# Commonwealth of Virginia
# Department of
# Medical Assistance Services

## 2019–20 Foster Care Focused Study

*—Final Copy—*

HSAG HEALTH SERVICES ADVISORY GROUP

VIRGINIA'S MEDICAID PROGRAM
DMAS
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# 1. Executive Summary

## Executive Summary

The Commonwealth of Virginia Department of Medical Assistance Services (DMAS) contracted with Health Services Advisory Group, Inc. (HSAG) to conduct the fifth annual Foster Care Focused Study in state fiscal year (SFY) 2019–2020 (Contract Year 6). Children in foster care face many barriers to adequate healthcare, and DMAS is committed to improving the quality, access, and timeliness of care for these children.

Furthermore, DMAS transitioned the Medallion 3.0 program to the Medallion 4.0 program during the year prior to the study period. Due to the program change, some children in foster care were transitioned to a different managed care organization (MCO) during the study period. In addition, the MCOs participating in Virginia Medicaid changed. The current study assessed healthcare utilization among children in foster care compared to utilization among children not in foster care ("non-foster children") who were enrolled with Medicaid MCOs[1-1] and compared these findings to baseline data from the previous year's study (Contract Year 5) to determine the extent to which MCOs reached Medallion 4.0 program goals.

## Methodology

The eligible population included foster children younger than 18 years of age as of January 1, 2019, who were enrolled in Virginia Medicaid under Aid Category "76" (Children in Foster Care) for any length of time during the January 1, 2019, to December 31, 2019, measurement year.

Selected study indicators assessed demographic characteristics among all children in foster care (i.e., the foster care population) for any length of Medicaid enrollment during the measurement period. For study indicators assessing healthcare utilization, the study population was limited to foster children enrolled in Medallion 4.0 Medicaid managed care service delivery with any MCO or a combination of MCOs during the measurement year, with enrollment gaps totaling no more than 45 days. This limitation ensured that these children were continuously enrolled and covered by Medicaid for study indicators assessing healthcare utilization. Additionally, HSAG compared this group of continuously enrolled foster children to non-foster children meeting the same age and enrollment criteria and sharing similar demographic and health characteristics.

Study data included administrative claims and encounters for a statistically valid sample of foster children and comparable non-foster children to examine services received by children using the January 1, 2019, to December 31, 2019, measurement year.

[1-1] Most children in foster care who received Medicaid benefits were transitioned from fee-for-service (FFS) programs to managed care no later than June 2014. Under Medallion 3.0 and Medallion 4.0, some children in foster care continued to receive Medicaid services on an FFS basis because they met exclusion criteria for managed care participation, such as receiving residential care services, skilled nursing facility care, or hospice care.

To determine the extent to which children in foster care who were continuously enrolled with one or more MCO throughout the study period utilized healthcare services, HSAG assessed 13 measures, representing 19 study indicators, across the following domains:

- *Primary Care*: One indicator in this category provided information on the degree to which foster children and comparable non-foster children utilized primary care services.
- *Oral Health*: Two indicators in this category provided information on the degree to which foster children and comparable non-foster children utilized oral health services.
- *Behavioral Health*: Twelve indicators in this category provided information on the degree to which foster children and comparable non-foster children utilized behavioral health services. A subsection encompassing three of the indicators provided information on healthcare utilization related to substance use.
- *Reproductive Health*: Three indicators in this category provided information on the degree to which foster children and comparable non-foster children utilized reproductive health services.
- *Respiratory Health*: One study indicator in this category provided information on the degree to which foster children and comparable non-foster children utilized respiratory health services.

Appendix A presents detailed descriptions of each study indicator, including pertinent references to the Healthcare Effectiveness Data and Information Set (HEDIS®)[1-2] and CMS Core Set technical specifications and/or value sets.

# Findings

The foster care population included 7,266 foster children enrolled in Medicaid during the measurement year. Among the foster care population, 2,847 foster children (39.2 percent) were continuously enrolled with any MCO or combination of MCOs during the measurement year. Finally, 2,798 of the continuously enrolled foster children (98.3 percent) were matched to a non-foster control population and included in the final study population for comparison to non-foster children. Demographic characteristics of the study population did not differ substantially from the foster care population, except that the study population contained 5.6 percent fewer children aged two years or younger.

Table 1-1 contains study indicator results for the study population and the matched comparison group with *p*-values indicating whether the rate differences between foster and non-foster children are statistically significant. Among the 19 study indicators, foster children demonstrated higher rates of healthcare utilization than non-foster children in 17 study indicators, seven of which were statistically significant. Appendix C includes detailed findings by members' age and MCO, including numerators and denominators.

[1-2] HEDIS® is a registered trademark of the National Committee for Quality Assurance (NCQA).

**Table 1-1—Overall Study Indicator Results for Foster Children and the Non-Foster Comparison Group**

| Measure | Foster Children Rate | Non-Foster Children Rate | *p* |
|---|---|---|---|
| **Primary Care** | | | |
| *Children and Adolescents' Annual Access to Primary Care Practitioners (PCPs)* | 97.1% | 93.4% | <0.001* |
| **Oral Health** | | | |
| *Annual Dental Visit* | 86.9% | 63.4% | <0.001* |
| *Preventive Dental Services* | 81.7% | 56.5% | <0.001* |
| **Behavioral Health** | | | |
| *7-Day Follow-Up After Hospitalization for Mental Illness* | 38.7% | 44.6% | 0.26 |
| *30-Day Follow-Up After Emergency Department (ED) Visit for Mental Illness* | 92.6% | 83.9% | <0.001* |
| *Metabolic Monitoring for Children and Adolescents on Antipsychotics* | 40.8% | 30.1% | 0.003* |
| *Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics* | 90.7% | 67.7% | 0.15 |
| *Initiation of Follow-Up Care for Children Prescribed Attention-Deficit/Hyperactivity Disorder (ADHD) Medication within 1 Month* | 80.8% | 78.9% | 0.42 |
| *Initiation of Follow-Up Care for Children Prescribed ADHD Medication within 2 Months* | 92.5% | 88.6% | 0.12 |
| *Initiation of Follow-Up Care for Children Prescribed ADHD Medication within 3 Months* | 95.0% | 91.9% | 0.06 |
| *Initiation of Follow-Up Care for Children Prescribed ADHD Medication within 6 Months* | 98.3% | 98.4% | 0.61 |
| *Initiation of Follow-Up Care for Children Prescribed ADHD Medication within 9 Months* | 100.0% | 99.2% | 0.28 |
| *Substance Use* | | | |
| *30-Day Follow-Up After ED Visit for Alcohol and Other Drug (AOD) Abuse or Dependence* | S | S | 0.62 |
| *Initiation of AOD Abuse or Dependence Treatment* | 44.4% | S | 0.47 |
| *Engagement in AOD Abuse or Dependence Treatment* | S | S | 0.96 |
| **Reproductive Health** | | | |
| *Chlamydia Screening Among Women* | 27.7% | 21.3% | 0.20 |
| *Most Effective or Moderately Effective Method of Contraceptive Care* | 54.2% | 41.3% | 0.01* |
| *Long-Acting Reversible Method of Contraceptive Care* | 10.6% | 4.4% | 0.003* |
| **Respiratory Health** | | | |
| *Asthma Medication Ratio* | 85.7% | 75.8% | 0.82 |

* Indicates that the rates are statistically different between the foster and non-foster children.
S indicates that the rate has been suppressed due to a numerator or denominator less than or equal to 10.
*P*-values were calculated using logistic regression to predict numerator-compliance by foster status while controlling for demographic and health characteristics.
Denominators vary by study indicator; please refer to Appendix A for indicator-specific technical specifications.

# Conclusions

SFY 2019–2020 is the fifth year of the Foster Care Focused Study and the second year to introduce a comparative analysis to a non-foster population. This study demonstrated that foster children have higher rates of healthcare utilization than comparable non-foster children for most study indicators. Study findings show that rate differences between the groups were greatest among dental measures, where the rates of foster children having annual dental visits and preventive dental services were over 20 percentage points higher than the rates for non-foster children.

SFY 2019–2020 is also the first year to introduce comparative analyses by measurement year for foster and non-foster children. Measurement year 2018 provided baseline data while DMAS transitioned from the Medallion 3.0 to the Medallion 4.0 program. Measurement year 2019 provided data from the first full year of the Medallion 4.0 program. This study showed that foster children had higher rates of healthcare utilization than non-foster children for two additional measures in measurement year 2019 compared to measurement year 2018: *Initiation of AOD Abuse or Dependence Treatment* and *30-Day Follow-Up After ED Visit for AOD Abuse or Dependence.* Please note, the rates for these measures have been suppressed from this report due to small numerators or denominators. Additionally, many rates were consistently higher for foster children across both measurement years.

For both measurement years, rate differences between foster children and non-foster children across study indicators persisted even after controlling for many demographic and health characteristics. The Commonwealth of Virginia requires foster parents to ensure that their foster children receive regular primary care and dental visits. Study findings demonstrate greater healthcare utilization by foster children across a wide range of indicators. Greater education of foster children and foster parents about available healthcare services and higher prioritization of healthcare by foster parents given their mandated responsibilities[1-3] may contribute to rate differences. Additionally, MCOs have specific health assessment and care coordination requirements for youth in foster care which may also contribute to rate differences.[1-4] Severity of clinical symptoms may have also contributed to rate differences between the groups, whereby foster children faced greater barriers to care and well-being, such as poverty and neglect, before entering the foster care system.[1-5] Therefore, health problems common in children, such as poor oral health, may be particularly worse among foster children and more likely to trigger healthcare utilization while in the foster care system.

Despite generally high rates of healthcare utilization, foster children had a notably lower rate than non-foster children for one study indicator during both measurement years 2018 and 2019: *7-Day Follow-Up After Hospitalization for Mental Illness*. The rate difference for this indicator was not statistically significant; however, the denominator size was small, and this finding may be clinically significant given the high-risk nature of this population. The Virginia Department of Social Services (VDSS) intends to provide ongoing medical treatment for foster children with mental or emotional disabilities,[1-3] yet this

[1-3] Virginia Department of Social Services. Child and Family Services Manual: Providing Foster Care Services. Available at: https://www.dss.virginia.gov/files/division/dfs/fc/intro_page/guidance_manuals/fc/08_2020/section_12_identifying_services_to_be_provided.pdf. Accessed on: November 22, 2019.

[1-4] Commonwealth of Virginia Department of Medical Assistance Services. Medallion 4.0 Managed Care Services Agreement: July 1, 2020–June 30, 2021. Available at: https://www.dmas.virginia.gov/files/links/5400/Medallion%204.0%20Contract%20SFY21v2.pdf. Attachment XII. 403–404. Accessed on: January 6, 2020.

[1-5] American Academy of Pediatrics. Foster Health: Health Care for Children and Adolescents in Foster Care. Available at: https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/healthy-foster-care-america/Documents/FosteringHealthBook.pdf. Accessed on: December 12, 2019.

measure indicated that some foster children are not receiving follow-up for hospitalizations for mental illness in a manner that is as timely as other similar non-foster children, despite the severity and frequency of behavioral health conditions among foster children.

HSAG identified a greater number of underlying health concerns among the foster children in this study compared to the non-foster children. To identify health characteristics for purposes of matching, HSAG compared the diagnoses of continuously enrolled foster children to continuously enrolled non-foster children. Before matching, foster children were substantially more likely to have diagnoses of behavioral health problems, such as anxiety disorders, intentional self-harm, psychotic disorders, and substance use disorders. Among the 19 study indicators assessed in the current study, 12 indicators focused on behavioral healthcare utilization, which helped capture areas of healthcare that are particularly relevant to foster children. Additionally, foster children were more likely than non-foster children to have a diagnosis of obesity or a metabolic syndrome, rheumatologic conditions, or congenital anomalies. Matching on these health characteristics reduced the influence of underlying health conditions on healthcare utilization rate differences between foster and non-foster children covered by DMAS.

Ultimately, comparing foster children to similar non-foster children offers a comprehensive assessment of the unique successes and challenges in healthcare for Virginia's foster children. The present rates for foster children can be understood in the context of the study indicator results for non-foster children, after accounting for Medicaid managed care enrollment, age, race, sex, region, MCO, and pertinent health characteristics. Furthermore, tracking rates over time provides insight into the impact of the Medallion 4.0 program and other variables correlated with time on healthcare utilization among foster children.

# Recommendations

HSAG collaborated with DMAS to ensure that this study may inform current and future quality improvement actions affecting children in foster care. As such, HSAG offers the following recommendations, based on the findings detailed in this report:

- The current study was the first study of this design to assign MCO status based on continuous enrollment. Future studies should maintain the current study design that compares foster and non-foster children, while displaying year-to-year comparisons to evaluate study indicator performance, particularly for indicators relevant to the goals of the American Academy of Pediatrics (AAP), VDSS, and Medallion 4.0.
- Both the current and the prior measurement year results showed that the foster children had lower rates for the *7-Day Follow-Up After Hospitalization for Mental Illness* measure compared to non-foster children. However, the measure results for the *30-Day Follow-Up After ED Visit for Mental Illness* measure were much higher for both the foster children and non-foster children indicating that follow-up care is being received. Specifically, the *7-Day Follow-Up After Hospitalization for Mental Illness* measure does require the member to follow up with a mental health practitioner while the *30-Day Follow-Up After ED Visit for Mental Illness* measure does not specify the provider type of the follow-up visit.
  - DMAS may consider identifying hospitals where the discharges are occurring and working with them to help facilitate targeted transition of care to ensure members are receiving the

appropriate follow-up care and that members are seeking care from an appropriate mental health provider.
  - Additionally, DMAS may consider a provider network analysis specific to mental health practitioners to assess whether members have the appropriate access to a mental health provider after a hospital visit for mental illness.
- The present study results showed that foster children were more likely to be diagnosed with chronic conditions compared to non-foster children. DMAS may consider performing a focused study limited to a sub-group of the foster children who have a specific chronic condition (e.g., Developmental Disorder, Obesity and Metabolic Syndrome) compared to a sub-group of the non-foster children with the same chronic condition and conducting a Medical Record Review (MRR) analysis to ensure these children are getting the appropriate care for their chronic condition.

## *DMAS' Input on Prior Focused Study Recommendations*

In addition to the recommendations noted above, DMAS provided the following detailed feedback regarding quality improvement actions or initiatives related to the 2019–20 Foster Care Focused Study.

### Data Recommendations

This year, DMAS has worked on a variety of measures with key state partners to improve services for youth in foster care. The agency has also welcomed the opportunity to utilize recommendations posed by HSAG in previous iterations of this report to further enhance services for youth. One such recommendation was to review outcomes during this study stratified by members in foster care and those youth who are not. These data have availed DMAS the opportunity to compare various outcomes including those related to behavioral health services, a focus of this study and key program area for DMAS.

This year also presented an opportunity for HSAG to provide comparative analyses by MCO, assisting in DMAS MCO foster care program oversight. DMAS also welcomed data presented in this report demonstrating results by geographic regions aligning with the Medallion 4.0 managed care program. These data are vital to evaluating foster care programs specific to Medallion 4.0 after its regional rollout, which concluded in December 2018.

### Community Partnerships

This year, enhanced child welfare community partnerships has also been a focus for DMAS. In July 2020, DMAS hosted its first Foster Care Partnership meeting with stakeholders from across the state including those from the Virginia Department of Social Services, the Virginia Commission on Youth, Local Departments of Social Services, Licensed Child Placement Agencies, DMAS MCOs, the Virginia Office of Children's Services, among others. This meeting provided an opportunity for various stakeholders to share their role in supporting youth in foster care and ignited a conversation on how stakeholders can collaborate to better serve youth throughout the Commonwealth.

After several key informant interviews to better assess the current needs of youth, DMAS developed two action groups to compliment the overall DMAS Foster Care Partnership. One group is a collaborative focused just on DMAS MCOs, providing them with the opportunity to have robust and ongoing discussion about their foster care programs. The other cross-sector group is focused on

improving care coordination with the goal of enhancing communication between all state partners serving youth.

DMAS also continues to maintain managed care contract requirements that all MCOs have Foster Care liaisons with competencies in child welfare to support members in foster care and address foster care specific inquiries from stakeholders such as Local Departments of Social Services and Licensed Child Placement Agencies. DMAS also has a dedicated foster care email box to streamline and address inquiries related to foster care and adoption assistance services.

## Streamlining Foster Care Enrollment

DMAS and the Virginia Department of Social Services also collaborated during this reporting year to assist members in foster care with maintaining continuous enrollment when they age out of care. System updates were put into place to automatically enroll youth into continued coverage to ensure they maintained access to care during their transition period until age 26, should they choose. These efforts were vital to foster care transition planning, an area that DMAS continues to partner on with MCOs and child welfare stakeholders across the Commonwealth.

## Medallion 4.0 Program Oversight Efforts

DMAS continues to improve efforts to track and analyze a variety of data sources to evaluate Virginia's foster care Medicaid programs. New reporting measures were added to the Medallion 4.0 program that DMAS MCOs report on monthly including those related to care coordination and member outreach, service utilization and efforts to assist members who age out of the child welfare system with transition planning. These data are tied to both Medallion 4.0 contract compliance and program oversight, presenting DMAS with an opportunity to utilize various data sources, including those in this report, to better understand the status of Medicaid programs serving youth in foster care.

# 2. Overview and Methodology

## Introduction

Beginning in contract year 2015–2016, DMAS contracted with HSAG to conduct, as an optional EQR task under CMS Medicaid guidelines,[2-1] an annual focused study that provides quantitative information about children and adolescents placed in foster care and receiving medical services through Medicaid managed care service delivery. DMAS has taken steps to continually improve the quality and timeliness of care for children in foster care who receive Medicaid benefits. For instance, most children in foster care were transitioned from fee-for-service (FFS) programs to managed care by June 2014.[2-2] Since 2015, DMAS has conducted follow-up training with participating local department of social services (LDSS) and Medicaid MCOs to address transition issues among children in foster care.

In contract year 2019–2020, HSAG conducted the fifth annual Foster Care Focused Study to determine the extent to which children in foster care received the expected preventive and therapeutic medical care under a managed care service delivery program compared to children not in foster care and receiving Medicaid managed care benefits. This is the second study to include a comparison between children in foster care and their non-foster peers and the first study to include a year-to-year comparison of findings.

During 2018–2019, DMAS transitioned from the Medallion 3.0 program to the Medallion 4.0 program. Due to the program change and changes in the participating MCOs, some members were transitioned to new MCOs during the study period. The MCO must work directly with either the social worker or the foster parent on any decisions regarding their medical care. Therefore, the Medallion transition may or may not have caused delays in enrollment changes, potentially resulting in an impact to the healthcare and coverage for the children in foster care. Additionally, the Medallion 4.0 program began covering and coordinating services, such as Early Intervention and non-traditional behavioral health services, that were previously paid through traditional FFS Medicaid (i.e., "carved out" of managed care). Therefore, continuing to track foster children's healthcare during this transitional period may help stakeholders understand the impact of the program change on study indicators.

A technical report published in 2015 by the AAP outlined a significant number of barriers in providing adequate health services to children in foster care.[2-3] These issues, compounded with the complexities of care for children with histories of trauma and potentially limited healthcare access, make the assessment of preventive and baseline healthcare services critical for a population in the developmental stages of life. Additionally, children in foster care are likely to require services from both physical and behavioral health providers,[2-4] necessitating levels of care coordination and follow-up

[2-1] Department of Health and Human Services, Centers for Medicare & Medicaid Services. *Protocol 9: Conducting Focused Studies of Health Care Quality*. October 2019. Available at: https://www.medicaid.gov/medicaid/quality-of-care/medicaid-managed-care/quality-of-care-external-quality-review/index.html. Accessed on: November 20, 2020.

[2-2] Under Medallion 3.0, some children in foster care continued to receive Medicaid services on an FFS basis because they met exclusion criteria for managed care participation, such as utilizing Medicaid benefits as secondary insurance (i.e., Third Party Liability [TPL]) or receiving residential care services.

[2-3] American Academy of Pediatrics. Health Care Issues for Children and Adolescents in Foster Care and Kinship Care. *Pediatrics*. Oct 2015:136:4. Available at: http://pediatrics.aappublications.org/content/pediatrics/early/2015/09/22/peds.2015-2656.full.pdf. Accessed on: June 22, 2018.

[2-4] Deutsch SA, Lynch A, Zlotnik S, et.al. Mental Health, Behavioral and Developmental Issues for Youth in Foster Care. *Curr Probl Pediatr Adolesc Health Care*. 2015; 45:292–297.

beyond those expected for most children and adolescents. Given the changes to Medicaid managed care benefits and the barriers to healthcare that children in foster care face, the present study examined how healthcare utilization among foster children compares to utilization among comparable children not in foster care. Furthermore, since the previous study (Contract Year 2018–2019) provided baseline data from the beginning of the transition to Medallion 4.0, the current study compared findings from measurement year 2019 to previous findings from measurement year 2018 to identify trends in utilization.

# Methodology

## *Data Sources*

This study examines services received by foster care children and comparable non-foster children from January 1, 2019, to December 31, 2019. Additionally, selected study indicators include services occurring up to one year before this measurement year. Appendix A provides detailed information on the measurement period for each study indicator. HSAG extracted information needed for the study from administrative claims and encounter data as well as member, provider, and enrollment data supplied by DMAS. In addition, DMAS supplied HSAG with dental encounter data from the Medicaid Dental Benefit Manager, DentaQuest, and behavioral health encounter data from Magellan. Data for claims and encounters paid through June 30, 2020, were provided to HSAG during July 2020, resulting in a six-month data runout from the end of the measurement period to data extraction.

## *Study Population*

The foster care population includes foster children younger than 18 years of age as of January 1, 2019, who were enrolled with DMAS for any length of time during the study period with an aid category of "076" (foster care).

To identify the study population for the healthcare utilization indicators, the foster care population was limited to children who were continuously enrolled as foster children with one or more MCOs during the measurement year. Continuous enrollment was defined as no more than 45 days without enrollment in Medicaid under the "076" aid category during the measurement year. Medicaid managed care enrollment was identified by the benefit package prefixes of "0103" or "0143," indicating enrollment in Medallion 3.0 Medicaid or Medallion 4.0 Medicaid, respectively. Limiting to continuously enrolled members at an early step allowed HSAG to better understand the characteristics of the study population and to identify a closely matched comparison group that supported the continuous enrollment criteria required for the study indicators. While DMAS does provide programming to support foster children enrolled with Virginia Commonwealth Coordinated Care (CCC) Plus, this study was limited to the Medallion 4.0 Medicaid program.

To identify the non-foster comparison group, HSAG first identified children younger than 18 years of age as of January 1, 2019, and who were continuously enrolled in Medallion 4.0 Medicaid managed care under an aid category other than "076" over the study period. Continuously enrolled foster children were compared to these continuously enrolled non-foster children in order to identify demographic and health characteristics that differed between the populations.

Health characteristics were assessed through primary diagnoses in the claims and encounter data. Diagnoses were grouped using a heuristic approach based on the Clinical Classifications Software (CCS),[2-5] clinical expertise, and historical knowledge of the challenges facing the foster care population. Appendix B provides detailed information on the construction of the health characteristics groups.

Next, HSAG calculated propensity scores for the foster and non-foster children continuously enrolled in managed care during the study period. To calculate propensity scores, HSAG used a logistic regression model to predict foster care status based on three demographic characteristics and 14 health characteristics. Children residing in an unknown geographic region were removed before propensity score calculations because this category was too small for reliable balancing.

HSAG used the following demographic characteristics as categorical variables for propensity score calculations:

- Sex: Male, Female
- Race: White, Black or African American, Other[2-6]
- Region: Central, Charlottesville/Western, Northern/Winchester, Roanoke/Alleghany, Southwest, Tidewater[2-7,2-8]

HSAG used the following healthcare characteristics as binary variables for propensity score calculations:

- Diagnosis of Adjustment Disorder
- Diagnosis of Anxiety Disorder
- Diagnosis of ADHD
- Diagnosis of Congenital Anomaly
- Diagnosis of Developmental Disorder
- Diagnosis of Intentional Self-Harm
- Diagnosis of Mood Disorder
- Diagnosis of Obesity and Metabolic Syndrome
- Diagnosis of Other Mental Health Disorders
- Diagnosis of Psychotic Disorder
- Diagnosis of Rheumatologic Condition
- Diagnosis of Substance Use Disorder
- ED Visit for Mental Health
- Acute Inpatient Visit for Mental Health

[2-5] Agency for Healthcare Research and Quality. Clinical Classifications Software (CCS) for ICD-10-PCS (beta version). Available at: www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp. Accessed on: November 14, 2019.
[2-6] Due to the limited number of foster children in race categories other than White and Black or African American, other race categories were combined into an "Other" race category. Race categories did not include consideration of ethnicity data.
[2-7] Regional attribution was based on the demographic file and the SFY 2020–2021 Medallion 4.0 Managed Care Services Agreement provided by DMAS and reflects the Medallion 4.0 regions.
[2-8] Commonwealth of Virginia Department of Medical Assistance Services. Medallion 4.0 Managed Care Services Agreement: July 1, 2020–June 30, 2021. Available at: https://www.dmas.virginia.gov/files/links/5400/Medallion%204.0%20Contract%20SFY21v2.pdf. Attachment XII. 403–404. Accessed on: August 4, 2020.

After calculating propensity scores, the foster and non-foster children were exact-matched by age category (Infant [≤ 2 Years], Preschool [3 to 5 Years], Elementary School [6 to 10 Years], Middle School [11 to 13 Years], High School [≥ 14 Years])[2-9] and continuously enrolled MCO (Aetna Better Health of Virginia; HealthKeepers, Inc.; Magellan Complete Care; Optima Family Care; Virginia Premier Health Plan, Inc.; UnitedHealthcare Community Plan; and Other).[2-10] HSAG exact-matched on age category because age is tied to health risk, likelihood of diagnosis, and healthcare utilization, and because age determined which healthcare claims were used in the health characteristic assessment. HSAG exact-matched on continuously enrolled MCO to improve the covariate balance when stratifying findings by MCO.

Finally, HSAG matched foster children and non-foster children on their propensity scores within exact-matched groups using the greedy 5→1 algorithm.[2-11] Covariate balance between the matched study population and comparison group was assessed by covariate-level Chi-square tests, an omnibus test, and a standardized differences assessment. Statistical tests, like the Chi-square test and the omnibus test, are traditional approaches to balance assessment, which examine individual covariate balance and overall covariate balance, respectively. The standardized differences assessment assesses balance without relying on sample size, which influences the sensitivity of the Chi-square and omnibus tests. Since this study's sample size is large, a standardized differences assessment may help provide a more reliable estimate of balance than statistical tests alone. Appendix B details the interpretation of the covariate balance tests.

## *Measures and Study Indicators*

For alignment with other quality initiatives, healthcare utilization measures were based on either the 2020 Core Set of Children's Health Care Quality Measures for Medicaid and Children's Health Insurance Program (CHIP) (Child Core Set), the 2020 Core Set of Adult's Health Care Quality Measures for Medicaid (Adult Core Set), or the HEDIS 2020 technical specifications.[2-12]

This study assessed 13 measures, representing 19 study indicators, across the following five domains:

### Primary Care

- *Children and Adolescents' Annual Access to PCPs*

[2-9] Age categories were calculated using the child's age at the beginning of the measurement year (i.e., January 1, 2019).
[2-10] Since the transition from Medallion 3.0 to Medallion 4.0 concluded, the current study assigned MCO using continuous enrollment. If a child was continuously enrolled with a single MCO during the measurement year with no more than one gap in enrollment of no more than 45 days, then HSAG assigned the MCO as the child's continuously enrolled MCO. Otherwise, HSAG assigned a child's continuously enrolled MCO as Other (e.g., children continuously enrolled with more than one MCO or children who had more than one gap in enrollment). Using continuous enrollment to determine MCO assignment improves the accuracy of which MCO was responsible for a member's healthcare during the measurement year.
[2-11] Parsons LS. Reducing Bias in a Propensity Score Matched-Pair Sample Using Greedy Matching Techniques. Available at: https://support.sas.com/resources/papers/proceedings/proceedings/sugi26/p214-26.pdf. Accessed on: July 10, 2019.
[2-12] HEDIS 2020 technical specifications align with indicator results reported to NCQA for the measurement period from January 1, 2019, through December 31, 2019.

### Oral Health

- *Annual Dental Visit*
- *Preventive Dental Services*

### Behavioral Health

- *7-Day Follow-Up After Hospitalization for Mental Illness*
- *30-Day Follow-Up After ED Visit for Mental Illness*
- *Metabolic Monitoring for Children and Adolescents on Antipsychotics*
- *Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics*
- *Follow-Up Care for Children Prescribed ADHD Medication*
  - *One-Month Follow-Up*
  - *Two-Month Follow-Up*
  - *Three-Month Follow-Up*
  - *Six-Month Follow-Up*
  - *Nine-Month Follow-Up*

Substance Use

- *30-Day Follow-Up After ED Visit for AOD Abuse or Dependence*
- *Initiation and Engagement of AOD Abuse or Dependence Treatment*
  - *Initiation*
  - *Engagement*

### Reproductive Health

- *Chlamydia Screening Among Women*
- *Contraceptive Care*
  - *Most Effective or Moderately Effective Method*
  - *Long-Acting Reversible Method*

### Respiratory Health

- *Asthma Medication Ratio*

Appendix A presents detailed descriptions of each measure, including pertinent references to 2020 HEDIS and CMS Core Set technical specifications and/or value sets.

To assess whether indicator rates were statistically different between the study population and the comparison group, HSAG calculated *p*-values using logistic regression to determine the association between foster care status and numerator-compliance while controlling for all demographic and health characteristics used for matching. A *p*-value less than 0.05 was considered statistically significant.

# 3. Findings

## Characteristics of the Foster Care Population and Study Population

This section provides findings describing the demographic characteristics of the 7,266 children in the foster care population and the 2,798 children in the study population. Foster care children were children in foster care younger than 18 years of age as of January 1, 2019, and receiving healthcare coverage from DMAS at any time from January 1, 2019, through December 31, 2019. Table 3-1 displays the distribution of foster care children by age category, sex, and race. Foster care children were disproportionately male (54.0 percent) and Black or African American (33.9 percent) compared to the general population in Virginia in 2019, which was 49.2 percent male and 13.4 percent Black or African American.[3-1]

**Table 3-1—Age, Sex, and Race Distribution of Children in Foster Care (n=7,266)**

| Category | Number | Percent |
|---|---|---|
| **Age Category** | | |
| ≤ 2 years | 1,591 | 21.9% |
| 3 to 5 years | 1,099 | 15.1% |
| 6 to 10 years | 1,598 | 22.0% |
| 11 to 13 years | 1,030 | 14.2% |
| ≥ 14 years | 1,948 | 26.8% |
| **Sex** | | |
| Male | 3,923 | 54.0% |
| Female | 3,343 | 46.0% |
| **Race** | | |
| Black or African American | 2,460 | 33.9% |
| White | 4,669 | 64.3% |
| Other | 137 | 1.9% |

Table 3-2 displays the distribution of foster care children by region and MCO in the measurement year. Please note that since the foster care population includes every member enrolled in foster care during the measurement year for any length of time, the latest MCO a member was enrolled with during the measurement year was used. Foster children were mostly from the Central (22.5 percent), Charlottesville/Western (18.6 percent), and Tidewater (17.2 percent) regions. The region for a small proportion of foster children (0.8 percent) was unknown; these children tended to be missing some address information or had an out-of-state address. Foster children were most likely to be enrolled with HealthKeepers (28.2 percent), Virginia Premier (26.3 percent), or Optima (21.1 percent). MCO

[3-1] United States Census Bureau. Virginia QuickFacts. Available at: https://www.census.gov/quickfacts/VA. Accessed on: November 12, 2020.

attribution was missing for 4.4 percent of foster children due to an absence of enrollment provider information in all enrollment spans during the measurement year.[3-2]

**Table 3-2—Region and MCO Distribution of Children in Foster Care (n=7,266)**

| Category | Number | Percent |
|---|---|---|
| **Region** | | |
| Central | 1,634 | 22.5% |
| Charlottesville/Western | 1,354 | 18.6% |
| Northern/Winchester | 1,000 | 13.8% |
| Roanoke/Alleghany | 1,096 | 15.1% |
| Southwest | 872 | 12.0% |
| Tidewater | 1,252 | 17.2% |
| Unknown | 58 | 0.8% |
| **Latest MCO in the Measurement Year** | | |
| Aetna | 566 | 7.8% |
| HealthKeepers | 2,049 | 28.2% |
| Magellan | 365 | 5.0% |
| Optima | 1,535 | 21.1% |
| Virginia Premier | 1,913 | 26.3% |
| UnitedHealthcare | 515 | 7.1% |
| FFS | 323 | 4.4% |

The study population were children in the foster care population who were continuously enrolled in Medallion 4.0 Medicaid managed care service delivery with any MCO or a combination of MCOs during the study period, for whom a non-foster match could be found. Continuous enrollment was defined as enrollment gaps totaling no more than 45 days. Among the foster care population, 38.5 percent (n=2,798) of children met the requirements for the study population. The demographic makeup of the study population mirrored the demographic makeup of the foster care population, except that there were 5.6 percent fewer children aged two years or younger. The disproportionate exclusion of infants can be attributed to the inability of children born more than 45 days into the measurement year to meet the continuous enrollment criteria, since these children would have an enrollment gap greater than 45 days.

Table B-1 and Table B-2 present the demographic and health characteristics of continuously enrolled foster children and continuously enrolled non-foster children prior to matching (n=2,847). Continuously enrolled foster children tended to be older, male, White, and less likely to be enrolled with HealthKeepers compared to continuously enrolled non-foster children. Furthermore, continuously enrolled foster children were less likely to live in the Tidewater or Northern/Winchester regions and more likely to live in the Charlottesville/Western and Southwest regions. In terms of health characteristics, continuously enrolled foster children were more likely to have diagnoses for several health conditions, primarily mental illnesses. Additionally, foster children were more likely to have ED and acute inpatient visits for mental illness than non-foster children, which may indicate greater severity

[3-2] Foster children may temporarily move to FFS and may not be enrolled with an MCO during the measurement year.

of mental illness among foster children. The higher rate of ED visits and acute inpatient visits may also indicate that foster children are more likely to seek care for mental illness through these means, especially if prior access to psychiatric care had been limited prior to entering foster care. The 2017–2018 and the 2018–2019 Foster Care Focused Study reports demonstrated that rates often differ by member characteristics such as age and region, and these findings provided justification for matching foster and non-foster children.

HSAG was able to match 98.3 percent (n=2,798) of continuously enrolled foster children to non-foster children with similar demographic and health characteristics. Table B-3 and Table B-4 present the demographic and health characteristics of the final study population and their comparison group. Matching successfully balanced characteristics between the study population and the comparison group, except for congenital anomalies, which were diagnosed in 5.5 percent (n=154) of the study population and 8.1 percent (n=227) of the comparison group.

Appendix B presents detailed descriptions of the demographic and health characteristics of foster and non-foster children prior to matching, as well as covariate balance findings.

# Healthcare Utilization Among Foster Children and Non-Foster Children

This section provides findings from the study indicators used to assess healthcare utilization for foster children in the study population, as well as findings for the non-foster comparison group. In addition to the summarized findings presented in the remainder of this section, Appendix C presents detailed study indicator results stratified by age category and MCO.

Although the non-foster comparison group has been matched to the foster children on a variety of demographic and health characteristics, HSAG advises caution in comparing the study indicator results between the foster and non-foster children. Due to the different criteria for denominators across measures, one child in a matched pair may be included in a measure calculation while the other child is not. When matched pairs are separated, the distribution of characteristics in the denominator-eligible study population and the denominator-eligible comparison group may differ from the overall distribution, and balanced covariates are no longer guaranteed. Furthermore, HSAG advises caution in interpreting the *p*-values, as denominator sizes vary by measure. Sample size influences the sensitivity of the *p*-value calculation, and smaller sample sizes result in less reliable logistic regression models.

## *Primary Care*

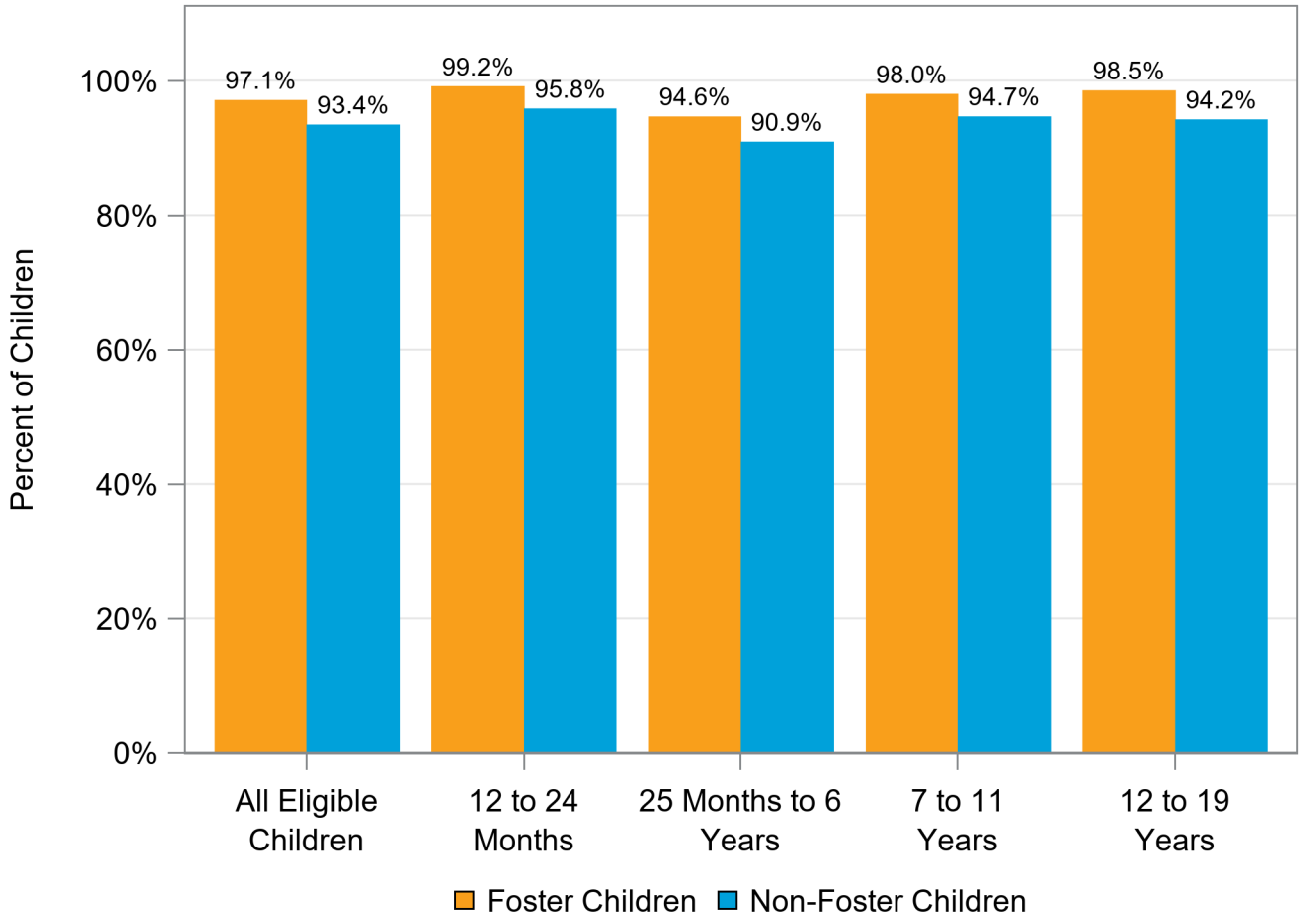
### *Children and Adolescents' Annual Access to PCPs (CAP)*

Among foster children who were at least 12 months old by the end of the measurement year, 97.1 percent had a visit with a PCP during the measurement year (Figure 3-1). Foster children had a significantly higher rate of annual PCP visits than similar non-foster children (93.4 percent, $p<0.001$), and both the foster and non-foster children demonstrated exceptionally high rates of PCP visits.

Findings are also presented by age category, using the categories from the CMS Child Core Set technical specifications for this measure (12 to 24 months, 25 months to 6 years, 7 to 11 years, and 12

to 19 years). Since children were exact-matched on a different categorization of age, comparisons of rates for foster and non-foster children within the CMS Child Core Set age categories must be interpreted with caution, as matched pairs may be separated across age categories. The gap between the rates of foster and non-foster children was widest for the age 12 to 19 years category. While the rate for foster children at least 12 years of age was 98.5 percent, the rate for non-foster children was 94.2 percent.

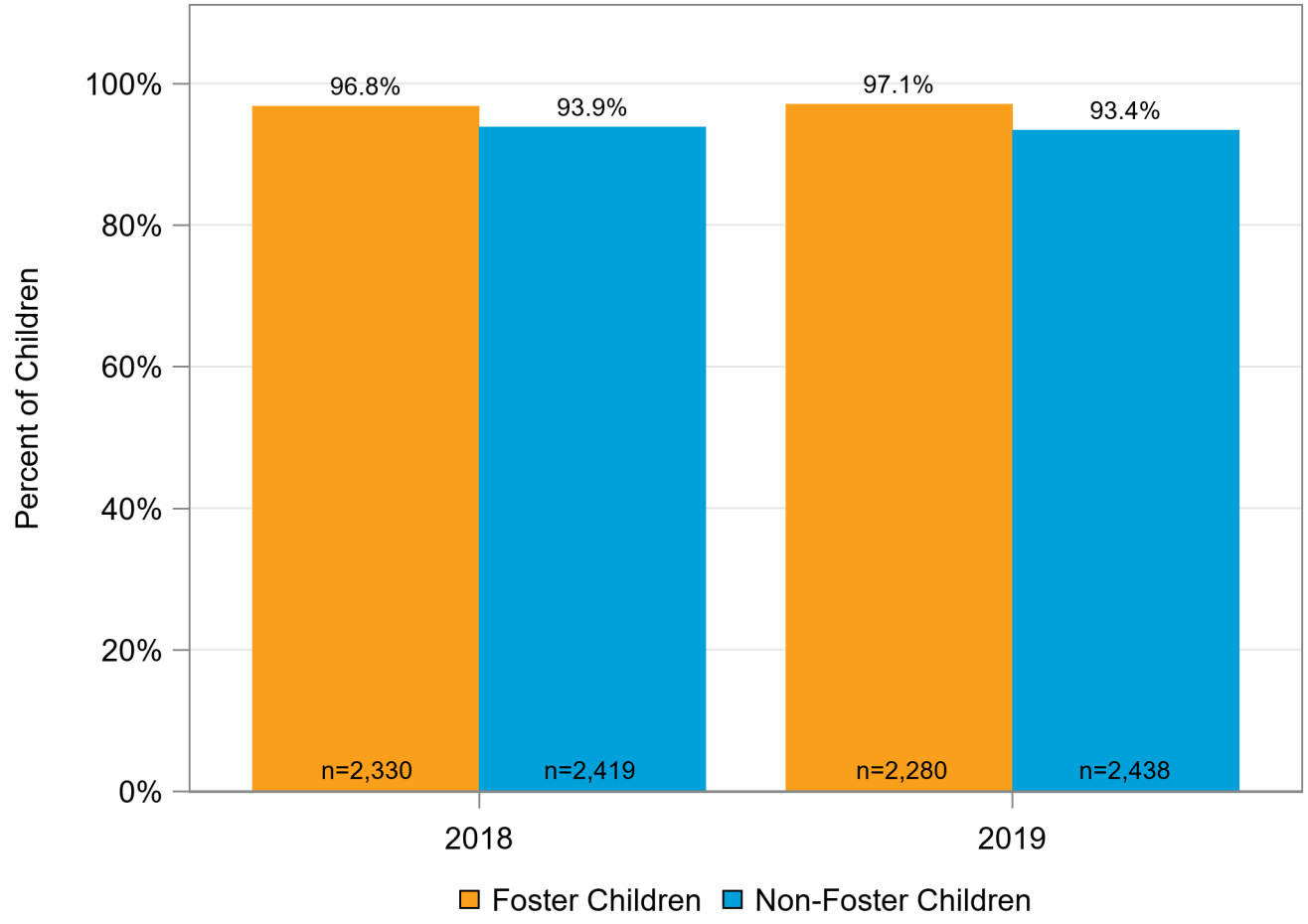
**Figure 3-1—Rates of Children and Adolescents' Annual Access to PCPs Among Foster Children and Non-Foster Children, by Age Category**




NOTE: The 12 to 24 Months category has 120 foster and 168 non-foster children. The 25 Months to 6 Years category has 784 foster and 725 non-foster children. The 7 to 11 Years category has 555 foster and 561 non-foster children. The 12 to 19 Years category has 821 foster and 984 non-foster children.

Additionally, Figure 3-2 provides a comparison for the total rate (i.e., the rate for all eligible children) between measurement year 2018 from the previous Foster Care Focused Study and measurement year 2019 from the current study. The difference between foster and non-foster children was 0.8 percentage points greater in 2019 compared to 2018, as utilization for foster children increased and utilization for non-foster children decreased.

**Figure 3-2—Rates of Children and Adolescents' Annual Access to PCPs Among Foster Children and Non-Foster Children, by Measurement Year**




## *Oral Health*

### *Annual Dental Visit (ADV)* and *Preventive Dental Services (PDENT-CH)*

Among foster children who were at least two years old by the end of the measurement year, 86.9 percent had a dental visit during the measurement year (Figure 3-3). Similarly, among foster children who were at least one year old by the end of the measurement year, 81.7 percent received preventive dental services (Figure 3-5). Rates of annual dental visits and preventive dental services for foster children were more than 20 percentage points higher than the rates among non-foster children

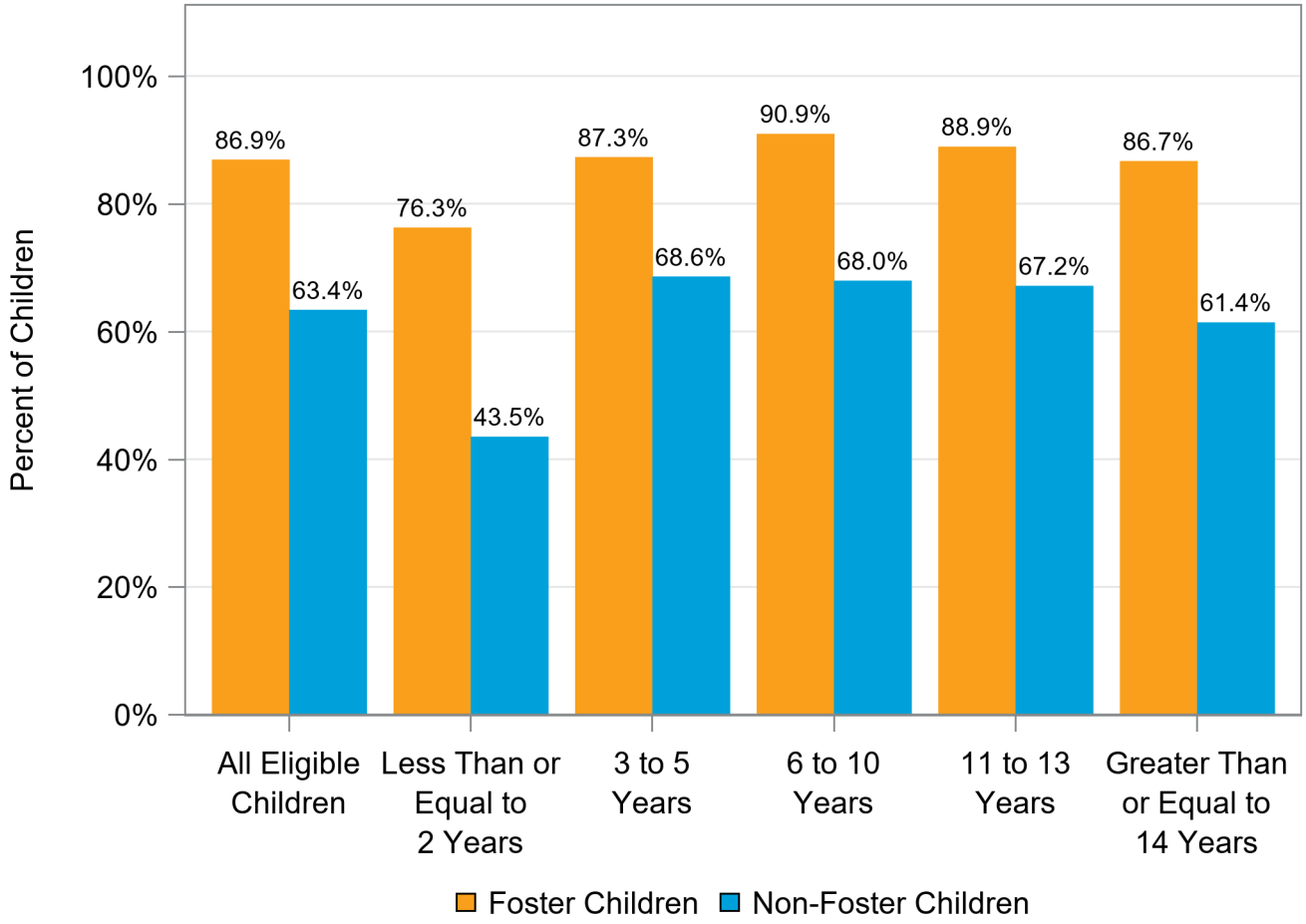
($p$<0.001). Therefore, foster children are accessing dental healthcare services at much higher rates than similar non-foster children.

Figure 3-3 and Figure 3-5 also present the findings for annual dental visits and preventive dental services stratified by age category. For both dental measures, infants (i.e., children aged two years or younger) in foster care demonstrated a notably lower rate than foster children of other ages, which may be expected given that dental examination requirements for foster children start at three years of age.[3-3] Infants also demonstrated the largest gap between foster and non-foster children—a more than 30 percent difference for both measures. For other age categories, the rates for foster children are consistently high. Furthermore, the gap in dental healthcare utilization between foster and non-foster children is smallest for children aged three to five years and widens as age increases. Ultimately, foster children have greater dental healthcare utilization than non-foster children across all age categories, and infants and children aged 14 years or older perform particularly well compared to non-foster children.

Additionally, Figure 3-4 and Figure 3-6 provide comparisons for the total rate (i.e., the rate for all eligible children) of dental utilization between measurement year 2018 from the previous Foster Care Focused Study and measurement year 2019 from the current study. The rates for foster children were consistent across the years, though non-foster children's utilization declined by 3.5 percentage points.

[3-3] Virginia Department of Social Services. Child and Family Services Manual: Providing Foster Care Services. Available at: https://www.dss.virginia.gov/files/division/dfs/fc/intro_page/guidance_manuals/fc/04_2013/Section_13_Providing_Foster_Care_Services.pdf. Accessed on: November 22, 2019.

**Figure 3-3—Rates of Annual Dental Visits Among Foster Children and Non-Foster Children, by Age Category**




NOTE: The Less Than or Equal to 2 Years category has 333 foster and 278 non-foster children. The 3 to 5 Years category has 465 foster and 462 non-foster children. The 6 to 10 Years category has 674 foster and 671 non-foster children. The 11 to 13 Years category has 407 foster and 411 non-foster children. The Greater Than or Equal to 14 Years category has 744 foster and 757 non-foster children.

**Figure 3-4—Rates of Annual Dental Visits Among Foster Children and Non-Foster Children, by Measurement Year**

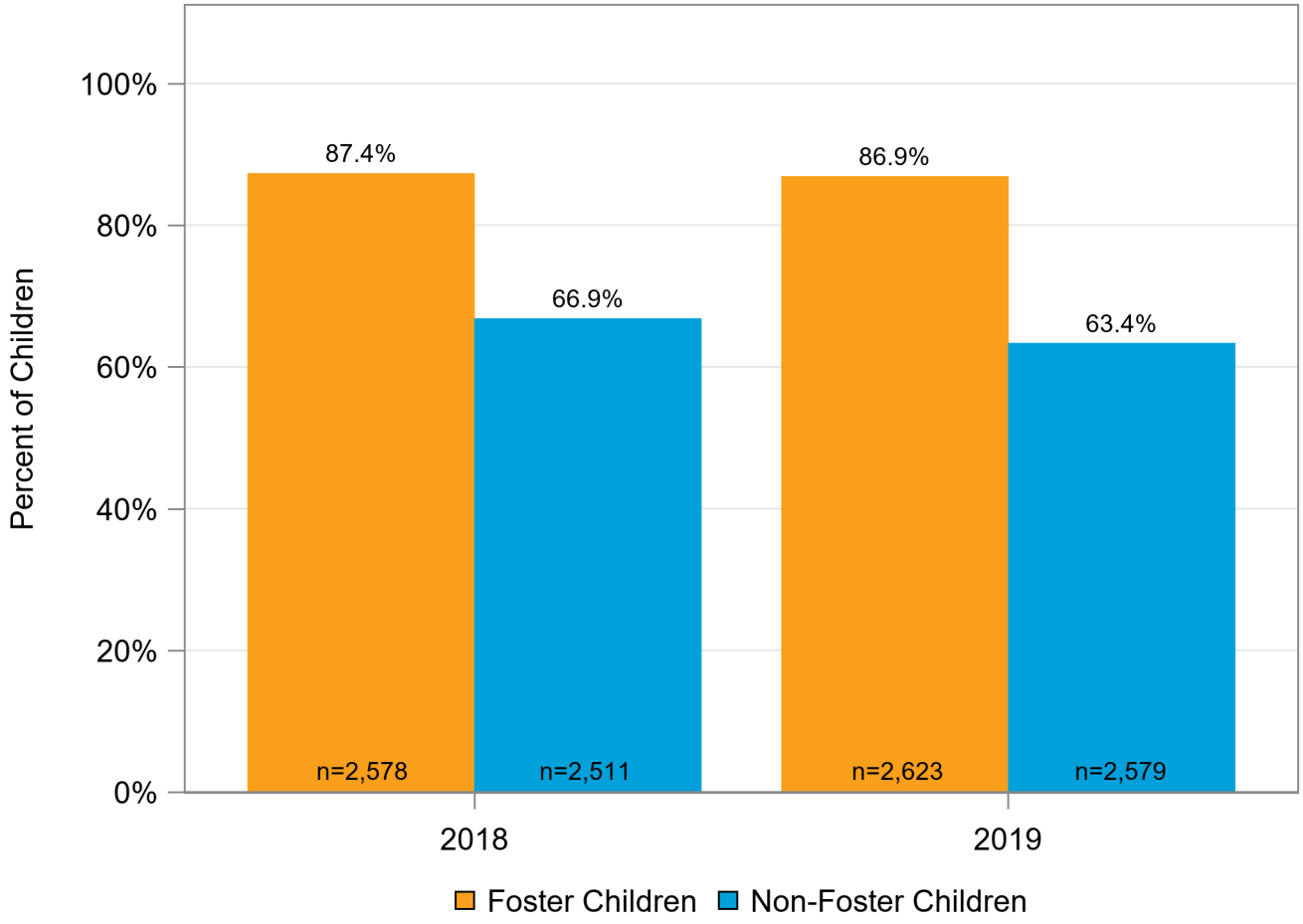
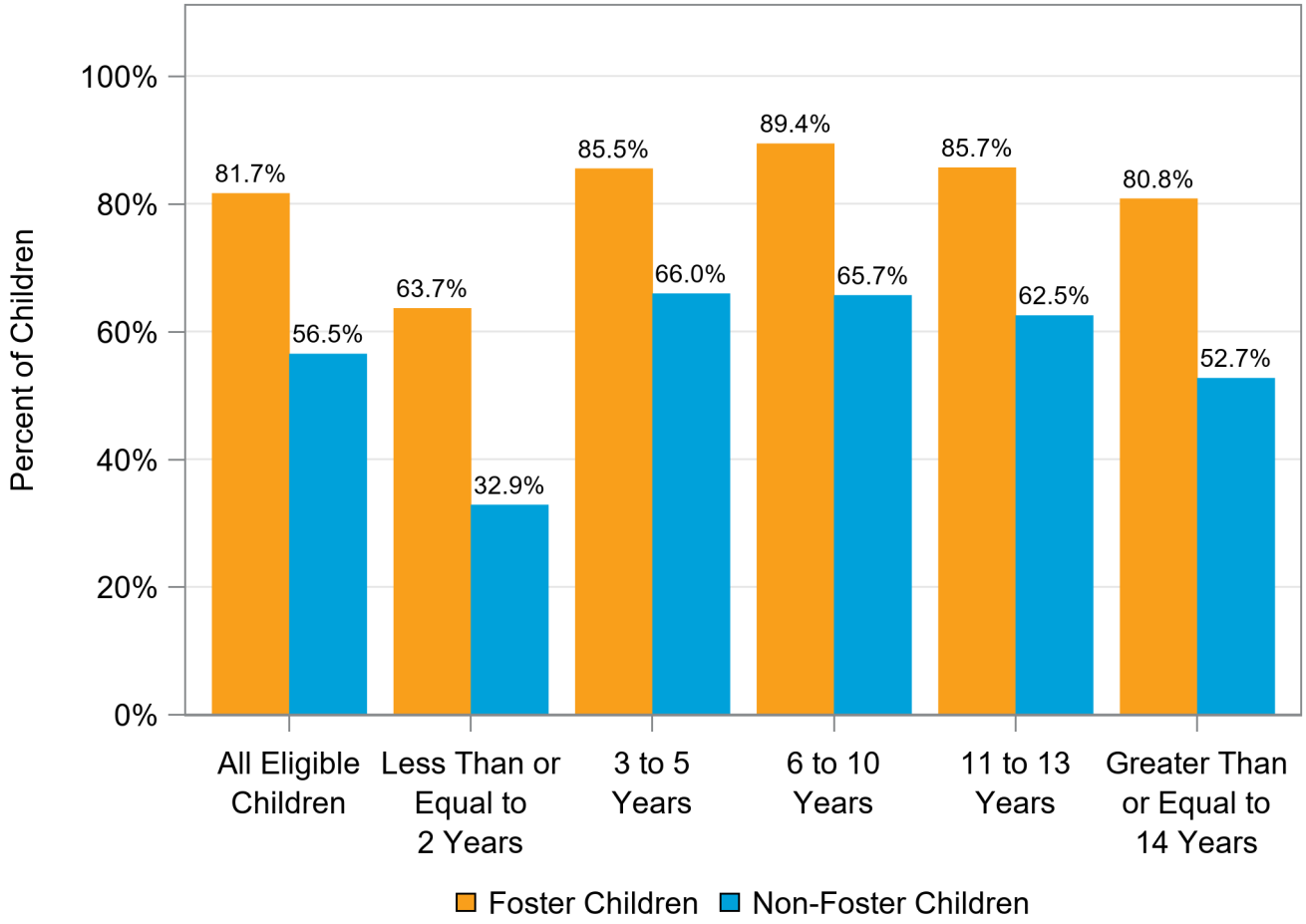
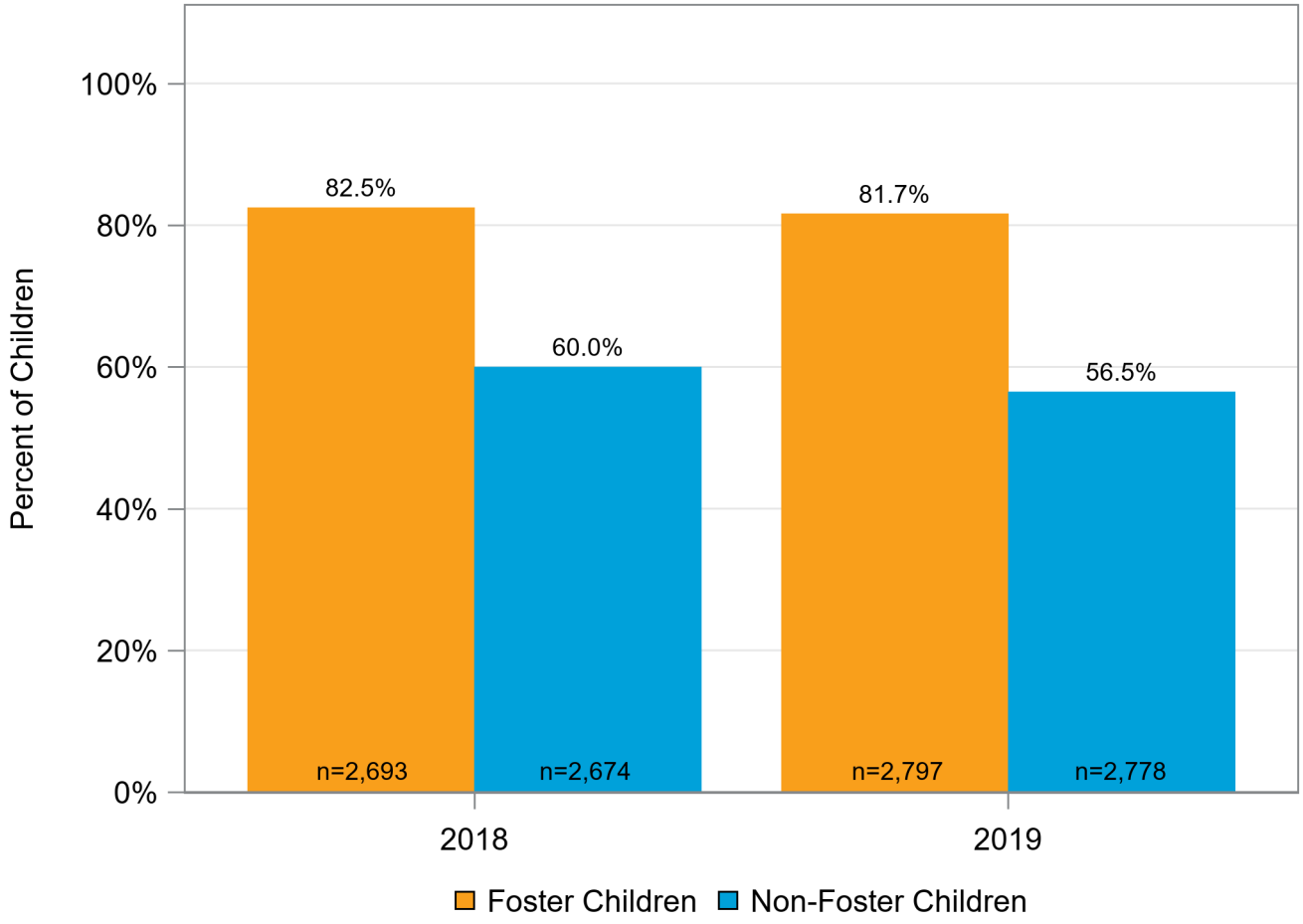


**Figure 3-5—Rates of Preventive Dental Services Among Foster Children and Non-Foster Children, by Age Category**




NOTE: The Less Than or Equal to 2 Years Category has 454 foster and 435 non-foster children. The 3 to 5 Years category has 470 foster and 470 non-foster children. The 6 to 10 Years category has 682 foster and 682 non-foster children. The 11 to 13 Years category has 419 foster and 419 non-foster children. The Greater Than or Equal to 14 Years category has 772 foster and 772 non-foster children.

**Figure 3-6—Rates of Preventive Dental Services Among Foster Children and Non-Foster Children, by Measurement Year**

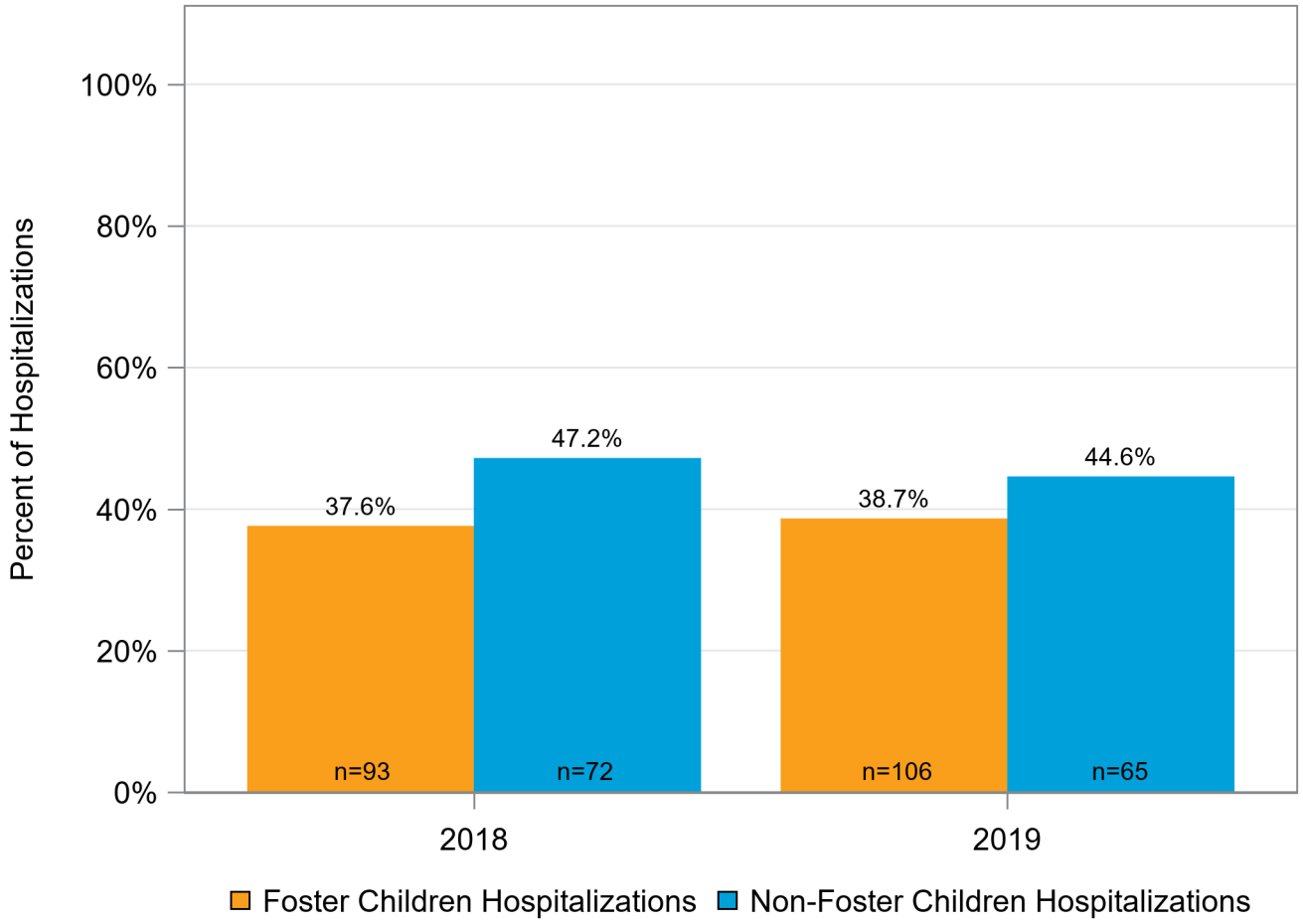



## *Behavioral Health*

### *7-Day Follow-Up After Hospitalization for Mental Illness (FUH)*

Figure 3-7 shows that, among hospitalizations of children aged 6 years or older for mental illness or intentional self-harm, 38.7 percent of foster children's hospitalizations and 44.6 percent of non-foster children's hospitalizations had a follow-up visit with a mental health practitioner within seven days, though this difference was not statistically significant ($p$=0.26). The denominators for this measure demonstrate that both foster and non-foster children had few instances of hospitalization for mental illness (n=106 hospitalizations and n=65 hospitalizations, respectively), although foster children had more hospitalizations. Less than half of foster and non-foster children received follow-up after hospitalization. Furthermore, rates were consistent for foster and non-foster children across measurement years 2018 and 2019.

**Figure 3-7—Rates of 7-Day Follow-Up After Hospitalization for Mental Illness Among Foster Children and Non-Foster Children, by Measurement Year**



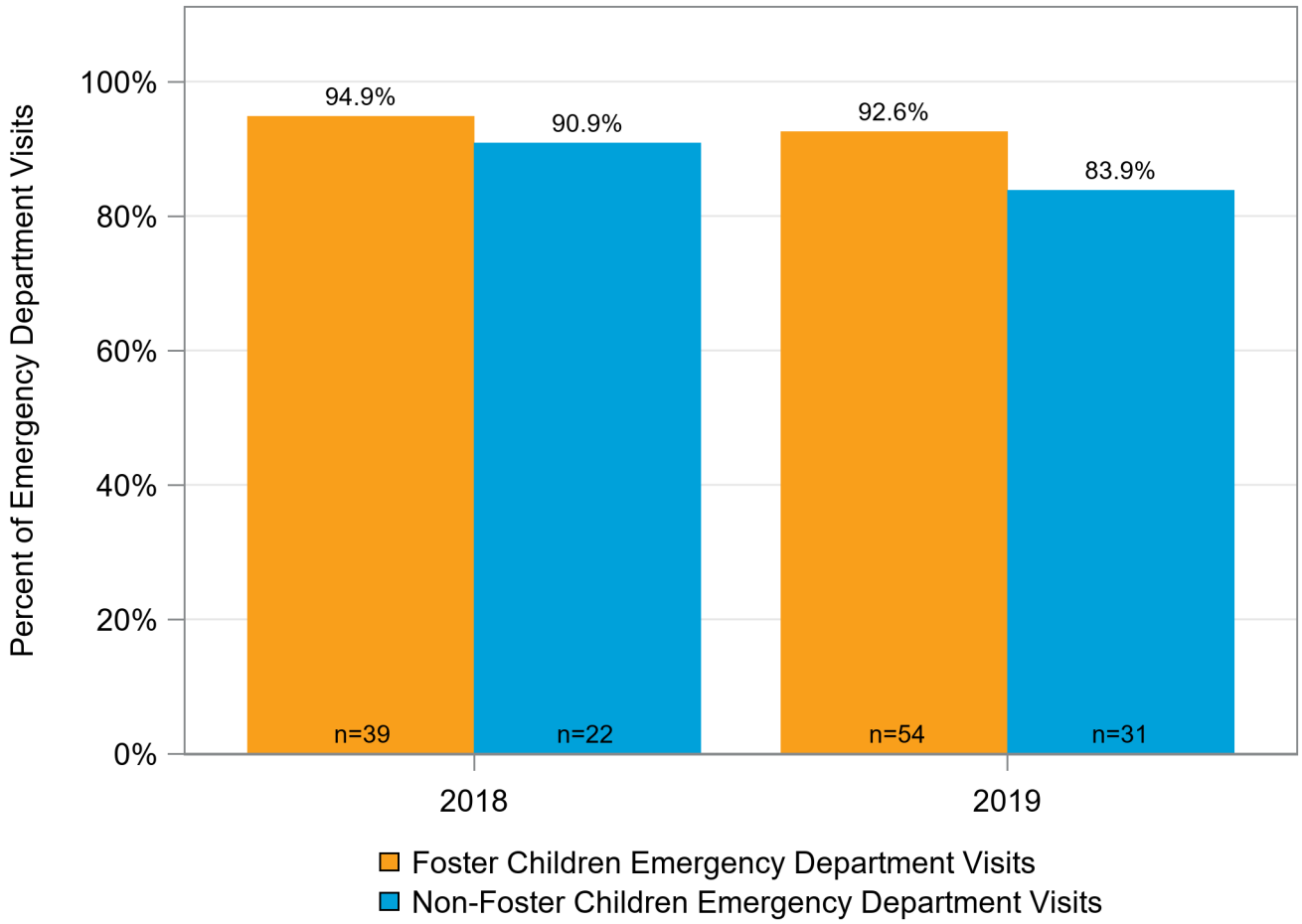

### *30-Day Follow-Up After ED Visit for Mental Illness (FUM)*

Figure 3-8 shows that, among ED visits of children aged 6 years old or older for mental illness or intentional self-harm, 92.6 percent of foster children's ED visits and 83.9 percent of non-foster children's ED visits had a follow-up visit for mental illness within 30 days of the ED visit for measurement year 2019. The denominators for this measure demonstrate that foster and non-foster children had very few instances of ED visits (n=54 ED visits and n=31 ED visits, respectively), although there were more ED visits during measurement year 2019 than measurement year 2018. Foster children were more likely to have an ED visit compared to non-foster children, even after matching on several types of mental illness and on previous instances of ED visits and acute inpatient visits for mental health. Since an ED visit for mental illness is an unusual event and mental illness is more likely to present in older children, one year of data may not have been adequate to match on mental illness.

Both foster and non-foster children demonstrated high rates of follow-up. The rate for foster children was 8.7 percentage points higher than the rate for non-foster children, and this finding was statistically significant ($p<0.001$). Furthermore, the rate difference between foster and non-foster children for measurement year 2019 was more than twice the rate difference for measurement year 2018. These

findings differ notably from the findings of the *7-Day Follow-Up After Hospitalization for Mental Illness* measure above.

**Figure 3-8—Rates of 30-Day Follow-Up After ED Visit for Mental Illness Among Foster Children and Non-Foster Children, by Measurement Year**




### *Metabolic Monitoring for Children and Adolescents on Antipsychotics (APM)* and *Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics (APP)*

Figure 3-9 shows that, among children aged 1 to 17 years who had two or more antipsychotic prescriptions, 40.8 percent of foster children and 30.1 percent of non-foster children had metabolic testing. The difference in rates during measurement year 2019 was statistically significant ($p$=0.003) and is consistent with findings from measurement year 2018. However, between measurement years 2018 and 2019, the rate for foster children decreased by 7.5 percentage points. Please note that 2018 rates were recalculated to account for incorporation/receipt of additional lab data. Among children aged 1 to 17 years who had a new prescription for an antipsychotic medication without a diagnosis approved by the Food and Drug Administration (FDA) for antipsychotic use, 90.7 percent of foster children and 67.7 percent of non-foster children had documentation of psychosocial care as first-line treatment ($p$=0.15), as shown in Figure 3-10. Although this figure also indicates that the rate for foster children increased across measurement years, the denominators are small, such that a single numerator event

could have a large impact on a rate. Therefore, the change across measurement years may not be clinically meaningful.

For both measures and both measurement years, foster children were more than twice as likely as non-foster children to qualify for the denominator. Therefore, foster children were far more likely than non-foster children to have multiple antipsychotic prescriptions as well as new antipsychotic prescriptions without a diagnosis approved for antipsychotic use, even though these findings also suggest that foster children were more likely to have tried another treatment approach.

**Figure 3-9—Rates of Metabolic Monitoring for Children and Adolescents on Antipsychotics Among Foster Children and Non-Foster Children, by Measurement Year**

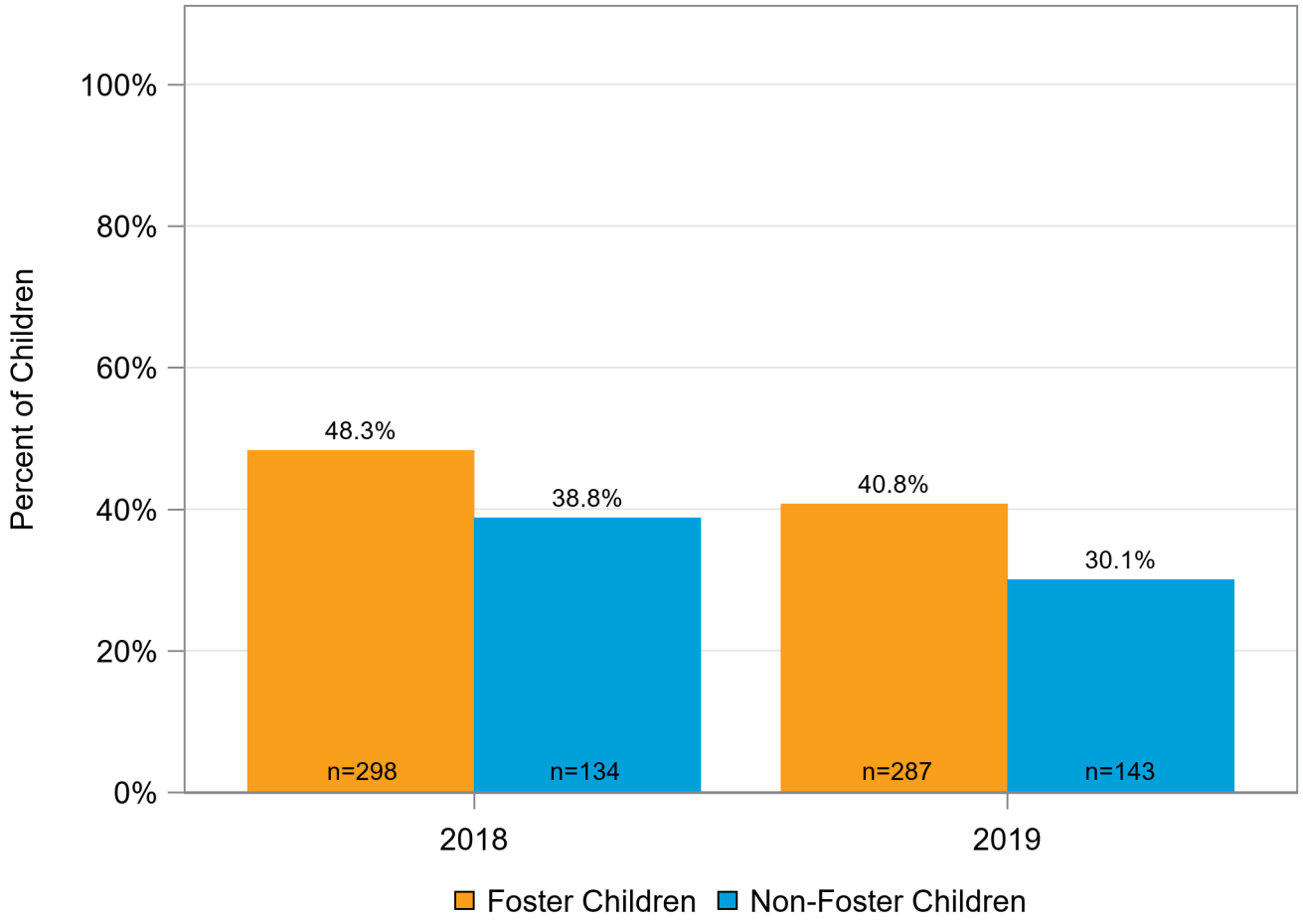
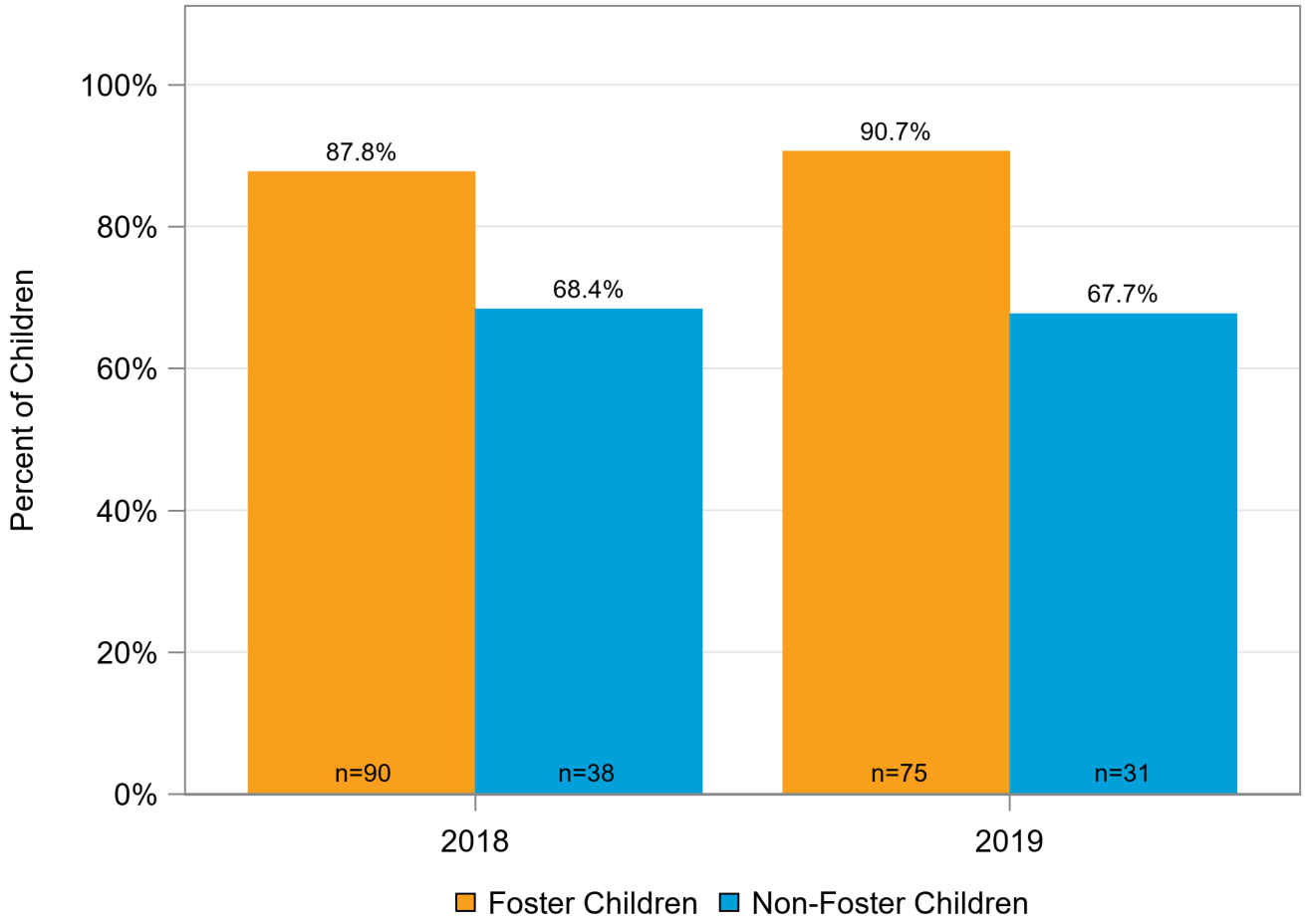


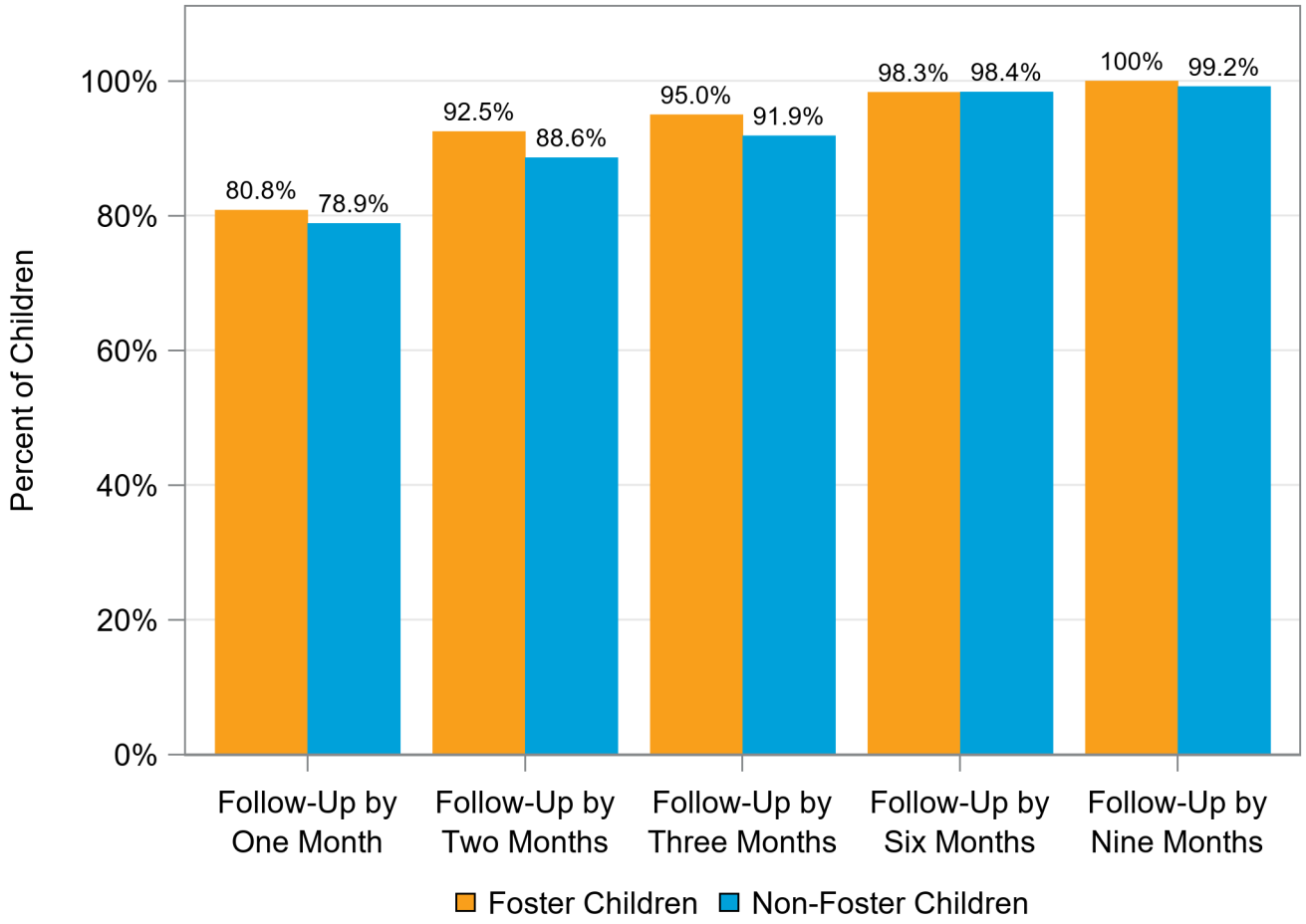
**Figure 3-10—Rates of Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics Among Foster Children and Non-Foster Children, by Measurement Year**




### *Follow-Up Care for Children Prescribed ADHD Medication (ADD)*

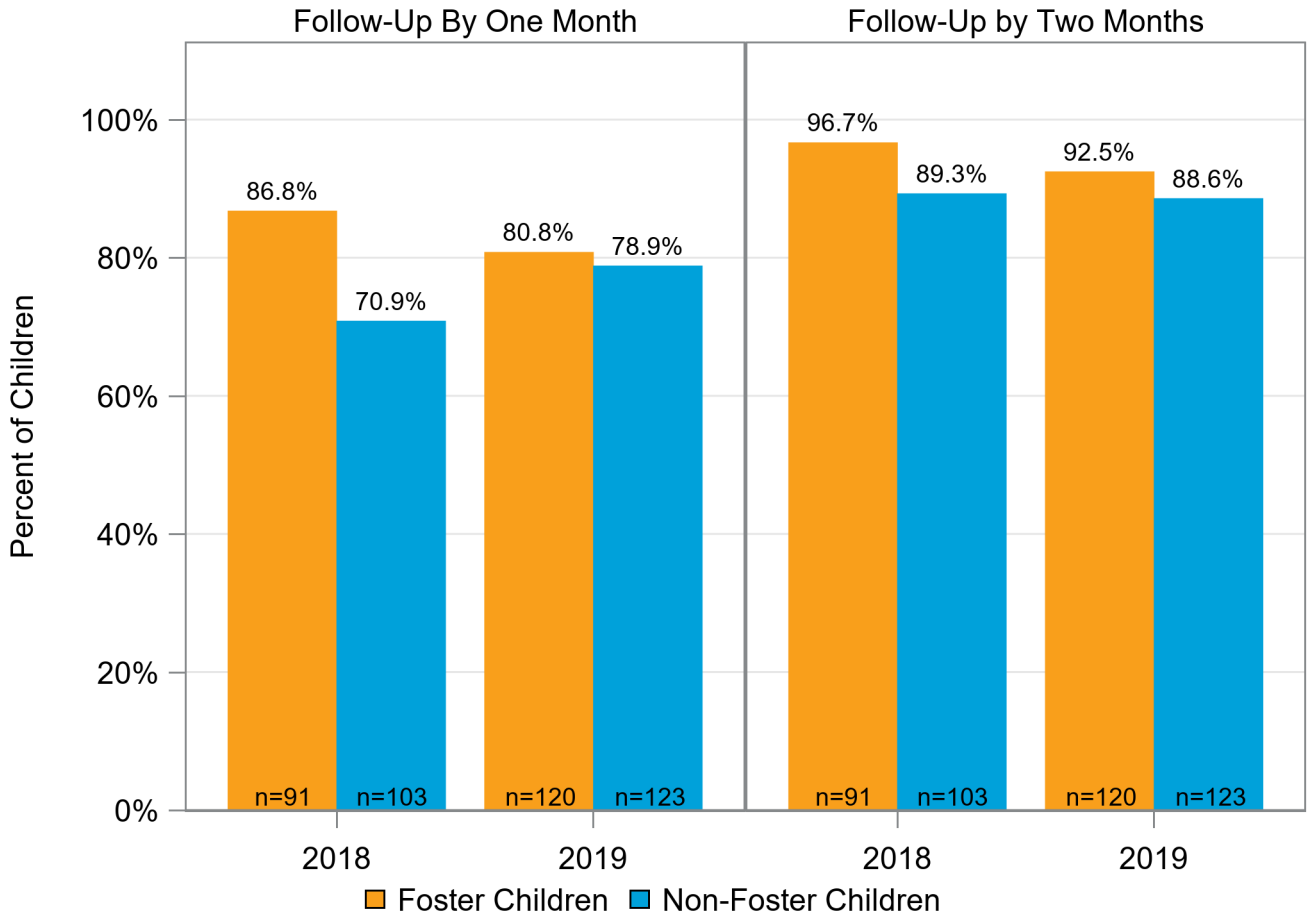
Figure 3-11 shows that, among children aged 6 to 12 years old with a newly prescribed ADHD medication, 80.8 percent of foster children and 78.9 percent of non-foster children initiated follow-up care within one month of the prescription ($p$=0.42). Foster children also showed higher rates of follow-up at two, three, and nine months after an ADHD medication prescription, although the differences were not statistically significant. Rates may fluctuate between measurement years 2018 and 2019, since the denominators for this measure are small.

**Figure 3-11—Rates of Follow-Up Care for Children Prescribed ADHD Medication Among Foster Children and Non-Foster Children**




NOTE: The denominators for foster and non-foster children are 120 and 123, respectively.

**Figure 3-12—Rates of Follow-Up Care for Children Prescribed ADHD Medication Among Foster Children and Non-Foster Children, by Measurement Year**




## Substance Use

### 30-Day Follow-Up After ED Visit for AOD Abuse or Dependence (FUA)

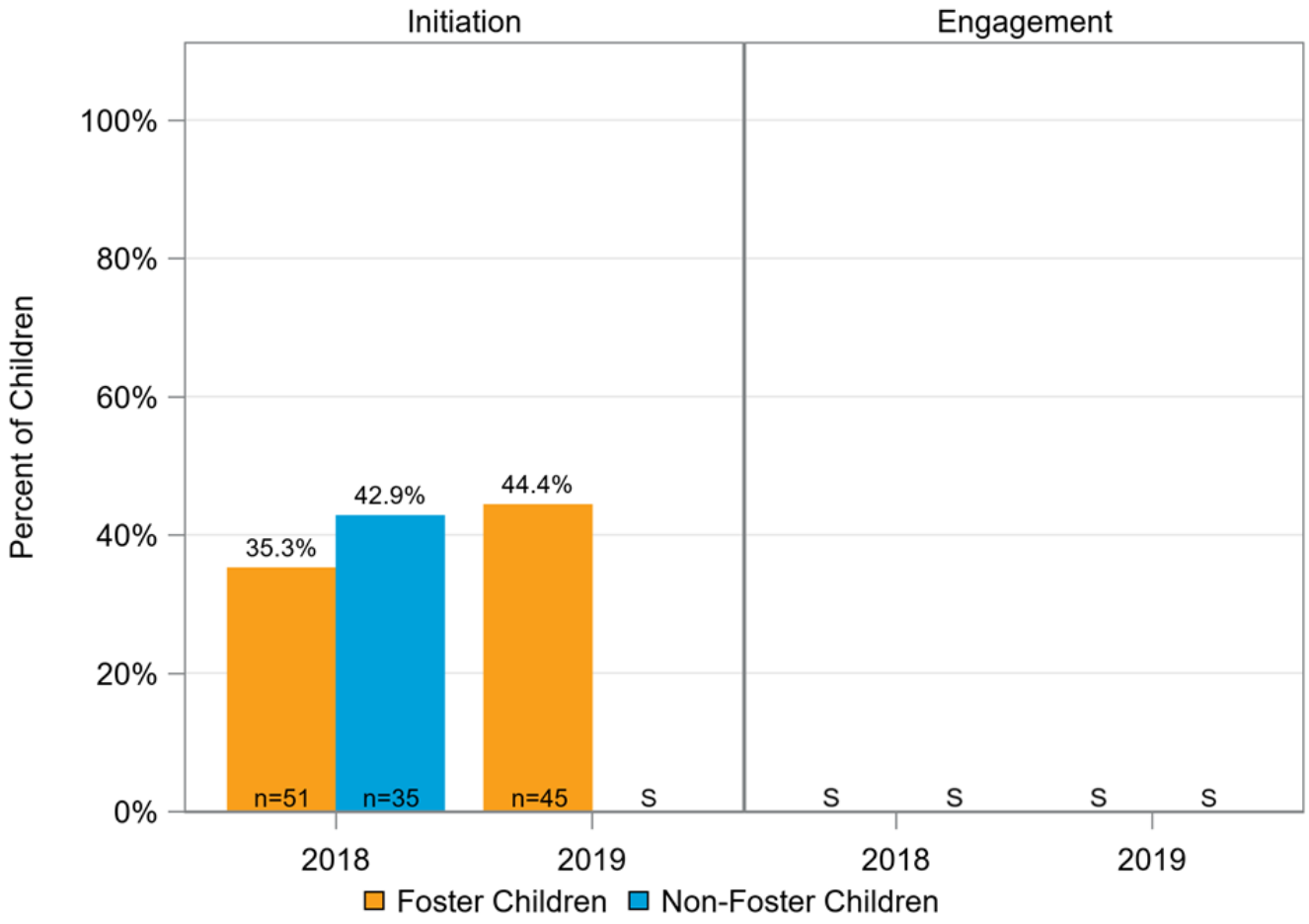
The *30-Day Follow-Up After ED Visit for AOD Abuse or Dependence* measure is not presented as a chart because the denominators for foster children and non-foster children were too small to ensure reliable rates. These denominator sizes are similar to measurement year 2018 and indicate that few children had ED visits for AOD use or dependence. Furthermore, foster children had higher rates of 30-day follow-up after an ED visit for AOD abuse or dependence than non-foster children, although the rate difference was not statistically significant.

### Initiation and Engagement of AOD Abuse or Dependence Treatment (IET)

Figure 3-13 shows that, among children 13 years or older who had a new episode of AOD use or dependence, 44.4 percent of foster children initiated treatment within 14 days of diagnosis. The rate of foster children who engaged with ongoing AOD treatment by initiating treatment and having two or more additional services or treatments within 34 days of the initiation visit was suppressed due to a

small numerator. Similarly, rates for non-foster children were also suppressed due to small numerators; however, foster children had higher rates for both initiation and engagement compared to non-foster children. Rate differences between foster and non-foster children were not statistically significant, although denominator sizes are small. The initiation rate for foster children also improved from measurement year 2018 to measurement year 2019. Since denominators are small, rate differences must be interpreted with caution, since a single numerator event can have a large impact on a rate.

**Figure 3-13—Rates of Initiation and Engagement of AOD Abuse or Dependence Treatment Among Foster Children and Non-Foster Children, by Measurement Year**




NOTE: S indicates that the rate has been suppressed due to a numerator or denominator less than or equal to 10.

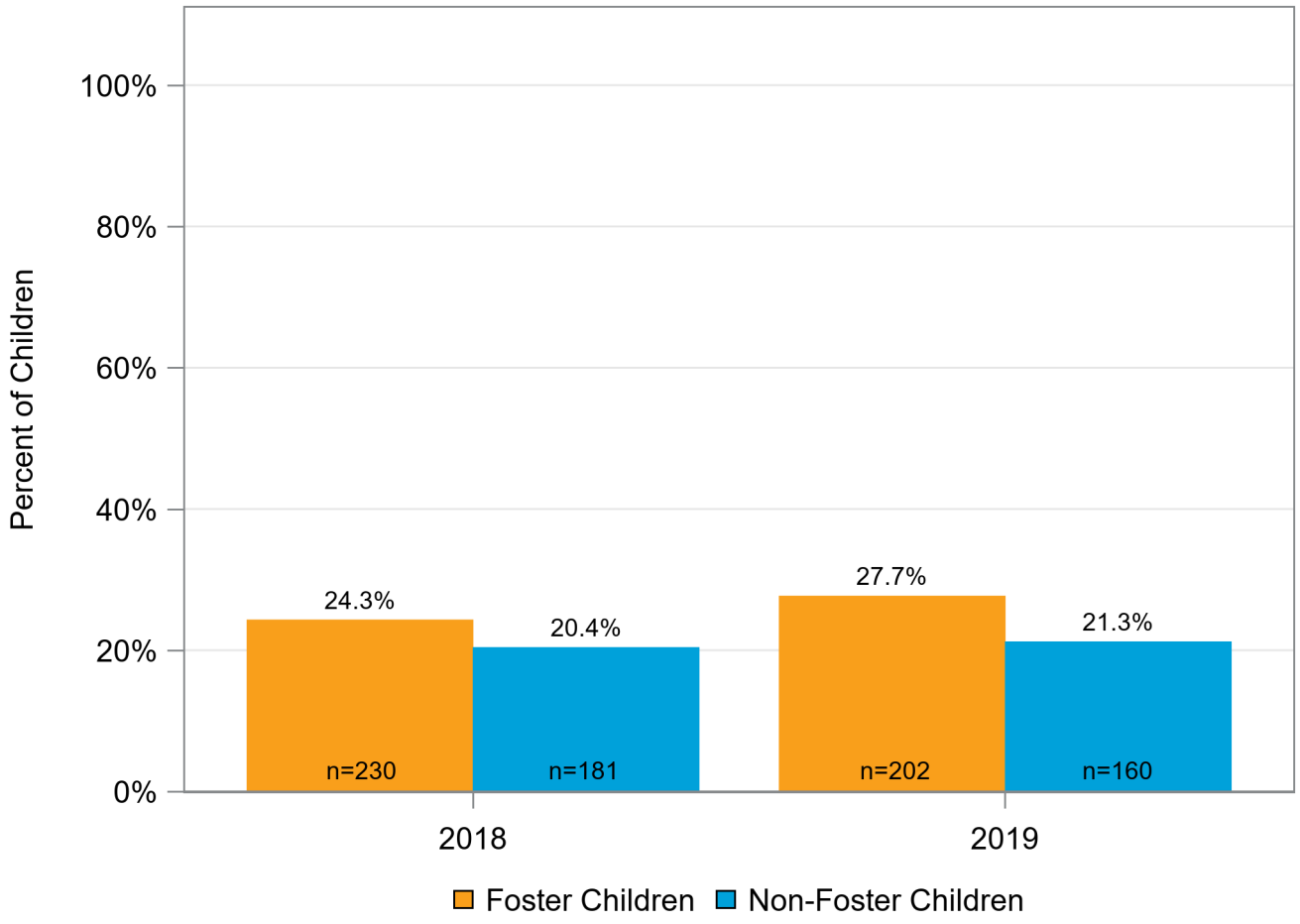
## *Reproductive Health*

### *Chlamydia Screening Among Women (CHL)*

Figure 3-14 shows that, among females aged 16 years or older who were identified as sexually active, 27.7 percent of foster children and 21.3 percent of non-foster children had at least one test for

chlamydia during the measurement year ($p$=0.20). Therefore, females in foster care and females not in foster care were similarly likely to undergo chlamydia screening, although screening rates were low for both groups. Furthermore, rates were similar between measurement years 2018 and 2019. The denominators, 202 foster children and 160 non-foster children, present a notable difference, suggesting that females in foster care were more likely to be identified as sexually active compared to their non-foster peers. Sexually active females were defined for this measure as females who had a pregnancy or a pregnancy test, who were dispensed a contraceptive prescription, or who responded affirmatively to a question about sexual activity.

**Figure 3-14—Rates of Chlamydia Screening in Women Among Foster Children and Non-Foster Children**



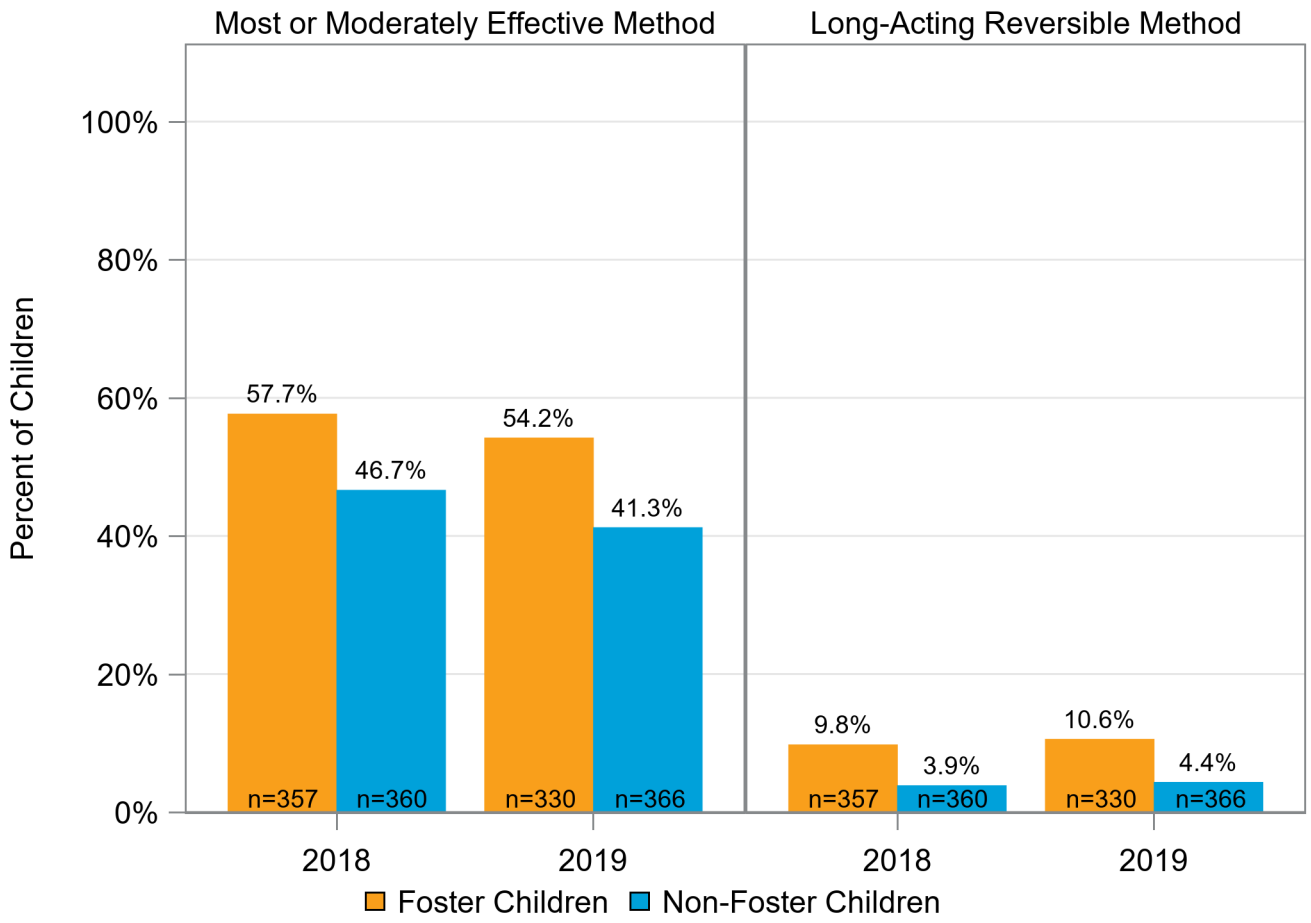

### *Contraception Care (CCW)*

Figure 3-15 shows that, among females aged 15 years or older who were at risk of unintended pregnancy, 54.2 percent of foster children were provided a most effective or moderately effective method of contraception, and 10.6 percent of foster children were provided a long-acting reversible method of contraception. In contrast, 41.3 percent of non-foster children were provided a most effective or moderately effective method of contraception, and 4.4 percent of non-foster children were provided a long-acting reversible method of contraception. Therefore, women in foster care were significantly more

likely to be provided the most or moderately effective contraceptive care ($p$=0.01) and significantly more likely to be provided long-acting reversible contraceptive care ($p$=0.003). The rate for most or moderately effective methods decreased by 3.5 percentage points for foster children between measurement years 2018 and 2019, whereas rates were consistent across years for long-acting reversible methods.

The denominators for foster children (n=330) and non-foster children (n=366) do not show the same disparity for the *Contraceptive Care* study indicators as the *Chlamydia Screening in Women* study indicator due to differences in the denominator criteria. The denominator for the *Contraceptive Care* study indicator does not consider sexual activity; it includes all women aged 15 years or older except for women who were infecund, were pregnant, or had just given birth. Therefore, the study population and comparison group denominators are more similar, since biological sex is matched between the groups and very few women met these exclusion criteria.

**Figure 3-15—Rates of Contraceptive Care Among Foster Children and Non-Foster Children**

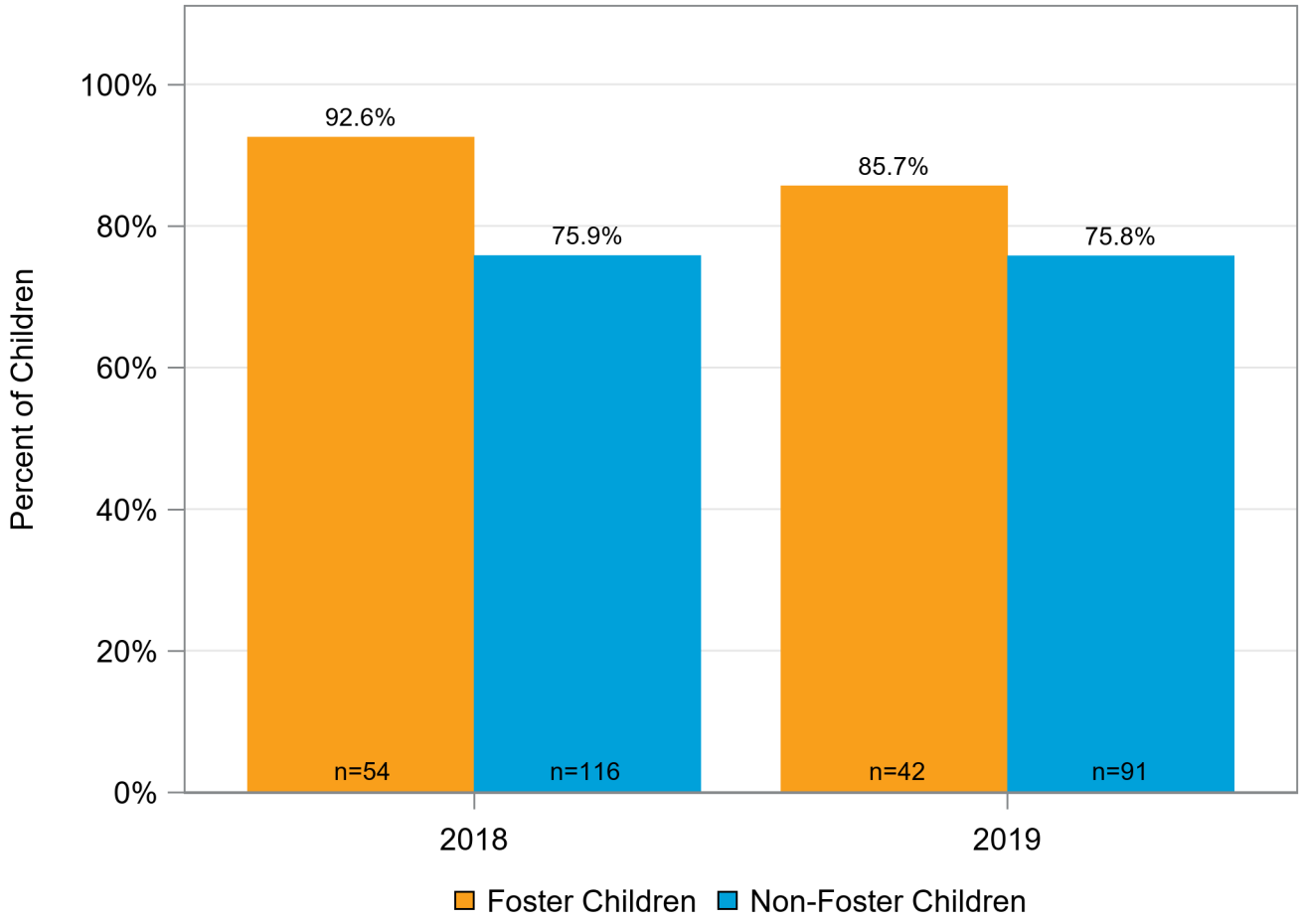



## *Respiratory Health*

### *Asthma Medication Ratio (AMR)*

Figure 3-16 shows that, among children aged 5 years or older who were identified as having persistent asthma, 85.7 percent of foster children and 75.8 percent of non-foster children had a ratio of controller medications to total asthma medications of 0.50 or greater during the measurement year. Findings were not statistically significant for measurement year 2019 ($p$=0.82), as the rate for foster children declined compared to measurement year 2018. However, the denominators also present interesting findings. More than twice as many non-foster children were identified as having persistent asthma as foster children, and the small denominator for foster children can contribute to large swings in rates.

**Figure 3-16—Rates of Appropriate Asthma Medication Ratio Among Foster Children and Non-Foster Children**



# 4. Conclusions and Recommendations

## *Conclusions*

SFY 2019–2020 is the fifth year of the Foster Care Focused Study and the second year to introduce a comparative analysis to a non-foster population. This study demonstrated that foster children have higher rates of healthcare utilization than comparable non-foster children for most study indicators. Study findings show that rate differences between the groups were greatest among dental measures, where the rates of foster children having annual dental visits and preventive dental services were over 20 percentage points higher than the rates for non-foster children.

SFY 2019–2020 is also the first year to introduce comparative analyses by measurement year for foster and non-foster children. Measurement year 2018 provided baseline data while DMAS transitioned from the Medallion 3.0 to the Medallion 4.0 program. Measurement year 2019 provided data from the first full year of the Medallion 4.0 program. This study showed that foster children had higher rates of healthcare utilization than non-foster children for two additional measures in measurement year 2019 compared to measurement year 2018: *Initiation of AOD Abuse or Dependence Treatment* and *30-Day Follow-Up After ED Visit for AOD Abuse or Dependence.* Please note, the rates for these measures have been suppressed from this report due to small numerators or denominators. Additionally, many rates were consistently higher for foster children across both measurement years.

For both measurement years, rate differences between foster children and non-foster children across study indicators persisted even after controlling for many demographic and health characteristics. The Commonwealth of Virginia requires foster parents to ensure that their foster children receive regular primary care and dental visits, which may explain some findings. However, study findings demonstrate greater healthcare utilization by foster children across a wide range of indicators. Greater education of foster children and foster parents about available healthcare services and higher prioritization of healthcare by foster parents given their mandated responsibilities[4-1] may also contribute to rate differences. Additionally, MCOs have specific health assessment and care coordination requirements for youth in foster care which may also contribute to rate differences.[4-2] Severity of clinical symptoms may have also contributed to rate differences between the groups, whereby foster children faced greater barriers to care and well-being, such as poverty and neglect, before entering the foster care system.[4-3] Therefore, even health problems common in children, such as poor oral health, may be particularly worse among foster children and more likely to trigger healthcare utilization while in the foster care system.

Despite generally high rates of healthcare utilization, foster children had a notably lower rate than non-foster children for one study indicator during both measurement years 2018 and 2019: *7-Day Follow-Up*

[4-1] Virginia Department of Social Services. Child and Family Services Manual: Providing Foster Care Services. Available at: https://www.dss.virginia.gov/files/division/dfs/fc/intro_page/guidance_manuals/fc/04_2013/Section_13_Providing_Foster_Care_Services.pdf. Accessed on: November 22, 2019.

[4-2] Commonwealth of Virginia Department of Medical Assistance Services. Medallion 4.0 Managed Care Services Agreement: July 1, 2020–June 30, 2021. Available at: https://www.dmas.virginia.gov/files/links/5400/Medallion%204.0%20Contract%20SFY21v2.pdf. Attachment XII. 403–404. Accessed on: January 6, 2020.

[4-3] American Academy of Pediatrics. Foster Health: Health Care for Children and Adolescents in Foster Care. Available at: https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/healthy-foster-care-america/Documents/FosteringHealthBook.pdf. Accessed on: December 12, 2019.

*After Hospitalization for Mental Illness*. The rate difference for this indicator was not statistically significant and was just 1.8 percentage points below the Virginia state rate (40.5 percent, Medicaid and CHIP managed care only).[4-4] However, the denominator size was small, and this finding may be clinically significant given the high-risk nature of this population. VDSS intends to provide ongoing medical treatment for foster children with mental or emotional disabilities,[4-5] yet this measure indicated that some foster children are not receiving follow-up for hospitalizations for mental illness in a manner that is as timely as other similar non-foster children, despite the severity and frequency of behavioral health conditions among foster children.

Note that HSAG identified a greater number of underlying health concerns among the foster children in this study compared to the non-foster children. To identify health characteristics for matching, HSAG compared the diagnoses of continuously enrolled foster children to continuously enrolled non-foster children. Before matching, foster children were substantially more likely to have diagnoses of behavioral health problems, such as anxiety disorders, intentional self-harm, psychotic disorders, and substance use disorders. Among the 19 study indicators assessed in the current study, 12 indicators focused on behavioral healthcare utilization, which helped capture areas of healthcare that are particularly relevant to foster children. Additionally, foster children were more likely to have a diagnosis of obesity or a metabolic syndrome, rheumatologic conditions, or congenital anomalies. Matching on these health characteristics helped reduce the influence of underlying health conditions on healthcare utilization rate differences between foster and non-foster children covered by DMAS.

Ultimately, comparing foster children to similar non-foster children offers a comprehensive investigation of the unique successes and challenges in healthcare for Virginia's foster children. The present rates for foster children can be understood in the context of the study indicator results for non-foster children, after accounting for Medicaid managed care enrollment, age, race, sex, region, MCO, and pertinent health characteristics. Furthermore, tracking rates over time provides insight into the impact of the Medallion 4.0 program and other variables correlated with time on healthcare utilization among foster children.

## *Study Limitations*

Study findings and conclusions may be affected by limitations related to the study design and source data. As such, caveats include, but are not limited to, the following:

- While the study population and the comparison group were matched on demographic and health characteristics relevant to the foster care population, these characteristics were not completely balanced. The results showed 2.6 percent more non-foster children were diagnosed with a congenital anomaly. Diagnosis of a congenital anomaly is likely to influence healthcare utilization and, therefore, may contribute to some observed rate differences between the study population and the comparison group. However, none of the study indicators specifically relate to congenital anomalies, so HSAG expects impact on the study indicator findings to be minimal.

[4-4] Centers for Medicare & Medicaid Services. Percentage of Discharges for Children Ages 6 to 17 Hospitalized for Treatment of Mental Illness or Intentional Self-Harm with a Follow-Up Visit within 7 and 30 Days After Discharge, as Submitted by States for the FFY 2019 Child Core Set Report.

[4-5] Virginia Department of Social Services. Child and Family Services Manual: Providing Foster Care Services. Available at: https://www.dss.virginia.gov/files/division/dfs/fc/intro_page/guidance_manuals/fc/04_2013/Section_13_Providing_Foster_Care_Services.pdf. Accessed on: November 22, 2019.

- Study indicator rates must be interpreted with caution given the denominator limitations. The covariate balance between the denominator-limited study population and the denominator-limited comparison group may be disrupted when one child in a matched pair qualifies for a study indicator denominator and the other child does not. The smaller the denominators, the greater the risk of imbalance between the foster and non-foster groups. The *p*-values presented in Table 1-1 aid in interpreting the significance of the rate differences after adjusting for demographic and health characteristics.
- Study indicator results may be influenced by the accuracy and timeliness of the administrative claims and encounter data used for calculations and must be interpreted within the broader context of the population. Study indicators are also based on HEDIS and CMS Core Set technical specifications, which may not comprehensively mirror the complete range of clinical practices recommended by AAP for children in foster care (e.g., an enhanced periodicity schedule customized to align with the needs of children in foster care).
  - Furthermore, selected study indicators were originally developed by NCQA and/or CMS to assess access to care or the degree to which care adhered to clinical guidelines. These measures were not necessarily developed to assess healthcare utilization. For example, most study indicators do not assess the frequency of service utilization; they only assess whether or not a visit occurred. Findings should be interpreted with respect to the intent of the HEDIS and CMS Core Set technical specifications.
- The accuracy of region and MCO characteristics may be influenced by the accuracy and timeliness of the administrative data. However, the current study's new methodology for MCO assignment, which is based on continuous enrollment, improves upon the accuracy of MCO assignment compared to the study for measurement year 2018. The transition between the Medallion 3.0 and the Medallion 4.0 programs occurred during measurement year 2018, such that some children were assigned to new MCOs. Therefore, the previous study used the latest MCO a member was enrolled with during the measurement year to assign MCO status.
  - Since the methodology for MCO assignment differs between measurement year 2018 and measurement year 2019, differences in rates stratified by MCO between the two studies may be attributable to this methodology change. However, during measurement year 2018, 90.7 percent of continuously enrolled foster children and 88.3 percent of continuously enrolled non-foster children were enrolled with only one MCO during the measurement year. Therefore, HSAG would not expect a large impact from this methodology change.
- The study population and comparison group were limited by several factors, including needs for continuous enrollment and having a comparable match; therefore, study findings are not generalizable to other foster children, to other non-foster children, or to other HEDIS or CMS Core Set measure calculations. Despite the limitations of the denominators, however, study indicator results are generalizable to the full study population and the comparison group.

## *Recommendations*

HSAG collaborated with DMAS to ensure that this study may inform current and future quality improvement actions affecting children in foster care. As such, HSAG offers the following recommendations, based on the findings detailed in this report:

- The current study was the first study of this design to assign MCO status based on continuous enrollment. Future studies should maintain the current study design that compares foster and non-

foster children, while displaying year-to-year comparisons to evaluate study indicator performance, particularly for indicators relevant to the goals of the American Academy of Pediatrics (AAP), VDSS, and Medallion 4.0.

- Both the current and the prior measurement year results showed that the foster children had lower rates for the *7-Day Follow-Up After Hospitalization for Mental Illness* measure compared to non-foster children. However, the measure results for the *30-Day Follow-Up After ED Visit for Mental Illness* measure were much higher for both the foster children and non-foster children indicating that follow-up care is being received. Specifically, the *7-Day Follow-Up After Hospitalization for Mental Illness* measure does require the member to follow up with a mental health practitioner while the *30-Day Follow-Up After ED Visit for Mental Illness* measure does not specify the provider type of the follow-up visit.
  - DMAS may consider identifying hospitals where the discharges are occurring and working with them to help facilitate targeted transition of care to ensure members are receiving the appropriate follow-up care and that members are seeking care from an appropriate mental health provider.
  - Additionally, DMAS may consider a provider network analysis specific to mental health practitioners to assess whether members have the appropriate access to a mental health provider after a hospital visit for mental illness.
- The present study results showed that foster children were more likely to be diagnosed with chronic conditions compared to non-foster children. DMAS may consider performing a focused study limited to a sub-group of the foster children who have a specific chronic condition (e.g., Developmental Disorder, Obesity and Metabolic Syndrome) compared to a sub-group of the non-foster children with the same chronic condition and conducting a Medical Record Review (MRR) analysis to ensure these children are getting the appropriate care for their chronic condition.

## *DMAS' Input on Prior Focus Study Recommendations*

As this is the fifth EQR Foster Care Focused Study, HSAG requested that DMAS provide feedback regarding quality improvement actions or initiatives related to the 2019–20 Foster Care Focused Study, and DMAS offered the following information.

### Data Recommendations

This year, DMAS has worked on a variety of measures with key state partners to improve services for youth in foster care. The agency has also welcomed the opportunity to utilize recommendations posed by HSAG in previous iterations of this report to further enhance services for youth. One such recommendation was to review outcomes during this study stratified by members in foster care and those youth who are not. These data have availed DMAS the opportunity to compare various outcomes including those related to behavioral health services, a focus of this study and key program area for DMAS.

This year also presented an opportunity for HSAG to provide comparative analyses by MCO, assisting in DMAS MCO foster care program oversight. DMAS also welcomed data presented in this report demonstrating results by geographic regions aligning with the Medallion 4.0 managed care program. These data are vital to evaluating foster care programs specific to Medallion 4.0 after its regional rollout, which concluded in December 2018.

## Community Partnerships

This year, enhanced child welfare community partnerships has also been a focus for DMAS. In July 2020, DMAS hosted its first Foster Care Partnership meeting with stakeholders from across the state including those from the Virginia Department of Social Services, the Virginia Commission on Youth, Local Departments of Social Services, Licensed Child Placement Agencies, DMAS MCOs, the Virginia Office of Children's Services, among others. This meeting provided an opportunity for various stakeholders to share their role in supporting youth in foster care and ignited a conversation on how stakeholders can collaborate to better serve youth throughout the Commonwealth.

After several key informant interviews to better assess the current needs of youth, DMAS developed two action groups to compliment the overall DMAS Foster Care Partnership. One group is a collaborative focused just on DMAS MCOs, providing them with the opportunity to have robust and ongoing discussion about their foster care programs. The other cross-sector group is focused on improving care coordination with the goal of enhancing communication between all state partners serving youth.

DMAS also continues to maintain managed care contract requirements that all MCOs have Foster Care liaisons with competencies in child welfare to support members in foster care and address foster care specific inquiries from stakeholders such as Local Departments of Social Services and Licensed Child Placement Agencies. DMAS also has a dedicated foster care email box to streamline and address inquiries related to foster care and adoption assistance services.

## Streamlining Foster Care Enrollment

DMAS and the Virginia Department of Social Services also collaborated during this reporting year to assist members in foster care with maintaining continuous enrollment when they age out of care. System updates were put into place to automatically enroll youth into continued coverage to ensure they maintained access to care during their transition period until age 26, should they choose. These efforts were vital to foster care transition planning, an area that DMAS continues to partner on with MCOs and child welfare stakeholders across the Commonwealth.

## Medallion 4.0 Program Oversight Efforts

DMAS continues to improve efforts to track and analyze a variety of data sources to evaluate Virginia's foster care Medicaid programs. New reporting measures were added to the Medallion 4.0 program that DMAS MCOs report on monthly including those related to care coordination and member outreach, service utilization and efforts to assist members who age out of the child welfare system with transition planning. These data are tied to both Medallion 4.0 contract compliance and program oversight, presenting DMAS with an opportunity to utilize various data sources, including those in this report, to better understand the status of Medicaid programs serving youth in foster care.

# Appendix A: Study Indicators

For reference, Appendix A provides the technical specifications set, description, denominator, and numerator(s) for each of the 19 study indicators calculated for continuously enrolled children in foster care and non-foster children, by domain.

## Primary Care

### *Children and Adolescents' Annual Access to PCPs (CAP)*

- *Specifications Set*: 2019 HEDIS technical specifications, with study-specific continuous enrollment modifications
- *Description:* The percentage of members who had a visit with a PCP
- *Denominator:* Members in the study population split into four groups: children 12–24 months, children 25 months–6 years, children 7–11 years, and adolescents 12–19 years as of the end of the measurement year
- *Numerator:* For children 12–24 months and 25 months–6 years, one or more visits with a PCP (Ambulatory Visits Value Set) during the measurement year; for children 7–11 years and 12–18 years, one or more visits with a PCP (Ambulatory Visits Value Set, Telephone Visits Value Set, Online Assessment Value Set) during the measurement year or the year prior to the measurement year

## Oral Health

### *Annual Dental Visit (ADV)*

- *Specifications Set:* HEDIS 2020 technical specifications, with study-specific continuous enrollment modifications
- *Description:* The percentage of members who had at least one dental visit during the measurement year
- *Denominator:* Members in the study population who are at least 2 years old as of the end of the measurement year
- *Numerator:* One or more visits with a dental practitioner during the measurement year

### *Preventive Dental Services (PDENT-CH)*

- *Specifications Set:* 2020 CMS Child Core Set technical specifications, with study-specific continuous enrollment modifications

- *Description:* Percentage of members who received at least one preventive dental service during the measurement year
- *Denominator:* Members in the study population who are at least one year old and who are eligible for EPSDT services
- *Numerator:* One or more instances of preventive dental service by or under the supervision of a dentist

# Behavioral Health

## *7-Day Follow-Up After Hospitalization for Mental Illness (FUH)*

- *Specifications Set:* 2020 CMS Adult and Child Core Set technical specifications, with study-specific continuous enrollment modifications
- *Description:* Percentage of discharges for members who were hospitalized for treatment of selected mental illness or intentional self-harm diagnosis and who had a follow-up visit with a mental health practitioner
- *Denominator:* Discharges of the members in the study population who are at least 6 years old but no older than 17 years old as of the date of the discharge with a hospitalization for treatment of selected mental illness or intentional self-harm diagnosis (Mental Illness Value Set, Intentional Self-Harm Dataset)
- *Numerator:* A follow-up visit with a mental health practitioner (Mental Health Practitioner Value Set) within seven days of discharge

## *30-Day Follow-Up After ED Visit for Mental Illness (FUM)*

- *Specifications Set:* 2020 CMS Adult Core Set technical specifications, with study-specific continuous enrollment modifications
- *Description:* Percentage of ED visits for members with a principal diagnosis of mental illness or intentional self-harm who had a follow-up visit for mental illness
- *Denominator:* ED visits (ED Value Set) of the members in the study population who are at least 6 years old as of the date of the ED visit with a principal diagnosis of mental illness or intentional self-harm (Mental Illness Value Set, Intentional Self Harm Dataset)
- *Numerator:* A follow-up visit with any practitioner, with a principal diagnosis of a mental health disorder or with a principal diagnosis of intentional self-harm (Mental Illness Value Set, Intentional Self Harm Dataset) and any diagnosis of a mental health disorder within 30 days after the ED visit

## *Metabolic Monitoring for Children and Adolescents on Antipsychotics (APM)*

- *Specifications Set:* HEDIS 2020 technical specifications, with study-specific continuous enrollment modifications

- *Description:* Percentage of members who had two or more antipsychotic prescriptions and had metabolic testing
- *Denominator:* Members in the study population who are at least one year old by the end of the measurement year and who have two or more antipsychotic prescriptions (Antipsychotic Medications List, Antipsychotic Combination Medications List) during the measurement year
- *Numerator:* At least one test for blood glucose (Glucose Lab Test Value Set, Glucose Test Result or Finding Value Set) or hemoglobin A1c (HbA1c) (HbA1c Lab Test Value Set, HbA1c Test Result or Finding Value Set) AND at least one test for low-density lipoprotein cholesterol (LDL-C) (LDL-C Lab Test Value Set, LDL-C Test Result or Finding Value Set) or cholesterol (Cholesterol Lab Test Value Set, Cholesterol Test Result or Finding Value Set)

## *Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics (APP)*

- *Specifications Set:* 2020 CMS Child Core Set technical specifications, with study-specific continuous enrollment modifications and a four-month look-back period from the earliest prescription dispensing data for eligible children
- *Description:* Percentage of members who had a new prescription for an antipsychotic medication and had documentation of psychosocial care as first-line treatment
- *Denominator:* Members in the study population who were at least one year old by the end of the measurement year and who have a new prescription for an antipsychotic medication (Antipsychotic Medications List, Antipsychotic Combination Medications List) during the intake period
- *Numerator:* Documentation of psychosocial care (Psychosocial Care Value Set) during the look-back period

## *Follow-Up Care for Children Prescribed ADHD Medication (ADD)*

- *Specifications Set:* 2020 CMS Child Core Set technical specifications, with study-specific continuous enrollment modifications and modifications to the follow-up windows
- *Description:* Percentage of members newly prescribed ADHD medication who had at least three follow-up visits within a 10-month period, one of which was within one, two, three, six, or nine months of when the first ADHD medication was dispensed
- *Denominator:* Members in the study population who have a prescription for ADHD medication (ADHD Medications List) and who are ages 6 to 12 years old as of the earliest prescription dispensing date

- *Numerator:*
  - *One-Month Follow-Up*: An outpatient, intensive outpatient, or partial hospitalization follow-up visit with a practitioner with prescribing authority, within one month after the earliest prescription dispensing date
  - *Two-Month Follow-Up*: An outpatient, intensive outpatient, or partial hospitalization follow-up visit with a practitioner with prescribing authority, within two months after the earliest prescription dispensing date
  - *Three-Month Follow-Up*: An outpatient, intensive outpatient, or partial hospitalization follow-up visit with a practitioner with prescribing authority, within three months after the earliest prescription dispensing date
  - *Six-Month Follow-Up*: An outpatient, intensive outpatient, or partial hospitalization follow-up visit with a practitioner with prescribing authority, within six months after the earliest prescription dispensing date
  - *Nine-Month Follow-Up*: An outpatient, intensive outpatient, or partial hospitalization follow-up visit with a practitioner with prescribing authority, within nine months after the earliest prescription dispensing date

# Substance Use

## *30-Day Follow-Up After ED Visit for AOD Abuse or Dependence (FUA)*

- *Specifications Set:* 2020 CMS Adult Core Set technical specifications, with study-specific continuous enrollment modifications
- *Description:* Percentage of ED visits for members with a principal diagnosis of AOD use or dependence who had a follow-up visit for AOD use or dependence
- *Denominator:* ED visits of the members in the study population who are at least 13 years of age or older as of the date of the ED visit with an ED visit (ED Value Set) with a principal diagnosis of AOD use or dependence (AOD Abuse and Dependence Value Set)
- *Numerator:* A follow-up visit with any practitioner, with a principal diagnosis of AOD within 30 days after the ED visit, including visits that occur on the date of the ED visit

## *Initiation and Engagement of AOD Abuse or Dependence Treatment (IET)*

- *Specifications Set:* 2020 CMS Adult Core Set technical specifications, with study-specific continuous enrollment modifications and a two-month look-back period from the earliest eligible encounter with a diagnosis of AOD use or dependence for all eligible children
- *Description:* Percentage of members with a new episode of AOD use or dependence who received initiation of AOD treatment and engagement of AOD treatment
- *Denominator:* Members in the study population who are at least 13 years old as of the end of the measurement year with a new episode of AOD use or dependence during the measurement year (AOD Abuse and Dependence Value Set, Opioid Abuse and Dependence Value Set, Other Drug Abuse and Dependence Value Set)

- *Numerator:*
  - *Initiation:* An initiation visit, defined as an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization, telehealth or medication treatment within 14 days of diagnosis
  - *Engagement:* An initiation visit AND two or more additional AOD services or medication treatment within 34 days of the initiation visit

# Reproductive Health

## *Chlamydia Screening Among Women (CHL)*

- *Specifications Set:* 2020 CMS Child Core Set technical specifications, with study-specific continuous enrollment modifications and limitation to females aged 16 years and older
- *Description:* Percentage of women who were identified as sexually active and who had at least one test for chlamydia during the measurement year
- *Denominator:* Members in the study population who are female, at least 16 years or older as of the end of the measurement year, and are identified as sexually active (Pregnancy Value Set, Sexual Activity Dataset, Pregnancy Tests Value Set)
- *Numerator:* At least one chlamydia test (Chlamydia Tests Value Set) during the measurement year

## *Contraceptive Care (CCW)*

- *Specifications Set:* 2020 CMS Child Core Set technical specifications, with study-specific continuous enrollment modifications and limitation to females aged 15 years and older
- *Description:* Percentage of women at risk of unintended pregnancy that were provided a most effective or moderately effective method of contraception or were provided a long-acting reversible method of contraception
- *Denominator:* Members in the study population who are female, at least 15 years or older as of the end of the measurement year, and are identified as being at risk of unintended pregnancy
- *Numerator:*
  - *Most effective or moderately effective method:* Provision of a most effective method of contraception (i.e., sterilization, contraceptive implants, or intrauterine devices or systems) or moderately effective method of contraception (i.e., injectables, oral pills, patch, ring, or diaphragm)
  - *Long-acting reversible method:* Provision of a long-acting reversible method of contraception (i.e., contraceptive implants or intrauterine devices or systems)

# Respiratory Health

## *Asthma Medication Ratio (AMR)*

- *Specifications Set:* 2020 CMS Child Core Set technical specifications, with study-specific continuous enrollment modifications and a one-year look-back period for all eligible children
- *Description:* Percentage of members who were identified as having persistent asthma and had a ratio of controller medications to total asthma medications of 0.50 or greater during the measurement year
- *Denominator:* Members in the study population who are at least 5 years old as of the end of the measurement year and are identified as having persistent asthma
- *Numerator:* Medication ratio of controller medications (Asthma Controller Medications List) to total asthma medications (Asthma Controller Medications List and Asthma Reliever Medications List) of 0.50 or greater during the measurement year

# Appendix B: Characteristics of the Non-Foster Children Comparison Group

Appendix B lists the following reference information related to HSAG's approach to matching the population of continuously enrolled non-foster children (i.e., the comparison group) with the continuously enrolled foster children (i.e., the study population):

- Demographic characteristics of continuously enrolled non-foster children compared to continuously enrolled foster children prior to matching (Table B-1)
- Detailed information on the health characteristic methodology, including the health characteristics of continuously enrolled non-foster children compared to continuously enrolled foster children prior to matching (Table B-2)
- Demographic and health characteristics of the final matched comparison group compared to the study population (Table B-3 and Table B-4)
- Detailed findings and discussion of the covariate balance checks

## Characteristics Before Matching

Table B-1 presents the findings of the demographic characteristic assessment of continuously enrolled non-foster children compared to continuously enrolled foster children, prior to matching.

**Table B-1—Demographic Distribution of Foster Children (n=2,847) and Non-Foster Children (n=453,106) Continuously Enrolled in Managed Care, Before Matching**

| Category | Foster Children | | Non-Foster Children | |
|---|---|---|---|---|
| | Count | Percent | Count | Percent |
| **Age Category** | | | | |
| ≤ 2 years | 470 | 16.5% | 87,029 | 19.2% |
| 3 to 5 years | 484 | 17.0% | 79,868 | 17.6% |
| 6 to 10 years | 690 | 24.2% | 131,226 | 29.0% |
| 11 to 13 years | 425 | 14.9% | 75,114 | 16.6% |
| ≥ 14 years | 778 | 27.3% | 79,869 | 17.6% |
| **Sex** | | | | |
| Male | 1,544 | 54.2% | 228,083 | 50.3% |
| Female | 1,303 | 45.8% | 225,023 | 49.7% |
| **Race** | | | | |
| Black or African American | 1,026 | 36.0% | 176,872 | 39.0% |
| White | 1,757 | 61.7% | 242,272 | 53.5% |
| Other | 64 | 2.2% | 33,962 | 7.5% |
| **Region** | | | | |
| Central | 652 | 22.9% | 114,293 | 25.2% |
| Charlottesville/Western | 540 | 19.0% | 53,301 | 11.8% |

| Category | Foster Children | | Non-Foster Children | |
|---|---|---|---|---|
| | Count | Percent | Count | Percent |
| Northern/Winchester | 375 | 13.2% | 107,664 | 23.8% |
| Roanoke/Alleghany | 395 | 13.9% | 43,619 | 9.6% |
| Southwest | 384 | 13.5% | 27,688 | 6.1% |
| Tidewater | NR | NR | NR | NR |
| Unknown | S | S | S | S |
| **Continuously Enrolled MCO** | | | | |
| Aetna | 190 | 6.7% | 34,985 | 7.7% |
| HealthKeepers | 850 | 29.9% | 155,005 | 34.2% |
| Magellan | 103 | 3.6% | 15,105 | 3.3% |
| Optima | 648 | 22.8% | 97,751 | 21.6% |
| Virginia Premier | 738 | 25.9% | 102,518 | 22.6% |
| UnitedHealthcare | 171 | 6.0% | 38,971 | 8.6% |
| Other | 147 | 5.2% | 8,771 | 1.9% |

NR indicates that the counts and percentages were not reported in order to ensure counts and percentages for the suppressed category could not be deduced.
S indicates that the count and percent were suppressed due to numerators less than or equal to 10.

## *Health Characteristic Methodology*

In order to identify a comparison group with similar health characteristics to the continuously enrolled foster children, HSAG identified primary diagnoses which occurred at different rates with the claims for continuously enrolled foster children and the claims for continuously enrolled non-foster children. For children older than two years of age as of January 1, 2019, the claims assessment period was January 1, 2018, through December 31, 2018. For children two years of age or younger as of January 1, 2019, the claims assessment period was January 1, 2019, through December 31, 2019. These diagnoses were grouped into 12 categories using CCS:[B-1]

- **Adjustment Disorder**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Adjustment disorders [5.1]
- **ADHD**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Attention deficit, conduct, and disruptive behavior disorders [5.3]
  - Impulse control disorders not elsewhere classified [5.7]
- **Anxiety Disorder**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Anxiety disorders [5.2]
- **Congenital Anomaly**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:

[B-1] Agency for Healthcare Research and Quality. Clinical Classifications Software (CCS) for ICD-10-PCS (beta version). Available at: www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp. Accessed on: November 14, 2019.

  - Cardiac and circulatory congenital anomalies [14.1]
  - Digestive congenital anomalies [14.2]
  - Genitourinary congenital anomalies [14.3]
  - Nervous system congenital anomalies [14.4]
  - Other congenital anomalies [14.5]
- **Developmental Disorder**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Developmental disorders [5.5]
  - Disorders usually diagnosed in infancy, childhood, or adolescence [5.6]
- **Intentional Self-Harm**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Suicide and intentional self-inflicted injury [5.13]
- **Mood Disorder**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Mood disorders [5.8]
- **Obesity and Metabolic Syndrome**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Diabetes mellitus without complication [3.2]
  - Diabetes mellitus with complications [3.3]
  - Other endocrine disorders [3.4]
  - Nutritional deficiencies [3.5]
  - Disorders of lipid metabolism [3.6]
  - Other nutritional; endocrine; and metabolic disorders [3.11]
- **Other Mental Health Disorder**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Miscellaneous mental disorders [5.15]
- **Psychotic Disorder**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Schizophrenia and other psychotic disorders [5.10]
- **Substance Use Disorder**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Alcohol-related disorders [5.11]
  - Substance-related disorders [5.12]
- **Rheumatologic Condition**: At least one primary diagnosis during the claims assessment period meeting any of the following second-level CCS Categories:
  - Other connective tissue disease [13.8]

Additionally, since mental health diagnoses featured prominently among claims for the foster children, HSAG also sought to ensure comparability in the severity of mental health conditions between the foster and non-foster children. Therefore, HSAG also identified ED visits and acute inpatient visits with a primary diagnosis relating to mental health among both groups. These visits were defined as:

- **ED Visit for Mental Health**: At least one claim during the claims assessment period meeting both of the following conditions:
  - The claim's revenue code starts with: [045].
  - The claim's primary diagnosis is included in the HEDIS 2019 Mental Health Diagnosis Value Set.
- **Acute Inpatient Visit for Mental Health**: At least one claim during the claims assessment period meeting all the following conditions:
  - The claim's revenue code is included in the HEDIS 2019 Inpatient Stay Value Set.
  - The claim's revenue code and type of bill code is not included in the HEDIS 2019 Nonacute Inpatient Stay Value Set.
  - The claim's primary diagnosis is included in the HEDIS 2019 Mental Health Diagnosis Value Set.

Table B-2 presents the health characteristic assessment findings for continuously enrolled foster and non-foster children, prior to matching.

**Table B-2—Distribution of Health Characteristics Among Foster Children (n=2,847) and Non-Foster Children (n=453,106) Continuously Enrolled in Managed Care, Before Matching**

| Category | Foster Children | | Non-Foster Children | |
|---|---|---|---|---|
| | Count | Percent | Count | Percent |
| Adjustment Disorder | 1,126 | 39.6% | 14,769 | 3.3% |
| ADHD | 1,204 | 42.3% | 42,337 | 9.3% |
| Anxiety Disorder | 797 | 28.0% | 12,849 | 2.8% |
| Congenital Anomaly | 163 | 5.7% | 14,322 | 3.2% |
| Developmental Disorder | 791 | 27.8% | 33,358 | 7.4% |
| Intentional Self-Harm | 112 | 3.9% | 1,899 | 0.4% |
| Mood Disorder | 757 | 26.6% | 13,866 | 3.1% |
| Obesity and Metabolic Syndrome | 636 | 22.3% | 49,432 | 10.9% |
| Other Mental Health Disorder | 279 | 9.8% | 2,316 | 0.5% |
| Psychotic Disorder | 33 | 1.2% | 484 | 0.1% |
| Rheumatologic Condition | 201 | 7.1% | 21,992 | 4.9% |
| Substance Use Disorder | 93 | 3.3% | 1,089 | 0.2% |
| ED Visit for Mental Health | 49 | 1.7% | 899 | 0.2% |
| Acute Inpatient Visit for Mental Health | 141 | 5.0% | 1,681 | 0.4% |

## Characteristics After Matching

Table B-3 presents the demographic characteristic assessment findings for the final study population and comparison group, after matching the populations of continuously enrolled foster and non-foster children.

**Table B-3—Demographic Distribution of Foster Children (n=2,798) and Non-Foster Children (n=2,798) Continuously Enrolled in Managed Care, After Matching**

| Category | Foster Children | | Non-Foster Children | | Chi- square Balance Test *p* | Standardized Differences Assessment *d* |
|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | | |
| **Age Category** | | | | | | |
| ≤ 2 years | 455 | 16.3% | 455 | 16.3% | 1.00 | 0.000 |
| 3 to 5 years | 470 | 16.8% | 470 | 16.8% | | 0.000 |
| 6 to 10 years | 682 | 24.4% | 682 | 24.4% | | 0.000 |
| 11 to 13 years | 419 | 15.0% | 419 | 15.0% | | 0.000 |
| ≥ 14 years | 772 | 27.6% | 772 | 27.6% | | 0.000 |
| **Sex** | | | | | | |
| Male | 1,520 | 54.3% | 1,507 | 53.9% | 0.73 | 0.009 |
| Female | 1,278 | 45.7% | 1,291 | 46.1% | | -0.009 |
| **Race** | | | | | | |
| Black or African American | 1,005 | 35.9% | 999 | 35.7% | 0.22 | 0.004 |
| White | 1,729 | 61.8% | 1,714 | 61.3% | | 0.011 |
| Other | 64 | 2.3% | 85 | 3.0% | | -0.047 |
| **Region** | | | | | | |
| Central | 647 | 23.1% | 650 | 23.2% | 0.67 | -0.003 |
| Charlottesville/Western | 530 | 18.9% | 504 | 18.0% | | 0.024 |
| Northern/Winchester | 373 | 13.3% | 410 | 14.7% | | -0.038 |
| Roanoke/Alleghany | 380 | 13.6% | 358 | 12.8% | | 0.023 |
| Southwest | 378 | 13.5% | 375 | 13.4% | | 0.003 |
| Tidewater | 490 | 17.5% | 501 | 17.9% | | -0.010 |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | 187 | 6.7% | 187 | 6.7% | 1.00 | 0.000 |
| HealthKeepers | 846 | 30.2% | 846 | 30.2% | | 0.000 |
| Magellan | 100 | 3.6% | 100 | 3.6% | | 0.000 |
| Optima | 639 | 22.8% | 639 | 22.8% | | 0.000 |
| Virginia Premier | 725 | 25.9% | 725 | 25.9% | | 0.000 |
| UnitedHealthcare | 166 | 5.9% | 166 | 5.9% | | 0.000 |
| Other | 135 | 4.8% | 135 | 4.8% | | 0.000 |

The age category and MCO distributions were identical in the study population and the comparison group due to exact matching on these characteristics. Neither the covariate-level Chi-square tests nor the standardized differences test identified any significant differences in the demographic characteristics of the matched foster and non-foster children.

Table B-4 presents the health characteristic assessment findings for the final study population and comparison group, after matching continuously enrolled foster and non-foster children.

**Table B-4—Distribution of Health Characteristics Among Foster Children (n=2,798) and Non-Foster Children (n=2,798) Continuously Enrolled in Managed Care, After Matching**

| Category | Foster Children | | Non-Foster Children | | Chi- square Balance Test *p* | Standardized Differences Assessment *d* |
|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | | |
| Adjustment Disorder | 1,083 | 38.7% | 1,116 | 39.9% | 0.37 | -0.024 |
| ADHD | 1,171 | 41.9% | 1,238 | 44.2% | 0.07 | -0.048 |
| Anxiety Disorder | 770 | 27.5% | 707 | 25.3% | 0.06 | 0.051 |
| Congenital Anomaly | 154 | 5.5% | 227 | 8.1% | <0.001* | -0.104* |
| Developmental Disorder | 756 | 27.0% | 807 | 28.8% | 0.13 | -0.041 |
| Intentional Self-Harm | 109 | 3.9% | 91 | 3.3% | 0.19 | 0.035 |
| Mood Disorder | 734 | 26.2% | 691 | 24.7% | 0.19 | 0.035 |
| Obesity and Metabolic Syndrome | 616 | 22.0% | 695 | 24.8% | 0.01* | -0.067 |
| Other Mental Health Disorder | 253 | 9.0% | 186 | 6.6% | <0.001* | 0.089 |
| Psychotic Disorder | 32 | 1.1% | 26 | 0.9% | 0.43 | 0.021 |
| Substance Use Disorder | 88 | 3.1% | 81 | 2.9% | 0.58 | 0.015 |
| Rheumatologic Condition | 198 | 7.1% | 195 | 7.0% | 0.88 | 0.004 |
| ED Visit for Mental Health | 47 | 1.7% | 39 | 1.4% | 0.38 | 0.023 |
| Acute Inpatient Visit for Mental Health | 135 | 4.8% | 104 | 3.7% | 0.04* | 0.055 |

* Indicates that the covariate balance test found imbalance between the foster and non-foster children.

The health characteristics distributions for the study population and the comparison group were balanced by matching, except for congenital anomalies. Both the Chi-square test ($p<0.001$) and the standardized differences assessment ($d=-0.104$) identified imbalance for this characteristic, where 5.5 percent (n=154) of foster children and 8.1 percent (n=227) of non-foster children had a claim with a primary diagnosis of a congenital anomaly. The omnibus test likewise identified imbalance in at least one covariate ($p<0.001$). Diagnosis of a congenital anomaly is likely to influence healthcare utilization and other lifestyle factors and, therefore, may contribute to observed differences between the study population and the comparison group. However, none of the study indicators specifically relate to congenital anomalies, so HSAG expects minimal impact on the study indicator findings.

The Chi-square test also suggested imbalance for other mental health disorders ($p<0.001$). However, the standardized differences assessment did not identify any imbalance in other mental health disorders. This test does not rely on sample size to determine imbalance. Since the sample size is large (2,798 pairs of foster and non-foster children), and larger sample sizes increase the sensitivity of the Chi-square and omnibus tests, the statistical tests are particularly sensitive to small differences in distribution and should be interpreted with caution. Since the chi-square test and the standardized differences test disagreed on whether this characteristic was imbalanced, HSAG did not consider the balance of other mental health disorders as a limitation.

# Appendix C: Detailed Findings by Study Indicator

Appendix C provides the numerators, denominators, and rates for each study indicator applicable to continuously enrolled non-foster children (i.e., the comparison group) and continuously enrolled foster children (i.e., the study population). Results are presented for all children in each indicator's denominator, as well as stratified by age category and the child's continuously enrolled MCO. The age categories included in each table differ by measure due to the age restrictions outlined in the technical specifications for each measure, as shown in Appendix A. The value "NC" indicates that the rate could not be calculated due to a denominator of zero. The value "S" indicates that the numerator, denominator or rate was suppressed due to a numerator or denominator less than or equal to 10. The value "NR" indicates that the numerator, denominator or rate could not be reported in order to prevent a suppressed numerator, denominator or rate in another category from being deduced.

## Primary Care

**Table C-1—Rates of Children and Adolescents' Annual Access to PCPs Among Eligible Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 2,214 | 2,280 | 97.1% | 2,278 | 2,438 | 93.4% |
| **Age Category** | | | | | | |
| ≤ 2 years | 427 | 439 | 97.3% | 408 | 431 | 94.7% |
| 3 to 5 years | 434 | 465 | 93.3% | 412 | 462 | 89.2% |
| 6 to 10 years | 541 | 552 | 98.0% | 531 | 561 | 94.7% |
| 11 to 13 years | 298 | 302 | 98.7% | 326 | 344 | 94.8% |
| ≥ 14 years | 514 | 522 | 98.5% | 601 | 640 | 93.9% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | 135 | 140 | 96.4% | 140 | 149 | 94.0% |
| HealthKeepers | 696 | 717 | 97.1% | 695 | 751 | 92.5% |
| Magellan | 57 | 61 | 93.4% | 59 | 70 | 84.3% |
| Optima | 523 | 539 | 97.0% | 540 | 570 | 94.7% |
| Virginia Premier | 589 | 603 | 97.7% | 607 | 652 | 93.1% |
| UnitedHealthcare | 118 | 123 | 95.9% | 132 | 137 | 96.4% |
| Other | 96 | 97 | 99.0% | 105 | 109 | 96.3% |

## Oral Health

**Table C-2—Rates of Annual Dental Visits Among Eligible Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 2,280 | 2,623 | 86.9% | 1,635 | 2,579 | 63.4% |
| **Age Category** | | | | | | |
| ≤ 2 years | 254 | 333 | 76.3% | 121 | 278 | 43.5% |
| 3 to 5 years | 406 | 465 | 87.3% | 317 | 462 | 68.6% |
| 6 to 10 years | 613 | 674 | 90.9% | 456 | 671 | 68.0% |
| 11 to 13 years | 362 | 407 | 88.9% | 276 | 411 | 67.2% |
| ≥ 14 years | 645 | 744 | 86.7% | 465 | 757 | 61.4% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | 137 | 169 | 81.1% | 92 | 170 | 54.1% |
| HealthKeepers | 701 | 791 | 88.6% | 515 | 778 | 66.2% |
| Magellan | 71 | 86 | 82.6% | 44 | 84 | 52.4% |
| Optima | 527 | 604 | 87.3% | 364 | 592 | 61.5% |
| Virginia Premier | 604 | 692 | 87.3% | 454 | 678 | 67.0% |
| UnitedHealthcare | 126 | 153 | 82.4% | 83 | 152 | 54.6% |
| Other | 114 | 128 | 89.1% | 83 | 125 | 66.4% |

**Table C-3—Rates of Preventive Dental Services Among Eligible Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 2,284 | 2,797 | 81.7% | 1,570 | 2,778 | 56.5% |
| **Age Category** | | | | | | |
| ≤ 2 years | 289 | 454 | 63.7% | 143 | 435 | 32.9% |
| 3 to 5 years | 402 | 470 | 85.5% | 310 | 470 | 66.0% |
| 6 to 10 years | 610 | 682 | 89.4% | 448 | 682 | 65.7% |
| 11 to 13 years | 359 | 419 | 85.7% | 262 | 419 | 62.5% |
| ≥ 14 years | 624 | 772 | 80.8% | 407 | 772 | 52.7% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | 135 | 187 | 72.2% | 93 | 183 | 50.8% |
| HealthKeepers | 717 | 846 | 84.8% | 498 | 841 | 59.2% |
| Magellan | 74 | 99 | 74.7% | 38 | 99 | 38.4% |
| Optima | 529 | 639 | 82.8% | 345 | 635 | 54.3% |
| Virginia Premier | 586 | 725 | 80.8% | 436 | 723 | 60.3% |
| UnitedHealthcare | 129 | 166 | 77.7% | 77 | 163 | 47.2% |
| Other | 114 | 135 | 84.4% | 83 | 134 | 61.9% |

# Behavioral Health

**Table C-4—Rates of 7-Day Follow-Up After Hospitalization for Mental Illness Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 41 | 106 | 38.7% | 29 | 65 | 44.6% |
| **Age Category** | | | | | | |
| 6 to 10 years | 11 | 19 | 57.9% | S | S | S |
| 11 to 13 years | 11 | 32 | 34.4% | S | S | S |
| ≥ 14 years | 18 | 54 | 33.3% | 19 | 43 | 44.2% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | S | S | S | S | S | S |
| Magellan | S | S | S | S | S | S |
| Optima | S | S | S | S | S | S |
| Virginia Premier | S | S | S | S | S | S |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

**Table C-5—Rates of 30-Day Follow-Up After ED Visit for Mental Illness Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 50 | 54 | 92.6% | 26 | 31 | 83.9% |
| **Age Category** | | | | | | |
| 6 to 10 years | 14 | 15 | 93.3% | S | S | S |
| 11 to 13 years | 12 | 13 | 92.3% | S | S | S |
| ≥ 14 years | 23 | 25 | 92.0% | 19 | 20 | 95.0% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 16 | 16 | 100% | S | S | S |
| Magellan | S | S | S | 0 | 0 | NC |
| Optima | S | S | S | S | S | S |
| Virginia Premier | 17 | 19 | 89.5% | 12 | 15 | 80.0% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

**Table C-6—Rates of Metabolic Monitoring for Children and Adolescents on Antipsychotics Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 117 | 287 | 40.8% | 43 | 143 | 30.1% |
| **Age Category** | | | | | | |
| ≤ 2 years | 0 | 0 | NC | 0 | 0 | NC |
| 3 to 5 years | S | S | S | S | S | S |
| 6 to 10 years | 29 | 85 | 34.1% | S | S | S |
| 11 to 13 years | 37 | 74 | 50.0% | S | S | S |
| ≥ 14 years | 46 | 116 | 39.7% | 21 | 54 | 38.9% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 37 | 95 | 38.9% | 13 | 50 | 26.0% |
| Magellan | S | S | S | S | S | S |
| Optima | 22 | 67 | 32.8% | S | S | S |
| Virginia Premier | 32 | 64 | 50.0% | 15 | 46 | 32.6% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

**Table C-7—Rates of Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 68 | 75 | 90.7% | 21 | 31 | 67.7% |
| **Age Category** | | | | | | |
| ≤ 2 years | 0 | 0 | NC | 0 | 0 | NC |
| 3 to 5 years | S | S | S | S | S | S |
| 6 to 10 years | 22 | 23 | 95.7% | S | S | S |
| 11 to 13 years | 17 | 17 | 100% | S | S | S |
| ≥ 14 years | 26 | 30 | 86.7% | S | S | S |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 27 | 29 | 93.1% | S | S | S |
| Magellan | S | S | S | 0 | 0 | NC |
| Optima | 14 | 18 | 77.8% | S | S | S |
| Virginia Premier | S | S | S | S | S | S |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

**Table C-8—Rates of Initiation of Follow-Up Care Within One Month for Children Prescribed ADHD Medication Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 97 | 120 | 80.8% | 97 | 123 | 78.9% |
| **Age Category** | | | | | | |
| 6 to 10 years | 75 | 88 | 85.2% | 72 | 92 | 78.3% |
| 11 to 13 years* | 22 | 32 | 68.8% | 25 | 31 | 80.6% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 36 | 45 | 80.0% | 37 | 45 | 82.2% |
| Magellan | S | S | S | S | S | S |
| Optima | 20 | 23 | 87.0% | 16 | 23 | 69.6% |
| Virginia Premier | 22 | 30 | 73.3% | 29 | 37 | 78.4% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

* Based on age restrictions in the technical specifications for the study indicator, some children in this age category were excluded. Please refer to Appendix A for the technical specifications.

**Table C-9—Rates of Initiation of Follow-Up Care Within Two Months for Children Prescribed ADHD Medication Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 111 | 120 | 92.5% | 109 | 123 | 88.6% |
| **Age Category** | | | | | | |
| 6 to 10 years | 84 | 88 | 95.5% | 82 | 92 | 89.1% |
| 11 to 13 years* | 27 | 32 | 84.4% | 27 | 31 | 87.1% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 42 | 45 | 93.3% | 40 | 45 | 88.9% |
| Magellan | S | S | S | S | S | S |
| Optima | 22 | 23 | 95.7% | 20 | 23 | 87.0% |
| Virginia Premier | 27 | 30 | 90.0% | 33 | 37 | 89.2% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

* Based on age restrictions in the technical specifications for the study indicator, some children in this age category were excluded. Please refer to Appendix A for the technical specifications.

**Table C-10—Rates of Initiation of Follow-Up Care Within Three Months for Children Prescribed ADHD Medication Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 114 | 120 | 95.0% | 113 | 123 | 91.9% |
| **Age Category** | | | | | | |
| 6 to 10 years | 85 | 88 | 96.6% | 86 | 92 | 93.5% |
| 11 to 13 years* | 29 | 32 | 90.6% | 27 | 31 | 87.1% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 43 | 45 | 95.6% | 41 | 45 | 91.1% |
| Magellan | S | S | S | S | S | S |
| Optima | 23 | 23 | 100% | 22 | 23 | 95.7% |
| Virginia Premier | 27 | 30 | 90.0% | 34 | 37 | 91.9% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

* Based on age restrictions in the technical specifications for the study indicator, some children in this age category were excluded. Please refer to Appendix A for the technical specifications.

**Table C-11—Rates of Initiation of Follow-Up Care Within Six Months for Children Prescribed ADHD Medication Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 118 | 120 | 98.3% | 121 | 123 | 98.4% |
| **Age Category** | | | | | | |
| 6 to 10 years | 86 | 88 | 97.7% | 90 | 92 | 97.8% |
| 11 to 13 years* | 32 | 32 | 100% | 31 | 31 | 100% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 44 | 45 | 97.8% | 45 | 45 | 100% |
| Magellan | S | S | S | S | S | S |
| Optima | 23 | 23 | 100% | 23 | 23 | 100% |
| Virginia Premier | 30 | 30 | 100% | 36 | 37 | 97.3% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

* Based on age restrictions in the technical specifications for the study indicator, some children in this age category were excluded. Please refer to Appendix A for the technical specifications.

**Table C-12—Rates of Initiation of Follow-Up Care Within Nine Months for Children Prescribed ADHD Medication Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 120 | 120 | 100% | 122 | 123 | 99.2% |
| **Age Category** | | | | | | |
| 6 to 10 years | 88 | 88 | 100% | 91 | 92 | 98.9% |
| 11 to 13 years* | 32 | 32 | 100% | 31 | 31 | 100% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | 45 | 45 | 100% | 45 | 45 | 100% |
| Magellan | S | S | S | S | S | S |
| Optima | 23 | 23 | 100% | 23 | 23 | 100% |
| Virginia Premier | 30 | 30 | 100% | 36 | 37 | 97.3% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

* Based on age restrictions in the technical specifications for the study indicator, some children in this age category were excluded. Please refer to Appendix A for the technical specifications.

## *Substance Use*

**Table C-13—Rates of 30-Day Follow-Up After ED Visit for AOD Abuse or Dependence Among Foster Children and Non-Foster Children, by Age Category and MCO**

All cells in table were either unreportable or suppressed, therefore no results are displayed.

**Table C-14—Rates of Initiation of AOD Abuse or Dependence Treatment Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 20 | 45 | 44.4% | S | S | S |
| **Age Category** | | | | | | |
| 11 to 13 years* | S | S | S | 0 | 0 | NC |
| ≥ 14 years | NR | NR | NR | S | S | S |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | 0 | 0 | NC |
| HealthKeepers | S | S | S | S | S | S |
| Magellan | S | S | S | 0 | 0 | NC |
| Optima | S | S | S | S | S | S |
| Virginia Premier | S | S | S | S | S | S |
| UnitedHealthcare | S | S | S | 0 | 0 | NC |
| Other | S | S | S | S | S | S |

* Based on age restrictions in the technical specifications for the study indicator, some children in this age category were excluded. Please refer to Appendix A for the technical specifications.

**Table C-15—Rates of Engagement of AOD Abuse or Dependence Treatment Among Foster Children and Non-Foster Children, by Age Category and MCO**

All cells in this table were either unreportable or suppressed; therefore, no results are displayed.

# Reproductive Health

**Table C-16—Rates of Chlamydia Screening in Women Among Foster Children and Non-Foster Children, by MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 56 | 202 | 27.7% | 34 | 160 | 21.3% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | S | S | S | S | S | S |
| Magellan | S | S | S | S | S | S |
| Optima | 30 | 51 | 58.8% | 14 | 38 | 36.8% |
| Virginia Premier | 15 | 57 | 26.3% | S | S | S |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

**Table C-17—Rates of Provision of Most or Moderately Effective Methods of Contraceptive Care to Foster Children and Non-Foster Children, by MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 179 | 330 | 54.2% | 151 | 366 | 41.3% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | 15 | 27 | 55.6% | 14 | 33 | 42.4% |
| HealthKeepers | 56 | 101 | 55.4% | 34 | 98 | 34.7% |
| Magellan | S | S | S | S | S | S |
| Optima | 39 | 78 | 50.0% | 36 | 79 | 45.6% |
| Virginia Premier | 56 | 90 | 62.2% | 49 | 106 | 46.2% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

**Table C-18—Rates of Provision of Long-Acting Reversible Methods of Contraceptive Care to Foster Children and Non-Foster Children, by MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 35 | 330 | 10.6% | 16 | 366 | 4.4% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | S | S | S | S | S | S |
| Magellan | S | S | S | S | S | S |
| Optima | S | S | S | S | S | S |
| Virginia Premier | S | S | S | S | S | S |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | S | S | S | S | S | S |

# Respiratory Health

**Table C-19—Rates of Appropriate Asthma Medication Ratio Among Foster Children and Non-Foster Children, by Age Category and MCO**

| Category | Foster Children | | | Non-Foster Children | | |
|---|---|---|---|---|---|---|
| | Numerator | Denominator | Rate | Numerator | Denominator | Rate |
| All Eligible Children | 36 | 42 | 85.7% | 69 | 91 | 75.8% |
| **Age Category** | | | | | | |
| 3 to 5 years* | S | S | S | 17 | 20 | 85.0% |
| 6 to 10 years | 12 | 13 | 92.3% | 22 | 28 | 78.6% |
| 11 to 13 years | 11 | 13 | 84.6% | 11 | 15 | 73.3% |
| ≥ 14 years | S | S | S | 19 | 28 | 67.9% |
| **Continuously Enrolled MCO** | | | | | | |
| Aetna | S | S | S | S | S | S |
| HealthKeepers | S | S | S | 25 | 32 | 78.1% |
| Magellan | S | S | S | 0 | 0 | NC |
| Optima | S | S | S | 21 | 21 | 100% |
| Virginia Premier | S | S | S | 16 | 27 | 59.3% |
| UnitedHealthcare | S | S | S | S | S | S |
| Other | 0 | 0 | NC | S | S | S |

* Based on age restrictions in the technical specifications for the study indicator, some children in this age category were excluded. Please refer to Appendix A for the technical specifications.