Impact of Primary Care Access on Total Cost of Care in North Carolina's Medicaid Population

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KEY POINTS FROM THIS BRIEF:

- Providing local access to care and increasing engagement in primary care is associated with lower hospital utilization and total cost of care.
- Proximity of care is important for reducing unnecessary ED utilization; ED rates were 17% higher for highly complex patients who reside more than 25 miles away from a PCP.
- Longer lapses in primary care engagement were associated with increasingly higher hospital utilization rates.
- Complex patients receiving an annual preventive care visit experienced nearly $60 million less in hospital-related spend.
- High-risk patients with annual primary care visits experienced $864 PMPM lower total costs. Successfully engaging all patients in the cohort in annual preventive care would save an additional $100M per year.

Background

A key component of North Carolina's cost containment strategy for Medicaid is the promotion of preventive care and more efficient, coordinated care delivery through Advanced Medical Homes (AMHs) across the state. Tier 3 AMHs receive funding to support efforts designed to identify high-risk patients and provide proactive outreach and care management support to prevent unnecessary acute hospital and emergency room visits.

Community Care Physician Network (CCPN) is the largest clinically- integrated network of Tier 3 AMHs in North Carolina. CCPN includes over 3,800 clinicians, serving in more than 400 practice groups with over 1,100 practice locations across 97 of North Carolina's 100 counties. Collectively, approximately 40% of the statewide Medicaid Standard Plan population is empaneled to a CCPN AMH Tier 3 practice. Using our risk stratification logic and our claims data, CCPN analyzed the impact of primary care visits for high-complexity patients and found a direct correlation between recency of primary care visits and reduced utilization and cost.

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Study Approach

For this data brief, we focused on Community Care Physician Network's highest-risk and most complex patient cohort within the Standard Plan population – those most likely to have multiple hospital and ED visits and drive total cost of care. These highest-complexity patients are usually the most expensive patients and are typically the hardest to engage with and treat.

To conduct this analysis, CCPN utilized the Johns Hopkins ACG system to identify approximately 20,000 members who are the most complex in the CCPN network's Standard Plan membership. These 20,000 individuals represent approximately 3% of CCPN's Standard Plan attribution and have multiple and complex chronic medical and/or behavioral health conditions, exponentially higher inpatient and ED utilization, and generate costs to Medicaid of approximately $700M annually, or $2,893 per member per month.

See costs and disease burden in the Sample Characteristics table below:

Table 1: Sample Characteristics – Focus on Highest Risk Members (Multi-Morbidity of High-Complexity**)

Characteristic	Rate/Percent
Total N	19,993
Adult	73%
Female	59.7%
Black	32.6%
White	59.7%
Hispanic	8.2%
Aged, Blind or Disabled	22.4%
IP/1,000 (excluding maternity)	402.9
ED/1,000 (for any reason)	2,332.8
Estimated Cost (Annual Total)*	$694,076,988
Estimated Cost (PMPM)*	$2,893
Had Primary Care in the Past Year	52.5%

Chronic Condition	Percent
Hypertension	55.4%
Diabetes	32.0%
COPD	18.2%
Ischemic Heart Disease	16.8%
Congestive Heart Failure	11.0%
Chronic Renal Failure	13.3%
Major Psychiatric Condition	38.4%

**Because the PHPs do not provide complete data on paid claims amounts, this is likely a conservative estimate based on what we can extrapolate from some of the plans.*

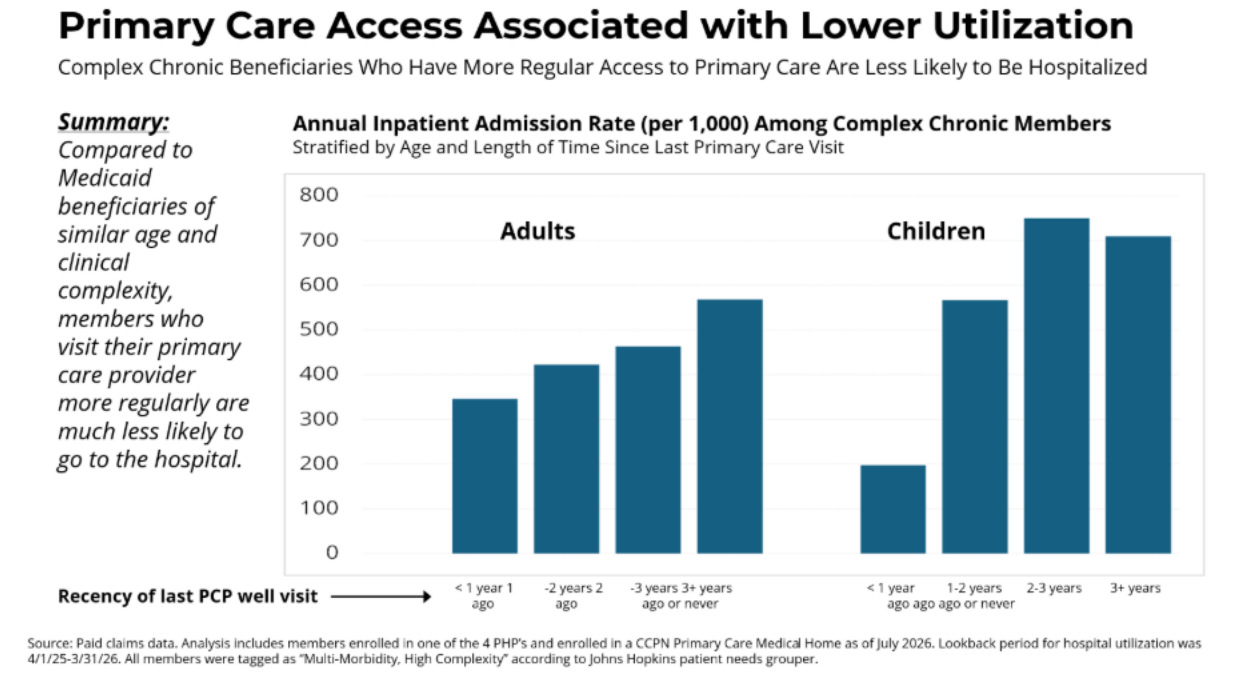
***Risk determined by the Johns Hopkins ACG Grouper.*

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Primary Care Access and Inpatient Utilization

Analysis of this high-complexity cohort of 20,000 patients indicates the importance of a medical home model in improving health outcomes and controlling cost. Patients who have seen their primary care provider in the past year are much less likely to have inpatient admissions. The risk of admissions grows the longer it has been since they saw their PCP. As depicted in the figure below, high-risk adults who have seen a provider within the last year have an admission rate of 346 per 1,000 vs. an admission rate of 568 per 1,000 for high-risk patients who have not seen a provider in 3 or more years or never saw a provider at all (as far as we can observe through historical claims data). These findings represent 222 fewer inpatient admissions per 1,000 members for those who have recently seen their PCP, and an inpatient admissions rate that is 1.64 times higher for the unseen members. Similarly, and even more dramatically, high-risk children who had not seen their PCP in three or more years had admission rates 3.58 times those of children who had been seen in the past 12 months, representing a difference of 511 fewer inpatient admissions per 1,000.

We modeled cost savings from just reduced inpatient utilization for this cohort by assuming an average cost per hospitalization of approximately $14,551 per admission (1). Our modeling estimated savings of $3.2M per 1,000 adults, or $17,974,208 for all the adults in the most engaged cohort, and savings of $7.4M per 1,000 children, or $36,737,960 for all the children in the most engaged cohort. Taken together, that is savings of $54,712,168 from just averted inpatient hospitalizations that are attributable to primary care engagement. This is a conservative estimate considering that the total cost of care for this high-risk cohort is $700M annually and inpatient costs typically account for 32% of costs[2].



Primary Care Access and ED Utilization

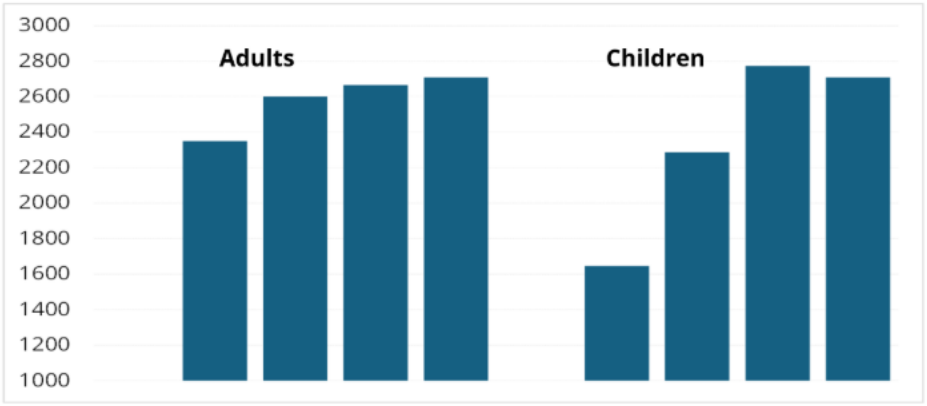
Similar trends were observed when considering visits to the emergency room. For non-emergencies, establishing a relationship with a medical home decreases the likelihood of patients going to the ED instead of their PCP. Adult high-risk members of this cohort who have not been seen by the PCP in 3 or more years experienced ED rates 1.15 times greater than those who have been seen within the last year (2,709 vs. 2,350 ED visits per 1,000). For children, the impact of the recency of PCP visit on ED utilization is even more pronounced. High-risk children without a visit in the last 3 or more years had ED utilization rates more than 1.6 times greater than those with a PCP visit in the last year (2,709 vs 1,646 ED visits per 1,000). This translates to 1.6 visits per child per year for patients with recent visits vs. 2.7 visits per child per year for those without recent visits. Assuming that the average cost of an ED visit is $500, this translates to a savings of $994,829 for the adults and $2,625,886 for the children, for a grand total of $3,620,715 in savings from just averted ED visits that are attributable to primary care engagement among this cohort of the most engaged members. Coupled with the earlier analyses, our modeling estimates a total savings of $58,332,883 from averted inpatient and ED utilization attributable to greater engagement with the primary care provider.

Primary Care Access Associated with Lower Utilization

Complex Chronic Beneficiaries Who Have More Regular Access to Primary Care Are Less Likely to Go To The ED

Summary: *Compared to Medicaid beneficiaries of similar age and clinical complexity, members who visit their primary care provider more regularly are much less likely to go to the emergency department (ED).*

Annual ED Visit Rate (per 1,000) Among Complex Chronic Members
Stratified by Age and Length of Time Since Last Primary Care Visit



Source: Paid claims data. Analysis includes members enrolled in one of the 4 PHP's and enrolled in a CCPN Primary Care Medical Home as of July 2026. Lookback period for hospital utilization was 4/1/25-3/31/26. All members were tagged as "Multi-Morbidity, High Complexity" according to Johns Hopkins patient needs grouper.

Access to Primary Care and Total Cost of Care

Because access to primary care can impact total cost of care in more ways than just hospital utilization, we modeled the potential total cost savings opportunity that could be realized by increasing primary care engagement for the less engaged members. Using available paid claims data, we first estimated the total annual spend per member per month (PMPM) incurred by each cohort. Next, we calculated the difference between the PMPM spend for each cohort relative to the PMPM spend for the most engaged cohort (<1 year cohort). Then, we calculated a weighted difference across all of those cohorts to estimate how much less on average the most engaged cohort spent PMPM. Our modeling suggests

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that those patients who are highly engaged with primary care spend an average of $864 PMPM less than similar patients with equal complexity. Furthermore, we estimate that getting the remainder of the patients in this cohort to engage in primary care could yield close to $100,000,000 in additional savings (see table below).

Table 2: Estimated Savings as a Function of Primary Care Engagement

PCP Recency	Number of Members	Estimated Annual Spend PMPM*	Difference in PMPM Spend Relative to "<1 year" Cohort	Estimated Savings from Better Medical Home Engagement
< 1 year	10,492	$2,485	N/A	$0
1-2 years	1,678	$3,282	$797	$16,044,705
2-3 years	693	$3,438	$953	$7,925,149
3+ years	7,130	$3,356	$871	$74,521,879
Total:	**19,993**	**$2,893**	**$864**	**$98,494,173**

**Using paid claims data from one of our more complete payer sources, we calculated the average annual cost per cohort and applied those costs across all the PHPs to estimate a total spend for each of the cohorts. Because we do not receive complete claims data, these are likely low estimates, but we wanted to capture as much of the potential total cost of care savings that could be realized.*

Access to Primary Care and Utilization

As we contemplate North Carolina's rural geography and the broad distribution of Medicaid beneficiaries across the state, access to primary care becomes even more important for those in rural areas. An examination of the relationship between distance to the AMH and ED utilization showed that those patients 25 miles or more away from their attributed AMH experienced ED rates that were 17% higher (2,683 compared to 2,299 ED Visits per 1,000) than those who had a more geographically available practice. When deciding whether to go to the ED or the doctor for an emergency, the data clearly suggest a preference for the ED if their doctor is not nearby. ED utilization can be particularly costly for these individuals as it often results in additional uncoordinated and avoidable spend occurring within the hospital system and facility fees. Although we did not observe this same phenomenon on the inpatient side, that is somewhat to be expected as the need for hospitalization is going to be a bigger driver than the distance to their medical home.

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Findings

North Carolina's Advanced Medical Home (AMH) model is demonstrating that continuity with primary care reduces cost and utilization for high-complexity Medicaid patients participating in the state's "Standard Plan" -- the managed care plan that covers children, families, adults, and pregnant women, including adults with mild-to-moderate behavioral health needs. More medical home visits with this population of the most complex members demonstrated a measurable decline in ED and inpatient utilization rates, saving nearly $60 million in averted hospital costs and approximately $864 PMPM in total spend.

Discussion

Importance of the AMH Model in Sustaining Access to Care in NC

The Medicaid AMH model plays a key role in sustaining the economic viability of rural practices and ensuring continued local access to care for beneficiaries, which is a key driver in reducing unnecessary utilization and cost. The model includes value-based payments that reward practices for improving preventive screenings, immunizations, and control of chronic illnesses such as diabetes and hypertension, and allows practices to share savings with payers by improving health outcomes and reducing cost. In addition, the AMH model provides per member per month payments to practices to support their infrastructure costs and to fund care management services that ensure patient care is optimized to prevent complications and avoid unnecessary hospital utilization and cost.

Without the AMH program, fewer practices may be available to meet the needs of these high-need, high-opportunity Medicaid patients across the state, potentially contributing to increased utilization and costs associated with reduced proximity to primary care and appointment availability. The map below shows the broad distribution of high-risk Medicaid population enrolled in CCPN as it relates to the CCPN practice locations. Should some of these smaller practices cease providing access, there will be significant increases in utilization and costs.

Data Sources

Members included in these analyses were enrolled in one of the Medicaid Standard Prepaid Health Plans and assigned to a practice within the CCPN clinically integrated network as of July 2026. Inpatient and ED utilization was based on paid claims data for dates of service between 4/1/25 and 3/31/26. Clinical complexity was determined by the Johns Hopkins ACG Grouper. Primary care engagement was based on a combination of both claims and clinical data.

Suggested Citation

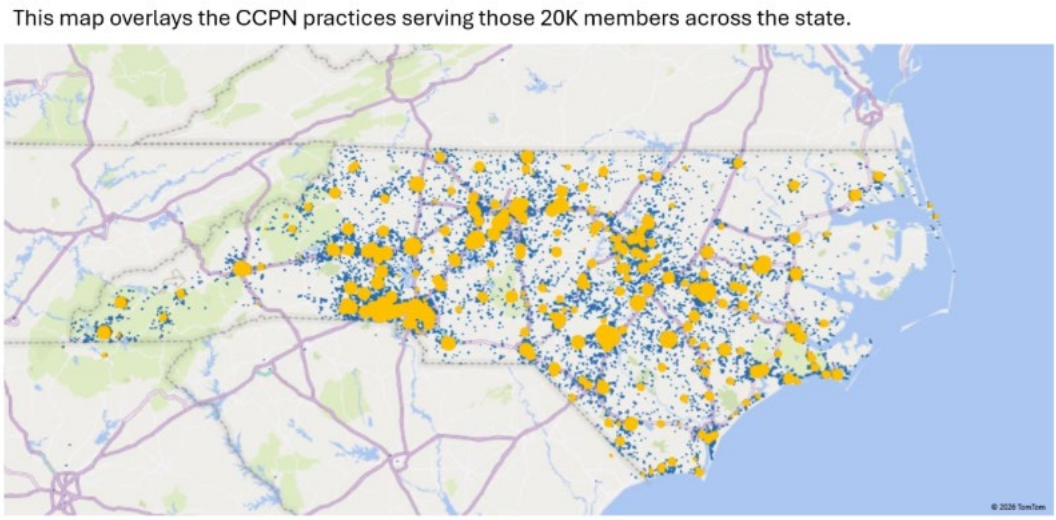
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References

1. De Vries, D., Sobko, K., Ali, N. (2026, April 10). How much does staying in a hospital cost? SonderCare. https://www.sondercare.com/learn/home-hospital/how-much-staying-in-hospital-cost/?srsltid=AfmBOoqdjXljQlenNxNPNGF3eoP0o6-3-zoFBiymtSbWLO8DNmtnuxY6
2. Hulver, S., Levinson, Z. Burns, A., Hinton, E., Neuman, T. & Rudowitz, R. (2025, March 5). 5 key facts about Medicaid and hospitals. KFF. https://www.kff.org/medicaid/5-key-facts-about-medicaid-and-hospitals.

Figure 1: Location of High-Risk Members in Relation to Their Advanced Medical Homes



The map above illustrates the distribution of these approximately 20,000 high risk members across the State of North Carolina. Each blue dot represents the approximate location of the member's residence, and the orange dots represent the location of the advanced medical homes.

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