2021

Southeastern Rural Provider Participation and Performance Trends in Merit-Based Incentive Payment System (MIPS) 2018 Performance Year Results

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SOUTHEASTERN RURAL PROVIDER PARTICIPATION AND PERFORMANCE TRENDS IN MERIT-BASED INCENTIVE PAYMENT SYSTEM (MIPS) 2018 PERFORMANCE YEAR RESULTS

BY

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A doctoral project submitted to the faculty of the Medical University of South Carolina
in partial fulfillment of the requirements for the degree
Doctor of Health Administration
in the College of Health Professions

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Acknowledgements

I'd like to thank my parents, who have not only encouraged the pursuit of higher education and instilled the value and privilege of academic enrichment, but made it a reality for me. This academic accomplishment is a reflection of the unconditional confidence you have in your children and the endless sacrifices you make to have gotten me here. Thank you for being the best support system, role models, and cheerleaders. To my committee members: thank you for the continued support, encouragement, and guidance throughout this academic journey, from the day I learned about the program to its completion. It's been a privilege to learn from you, and I couldn't imagine a better trio of women to complete this dissertation with. To my professional network, particularly the team at Azalea Health: thank you for the platform you gave me to start my career, pursue the DHA program, and continue my professional development. The encouragement you gave me, the leadership opportunities, and years of camaraderie will forever serve as the foundation for a successful career, and I'm truly grateful for the positive impact my time at Azalea has had on both my career path and my professional goals. And lastly, to the sisterhood that surrounds me: thank you for constantly pushing me to do better and be more, and for showing this world the true power of what headstrong, smart, talented women can accomplish.

Abstract of Dissertation Presented to the
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Chairperson: Annie N. Simpson, PhD
Committee: Jillian Harvey, PhD
Kit N. Simpson, DrPH

The purpose of this study is to identify trends in participation, clinician performance, program scores, and payment adjustments received for rural and urban providers during the MIPS 2018 Performance Year. Five contiguous states in the southeastern US were selected for this study due to their significant rural population: Alabama, Georgia, South Carolina, North Carolina, and Tennessee. Descriptive statistics were used to summarize participation and performance data for rural and urban providers in the Southeastern US, as reported in the 2018 QPP Experience Report Public Use File and made publically available by CMS. The study findings extend prior evidence that has shown that value-based payment programs disproportionately penalize rural healthcare providers when compared to their urban counterparts (Johnston, 2020; Khuller, 2020; Navathe, 2019). It will be vital for CMS to identify and appropriately address barriers to participation and performance faced by rural healthcare providers to ensure the success of the MIPS program.

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CHAPTER I INTRODUCTION

1.1 Background and Need

Historically, payment systems for reimbursing physicians in the outpatient setting were based on a fee-for-service model, where physicians were financially incentivized for volume of services provided over value, cost-effectiveness, or patient outcomes. Prior to 2015, the Centers for Medicare and Medicaid Services (CMS) calculated physician payment rates for Medicare through an algorithm based on the relative value of a physician's work, a modifier to adjust for geographic differences, and a monetary conversion factor known as sustainable growth rate (SGR) (CMS, 2015; Ryan, 2015). This formula was intended to ensure Medicare expenditures did not exceed growth in the national economy. By setting target expenditures relative to gross domestic product (GDP), annual adjustments would be made to the physician fee schedule if physician spending exceeded or was less than the calculated targets.

During the initial years of the SGR formula used to set physician fee schedules, physicians saw modest payment increases. However, with the economic downturn that occurred starting in 2001, SGR targets were lowered and physician spending continued to rise (Ryan, 2015). Actual expenditures exceeded allowed targets, and a statutory 4.8% physician payment cut across the board was triggered in 2002 (Fontenot et al., 2015). The significant payment cut resulted in fury from physicians, hospitals, and medical trade associations. The medical community reacted to the payment adjustment and claimed their ability to care for Medicare beneficiaries would be drastically jeopardized (Carey, 2013). In the following years, physician spending continued to increase beyond GDP year-over-year (Aizenman, 2010). The increase in spending over the allowed targets should have triggered negative adjustments to the Medicare fee schedule, resulting in additional payment cuts for physicians to control federal spending.

However, instead of implementing physician cuts as the SGR mandated, pressure from the provider community and a lobbying blitz resulted in the passing of short-term congressional patches, or "doc fixes", to delay payment adjustments from 2003 through 2014 (Hahn, 2014). Several proposals to overhaul the Medicare physician payment system permanently were introduced throughout these years; however, Congress was unsuccessful in passing legislation to repeal SGR, minimize disruption to the Medicare program, and sustainably reduce federal spending long-term. This congressional failure to pass legislation was mostly due to bipartisan disagreement on how to finance a repeal of the SGR and overall budget implications for federal spending (Hedstrom, 2014).

When the last congressional patch delaying payment adjustments expired on March 31, 2015, the healthcare industry would have faced a 21.2% payment reduction to physician payment rates across the board (Fontenot et al., 2015). This would have significantly destabilized the Medicare system and resulted in physicians unable or unwilling to participate in the program or limiting the number of beneficiaries they can provide service to and remain financially viable. The resulting impact on patient access to care would have significant implications for the entire health care system. It was apparent to the industry that physician payments could not sustainably be determined with a fee-for-service model that incentivized the volume of services delivered with no regard to value or quality.

After the 2104 midterm elections and subsequent changes to congressional committees, lawmakers resurrected the effort to repeal SGR as a key topic in the 114th Congress. The Medicare Access and CHIP Reauthorization Act (MACRA) was introduced in the House of Representatives on March 24, 2015, passed with a vote of 392 to 37, and was sent to the Senate for voting on March 26, 2015. On April 14, 2015, the bill passed the Senate with a vote of 92 to

8 and was presented to President Barack Obama. Within two days, President Obama signed the bill, and MACRA went into effect as public law on April 16, 2015 (Congress.gov, 2015). In a rare demonstration of successful bipartisanship and bicameral negotiations, MACRA was passed within a 3-week period.

MACRA overhauls the method for calculating physician and other healthcare provider reimbursement under the Medicare program. This law created the Quality Payment Program (QPP), which repealed the SGR, established a new payment system for provider reimbursement, and created financial incentives for providers to participate in value-based care (CMS, 2019a). Beginning in 2017, eligible clinicians are required to participate in one of two program tracks each year under QPP: the Merit Based Incentive Program (MIPS) or Advanced Alternative Payment Models (APMs). Clinicians receive positive or negative performance-based payment adjustments to their Medicare Part B fee schedule by reporting clinical, financial, and administrative data each year. Clinicians required to participate in QPP must satisfy the requirements of one of these two tracks to avoid negative payment adjustments in subsequent years. MIPS builds on the existing fee-for-service payment model and modifies it to incentivize value and outcome-driven, quality care, and discourages the overutilization of services. Advanced APMs are risk-based models that reward groups of clinicians for delivering cost-effective care and engaging in care-coordination. Advanced APMs give clinicians a higher financial incentive to completely move away from the modified fee-for-service model, and are encouraged to rely on care coordination, cost-effective practices and data sharing to treat patients (CMS, 2019a).

Clinicians participating on the MIPS track receive performance-based payment adjustments by reporting data on four weighted categories: Quality, Cost, Promoting

Interoperability, and Improvement Activities. For the 2018 program year, the Quality category was weighted at 50%, the Promoting Interoperability category was weighted at 25%, the Improvement Activities category was weighted at 15%, and the Cost category was weighted at 10%. Individual scores from each of these categories were combined to calculate a composite performance score for each provider or provider group, ranging from 0 to 100 points. Composite MIPS scores based on 2018 performance data is compared against threshold scores calculated by CMS by geographic region, and used to adjust reimbursed payment in 2020 (Squitieri & Chung, 2017).

Based on historical benchmarks for measures and the 2018 performance data, CMS determined the following thresholds for receiving payment adjustments: 0-14 points is a negative payment adjustment up to -5%, 15-69 points is between earning no payment adjust to a modest positive payment adjustment up to 5%, and 70-100 is "exceptional performance" where clinicians are eligible to receive an additional positive payment adjustment. CMS determines these thresholds and the amount of the scaled payment adjustments received by clinicians to be budget-neutral, with an additional $500,000,000 to be distributed to exceptional performers (Squitieri & Chung, 2017). There are also many special scoring mechanisms, like bonus points, reweighting of categories, exemptions, and special status designations that may allow providers to earn more points and higher payment adjustments or be excluded from participation from MIPS. Individual providers and groups were excluded from participating in MIPS for the 2018 performance year if they billed less than or equal to $90,000 in Medicare Part B allowable charges or had fewer than 200 Medicare Part B beneficiaries the prior year (CMS, 2021b).

1.2 Problem Statement

MACRA was ultimately passed to control long-term federal spending on healthcare. The United States continues to spend a significant amount on healthcare annually, with the federal government sharing a large portion of the total healthcare expenditures. In 2019, the US spent a total of $3.8 trillion on healthcare expenditures, accounting for 17.7% of the nation's GDP (CMS, 2019b). Roughly 21% of total healthcare expenditures in 2019, or $800 billion, was directly related to the Medicare program (CMS, 2019b). Over the last decade, federal spending on Medicare in the form of benefit payments has grown continuously (Cubanski, 2018). Medicare spending is projected to continue growing at an average rate of 7.6% over the next several years, faster than any other major payer in healthcare (Keehan et al., 2020). This projected growth in spending can be attributed primarily to increased enrollment of Medicare beneficiaries, volume of services, and healthcare prices (Cubanski, 2018). Medicare plays a major role in the American healthcare system with the significant amount of federal dollars that are spent and the large number of beneficiaries.

Historical attempts at a sustainable physician payment system for Medicare have largely failed to reduce federal spending, stabilize health care costs, or encourage healthcare providers to deliver high quality, value-based care. Due to the congressional patches delaying payment cuts, the SGR method failed to ensure that federal healthcare expenditures did not exceed growth in the national economy. Legacy CMS programs like the Physician Quality Reporting Program (PQRS), Value-based Payment Modifier (VM), and Medicare Electronic Health Record Incentive Program/Meaningful Use (MU) were also unsuccessful in reducing overall federal spending on Medicare. This failure can be attributed to several factors (MedPAC, 2018):

- A lack of universal participation from providers resulting from voluntary reporting requirements
- Single-sided financial risk models incentivized participation, but did not discourage nonparticipation
- Insignificant financial penalties for not participating in value-based care
- Programs relied on the existing fee-for-service model, which does not control utilization of services
- Cumbersome reporting and technical requirements discouraged provider participation in quality programs
- Quality performance data on providers was not publicly available.

CMS attempted to address these historical failures by consolidating PQRS, VM, and MU into a single, streamlined, mandatory reporting program under MIPS. CMS has taken incremental steps toward modifying the program since its implementation in 2017, and continues to "further refine program requirements, respond to stakeholder feedback, reduce reporting burden, encourage meaningful participation, and improve patient outcomes" (CMS, 2021b, p. 1). The implementation of QPP represents a monumental shift in the industry toward reimbursing healthcare providers for value over volume and eliminating the historical fee-for-service model. In addition to this qualitative approach to improvement, it is vital to the success of the program for CMS to consider the quantitative data collected in future program modifications.

Rural healthcare providers have historically been disadvantaged when faced with value-based care and participation in quality reporting programs. They face structural barriers, practitioner shortages, hospital closures, and healthcare disparities that present challenges to achieving equitable outcomes in treating rural populations (Graves & Hammarlund, 2020). Small

and rural hospitals also have less experience with value-based purchasing models and reporting programs (LaPointe, 2017). To account for the barriers faced by rural providers, CMS created eligibility exemptions and special scoring mechanisms under QPP to encourage participation and mitigate the effect of low program performance. CMS developed low-volume thresholds to exclude providers in small and rural hospitals that did not have enough Medicare revenue and patients to significantly take part in MIPS. In addition to the low-volume threshold, CMS also exempts most providers who are practicing in a rural health clinic or critical access hospital from participating in MIPS (LaPointe, 2017). For rural providers that are not exempt from MIPS, CMS automatically awards double the points for each improvement activity submitted (CMS, 2021c).

1.3 Research Questions

This study examines MIPS program data from the 2018 Performance Year [January 01, 2018 to December 31, 2018], made publicly available by CMS. The aim of the study is to identify trends in MIPS participation, clinician performance, program category scores, reported quality measures, payment adjustments and submission methods across rural clinicians practicing in Alabama, Georgia, South Carolina, North Carolina, and Tennessee. This analysis is intended to provide CMS with key data-driven trends and statistics to incorporate into the continuing effort to improve MIPS and QPP, as well as ensure rural providers can participate and succeed under the program. This retrospective descriptive study explores MIPS program data and identifies useful trends and statistics for rural healthcare stakeholders. The following research questions were examined for Southeastern rural providers and compared with their urban counterparts:

- What was the participation rate for eligible providers in the 2018 Performance Year?

- Did most providers report as individuals, groups, or participate in a MIPS APM?
- What final and category scores did eligible providers receive?
- How did eligible providers perform against the CMS-established benchmarks?
- Which percentage of providers received positive, negative, or neutral payment adjustments?

1.4 Population

The population included in this study are eligible clinicians from the 2018 Performance Year of MIPS. CMS defines eligible clinicians as the following licensed healthcare providers: physicians (including doctors of medicine, doctors of osteopathy, osteopathic practitioners, doctors of dental surgery, doctors of dental medicine, doctors of podiatric medicine, doctors of optometry, and chiropractors), physician assistants, nurse practitioners, clinical nurse specialists, and certified registered nurse anesthetists. MIPS participation exemptions were given to eligible clinicians based on the following criteria: clinicians enrolling in the Medicare program for the first time in 2018, participation in an Advanced APM, less than $90,000 billed in physician fee schedule services furnished to Medicare fee-for-service (FFS) beneficiaries, or clinicians who have 200 or fewer Medicare Part B FFS beneficiaries (CMS, 2018). A total of 889,995 eligible clinicians were included in the 2018 MIPS Performance Year (Verma, 2020).

This study specifically examines eligible clinicians who received a rural designation during the 2018 MIPS Performance Year. CMS designates an individual practitioner as rural if the clinician is associated with a practice located in a rural-designated zip code, as defined by the Federal Office of Rural Health Policy. Data from five contiguous southeastern US states (Alabama, Georgia, South Carolina, North Carolina, and Tennessee) were selected for analysis, due to their significant rural populations as a region.

CHAPTER II SCOPING LITERATURE REVIEW

2.1 Introduction

A review of the literature was performed using the PubMed Library Database. Research published between 2017 to 2021 were considered in this literature review, which aligns with the time frame from the first performance year following MIPS implementation to present day. There are few published studies of the overall impact of MIPS on the healthcare system to date, likely due to the program being in the early years of its implementation. Additionally, CMS implemented flexibilities in data submission deadlines, payment adjustments, and participation requirements for MIPS in response to the 2019 Novel Coronavirus (COVID-19) pandemic (CMS, 2021a). Furthermore, limited research has been conducted on rural healthcare and participation in or performance under QPP or MIPS at the time of this study. This literature review focuses on the available research surrounding MIPS to date, which was found to be largely related to early concerns and criticism of MIPS received from the healthcare industry and lessons learned from the MIPS 2017 Performance Year.

2.2 Program Design

Most of the available literature on MIPS is focused on the program's design, particularly on the scoring methodology and payment incentives. An area of uncertainty cited in the literature is how clinicians will respond to the MIPS incentive design and the program's ability to achieve its long-term goals (Nuckols, 2017). The relationship between the design of the program, its pay-for-performance incentives, and the effectiveness of MIPS has not been empirically examined because the program is only in its fifth year of implementation. One study published during the first year of the program anticipated the payment incentives for clinicians were too "weak" to reduce the provision of services, or that some features of MIPS created incentives to do more

rather than less (McWilliams, 2017). Research published in the years following mimicked this concern that the program design resulted in low payment incentives received by clinicians, which were validated by early MIPS program data. In a 2019 study published in *Health Affairs*, researchers found that the maximum positive MIPS payment adjustment for participants in 2017 was only 1.88%, an amount lower than the plus 4% to 22% increase publicized by CMS (Navathe et al., 2019). A 2020 study published in *Health Affairs* similarly criticized CMS' decision to implement MIPS with such low performance thresholds, concluding that the decision resulted in a low marginal benefit of participation in the program and limited incentives to incrementally improve provider performance (Apathy, 2020).

In addition to early criticisms of the payment incentives under MIPS, existing literature focuses on the scoring methodology under the program. A 2019 study published in the *Journal of the American Medical Association* claimed the limited number of measures and allowance of choice for which measures to report makes it "difficult to believe the MIPS will have a meaningful impact on patient outcomes or experiences" (Rathi, 2019). Another study similarly criticized the program's scoring methodology, which grades clinicians on a curve and results in providers with identical performance measures receiving different scores (McWilliams, 2017).

2.3 Program Participation

In the 2018 QPP Reporting Experience Report published by CMS, a total of 889,995 clinicians were determined to be eligible for participation in MIPS for the 2018 Performance Year. Of all eligible clinicians, 874,515, or 98%, participated in the program (QPP, 2020). In the 2017 QPP Reporting Experience Report, a total of 1,057,824 clinicians were eligible for MIPS in 2017, with 1,006,319, or 95% participating (QPP, 2019). Fewer clinicians were considered eligible for participation in MIPS in 2018 due to changes in the low-volume thresholds, which

exempted certain clinicians from participation in MIPS. This was intentionally designed by CMS to allow for providers and the healthcare industry more time to be familiar with the program before participating. CMS established a goal of having 90% of MIPS eligible clinicians participate in the program, which was exceeded in the first year of the program (QPP, 2019).

Although CMS reported high overall participation rates in the first two years of the MIPS program, a 2020 study published in *Health Affairs,* raised concerns of the actual participation in the program. In contrast to the 98% overall participation rate in 2017, assessing clinician participation in individual MIPS categories indicated substantially lower participation rates. The study showed 26.5% of clinicians did not participate in the Quality category, 16.9% of clinicians did not participate in the Improvement Activities category, and 34.8% of clinicians did not participate in the Advancing Care Information category in 2017 (renamed to Promoting Interoperability category in 2018 (Apathy & Everson, 2020). With almost half of participating clinicians not participating in all three MIPS categories for 2017, the study authors advised caution when claiming the 95% participation rate indicated program success (Apathy & Everson, 2020).

A 2019 study published in the *Journal of the American Medical Association* reiterated the concern of inflated participation rates and the implications for measuring program success. The study authors argued that the extreme flexibility in measure selection and data submission, combined with the low scoring thresholds set by CMS, allowed clinicians to submit minimal data lacking clinical validity and still count as participating in the program (Rathi & McWilliams, 2019).

2.4 Participation Type

In the 2018 QPP Reporting Experience Report published by CMS, 53% of clinicians reported as a group, 41% participated in a MIPS APM, and 6% reported as individuals (QPP, 2020). In the 2017 QPP Reporting Experience Report, 54% of clinicians reported as a group, 34% participated in a MIPS APM, and 12% reported as individuals (QPP, 2019). CMS also introduced an additional method of participating in 2018, referred to as virtual groups; however, no clinicians reported under this participation type in 2018 (QPP, 2020). The data from the first two years of MIPS indicated clinicians are more often reporting as a group, and moving away from individual reporting. This data also showed the significant participation in MIPS through APMs indicates that "clinicians and practices are interested in and moving toward value-based arrangements and taking on additional risk for the outcomes of their patients" (QPP, 2019, p.9).

2.5 Payment Adjustments

Prior to releasing the full results and performance data for the 2018 MIPS Performance Year, CMS published preliminary results highlighting provider participation and payment adjustments received. CMS claimed 98% of eligible clinicians participating in MIPS received a positive payment adjustment, which is an increase from the 93% of eligible clinicians who received a positive payment adjustment in the 2017 MIPS Performance Year (Verma, 2020). CMS also claimed 97% of eligible clinicians in rural practices received a positive payment adjustment, compared to 93% in 2017. CMS concluded that the high participation rates among rural and small providers supported their efforts in "making strides towards making MIPS a practical program for every clinician, regardless of size" (Verma, 2020).

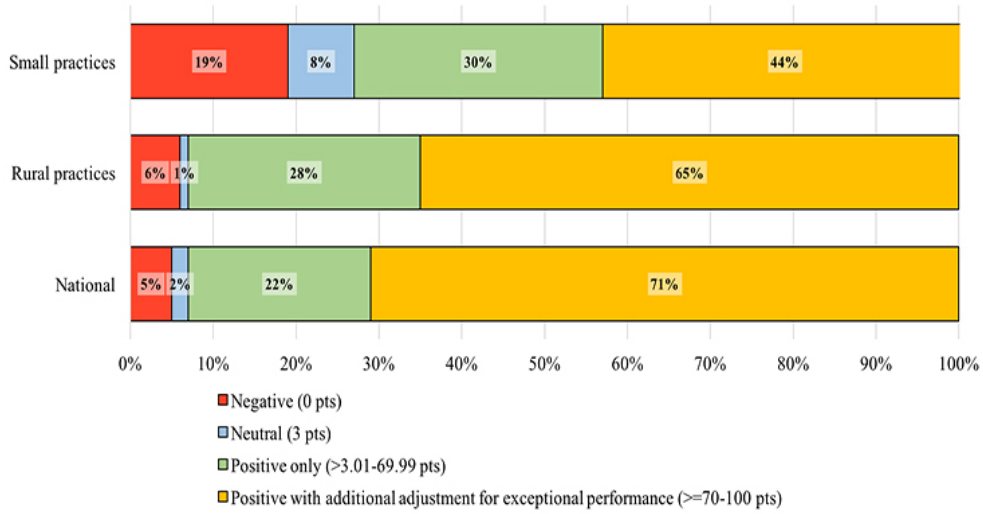
Similar to the concerns of inflated overall participation rates, the 2020 *Health Affairs* study also raised concerns of the percentage of clinicians receiving a positive payment

adjustment without participating in all MIPS categories. The study found that 74% of clinicians who only partially participated in the program received positive payment adjustments in the 2017 MIPS Performance Year (Apathy & Everson, 2020). Thus, although CMS reported 93% of clinicians received a positive payment adjustment in 2017, only 19% of clinicians participated in all MIPS categories and avoided a negative payment adjustment (QPP, 2019).

2.6 Rural Practices

At the time of this study, no published study had examined rural providers and their participation and performance during the first two years of the MIPS program. One study, however, examined performance based payment adjustments for small and rural providers versus all eligible providers across the US. In that analysis of 2017 MIPS performance data posted in *Health Affairs Blog,* "larger and non-rural practices performed considerably better than their smaller and rural counterparts" (Navathe et al., 2019, p. 1).

Figure . *2017 MIPS Payment Adjustments By Practice Size (Navathe et al., 2019)*



As shown in Figure 1, the analysis by Navathe and colleagues revealed that fewer rural practices qualified as exceptional performers, as defined by CMS as having a final MIPS score of 70 or greater The researchers' analysis also showed that, on average, rural practices performed worse

than large practices, as evidenced by a median final MIPS score of 75.29 for rural practices versus 90.29 for large practices in 2017 (Navathe et al., 2019).

Rural practices are often associated with serving patients who face greater health disparities and are more socially disadvantaged and socially at-risk than urban patients. (RHI, 2019). In a study published in the *Journal of the American Medical Association,* Kullar et al. (2020) determined that providers with the highest proportion of socially disadvantaged patients had significantly lower MIPS scores. This cross-sectional study found physicians working at safety net practices scored lower across all MIPS categories in 2017. In a study published in *Health Affairs,* Johnston et al. found that clinicians with the highest socially at-risk caseloads scored 13.4 points lower in their final MIPS score than clinicians with the lowest socially at-risk caseload (2020). Additionally, the study found clinicians with the highest socially at-risk caseloads "were 99 percent more likely to receive a negative payment adjustment, and were 52 percent less likely to receive an exceptional performance bonus payment" (Johnston et al., 2020).

2.7 Conclusion

Available research on the impact of MIPS and its viability as a permanent physician payment system is mostly based on qualitative data and conjecture from historical experiences; Few studies to date empirically evaluated or utilized quantitative data in rural providers and practices. Although the high overall participation rates in the first two years of the MIPS program are laudable, participation in individual categories is substantially lower.

CHAPTER III METHODOLOGY

3.1 Research Design and Data Set Description

This retrospective descriptive cohort analysis identifies and describes trends in the MIPS 2018 Performance Year. This study can help CMS continue to improve the design of QPP and shape the reporting requirements and scoring methodology for rural providers participating in MIPS. This study can also help other healthcare quality stakeholders, including rural healthcare providers, identify key trends and program factors that may affect rural provider participation in MIPS, and consequently their Medicare reimbursement. This descriptive study uses publicly available MIPS data from 2018 to identify trends in program performance for rural providers versus their urban counterparts in the following Southeastern states: Alabama, Georgia, South Carolina, North Carolina, and Tennessee. No hypothesis was tested as part of this study.

CMS released the 2018 QPP Experience Report Public Use File (PUF) on October 28, 2020. The file, available on CMS' public data website (data.cms.gov), allows users to view data regarding MIPS participation and performance during the 2018 performance year. The information provided in the PUF covers eligibility and participation, performance categories, and final score and payment adjustments for individual providers, identified by their respective National Provider Identifier [NPI]. Per CMS rules, information on NPIs with fewer than 11 beneficiaries are suppressed from public use on the PUF (HealthCentric Advisors, 2020).

3.2 Variable Description

The PUF dataset includes all healthcare providers deemed eligible for participation in MIPS during the 2018 Performance Year. All healthcare providers that billed more than $90,000 in Medicare Part B claims, or had more than 200 Medicare Part B beneficiaries during CMS' eligibility determination period, were included in the PUF whether they submitted data or not.

Five contiguous states in the southeastern US were selected for this study, due to their significant rural populations as a region: Alabama, Georgia, South Carolina, North Carolina, and Tennessee. The PUF identifies the practice state as the location of the provider's billing address where services are rendered. Within the selected Southeastern US states, providers fall into one of two categories: rural or urban. If applicable, providers are directly indicated as "rural" on the PUF. CMS designates an individual practitioner as rural if the clinician is associated with a practice located in a rural-designated zip code, as defined by the Federal Office of Rural Health Policy. For this analysis, all providers not designated as rural on the PUF were considered urban providers.

This study assessed the following outcomes related to participation and performance in MIPS, included as variables on the PUF (CMS, 2020):

- Participated: indicates if the clinician reported data or received a Final Score greater than zero
- Participation Type: indicates the reporting method from which the clinician received a final score; in 2018, clinicians had the option of reporting for MIPS as a group, individually, or by participating in a MIPS APM
- Final Score: the overall score (on a numerical scale of 0 to 100) received by the eligible clinician for the performance year; also referred to as the Composite Performance Score (CPS)
- Quality Category Score: the unweighted score received by the participant for the Quality score that is used for the overall score
- Promoting Interoperability (PI) Category Score: the unweighted score received by the participant for the PI category that is used for the final score

- Improvement Activity (IA) Category Score: the score received for the IA category based on all the IA measures picked and IA bonuses received for the category that contributed to the final score
- Cost Score: the unweighted score received for the Cost category based on all the cost measures reported and used for final scoring
- Payment Adjustment: the payment adjustment received by comparing the overall score obtained by the eligible clinician to the performance thresholds.

3.3 Data Analysis

Descriptive statistics were used to summarize participation and performance data for rural and urban providers in the Southeastern US. Counts and percentages were used to describe program participation, participation type, performance based on CMS-publicized thresholds on scores and payment adjustments. Averages were used to evaluate final scores, category scores, and payment adjustments. The chi-square test was used to determine if descriptive statistics for categorical variables differed by rural vs urban designation. The categorical variables in this study included participation (true or false) and participation type (group, individual, or MIPS APM). T-tests were used to determine if descriptive statistics for continuous variables differed by rural vs urban designation. The continuous variables in this study included the final score, category scores, and payment adjustment.

3.4 Protection of Human Subjects

The use of this data set is unrestricted and made publicly available by CMS. It does not contain healthcare restricted or patient information. Therefore, Institutional Review Board approval was not needed.

CHAPTER IV RESULTS

4.1 Results/Findings

The objective of the study was to identify trends in MIPS participation and performance among rural and urban providers in select Southeastern states for the 2018 Performance Year. Using MIPS program data made publicly available by CMS, the following research questions were examined for Southeastern rural providers and compared with their urban counterparts:

- What was the participation rate for eligible providers in the 2018 Performance Year?
- Did most providers report as individuals, groups, or participate in a MIPS APM?
- Which final and category scores did eligible providers receive?
- How did eligible providers perform against the CMS-established benchmarks?
- Which percentage of providers received positive, negative, or neutral payment adjustments?

A total of 882,493 providers across the US were designated by CMS as eligible clinicians for the 2018 MIPS Performance Year. Of those 882,493 providers, 115,826, or approximately 13%, were designated as rural, and 766,667 providers, or approximately 87%, were considered as practicing in urban areas. Of the total 882,493 eligible clinicians in the US, 108,112 (12.3%) providers were located in the five selected Southeastern states for this study: Alabama, Georgia, South Carolina, North Carolina, and Tennessee. Of those 108,112 providers, 19,202, or approximately 18%, were designated by CMS as rural, and the remaining 88,910, or approximately 82%, were considered to be practicing in urban areas.

4.1.1 Findings in MIPS Participation

As shown in Table 1, a total of 992,493 providers were eligible for MIPS in 2018 across the US. Of those providers 867,018, or 98.25%, participated in the program and 15,475, or

1.75%, did not participate in MIPS. Of the rural providers eligible for MIPS nationally, 113,809, or 98.26%, participated in the program, while 2,017, or 1.74%, did not participate. Of the urban providers eligible for MIPS nationally, 753,209, or 98.24%, participated in the program, while 13,458, or 1.76%, did not participate. Participation rates between rural and urban providers nationally was not statistically significantly different (P=0.735).

Table 1 also expresses the participation rates for providers in the selected Southeastern states for this study. A total of 108,112 providers in the selected Southeastern states were eligible for MIPS in 2018. Of those providers, 106,989, or 98.96%, participated in the program, and 1,123, or 1.04%, did not participate in MIPS. Of the rural providers eligible for MIPS in the Southeast, 18,946, or 98.67%, participated in the program, while 256, or 1.33%, did not participate. Of the urban providers eligible for MIPS in the Southeast, 88,043, or 99.02%, participated in the program, while 867, or 0.98%, did not participate. The difference in participation rates between rural and urban providers in the Southeast was statistically significantly lower among rural providers by 0.35% (P<0.001).

Table . *MIPS Participation Rates*

Nationally				
	All Providers (n=882,493) n (%)	**Rural Providers (n=115,826) n (%)**	**Urban Providers (n=766,667) n (%)**	**P-Value**
Participated	867,018 (98.25)	113,809 (98.26)	753,209 (98.24)	0.735
Did Not Participate	15,475 (1.75)	2,017 (1.74)	13,458 (1.76)	
Southeastern US				
	All Providers (n=108,112) n (%)	**Rural Providers (n=19,202) n (%)**	**Urban Providers (n=88,910) n (%)**	**P-Value**
Participated	106,989 (98.96)	18,946 (98.67)	88,043 (99.02)	< 0.001
Did Not Participate	1,123 (1.04)	256 (1.33)	867 (0.98)	

4.1.2 Findings in MIPS Participation Type

As shown in Table 2, 466,909, or 53.85% of providers in the US participated in MIPS as a group, 348,893, 40.24%, participated through a MIPS APM, and 51,216, or 5.91%, participated as individuals. Of the rural providers who participated in MIPS across the US, 59,693, or 52.45%, participated as a group, 46,048, or 40.46%, participated through a MIPS APM, and 8,086, or 7.09%, participated as individuals. Of the urban providers who participated in MIPS across the US, 407,216, or 54.06%, participated as a group, 302,845, or 40.21%, participated through a MIPS APM, and 43,148, or 5.73%, participated as individuals. Rural providers in the US were 1.36% more likely to participate as individuals than their urban counterparts ($P<0.001$).

Table 2 also expresses the distribution of providers by participation type in the selected Southeastern states for this study. A total of 46,068 providers, or 43.06%, in the Southeast participated in MIPS as a group, 53,919, or 50.40%, participated through a MIPS APM, and 7,002, or 6.54%, participated as individuals. Of the rural providers who participated in MIPS in the Southeast, 8,804, or 46.47%, participated as a group, 8,207, or 43.32%, participated through a MIPS APM, and 1,1935, or 10.21%, participated as individuals. Of the urban providers who participated in MIPS in the Southeast, 37,264, or 42.32%, participated as a group, 45,712, or 51.92%, participated through a MIPS APM, and 5,067, or 5.76%, participated as individuals. The difference in individual participation among Southeastern rural and urban providers were more pronounced than in the US, with rural Southeastern providers participating as individuals at almost double the rate of their urban counterparts (rate difference 4.45%; $P<0.001$).

While a higher percentage of rural and urban providers participated in MIPS as a group nationally, a higher percentage of urban providers participated through a MIPS APM rather than

through a group or individually in the Southeast. Additionally, a higher percentage of rural providers in the Southeast participated in MIPS as individuals versus their urban counterparts and rural providers nationally.

Table . *MIPS Participation Type*

Nationally				
	All Providers (n=867,018) n (%)	**Rural Providers (n=113,809) n (%)**	**Urban Providers (n=753,209) n (%)**	**P-Value**
Group	466,909 (53.85)	59,693 (52.45)	407,216 (54.06)	< 0.001
Individual	51,216 (5.91)	8,068 (7.09)	43,148 (5.73)	
MIPS APM	348,893 (40.24)	46,048 (40.46)	302,845 (40.21)	
Southeastern US				
	All Providers (n=106,989) n (%)	**Rural Providers (n=18,946) n (%)**	**Urban Providers (n=88,043) n (%)**	**P-Value**
Group	46,068 (43.06)	8,804 (46.47)	37,264 (42.32)	< 0.001
Individual	7,002 (6.54)	1,935 (10.21)	5,067 (5.76)	
MIPS APM	53,919 (50.40)	8,207 (43.32)	45,712 (51.92)	

4.1.3 Findings in MIPS Final and Category Scores

Table 3 expresses the average final scores received for MIPS 2018, as well as the average scores received in each of the four MIPS categories. CMS scores eligible Medicare Part B clinicians on a 100-point performance scale which results in a Composite Performance Score (CPS), or the final score. In this dissertation study, the average scores were determined for all eligible clinicians across the US, all eligible clinicians in the Southeast, and all participating providers in the Southeast. Nationally, the mean final score for rural eligible clinicians, 85.96 points, was statistically significantly lower than for urban eligible clinicians, 87.00 points ($P<0.001$). The mean final score for rural eligible clinicians in the Southeast was 83.05 points,

which was statistically significantly lower than the mean final score for their urban counterparts at 87.94 points (P<0.001). Similarly, when looking only at MIPS participating providers in the Southeast, rural providers scored statistically significantly lower than urban providers by 4.62 points (P<0.001).

Similar to what was found in overall average scores, the average category scores for rural providers were statistically significantly lower than urban providers across three MIPS categories: Quality, Promoting Interoperability, and Improvement Activities (Table 3). Nationally, rural providers scored an average of 0.95, 3.58, and 0.34 points lower than urban providers in the Quality, Promoting Interoperability, and Improvement Activities categories, respectively (P<0.001) (Table 3). In the Southeast, rural providers scored an average of 6.53, 12.45, and 0.86 points lower than urban providers in the Quality, Promoting Interoperability, and Improvement Activities categories, respectively (P<0.001) (Table 3). Within participating providers only in the Southeast, rural providers scored an average of 6.32, 12.36, and 0.72 points lower than urban providers in the Quality, Promoting Interoperability, and Improvement Activities categories, respectively (P<0.001) (Table 3).

Nationally, for the remaining category cost, rural providers tended to average higher. The mean score for the cost category for rural eligible clinicians was 0.10 points higher than for urban eligible clinicians, although this difference was not statistically significant (P=0.447) (Table 3). In the Southeast, the mean score for the cost category for both rural and urban eligible clinicians was 27.03. When looking only at MIPS participating providers in the Southeast, the mean score for the cost category was statistically significantly higher for rural providers than for urban providers by 4.92 points (P<0.001) (Table 3).

Table 4 shows the distribution of rural and urban providers and the final scores received, both nationally and in the Southeast. Across the US, the percentage of rural providers who received the minimum MIPS score, or 0 points, was lower than the percentage of urban providers (1.74% and 1.76%, respectively). However, when looking only at Southeastern states, the percentage of rural providers who received a final score of 0 was higher than the percentage of urban providers (1.33% and 0.98%, respectively). Both nationally and in the Southeast, the percentage of providers who received the maximum MIPS score possible, or 100 points, was lower for rural providers than for urban providers. In the Southeast, while 51.25% of urban providers received the maximum MIPS score, only 46.80% of rural providers received the same number of points.

Table 4 also shows the distribution of providers who were categorized as low, high, and exceptional performers, determined by final score thresholds set by CMS. Both nationally and in the Southeast, the percentage of rural providers who were low performers, or received a final score of less than 15 points, was higher when compared with urban providers. Among rural providers in the Southeast, 2.27% were low performers, while 1.11% of urban providers were in the same category. Similarly, the percentage of rural providers who qualified as exceptional performers, or received a final score of above 70 points, was lower than for urban providers. While 83.17% of urban providers in the Southeast qualified as exceptional providers, 76.45% of rural providers received scores above 70 points.

Table . *Average MIPS Final and Category Scores*

Nationally				
	All Providers (n=882,493) Mean (SD)	**Rural Providers (n=115,826) Mean (SD)**	**Urban Providers (n=766,667) Mean (SD)**	**P-Value**
Final Score	86.87 (24.00)	85.96 (25.03)	87.00 (23.84)	< 0.001
Quality Category Score	81.82 (30.20)	80.99 (31.02)	81.94 (30.08)	< 0.001
PI Category Score	70.97 (44.18)	67.86 (45.39)	71.44 (43.98)	< 0.001
IA Category Score	38.12 (8.21)	37.82 (8.83)	38.16 (8.12)	< 0.001
Cost Category Score	31.97 (39.36)	32.05 (40.63)	31.95 (39.16)	0.447
Southeastern US				
	All Providers (n=108,112) Mean (SD)	**Rural Providers (n=19,202) Mean (SD)**	**Urban Providers (n=88,910) Mean (SD)**	**P-Value**
Final Score	87.07 (23.71)	83.05 (27.04)	87.94 (22.83)	< 0.001
Quality Category Score	82.49 (29.63)	77.12 (33.34)	83.65 (28.64)	< 0.001
PI Category Score	70.65 (44.35)	60.41 (47.46)	72.86 (43.32)	< 0.001
IA Category Score	38.12 (8.16)	37.42 (9.52)	38.28 (7.82)	< 0.001
Cost Category Score	27.90 (39.35)	27.03 (38.71)	27.03 (38.71)	< 0.001
Southeastern US (Participating Providers)				
	All Providers (n=106,989) Mean (SD)	**Rural Providers (n=18,946) Mean (SD)**	**Urban Providers (n=88,043) Mean (SD)**	**P-Value**
Final Score	87.99 (22.08)	84.18 (25.43)	88.80 (21.20)	< 0.001
Quality Category Score	83.35 (28.55)	78.15 (32.33)	84.47 (27.55)	< 0.001
PI Category Score	71.39 (43.98)	61.22 (47.29)	73.58 (42.92)	< 0.001
IA Category Score	38.52 (7.20)	37.93 (8.52)	38.65 (6.87)	< 0.001
Cost Category Score	27.78 (39.35)	31.82 (42.03)	26.90 (38.69)	< 0.001

Table . *MIPS Score Performance Against Benchmarks*

Nationally			
	All Providers (n=882,493) n (%)	**Rural Providers (n=115,826) n (%)**	**Urban Providers (n=766,667) n (%)**
Providers With Minimum Score (0 points)	15,475 (1.75)	2,017 (1.74)	13,458 (1.76)
Providers Who Scored Maximum Score (100 Points)	424,973 (48.16)	55,115 (47.58)	369,858 (48.24)
Low Performers (Scored Between 0 to 14.99 Points)	17,842 (2.02)	2,385 (2.06)	15,457 (2.02)
High Performers (Scored Between 15 and 69.99 Points)	123,046 (13.94)	17,458 (15.07)	105,588 (13.77)
Exceptional Performers (Scored Between 70 and 100 Points)	741,605 (84.04)	95,983 (82.87)	645,622 (84.21)
Southeastern US			
	All Providers (n=108,112) n (%)	**Rural Providers (n=19,202) n (%)**	**Urban Providers (n=88,910) n (%)**
Providers With Minimum Score (0 points)	1,123 (1.04)	256 (1.33)	867 (0.98)
Providers Who Scored Maximum Score (100 Points)	54,549 (50.46)	8,987 (46.80)	45,562 (51.25)
Low Performers (Scored Between 0 to 14.99 Points)	1,421 (1.31)	436 (2.27)	985 (1.11)
High Performers (Scored Between 15 and 69.99 Points)	18,064 (16.71)	4,086 (21.28)	13,978 (15.72)
Exceptional Performers (Scored Between 70 and 100 Points)	88,627 (81.98)	14,680 (76.45)	73,947 (83.17)

4.1.4 Findings in Payment Adjustments

Table 5 expresses the average final payment adjustments received across all MIPS eligible clinicians in the US, among MIPS eligible clinicians in the Southeast, and among providers who participated in the program within the Southeast. Across all three groups, the average final payment adjustment received by rural providers was statistically significantly lower

than the average payment adjustment received by urban providers within the same group ($P<0.001$). Among all rural eligible clinicians and rural providers participating in MIPS in the Southeast, the mean final payment adjustments were 1.11% and 1.20%, respectively ($P<0.001$). This difference was even greater in the Southeast. Among all urban eligible clinicians and eligible providers participating in MIPS in the Southeast, the mean final payment adjustments were 1.26% and 1.32%, respectively ($P<0.001$).

As shown in Table 6, the final payment adjustments received by rural and urban providers both nationally and in the Southeast ranged from -5.00% to 1.68%. When looking only at providers who participated in the MIPS program in the Southeast, the minimum payment adjustment received was lower for urban providers than it was for rural providers: - 3.33% and -2.18%, respectively. The maximum payment adjustment received by both urban and rural participating providers in the Southeast was the same as the maximum payment adjustment received by all eligible clinicians across the US as well as in the Southeast (1.68%).

Table 7 shows the distribution of rural and urban providers and the final payment adjustments received, both nationally and in the Southeast. Although the percentage of providers receiving the minimum and maximum payment adjustments were not drastically different among rural versus urban providers across the US, the difference is more pronounced for providers in the Southeast. A higher percentage of rural providers received the minimum payment adjustment of -5%, as opposed to urban providers in the Southeast (1.33% and 0.98%, respectively). A lower percentage of rural providers received the maximum payment adjustment of 1.68%, as opposed to urban providers in the Southeast (46.87% and 51.30%, respectively).

Similarly, the difference in the distribution of providers in receiving a negative, neutral, or positive payment adjustment was more pronounced in the Southeast. A higher percentage of

rural providers received a negative payment adjustment when compared to urban providers in the Southeast (2.27% and 1.11%, respectively). A lower percentage of rural providers received a positive payment adjustment when compared to urban providers in the Southeast (95.93% and 98.24%, respectively).

Table . *Average Payment Adjustments Received*

Nationally				
	All Providers (n=882,493) Mean (SD)	**Rural Providers (n=115,826) Mean (SD)**	**Urban Providers (n=766,667) Mean (SD)**	**P-Value**
Payment Adjustment	1.19 (0.01)	1.17 (0.01)	1.19 (0.01)	< 0.001
Southeastern US				
	All Providers (n=108,112) Mean (SD)	**Rural Providers (n=19,202) Mean (SD)**	**Urban Providers (n=88,910) Mean (SD)**	**P-Value**
Payment Adjustment	1.23 (0.01)	1.11 (0.01)	1.26 (0.01)	< 0.001
Southeastern US (Participating Providers)				
	All Providers (n=106,989) Mean (SD)	**Rural Providers (n=18,946) Mean (SD)**	**Urban Providers (n=88,043) Mean (SD)**	**P-Value**
Payment Adjustment	1.30 (0.01)	1.20 (0.01)	1.32 (0.01)	< 0.001

Table . *Minimum and Maximum Payment Adjustment Received*

Nationally		
	Rural Providers	**Urban Providers**
Minimum Payment Adjustment Received	-5.00%	-5.00%
Maximum Payment Adjustment Received	1.68%	1.68%
Southeastern US		
	Rural Providers	**Urban Providers**
Minimum Payment Adjustment Received	-5.00%	-5.00%
Maximum Payment Adjustment Received	1.68%	1.68%
Southeastern US (Participating Providers)		
	Rural Providers	**Urban Providers**
Minimum Payment Adjustment Received	-2.18%	-3.33%
Maximum Payment Adjustment Received	1.68%	1.68%

Table . *Distribution of Payment Adjustments Received*

Nationally			
	All Providers (n=882,493) n (%)	**Rural Providers (n=115,826) n (%)**	**Urban Providers (n=766,667) n (%)**
Providers Receiving Minimum Payment Adjustment	15,575 (1.76)	2,020 (1.74)	13,555 (1.77)
Providers Receiving Maximum Payment Adjustment	429,134 (48.63)	56,258 (48.57)	372,876 (48.46)
Providers Receiving Negative Payment Adjustment	17,842 (2.02)	2,385 (2.06)	15,457 (2.02)
Providers Receiving Neutral Payment Adjustment	4,552 (0.52)	750 (0.65)	3,802 (0.50)
Providers Receiving Positive Payment Adjustment	860,099 (97.46)	112,691 (97.29)	747,408 (97.49)
Southeastern US			
	All Providers (n=108,112) n (%)	**Rural Providers (n=19,202) n (%)**	**Urban Providers (n=88,910) n (%)**
Providers Receiving Minimum Payment Adjustment	1,123 (1.04)	256 (1.33)	867 (0.98)
Providers Receiving Maximum Payment Adjustment	54,607 (50.51)	9,000 (46.87)	45,607 (51.30)
Providers Receiving Negative Payment Adjustment	1,421 (1.31)	436 (2.27)	985 (1.11)
Providers Receiving Neutral Payment Adjustment	922 (0.85)	345 (1.80)	577 (0.65)
Providers Receiving Positive Payment Adjustment	105,769 (97.83)	18,421 (95.93)	87,348 (98.24)

CHAPTER V DISCUSSION

5.1 Discussion of Results

In this retrospective descriptive cohort analysis of MIPS 2018 participation and performance, rural providers in the Southeast generally scored lower, performed poorer, and received lower payment adjustments than their urban counterparts in the Southeast. These findings extend prior evidence, which demonstrated that value-based payment programs disproportionately penalize rural providers and practices, nationally. These findings also have major implications for the overall design of MIPS and corresponding planned program updates by CMS, as well as for rural healthcare providers seeking financial success under Medicare.

5.1.1 MIPS Participation

CMS defines "eligible clinicians" as healthcare providers that meet the MIPS eligibility thresholds, determined on clinician type, Medicare patient volume, and Medicare charges. For the 2018 performance year, Medicare providers who billed more than $90,000 for Part B covered professional services and saw more than 200 Part B patients were designated as eligible clinicians and were included in the 2018 QPP PUF dataset (CMS, 2018). CMS defines an eligible clinician as having participated in MIPS if the provider reported data or received a final score greater than zero (QPP, 2020). The percentage of eligible clinicians who were designated as "participated" was lower for rural providers than for urban providers, both nationally and in the Southeast. While the difference in rural and urban participation rates was not statistically significant nationally, this difference was significant when assessing Southeast providers.

Overall, the participation rates for both rural and urban eligible clinicians was high, which is consistent with CMS' claims of exceeding their goals for provider participation in MIPS during the initial years of the program's implementation (QPP, 2019). A participation rate of

above 98% reflects a significant number of providers who are determined to be eligible for MIPS, are successfully reporting data, and are actively choosing to participate in MIPS. However, evaluating MIPS participation rates based on CMS' definition may not accurately reflect participation in the program. Because CMS allows various methods for collecting and submitting MIPS data, some provider data may be reported inadvertently, and not necessarily as a result of active decision making by providers. The MIPS scoring methodology also allows providers to avoid scoring zero points by reporting a minimal amount of data in order to be recorded as a MIPS participant. Providers also had the option to manually attest their results for certain MIPS categories on CMS' QPP web interface, which could lead to inaccurate reporting of data.

For these reasons, CMS' definition of participation does not reflect providers' efforts to report data or actively choose to participate in MIPS. A more accurate measure of participation would be to assess whether providers actively chose to report data to the program, and to determine participation based on data reported across all 4 categories for the full performance year. This would allow a more meaningful analysis of difference participation rates of rural providers versus urban providers, thus identifying providers who are experiencing barriers to MIPS participation.

5.1.2 MIPS Participation Type

There were four participation options for the MIPS 2018 Performance Year (QPP, 2018). MIPS eligible clinicians could participate in MIPS as an individual, a group practice, a virtual group, or as a MIPS APM Entity. If participating as an individual, a provider's final score and payment adjustment is based on individual performance. A provider may participate in MIPS as a member of a group with other providers that are practicing in the same organization. If

participating in a group, a provider's final score and payment adjustment is based on the aggregated performance of all providers in the group. Solo practitioners and groups with fewer than 10 providers may choose to participate as a virtual group, where a provider's final score and payment adjustment is based on the aggregate performance of all providers in the virtual group. A MIPS APM Entity is defined as an entity that participates in an Alternative Payment Model or other payer arrangement through a direct agreement with CMS. If participating in MIPS APM, a provider's final score and payment adjustment is based on the aggregate performance of all providers in the MIPS APM (CMS, 2021d). Nationally, more rural and urban providers participated in MIPS as a group than any other participation option. While more rural providers participated in MIPS as a group in the Southeast, more urban providers participated as a MIPS APM than any other participation option.

CMS allows eligible clinicians the choice in reporting to MIPS as an individual or through one of the three group reporting options, depending on the provider's practice affiliations or practice size. The MIPS participation type impacts the measures and activities reported and the reporting requirements, as well as the providers' final scores and payment adjustments. Reporting to MIPS as a group or by participating in a MIPS APM may have several advantages, including distributing the administrative burden of reporting across multiple providers and providing more flexibility in reporting quality measures. Conversely, reporting as an individual may have drawbacks, including not having other providers' performance to supplement final scores or not being able to share the responsibility of meeting reporting benchmarks for certain MIPS measures and activities (Hughes, 2020). This is also supported by the findings of the current dissertation study, which revealed that both nationally and in the

Southeast, the percentage of providers that reported as individuals was significantly higher for rural providers than for urban providers.

Those current findings suggest that CMS should empirically assess how participation type affects scoring and make the necessary program improvements to ensure that certain providers aren't disadvantaged based on the participation options available to them. Although the individual reporting option may seem the least utilized, it is vital for CMS to continue to improve this reporting option for providers who are not affiliated with a hospital or large practice and do not have the option to report as a group or MIPS APM. This is particularly important for rural providers, because solo and small practices are more likely to be located in rural areas (Liaw et al., 2016). The CMS should also continue to improve the virtual group reporting option, which was created to give solo practitioners and small practices the opportunity to join other eligible clinicians and participate in MIPS as a group. This dissertation study found that no providers in the MIPS 2018 Performance Year used the virtual group option to participate in the MIPS program. The barriers to utilizing this reporting option should be identified and addressed for future program years, especially for rural providers because this may be the only group participation option applicable to them.

5.1.3 MIPS Final and Category Scores

Overall, rural providers performed considerably worse in MIPS 2018 than their urban counterparts. On average, rural providers received a lower mean final score and mean category score in all MIPS categories except cost than urban providers. Also, more rural providers received the minimum final score possible (0 points) and were counted as "low performers" (receiving a final score of less than 15 points). Similarly, fewer rural providers received the maximum final score possible (100 points) or qualified as "exceptional providers" (receiving a

final score of 70 points or higher). These findings are consistent with previous research conducted nationally on the 2017 MIPS Performance Year; researchers determined that rural providers performed considerably worse than their urban counterparts (Navathe, 2019). Those findings are consistent with trends in rural participation in other Medicare quality reporting programs, where small and rural physician practices disproportionally face challenges when participating in Medicare's legacy value-based care payment models (US GAO, 2016). Thus, rural providers continue to be disadvantaged in participating in value-based programs that are scored on performance, including MIPS.

Under CMS' current scoring methodology for MIPS, certain categories are reweighted when calculating final scores depending on the providers' participation type. For the 2018 Performance Year, the Cost category was reweighted to 0% for all providers participating through a MIPS APM (CMS, 2021d). This reweighting is reflected in the MIPS 2018 PUF by all providers participating in a MIPS APM receiving a Cost category score of 0 points. While this analysis showed rural providers in the Southeast had a higher mean score in the Cost category than urban providers, the analysis also indicated more urban providers in the Southeast participated through a MIPS APM. Because a score of 0 points based on MIPS APM participation versus performance is not indicated in the PUF dataset, the mean cost scores do not accurately reflect provider performance in this category. The higher mean score in the cost category observed for rural providers is not reflecting better performance than urban providers.

Similarly to reweighting category scores based on participation type, CMS also awards bonus points based on special statuses. For the MIPS 2018 Performance Year, rural designated providers automatically received double the points for each Improvement Activity reported. CMS' intention of assigning special statuses and awarding bonus points is to give certain groups

of eligible clinicians' advantages in scoring to create a level playing field. However, these scores are not differentiated in the PUF dataset. The mean score for the Improvement Activity category was higher for urban providers than for rural providers. If CMS is creating special statuses and bonus points to level the playing field and provide preferential scoring to disadvantaged provider groups, MIPS data should be collected in a way that allows CMS to quantitatively assess whether these points are having the desired impact on the final score, which is ultimately reflected in the payment adjustment earned.

5.1.4 Payment Adjustments

On average, rural providers received a lower payment adjustment than urban providers, particularly in Southeastern states. This study also determined the maximum positive payment adjustment across all participants in 2018 was only 1.68%, an amount vastly lower than the 25% increase possible under the program publicized by CMS. This is also lower than the amount received during the MIPS 2017 Performance Year, where the maximum positive payment adjustment received was 1.88% (Navathe et al., 2019). The maximum negative payment adjustment received was consistent with CMS' publicized amount at -5%, which was 1% lower than the minimum adjustment received during the 2017 Performance Year due to planned CMS program updates (Squitieri & Chung, 2017). This study found that the percentage of providers who received the maximum negative payment adjustment was higher for rural providers than for urban providers (1.74% and 1.77%, respectively). This difference is greater when looking specifically at rural versus urban providers in the Southeast (1.33% and 0.98%, respectively). Due to the scoring methodology for MIPS, the number of providers receiving the maximum negative adjustment may reflect rural providers having a lower participation rate, since eligible

clinicians who do not participate automatically receive the maximum negative payment adjustment.

This study also found that the percentage of providers who received the maximum positive payment adjustment was nearly identical for rural providers and urban providers (48.57% and 48.46%, respectively). However, the percentage of providers who received the maximum positive payment adjustment was lower for rural providers in the Southeast than for urban providers (46.87% and 51.30%, respectively). The percentage of providers who received a negative payment adjustment was higher for rural providers than for urban providers in the Southeast, and the percentage of providers who received a positive adjustment was lower for rural providers than for urban providers. These findings are consistent with results from other studies that demonstrated proportionally more rural practices received negative payment adjustments versus program participants overall in 2017 (Navathe et al., 2019). The findings from the current study indicated that rural providers were financially disadvantaged in the MIPS 2018 Performance Year when compared to their urban counterparts, particularly in the Southeast.

5.2 Limitations

This analysis is limited to data that are provided by CMS in their Public Use File. One limitation to evaluating provider performance in MIPS is that the data file does not include the raw scores for individual measures and activities submitted, so analysis can only be completed at a category level. Also, special statuses and bonus measures are not differentiated in the dataset, which limits the ability to assess provider performance by taking into account bonus points and reweighted category scores. This limitation also impacts the mean final scores and category scores calculated in this analysis, as a more accurate analysis of provider performance would take into account these special scoring mechanisms. An additional limitation is the method that

CMS uses to define that a provider is participating in MIPS. A more accurate method of assessing provider participation in this analysis would be to define participation as actively choosing to submit data to MIPS. However, the participation variable would have to be redefined on the PUF by CMS in order to allow for this to be measured.

5.3 Future Research

Available research on the impact of MIPS and its viability as a permanent physician payment system is based mostly on qualitative data and conjecture from historical experiences; limited research is available that provides empirical evaluations or utilizes quantitative data in its findings. Additional research on MIPS participation and performance will be vital to the program's success, particularly with disadvantaged groups like rural healthcare providers. As this analysis and previous studies conducted by other researchers have shown, programs like MIPS appear to be disproportionately rewarding larger, urban practices with fewer socially at-risk patients, while penalizing smaller, rural practices that serve disadvantaged populations. As CMS makes changes to the program during the next few years, barriers to participation and reasons for lower scores should be empirically assessed using MIPS program data. CMS should also consider improving the PUF for future Performance Years to allow more salient analyses of MIPS participation and performance. This includes publishing raw performance data on individual measures and activities submitted, geographic information on providers including city and zip code, and the submission method used by participating providers. As the MIPS program matures, future research will be vital to ensure that CMS is making the appropriate program updates and awarding bonus points or assigning special statuses to disadvantaged providers to allow for successful participation in the program.

5.4 Conclusion

While rewarding provider performance based on quality is a laudable policy goal, rural healthcare providers, particularly in the Southeast, continue to be disadvantaged under quality reporting programs like MIPS. The results of this study indicate that rural providers had a lower participation rate, scored lower performance points, and received lower payment adjustments when compared to their urban counterparts. To ensure that rural healthcare providers are successful under value-based payment systems like MIPS, it is urgent that policymakers continue to improve MIPS in future program years, consider additional policy measures to ensure a level playing field for rural and urban providers, and support additional research to identify barriers to provider participation and performance. As this analysis has shown, MIPS needs to be fundamentally reshaped for successful rural participation and performance, which is essential for CMS to achieve their goal of creating a sustainable physician reimbursement model that controls federal spending on healthcare.

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