Impacts of Medicaid Transformation on North Carolina Public Transit Systems: Lessons Learned and Best Practices

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16. Abstract

The shift from Fee-for-Service to Managed Care Organizations changed the landscape and possibilities for coordinated human service transportation in NC. Previously, Non-Emergency Medical Transportation (NEMT) trips were serviced extensively by community transit systems (CTS), alongside both other human services transportation purposes and service to the public. These trips were part of a coordinated transportation model, in which revenue from Medicaid NEMT was coupled with other funding sources to maximize funding efficiency by serving multiple rider types on the same trip. The shift to Managed Care places decisions about how to provide NEMT trips—and the money that pays for these trips—in the control of transportation brokers. This shift promises to open new transportation options for Medicaid beneficiaries, potentially bringing benefits like reduced wait or trip times. Nevertheless, the transformation decreases the opportunity for CTSs to pool funding and trip purposes—effectively limiting the ability of these organizations to coordinate human services transportation. This study explored the impacts of Medicaid Transformation on community transit systems and the Medicaid beneficiaries who had historically depended on them for NEMT. Key findings include: 1) In aggregate, the number of Medicaid trips served by CTSs has exhibited moderate recovery since Transformation and the onset of the pandemic but has not reached pre-pandemic levels, 2) Impacts of the Transformation varied across geographies, 3) CTS administrators expressed concerns about lost rides, reduced revenue, and inefficient use of resources, 4) CTS administrators reported communication and collaboration difficulties with NEMT brokers, 5) Informal connections and communications between riders and NEMT personnel were eroded, and 6) CTS personnel shared concerns about the experiences of their former riders on new services. The main recommendations that stem from these findings focus on ways for CTSs to maintain financial viability post-transformation and the collection and use of data to monitor and improve the experiences of NEMT users across all providers post-transformation.

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Executive Summary

Medicaid beneficiaries are entitled to non-emergency medical transportation (NEMT) to and from health care services when they are unable to arrange their own transport. This benefit ensures access for low-mobility individuals, particularly those with complex or recurring health care needs. Starting July 1, 2021, North Carolina's Medicaid program began moving to a managed care model using prepaid health plans (PHP) from a fee-for-service (FFS) model. This has significantly changed the NEMT process for Medicaid beneficiaries. Responsibility for scheduling trips, selecting providers, and billing has transitioned from the county social service departments (DSS) to transportation brokers. This report describes how this Medicaid Transformation has affected NEMT in the state with a focus on understanding the impacts on community transit systems (CTS).

Analysis of Medicaid enrollment and CTS NEMT trips shows varied impacts of the change to managed care. At the state level, transit systems saw a large drop-off in trips served through the Transformation and the pandemic but have since exhibited substantial, though not full, recovery. However, the recovery patterns were uneven. CTSs located near hospitals generally reported increases in Medicaid trips since FY2021, while systems in counties without major hospitals carried fewer Medicaid trips. This disparity reflects the difficulties that rural CTS face when providing transportation to specialized medical facilities located outside the county. The *NC Medicaid Transformation and Non-emergency Medical Transportation Dashboard*, created as part of this project, facilitates visualization and analysis of these trip and enrollment patterns and is available through NCDOT.

Interviews with CTS leadership yielded four key findings about the impacts of the Medicaid Transformation on CTS operations. First, the Transformation had different impacts across geographies with systems in the most rural counties having more impacts on operations and trip patterns. Second, Medicaid trip revenue is integral to sustaining many CTS's operations, and decreases in NEMT trips have challenged the financial health of some CTS systems. Some systems have identified new ways to expand their ridership (and thereby revenue) such as by contracting with local senior centers. Third, the change from DSS to brokers—at least initially—has made coordinating patient appointment times and transit service hours more challenging. Lastly, pilot efforts to increase communication between brokers and CTS have been successful and have identified trip assignment strategies that meet broker performance metrics and support the critical role of CTSs in NEMT. Specifically, Johnston County's arrangement with their broker of a *de facto* right of first refusal (ROFR) via an auto-assign pilot has seen great success.

Impacts on CTS riders are more challenging to assess. Interviews with CTS staff identified scheduling and routing difficulties that arise from working with brokers, some of which resulted in beneficiaries missing rides or paying out of pocket for service. CTS staff also reported that the shift to managed care dissolved the personal touch, trust, and safety that beneficiaries were used to when engaging with transit-provided NEMT pre-Transformation.

Based on these findings, we recommend consideration of:

- Extending the Johnston County pilot to other counties where conditions are appropriate,
- Diversifying revenue sources for transit systems through identification of new services as well as reconsideration of state funding formulas,
- Reassessing contracts between brokers and CTS annually with attention to rates and operating requirements including lead time,
- Providing mechanisms for beneficiaries to provide feedback on NEMT experiences,
- Developing quality control protocols using trip characteristics and performance to systematically evaluate performance of all transportation providers.

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Introduction

Non-emergency medical transportation (NEMT) is a mandatory Medicaid benefit created to help beneficiaries access necessary health care services. This subsidized transportation to medical appointments offers a critical service used by millions of Medicaid beneficiaries. NEMT plays a particularly vital role in enabling access to care for beneficiaries with chronic and/or complex medical conditions, including end-stage renal disease, intellectual or developmental disabilities, and behavioral health conditions such as substance use disorder.

States can deliver NEMT in several ways; they may manage the benefit directly and pay for rides on a fee-for-service (FFS) basis, contract with a transportation broker to manage and deliver benefits, or use Medicaid managed care contracts to deliver NEMT along with other Medicaid benefits through managed care organizations (MCOs). Before July 1, 2021, North Carolina Medicaid delivered NEMT on an FFS basis through eligible community providers, with public transit services carrying a substantial number of NEMT trips. These transit-based Medicaid trips were serviced alongside general purpose transit trips not subsidized through the Medicaid benefit. Since July 2021, marking the beginning of "Medicaid Transformation," the state has transitioned to a managed care model and is now beginning to deliver NEMT via MCOs. Specifically, Prepaid Health Plans (PHPs) participating in NC Medicaid Managed Care may now use statewide transportation brokers to arrange and provide transportation or contract directly with eligible transport providers. These private brokers predominantly make NEMT decisions under this managed care model and may or may not choose to contract with public sector transportation providers for NEMT.

This project addresses an urgent need to study the operational and financial impacts of Medicaid Transformation in North Carolina from a direct fee-for-service to a brokered managed care model on transit systems, as well as travel impacts on transit riders across the state. Understanding these impacts, as well as ways that transit agencies have approached managing the transformation, allowed us to identify lessons learned and best practices and offer guidance to state and local agencies for future transit planning.

Research Objectives

With this project, we document how the Medicaid Transformation has impacted community transit systems' ability to provide North Carolinians with access to critical destinations. We focus on the impacts of Medicaid Transformation on community transit systems and North Carolinians by analyzing ridership patterns and Medicaid enrollment, as well as interviews with CTS leadership. From these, we identify lessons learned and opportunities for community transit systems to manage Medicaid Transformation.

Furthermore, a cross-cutting aim of our research is to generate useful information for NCDOT on future transit planning activities that promote health care accessibility. Identifying how NEMT trip data differs pre and post transformation and analyzing how certain CTSs have remained successful in their service provision allows us to generate recommendations for state officials to help address gaps or challenges in access to medical services created or perpetuated by the transformation.

Research Tasks and Methodology

To understand the impacts of Medicaid Transformation and meet stated research objectives, the project team undertook the following 3 tasks:

Task 1: Assess impacts of Medicaid Transformation on community transit systems

Using data housed and curated by the Institute for Transportation Research and Education (ITRE) at North Carolina State University on NC Operating Statistics, NEMT Status Data

Collection reports, and trip origins/destinations, we tracked temporal and spatial patterns in NEMT, general public, and other contract transit trips to characterize changing transportation flows following Medicaid Transformation. We leveraged these data sources to develop a web application tool to compare CTSs throughout the state. There were significant variations across the state with some systems able to maintain or increase service delivery while others reduce service. We exploited these differences to identify factors such as service area characteristics, population characteristics, NEMT agreements with private transport brokers, and service policies that allow some systems to provide access to health care, employment, and other destinations while maintaining operational efficiency and financial health. After developing an understanding of select transit systems that were more or less able to maintain service levels and financial health after the Medicaid Transformation, we sought to explain certain trends and occurrences through qualitative insights from CTS leadership, specifically to understand how operations and finances have been affected. These insights were gathered via interviews with nine CTSs and their leaders, as well as one interview with the state Medicaid Transportation Manager.

Task 2: Assess impacts of Medicaid Transformation on riders

To understand how North Carolinians – specifically, the riders of the community transit systems – are impacted by Medicaid Transformation, the team conducted interviews with CTS leaders to learn how riders are reporting on their experiences to their transit systems. We analyzed the interviews for major themes and patterns that occurred repeatedly across interviews. Connecting the variation in system characteristics to the variation in reported rider impacts provided insight into which policies and behaviors contributed to the continued success of transit systems in the face of new challenges. These interviews augmented the quantitative data insights gathered from the Web Application by providing rich details about the individual-level experiences behind the data.

Task 3: Identify lessons learned and opportunities for community transit systems to manage the Medicaid Transformation

We documented the practices of transit systems that were most successful in navigating the Medicaid Transformation, as identified by maintaining service levels and financial health across all trip purposes. Identifying lessons learned and best practices in managing community transportation services under Medicaid Transformation allowed us to generate recommendations for local and state officials to help address gaps or challenges in access to medical services created or perpetuated by the transformation.

Literature Review

Transportation barriers are known obstacles to health care access and result in delayed care, as well as missed appointments and missed or delayed medication use (Syed et al., 2013). Groups that are already prone to greater social and economic disadvantage, including individuals who are poor and/or under or uninsured and who have chronic conditions, are more likely to encounter transportation barriers to care and to experience negative health consequences (Wolfe et al., 2020). Addressing transportation barriers resulting in missed or delayed care is important not only for mitigating adverse health outcomes among patients but also for avoiding costs to the health care system stemming from increased use of emergency departments and hospitalizations (Kangovi et al., 2013; Nguyen & Dejesus, 2010). The NEMT benefit is an important mechanism for overcoming transportation barriers and facilitating access to medical care for Medicaid beneficiaries. In 2018, 3.2 million beneficiaries in the United States used NEMT service on over 60 million ride-days (i.e., days in which a beneficiary had an NEMT ride) (MACPAC, 2021). NEMT services play a vital role in enabling access to care for Medicaid beneficiaries, especially for those with chronic and/or complex conditions that result in high health care burdens and associated transportation needs, such as individuals receiving dialysis treatment for chronic kidney disease.

In North Carolina, NEMT trips have historically been provided using a direct fee-for-service model. Community transportation systems (CTS)—coordinated public transit/human service agency transportation services established in all 100 counties that offer mobility options to those prone to experience transportation and health disadvantages, including the elderly, low-income individuals, people with disabilities, and rural residents—have historically been charged with coordinating and providing these trips (North Carolina Public Transit Association, 2015). Medicaid trips comprise a substantial portion of all community transportation trips in the state. In 2019, community transit systems provided 1.3 million NEMT rides amounting to 23% of all transit trips in North Carolina and 21% of revenues(North Carolina Public Transit Association, 2020). These rides were provided alongside general-purpose transit trips that may or may not have been sponsored by other subsidized transportation programs (e.g., senior transportation programs, employment programs, etc.). In the past, policymakers and some elected officials questioned the effectiveness of the community transit-based NEMT delivery model, as these systems offer a more general service intended to meet many transportation needs rather than a specific medical transportation service. In 2012 and 2013 NCDHHS considered transitioning NEMT to a brokerage model, in which a state broker would contract with, likely, private transportation providers to deliver NEMT; this was abandoned after that state determined that the existing model was less expensive (North Carolina Public Transit Association, 2015).

The state's recent Medicaid Transformation to managed care, implemented on July 1, 2021, transitioned NEMT service delivery to a brokerage model. Under this model, PHPs participating in NC Medicaid managed care have contracted with transportation brokers, ModivCare and MTM, that can work with private and public transportation providers to deliver NEMT. Per the *Handbook for Examining the Effects of Separate Non-Emergency Medical Transportation (NEMT) Brokerages on Transportation Coordination*, the state of Florida has also been using a Managed Care model with private, for-profit brokers. In this case study, local transit system revenues, particularly those of rural areas, have largely decreased. This is due to fewer shared NEMT trips and thus a higher cost of providing transportation per passenger. The downstream effect of this decreased revenue is a reduced match for federal transit funds. However, the state Medicaid agency finds that the introduction of the Managed Care model does diminish the increased costs of Medicaid. Additionally, contracting with private brokers has led to increased NEMT coverage in certain regions of the state. (Edrington et al., 2018, Chapter 5). Kim et al., also find that, specifically in the context of asthmatic children and diabetic adults,

"the shift to transportation brokerage services improved access to care among Medicaid beneficiaries and decreased the expenditures" (Kim et al., 2009).

The existing literature on the broker model also points to benefits regarding decreased wait times through private rideshare services (Powers et al., 2016). However, rideshare services were also not found to be associated with a decrease in missed Medicaid rides (Chaiyachati et al., 2018). This knowledge serves to benefit policymakers because NEMT provision through rideshare is considered an innovative tool for the future of health care (Adelberg & Simon, 2017).

Assessing Impacts on Community Transit Systems and North Carolinians: Interactive Mapping Web Application

Overview

The *NC Medicaid Transformation and Non-emergency Medical Transportation Dashboard* is a visualization tool that can be used to display key statistics about North Carolina's 67 Community Transit Systems (CTS) that have provided Medicaid-funded demand-response transportation services from fiscal years (FY) 2019 through 2022. These data are visualized spatially and graphically through maps, tables, and bar graphs.

Given the data included in the Web App, the user can longitudinally analyze key metrics related to the execution of trips by CTSs. The Web App allows for comparison across four fiscal years for each of the following metrics, within any selected CTS:

- Number of trips
- Number of miles
- Number of hours
- Efficiencies
- Proportions of Medicaid trips, non-contract trips, and other contract trips
- Medicaid enrollment
- Population
- Amount of money paid for trips
- Pre-paid Health Plan (PHP) Enrollment
- Number of procedures for which transportation was provided

Additionally, the user can interpret patterns in the spatial distribution of various metrics via the color-coded maps, which are provided for each page of the Web App. In analyzing the visualizations of the Web App, the user can: identify patterns within specific geographic areas; compare differences in executed trips and payments before and after the COVID-19 pandemic and 2021 Medicaid Transformation; differentiate the proportions of the three identified trip types (Medicaid, non-contract, and other contract); and understand where the money paid for trips is allocated.

Technical Details and Guidelines for Use

Data Inputs and Sources

The data come from three primary sources. First, CTS operating statistics (e.g., trips served, miles driven, hours driven) were furnished by The Institute for Transportation Research and Education (ITRE) at North Carolina State University, which curates an aggregated database of such information. Second, data on Medicaid enrollment and payments to transportation services providers were assembled from monthly reports NC Department of Health and Human Services (DHHS), which are publicly available from their website[1]. Finally, state and county population data were obtained from the US Census. The tool can display data ranging from June 2018 through May 2022, corresponding to FY2019 through FY2022.

Web App Structure and Operations

The Web App includes seven pages of descriptive data on the following topics: CTS Operations; CTS Medicaid Trips; CTS Non-contract Trips (General Public); CTS Other-contract Trips; County: Medicaid Enrollment; County: Payment to All Transportation Providers; and County: Payment to NEMT Providers. Upon opening the web application, the user is met with a dashboard that includes five sections of summary statistics (number of trips, number of miles,

[1] https://medicaid.ncdhhs.gov/reports/enrollment-reports

number of miles, efficiencies, and proportions of Medicaid trips, non-contract trips, and other contract trips), a map that highlights which (if any) CTS is selected, a drop-down menu for county selection, and a labeled horizontal pane at the bottom indicating the page of statistics displayed, which defaults to "CTS Operations." Different pages may be selected by clicking the arrows to the left or the right. Alternatively, if the user's screen is sufficiently expanded, this horizontal pane will become tabs for the different pages of the web application, allowing for instant selection. To the left of the dashboard is a thin vertical pane with a small arrow. Clicking this arrow will open a summary of information about the web application, the data it displays, and brief instructions, which can be pinned to the page as the user toggles the tool functions.

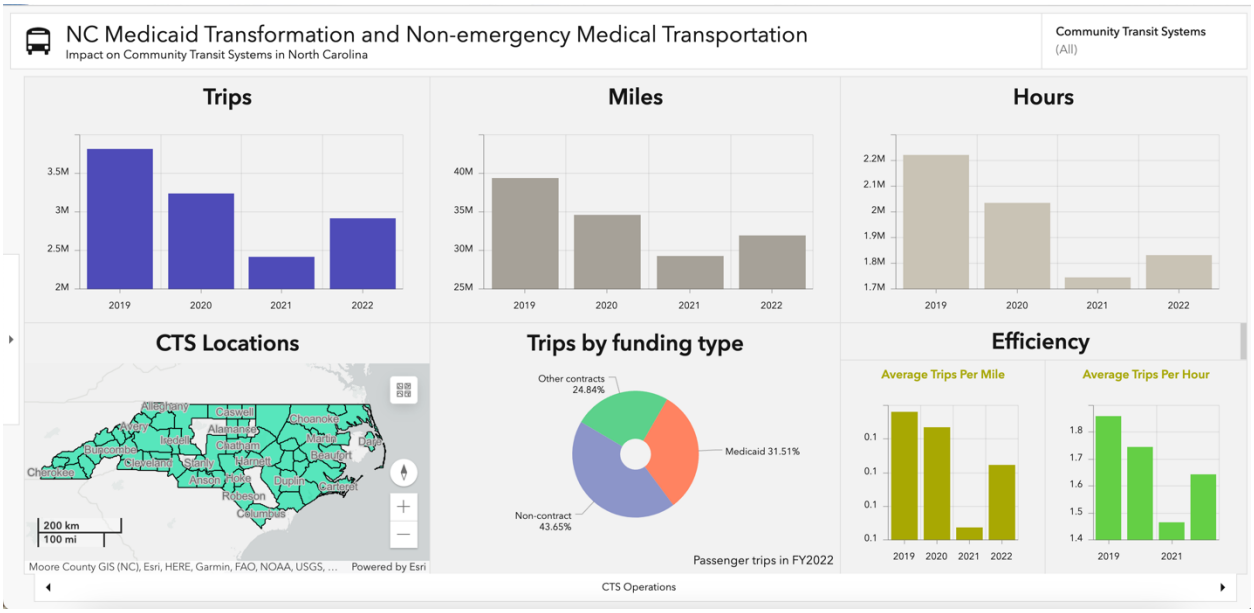

Figure 1: The default page of the Web App

The Web App allows users to access the same features and functions across data sets. To the right of the title pane is a drop-down menu that allows the user to specify one or select multiple CTS(s), which causes the tool to display statistics only for the selected system(s). The user can thereby either select data for just one CTS or view aggregated data for multiple systems combined. Unless otherwise stated, every visualization provides a breakdown of the data for each fiscal year 2019, 2020, 2021, and 2022[2]. The three pages that present detailed statistics about trip types (Medicaid Trips, Non-contract Trips, and Other Trips) include bar graphs that are equipped with a slider function that, when dragged across the graph, can be used to display the data within a specific time window.

Maps are included on every page except for the default page ('CTS Operations'). On each map, the user can select which of the delineated figures will be displayed via the 'Layers' function in the top right corner of the map. See Figure 2 for the example of the 'County: Medicaid Enrollment' page, where the user can choose between map layers that present the percentage of Medicaid enrollment over the county population for each fiscal year, FY2019-FY2022, as well as the percentage of Medicaid enrollment in a Prepaid Health Plan (PHP) during

[2] The term 'fiscal year' refers to a twelve-month period between July 1 of the previous year and June 30 of the stated year. For example, fiscal year 2019 refers to the period between July 1, 2018 and June 30, 2019.

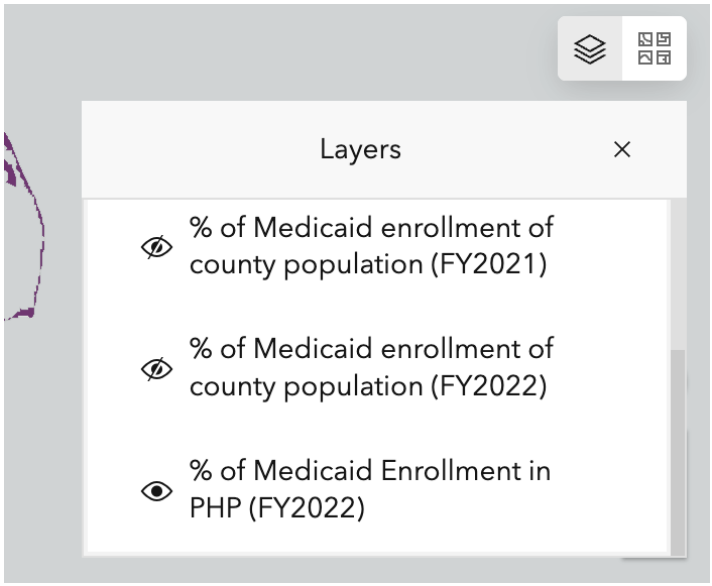

Figure 2: The layer selection function of the map on the 'County: Medicaid Enrollment' page

FY2022. Additionally, hovering the cursor over any bar of the graphs, or any slice of the pie charts will display the exact number for each data value (and percentage, if applicable).

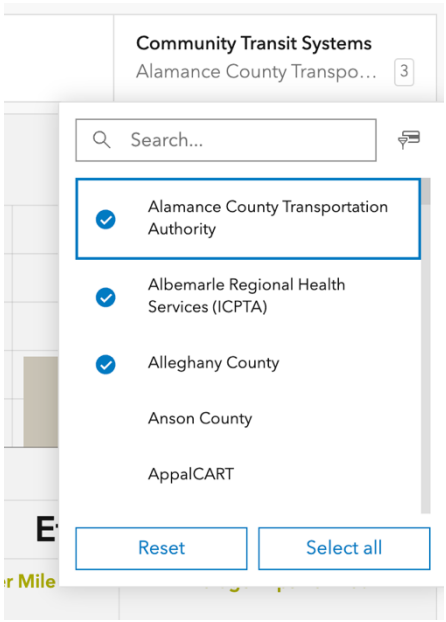

Figure 3: The Web App's drop-down function allows users to select one or more CTS(s) to analyze

CTS Operating Statistics

On the default page, the following bar graphs display their data for each FY2019, FY2020, FY2021, and FY2022: The Trips graph displays the total number of trips served by the selected CTS; the Miles graph displays the total number of miles driven the trips; the Hours graph displays the total number of hours driven during the trips; and the Efficiency graph displays two different efficiency metrics: 1) the average number of CTS trips per mile, and 2) the average number of CTS trips per hour. The Trips by Funding Type pie chart displays the proportion of Medicaid trips, non-contract trips, and other contract trips over the total number of trips in FY2022. Lastly, the CTS Location map visually highlights which CTS data is selected and

displayed. If all CTSs are selected, then the map does not highlight any counties. Through manipulating the above functions, the user can gain at-a-glance quantitative insights about the operations of CTSs in North Carolina and how they have changed over four fiscal years.

The next three pages of the web application present the user with more granular insights by trip type (Medicaid trips, non-contract trips (e.g., for the general public), and other-contract trips) executed by CTSs. At the bottom of each of these tabs is a bar graph that displays the total number of trips per month between FY2019 and FY2022, starting on June 1, 2019, and ending on May 1, 2022. Above the bar graph on the right is a table that, for each CTS, expresses the total number of trips for each identified fiscal year and the following ratios: the ratio of CTS trips during FY2022 to that of FY2019; the ratio of CTS trips during FY2022 to that of FY2020; and the ratio of CTS trips during FY2022 to FY2021. The default setting of the map shows the ratio of trips in FY2022 to the trips for FY2019.

To the left of the table is a map of this data for each county. If a CTS area is shaded in white, the ratio is at or near 1, signaling that there was no substantial change in the number of trips between the selected years. If a CTS area is shaded in blue, the ratio is less than 1, signaling that there was a decline in the number of trips, whereas if a county is shaded in red, the ratio is greater than 1, signaling that there was an increase in the number of trips. The map legend displays this information as a color ramp. These pages of the web application can be used to visually understand longitudinal changes in the quantity of CTS Medicaid trips, CTS non-contract trips, and other CTS non-contract trips.

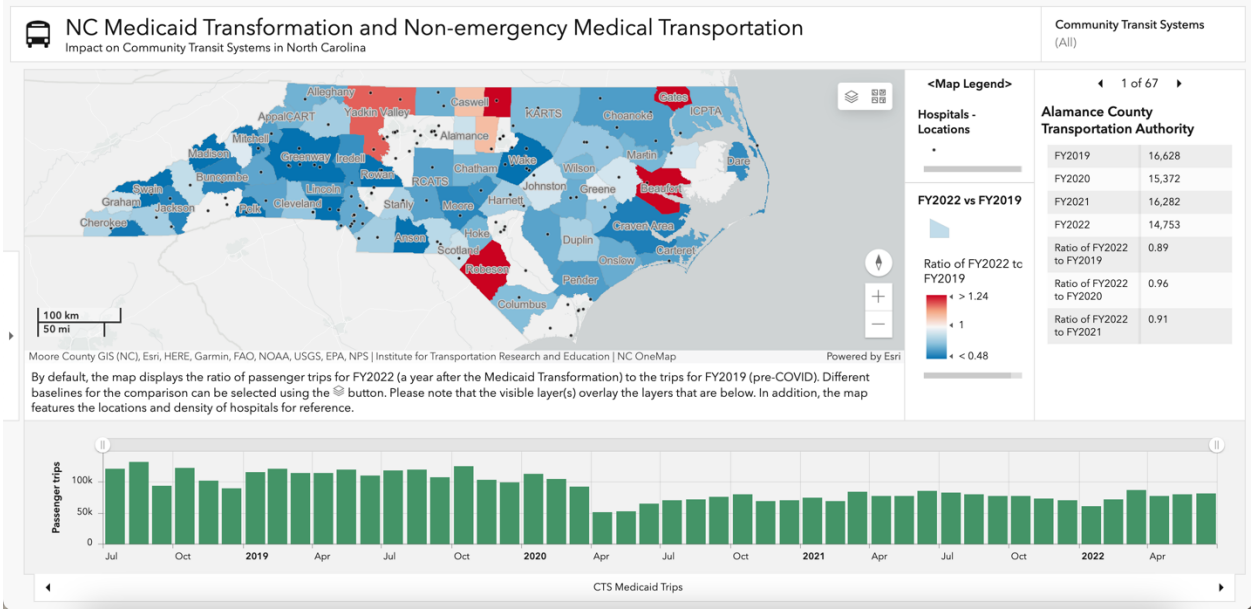

Figure 4: The 'CTS Medicaid Trips' page of the Web App

Medicaid Enrollment and Population

The remaining three pages show information by county (selectable by CTS area) on Medicaid enrollment, payments made to all transportation providers, and payments made specifically to NEMT transportation providers. The first page, displaying Medicaid enrollment for each county, contains two bar graphs: one that displays the total number of people in the selected county that are enrolled in Medicaid, and one that displays the total population in the selected CTS region. The Medicaid Enrollment bar graph also provides compositional data regarding the total number

of people enrolled in Prepaid Health Plans (PHPs) versus the total number of people enrolled as part of the Fee-for-Service (FFS) model.[3]

Above these graphs is a table which, for each CTS, shows the percentage of Medicaid enrollees that are in PHPs and the percentage of the selected CTS population that are enrolled in Medicaid for each fiscal year. The map's default layer displays the percentage of those enrolled in Medicaid that are in a PHP, for each CTS. For this layer, a darker purple shading indicates a proportion closer to 64.6% or greater and a lighter shading indicates a proportion closer to 54% or lower. For the other layers, darker blue-green shading indicates a proportion of Medicaid enrollment to county population closer to 29% or greater, and lighter, pink-blue shading indicates a proportion closer to 17% or lower. Through this page, users of the web application can learn about Medicaid enrollment and PHP participation metrics.

Payments to Providers

The remaining two pages feature data about the payment of transportation procedures. The page labeled "County: Payment to All Transportation Providers" includes data for both emergency medical transportation and NEMT purposes; however, the webpage labeled "County: Payment to NEMT Providers" includes data exclusively regarding NEMT services that CTSs provide. The following operational guidance applies to both pages.

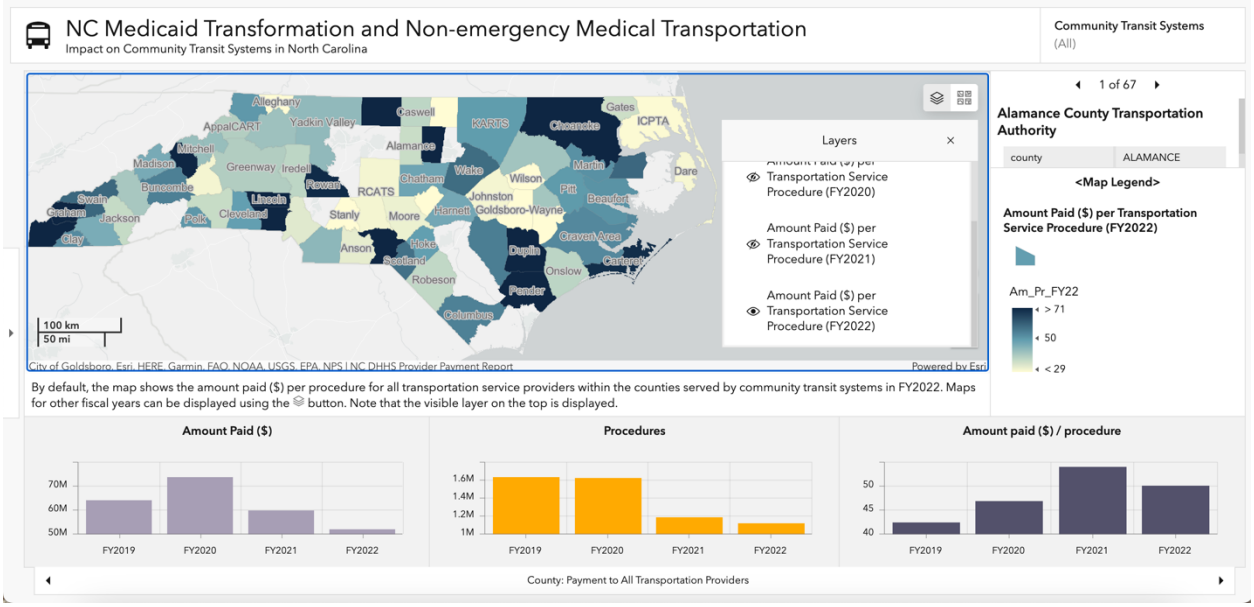

Figure 5: The 'County: Payment to All Transportation Providers' page of the Web App

The bottom of the page features three bar graphs: Amount Paid ($), which expresses the total amount (in US dollars) paid to transportation providers in each fiscal year; Procedures, which expresses the number of procedures for which transportation was provided for the selected county across each fiscal year; and Amount Paid ($)/Procedure, which expresses the amount of money (in US dollars) paid to the delineated transportation provider per procedure for the selected county across each fiscal year. Per the color ramp included in the map legend, the darker and bluer the shading, the larger the amount of money paid per procedure to transportation providers in that county. Inversely, the lighter, more yellow the shading, the lower the amount of money paid. Insights gathered from the use of these pages of the web application include the average price of the transportation service procedures and the spatial distribution of these prices.

[3] Note that there are zero people enrolled in PHPs for each fiscal year FY2019-FY2022 because PHPs were not introduced until the end of FY2021.

Assessing Impacts of Medicaid Transformation on Community Transit Systems: Analysis of Ridership Patterns and Interviews with Leadership

Overview: Impacts by the Numbers

This section leverages CTS operations data, expenditure data from NCDHHS, and NC population data, which are visualized in the Web App, to provide insight into how operations of the 67 included CTSs have been affected through the Medicaid Transformation process. Regarding summary data of the systems, the 'CTS Operations' page of the Web App demonstrates that the aggregate number of trips, miles, hours, trips per mile, and trips per hour have increased from their COVID-19 pandemic lows during FY2021 but have not returned to the levels they were before the pandemic and before NC Medicaid Transformation.

On the CTS level, there are a few key patterns that emerged through Medicaid Transformation and pandemic recovery. First, many systems located in or around regions of high hospital density reported increases in Medicaid trips since FY2021. Second, many counties in or around areas of low hospital density have increased the quantity of non-contract and other-contract trips since Medicaid transformation. Moreover, most counties with a high percentage of Medicaid enrollees in a PHP are in or around areas of high hospital density. Lastly, across the aggregated state data, the quantity of NEMT trips provided for procedures has increased, whereas the quantity of all transportation trips has continued to decline. See Figure 1 for a visualization of this information.

<u>Number of Medicaid Trips</u>

An examination of Medicaid trip trends between FY2019 through FY2022 suggests that overall, CTSs in North Carolina have exhibited some recovery in terms of how many Medicaid trips they are serving, but that these levels are about half what they were pre-Transformation and pre-pandemic (Figure 6).

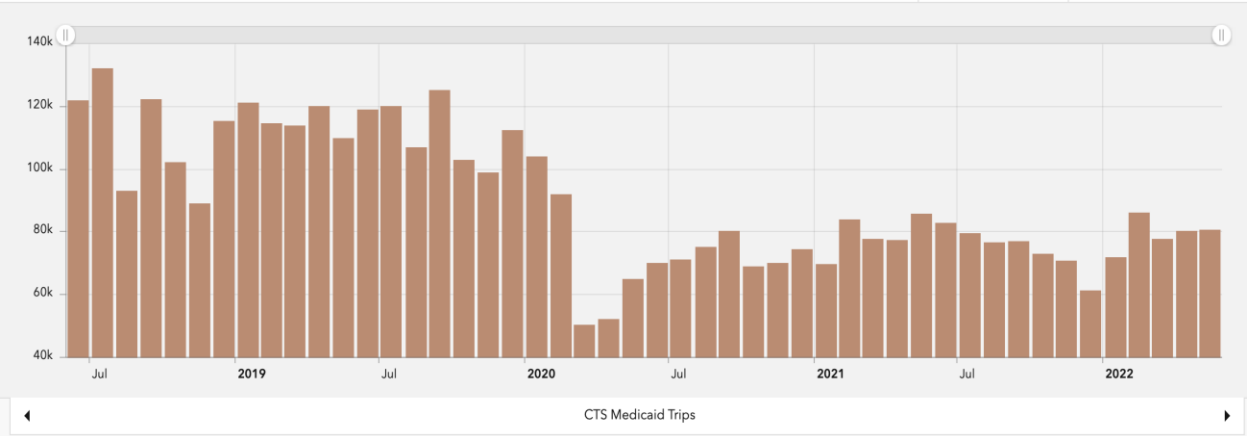

Figure 6: Number of Medicaid trips served by CTSs, FY2019 to FY2022

The aggregated trends shown in Figure 6, however, conceal substantial geographic variation in trends. The map displayed in Figure 7 shows that over the most recently available fiscal year's data, some counties have exhibited notable recovery, while others have not.

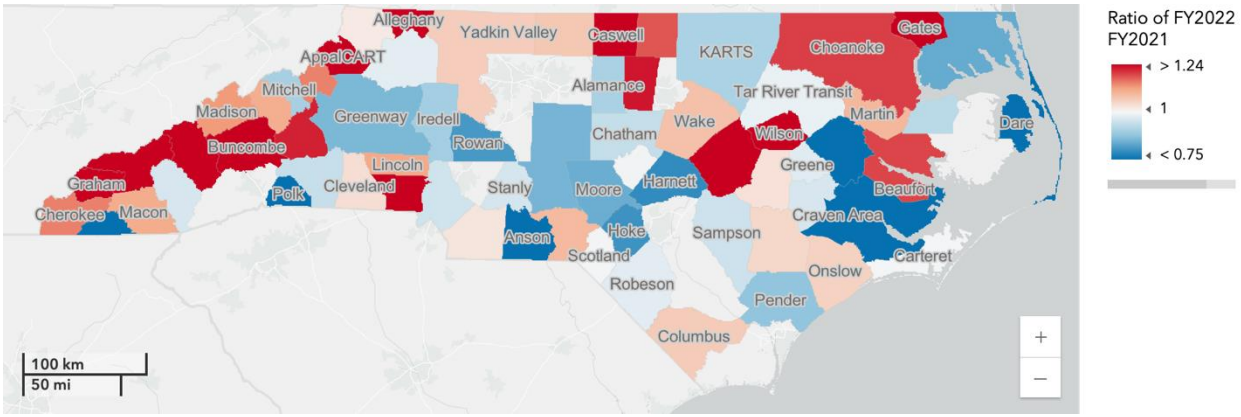

Figure 7: Ratio of FY2022 Medicaid trips served to FY2021 trips served by county

These differences are clear when examining trends in trips served over time in specific counties. While very few counties have returned to pre-pandemic levels of executed Medicaid trips, a select few, like Beaufort and Johnston counties, have exhibited remarkable recovery (Figure 8).

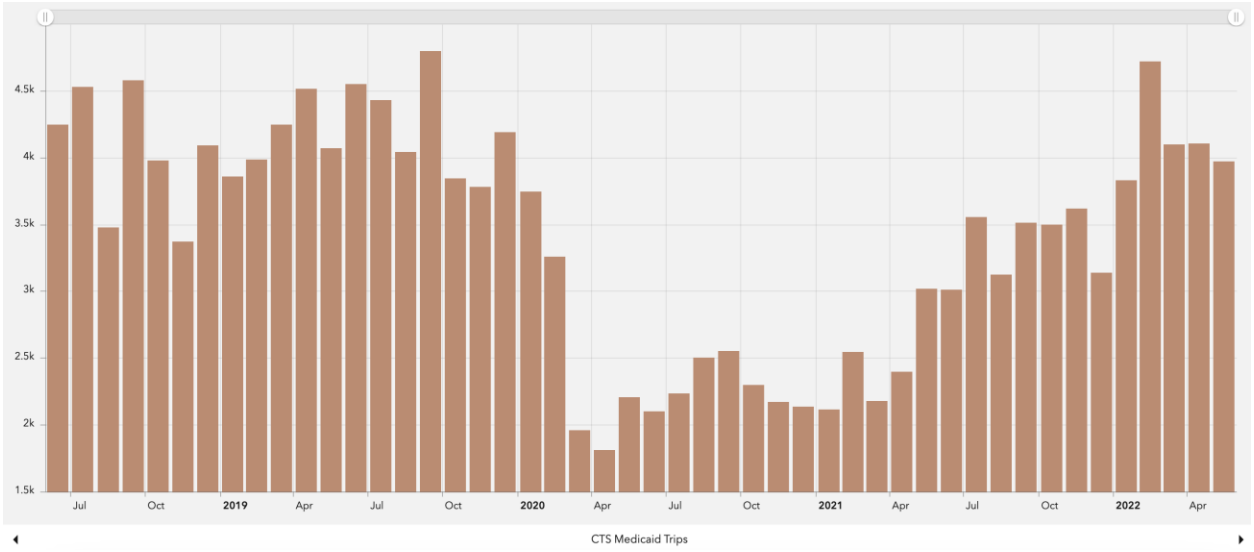

Figure 8: Johnston County's longitudinal changes in the quantity of Medicaid trips

Meanwhile, other counties have struggled. For example, Anson County has continued to see a decline in the number of Medicaid trips served by CTSs post-transformation (Figure 9).

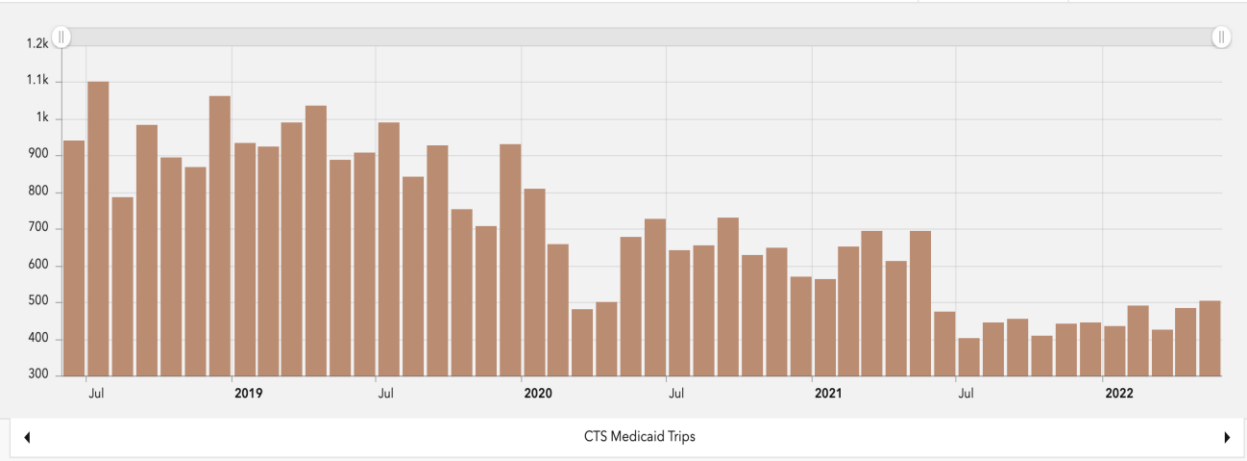

Figure 9: Anson County's longitudinal changes in the quantity of Medicaid trips

While not evenly distributed, some signs of recovery appear when examining trends on a county level between FY2021 and FY2022: Several counties experienced a jump in Medicaid trips from FY2021 to FY2022, in sharp contrast with the previous two fiscal years.

Many counties either experienced no change in the quantity of Medicaid trips or an increase between FY2021 and FY2022, particularly in and around areas of high hospital density. Such areas include Wake County, Johnston County, Orange County, Gaston County, and Buncombe County, among others. For example, Buncombe County executed 2,857 Medicaid trips in FY2021 and 4,563 Medicaid trips in FY2022, increasing the number of trips by 162% within the year. Inversely, several counties located further away from the areas of high hospital density have seen either no change or a decrease in Medicaid trips since FY2021. These counties/service areas include, among others, the Craven Area, Dare County, Anson County, Carteret County, ICPTA, and Clay County. Anson County illustrates this well; the county executed 7,812 Medicaid trips in FY2021 and only 5,409 Medicaid trips in FY2022 (See Figure 9). This pattern implies a correlation between hospital density and uptake of Medicaid trips such that CTSs located in areas of higher hospital density were able to execute more Medicaid trips after both the COVID-19 pandemic and Medicaid Transformation than CTSs located in areas of lower hospital density.

Number of Non-Contract and Other-Contract Trips

We also observed patterns in non-contract trips and other-contract trips, i.e., trips served by CTS for non-NEMT purposes. When comparing FY2022 to FY2019, much of the state experienced a decrease in both these types of trips, with an even higher magnitude of difference in the number of other-contract trips. The data indicates that the quantities of non-contract trips and other-contract trips have largely not returned to pre-pandemic levels. Notable exceptions include a stretch of counties between Chatham and Beaufort, which have seen an increase in non-contract trips since FY2019. In terms of other-contract trips, Wilson and Moore counties were the only two in the entire state to see an increase in other-contract trips since FY2019.

When comparing FY2022 to FY2021, there is a striking increase in the number of both non-contract and other-contract trips during this time frame, with an especially pronounced increase in other-contract trips, which loosely corresponds with hospital density. Regions of the state with lower hospital density, such as those of the Northwest, Southern, and Northeastern regions, have seen substantial increases in the quantity of non-contract trips.

The opposite is generally true, however, among CTSs that are in higher hospital-density regions. For example, counties in the Charlotte and Raleigh Metropolitan Areas, which feature two of the main hospital hubs in the state, saw either no change or a marked decrease in the quantity of non-contract trips.

The data for other-contract trips parallels these patterns. For example, Sampson, Duplin, Lenoir, Greene, Craven Area, and Carteret counties form a regional cluster of counties that dramatically increased their quantity of other-contract trips between FY2021 and FY2022, sometimes doubling from the year prior. Compared to the rest of North Carolina, this region also has a much lower density of hospitals.

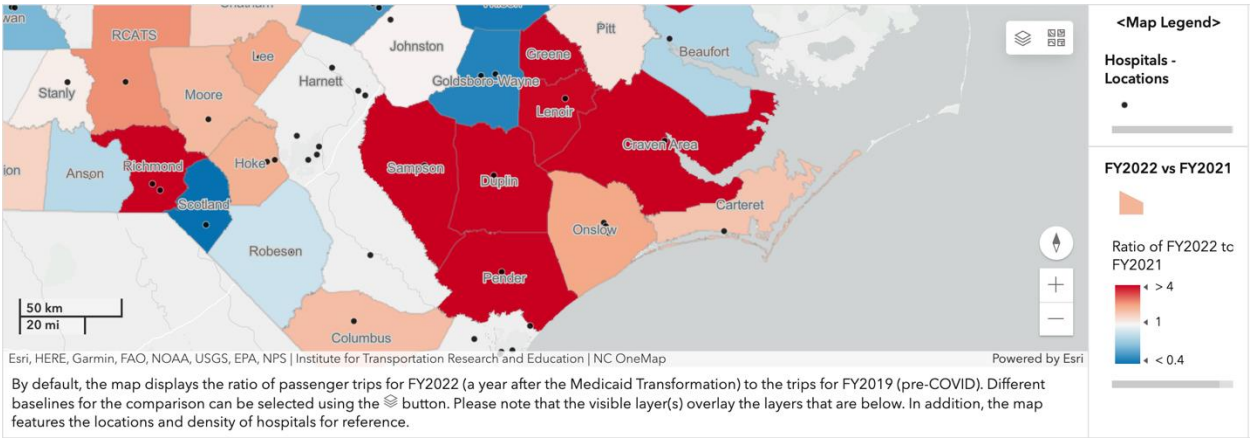

Figure 10: The Southeastern regional cluster of CTSs that dramatically increased their quantity of other-contract trips between FY2021 and FY2022.

Collectively, these insights suggest a correlation between hospital density and the uptake of non-contract and other-contract trips after Medicaid Transformation.

<u>Rates of PHP Enrollment</u>

In terms of Medicaid enrollment by county, the 67 CTSs have seen steadily increasing numbers of Medicaid enrollees, totaling 1.6 million in FY2019, 1.7 million in FY2020, 1.8 million in FY2021, and 2.08 million in FY2022. This steady increase in enrollment is accompanied by an increase in the overall population in North Carolina, from 8 million in FY2019 to 8.1 million in FY2022. After Medicaid Transformation in July 2021, 1.3 million people out of the 2.08 million enrollees joined a PHP.

The spatial distribution of PHP participation is correlated with hospital density. The three main regions of hospital density – the Triad, Triangle, and Charlotte Metropolitan Areas – and their surrounding CTSs exhibit high rates of PHP participation. Proportions range from approximately 60 to 66% of overall Medicaid enrollees in these CTSs who have joined a PHP. A few of these CTSs include, but are not limited to: GoWake, JCATS, Orange, Harnett, Chatham, Mecklenburg, and Union CTSs.

By contrast, many of the CTSs located further away from areas of high hospital density have reported significantly lower levels of PHP participation, with rates ranging from 29.5 to 53.7% in Cherokee, Graham, Jackson, Swain, Mitchell, AppalCART, Ashe, and Carteret CTSs.

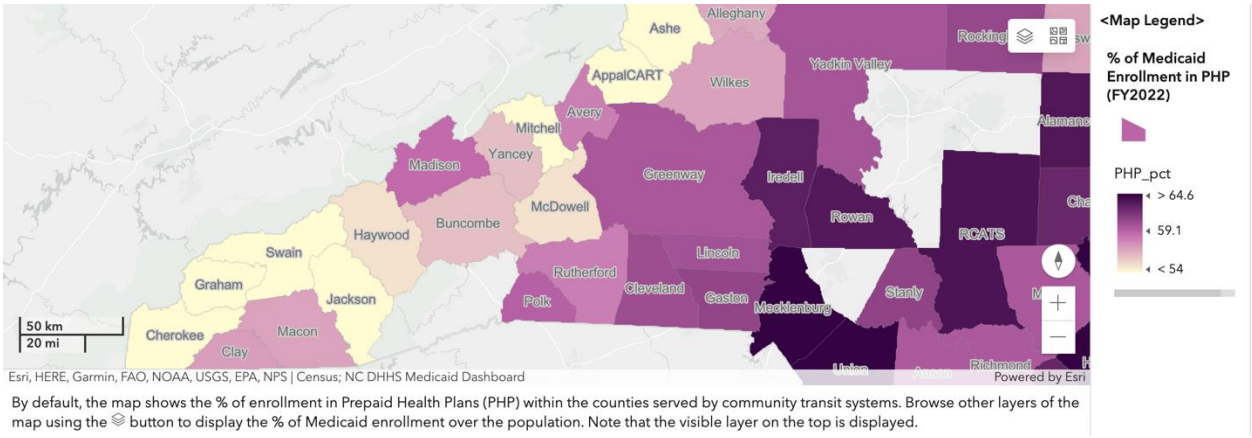

Figure 11: Two clusters of CTSs, each relatively distant from areas of high hospital density, and their proportion of PHP enrollment.

Compared to other CTSs, these systems have a relatively low number of hospitals and are relatively far away from hospitals.

<u>Amount of Money Paid to Providers</u>

Finally, in examining payments made either to all transportation providers or to providers specifically for NEMT service, there are no substantial overall patterns in the spatial distribution of the data. Between FY2019 and FY2020, providers of all transportation and providers of solely NEMT served consistent numbers of procedures. Across both years, there were 1.6 million procedures by providers of all transportation and 1.2 million procedures by providers of solely NEMT. The number of procedures for which transportation was provided in FY2020 significantly decreased for both payment types, likely due to the COVID-19 pandemic. However, the number of procedures has continued to decline for all transportation but has slowly begun to increase for NEMT-only providers.

This pattern follows in the amount of money paid per procedure. The amount of money for all transportation was steadily increasing through FY2021 before decreasing by $4.00 per procedure in FY2022. In contrast, the amount of money paid per procedure for NEMT transportation has been increasing since FY2019. This aggregate data indicates that the money paid per procedure and the number of procedures for NEMT have been steadily increasing. However, in the year since FY2021, all transportation has seen a decline in the amount of money spent per procedure as well as the number of procedures.

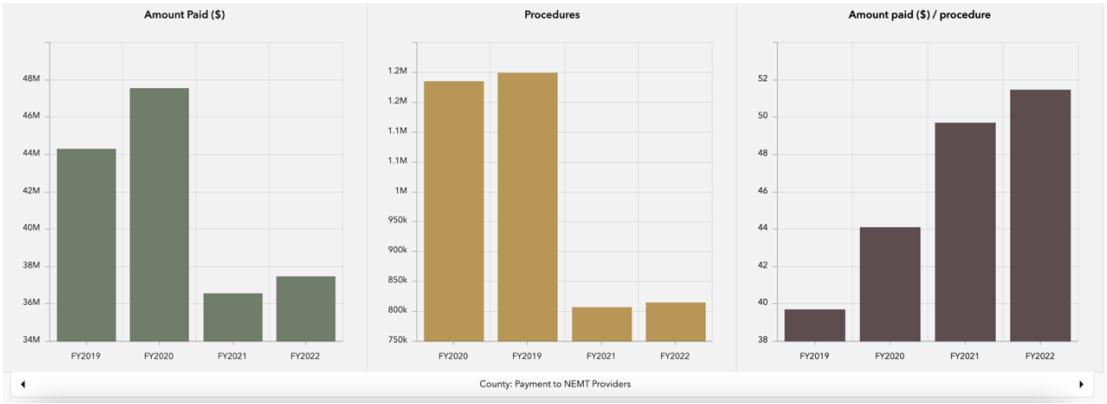

Figure 12: Aggregated data on payments to NEMT providers for all 67 CTSs

A Closer Look: Highlighting Specific Systems

While the above sections provided insight into statewide trends, these aggregate trends do not necessarily represent the patterns observed at a more local level. For example, we observed several key distances—at least in broad strokes—between urban/urban-adjacent counties near medical facilities and their more rural counterparts with longer distances to travel to the nearest medical facilities. In this section, we highlight a CTS serving a substantially urban county, which has experienced a relatively strong recovery through Medicaid Transformation and the waning of the pandemic (Johnston County). We contrast these insights with a picture of a rural county that has struggled by comparison (Carteret County). Through this comparison, we highlight some of the differential impacts these events have had on different parts of the state.

In terms of general operating statistics, Johnston County Area Transit (JCATS)'s quantities of trips, miles, and hours have been decreasing since FY2019, with a steep decline from FY2020 to FY2021. However, the county bounced back to approximately the same levels as those of FY2020 in FY2022: the county saw 81,600 trips, 1,100,000 miles, and 61,500 hours in FY2020 and 82,900 trips, 1,100,000 miles, and 62,000 hours in FY2022. In contrast, Carteret County has maintained numbers of miles under 460,000 and numbers of hours under 26,000 for the last three fiscal years (as compared to FY2019's 535,800 and 27,800, respectively).

Johnston County Area Transit System (JCATS)

JCATS is one of the few systems to have returned to pre-pandemic levels of trips, miles, and hours. Likewise, the efficiency metrics have also returned to those of FY2020, at 0.1 trips per mile and 1.3 trips per hour. Very few, if any, other CTSs have accomplished such a rapid return. There are peers to Johnston that also have exhibited these trends, such as GoWake, Mecklenburg County, and Buncombe County. Another unique characteristic of JCATS is the proportion of trips that were executed for Medicaid purposes in FY2022 (see Figure 13). Within the system, 53.3% of all CTS trips were Medicaid trips. In comparison, the state-wide proportion of Medicaid trips was only 31.5% of all CTS trips. JCATS has increased the number of Medicaid trips such that the ratio of FY2022 trips to FY2019 trips is 0.9, the ratio of FY2022 trips to FY2020 trips is 1.04, and the ratio of FY2022 trips to FY2021 trips is 1.56. This increase between FY2021 and FY2022 is consistent with trends in just a few other systems, particularly those in or around areas of high hospital density, like Orange County and Buncombe County.

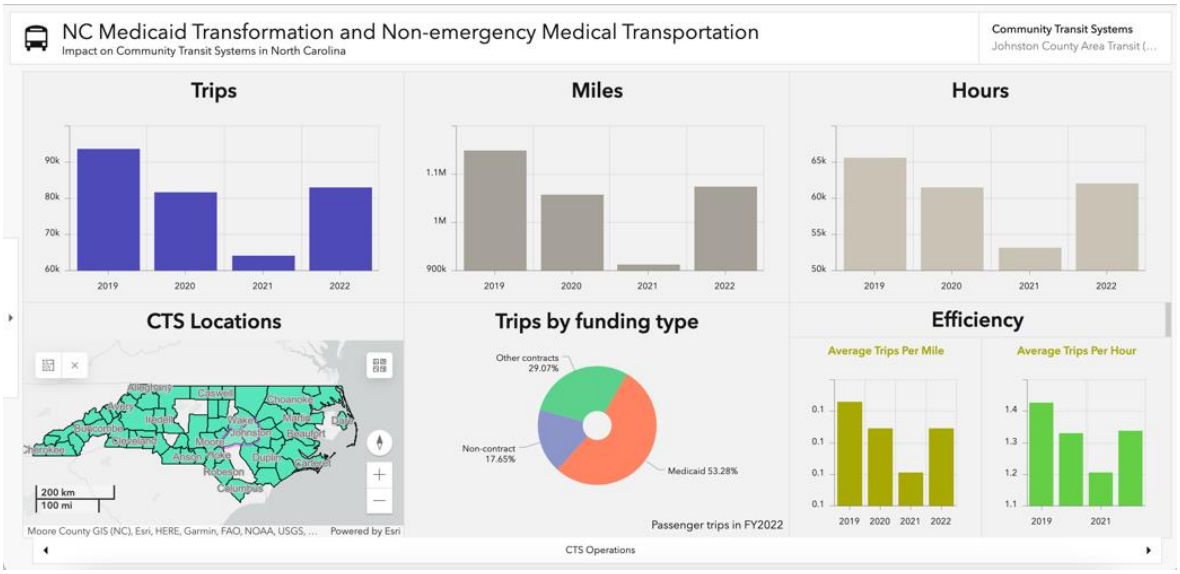

Figure 13: JCATS operations statistics

JCATS was not executing many non-contract trips before the pandemic, but the system has since increased this quantity almost sevenfold, from 2,130 trips in FY2019 to 14,624 trips in FY2022. However, the number of other-contract trips remains at only just over half of what it was in FY2019. This is in line with the overall trend of the 67 systems.

Like many other urban areas of the state, over 60% of the Medicaid enrollees in JCATS switched from the fee-for-service model to a pre-paid health plan. The proportion of the system's population that is enrolled in Medicaid has been steadily increasing since FY2019, as has the proportion across much of North Carolina. Additionally, compared to many other, more rural systems, JCATS' provision of both emergency medical transportation and NEMT declined between FY2019 and FY2022. Despite the decrease of both metrics in FY2021, the amount of money paid per procedure was markedly highest in that year, indicating that money paid and procedures did not proportionally decline. Overall, the amount of money paid to providers and the number of procedures for which transportation was provided has risen since FY2020, but not enough to match pre-pandemic levels. GoWake, a nearby region of high hospital density, followed a similar trend.

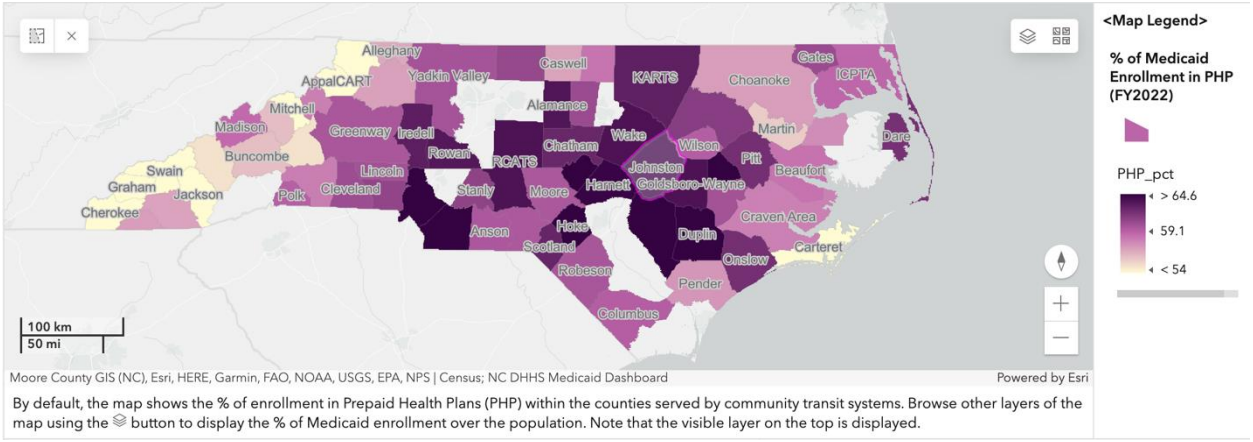

Figure 14: JCATS' proportion of Medicaid beneficiaries enrolled in a PHP contextualized by the proportions of other CTSs

JCATS also serves as an interesting case study given its auto-assign pilot program that the system implemented with ModivCare, which is discussed in detail in the next chapter of this report. Examining the trends that occurred within JCATS may have implications that could help inform support for other systems after the implementation of Medicaid Transformation. While JCATS in some ways mimics patterns seen by other urban-adjacent counties, the introduction of the auto-assign program after the 2021 Medicaid Transformation may be further correlated with the dramatic uptake of both Medicaid and non-contract trips as well as the decline in the amount of money paid per procedure in JCATS.

Carteret County

Carteret County provides a counterpoint to the trends that JCATS has experienced. Like JCATS, the total number of the county's trips, miles, and hours has either returned to pre-pandemic levels or exceeded them. However, only 12.4% of Carteret's executed trips in FY2022 were for Medicaid-related purposes, suggesting that an increase in the quantity of other-contract and non-contract trips is making up for the depressed number of Medicaid trips.

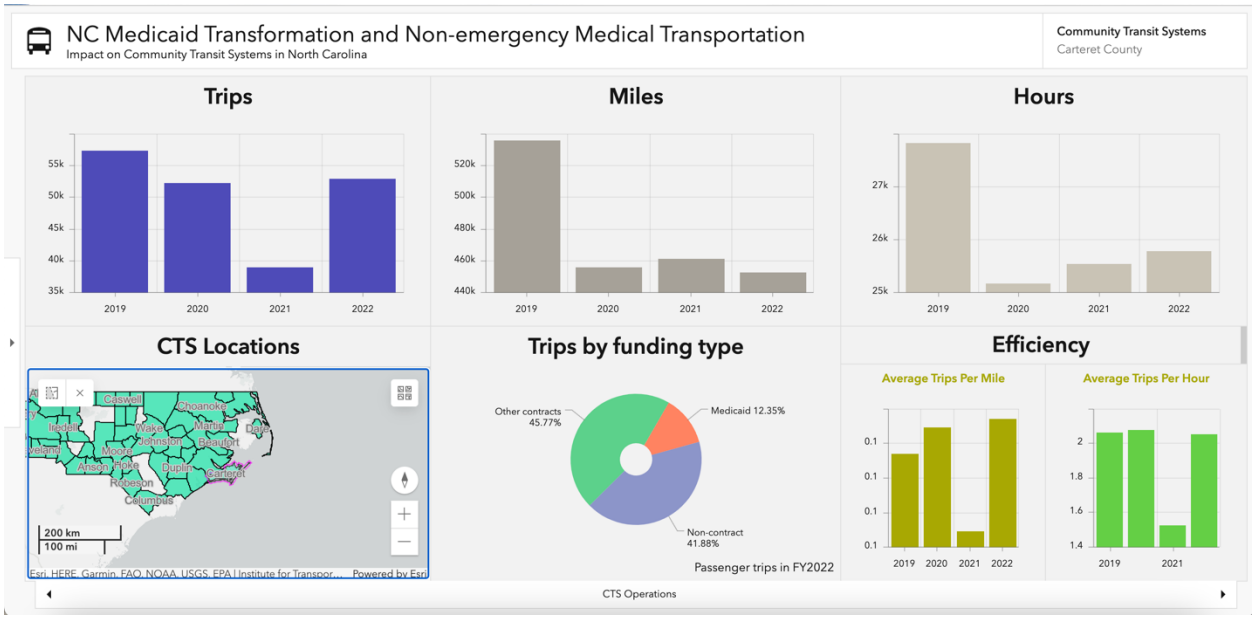

Figure 15: Carteret County's operations statistics

Alongside other counties located in areas of low hospital density, such as Jackson, Wilkes, Cleveland, and Pitt counties, Carteret reported higher numbers of non-contract trips and other-contract trips in FY2022 than in FY2020, or even compared to FY2019. Conversely, Carteret has largely struggled to raise the number of Medicaid trips since FY2020 and FY2019, like other rural counties of low hospital density. The amount of money paid and the number of procedures has been declining for all transportation as well as solely NEMT since FY2020, with a stark reduction in the number of procedures for both expenditures and number of procedures. From FY2020 through FY2021, 62% of the money per procedure for all transportation consisted of money paid per procedure for NEMT alone. A discontinuity appears in FY2022 when money per procedure for NEMT alone dropped to only 44% of money per procedure for all transportation. This information suggests that, in FY2022, all transportation became the dominant source of expense to payors.

Additionally, Carteret County is one of eight CTSs that has reported PHP participation at 53.7% or less of the system's overall Medicaid enrollment. Notably, all eight of these systems are rural and relatively distant from areas of high hospital density. Like most other counties in the state, Carteret County's population, as well as overall Medicaid enrollment, has been steadily increasing since FY2020.

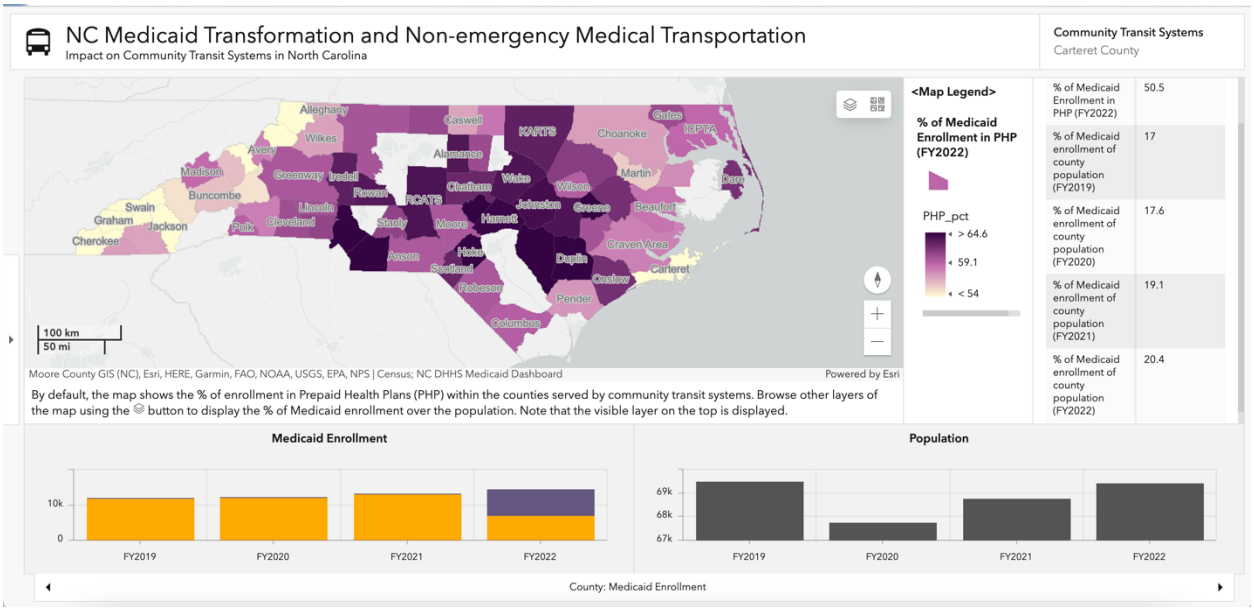

Figure 16: After Medicaid Transformation, 50.5% of Carteret County's Medicaid recipients were enrolled in a PHP

Collectively, these data suggest that following both the COVID-19 pandemic and Medicaid Transformation, Carteret County serves as an exemplar of a rural county that has not experienced recovery in providing Medicaid trips and thus provided more non-contract and other-contract trips in exchange.

Diving Deeper: Qualitative Analysis of Interviews with CTS Administrators

While the above sections provide an effective overall picture of quantitative changes in CTS operations through the early stages of Medicaid Transformation and pandemic recovery, as well as a comparison of some localized patterns, interpreting these patterns requires a better understanding of what the changes have looked like on the ground. To that end, we conducted qualitative interviews with leadership from a diverse group of CTSs. The following section is a reprint of the data, methods, and results sections from a paper entitled "Impacts of North Carolina's Medicaid Transformation on Community Transit Systems: A Qualitative Analysis with Policy Implications", published in *Transportation Research Interdisciplinary Perspectives*. This section reflects the methods and content of the interviews we conducted for this study addressing changes in CTS operations through Medicaid Transformation followed by detailed narrative results. A full reference to the paper follows:

Santana Palacios, M., McDonald, N., & Iacobucci, E. (2023). Impacts of North Carolina's Medicaid transformation on Community Transit Systems: A qualitative analysis with policy implications. *Transportation Research Interdisciplinary Perspectives, 22*, 100918. https://doi.org/10.1016/j.trip.2023.100918

Research Design and Methods

From February to April 2023, the research team conducted semi-structured in-depth interviews with leadership from nine community transit organizations and one Medicaid Transportation Manager in North Carolina (Figure 1). Insights from interviews were triangulated with a policy content analysis, wherein we compared responses we collected with policy documents related to NEMT service provision under Managed Care and public records from CTSs' board meetings. Semi-structured interviews were a valuable tool in this context since they allowed us not only to

uncover insights about the transition that we could anticipate from official policy documents but to learn about unexpected changes and impacts as well (Singleton and Straits, 2005).

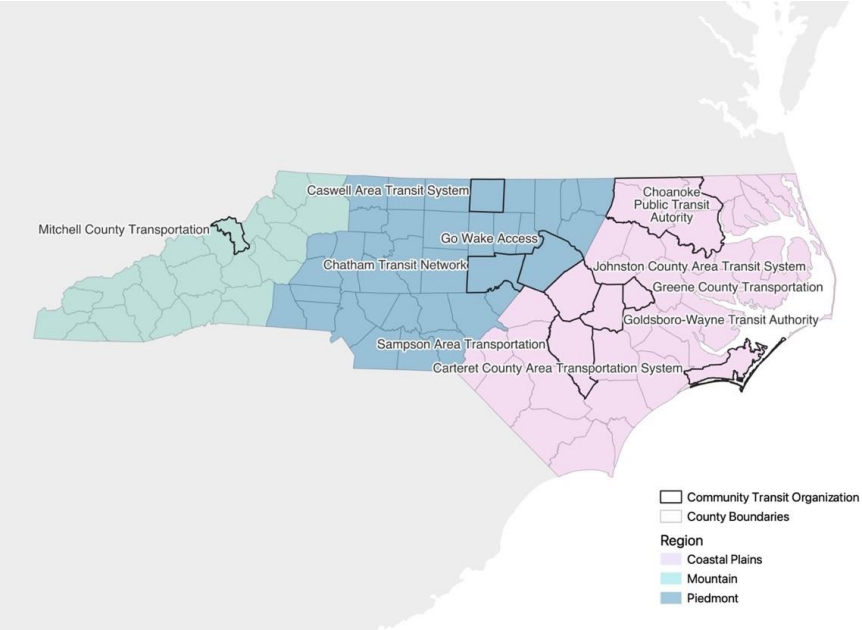

Figure 17: Location of Community Transit Organizations included in the study

Interview participants were identified through a stratified purposive sampling process. One stratum consists of the three geographical regions the state is often divided into: Coastal plains in the East, Mountain areas in the West, and Piedmont in the state's central area. The other stratum is whether CTSs serve residents from single or multiple counties. Once a list of CTSs within each stratum was generated, the team considered sources of information-rich cases related to our research question. CTSs were chosen in consultation with practitioners and researchers with experience working with community transit organizations in North Carolina, who also recommended interviewing the Wake County Human Services' Medicaid Transportation Manager to expand upon some themes that emerged during the first round of semi-structured interviews.

Role	Organization	Region	Counties Served	Ridership [1]	Medicaid-Funded Trips [2]
Director	Chatham Transit	Piedmont	Chatham	53.300	12%
Director	Greene County Transit	Coastal Plains	Green	17.300	35%
Director	Mitchell County Transportation Authority (MCTA)	Mountain	Mitchel	37.100	11%
Director	Caswell County Area Transportation System (CATS)	Piedmont	Caswell	57.300	32%
Director	Goldsboro-Wayne Transportation Authority (GWTA)	Coastal	Wayne	44.300	58%
Director	Carteret County Area Transportation System (CCATS)	Coastal	Carteret	52.900	12%
Director	Choanoke Public Transportation Authority	Coastal	Bertie, Halifax, Hertford, Northampton	25.900	47%
Director	Sampson Area Transportation (SAT)	Coastal	Sampson	40.300	40%
Director	Johnston County Area Transit System (JCATS)	Piedmont	Johnston	82.900	53%
Medicaid Transportation Manager	Wake County Human Services	Piedmont	Wake	-	

Table 1: Summary Characteristics of Interview Participants

Source: Ridership data provided by the North Carolina State University Institute for Transportation Research and Education. Note [1] Data correspond to the 2022 Fiscal Year, [2] As a percentage of ridership.

Interview participants were recruited via email with the assistance of leadership from the North Carolina Public Transit Association. Interviews lasted between 30 to 50 minutes and were conducted via Zoom. The interviews focused on four themes — 1) agreement with brokers, 2) customer base, 3) operations and logistics, and 4) finances. We asked predominantly open-ended questions, allowing respondents to guide the conversation based on their experiences and allowing other themes to emerge. Interview audio recordings were transcribed using Otter.ai and cleaned and coded by one research team member.

Our sampling method allowed us to identify experiences and issues in common across many CTSs while also uncovering differences experienced by CTSs whose contexts (e.g., geography, population density) were quite different. This strategy facilitated an in-depth understanding of how Medicaid Transformation altered community transportation systems' ability to continue coordinating individual human service transportation programs. Policy content analyses considered how various NEMT Managed Care Policy provisions overlapped

with interview themes, which help explain what has guided brokers' decisions and interviewees' experiences with the Medicaid Transformation.

We coded interview transcripts following an iterative process that is in part deductive (codes developed a priori) and in part inductive (codes developed in the course of the analysis) (Bingham, 2023). This iterative qualitative data analysis process is referred to as Flexible Coding by Deterding and Waters (Deterding & Waters, 2018) and cited as such by some scholars in transportation research (see for instance (Oluyede et al., 2022; Palacios et al., 2020). Our deductive coding process was based on the questions included in the interview guide, for example, "What are some of the challenges that emerged with the transition when scheduling trips requested by the private broker?, which we assigned the code "trip scheduling challenges." The deductive coding process consisted of tagging or labeling all topics that emerged during the interviews, such as "General-purpose trips funding" and "Location (Dis)advantage."

The coded text was further analyzed to develop thematic data synthesis, which we triangulated with policy document content. Our qualitative data analysis provides a nuanced understanding of how the Medicaid Transformation has impacted CTSs' ability to continue coordinating between multiple human transportation programs in North Carolina.

Limitations

Even though our recruiting strategy followed a stratified purposive sampling process to elicit responses from various CTSs, it is possible that some experiences were not captured. This potential omission could be mitigated if resources that allow conducting more interviews for an extended period were available. However, despite these limitations, by the time our fieldwork had stopped, we had reached saturation on most of the themes that structured interviews: contractual limitations, operational and logistical challenges, and financial constraints that emerged with the Medicaid Transformation and affected CTSs' Transportation Coordination ability.

Findings

Our analysis identified four primary themes: 1) Location (Dis)advantage, Ridership, and Prospects for Transportation Coordination; 2) Transit Operations and Riders' Flexibility; 3) CTSs' Funding and Sharing Costs; and 4) Collaborating to Navigate the New System. In the section below, we describe findings in these thematic areas with supporting context and quotes from our interviewees.

Theme 1: Location (Dis)advantage and Prospects for Transportation Coordination

CTSs reported very different experiences concerning how Medicaid Transformation has impacted their transportation coordination ability. Interviews suggest such experiences are, to some extent, mediated by how close their county was to facilities providing specialized medical care. Most rural counties in the sample lack medical facilities that offer specialized treatment and are located far from those that do. Most respondents whose CTSs serve counties far from specialized medical care facilities expressed their systems have lost Medicaid NEMT trips since the state transitioned to the managed care model. Lack of within-county specialized medical care requires transportation-disadvantaged Medicaid beneficiaries to travel long distances to reach specialists in another county.

Leadership from CTSs serving counties closer to specialized medical facilities shared that their systems have not struggled to receive and fulfill trip requests, and one indicated her CTS has had no issues with transportation coordination. The interviewee, whose CTS has seen an increase in Medicaid trips, described the apparent relationship between location, ridership, and capacity:

> We're a little bit different from everybody else; we're literally 17 miles from Chapel Hill. And we're in and out of there 10, 15, 20 times a day anyway [...] We're seeing [Medicaid] riders that we had never dealt with before [...] Most of them are going to dialysis, these clients or needing to go towards the Chapel Hill area, UNC area [...] I think our relation, our closeness to somewhere like Chapel Hill and Durham […] assist us in being able to handle more of the trips.

Another interviewee compared his CTS's location advantage with others in the state that struggle to comply with Managed Care policy guidance concerning long-distance trips: “We don't have that [issue] here because we're geographically close to the worst-case scenario [...] To take a rider coming to a specialist anywhere in Raleigh, Cary, even Durham, and Chapel Hill, that's a *one-hour trip* for us.”

That this location-advantaged CTS is close to the *worst-case scenario* may indicate brokers privilege transportation providers who can provide travel times of less than an hour, which also coincides with the ideal maximum travel time stated in the NEMT Managed Care policy. CTSs with a relative location advantage (at least, those included in this study) have also been able to negotiate more flexible pick-up times with brokers’ coordinators while still providing reasonable waiting times for beneficiaries.

This regional location advantage further affects transportation coordination. Closeness to specialized medical services allows shorter *and more* Medicaid trips, as one interviewee noted. In turn, shorter *and more* Medicaid trips lead to higher transportation service delivery efficiencies, which means a higher ability to coordinate Medicaid trips with other human transportation services, or as one interviewee put it: "The more people you can put on one vehicle, the lower the cost is for each rider. So anytime we can maximize that efficiency is to everyone's benefit."

In contrast, most CTSs serving counties further away may require a two- or three-hour trip to reach their clients' medical appointments. Longer distances can prevent CTSs from scheduling trip requests for beneficiaries who transitioned to Managed Care to share a vehicle with other riders. Providing shared rides—though a more efficient use of revenue—would most likely increase overall trip travel times to an extent that is deemed as too onerous by brokers' coordinators under new policy guidance. Because Medicaid is an important revenue source for CTSs, some therefore privilege serving NEMT Medicaid recipients' travel times at the cost of other human transportation programs' efficiency.

Notably, the decreased transportation coordination ability contrasts with the steady increase in NEMT ridership for many CTSs in our sample, including some in small rural CTSs far from specialized medical centers. One director from one such CTS commented during a quarterly board meeting that took place only a few months after the Medicaid Transformation began: "We are still seeing an increase in ridership since our last meeting [...] This has not been a smooth transition, but *things are getting better*. The managed care brokers for Medicaid trips are coming in steady now." Nevertheless, she also noted: "The way Medicaid trips are set up now, we may send two to three buses to same area out of town since appointments can be made any day of the week and time [...] We are out of the county more often and *many times with fewer riders on board due to this new transition*."

Our interviews indicated that NEMT ridership has been rising for most CTSs while the number of NEMT riders who transitioned to Managed Care is not yet significant for some CTSs at this point in the transition. Nevertheless, the large majority of our interviewees were concerned that their ability to coordinate between different human transportation services will be drastically diminished once the second phase of the Transformation is rolled out. Some have seen their coordination efforts already affected for various reasons, seriously affecting

transportation-disadvantaged populations in rural North Carolina. These reasons are described in the following sections.

Theme 2: Transit Operations and Rider Flexibility

The new NEMT Managed Care policy established rules to improve beneficiaries' access to health care, impacting CTSs' daily operations in various ways. These impacts include things like transportation provider priority, abilities to meet expected pick-up times, booking processes, and how these and other factors come together (or do not) to provide transportation-disadvantaged residents with reliable service to fulfill their travel needs and allow CTSs to continue serving as many customers as possible with their already limited budgets.

Service Delivery and Prioritization

In the spirit of maintaining the coordinating role of CTSs, NCDOT recommended to the state's DHHS Division of Medical Assistance that transportation brokers shall offer the right of first refusal (ROFR) in the trip assignment process to CTSs unless it is not the most appropriate mode given enrollee needs (NCDOT, 2018)

The ROFR is a contractual right to enter a business transaction with a person or company before anyone else can. In a CTS-Broker contractual agreement with this recommended provision, if the CTS were to decline a transaction (referred to as rerouting a trip), the transportation broker would be free to entertain other providers.

Despite this NCDOT recommendation to the DHHS, the adopted NEMT Managed Care policy does not specify ROFR for CTSs. The NEMT Managed Care policy only states that private health plans (PHP)—and therefore transportation brokers that contract with them—are required to develop a network of NEMT providers to fulfill the requirements, including: "transport a member in the mode most appropriate to meet the member's needs and circumstances [and] assure transportation is provided to members in a timely and cost-effective manner" (NC NEMT Managed Care Policy, 2022, p.5)

Most interviewees shared they were not provided with any ROFR. For one, legal teams representing private brokers strongly opposed giving CTSs this right. Additionally, brokers considered such a practice at odds with their obligation to ensure NEMT-dependent Medicaid beneficiaries are provided with the most cost-effective transportation alternative. One interviewee commented on how the idea of offering CTSs the ROFR was not perceived as ethical by ModivCare legal team when the Transformation began: "The problem we saw was the hesitancy to change their contract language to give us what we call right of first refusal [...] we will just return [potential riders] by right; that was a challenge."

Therefore, the lack of a right of first refusal for CTSs could substantially alter which parties support coordinating transportation, as the determination of "appropriateness" for trips to be carried out by CTSs is transferred from CTSs to transportation brokers. Our interviews suggested that, at least for some CTSs, this shift in roles was coming to pass. For instance, some interviewees felt their organizations were often brokers' last resort despite what CTSs were assured.

When asked how they learned this, one interviewee commented: "I have no clue because it was told to us when this was going into a place that the transportation system would be given first right of refusal. And even getting a third of the trips that are available out there." Another shared: "[…] we will have people call us that have previously ridden with us through social services and will call asking where their ride is. And we don't have a ride assigned for them. So, when we double-check on it, it's been assigned to a different provider."

Who Decides What Pick-Up Times When?

One logistical difference between county DSS and the new broker-coordinators is who sets pick-up and waiting times and at what point in the process. To initiate a NEMT trip request under Medicaid Direct, patients contact their county's DSS transportation coordinator and provide all required appointment and eligibility information. The coordinator sends the request to the CTS serving their county (providing *de facto* right of first refusal) and contacts the patient once the agency has set the day's trip schedules to let them know the pick-up time. These times are often decided the day before the trip.

Under Managed Care, however, patients in North Carolina request NEMT trips through brokers' agents, who assign them a pick-up time before the CTSs plan their routes and, therefore, before a realistic pick-up time has been determined. Because brokers are not responsible for fulfilling the transportation services, communicating pick-up times too early poses CTSs with the challenge of fulfilling brokers' requests while balancing logistical parameters that make it possible to provide service. For example, providing service in sparsely populated, often rural areas requires accommodating as many riders as possible in one vehicle, which means that routes can vary widely depending on who needs to travel on a given day, making predicting possible pick-up times a highly uncertain practice.

In rural North Carolina, CTSs' goal to maximize vehicle occupancy, and make out-of-county trips financially viable, induces longer waiting times for some clients, sometimes significantly longer than the exact expected time provided by brokers. As a result, patients are often frustrated when they plan around a quoted time only to have their ride fail to meet the scheduled pick-up time. A director from one CTS provided an extreme example that illustrates the problem:

> [T]his week, we had a managed care client that had an out-of-county appointment, I believe, [at] 1:00 or 1:30 pm. We arrived at the [person's] home [...] at about 7:30 am because we had four or five other people [in the same van] that had earlier appointments. And she was quite upset that we were there so early, and she mentioned the broker's name and said they told me I would be picked up between 12:30 […] one o'clock."

Accessing riders' homes in rural North Carolina makes pick-up times even more unreliable, as one interviewee explained:

> And this is where [CTSs] get into a problem with [brokers], telling the people what time we're going to pick them up. The person that [beneficiaries] are talking to at the [broker's] call center doesn't know that J lives down the dirt lane, five miles back into the farm. And it's going to take us 10 minutes just to navigate that dirt lane. And then another 10 to get back out to the road. And then we might get stuck behind a tractor because it's, you know, harvesting time. There are just so many factors that play into it that the call center representatives have no clue about."

These disparities between quoted and actual pick-up times have adverse effects on clients and jeopardize the ability of CTSs to meet their policy obligations under the new specifications. Expected waiting times for transportation-disadvantaged beneficiaries are specified in the NEMT Managed Care Policy: "Transportation shall be scheduled so that the member arrives on time [...], but no sooner than *one hour* before the appointment; nor must wait more than one hour after the conclusion of the treatment for transportation home" (NC Managed Care Policy, 2022, p. 2). The policy also specifies a longer waiting time for instances where Medicaid beneficiaries' trips are paired with other riders in the same vehicle.

> When provided as part of a multi-loaded, long distance and/or coordinated trip, transportation shall be scheduled so that the member arrives on time, but no sooner than two hours before the appointment, nor must wait more than two hours after the conclusion of the treatment for transportation home (NC Managed Care Policy, 2022, p. 2).

Disparities in times quoted by brokers and times logistically feasible to fulfill by CTSs increase the likelihood of violating these expectations. Information to counter false expectations is provided by Greene Transit on their websites, stating: "Actual pick-up times will be adjusted according to system needs. The goal of the system is to honor passengers' schedule needs in a cost-efficient manner."

Trip Request Advance Notice and Non-compliance Issues

Some interviewees noted that some brokers' coordinators rarely honored what was said in their contracts concerning booking rules. Booking rules vary significantly from county to county. Still, contract agreements between CTSs and NEMT private brokers state how many hours or days in advance private brokers must request a trip for Medicaid beneficiaries.[2] Most CTSs are consistent in requiring a 24-hour notice for with-in-county trips. Nevertheless, while most require a 2-day notice for all out-of-the-county trips (e.g., Greene County Transportation), some request trips are requested at least three days in advance (e.g., Mitchell County Transit). Carteret County Area System requires all out-of-county transportation to be scheduled at least 24 hours in advance.

Variations in booking rules indicate the complexities transportation brokers face when requesting NEMT trips to CTSs in North Carolina. However, brokers failing to honor these booking rules further complicate the ability of CTSs to honor times quoted by brokers, affecting CTSs' scheduling processes and, therefore, overall transportation coordination ability.
Some CTSs attempted to develop coping strategies, assuming the above scheduling and fulfillment disparities would get ironed out. For instance, once the Medicaid Transformation started, leadership at the MCTA decided to serve as many last-minute trip requests as possible to gain brokers' trust, at the cost of not maximizing vehicle occupancy and, in some instances, not reaching a break-even point. The strategy proved unsustainable in maintaining health transportation coordination levels, rendering the CTS to reroute all non-complying requests:

> So, for about a year or more, I told [our employees], whatever they send us, do whatever we must do to take it. And then it was getting out of hand. And it was like they never cared about honoring what we had asked for and what was in the contract ... And it was really causing a scheduling nightmare, as you can imagine ... So, I told [our employees] they have to abide by our rules, three-day notice out-of-county, 24-hour notice within-county - denied! I said they've got to abide by our rules - denied!

The “scheduling nightmare” created by same-day or last-minute trip requests means CTSs' schedulers have less time to enter and validate trip requests in their scheduling software and then manually validate what it suggests. For out-of-county requests in particular, not having trip information in advance prevents CTSs’ schedulers from generating routes that maximize vehicle occupancy. In turn, suboptimal use of fleet and driver resources hampers CTSs' ability to minimize operational costs to the extent that trips are financially viable. This is particularly important in rural areas where travel demand is low and resources are scarce.

Firm determination to reroute all non-compliant trips deteriorated relationships with some brokers' trip coordinators. Some interviewees perceived that brokers responded to consistent rerouting behavior with fewer Medicaid NEMT trip booking requests. As difficult as it has been for some CTSs to fulfill requests from brokers, rerouting NEMT trips requested by brokers could have even worse impacts on CTSs than fulfilling the request if the result is entirely losing Medicaid riders, which for many CTSs also means losing their most important source of revenue.

Related to the previous theme of locational (dis)advantage, while the prospect of rerouting presents an existential threat for some CTSs, rerouting has not been an issue for those counties close enough to clusters of specialized medical care, like Chatham and Johnston. Because most out-of-county trips are within an hour of these larger counties, even those shared with more passengers, they can offer flexibility that makes rerouting unnecessary. However, for some other CTSs, changes driven by the NEMT Managed Care policy, along with unexpected behavior from some brokers' trip coordinators, have left them feeling that they are in a no-win scenario.

Semi-structured routes and the need for rides appointments flexibility

In contrast to CTSs who can operate strict demand-response services, most rural CTSs provide out-of-county semi-structured demand-response services, which are routes with predetermined schedules that operate *only* if there is enough demand for them. This operational strategy aims to increase CTSs' chances of reaching a targeted vehicle occupancy, thereby reducing overall operational costs for out-of-county trips that otherwise would be prohibitively expensive to serve.

Semi-structured routes, while helping some rural CTSs increase operational efficiencies, pose an additional challenge to brokers' trip coordinators because there is no consistency in when these services are offered across the state. For instance, Greene Transit offers out-of-county trips from Tuesday through Thursday. Samson County Transportation has seven different semi-structured run configurations, which offer runs one, two, or three days a week, depending on the destination, except for one that travels to Wilmington only on the second and fourth Thursday of every month (Figure 18).

Out of County Medical Schedule	
RALEIGH/DURHAM/CHAPEL HILL/HILLSBOROUGH	MONDAY, WEDNESDAY
FAYETTEVILLE/HOPE MILLS/WADE/STEDMAN	MONDAY, WEDNESDAY, FRIDAY
MT. OLIVE/GOLDSBORO	TUESDAY
BENSON/DUNN/ERWIN/LILLINGTON	TUESDAY
WILMINGTON/BURGAW	2ND & 4TH THURSDAY
KENANSVILLE/WALLACE/WILLARD	3RD THURSDAY
ELIZABETHTOWN/ATKINSON	2ND THURSDAY

Table 2: Sampson Area Transportation Out of County NEMT Schedule.

One strategy CTSs have historically used to maximize operational efficiency is rescheduling some medical appointments, so Medicaid riders' pick-up times better align with other passengers' travel itineraries. This practice entails CTS schedulers working closely with their county's Department of Social Services (DSS), health professionals, and riders, and was particularly useful to increase vehicle occupancy for within out-of-county runs, which in most cases, are operated through semi-structured runs, as an interviewee, explained:

> We go to Asheville twice daily; we have a morning and an evening run. And so, you know, we would ask the Medicaid recipient sometimes if we could reschedule their time so that nobody had a long wait. And [...] most of the time they would say, yeah, so we'd

> call the doctor would say, we're going to be over there at 10 o'clock - and this appointment is at 11:45.

Rescheduling flexibility was diminished once the Medicaid Transformation started in July 2021. Most interviewees lamented that private brokers do not allow CTS schedulers to contact either riders or health professionals[3], nor are they willing to contact riders themselves. On this topic, an interviewee commented:

> The brokers are not being flexible at all. It's like, cut and dry. There are lots of them. They don't see any of the flexibility that could be involved; they can make one phone call going [to a doctor's office and say] I got I can drop this person off at this time. Is that going to be something that you can help accommodate?" They're not willing to bend.

In this way, the transition to Managed Care and its resulting shift of the primary transportation coordination role to private brokers from CTSs threatens the viability of the semi-structured runs that have made out-of-county NEMT services possible in many rural counties in the first place.

Theme 3: CTSs Funding and Coordinated-Shared Riders

An essential dimension of the Coordinated Transportation model is CTSs' ability to offset operational costs with revenue tied to different human service programs and grants. In rural North Carolina, aside from revenue from Medicaid and fares paid by riders, CTSs often receive funding from the North Carolina Department of Transportation through competitive grants. One important contribution comes from the NCDOT Rural Operating Assistance Program. ROAP aims to provide community transit organizations with an annual lump sum of money to deliver transportation services to vulnerable population groups in rural areas with poor access to other means of transportation. ROAP includes the following funding for three population groups: 1) The Elderly and Disabled Transportation Assistance Program or EDTAP, 2) The Employment and Transportation Assistance Program or EMPL, and 3) The Rural General Public Program or RGP.

Interviewees commented on how particularly crucial Medicaid trip revenue is CTSs' ability to operate and, therefore, serve the needs of other transportation-disadvantaged population groups. One shared: "If we have Medicaid recipients traveling out of the county, the general public can ride. But our vans only leave if we have Medicaid; I only go to other counties if we have Medicaid recipients going." Another participant noted: "Medicaid accounts for about 63% of our revenue, so it's all very important for our system to keep that business."

With the change from Medicaid Direct to the Managed Care model, one potential implication is reduced CTS control over their financial health and, mainly, the ability to stretch their funds to reach more transportation-disadvantaged residents. For example, with the new procedures, interviewees shared that since scheduling multiple riders in a single vehicle is more difficult, some trips no longer make financial sense. For CTSs that split costs between Medicaid and ROAP funds to maximize the number of transportation-disadvantaged residents they could serve, their ability to provide these services has been diminished. One interviewee commented on the resulting reduced access: "It has affected our general public riders [...] We now have set days that people can do things such as shopping; so, somebody needs to go to the grocery store. They can do that on Tuesdays and Thursdays rather than Monday through Friday."

Only a few CTSs have filled the void with local public funds or contracts with other organizations requiring transportation services. CCATS now contracts with the Carteret County Correctional Facility to assist their work release program with transportation services. People nearing the end of their sentence participating in the program leave prison for part of the day to work for a business in the community. CCATS transports 20 individuals every morning working

in the same location. An interviewee from CCATS commented: "[This contract] has helped sustain our shortfall from Medicaid [...] My county [now that there are no ROAP funds remaining] picks up 70 to 80% of the cost of that [ROAP] trip."

Changes brought about by the Medicaid Transformation could have more dire long-term impacts on the financial stability of CTSs themselves. Most CTSs must spend more from ROAP per passenger or, in extreme cases, have run out of ROAP funds to cover trips for residents that benefited from the EDTAP, EMPL, and/or RGP. This has occurred despite the large amounts of emergency funding provided under the CARES Act to compensate for the passenger revenue lost due to the COVID-19 pandemic. One interviewee shared with us, "We're out of ROAP already. I used to spread that money across the whole year. I can't do that anymore, and I know that doesn't make sense." Another noted: "Some systems, once their ROAP funding is gone, they stopped doing those trips, [...] they stopped taking the elderly or disabled or the RGP when their money's ran out."

Theme 4: Emerging Solutions to Navigate the New System: Leadership, Communication, and Creativity

In some cases, CTSs and brokers have devised mutually acceptable arrangements that help both parties work toward their goals in the new system. For example, we mentioned earlier a common challenge for CTSs is the lack of a formal, legal right of first refusal (ROFR) for trips. In lieu of such a legally prescribed right, JCATS worked with the ModivCare operations team to design an auto-assign pilot. In this pilot, all NEMT requests from beneficiaries residing in Johnston County will be automatically assigned to JCATS, as they would with a formal ROFR. With no contract modification, this operational strategy guarantees JCATS the right of first refusal while decreasing complexity for brokers' coordinators.

> They auto-assign all of their trips to our system, which is the same thing as giving us first right [...] So, in their system, it's a matter of clicking a couple of switches, and all the rides automatically route to us.

For JCATS, having the right of first refusal gave them enough time and potential riders to increase vehicle occupancy and share vehicle trip costs between multiple funding sources. By having a large volume of trip requests made well in advance, JCATS regained its ability to combine passengers from various programs into vehicles, thus decreasing trip costs per passenger and reaching their pre-transformation efficiency levels. JCATS' pilot has successfully served approximately 98 percent of all NEMT trip requests made by brokers under the auto-assignment program. The number of trips requested ranged from 330 to 490, depending on the month. The only rerouted trips were the few for which residents lived in a zip code split between Johnston County and a neighboring county.

Johnston County's auto-assignment success can be attributed to three key factors: leadership, operational capacity, and relative location. JCATS has strong leadership and operational capacity to handle the large volumes of trips requested by ModivCare, and the CTS was used before the Managed Care model started in NC. The leadership of JCATS and ModivCare collaborated closely and were willing to experiment to benefit all parties involved. After three months of conversations about the need for the right of first refusal, they found that the solution was more straightforward than either party anticipated. Specifically, and according to a participant from JCATS, ModivCare's North Carolina Marketing director proposed:

> I can send all the trips to you if you think you can handle [them], but if you can't handle them, was going to, you know, there's just going to show the right send them out [...] we

> can do this operationally, we don't need the legal department to bless it, we can just go try it out.

Besides JCATS's good communication with ModivCare leadership, the CTS enjoys a location advantage, making the organization an excellent case to test the auto-assignment pilot. The county is within an hour's drive to Raleigh, Cary, and even Durham and Chapel Hill, where a large share of specialized medical services in the state is based. "I think the decision process has mostly been centered around the strength of the transit systems leadership. In other words, a well-run system."

This example provides optimism for further collaboration between brokers and CTSs but will likely not be directly replicable in smaller counties. As JCATS' director opined, "The reality here is [smaller counties/CTSs] have some inherent disadvantages that will make it even more challenging for them than someone like ours." Creativity and a willingness to collaborate toward overlapping areas in each organization's mission will be necessary for plotting the course of efficient, cost-effective NEMT service that reaches those that such programs intend to help.

Impacts on Riders: Qualitative Analysis of Interviews with CTS Administrators

The interviews with CTS leadership also highlighted critical issues for users of NEMT. From the CTS perspective, riders had an established and personal relationship with NEMT providers prior to the Medicaid Transformation. Riders knew the transportation processes well and built relationships with drivers and ride schedulers. CTS leadership reported concerns that the rider experience had degraded after the Medicaid Transformation as a result of the shift to scheduling through broker call centers and new practices for pick-up and drop-offs. These perspectives were especially pronounced in more rural counties where the number of riders and staff were smaller and the need to coordinate transit trips to often distant medical facilities was most clear.

Below, we present concerns that CTS administration had for their riders along two major themes: 1) New uncertainty around ride scheduling and pickup, and 2) Dissolution of personal relationships. While the CTS perspective is critically important, we acknowledge it is incomplete. It does not highlight the stories of individuals who have not shared their opinions with CTS staff.

Theme 1: New Uncertainty Around Ride Scheduling and Pickup

Every CTS interviewee underscored how the switch to the brokers' call center structure was a difficult transition for many riders. When rides were coordinated by county DSS offices, there was a high degree of local knowledge about pick-up and drop-off locations as well as CTS capabilities. When riders schedule rides through the broker, they speak to someone from a call center who is likely not located in North Carolina, and who lacks on-the-ground knowledge. This stands in contrast to the prior system, in which they would have spoken to a local DSS employee who not only knew the area but may have been familiar with the individual calling as well as their particular needs.

Difficulties Navigating Call Centers and Scheduling

CTS staff shared that some riders reported the broker scheduling process to be confusing, long, and arduous. The call centers require riders to navigate voice menus and riders often must wait several minutes for an available agent. Moreover, when one phones into the broker's call center, the caller is directed to a different staff member every time, eliminating the possibility of developing the personal relationship that riders once had with their scheduler. In the following quote, Sheila Blalock of Mitchell County described an instance of great difficulty navigating the scheduling process with a broker as she tried to make an appointment on behalf of a beneficiary:

> We had a lady who was just refusing to call ModivCare. She said, 'I will not do it.' And I said, 'well, do I have your permission to make your appointment for you?' And she said, 'yes'. So, I spent about 45 minutes trying to make her appointment. And then I had a meeting. And so, my operations manager continued to try and call, well, I was on hold. So, I transferred the call to her, she got on hold, and she spent the better part of probably 20 minutes or longer trying to make the appointment […] I don't think she ever got through to make the appointment […] she hung up. And we tried again […] As I went through the steps of trying to make the Medicaid appointment for her, we got to the address […] and as I was trying to look up the zip code, they hung up on us. And so, we had to call back and start all over again.

Blalock also described another occasion in which a rider was unable to navigate the complexity of the system, and compares it to the process riders once had when scheduling through DSS and CTOs:

> I had a mother of a two-year-old who had missed her prenatal appointments twice because ModivCare had been a no-show. And so, she called and begged me, she said, I've got two prenatal visits, please let me pay. And I asked her if I could call and make it for her. In the end, we ended up taking her because I just gave up trying to make it. And she said, when you have a two-year-old running around, screaming hollering, wanting your attention, and you're on the phone for up to 14 minutes trying to make your appointment, she said, it's just impossible. […] If you're elderly, partly hearing, mother of a two-year-old, their system doesn't work. You know, they call us, we answer the phone, that's one thing I refused our phones to do is to go to an answering machine. I want them to get someone on the phone first thing if possible. You know, in less than two minutes, we've got their information, we got them down. Our system calls them the day before and lets them know their pickup time […] that's what they're used to dealing with.

Beyond the complexity of navigating the scheduling systems, neither the brokers nor the call center personnel have knowledge about North Carolina, its state-specific Medicaid and Managed Care policies, or the state's rural geographies. This disconnect results in brokers scheduling appointments, pick-ups, and drop-offs in an illogical or inconvenient manner. For example, Rosemarie Oates of Sampson County shared that brokers occasionally assign trips between locations in western North Carolina and Sampson County, which are several hundred miles away from one another. She expands on this lack of local knowledge in the following quote:

> The person that they're talking to at the call center doesn't know that, you know, Jane Doe lives down the dirt lane, five miles back into the farm. And it's going to take us 10 minutes just to navigate that dirt lane. And then another 10 to get back out to the road. And then we might get stuck behind a tractor because it's harvesting time. There're just so many factors that play into it that the call center representatives have no clue about.

Because CTSs are no longer in charge of ride scheduling, they are not able to take factors like those described above into scheduling their routes, which in turn leads to unreliable experiences for riders.

Issues With Non-CTS Rides

CTS staff also reported that riders lacked trust in other vendors. The interviewees detailed that riders struggle to place confidence in these drivers and vehicles for a variety of reasons. First, the rider may not have been given any information on who is picking them up or what they look like. The vehicle that arrives may be a ride-hailing vehicle (e.g., Uber, Lyft) or an unmarked van. Carteret County detailed how some of their clients are not comfortable getting into a car with a stranger. In some cases, even though a rider was using a service delivered by another vendor, riders would call Carteret County and express concern and discontent. Specific complaints included how rude a driver was, incredulity about a driver's appearance, and the lack of identification by some drivers.

Many CTSs communicated that the quality of alternate vendor vehicles was also a major deterrent. Riders have shared with CTS staff that they did not enjoy the trip in the vendor's vehicle and that they didn't feel secure in it. They expressed concern about the driver's training and ability to operate the vehicle safely, a worry that CTS staff shared. Moreover, riders have shared that their experiences with other vendors were so poor—whether it be for the above-listed reasons or simply because their ride never arrived—that they never want to use that vendor's services again. Blalock described receiving feedback about these kinds of issues in the following interview excerpt:

> I've had Medicaid recipients call us and beg us to just let them pay privately. They didn't want to deal with calling the broker or they would not show up and they would miss their appointments. We had one gentleman who was visually impaired - he can see, but he is not legal to drive, and he had driven himself to Asheville because, when the broker didn't show up, he had to get to that appointment. And he drove himself.

Beneficiaries attempting to pay for transportation or driving in lieu of using their benefit is cause for concern, given that the intent of the Transformation is to provide their transportation benefit more efficiently, and not to dissuade beneficiaries from using it. While it is unclear how universal these negative experiences are—CTS administrators may be likelier to hear about negative experiences rather than positive ones—it was clear that CTS staff were concerned about the experiences some of their former clients were having in using those services. Moreover, missed appointments can have serious downstream effects, a concern which Williamson described as follows:

> And with us not having any hospitals and only having a couple of medical facilities, if they're not going to their appointments […] then they're going to be calling for 911. And then we only have you know, so many ambulances here, too. So, I mean, it just starts using all of your resources, because you know, they're not able to, to make the transformation successful for them.

In other words, if broker-scheduled transportation does not show up, resulting in missed medical appointments, riders may subsequently suffer worse medical outcomes, which in turn may *also* be less efficient from a cost perspective for transportation should they end up requiring emergency transportation.

In comparison, CTS administration described feedback from riders who heavily prefer CTSs for transportation because the service is superior, the vehicle is better, the CTS helps the rider, and the CTS's vehicle reliably arrives. The above difficulties are compounded by the fact that riders are often not even told *which service* will be transporting them; they are typically just given a time.

Communication of Medicaid Transformation to Riders

Some beneficiaries, particularly seniors who require additional clarification and patience, reported difficulty understanding the Medicaid Transformation and its ramifications. While seniors did receive the letters and written notifications, a few still struggled to interpret what was involved with the changes. Notably, these clients reached out to their CTSs to seek clarification and express their confusion, just as they were used to doing. It is clear that, for many community transit users, the CTS remains a reliable and direct source of information. Furthermore, Misty Chase of Greene County reflected that a portion of the service delivery improvements that they've seen in the past few months may be attributed to beneficiaries developing a better understanding of the various roles in the Managed Care transportation operation.

<u>Theme 2: Dissolution of Personal Relationships</u>

CTS leadership reported the care and concern that CTS staff have for riders often extends outside the boundaries of duty. Given both the vulnerability and routine nature of accessing healthcare, many riders of community transit systems had established relationships with the various actors of the transportation workflow. From DSS to CTS staff to the vehicle drivers, most of the CTSs noted that, prior to Medicaid Transformation, riders had benefitted from these relationships. Riders' needs were known and catered to, and they were able to trust that they could access transportation safely, comfortably, and predictably. This was particularly true in rural

communities, where a significantly smaller number of residents are engaged in the community transit system. CTS staff would give extra help when providing service to beneficiaries, for example by giving riders explicit instructions on how to identify the correct building or navigate a complicated facility.

Now that brokers are scheduling beneficiaries' trips with other vendors that do not provide this information, CTSs reported receiving calls from riders who are having trouble entering the correct office. Moreover, since many riders are disabled or seniors, they may be in uncomfortable or unsafe situations that they have difficulty getting themselves out of. Historically, it has not been uncommon for CTS drivers to assist the client during these situations, typically at the pick-up or drop-off phases of the trip. Brokers, however, have outright scolded CTSs for diverging from the rigid schedule to assist these riders. For example, Melissa Williamson of Caswell County cited an example of an elderly client who didn't have the key to enter their house upon drop-off:

> ModivCare will not allow you to stay with them and to help them. You're just supposed to call them back and leave them. We have never been in the business of doing that. We have always gotten in touch, say if it's the senior center or DSS, whoever's written the referral. And this was during the hot summer. And we tried to make sure that the individual can get into their home before we just leave, we have a conscience and [ModivCare is] all about, 'no you gotta stay efficient and move on to the next route.'

Riders had established relationships with drivers of CTS vehicles as well. The same drivers tend to operate the same routes on the same days, such that the driver becomes a crucial part of the rider's transportation routine. For some riders, the driver might be the only person who is able to regularly check in on them. In that sense, the CTS vehicle driver has historically been a key figure in the promotion of the riders' welfare. As Medicaid Transformation makes it so that more trips are being redirected away from the CTS's services (and therefore drivers) and towards alternative vendors, riders' well-being is being monitored less. The following quote from Williamson embodies this notion:

> Because your drivers have kind of the same repeat riders, they know their clients and [the] clients, they trust their driver. So, a lot of times information that we would gain would be through our drivers because they would say, for example, John […] seems like maybe he's not getting the care that he needs or personal hygiene, something's going on. Then we were able to turn right around and get in touch with a social worker at DSS who could go check on John. But see, nobody cares about that now. All they care about is, yeah, you took them, you got them back.[…] That's all we asked you to do, move on to the next trip.

Related to the above, some riders may have personal needs or circumstances that personnel at the DSS and/or CTS would know to accommodate, even if they were not formally noted in a transportation management system. For example, Chase described how they sometimes assigned vehicles based on their knowledge of riders' mobility issues:

> I have eight vans, six of them have lifts, and two do not. We may have a passenger, that's not a wheelchair passenger, but she may use a walker. So, we knew that passenger, and we knew that if we were picking her up, we probably needed to send a lift van, because on a good day, she could get on the van, but on a bad day, she couldn't. [The broker doesn't] want to put in that we needed a lift van because they pay us more for lift vans.

Intangible elements of the coordinated transportation model that preceded Medicaid Transformation, like the personal relationships highlighted above, were crucial aspects of how the system arranged transportation and cared for beneficiaries. Unlike concrete aspects like a ride's on-time status or even arrival, these aspects do not arise in any of the system's quantitative metrics, either before or after the transformation. Nevertheless, these qualitative findings speak to a profound difference in rider experience—and indeed possibly health outcomes—and are therefore essential to highlight.

Locational Differences

It is important to note that the JCATS and Chatham County interview data are markedly different from those of the other, more rural counties. The other CTOs included in this analysis are located much further away from hospital-dense areas of the state, and the transportation journey to specialists and expansive hospitals may take upwards of three hours one way. JCATS and Chatham County are significantly closer to these hospitals, and thus the implementation of Managed Care has impacted them differently.

Limitations

Notably, this report's data exclusively includes CTS perspectives on the impacts of Medicaid Transformation on riders. To complete the narrative, information directly from riders will be necessary. Furthermore, the stories and commentary shared by interviewees are only about riders who have continued to use the community transportation services and therefore were able to report their experiences to CTSs. The interviews do not include any perspectives from riders who have stopped using community transportation services after Medicaid Transportation.

Discussion: Lessons Learned and Recommendations

The shift from Fee-for-Service to Managed Care Organizations changed the landscape and possibilities for coordinated human service transportation in NC. Previously, NEMT trips were serviced extensively by community transit systems, alongside both other human services transportation purposes and service to the public. These trips were part of a coordinated transportation model, in which revenue from Medicaid NEMT was coupled with other funding sources, e.g., the Rural Operating Assistance Program (ROAP), to maximize funding efficiency by serving multiple rider types on the same trip. The shift to Managed Care places decisions about how to provide NEMT trips—and the money that pays for these trips—in the control of transportation brokers, i.e. ModivCare and MTM. This shift promises to open new transportation options for Medicaid beneficiaries potentially bringing benefits like reduced wait or trip times. Nevertheless, the transformation greatly decreases the opportunity for CTSs to pool funding and trip purposes—effectively limiting the ability for these organizations to coordinate human services transportation.

Our study explored the impacts of Medicaid Transformation on community transit systems and the Medicaid beneficiaries who had historically depended on them for NEMT. We revealed the following major insights:

1. **In aggregate, the number of Medicaid trips served by CTSs has exhibited moderate recovery since Transformation and the onset of the pandemic but has not reached pre-pandemic levels:** As of the end of FY22, ridership had recovered to around half the level of typical pre-pandemic, pre-Transformation figures.
2. **Impacts of the Transformation varied across geographies:** CTSs in more rural counties without proximate healthcare facilities often exhibited less recovery than counties with higher hospital density.
3. **CTS administrators expressed concerns about lost rides, reduced revenue, and inefficient use of resources:** Lost revenues from diminished ridership were a worry, but this worry was compounded by broker-imposed inefficient scheduling that caused CTSs to run emptier vehicles, thereby expending other funding sources faster.
4. **CTS administrators reported communication and collaboration difficulties with NEMT brokers:** Brokers would often assign trips to CTSs (though not as many as pre-Transformation), but not abide by advance-notice policies, while—with some notable exceptions—CTSs had little recourse and no real channel to communicate with brokers about issues like scheduling.
5. **Informal connections and communications between riders and NEMT personnel were eroded:** The tandem of DSS and CTSs were afforded a degree of autonomy and personal interaction that let them care for beneficiaries, e.g., understanding logistics of specific routes or ensuring they were able to get into their houses on hot days after a trip. Brokers afford no such interaction, and when managing CTS-served trips, reportedly pressured CTS staff to move quickly as opposed to e.g., ensuring riders are safely inside their destination.
6. **CTS personnel worry about the experiences of their former riders on new services:** While it is difficult to generalize, CTS administrators reported communicating with former riders who had difficult experiences with new NEMT services. For example, vehicles may not be marked, drivers may not adequately identify themselves, scheduling may not be reliable, and sometimes riders were not told which service would pick them up. Moreover, riders who were used to communicating directly with county DSS staff to arrange rides were left navigating brokerage call centers, in some cases expressing to CTS personnel how difficult this process had become.

With these findings in mind, we provide two sets of policy and practice considerations for the future of NEMT in North Carolina, with the first set directed toward supporting Community Transit as a public good, and the second directed toward supporting Medicaid beneficiaries who use NEMT.

Recommendations: Community Transit

CTSs continue to play an important role in delivering NEMT in North Carolina, but some key changes may help them better serve this role—as well as their non-NEMT riders—in the new post-transformation landscape. First, where appropriate, CTSs should be granted the right of first refusal to serve Medicaid NEMT trips, as in the JCATS pilot. Additional pilot ROFR programs are either being considered or actively operating in several additional NC counties at the time of this report's completion. In addition to JCATS, Modivcare has expanded the auto-assignment pilot to County of Lee Transit System (COLTS), Rutherford County Transit, Alleghany in Motion, Craven Area Rural Transportation, Goldsboro Wayne, and Ashe County (ACTA Travel) (D. Rhew, personal communication, May 13, 2024). Mitchell County and Sampson Area Transportation are set to begin participating in the program as of July 17th. Additionally, WellCare/MTM have instituted their "high-flyer" program in which five public transit agencies are receiving additional trips based on their capacity to accept them. These programs operate in a variety of counties with different characteristics, with these programs tailored to those counties' needs. The results of these further pilots should be examined as peer counties may seek to emulate their successes. Second, when brokers do assign trips to CTSs, they should be required to give adequate lead time to allow CTSs to plan efficient routes. With these steps in place, CTSs could thereby accept rides they are well-equipped to serve, but not be saddled with rides that are burdensome, that do not make financial sense, and/or that would result in a poor experience for the rider.

At the same time, many CTSs are unlikely to see their Medicaid ridership recover to pre-transformation levels potentially leaving them with a revenue shortfall. Because Medicaid revenue has historically served as a key source to reach federal funding match thresholds, alternative state-level funding mechanisms should be explored. Filling this funding gap should be a priority, as each dollar of state funding allocated to transit results in approximately six additional dollars of funding awarded from other sources (Monast et al., 2015). Adequate funding for rural transit services will help transit systems maintain a consistent level of service for the ridership they will continue to serve.

For their part, CTSs should consider diversifying their ridership and revenue sources, e.g., taking on contracts with additional non-Medicaid organizations as clients. Some CTSs have had limited success with this approach already. Finally, CTS administrators should continually evaluate their costs, revenues, and overall financial needs in preparation for the annual contract renewal process with brokers. Rate structures and service priorities are part of these contracts, and CTSs may be able to advocate for more favorable terms as circumstances change. In a follow-up conversation, one of our interviewees indicated specifically that they were able to renegotiate their rates at the end of their annual contract in order to stay afloat.

Recommendations: Medicaid NEMT Users

For its part, the Department of Health and Human Services has a vested interest both in the cost efficiency with which NEMT is delivered as well as the experiences of beneficiaries using it. With Medicaid NEMT no longer inherently coupled to CTSs, strategy adjustments may help ensure efficiency and quality of experience as this new landscape continues to evolve. A key first step is to engage in robust data collection efforts—both in terms of trip performance and rider

experience—which can be used as foundations to tweak practice in the post-transformation landscape (Edrington et al., 2018).

Trip Performance and Rider Experience Data

A key step in this direction should be continued and augmented collection of comprehensive and standardized data on trip performance and rider experience across NEMT providers and brokers. Post-transformation, this process entails a variety of providers—public and private—being monitored according to the same standard metrics. Currently, all NEMT trip requests submitted for Medicaid billing must include a host of data points, including information about the billing provider, rendering provider, trip characteristics, timing, and whether the member was successfully picked up, among several other pieces of information (North Carolina Department of Health and Human Services Division of Health and Human Services, 2024 pp. 24-27). As part of state NEMT policy, PHPs are required to perform a self-audit of NEMT services using these data, which entails randomly sampling 2% of trips or 200 trips—whichever is less—per calendar quarter and submit their findings annually (North Carolina Department of Health and Human Services Division of Health and Human Services, 2024 p. 4). Additionally, as of September 1st, 2022, PHPs must submit a monthly report to the DHHS detailing "… NEMT utilization, monthly requests received, processed, denied and open where the date of service falls within the reporting range" (Amendment 11 (12): Prepaid Health Plan Services, 2022 p. 63). Thus, the foundations for both effective data collection and the employment of these data toward continual NEMT improvement are in place. Nevertheless, the current policy language implies that these data are collected primarily for billing and fraud reduction purposes, and we suggest that there is a substantial opportunity to expand the use of these data for quality control purposes.

The state could continue to augment these data collection efforts. For example, the Medicaid and CHIP Payment and Access Commission (MACPAC) suggests that states leverage technology to track driver and/or vehicle locations, allowing for both real-time and historical monitoring of trip performance (MACPAC, 2021). Furthermore, North Carolina should consider efforts to collect data systemically and continuously on rider experiences through the inclusion of an NEMT question on customer satisfaction surveys and a formal appeals and grievance process. While NCDHHS oversees a comprehensive survey to monitor and improve overall care, it does not currently ask about experiences using NEMT (North Carolina Department of Health and Human Services Division of Health Benefits, 2023). NCDHHS could consider the inclusion of a section that tracks NEMT quality, including its ease of access, reliability, safety, scheduling, and customer service experience. North Carolina could also consider allowing members to use the grievance process to report poor experiences on the part of riders, including rides that never showed up (Ersland, 2022). The State of Oregon implemented this and also has the authority to intervene in brokerage driver activities and mandate additional training (CareOregon, 2023).

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