

Review of the Expert and Academic Literature Assessing Impact of Medicare Access and CHIP Reauthorization Act of 2015

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February 21, 2023

Introduction

The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) was signed into law on April 16, 2015 and took effect in January 2017. Among other provisions, MACRA repealed the Sustainable Growth Rate system. MACRA replaced the Sustainable Growth Rate system with two incentive payment programs for physicians: 1) the advanced alternative payment model (A-APMs) track, which provides a monetary bonus for qualifying physicians who participate in an alternative payment model; and 2) the Merit-Based Incentive Payment System (MIPS) track, which adjusts physicians' payments based on their performance scores and use of electronic medical records using quality measures from activities selected by the physicians themselves. These two programs are together known as the Quality Payment Program.

- **A-APM:** From 2019 to 2024, physicians who qualify and participate in an alternative payment model receive bonus payments of 5% of the Medicare-covered professional services annually. These alternative payment models generally require participating groups (e.g., accountable care organizations) to bear financial risk. There are a wide set of models that qualify for the A-APM bonus.
- **MIPS:** Unless exempt from the program, physicians who do not participate in an alternative payment model must participate in MIPS.¹ The MIPS program calculates physician payment adjustments based on four areas: 1) quality and advancing care information; 2) meaningful use of electronic health records; 3) clinical improvement activities; and 4) cost. Based on their performance in these domains, physicians' payments get adjusted up or down.

This document provides a synthesis of the key academic and neutral, third-party literature on the impact of MACRA on spending and quality. We also summarize the views of experts on the

¹ Physicians who do not have a sufficient number of cases for their scores to be statistically reliable are exempt. CMS estimates this may include over half of physicians. See "Report to the Congress: Medicare Payment Policy, Chapter 15" (Medicare Payment Advisory Commission, March 2018), https://www.medpac.gov/document/http-www-medpac-gov-docs-default-source-reports-mar18_medpac_entirereport_sec_rev_0518-pdf/.

functioning of MACRA and the potential for the program to raise the productivity of physician services in the future. Attached is a spreadsheet highlighting the key literature.

Key Findings

Key Finding 1: The MIPS program has not led to improvements in quality, decreases in spending, or increases in productivity. Conversely, implementing the program has been administratively costly for physicians. Finally, raising providers' payment rates incentivizes them to raise their activity, so when quality scores add to their payment rates, rather than serving as a bonus, they inadvertently physicians to raise their activity in future years.

Key Finding 2: There is evidence that alternative payment models can lead to modest cost savings of between 1% and 5% without adversely impacting quality. However, there are a range of programs that qualify as alternative payment models, and there is substantial variation in the performance of these programs. Some qualifying programs have not been shown to lead to savings. Population-based models like the Medicare Shared Savings Program and Next Generation ACO Model have been shown to generate net savings of between 0.5% and 1.5% annually. Conversely, episode-based models have produced a mix of savings and losses for Medicare. For many models, net savings to the Medicare program were minimal once the Medicare bonus payments were factored in.

Key Finding 3: While there is evidence that alternative payment models can lead to modest cost savings, there is not substantial causal evidence that the financial incentives in A-APM induced physicians who otherwise would not have done so to select into alternative payment programs. However, in parallel with the introduction of MACRA, there has been an increase in clinician participation in alternative payment models. Likewise, the ease with physicians can qualify for MIPS bonuses likely lowers the interest some physicians have in participating in the A-APM program.

The Merit-Based Incentive Payment System

External Assessments

“Much of the design of MIPS is based on predecessor Medicare programs that have generally not been successful at improving population outcomes or substantively improving care processes...the Commission recommends that Congress eliminate the current MIPS program as soon as possible,” Medicare Payment Advisory Committee, 2018.²

“Research examining the structure of the Merit-Based Incentive Payment System and experience with similar programs suggest that MIPS is unlikely to improve the quality or efficiency of patient care. But MIPS is creating substantial administrative costs,” Matthew Fiedler, former Chief Economist at the President’s Council of Economic Advisors.³

Core Criticisms of MIPS

1. The administrative complexity of MIPS is high and generates administrative costs for clinicians. MIPS requires providers to report multiple quality measures using one of five reporting tools. The initial estimate of the cost burden this placed on physicians was \$1.3 billion in 2017.⁴ The annual per-physician spending to participate in MIPS was estimated to be between \$10,000 and \$15,000 in 2019, and about half of this cost is derived from additional physician time spent on reporting.⁵ These are largely fixed costs and the costs of participation decrease over time.
2. The quality measurement, reporting, and selection of outcomes is complex and creates quality ratings that are inconsistent, challenging to compare across providers, and subject to fluctuations over time. For example, clinicians who achieve the same quality score on the same quality measure can receive different scores as a function of the method via

² Ibid.

³ “Medicare Physician Payment Reform After Two Years: Examining MACRA Implementation and the Road Ahead” (United States: Brookings Institution, May 8, 2019), <https://www.brookings.edu/wp-content/uploads/2019/05/FiedlerTestimony050819-FINAL.pdf>.

⁴ “Medicare Program; Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive Under the Physician Fee Schedule, and Criteria for Physician-Focused Payment Models,” Pub. L. No. 214, 81 Federal Register 77008 (2016), <https://www.federalregister.gov/documents/2016/11/04/2016-25240/medicare-program-merit-based-incentive-payment-system-mips-and-alternative-payment-model-apm#h-422>.

⁵ Dhruv Khullar et al., “Time and Financial Costs for Physician Practices to Participate in the Medicare Merit-Based Incentive Payment System: A Qualitative Study,” *JAMA Health Forum* 2, no. 5 (May 14, 2021): e210527, <https://doi.org/10.1001/jamahealthforum.2021.0527>.

which they reported their outcomes.⁶ Likewise, because most providers will likely have high MIPS scores, small differences in quality will lead to large differences in payments. Finally, scores are physician-based, when many of outcomes measures are a function of care provided by multiple physicians.

3. Because clinicians can select the quality measures on which they are assessed from a set of hundreds of possible outcomes measures, they are likely motivated to select scores where they are already successful. As a result, MIPS appears to be rewarding providers' ability to jump through bureaucratic hoops, not their ability to provide quality care to patients or improve their clinical services over time. Physicians in large groups or health systems are more likely to have high MIPS scores, again indicating that the system may be subject to some gaming that offers those with administrative resources an advantage.⁷ Likewise, the wide range of measures makes it nearly impossible to compare quality across physicians.
4. Because the MIPS adjustments raise and lower physician payments (rather than result in lump sum bonuses), they can induce increases in activity because there is widespread evidence that increases in provider payments raises provider volume.⁸

Administrative Costs: Participation in MIPS has been costly to physicians. In 2019, CMS estimated participants would spend close to \$500 million to report MIPS scores.⁹ That number fell to \$280

⁶ "Report to the Congress: Medicare Payment Policy, Chapter 15."

⁷ Kenton J. Johnston, Timothy L. Wiemken, Jason M. Hockenberry, et al. "Association of Clinician Health System Affiliation With Outpatient Performance Ratings in the Medicare Merit-based Incentive Payment System", *JAMA* 324 no.10 (2020): 984-992, doi:10.1001/jama.2020.13136.

⁸ Jeffrey Clemens and Joshua D. Gottlieb, "Do Physicians' Financial Incentives Affect Medical Treatment and Patient Health?," *The American Economic Review* 104, no. 4 (April 2014): 1320–49, <https://doi.org/10.1257/aer.104.4.1320>; Tal Gross et al., "Regulated Revenues and Hospital Behavior: Evidence from a Medicare Overhaul," *The Review of Economics and Statistics*, September 27, 2022, 1–26, https://doi.org/10.1162/rest_a_01254; Marika Cabral, Colleen Carey, and Sarah Miller, "The Impact of Provider Payments on Health Care Utilization of Low-Income Individuals: Evidence from Medicare and Medicaid," Working Paper, Working Paper Series (National Bureau of Economic Research, November 2021), <https://doi.org/10.3386/w29471>.

⁹ "Medicare Physician Payment Reform After Two Years: Examining MACRA Implementation and the Road Ahead."

million in 2020,¹⁰ \$150 million in both 2021¹¹ and 2022,¹² and is projected to be \$75 million in 2023.¹³ The declining cost to physicians is a result of both high upfront costs to participate and CMS revisions its methodology for calculating the cost burden of the program.¹⁴ The time and expense of complying and reporting under MIPS has placed a particularly heavy burden on small,

¹⁰ “Medicare Program; CY 2020 Revisions to Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment Policies; Medicare Shared Savings Program Requirements; Medicaid Promoting Interoperability Program Requirements for Eligible Professionals; Establishment of an Ambulance Data Collection System; Updates to the Quality Payment Program; Medicare Enrollment of Opioid Treatment Programs and Enhancements to Provider Enrollment Regulations Concerning Improper Prescribing and Patient Harm; and Amendments to Physician Self-Referral Law Advisory Opinion Regulations Final Rule; and Coding and Payment for Evaluation and Management, Observation and Provision of Self-Administered Esketamine Interim Final Rule,” Pub. L. No. 221, 84 Federal Register 62568 (2019), <https://www.federalregister.gov/documents/2019/11/15/2019-24086/medicare-program-cy-2020-revisions-to-payment-policies-under-the-physician-fee-schedule-and-other>.

¹¹ “Medicare Program; CY 2021 Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment Policies; Medicare Shared Savings Program Requirements; Medicaid Promoting Interoperability Program Requirements for Eligible Professionals; Quality Payment Program; Coverage of Opioid Use Disorder Services Furnished by Opioid Treatment Programs; Medicare Enrollment of Opioid Treatment Programs; Electronic Prescribing for Controlled Substances for a Covered Part D Drug; Payment for Office/Outpatient Evaluation and Management Services; Hospital IQR Program; Establish New Code Categories; Medicare Diabetes Prevention Program (MDPP) Expanded Model Emergency Policy; Coding and Payment for Virtual Check-in Services Interim Final Rule Policy; Coding and Payment for Personal Protective Equipment (PPE) Interim Final Rule Policy; Regulatory Revisions in Response to the Public Health Emergency (PHE) for COVID-19; and Finalization of Certain Provisions from the March 31st, May 8th and September 2nd Interim Final Rules in Response to the PHE for COVID-19,” Pub. L. No. 248, 85 Federal Register 84472 (2020), <https://www.federalregister.gov/documents/2020/12/28/2020-26815/medicare-program-cy-2021-payment-policies-under-the-physician-fee-schedule-and-other-changes-to-part>.

¹² “Medicare Program; CY 2022 Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment Policies; Medicare Shared Savings Program Requirements; Provider Enrollment Regulation Updates; and Provider and Supplier Prepayment and Post-Payment Medical Review Requirements,” Pub. L. No. 221, 86 Federal Register 64996 (2021), <https://www.federalregister.gov/documents/2021/11/19/2021-23972/medicare-program-cy-2022-payment-policies-under-the-physician-fee-schedule-and-other-changes-to-part>.

¹³ “Medicare and Medicaid Programs; CY 2023 Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment and Coverage Policies; Medicare Shared Savings Program Requirements; Implementing Requirements for Manufacturers of Certain Single-Dose Container or Single-Use Package Drugs To Provide Refunds With Respect to Discarded Amounts; and COVID-19 Interim Final Rules,” Pub. L. No. 222, 87 Federal Register 69404 (2022), <https://www.federalregister.gov/documents/2022/11/18/2022-23873/medicare-and-medicare-programs-cy-2023-payment-policies-under-the-physician-fee-schedule-and-other>.

¹⁴ Medicare Program; CY 2021 Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment Policies; Medicare Shared Savings Program Requirements; Medicaid Promoting Interoperability Program Requirements for Eligible Professionals; Quality Payment Program; Coverage of Opioid Use Disorder Services Furnished by Opioid Treatment Programs; Medicare Enrollment of Opioid Treatment Programs; Electronic Prescribing for Controlled Substances for a Covered Part D Drug; Payment for Office/Outpatient Evaluation and Management Services; Hospital IQR Program; Establish New Code Categories; Medicare Diabetes Prevention Program (MDPP) Expanded Model Emergency Policy; Coding and Payment for Virtual Check-in Services Interim Final Rule Policy; Coding and Payment for Personal Protective Equipment (PPE) Interim Final Rule Policy; Regulatory Revisions in Response to the Public Health Emergency (PHE) for COVID-19; and Finalization of Certain Provisions from the March 31st, May 8th and September 2nd Interim Final Rules in Response to the PHE for COVID-19.

rural practices.¹⁵ Providers indicate the financial and time resources required to comply with MIPS is a barrier to participation,¹⁶ as are the complexity and lack of program clarity about quality reporting.¹⁷

Spending: There is scant empirical evidence currently suggesting that the MIPS program reduced health spending.

Quality: Evidence suggests the MIPS program has not necessarily led higher-quality physicians to receive higher payments, and there is no published evidence that it has led to improvements in quality. Research on the Value-Based Payment Modifier program, a predecessor to MIPS, did not find that introducing similarly structured quality bonuses reduced hospital readmissions, hospitalizations, Medicare spending, or mortality.¹⁸ More recently, for surgeons, although lower MIPS scores were associated with higher mortality and higher readmissions rates for some specialties, they were not associated with higher complication and failure-to-rescue rates.¹⁹ Likewise, for primary care physicians, MIPS scores had a mixed association with process and outcome measures; physicians with lower MIPS scores reported on average worse performance on diabetic and mammography screening measures, better performance on influenza vaccination and tobacco screening measures, and no difference in performance on ambulatory care-sensitive admission outcomes.²⁰ Moreover, physicians with low MIPS scores but superior outcomes were found to have cared for more complex patients.²¹

The inconsistency in the program's ability to reward quality may be the result of allowing providers to choose which measures to report. There are high rates of partial participation in

¹⁵ Khullar et al., "Time and Financial Costs for Physician Practices to Participate in the Medicare Merit-Based Incentive Payment System."

¹⁶ Khullar et al.

¹⁷ Peter Mendel et al., "Perspectives of Physicians in Small Rural Practices on the Medicare Quality Payment Program" (RAND Corporation, March 5, 2019), https://www.rand.org/pubs/research_reports/RR2882.html.

¹⁸ Eric T. Roberts, Alan M. Zaslavsky, and J. Michael McWilliams, "The Value-Based Payment Modifier: Program Outcomes and Implications for Disparities," *Annals of Internal Medicine* 168, no. 4 (February 20, 2018): 255–65, <https://doi.org/10.7326/M17-1740>.

¹⁹ Laurent G. Glance et al., "Association Between the Physician Quality Score in the Merit-Based Incentive Payment System and Hospital Performance in Hospital Compare in the First Year of the Program," *JAMA Network Open* 4, no. 8 (August 3, 2021): e2118449, <https://doi.org/10.1001/jamanetworkopen.2021.18449>.

²⁰ Amelia M. Bond et al., "Association Between Individual Primary Care Physician Merit-Based Incentive Payment System Score and Measures of Process and Patient Outcomes," *JAMA* 328, no. 21 (December 6, 2022): 2136–46, <https://doi.org/10.1001/jama.2022.20619>.

²¹ Bond et al.

MIPS and providers can opt to report some but not all measures.²² This has led many participants to receive positive payment adjustments while not participating in each category,²³ potentially undermining the effectiveness of the program.²⁴

Utilization: Several MIPS measures focus on reducing utilization of certain high-cost or low-value procedures, but there is no published evidence to suggest that the program has led to reductions in low-value care.

Alternative Payment Models

There is generally more optimism about the scope for alternative payment programs to raise health care productivity. As a result, analysts are generally more favorable towards A-APM and want to see the program expanded, with sharper incentives to steer clinicians to participate in the programs. However, there is not a firm evidence base on the efficacy of A-APMs. Here, some of the more positive results in studies could reflect that practices more likely to succeed under an alternative payment model were the first to select in to participate in an alternative payment model. Care should be taken in assuming that results from high-performing, early alternative payment model adopters will generalize to physicians and practices who have been more reticent to sign up.

Enrollment in Alternative Payment Models: Although participation in accountable care organizations (ACOs) had been growing since the passage of MACRA, growth plateaued in 2022.²⁵ This was mainly the result of anticipated tightening of CMS requirements for participation in advanced alternative payment models (specifically, stricter downside risk requirements for Medicare Shared Savings Program participants²⁶) as well as CMS's pause on accepting new entrants for certain programs due to benchmarking challenges during the COVID-19 pandemic.²⁷

²² Nate C. Apathy and Jordan Everson, "High Rates Of Partial Participation In The First Year Of The Merit-Based Incentive Payment System," *Health Affairs* 39, no. 9 (September 2020): 1513–21, <https://doi.org/10.1377/hlthaff.2019.01648>.

²³ Apathy and Everson.

²⁴ "Medicare Physician Payment Reform After Two Years: Examining MACRA Implementation and the Road Ahead."

²⁵ David Muhlestein et al., "Growth Of Value-Based Care And Accountable Care Organizations In 2022," *Health Affairs Forefront*, accessed January 24, 2023, <https://doi.org/10.1377/forefront.20221130.22253>.

²⁶ David Muhlestein et al., "All-Payer Spread Of ACOs And Value-Based Payment Models In 2021: The Crossroads And Future Of Value-Based Care," *Health Affairs Forefront*, accessed February 17, 2023, <https://doi.org/10.1377/forefront.20210609.824799>.

²⁷ Muhlestein et al., "Growth Of Value-Based Care And Accountable Care Organizations In 2022."

In general, there remain structural barriers to provider participation in advanced alternative payment models: rural providers have found there are generally not available alternative payment model programs to join in their area, and small practices report that the programs require too much financial risk to consider participating.²⁸ Research indicates that participating in an APM is more costly than basic MIPS participation.²⁹ Criticism about costs and administrative burden, for example, delayed the Radiation Oncology Alternative Payment Model (RO-APM).³⁰

Spending: Evidence suggests that some population-based alternative payment models, like the Medicare Shared Savings Program (MSSP) and Next Generation ACO Model, have led to modest reductions in health spending on the order of 1% to 5%.³¹ In particular, the Medicare Shared Savings Program, which began before the implementation of MACRA but currently qualifies as an advanced alternative payment model,³² has resulted in reduced Medicare spending for participant ACOs; peer reviewed literature reported annual savings of up to 5% or \$474 per beneficiary for certain categories of ACOs in the early years of the program.³³ This was partially driven by a 9% reduction in post-acute spending.³⁴ Savings were larger for physician group ACOs as compared to hospital-integrated ACOs (that is, ACOs where physician groups were part of a larger health system or hospital); physician group ACOs produced net savings of \$256 million or 1.5% in 2015, while hospital-integrated ACOs did not produce net savings after accounting for bonus payments.³⁵ Furthermore, medical episode spending was 3% lower for patients in a

²⁸ Mendel et al., “Perspectives of Physicians in Small Rural Practices on the Medicare Quality Payment Program.”

²⁹ Khullar et al.

³⁰ Luh, Join, et al. “An Overview of the Radiation Oncology Alternative Payment Model and Impact on Practices Serving Vulnerable Populations,” *Journal of the American College of Radiology*, 19:1A, 53-60 (January 2022).

³¹ Joshua M. Liao, Amol S. Navathe, and Rachel M. Werner, “The Impact of Medicare’s Alternative Payment Models on the Value of Care,” *Annual Review of Public Health* 41, no. 1 (2020): 551–65, <https://doi.org/10.1146/annurev-publhealth-040119-094327>.

³² “Advanced APMs,” CMS Quality Payment Program, accessed February 6, 2023, <https://qpp.cms.gov/apms/advanced-apms>.

³³ J. Michael McWilliams et al., “Early Performance of Accountable Care Organizations in Medicare,” *New England Journal of Medicine* 374, no. 24 (June 16, 2016): 2357–66, <https://doi.org/10.1056/NEJMsa1600142>; J. Michael McWilliams et al., “Changes in Postacute Care in the Medicare Shared Savings Program,” *JAMA Internal Medicine* 177, no. 4 (April 1, 2017): 518–26, <https://doi.org/10.1001/jamainternmed.2016.9115>; J. Michael McWilliams et al., “Medicare Spending after 3 Years of the Medicare Shared Savings Program,” *New England Journal of Medicine* 379, no. 12 (September 20, 2018): 1139–49, <https://doi.org/10.1056/NEJMsa1803388>; Liao, Navathe, and Werner, “The Impact of Medicare’s Alternative Payment Models on the Value of Care.”

³⁴ McWilliams et al., “Changes in Postacute Care in the Medicare Shared Savings Program.”

³⁵ McWilliams et al., “Early Performance of Accountable Care Organizations in Medicare”; McWilliams et al., “Changes in Postacute Care in the Medicare Shared Savings Program”; McWilliams et al., “Medicare Spending after 3 Years of the Medicare Shared Savings Program.”

Medicare Shared Savings Program ACO and a bundled payment program than those in a bundled payment program alone.³⁶

The Next Generation ACO Model also generated net spending reductions of around 0.5% in its first year after implementation.³⁷ However, although gross savings were between 0.4% and 3% in each year of the model's existence, by its termination at the end of 2020, it had led to a 0.5% *net increase* in spending over its five-year lifetime after accounting for shared savings payments from Medicare to participants.³⁸ This was partially a result of structural changes to the model and selection bias: Medicare shielded participants from losses due to the COVID-19 pandemic, and separately, participants that earned shared savings remained in the model while participants with shared losses exited the model.³⁹

The case of the Next Generation ACO Model is indicative of a larger trend: the A-APM track provides physician bonuses for participation in programs, and these bonuses have often been shown to raise net spending. For example, clinicians can receive Quality Payment Program credit for participating in the Comprehensive Primary Care Plus model. An independent review of this program found that it led to modest quality gains: participants in the model saw a 1% improvement in recommended diabetes control care adherence, including eye exams, attention for nephropathy, and blood sugar level tests, compared to providers in lower risk payment models.⁴⁰ However, after adjusting for bonus payments, this program led to increases, rather than decreases, in health spending.⁴¹

Likewise, the Comprehensive End-Stage Renal Disease Care (CEC) model also generated initial savings, estimated at over \$100 per beneficiary per month, or about 1.8% of total spending.⁴²

³⁶ Amol S. Navathe et al., "Association of Patient Outcomes With Bundled Payments Among Hospitalized Patients Attributed to Accountable Care Organizations," *JAMA Health Forum* 2, no. 8 (August 20, 2021): e212131, <https://doi.org/10.1001/jamahealthforum.2021.2131>.

³⁷ "Next Generation Accountable Care Organization (NGACO) Model Evaluation: Fifth Evaluation Report" (NORC at the University of Chicago, November 2022), <https://innovation.cms.gov/data-and-reports/2022/nextgenaco-fifthevalrpt>.

³⁸ "Next Generation Accountable Care Organization (NGACO) Model Evaluation: Fifth Evaluation Report."

³⁹ "Next Generation Accountable Care Organization (NGACO) Model Evaluation: Fifth Evaluation Report."

⁴⁰ Sabrina Wang et al., "Can Alternative Payment Models And Value-Based Insurance Design Alter The Course Of Diabetes In The United States?," *Health Affairs* 41, no. 7 (July 2022): 980–84, <https://doi.org/10.1377/hlthaff.2022.00235>; "Independent Evaluation of Comprehensive Primary Care Plus (CPC+): Third Annual Report" (Mathematica, January 2021), <https://innovation.cms.gov/data-and-reports/2021/cpc-plus-third-anual-eval-report>.

⁴¹ "Independent Evaluation of Comprehensive Primary Care Plus (CPC+): Third Annual Report."

⁴² "Comprehensive End Stage Renal Disease Care (CEC) Model Performance Year 1 Annual Evaluation Report" (The Lewin Group, October 2017); Jonathan Cheng et al., "Four Years into MACRA: What Has Changed?," *Seminars in Dialysis* 33, no. 1 (2020): 26–34, <https://doi.org/10.1111/sdi.12852>; Grecia Marrufo et al., "Association of the

However, these savings were offset by shared savings payments, resulting in net increases of about \$78 per beneficiary per month, or about 1.2% of total spending.⁴³

Similarly, the Bundled Payments for Care Improvement Initiative (BPCI) reduced spending on lower extremity joint replacement episodes by about 4% in its first two years, but it did not reduce spending for other types of care.⁴⁴ The initiative also resulted in a net loss of about \$65 million (0.4%) for Medicare beginning in 2018.⁴⁵

Finally, the Comprehensive Care for Joint Replacement (CJR) program was initially associated with 2.5% to 3.5% lower spending on joint replacement care.⁴⁶ However, the aggregate savings generated by the program declined in recent years, potentially as a result of changes to the program that made participation voluntary in some areas and changes in Medicare program rules allowing outpatient knee replacement procedures that were not eligible for reimbursement under the program.⁴⁷

Quality: A-APM participation is generally associated with either no changes or modest improvements in quality as measured by readmission rates, hospitalization rates, rates of complication, and patient experience. For example, there is some evidence that the Medicare

Comprehensive End-Stage Renal Disease Care Model With Medicare Payments and Quality of Care for Beneficiaries With End-Stage Renal Disease,” *JAMA Internal Medicine* 180, no. 6 (June 1, 2020): 852–60, <https://doi.org/10.1001/jamainternmed.2020.0562>.

⁴³ Marrufo et al., “Association of the Comprehensive End-Stage Renal Disease Care Model With Medicare Payments and Quality of Care for Beneficiaries With End-Stage Renal Disease.”

⁴⁴ Laura A. Dummit et al., “Association Between Hospital Participation in a Medicare Bundled Payment Initiative and Payments and Quality Outcomes for Lower Extremity Joint Replacement Episodes,” *JAMA* 316, no. 12 (September 27, 2016): 1267–78, <https://doi.org/10.1001/jama.2016.12717>; Anne J. Miller-Breslow and Noah M. Raizman, “Physician Reimbursement: Fee-for-Service, Accountable Care, and the Future of Bundled Payments,” *Hand Clinics, Health Policy and Advocacy in Hand Surgery*, 36, no. 2 (May 1, 2020): 189–95, <https://doi.org/10.1016/j.hcl.2019.12.002>; Rajender Agarwal et al., “The Impact Of Bundled Payment On Health Care Spending, Utilization, And Quality: A Systematic Review,” *Health Affairs* 39, no. 1 (January 2020): 50–57, <https://doi.org/10.1377/hlthaff.2019.00784>.

⁴⁵ “CMS Bundled Payment for Care Improvement Advanced Model: Third Evaluation Report” (The Lewin Group, February 2022).

⁴⁶ Derek A. Haas et al., “Evaluation of Economic and Clinical Outcomes Under Centers for Medicare & Medicaid Services Mandatory Bundled Payments for Joint Replacements,” *JAMA Internal Medicine* 179, no. 7 (July 1, 2019): 924–31, <https://doi.org/10.1001/jamainternmed.2019.0480>; Michael L. Barnett et al., “Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement,” *New England Journal of Medicine* 380, no. 3 (January 17, 2019): 252–62, <https://doi.org/10.1056/NEJMsa1809010>.

⁴⁷ Andrew D. Wilcock et al., “How Hospitals Respond to Incentives in Bundled Payment Models for Joint Surgery,” *The Commonwealth Fund*, May 18, 2021, <https://doi.org/10.26099/ysde-ke82>.

Shared Savings Program resulted in between a 1% and 2.5% reduction in readmissions⁴⁸ and a modest improvement—equivalent to moving from the 80th to 95th percentile—in patient experience, as measured by timely access to care and overall ratings of primary and specialist physician care.⁴⁹ Other evidence suggests that while the Medicare Shared Savings Program resulted in savings, it was not accompanied by a change in quality.⁵⁰ The Comprehensive End-Stage Renal Disease Care model resulted in improvements in quality of care, including fewer catheter placements and fewer hospitalization for end-stage renal disease complications.⁵¹

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⁴⁸ Bukola Abodunde, Chelsea Slater, and Alberto Coustasse, “MACRA and Accountable Care Organizations: Is It Working?,” *The Journal of Ambulatory Care Management* 44, no. 2 (June 2021): 148, <https://doi.org/10.1097/JAC.0000000000000350>; Navathe et al., “Association of Patient Outcomes With Bundled Payments Among Hospitalized Patients Attributed to Accountable Care Organizations.”

⁴⁹ J. Michael McWilliams et al., “Changes in Patients’ Experiences in Medicare Accountable Care Organizations,” *New England Journal of Medicine* 371, no. 18 (October 30, 2014): 1715–24, <https://doi.org/10.1056/NEJMsa1406552>.

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⁵¹ “Comprehensive End Stage Renal Disease Care (CEC) Model Performance Year 1 Annual Evaluation Report”; Cheng et al., “Four Years into MACRA”; Marrufo et al., “Association of the Comprehensive End-Stage Renal Disease Care Model With Medicare Payments and Quality of Care for Beneficiaries With End-Stage Renal Disease.”

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