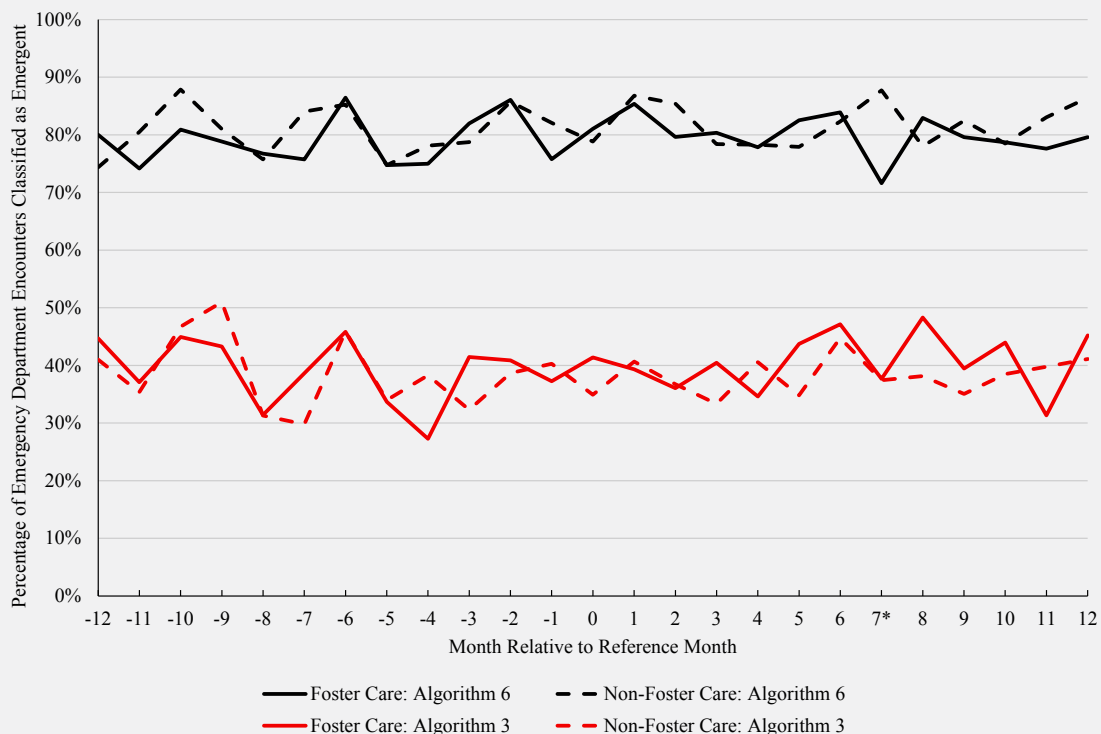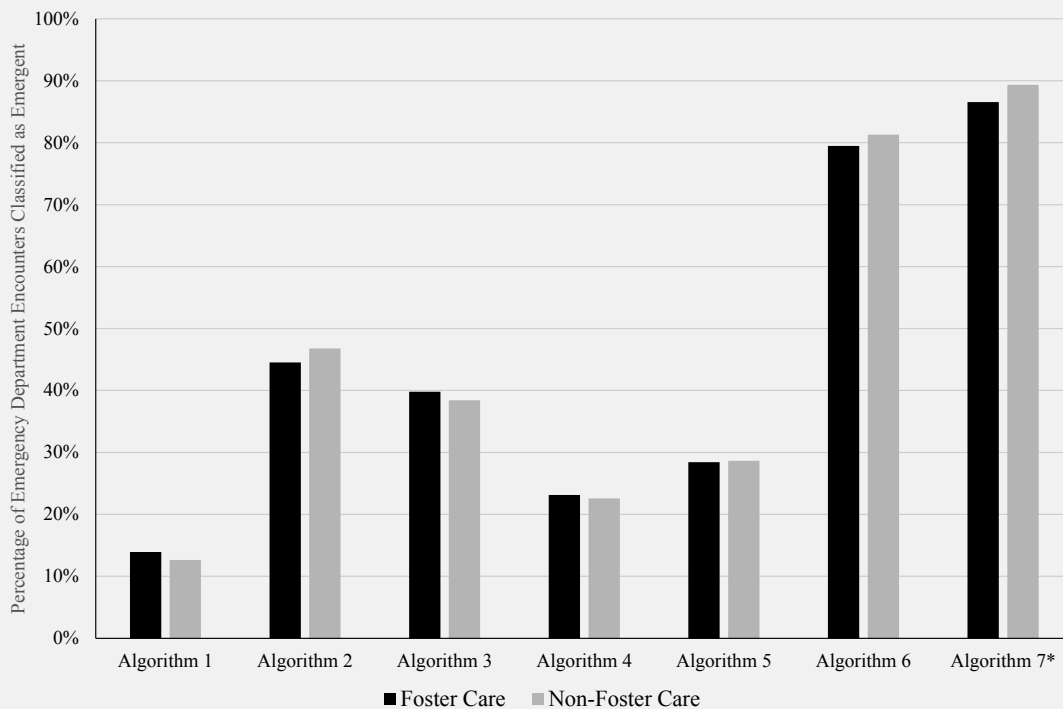
Months indicated with a * indicate the difference between the foster care and non-foster care cohorts in that month is statistically significant at the 1% level of significance for Algorithm 6.

Months indicated with a ^ indicate the difference between the foster care and non-foster care cohorts in that month is statistically significant at the 1% level of significance for Algorithm 3.

As shown in Figure 5, the percentage of ED encounters for emergent conditions was relatively stable over time for both the foster care and matched non-foster care cohorts with some variation around 80% for Algorithm 6 and 40% for Algorithm 3. In contrast to the marked differences in ED encounters shown in Figures 2 and 3, particularly in the months before and in the reference month, the percentages of encounters for emergent conditions were essentially the same for foster care and matched non-foster care cohorts. While there was one month (month 7) for algorithm 6 that was significantly different, there were no statistically significant differences in any of the 25 months for algorithm 3 or the other 24 months for algorithm 6. Moreover, in contrast to the patterns of sharply increasing ED utilization for the foster care cohort over the months immediately preceding the reference month followed by a decline in the months after the reference month (month 0), the percentage of ED encounters for emergent conditions was relatively constant over the entire 25 months.

Figure 6 aggregates all of the ED encounters for the foster care cohort and separately for the matched non-foster care cohort to illustrate the extent to which there are differences in the percentage of ED encounters for emergent conditions across the seven algorithms. These percentages include all 3,465 ED encounters for the foster care cohort and 3,631 ED encounters for the non-foster care cohort for each algorithm.

Figure 6: Percentage of ED Encounters for Emergent Conditions across Seven Algorithms for Foster Care and Non-Foster Care Cohorts

*A * indicates the difference between the foster care and non-foster care cohorts was statistically significant at the 1% level of significance for that algorithm.*

As shown in this figure there were minimal differences in the percentages of encounters for emergent conditions between the foster care and matched non-foster care cohorts across all of the algorithms, with the only statistically significant difference between the foster care and non-foster care cohorts for algorithm 7 and this difference was less than three percentage points. This figure also highlights the extent to which the categorization of ED utilization for emergent conditions is dependent on the definition of "emergent." For example, the percentage of ED encounters classified as emergent ranged from less than 15% for Algorithm 1 to almost 90% for Algorithm 7. These algorithms were developed only to explore the differences between foster care and matched non-foster care cohorts and the resulting wide range of encounters classified as "emergent" indicates these algorithms should not be used to assess whether ED encounters are urgent, preventable, or optimally treated in an ED.

3   Did utilization of ED services for emergent conditions vary by age at the time of entry into foster care??

Recognizing that the utilization of ED services differed by age in Figures 3 and 4 and that encounters for emergent conditions were very similar across the foster care and the non-foster care cohorts, we analyzed the ED encounters for these two groups together to examine the extent to which there were differences by age in the percentage of encounters for an emergent condition. Figure 7 presents the percentage of ED encounters for emergent conditions by age for each of the seven algorithms. As shown in this figure, the percentage of encounters for emergent conditions increased with age across all of the algorithms with the lowest percentage for ages under 7 and the highest percentage for the 13 to 16 year old age group. The findings from this figure in combination the previous findings suggest that additional research is needed to develop age-appropriate algorithms to categorize ED encounters as emergent to improve the development of policies and program components to encourage Medicaid members to access care in the most appropriate setting.

Figure 7: Percentage of ED Encounters for Emergent Conditions across Seven Algorithms for Combined Foster Care and Non-Foster Care Cohorts by Age Group
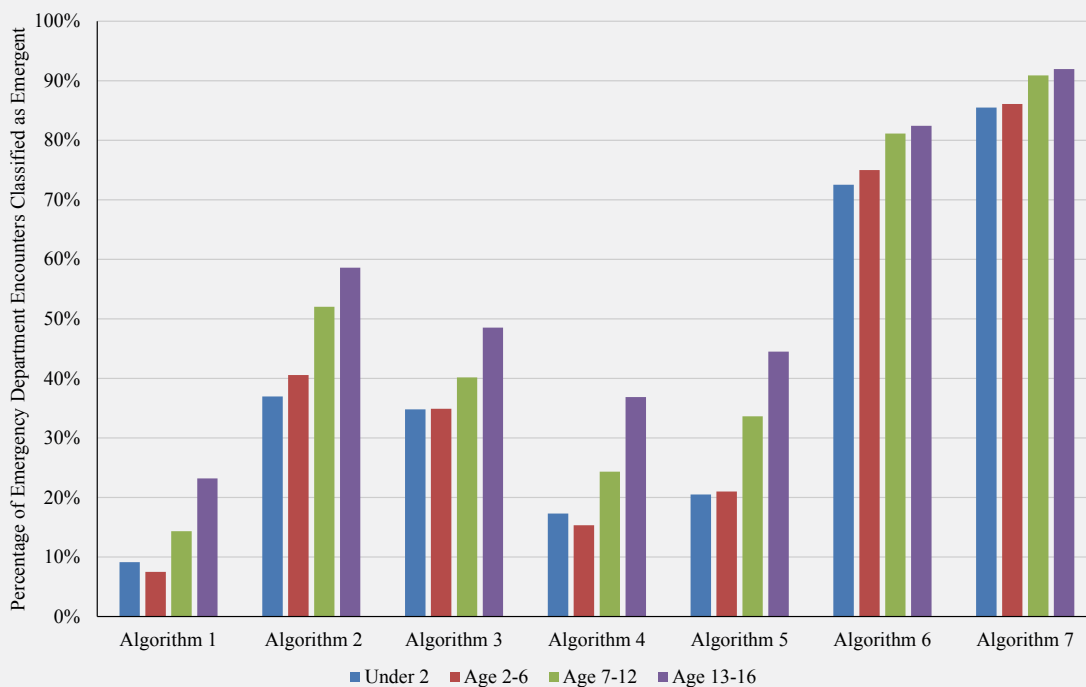
Summary and Discussion

Although the common perception is that children and youth in foster care utilize the ED more and frequently use the ED for conditions that are amenable to treatment in primary care, the analysis results presented here raise several questions about the reasonableness of these perceptions. The results in Figure 2 show that after entry into foster care, the utilization of ED services was lower after being in foster care for over a month compared to the utilization by these same children and youth before entering foster care. Moreover, this study found no systematic differences between ED utilization patterns of children and youth once in foster care with a matched non-foster care cohort, with the exception of youth age 13 and older. Even for these older youth their ED utilization was lower after entry into foster care compared to what it was before entry. In addition to similar levels of ED utilization after entry into foster care, these children and youth used ED services for emergent conditions at fundamentally the same rates as the matched non-foster care comparison cohort across multiple methods for classifying an ED encounter as one that treats an emergent condition.

One of the most noteworthy findings in Figure 3 that could have significant policy implications was the higher and increasing utilization of ED services by Health First Colorado members seven years of age and older in the 12 months before entry into foster care. This pattern, which starts earlier and is more substantial for older youth, potentially provides a leading indicator of placement into foster care that could be used to divert these members from entering foster care. Additional analyses are needed to develop the best predictive model and confirm the predictive validity of the selected model before considering the use of increasing ED utilization as a leading indicator. If a validated predictive model can be developed, information on a member's increased ED usage could be provided to child welfare case workers for members that already have open child welfare cases to provide additional family preservation services. Alternatively, for members without open cases, Regional Accountable Entities could be tasked with providing additional care coordination services to younger members with increasing ED usage. Finally, an evaluation of providing these additional services would identify their cost savings, as well as any improvements in children's health and well-being.

Finally, the contrast of our findings with the literature may be attributed to previous comparisons of ED utilization by foster care children and youth to a general Medicaid population or one that is only matched on demographic characteristics. We applied the Pediatric Medical Complexity Algorithm (PMCA) using all medical claims and behavioral health encounters for Health First Colorado members from July 2011 through March 2018 to develop a more appropriate non-foster care comparison group for this analysis.[12] In addition to matching on age, sex, and calendar months of Health First Colorado coverage, we matched foster care members to non-foster care members based on the presence of a physical health complexity and the presence of a mental health complexity. Specifically, foster care children and youth with both physical and mental health complexities were matched to non-foster care children and youth with both physical and mental health complexities. Similarly, foster care members with a either a physical health complexity or mental health complexity were matched with non-foster care members with the same complexity, and those without a complexity were matched to non-foster care members without a complexity. As such, a more appropriate comparison group for foster care children and youth in the literature would be Medicaid members matched on both demographic characteristics and health complexities.

Definitions

Foster Care Population: Health First Colorado members with at least one month of Medicaid eligibility assigned to a foster care aid code (10, 11, 12, 13, 19, 20, 23, and 70).

Non-foster care population: Health First Colorado members with at least one month of Medicaid enrollment and no months of Medicaid eligibility assigned to a foster care aid code.

Classification of Emergency Department Encounters for Emergent Conditions: Seven different algorithms were used to classify an ED encounter as treating an emergent condition using linked claims and clinical information. The specific definitions are:

Algorithm 1:   The claim for the emergency encounter includes one of the following CPT® codes – 99284, 99285, 99291 or 99292

Algorithm 2:   The claim for the emergency encounter includes one of the following CPT® codes – 99284, 99285, 99291, 99292 or 99283

Algorithm 3:   The claim for the emergency encounter includes one of the following CPT® codes – 99284, 99285, 99291 or 99292 – and the EHR indicates that at least one pharmacy prescription for a therapeutic linked to an emergent condition was written

Algorithm 4:   The claim for the emergency encounter includes one of the following CPT® codes – 99284, 99285, 99291 or 99292 – and the EHR indicates that one or more laboratory results was reported as outside of the normal range

Algorithm 5:   The claim for the emergency encounter includes one of the following CPT® codes – 99284, 99285, 99291 or 99292 – and the EHR indicates that four or more laboratory or other procedures were ordered and performed

Algorithm 6:   The claim for the emergency encounter includes one of the following CPT® codes – 99284, 99285, 99291, 99292 or 99283– and the EHR indicates that at least one pharmacy prescription for a therapeutic linked to an emergent condition was written, or that one or more laboratory results was reported as outside of the normal range, or that four or more laboratory or other procedures were ordered and performed or that three or more vital signs were recorded outside the normal range

Algorithm 7:   The claim for the emergency encounter includes one of the following CPT® codes – 99284, 99285, 99291, 99292 or 99283– and the EHR indicates that at least one pharmacy prescription for a therapeutic linked to an emergent condition was written, or that one or more laboratory results was reported as outside of the normal range, or that four or more laboratory or other procedures were ordered and performed or that three or more vital signs were recorded outside the normal range, or the time of arrival at the ED was outside of regular office and urgent care hours

Data Source and Methods

The analyses used Health First Colorado member eligibility files, medical claims and behavioral health encounter data provided by the Colorado Department of Health Care Policy and Financing (Department) from its BIDM platform. The Department provided data were linked with electronic health record data from Health Data Compass at the University of Colorado Anschutz Medical Campus. Health Data Compass combines electronic health record (EHR) data from the University of Colorado Health (UCHealth), University of Colorado Medicine (CU Medicine) and Children's Hospital Colorado. The Department provided data for the period July 2011 through March 2018 for this analysis. All children and youth, under the age of 18 as of July 2011 with at least one month of health insurance coverage under Health First Colorado from July 2011 through March 2018 were included in the analyses.

The Department provided member eligibility files identified the children and youth that first enter foster care after July 2011 based on the occurrence of eligibility aid codes of 10, 11, 12, 13, 19, 20, 23 or 70. First entry into foster care used the first month with a foster-specific aid code after June 2012 for members that did not have a foster-specific aid code between July 2011 and June 2012. The non-foster care cohort was identified by excluding anyone that had a foster-specific aid code from July 2011 through March 2018. Applying the age restriction and the foster-specific aid code criterion, we identified 23,213 individuals with a first entry into foster care and 582,535 individuals in the non-foster care cohort. The non-foster care cohort was used to identify the matched comparison group.

Health Data Compass provided EHR data for the foster care and non-foster care cohorts that had at least one health care encounter provided by UCHealth, CU Medicine or Children's Hospital Colorado from July 2013 through March 2018. The linkage of the Health First Colorado data to the Health Data Compass data warehouse identified 19,914 children and youth in the foster care cohort and 351,509 children and youth in the non-foster care cohort. Of these linked individuals, we identified 7,135 individuals in the foster care cohort with their matched comparison group also linked.

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 a Medicaid population of children 0 to 18 years old. 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) non-complex, chronic disease (NC-CD); and, (3) members with complex, chronic disease (C-CD). Foster care children and youth were matched to the non-foster care cohort by age, sex, PMCA category and presence of a mental health complexity.

Statistical tests applied a simple test of differences in two proportions using a two-tailed z-score with a 1% level of significance (alpha=0.01). These tests assessed the null hypothesis that the proportion for the foster care cohort equaled the proportion for the matched non-foster care cohort.

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Acknowledgements

Suggested Citation

Gritz MR, Hosokawa P, Sevick C, Alishahi ML, Orsi R, Kaferly J, Mathieu S. Utilization of Emergency Department Services by Children and Youth in Foster Care with Health First Colorado. Farley Health Policy Center Brief, 9. Aurora, CO: University of Colorado School of Medicine. 2020.