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Geographic Expansion of Medicaid Managed Care Organizations: Assessing Access to Primary Care in Nonmetropolitan Counties

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Purpose

From 2012 to 2018, many states' Medicaid programs increased the share of beneficiaries enrolled in comprehensive risk-based managed care organizations (MCOs), but little research has focused on the impact of this decision on nonmetropolitan areas. This brief assesses access to primary care in nonmetropolitan counties for Medicaid recipients who are newly covered through Medicaid MCOs. We calculated and analyzed a "PCP (primary care provider) access score" (summarizing actual travel distances to primary care) using geospatial methods and assessed the relationship between stronger state policies on network adequacy to observed PCP access scores in nonmetropolitan settings.

Key Findings

- Nonmetropolitan counties that had Medicaid MCOs prior to 2012 experienced better access to primary care—as measured by our PCP access score—than nonmetropolitan counties that expanded to Medicaid MCO coverage after 2012.
- Nonmetropolitan counties in states that specify stronger network adequacy travel time requirements for primary care providers (PCPs) had better PCP access scores on average than those in states that allow longer travel times.
- Among nonmetropolitan counties that were newly served by Medicaid MCOs in 2012-2018, a segment of roughly 45,000 Medicaid recipients experienced relatively low PCP access scores and thus less access to primary care.

Background

The Congressional Budget Office estimates that between 1999 and 2012, the proportion of all Medicaid beneficiaries who were eligible for full benefits (i.e. all service types are covered and paid by Medicaid) and who were enrolled in managed care grew from 63 percent to 89 percent.[1] As of July 2019, all states except four—Alaska, Connecticut, Vermont, Wyoming— were utilizing some form of managed care for their Medicaid programs; twelve states operated a primary care case management (PCCM) program where primary care physicians are paid a small monthly fee to provide case management services in addition to primary care, and forty states were contracting with comprehensive risk-based MCOs that cover all acute care services (and may include behavioral health, long-term services and supports, and dental).[2]

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In 2017, more than two-thirds (69.3%) of all Medicaid beneficiaries nationally were enrolled in a comprehensive MCO.[3] Historically, MCOs have been less common in nonmetropolitan areas due to a perception of limited ability to form provider networks.[4] However, as states have increasingly contracted with MCOs to serve their Medicaid populations, many of the counties newly served by Medicaid MCOs within the last decade have been nonmetropolitan counties. Since 2012, 15 states (listed in the appendix) have expanded Medicaid MCOs to new geographic areas across the state.[5] While the theoretical motivation for Medicaid MCOs is to make state budgeting more predictable and improve access and quality for Medicaid beneficiaries, little attention has been paid to measuring access specifically in nonmetropolitan areas. Although Medicaid requires states to establish standards for access to care to ensure that provider networks meet the needs of Medicaid beneficiaries, each state is given autonomy to establish its own network adequacy requirements.[6] Where provider availability is limited, states may also have flexibility in enforcing network adequacy standards for rural populations.[7] This brief evaluates the degree to which Medicaid beneficiaries in nonmetropolitan areas newly served by MCOs are able to access primary care, determined by travel distances, as this is the most common network adequacy measure used in MCO contracts.

Methods

Each nonmetropolitan county in the aforementioned 15 states that geographically expanded MCOs between 2012 and 2018 was dichotomized as either already being served by a Medicaid MCO in 2011 (early MCO counties) or newly being served by a Medicaid MCO in 2012-2018 (recent MCO counties). Fifty-three nonmetropolitan counties in Colorado that remained without a Medicaid MCO in 2018 were excluded. Metropolitan counties were also excluded, as most such counties were already served by MCOs by 2011, and travel distances are less likely to be problematic in metropolitan counties. Data from the 2019 County Health Rankings were used to describe and compare population characteristics of nonmetropolitan counties across these two groups.[8] States were also dichotomized by their network adequacy standard policies as follows: (1) those requiring travel time to visit a PCP in nonmetropolitan areas to be less than or equal to 30 minutes were categorized as having “stronger” requirements; and (2) those allowing travel times exceeding 30 minutes were considered to have “weaker” requirements. Three remaining states without established network adequacy standards for travel time were categorized based on their travel distance standard or were assumed to have “weaker” requirements based on lack of availability of data. See appendix for a summary of travel time requirements and states included in this study.

A “PCP access score” was developed to estimate potential network adequacy (assuming MCOs contracted with all available PCPs) in two steps. First, using the practice address for primary care providers with an active National Provider Identifier,[9] we calculated travel times in partnership with Bayes Impact, a nonprofit organization specializing in population-based geospatial analytics. Bayes Impact computed travel times for this project using underlying data that capture the actual distribution of the population across each county compared to the location of the nearest PCP, who could be in another county (and regardless of network affiliation). Second, to convert this information into a score that ranged between 0 and 100, weights (3,2,1, and 0) were assigned to counties based on the proportion of the population with driving times to the nearest PCP less than 30 minutes, 30-45 minutes, 45-60 minutes, and 60+ minutes, respectively, such that those counties in which higher proportions of the population had shorter travel times received higher scores, ensuring that higher scores corresponded with better PCP access at the county level. For the purposes of summarizing, PCP access scores were characterized as follows: “excellent” scores are 90-100; “good” scores are 70-89; “fair” scores are 50-69; and “poor” scores are below 50.

Then, to estimate the size of the Medicaid population that is impacted by a given network adequacy score, December 2018 county-level unduplicated Medicaid enrollment counts were aggregated within score categories. In cases where enrollment data were unavailable for December 2018, Medicaid enrollment counts from the most recent available state reports were used. Although most Medicaid recipients in the study states were enrolled into a Medicaid MCO, states vary in their requirements for mandatory vs. voluntary enrollment and the total share enrolled is potentially an overestimate in some states.[5]

Results

Except for Colorado,[10] in all 15 study states referenced in the appendix, the geographic expansion of MCOs has been implemented uniformly to all counties in the state, either expanding from an existing, mostly urban service region (10 states) or switching all counties statewide to MCOs between 2012 and 2018 (4 states). There were 114 nonmetropolitan counties served by MCOs in 2011 (early MCO counties) and 678 nonmetropolitan counties newly served by one or more MCOs during 2012-2018 (recent MCO counties). Although the proportion of noncore and micropolitan counties were similar for both groups, recent MCO counties had an average population density of 36.2 persons per square mile compared to 103.6 in early MCO counties. Household median income, unemployment rate, and high school graduation rate were similar for both groups (Table 1).

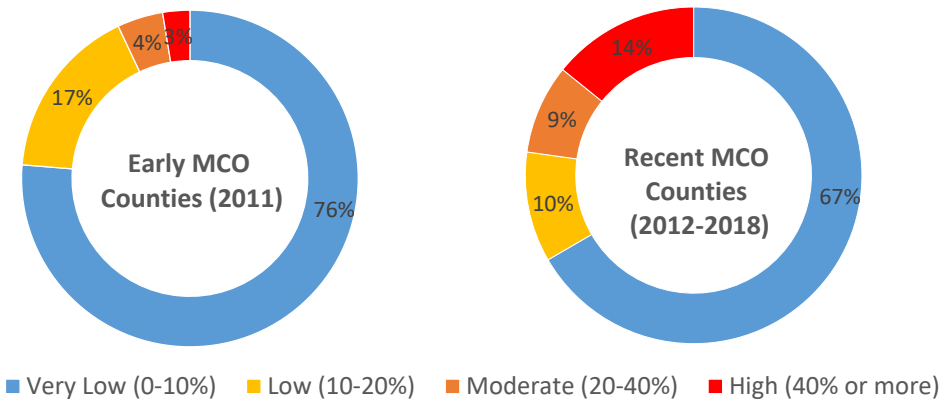
Table 1. Descriptive Statistics for Nonmetropolitan Counties by MCO Expansion Status for 15 Study States

	Early MCO Counties n=114, Mean (SD)	**Recent MCO Counties** n=678, Mean (SD)
Non-metropolitan Status, n (percent)		
Rural, Non-core	84 (73.7)	487 (71.8)
Rural, Micropolitan	30 (26.3)	191(28.2)
Average Population Density, 2012	103.6 (315.1)	36.2 (74.5)
2019 County Health Rankings*		
Household Income (Median)	$44,476	$46,921
Unemployment Rate	4.5% (1.0)	4.5% (1.9)
High School Graduation Rate	89.8% (6.0)	91.3% (7.6)
Life Expectancy, Years	76.5 (2.2)	77.2 (3.0)
Diabetes Prevalence	12.5% (1.9)	11.4% (2.2)
Percent of Adults Reporting Fair of Poor Health	19.5% (3.5)	17.7% (5.2)

*Source file years vary

Compared to early MCO nonmetropolitan counties, a greater proportion of recent MCO nonmetropolitan counties had travel times to the nearest PCP greater than or equal to 30 minutes. Among the 678 recent MCO nonmetropolitan counties, 33 percent had significant shares of their populations located more than 30 minutes from a PCP. In particular, 10 percent (68 counties) had between 10 and 20 percent of the population outside that range, 9 percent (62 counties) had between 20 and 40 percent of the population outside that range, and 14 percent (95 counties) had 40 percent or more outside that range. In comparison, only 3 percent of early MCO nonmetropolitan counties had 40 percent or more of their population outside that range (Figure 1). As computed by our method described in the section above, early MCO nonmetropolitan counties had a higher average PCP access score than recent MCO nonmetropolitan counties (97.2 vs. 90.7). Almost all (99 percent) of early MCO nonmetropolitan counties had a PCP access score greater than

Figure 1. Percentage of Nonmetropolitan Counties with Very Low, Low, Moderate, and High Shares of the Population Traveling ≥30 Minutes to Nearest PCP for 15 Study States



70, and 95 percent had excellent PCP access scores between 90 and 100 (Table 2). Conversely, recent MCO nonmetropolitan counties exhibited relatively lower PCP access scores, with over 20 percent of counties having scores under 90 and almost 6 percent having a poor PCP access score between 0 and 49. Additionally, nonmetropolitan counties in states that had weaker network adequacy travel time requirements for PCPs had relatively lower PCP access scores than those in states that had stronger network adequacy requirements. Whereas 13 percent of nonmetropolitan counties in states that had weaker network adequacy requirements had scores below 70, only 2 percent of nonmetropolitan counties in states with stronger network adequacy requirements had scores below 70 (Table 2).

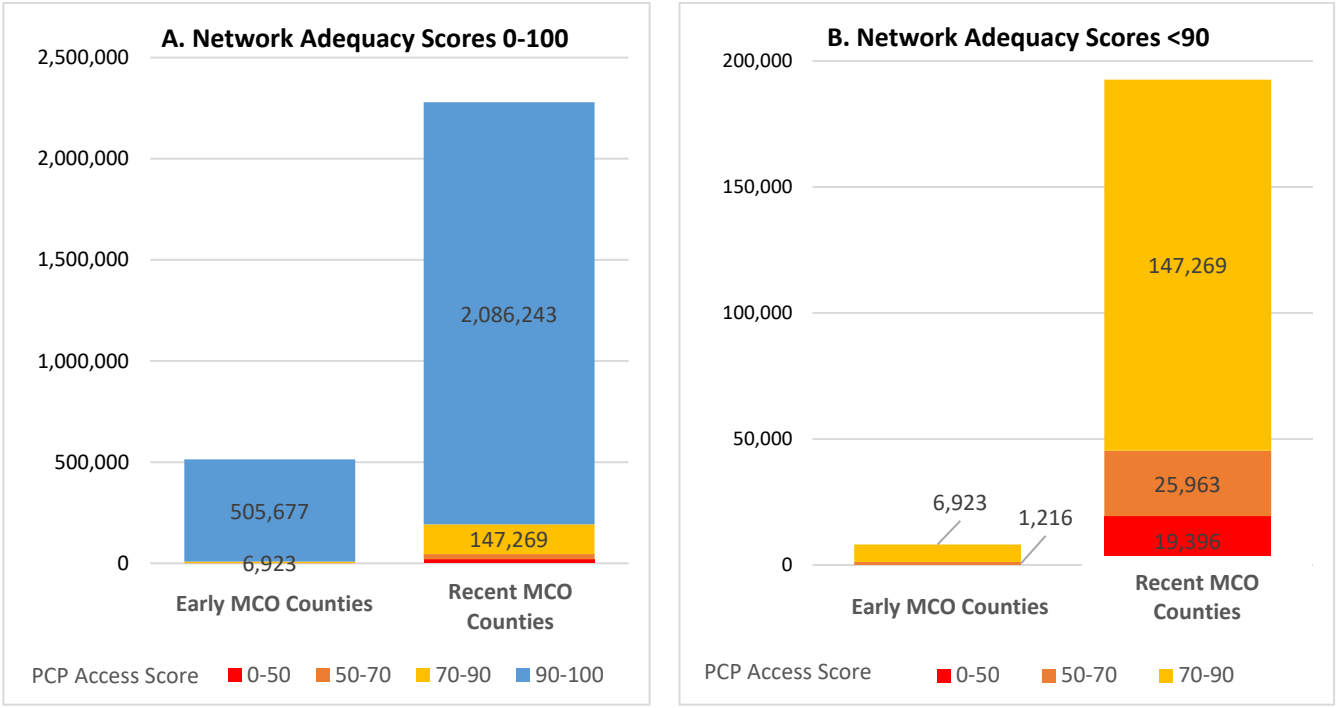
Table 2. County-Level PCP Access Score for 15 Study States (Range 0-100)

		PCP Access Weighted Score Scale			
		Poor 0-49	**Fair** 50-69	**Good** 70-89	**Excellent** 90-100
	Mean Score (SD)	**percent counties**	**percent counties**	**percent counties**	**percent counties**
MCO status					
Early MCO Counties	97.2 (5.1)	0	0.9	4.4	94.7
Recent MCO Counties	90.7 (18.2)	5.6	4.9	10.9	78.6
Network Adequacy Strength*					
Weaker (> 30 minutes)	89.3 (20.1)	7.6	5.4	11.1	76.3
Stronger (≤ 30 minutes)	96.2 (6.8)	0	2.2	7.8	90.0

*Nine states had weaker network adequacy requirements and six states had stronger network adequacy requirements. See Appendix for a summary of travel time requirements by state.

Applying county-level Medicaid enrollment counts, Figure 2 below provides estimates of the size of the Medicaid population that is impacted by poorer PCP access as measured by our PCP access score. Although a large majority of nonmetropolitan Medicaid beneficiaries experience excellent PCP access scores between 90 and 100 (Figure 2A), a sizeable number of Medicaid recipients in nonmetropolitan areas still experience poorer access to primary health care.

Figure 2. 2018 Medicaid Enrollment Counts* by PCP Access Score for 15 Study States



*Note: The share of the 2018 Medicaid population enrolled in a Medicaid MCO varies by state, as some eligibility groups and residents of particular counties may voluntarily enroll in a Medicaid MCO, but Medicaid enrollment counts at the county level do not distinguish these factors. Thus, these numbers may overestimate MCO enrollment but not the overall (MCO and FFS) number of Medicaid enrollees who experience lesser PCP access.

Figure 2B focuses on this group, showing the nonmetropolitan Medicaid enrollment corresponding to PCP access scores less than 90. Whereas only about 1,216 nonmetropolitan Medicaid recipients in counties served by MCOs in our study states prior to 2012 experienced a PCP access score less than 70 (and none experienced a score less than 50), more than 45,000 Medicaid recipients in nonmetropolitan counties experienced poorer PCP access scores in 2018, and more than 19,000 lived in counties with PCP access scores less than 50.

Discussion

The use of managed care in Medicaid has increased rapidly in recent years, and much of the expansion of MCOs has been geographic, extending MCOs into rural areas not previously covered. This MCO expansion has raised questions about access to primary care, defined here by travel times to PCPs and network adequacy standards. Although Medicaid requires states to establish standards for access to care to ensure that provider networks meet the needs of Medicaid beneficiaries, there is significant state-level variation. Reflecting the reality of more driving that is part of the typical rural experience, standards for travel times in rural areas are significantly longer than for urban areas, with some states allowing travel times up to 60 minutes for primary care access in rural areas. This analysis has shown that recent statewide expansions of Medicaid MCO programs may provide uneven benefits in terms of access to care for certain Medicaid recipients living in nonmetropolitan counties with fewer providers. However, stronger network adequacy requirements are associated with better access to care for those living in nonmetropolitan counties. Our analytic approach cannot identify causality, but it seems likely that these effects are self-reinforcing. Low numbers of PCPs mean lower network adequacy scores for the MCO, even if it contracts with all available providers. Weaker standards may be tacit acknowledgment of this problem.

As policymakers consider geographically expanding Medicaid MCO service areas statewide, including into more rural counties (the average population density in recent MCO nonmetropolitan counties was about one-third that in early MCO nonmetropolitan counties in our analysis), it is important to consider the implications of doing so for nonmetropolitan areas. Specific metrics and stricter standards for network adequacy can help ensure and increase access to care in rural counties in some cases, if care is taken to incentivize MCOs to do this work.[11] However, in many cases, ensuring similar access to primary care in both metropolitan and nonmetropolitan areas may require incorporating some flexibilities in areas where there are provider shortages.[12] Telehealth options, for instance, could factor into network adequacy standards and scoring in nonmetropolitan areas, especially in counties with limited provider access.[13] For example, new Medicare Advantage policies for rural areas have reduced the required percentage of beneficiaries that must reside within the maximum time and distance standards and provides a credit to encourage and account for telehealth providers.[14] MCOs that provide or facilitate transportation services could also receive credit in a more comprehensive access measure. Consideration may also need to be given to creating more uniformity in travel time standards, since state-level variations in these likely reinforce existing variations in rural MCO enrollees' access to care. Ultimately, when a state pays a monthly capitated rate to an MCO for each Medicaid enrollee, it is reasonable to expect that the MCO will provide adequate access to primary care for all urban and rural enrollees, which will translate into equitable health outcomes. While further research is needed to better evaluate the impact of Medicaid MCOs on health outcomes in nonmetropolitan areas, states should certainly consider ways to leverage the MCO mechanism to accomplish the goal of adequate access to primary care.

Notes

[1] Congressional Budget Office (CBO). Exploring the Growth of Medicaid Managed Care. 2018. https://www.cbo.gov/publication/54235

[2] Gifford K, Ellis E, Lashbrook A, Nardone M, Hinton E, Rudowitz R, Diaz M, Tian M. A View from the States: Key Medicaid Policy Changes. Results from a 50-State Medicaid Budget Survey for State Fiscal Years 2019 and 2020. 2019. https://www.kff.org/report-section/a-view-from-the-states-key-medicaid-policy-changes-introduction/

[3] Centers for Medicare and Medicaid Services (CMS). Medicaid Managed Care Enrollment and Program Characteristics, 2017. (2019).

[4] Slifkin R, Hoag S, Silberman P, Felt-Lisk S, Popkin B. Medicaid Managed Care Programs In Nonmetropolitan Areas: A Fifty-State Overview: Just over half of the nation's nonmetropolitan counties now offer managed care options to their Medicaid populations, a new survey finds. *Health Affairs*, *17*(6), 217-227. 1998.

[5] Kaiser Family Foundation, Results from a 50-State Medicaid Budget Survey for State Fiscal Years 2012-2018, https://www.kff.org/medicaid/report/medicaid-budget-survey-archives/

[6] Centers for Medicare and Medicaid Services (CMS). § 438.68, Final Rule. 2016. https://www.federalregister.gov/documents/2016/05/06/2016-09581/medicaid-and-childrens-health-insurance-program-chip-programs-medicaid-managed-care-chip-delivered

[7] Casey M, Henning-Smith C, Abraham J, Moscovice I. Regulating Network Adequacy for Rural Populations: Perspectives of Five States. University of Minnesota Rural Health Research Center. 2017.

[8] County Health Rankings and Roadmaps. 2019. https://www.countyhealthrankings.org/

[9] Primary Care Providers (PCP) were defined from the NPI data as individual clinicians indicating MD/DO credentials and a primary taxonomy code specifying Family Medicine, General Practice, OB/Gyn (all sub-categories), Internal Medicine (adolescent medicine, geriatrics, and NOS only), or Pediatrics (adolescent medicine, or NOS only). Also included were those with primary taxonomy codes indicating Advanced Practice Midwife, Nurse Practitioner, or Physician Assistant.

[10] Of Colorado's 64 counties, 4 had comprehensive Medicaid MCOs as of 2011, while 13 counties had comprehensive Medicaid MCOs through Accountable Care Collaboratives in 2017. Additional counties were served by ACC PCCM entities. See Note 3 reference for more details.

[11] Mueller KJ, Alfero C, Coburn AF, Lundblad JP, MacKinney AC, McBride TD, Weigel P. Medicaid Payment and Delivery System Reform: Challenges and Opportunities for Rural Health Systems. Rural Policy Research Institute Health Panel. 2016. http://www.rupri.org/wp-content/uploads/RUPRI-Health-Panel-Medicaid-Payment-and-Delivery-System-Reform-June-2016.pdf

[12] National Advisory Committee on Rural Health and Human Services. Rural Health Insurance Market Changes. 2018. https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/rural/publications/2018-Rural-Health-Insurance-Market-Challenges.pdf

[13] Ahn S, Corlette S, Lucia K. Can Telemedicine Help Address Concerns with Network Adequacy? Opportunities and Challenges in Six States. The Urban Institute. April 2016.

[14] Centers for Medicare and Medicaid Services (CMS). Medicare Program; Contract Year 2021 Policy and Technical Changes to the Medicare Advantage Program, Medicare Prescription Drug Benefit Program, and Medicare Cost Plan Program, Final Rule. 2020. https://www.federalregister.gov/documents/2020/06/02/2020-11342/medicare-program-contract-year-2021-policy-and-technical-changes-to-the-medicare-advantage-program

Appendix

Statewide Network Adequacy Travel Time Requirements for Primary Care Providers in Nonmetropolitan Areas			
"Weaker" Network Adequacy Requirement (Nonmetropolitan Travel Time >30 mins)			
State	Minutes	In Text Reference	Source
KY	45	"Rural: Within 45 minutes"	https://oig.hhs.gov/oei/reports/oei-02-11-00320.pdf
LA	60	"Rural Parishes - 60 minutes"	http://www.ldh.la.gov/assets/medicaid/RFP_Documents/RFP3/MMCQualityStrategy.pdf
ND	N/A*	Not found in any documentation	
NE	45 miles	"one PCP within 45 miles of the personal residences of members in rural counties"	https://oig.hhs.gov/oei/reports/oei-02-11-00320.pdf
NH	40	"2 PCPs within 40 minutes"	https://www.dhhs.nh.gov/ombp/caremgt/documents/mcm-network-adequacy.pdf
PA	60	"Section 9.679(d) of the managed care regulations states. . .access to covered services that are within . . 60 minutes travel in other counties not designated as metropolitan"	http://keepkidssafe.pa.gov/cs/groups/webcontent/documents/document/c_267054.pdf
TX	40	"Rural: 40 minutes"	https://hhs.texas.gov/reports/2019/01/report-medicaid-managed-care-provider-network-adequacy
UT	40	"within 40 minutes or 40 miles"	https://le.utah.gov/~2017/bills/hbillint/HB0395.htm
VA	60	"at least two (2) PCPs located within no more than sixty (60) minutes travel time from any member in rural areas"	http://www.dmas.virginia.gov/files/links/1566Medallionpercent204.0percent20Contractpercent20(07.26.2018).pdf
"Stronger" Network Adequacy Requirement (Nonmetropolitan Travel Time ≤30 mins)			
CA	30	"10 miles or 30 minutes from the beneficiary's residence"	https://www.dhcs.ca.gov/formsandpubs/Documents/FinalRuleNAFinalProposal.pdf
CO	30	"Within 30 minutes or 30 miles"	https://oig.hhs.gov/oei/reports/oei-02-11-00320.pdf
FL	30	"Maximum Time (minutes) 30"	https://ahca.myflorida.com/Medicaid/statewide_mc/pdf/Contracts/2018-08-01/Exhibit_II-A_MMA_Scope_2018-08-01.pdf
IA	30	"30 minutes or 30 miles from personal residence of member"	https://dhs.iowa.gov/sites/default/files/2018percent20Managedpercent20Carepercent20Qualitypercent20Plan.pdf?102420192253
IL	30	"The maximum recommended distance from any point of service area to a point of service area is: 30 minutes or 30 miles for primary care"	https://insurance.illinois.gov/HealthInsurance/NetworkAdequacyTransparencyChecklist.pdf (All QHP in Illinois)
MO	30 miles	"Rural: Within 30 miles"	https://oig.hhs.gov/oei/reports/oei-02-11-00320.pdf

*Network adequacy travel requirements not found in North Dakota's documentation; assume weaker requirements.