CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

Colorado Children's Campaign

The Impact of Continuous Medicaid and CHP+ Enrollment on Children in Colorado

Navigation

Summary

The Center for Improving Value in Health Care (CIVHC) partnered with the Colorado Children's Campaign (The Campaign) to examine the impact of continuous enrollment (CE) in Medicaid and Child Health Plan Plus (CHP+) on health care utilization and cost trends of children aged 0–6. The Colorado All Payer Claims Database (CO APCD) was leveraged to quantify the potential benefits of CE on children's health from 2018 to 2024, divided into pandemic, pandemic, and post-pandemic periods.

The results showed a significant increase in CE during the pandemic when Medicaid redetermination was halted, followed by a sharp decline in the post-pandemic period, particularly among CHP+ enrollees. Children aged 0- 3 years had the highest rates of non-CE post-pandemic, paired with the highest overall medical expenses (per-member-per-year (PMPY)) costs across all age groups.

Across all ages, non-CE children had higher hospitalizations and 30-day readmission rates than those with CE, potentially indicating an exacerbation of chronic or severe medical conditions. Non-CE children also had higher per-member-per-year (PMPY) costs than CE children. In contrast, primary care utilization was higher among CE patients. Additionally, dental care costs were highest among the CE, likely reflecting a return to preventive care after the pandemic. Finally, emergency department visits were higher among CE members, possibly showing improved access to health care without the accompanying higher yearly health care costs observed by non-CE members.

These findings highlight the critical need for continuous enrollment policies to ensure stable access to early childhood health care and prevent costly disruptions in care.

Background

The Campaign is a research and advocacy organization dedicated to promoting data-informed public policies improving child well-being across Colorado, particularly among communities of color and economically disadvantaged populations.[1] Through its legislative efforts, the Campaign has played a pivotal role in establishing key programs, including the Colorado Preschool Program, Child Health Plan Plus (CHP+), and the state's Department of Early Childhood.[2]

A central focus of the Campaign's advocacy is the implementation of Continuous Enrollment (CE) in Medicaid and CHP+, which ensures uninterrupted health care coverage for children, regardless of changes in family circumstances, providing stable access to preventive care and early interventions, which are essential for the health and development of young children.[3] While non-continuous Medicaid enrollment disproportionately negatively impacts the health of young children and children of color.[3] The Campaign has been a strong supporter of recent CE policies, including 12 months of continuous enrollment starting in 2024, HB22-1289, which expands coverage regardless of immigration status in 2025, and HB23-1300, which provides continuous Medicaid coverage for children up to age three beginning in 2026.

During the COVID-19 Public Health Emergency, Medicaid suspended eligibility redeterminations, which led to historic child health coverage increases across Colorado.[3] However, following the end of the public health emergency in April 2023 and the reinstatement of annual redeterminations, the state saw a sharp decline in Medicaid enrollment, with many families losing coverage, exacerbated by administrative barriers.[4,5] The expansion of CE for several years for children, and the large disenrollment of CE after the pandemic, allowed for an impromptu natural experiment to uncover the impacts of stable access to health insurance on young children's health care utilization and health care costs. Through a strategic partnership with the Center for Improving Value in Health Care and the Colorado All-Payer Claims Database (CO APCD), the Campaign hoped to use data to advocate for extending CE to all children aged 0–6 to ensure consistent access to early childhood health care.

Methodology

CIVHC conducted a cross-sectional analysis using data from the CO APCD to assess the impact of CE on health care utilization and costs among children aged 0 to 6 in Colorado. The study analyzed data from 2018 to 2024, encompassing three key periods: pre-pandemic, pandemic, and post-pandemic phases. Children were stratified into two age groups (0–3 and 4–6 years), and their enrollment status (continuous versus non-continuous coverage) served as a primary comparison metric.

Evaluation Questions

1. What is the rate of children with continuous Medicaid coverage in the pre-pandemic, pandemic, and post-pandemic study phases?
2. How does continuous coverage impact children's health care utilization across study phases?
3. How does continuous coverage impact children's health care cost patterns during the study phases?
4. Do health care utilization and cost differ by children's demographics across the study phases?

Measures

Measure	Definition
Insurance Payer Type and Coverage	Members (January 2018- December 2024) were grouped as follows: 1. Continuous Enrollment (CE): Insurance coverage for at least 11 months a year. 2. Non-Continuous Enrollment (Non-CE): Insurance coverage <11 months a year. Insurance Type: 1. CHP+ 2. Medicaid.
Demographics:	Percentage of members in the following demographic groups: i. Age Groups – 0-3, 4-6 years ii. Gender – Male, Female, Unknown/unidentified iii. Race and ethnicity iv. Member county—Rural/Urban
Health Care Utilization	Rate of services per 1000 members in: i. Inpatient hospitalization ii. 30-day readmission iii. Emergency Department (ED) iv. Primary care v. Dental Utilization
Economic	The total amount allowed for health care services was calculated on a per-member-per-month (PMPM) basis (total annual amount allowed for health care services divided by the total number of member months per year).
Health Care Utilization Trend	Trends in health care utilization patterns by different age groups, years, or study periods were reported as PMPY.
Economic Trend	Total health care cost trends among Medicaid and CHP+ enrollees are stratified by age groups, insurance type, coverage status (fully covered vs. not covered), years, and study periods, and were reported as PMPY or PMPM.

Cohort

The study population consisted of individuals in the CO APCD aged 0-6 with at least one month of insurance coverage between 2018 and 2024. The study was divided into three phases.

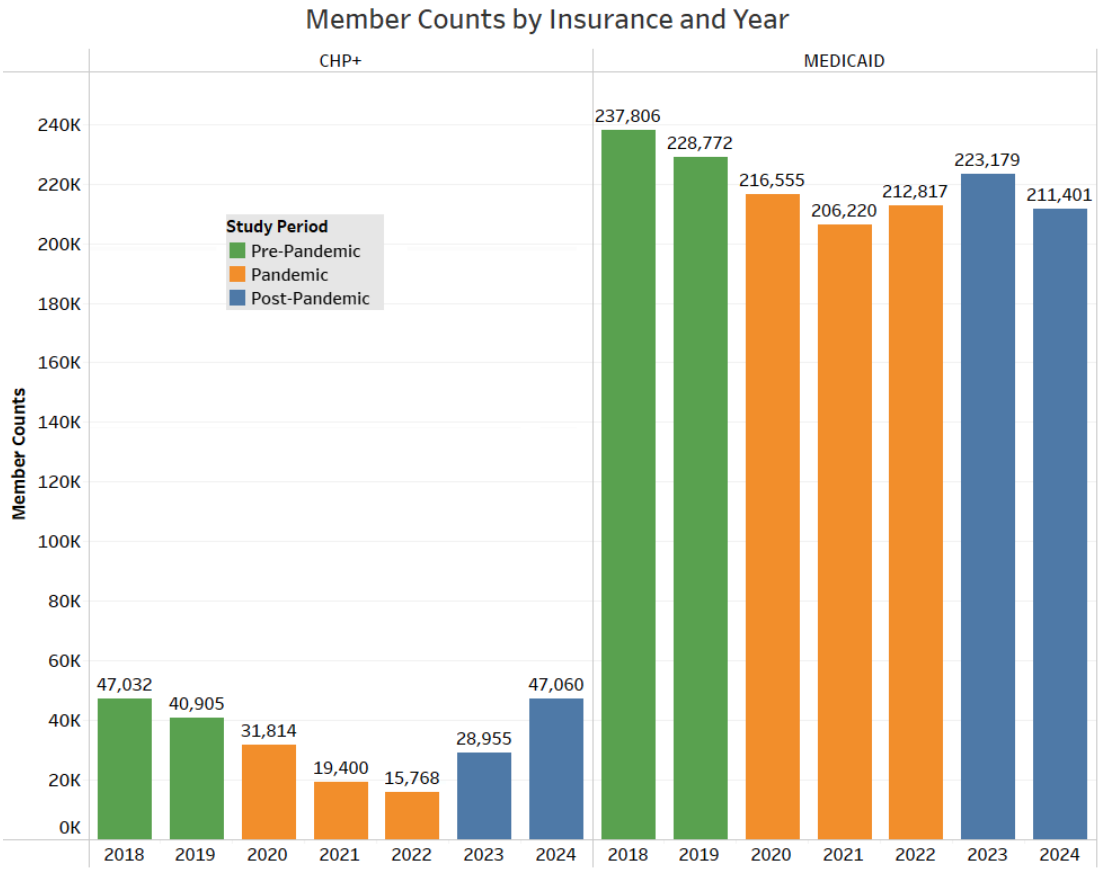
- Study phases
    i. Pre-pandemic – Jan 2018 till Dec 2020
    ii. Pandemic – Jan 2020 till Dec 2022
    iii. Post-pandemic- Jan 2023 till Dec 2024
- Cohort groups

Children were divided into two groups based on the age they were at the start of the year studied:

i. Infants and toddlers – 0-3 years of age.
ii. Early childhood -- 4-6 years of age.

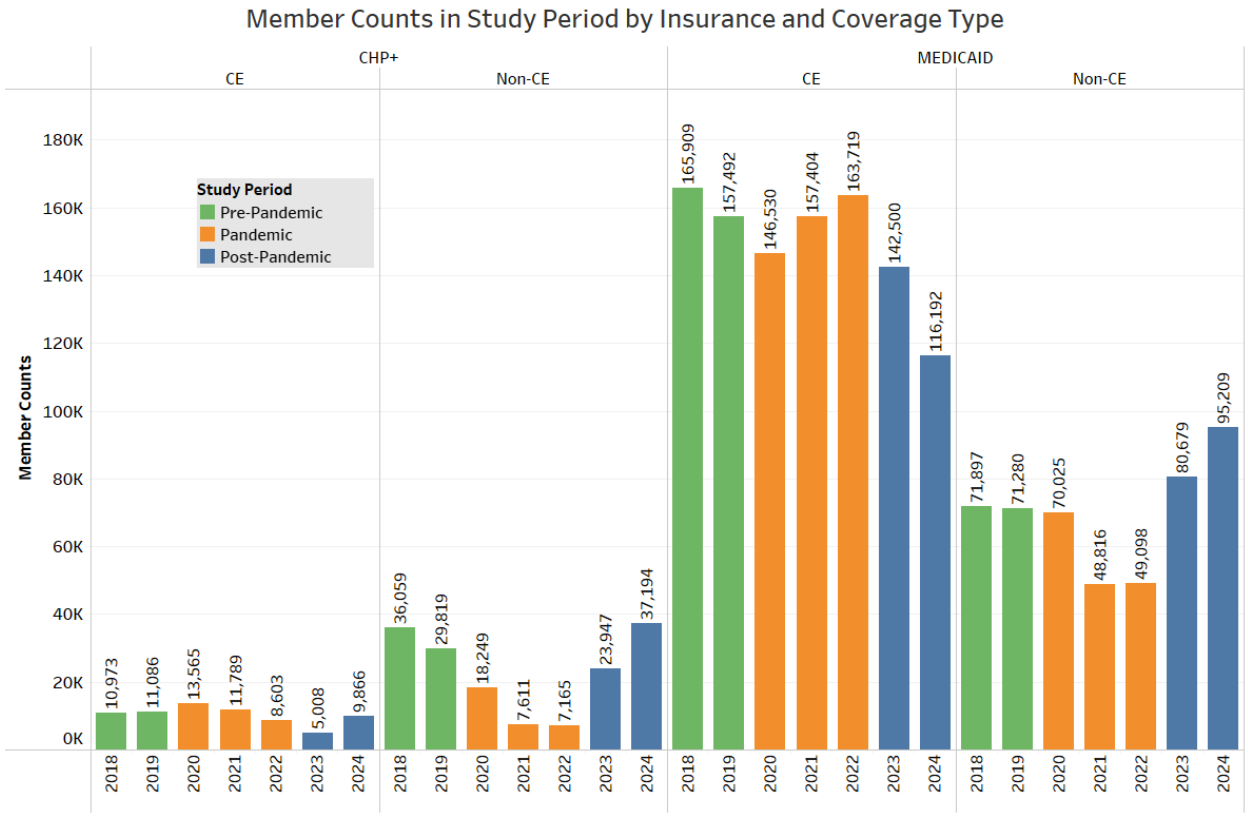
Results

Figure 1:



*Footnote: illustrates the distribution of members by insurance over the years. Members with at least one month of coverage within any insurance type were included in their respective subgroups; thus, member counts are not mutually exclusive within a single year or subgroup.

Figure 2:



*Footnote: illustrates the distribution of members by insurance and coverage type. Members with at least one month of coverage within any insurance type were included in their respective subgroups; thus, member counts are not mutually exclusive within a single year or subgroup.

Insurance Coverage

CIVHC observed a decline in member enrollment for CHP+ and Medicaid during the post-pandemic years (2023–2024) compared to pandemic years (2020-2022) (Figure 1). Figure 2 illustrates a decrease in CE Medicaid members after the PHE and an increase in non-CE Medicaid members. During the PHE, the number of fully covered Medicaid members increased from 146,530 in 2020 to 163,719 in 2022, and CE CHP+ membership peaked. At the same time, non-CE CHP+ members were higher in the pre- and post-PHE phases.

Demographics

Table 1:

Member Counts by Age groups

			Pre-Pandemic		Pandemic		Post-Pandemic	
			Member Counts	% Difference from Previous Phase	Member Counts	% Difference from Previous Phase	Member Counts	% Difference from Previous Phase
CHP+	CE	0 to 3 Years Old	7,739		8,884	14.80%	5,741	-35.38%
		4 to 6 Years Old	10,735		13,967	30.11%	8,093	-42.06%
	Non-CE	0 to 3 Years Old	28,403		14,844	-47.74%	27,784	87.17%
		4 to 6 Years Old	28,882		15,496	-46.35%	26,441	70.63%
MEDICAID	CE	0 to 3 Years Old	117,154		136,852	16.81%	100,383	-26.65%
		4 to 6 Years Old	113,424		136,566	20.40%	92,752	-32.08%
	Non-CE	0 to 3 Years Old	88,508		111,379	25.84%	103,412	-7.15%
		4 to 6 Years Old	42,788		44,685	4.43%	55,027	23.14%

*Footnote: Illustrates the distribution of members by insurance and age group. Members with at least one month of coverage within any insurance type were included in their respective subgroups; thus, member counts are not mutually exclusive within a single year or subgroup. Members' cohorts are aging across the study and hence move from one age group to another.

Age Groups

In both age categories (0–3 and 4–6 years), CIVHC observed a decline in CE in the post-pandemic phase relative to the pandemic, ranging from 26% to 42%. This decline was more pronounced among CHP+ members than Medicaid members, and among CE members aged 4-6 years than those aged 0-3 years.

Demographic Description

The cohort had a slightly higher proportion of male members (see Appendix 1). CHP+ enrollment remained consistently low across all demographic groups, whereas Medicaid had more CE members than non-CE. A consistent pattern was observed across racial, ethnic(see Appendix 2), and geographic subgroups (see Appendix 3: CE membership peaked during the pandemic and subsequently declined.

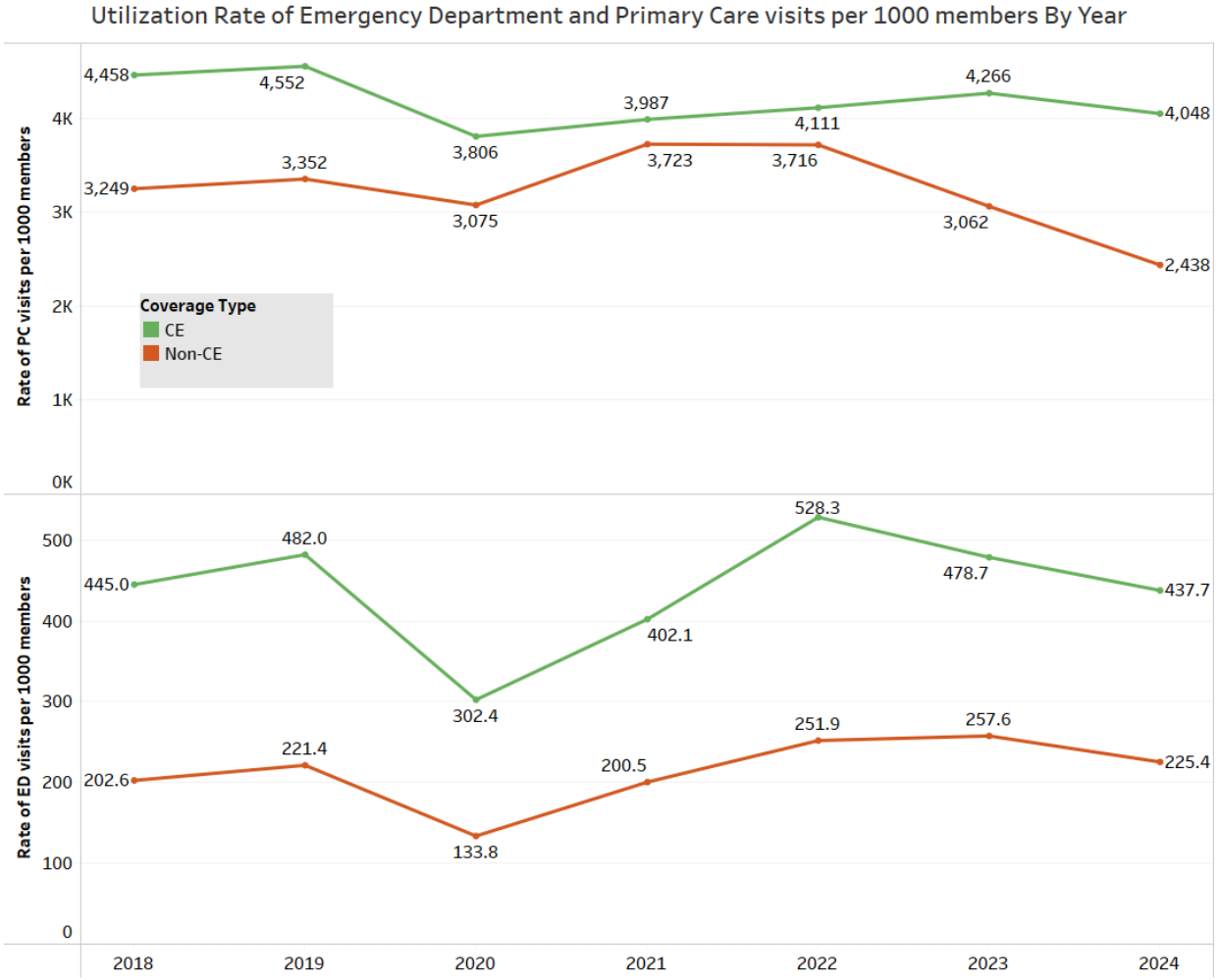
Health Care Utilization Measures

Emergency Department (ED) and Primary Care (PC) Visits

CE members consistently had higher PC visit rates (**Figure 3)**, indicating higher access to preventive care for CE. In 2024, CE had roughly 1.5 times more primary care visits than non-CE members.

ED utilization dropped sharply in 2020, consistent with reduced health care access and use during the early stages of the pandemic. It then rose and peaked in 2022 for CE and 2023 for non-CE members. Members with CE consistently had higher ED visit rates each year than their non-CE peers, potentially indicating that ED visits were leveraged to treat acute conditions and are a sign of access to health care.

Figure 3:

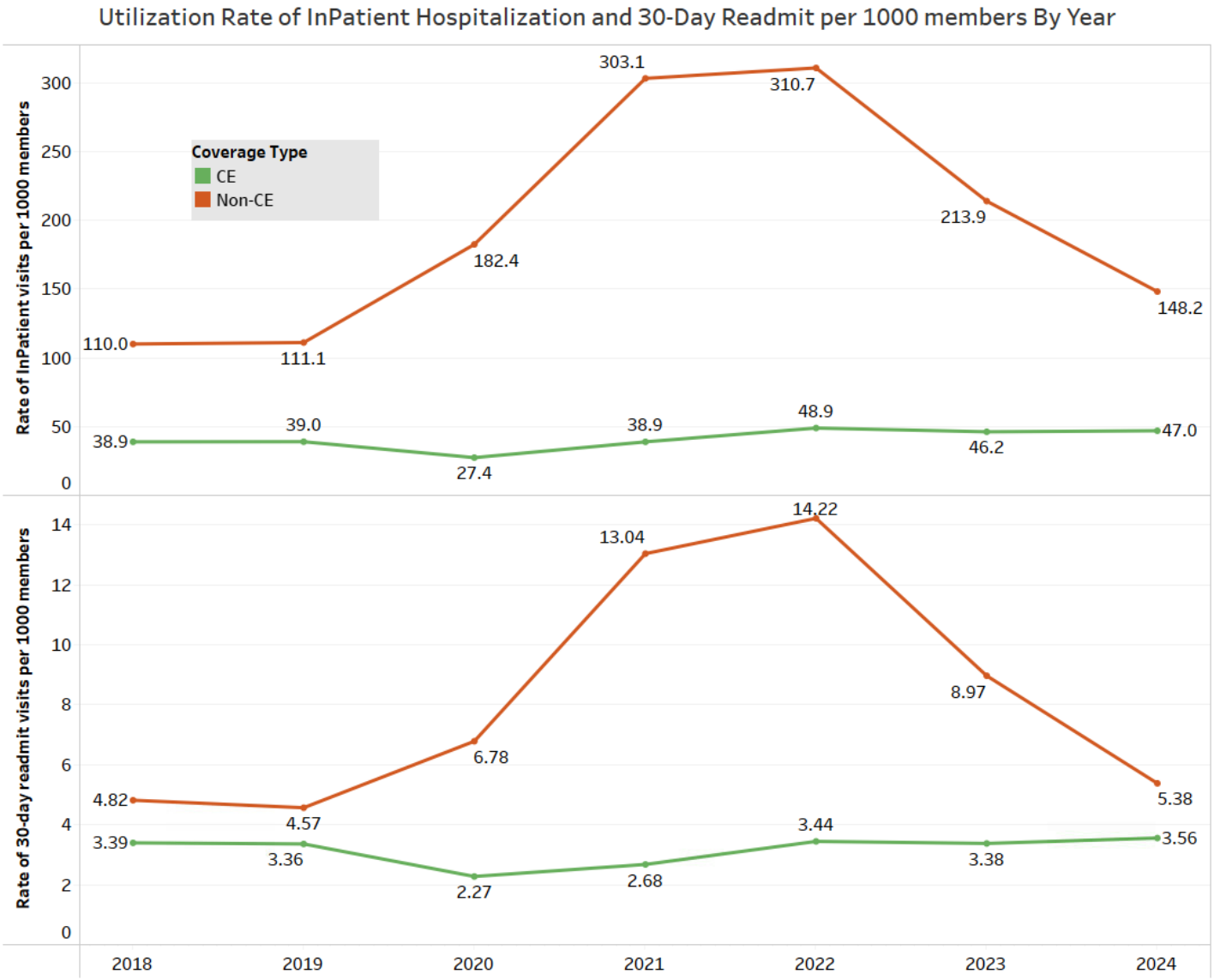


Inpatient Hospitalizations and 30-Day Readmission Hospitalizations

Children without CE had substantially higher hospital utilization than CE members ranging from 2.5 to 7.5 times over the study period **(Figure 4).** Hospitalization rates peaked during the PHE years (reaching 7.5 times higher for non-CE), peaking in 2022 and declining in 2024.

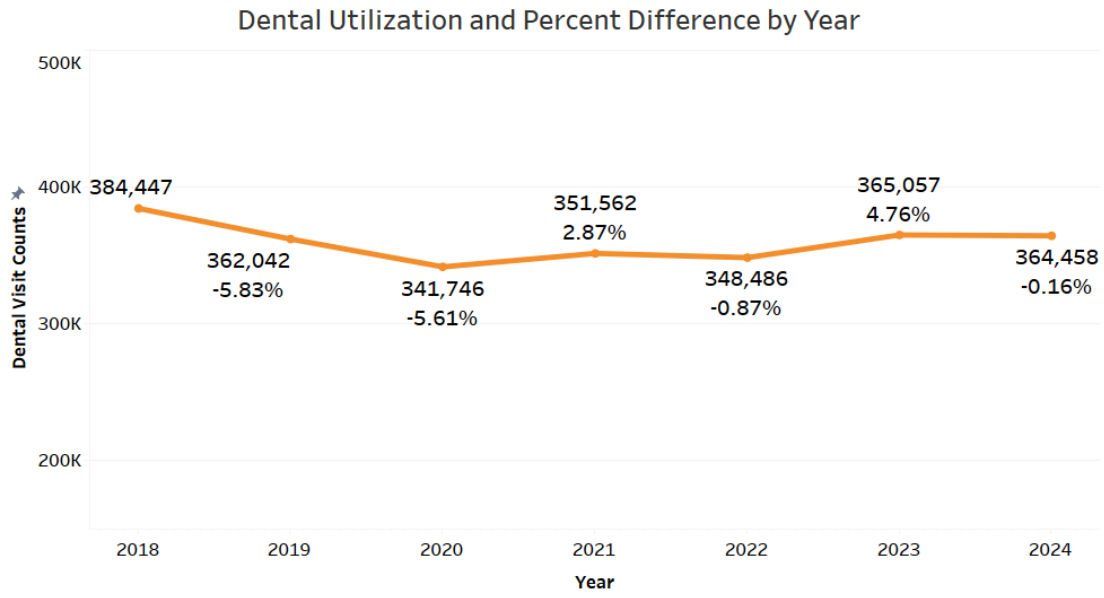
Hospital 30-day readmissions for non-CE peaked in 2022 at 14 per 1,000, nearly 4.5 times higher than for CE. Children aged 0–3 years had higher readmission rates than those aged 4–6 years, with White and Hispanic children in the younger group showing the highest utilization.

Figure 4:


Utilization Rate of InPatient Hospitalization and 30-Day Readmit per 1000 members By Year
Rate of InPatient visits per 1000 members
Coverage Type
CE
Non-CE
110.0
111.1
182.4
303.1
310.7
213.9
148.2
38.9
39.0
27.4
38.9
48.9
46.2
47.0
Rate of 30-day readmit visits per 1000 members
4.82
4.57
6.78
13.04
14.22
8.97
5.38
3.39
3.36
2.27
2.68
3.44
3.38
3.56
2018
2019
2020
2021
2022
2023
2024

Dental Utilization

Figure 5:

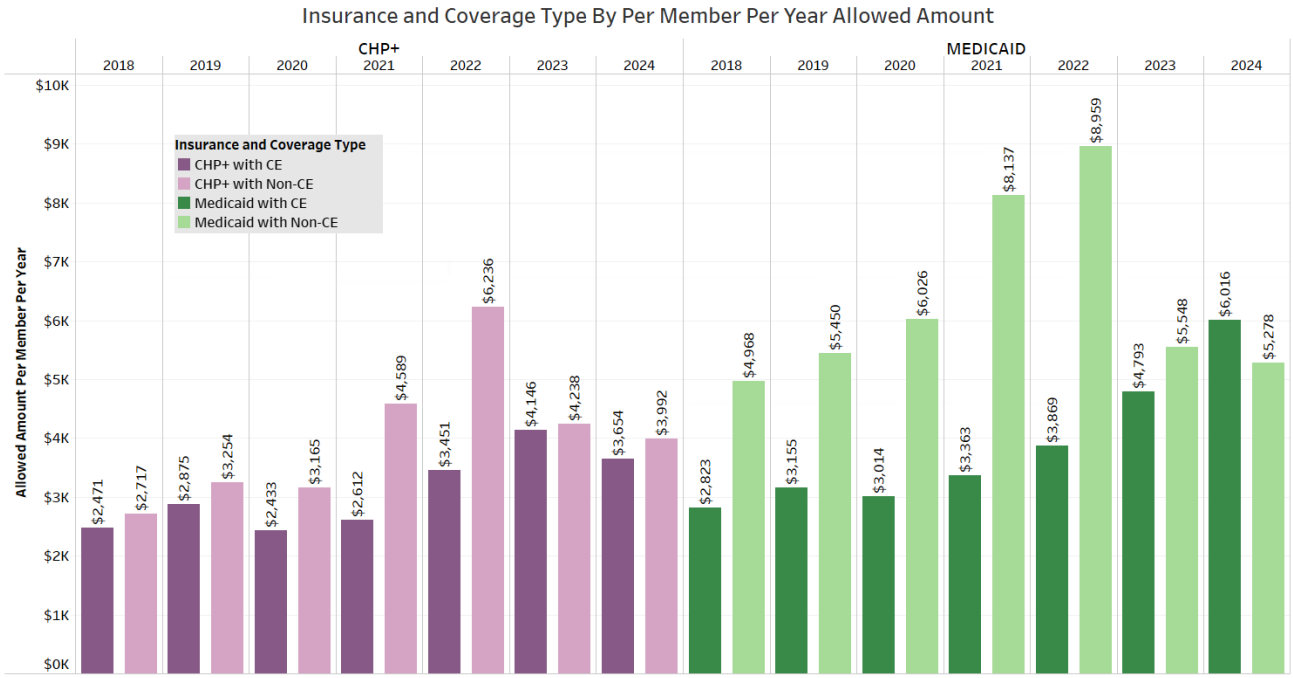


Dental care utilization showed high levels across all phases, with the lowest utilization recorded in 2020 and the highest in 2018. In contrast to other service types, dental visits increased during the post-pandemic phase (2023–2024), recovering from the dip observed during the pandemic. Dental visits per member in a year are nearly 1.5 to 2 times higher for CE members compared to non-CE.

Economic Trends

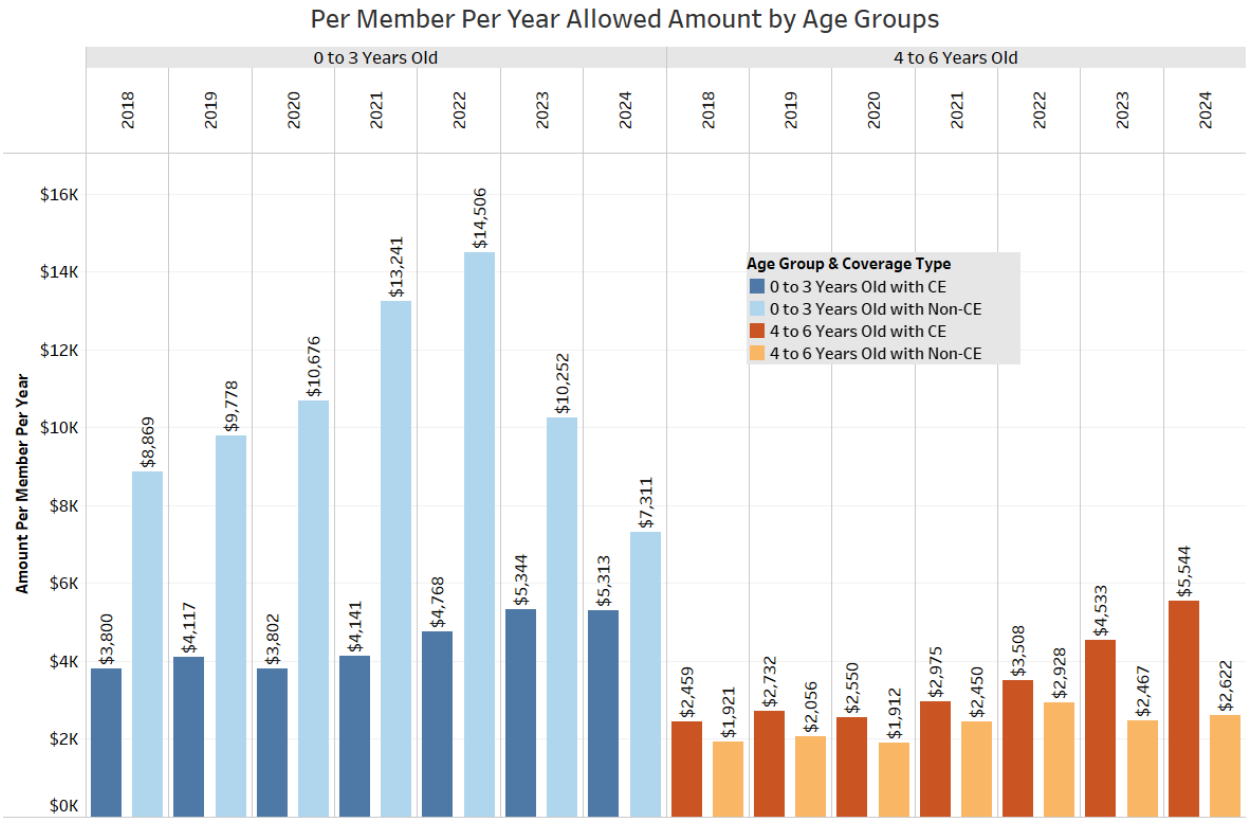
Medical Costs

Figure 6:



Members without CE incurred significantly higher PMPY costs than CE members across all subgroups, indicating that inconsistent coverage contributes to increased health care expenditures **(Figure 6).** Non-CE CHP+ members are costing nearly 1.75 to 1.8 times their CE members in 2021 and 2022. While non-CE Medicaid members for 2021 and 2022 cost 2.4 to 2.3 times that of Medicaid CE members. Since members are enrolled in CHP+ and Medicaid, the majority of healthcare costs are covered by the state, with minimal financial responsibility falling on the members.

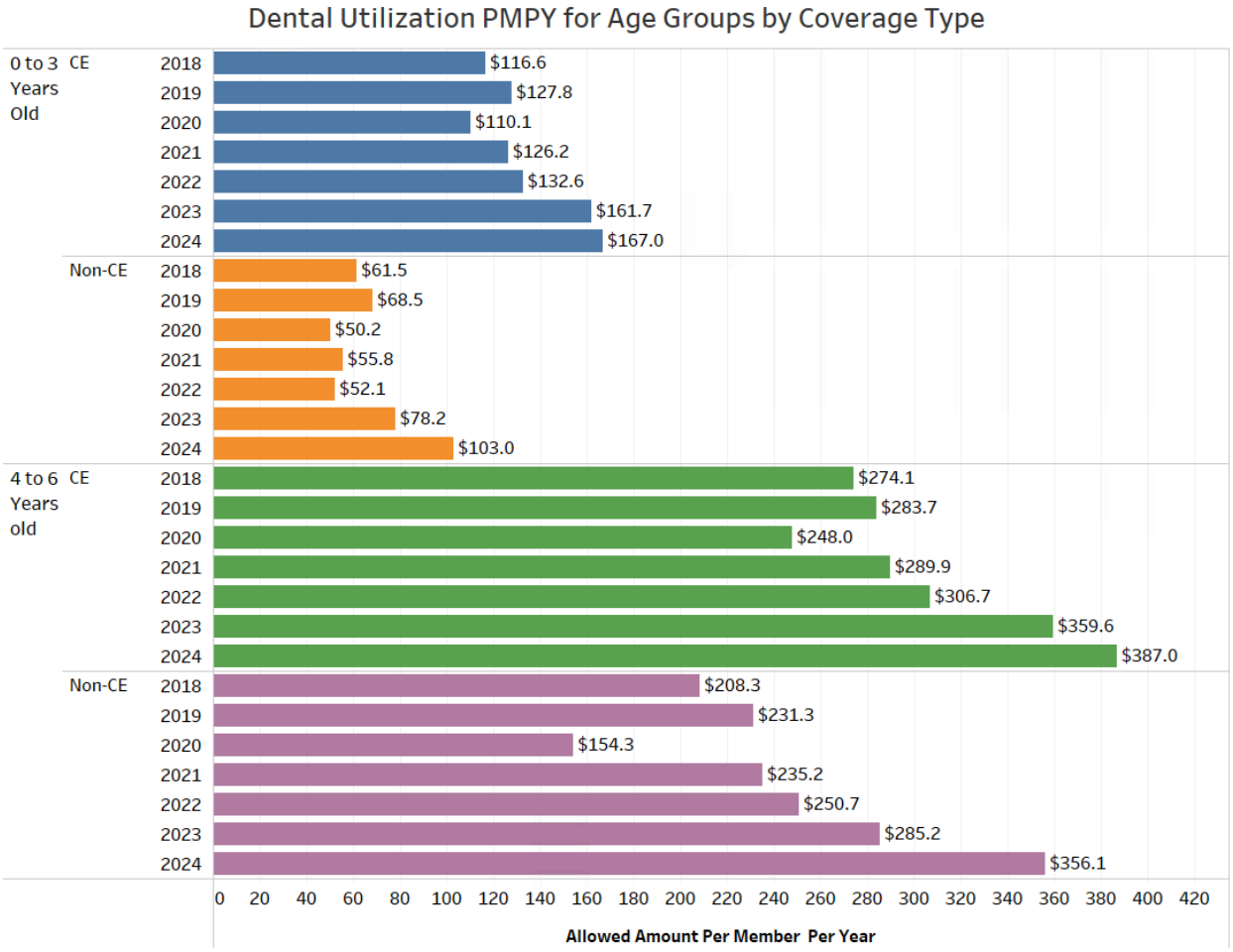
Figure 7:



Children aged 0–3 years had higher per-member per-year (PMPY) costs than those aged 4–6, regardless of insurance type or coverage status **(Figure 7).** During the pandemic years (2020 to 2022), PMPY costs for non-CE children aged 0–3 were 2.8 to 3.2 times higher than their CE counterparts. In contrast, the trend reversed for children aged 4–6: CE members in this age group consistently had higher PMPY costs than non-CE members, with PMPY values ranging from 1.3 times higher in 2018 to 2.1 times higher in 2024. Additionally, children aged 0–3 years had more inpatient (IP) and emergency department (ED) visits than their 4–6-year-old counterparts, further contributing to their elevated PMPY costs.

Dental Costs

Figure 8:



In contrast, the cost trends for dental care utilization diverged from medical claims. CE members had higher dental PMPY costs than those without CE. This was more significant for the youngest population, 0-3, who benefit from early dental interventions. Children aged 4–6 showed higher utilization and associated costs than those aged 0–3, indicating greater access to dental care (**Figure 8**). Children aged 4–6 tend to have higher dental utilization because their primary dentition is fully developed, making them more prone to dental issues. While children aged 0–3 are still in the early stages of tooth development and typically experience fewer dental concerns.

Discussion and Next Steps

This study of children aged 0–6 years in Colorado from 2018 to 2024 reveals significant shifts in health care coverage and utilization associated with the Public Health Emergency and halting of Medicaid redeterminations, including increased continuous enrollment in Medicaid and CHP+. However, following the expiration of these protections, there was a sharp decline in CE across both age groups and payers, with a more pronounced drop among CHP+ enrollees. This decline was accompanied by a rise in non-CE members, reflecting increased instability in coverage, particularly among younger children, who are most dependent on regular preventive and developmental care.

These coverage shifts were mirrored in health care utilization patterns. Younger children, especially those aged 0–3, had increased rates of hospitalizations and 30-day readmissions without CE. Primary care visits were higher among individuals with CE. Dental utilization declined in 2020 but rebounded strongly in the post-pandemic years, particularly among fully covered older children. These trends highlight the importance of maintaining continuous coverage to ensure consistent access to care and reduce avoidable acute service utilization.

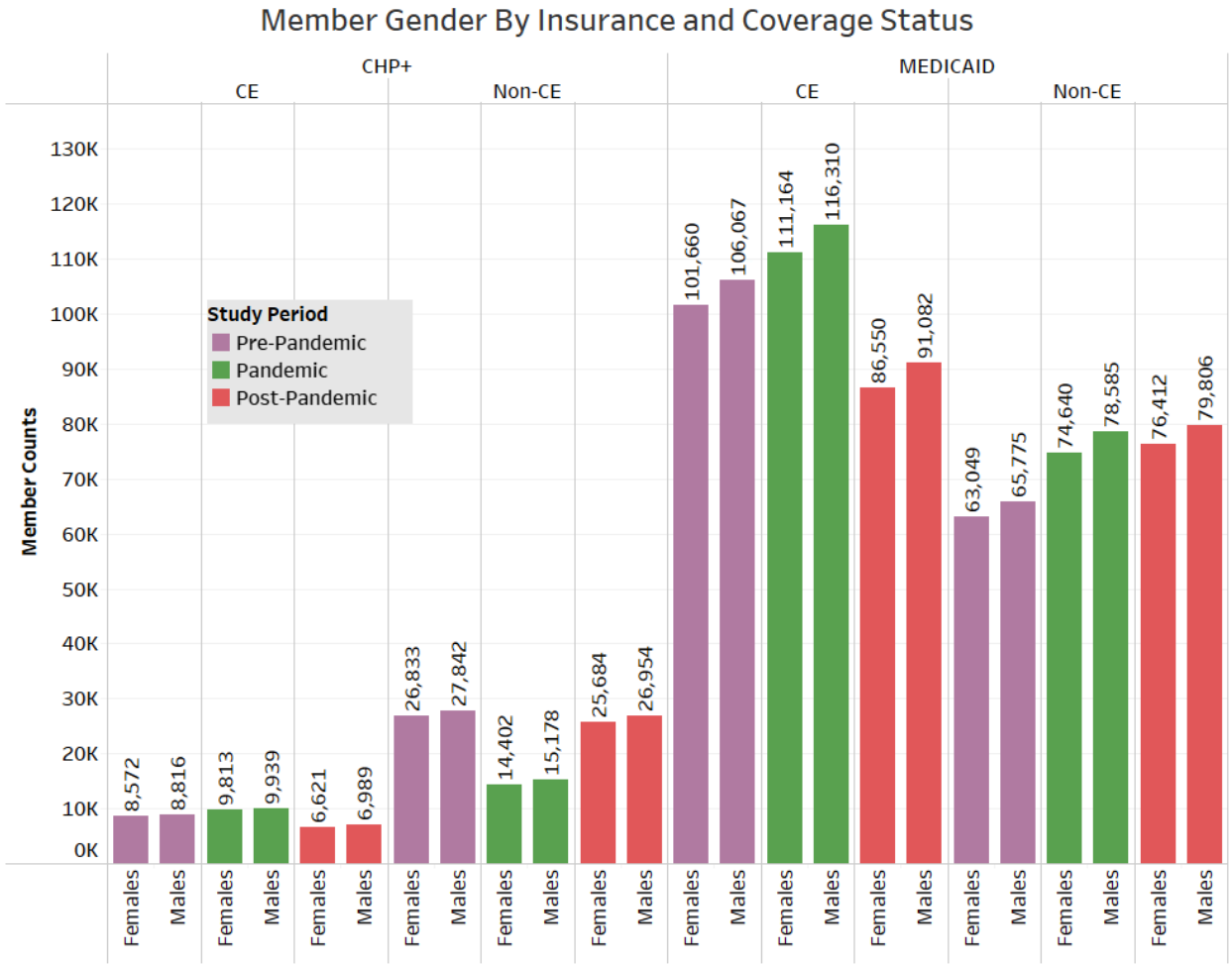
The economic analysis further demonstrated that those without CE had higher PMPY costs than those with CE, ranging from $90 to $2,700 less for CHP+ and $750 to $5,000 less for Medicaid. The only exception is in 2024, where CE members in Medicaid had a higher cost of $730. Children aged 0–3 incurred higher medical PMPY costs than those aged 4–6, consistent with the increased service needs typically observed in early childhood. The increased PMPY among non-CE members suggests that lapses in coverage may result in higher and more urgent healthcare costs. Dental costs rose steadily after the post-pandemic, highlighting a return to care and preventive service use among older, fully covered children. As healthcare costs rise, the state faces a growing financial burden, putting additional strain on its budget and resources.

These findings underscore the critical importance of stable and uninterrupted health coverage during early childhood. The rollback of continuous enrollment protections has exposed vulnerabilities in coverage continuity and may have downstream effects on health outcomes and system costs. Ensuring young children remain fully insured promotes health equity, reduces preventable high-cost care, and supports optimal early development. Future longitudinal research is needed to better understand the long-term effects of continuous health care enrollment coverage gaps.

Limitations

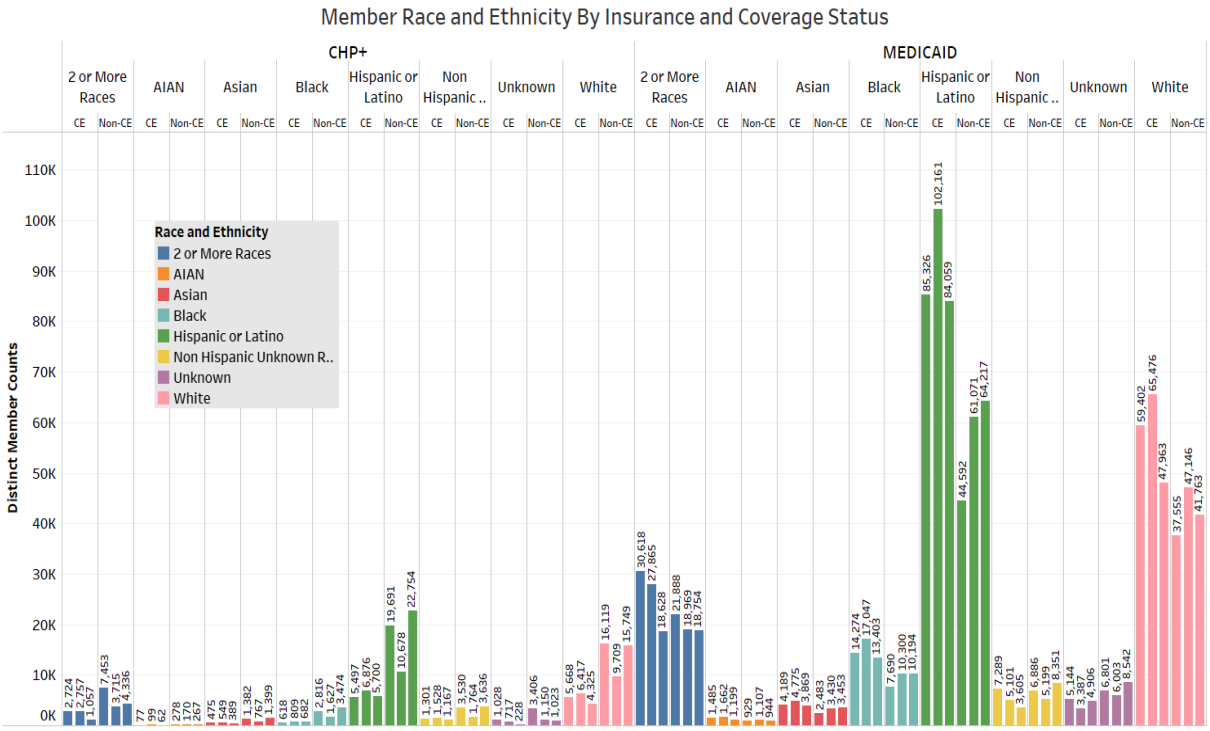
The CO APCD does not include claims data for individuals covered by TRICARE, Indian Health Service (IHS), approximately 50% of employer-sponsored ERISA plans, or for uninsured residents. As a result, the findings may not fully represent the pediatric population in Colorado, particularly those from military families, tribal communities, or those without insurance coverage. Second, the CO APCD does not contain information on premium amounts, which limits the ability to assess the impact of cost on health care utilization fully.

Appendix 1: Member Gender



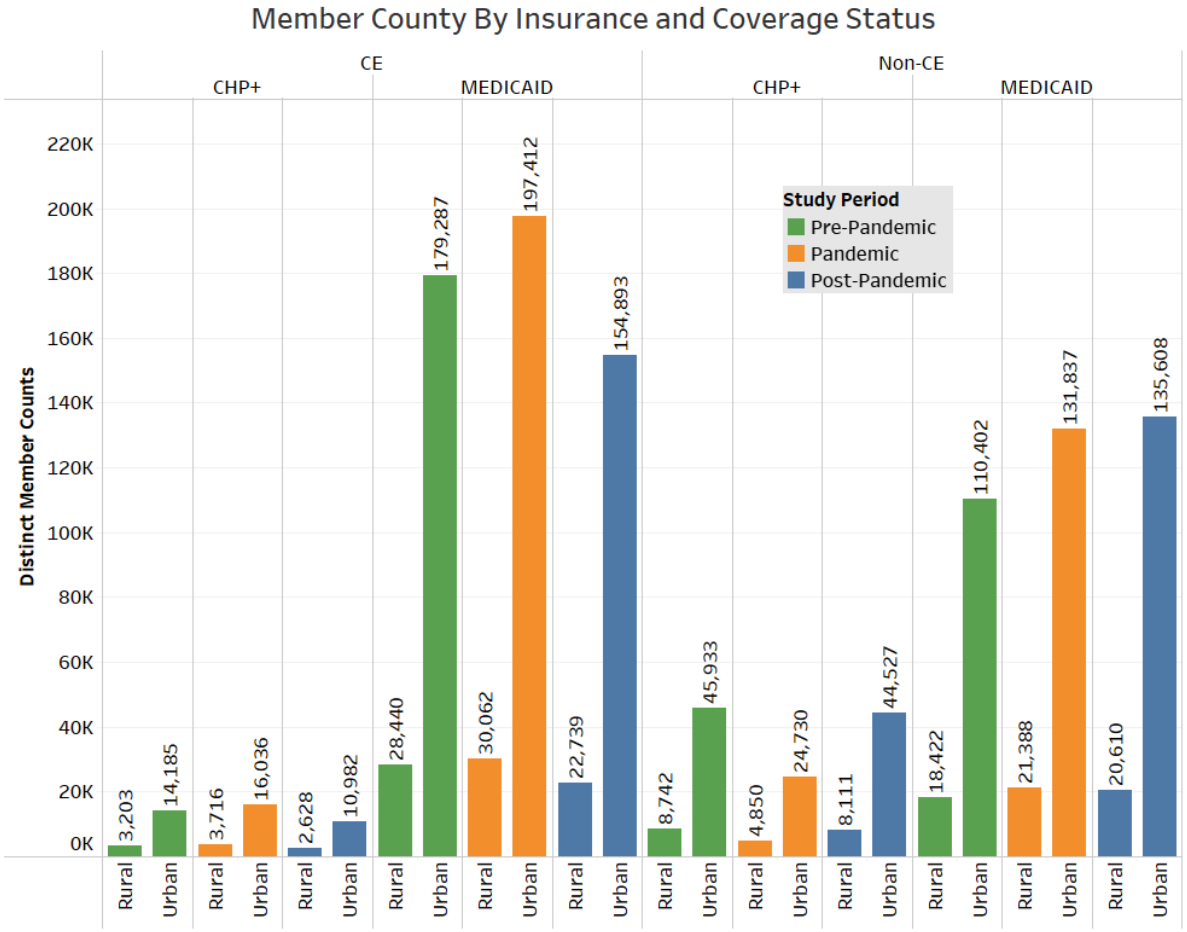
*Footnote: illustrates the distribution of members by their gender, insurance and coverage type. Members with at least one month of coverage within any insurance type were included in their respective subgroups; thus, member counts are not mutually exclusive within a subgroup or study period.

Appendix 2: Member Race and Ethnicity



*Footnote: illustrates the distribution of members by their race/ethnicity, insurance and coverage type. Members with at least one month of coverage within any insurance type were included in their respective subgroups; thus, member counts are not mutually exclusive within a study period or subgroup.

Appendix 3: Member County



*Footnote: illustrates the distribution of members by their residence county, insurance and coverage type. Members with at least one month of coverage within any insurance type were included in their respective subgroups; thus, member counts are not mutually exclusive within a study period or subgroup.

Appendix 4: Utilization Measure Methodology

Dental visits, inpatient hospitalizations, 30-day readmissions, and emergency department visits were identified by combining unique member encounters with unique service providers on each service date. Primary care visits were identified by unique procedure codes on each claim and then aggregated by individual members, provider, and service date. A member could have multiple primary care visits daily if they receive different provider procedures on the same day.

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