

**Testimony of J. Michael McWilliams, MD, PhD**  
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Subcommittee on Oversight & Investigations

Hearing on “MACRA Checkup: Assessing Implementation and Challenges That Remain for  
Patients and Doctors”

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**Opening Statement**

Chairman Griffith, Ranking Member Castor, members of the Subcommittee and full Committee, thank you for holding this hearing and giving me the opportunity to testify on the status of MACRA. My name is Michael McWilliams. I am a Professor of Health Care Policy and Professor of Medicine at Harvard Medical School and a physician at Brigham and Women’s Hospital. I also serve as a senior advisor to the CMS Innovation Center. (This testimony reflects my personal views and should not be attributed to any organization with which I am affiliated.)

My testimony today focuses on two major pieces of MACRA: the advanced Alternative Payment Model (APM) bonus and the Merit-based Incentive Payment System (MIPS). These payment reforms were intended to encourage the provision of more efficient and higher-quality care in the Medicare program. These are important goals. While well intended, however, the effectiveness of these reforms has been limited. The problems are ones of design – addressable in the case of the APM bonus but more intractable in the case of the MIPS.

Taking a step back, Medicare looks much different than it did when MACRA was enacted. Over half of eligible beneficiaries are now enrolled in the rapidly growing Medicare Advantage (MA) program. And while much of the care in the Traditional Medicare program is now provided in promising APMs such as accountable care organizations (ACOs), participation in those models has stalled in recent years, and Traditional Medicare is shrinking. Particularly with the advanced APM bonus set to expire next year, ending a key provision to encourage participation in APMs, it's a good time to take stock of MACRA and how its provisions could be restructured to better advance the goals of payment reform in Medicare.

My testimony makes 6 main points:

1. ***APMs are promising and worth encouraging.*** APMs are our best hope for managing spending in Traditional Medicare in a way that produces the most value for beneficiaries, particularly population-based payment models (ACOs). Not only do APMs discourage unnecessary care, they also give providers more *flexibility* to deliver care in ways that best meet their patients’ needs by setting payments that encompass total care for a patient and limiting fee-for-service (FFS) incentives that otherwise interfere by requiring clinicians to select specific services over others in order to get paid. That flexibility is crucial for providers to act on their intrinsic motivation and respond to market demand for better care. The evidence on APMs is generally encouraging. Savings have been modest, but, second...

2. ***The design of APMs as implemented has hampered their success.*** Because APMs have been largely voluntary, it has been challenging to move away from FFS rapidly. In my written testimony, I detail how design issues have limited incentives to participate and save in APMs. With recent changes to the Medicare Shared Savings Program (MSSP) that take effect next year, I believe that program (the largest APM), is now on the right track. But it has taken time, and now the APM bonus created by MACRA is set to expire at a critical juncture in APM evolution. Third, for that reason, I believe that...
3. ***The APM bonus should be extended, but also restructured to be more effective.*** To date, the bonus has been structured as a proportion of provider FFS revenue, which favors high-revenue organizations such as health systems and incentivizes more revenue – more costly care – undermining a main goal of APMs. The bonus has also been restricted to so-called *advanced* APMs with downside financial risk. But we now know that lower-revenue organizations have produced savings without downside risk and should be encouraged to participate, too. For these reasons, I recommend that the APM bonus be structured as a flat per beneficiary sum, independent of provider revenue, and broadened to include ACO contracts with no downside risk.
4. ***The MIPS has been a costly failure.*** In fact, I do not recall a more uniformly and resoundingly critiqued payment policy in my career. Many, including the Medicare Payment Advisory Commission (MedPAC), have called for its elimination, and I agree with that recommendation. I won't belabor the many flaws in the MIPS now but would like to point out that several are deep, intractable problems that would plague any pay-for-performance program and should caution us against replacing the MIPS with a scaled-back version. We now have over a decade of evidence on Medicare pay-for-performance programs demonstrating minimal benefits and costly unintended consequences. In sum, pay-for-performance makes for good slogans – such as “paying for quality instead of quantity” or “health instead of health care” – but not good results. It should not be at the center of Congressional efforts to improve the quality of care delivery. Instead, fifth...
5. ***Other strategies to support high-quality care should be prioritized.*** These include building better data systems to support providers and promoting competition, which exerts the primary external check on provider quality, as unhappy patients or clinicians will vote with their feet. These strategies may be beyond the scope of this hearing, but I note them to make the point that eliminating the MIPS is not conceding defeat.
6. ***Any discussion of Medicare reform must consider the implications of MA's rapid growth.*** As MA grows, and if APMs resume their growth, the MIPS will soon become obsolete and unworkable as the residual population becomes too small to support it. As MA grows, APMs also shrink. Thus, any discussion of the value and future of APMs begs for a discussion of the value and future of the Traditional Medicare program, particularly its role as a public option in facilitating regulation of MA and strengthening the Medicare program as a whole.

In my written testimony (below), I discuss in greater depth the conceptual problems with the design of the APM bonus and MIPS, briefly summarize what we know about their effectiveness to date, and recommend directions for reform, starting with the APM bonus as the more pressing issue for Congress to address. Thank you once again for inviting me to join you today. I look forward to your questions.

## Advanced APM Bonus

### ***Background on the Advanced APM Bonus and APMs***

The objective of the advanced APM bonus (also referred to as the APM Incentive Payment), was to encourage providers to participate in APMs. Through 2022, qualifying providers earned a bonus (paid out two years later) equal to 5% of Medicare revenue for professional services covered by Part B. Providers qualifying based on their APM participation this year (2023) will earn a 3.5% bonus (to be paid in 2025). The bonus is then set to expire in 2024. In its place, providers who qualify based on their APM participation in 2024 onward will receive a 0.5 percentage point higher annual increase in their physician fee schedule rates (0.75% update for qualifying providers vs. 0.25% for non-qualifying providers), again implemented with a two-year lag to allow assessment of APM participation before determining payment rates.

I believe APMs are worth encouraging. We have decades of research documenting widespread provision of low-value, if not wasteful or harmful, care under a FFS system.<sup>1</sup> While FFS is not the root cause of all overuse, it encourages it, and FFS is particularly ill-suited to supporting efficient use of innovative modes of care delivery – such as telemedicine, care coordination services, or in-home care – that have traditionally been unreimbursed or less generously reimbursed but hold great promise to improve patient care and experiences. As we innovate in care delivery, the unit of care – the service – grows harder to define, making it harder to set fees in a way that sufficiently covers the costs of each of the myriad ways to delivery care without encouraging more overuse.<sup>2</sup> Thus, low-value spending is likely to grow under FFS if we simply add codes to the fee schedule to support innovation. In contrast, payment models that give providers a fixed payment to cover total costs of care for a patient or an episode of care, or a substantial share thereof, encourage efficiency while giving providers more flexibility to arrange care in ways that better meet patient needs. In general, if providers are motivated to provide the best care they can to their patients via one set of services, we do not want FFS incentives getting in the way by redirecting them to a different set of services that bring in the revenue necessary to cover their practice costs. Conceptually, we want a payment system that supports innovation and improvement, while also curbing overuse so that we do not spend too much on health care at the expense of other social goals.

The evidence to date is generally supportive of APMs.<sup>3</sup> There is clear evidence that ACO models and some episode-based payment models have resulted in modestly reduced utilization,

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<sup>1</sup> Ishani Ganguli et al., “Cascades of Care After Incidental Findings in a US National Survey of Physicians,” *JAMA Netw Open* 2019;2(10): e1913325; Aaron L. Schwartz et al., “Measuring Low-Value Care in Medicare,” *JAMA Intern Med* 2014;174(7): 1067–76; Elliott S. Fisher et al., “The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care,” *Ann Intern Med* 2003;138(4): 288–98; Elliott S. Fisher et al., “The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care,” *Ann Internal Med* 2003;138(4): 273–87.

<sup>2</sup> Julia Adler-Milstein and Ateev Mehrotra, “Paying for Digital Health Care — Problems with the Fee-for-Service System,” *N Engl J Med* 2021;385(10): 871–73; Michael E. Chernew and J. Michael McWilliams, “The Case For ACOs: Why Payment Reform Remains Necessary,” *Health Affairs Forefront*, January 2022, <https://www.healthaffairs.org/content/forefront/case-acos-why-payment-reform-remains-necessary>.

<sup>3</sup> Gregory Pope et al., “Financial and Quality Impacts of the Medicare Physician Group Practice Demonstration,” *Medicare Medicaid Res Rev* 2014;4(3): mmrr2014-004-03-a01; J. Michael McWilliams et al., “Changes in Postacute Care in the Medicare Shared Savings Program,” *JAMA Intern Med* 2017;177(4): 518–26; David J. Nyweide et al.,

including fewer hospital admissions, less use of post-acute care in facilities (thought to be a leading source of overuse), and shifts away from higher-priced settings such as hospital outpatient departments. These gross savings have not consistently resulted in net savings to the Medicare program after factoring in shared-savings bonuses paid to participating providers, but I believe these findings are nevertheless promising for two reasons. First, the gross savings represent behavioral changes that we should expect to grow over time. Second, we should not expect more than modest savings to date because the incentives to save have been weak in APMs due to design issues I describe below.

Rigorous evidence of quality improvement resulting from APMs has been more limited, though studies have consistently found no evidence of quality deterioration either, which is reassuring.<sup>4</sup> Moreover, the same APM design issues that have limited incentives to save have also limited the flexibility afforded participants to deliver care in ways that may be better for patients but are under-supported by FFS.

***Participation Incentives are Vital to the Success of Voluntary APMs but Design Issues Have Limited the Effectiveness of the Advanced APM Bonus***

The advanced APM bonus established by MACRA was expected to play an important role in encouraging provider participation in APMs, which have largely been voluntary. Even when a voluntary APM is designed as well as possible to offer all providers an opportunity to prosper from efficiency in the long run, participation may be limited by financial risks in the short run that providers find prohibitive. Provider efforts to reduce spending entail costs, much of spending growth is not under provider control, and spending targets (or benchmarks) cannot reliably reward improvement for all providers in the short term. Thus, a participation bonus essentially acts as a cushion, making participation less risky for providers as they learn to

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“Association of Pioneer Accountable Care Organizations vs Traditional Medicare Fee for Service with Spending, Utilization, and Patient Experience,” *JAMA* 2015;313(21): 2152–61; J. Michael McWilliams et al., “Performance Differences in Year 1 of Pioneer Accountable Care Organizations,” *New Engl J Med* 2015;372(20): 1927–36; J. Michael McWilliams et al., “Delivery System Integration and Health Care Spending and Quality for Medicare Beneficiaries,” *JAMA Intern Med* 2013;173(15): 1447–56; J. Michael McWilliams, Bruce E. Landon, and Michael E. Chernew, “Changes in Health Care Spending and Quality for Medicare Beneficiaries Associated With a Commercial ACO Contract,” *JAMA* 2013;310(8): 829–36; Zirui Song et al., “Changes in Health Care Spending and Quality 4 Years into Global Payment,” *New Engl J Med* 2014;371(18): 1704–14; Karen E. Joynt Maddox et al., “Year 1 of the Bundled Payments for Care Improvement–Advanced Model,” *New Engl J Med* 2021;385(7): 618–27; Amol S. Navathe et al., “Spending And Quality After Three Years Of Medicare’s Voluntary Bundled Payment For Joint Replacement Surgery,” *Health Aff* 2020;39(1): 58–66; J. Michael McWilliams et al., “Savings or Selection? Initial Spending Reductions in the Medicare Shared Savings Program and Considerations for Reform,” *Milbank Q* 2020;98(3): 847–907; Amy Finkelstein et al., “Mandatory Medicare Bundled Payment Program for Lower Extremity Joint Replacement and Discharge to Institutional Postacute Care: Interim Analysis of the First Year of a 5-Year Randomized Trial,” *JAMA* 2018;320(9): 892–900; Michael L. Barnett et al., “Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement,” *New Engl J Med* 2019;380(3): 252–62; Matthew J. Trombley et al., “Early Effects of an Accountable Care Organization Model for Underserved Areas,” *New Engl J Med* 2019;381(6): 543–51; J. Michael McWilliams et al., “Medicare Spending after 3 Years of the Medicare Shared Savings Program,” *New Engl J Med* 2018;379(12): 1139–49; J. Michael McWilliams, Alice Chen, and Michael E. Chernew, “From Vision to Design in Advancing Medicare Payment Reform: A Blueprint for Population-Based Payments,” *Brookings*, 2021, <https://www.brookings.edu/research/from-vision-to-design-in-advancing-medicare-payment-reform-a-blueprint-for-population-based-payments/>.

<sup>4</sup> Ibid

respond to new incentives and reduce spending for their patients to levels that are reliably commensurate with success under the APM.

From the perspective of the regulator implementing voluntary APMs (CMS), participation incentives that make APMs more appealing (like the advanced APM bonus) or the alternative less appealing (like slowing FFS rate growth) make it easier to design APMs for long-term success by easing tradeoffs between strengthening incentives of participants to save vs. growing the number of participants.

For example, in the MSSP, the largest APM with 11 million aligned beneficiaries, incentives for participating ACOs to lower spending have been weak because of “ratchet effects” whereby an ACO is penalized with a lower benchmark if it lowers spending, leaving it with little incentive to ever lower spending. This has happened through “rebasing” of an ACO’s benchmark between agreement periods to its new historical spending level and through the impact of an ACO on its region’s spending growth, which feeds back to partly determine its benchmark.

The detrimental impact of these ratchet effects on ACO incentives should not be underestimated. Consider an ACO contemplating the implementation of a utilization management program that costs an average of \$40 per patient to operate and can reduce spending by an average of \$100 per patient by limiting excessively long post-acute stays in skilled nursing facilities. Because the program involves more outreach and communication with patients and their families, it also promises to improve aspects of patient experiences and could plausibly improve health outcomes as well. Under FFS, the program would pose losses to the organization (an increase in costs without an increase in revenue). In a one-sided (i.e., upside only) ACO contract with a 50% shared savings rate, the organization would earn a net of \$10 per patient in its first agreement period (\$50 shared-savings bonus - \$40 in costs). However, in its second agreement period, the ACO’s benchmark would fall by \$100 per patient as a result of rebasing, negating its shared savings bonus. If the ACO continued the program, it would incur net losses of \$40 per patient. If the ACO were in a contract with downside risk for spending in excess of its benchmark, and it ended the program, it would still incur losses because its spending would revert upward to \$100 above its benchmark. Thus, the ratchet effect greatly diminishes long-term incentives for ACOs to save and the related flexibility, or freedom from FFS incentives, to improve care delivery.

To mitigate the ratchet effect from rebasing, starting in 2017 the MSSP changed its benchmarking methodology for renewing ACOs to blend the ACO’s historical spending with its region’s average spending as the basis for its benchmark. The 2019 rule, “Pathways to Success,” accelerated this change by applying it to ACOs’ first agreement periods. The regional-historical blend strengthened incentives to save because spending in an ACO’s region is less affected by the ACO’s behavior than spending for its patients, such that spending reductions achieved by an ACO would not reduce its benchmark as much. However, this came at the expense of introducing incentives for providers with spending below their region’s average to participate and those with above-average spending to exit. New requirements under “Pathways” for ACOs to take downside risk made the disincentives for high-spending ACOs stronger.

The hope was that the advanced APM bonus, which was also implemented in 2017, would be sufficient to counteract the incentives discouraging ACOs with high spending from participating.

However, this proved not to be the case. A pattern of costly selective participation ensued in which ACOs with higher historical spending exited, and providers with low baseline spending continued or entered.<sup>5</sup> This was costly to Medicare, as ACOs with higher historical spending had saved more (consistent with their greater savings potential)<sup>6</sup> and those with lower spending received subsidies (shared-savings bonuses as an artifact of increasing benchmarks for ACOs with already lower spending). Those subsidies manifested as exploding “savings” (when savings are calculated as the difference between ACO spending and benchmarks) but more plausibly indicated rising costs to the program.<sup>7</sup> Moreover, overall participation stalled as the program became less appealing to the approximately half of providers with high spending for their region. From 2018 to 2023, the number of participating ACOs fell from 561 to 456, while the number of assigned beneficiaries stagnated (rising slightly from 10.5 to 10.9 million).<sup>8</sup> Similar patterns of selective participation against regionalized benchmarks have been observed in voluntary episode-based payment models, too.<sup>9</sup>

Obviously, we should not infer from these trends that the advanced APM bonus caused participation in the MSSP to plateau. Participation has almost surely been higher than it would have been without the bonus to some extent. But clearly, the effectiveness of the bonus has been limited in achieving its goal, raising the question of why. I see at least 4 reasons related to the design of APMs and the APM bonus:

- 1) *Design of APMs has limited incentives to participate*: Provider incentives to participate in an APM depend on *both* the design of the APM and any additional participation incentives. The smaller the rewards for savings and the greater the prospect of losses in an APM, the lower participation will be. By limiting rewards for lowering spending, ratchet effects present in the MSSP and other APMs also weakened incentives to participate. Although incorporating a regional spending component into benchmarks strengthened ACO incentives to save somewhat, the historical component continued to be rebased, and both components have been

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<sup>5</sup> Michael E. Chernew et al., “MSSP Participation Following Recent Rule Changes: What Does It Tell Us?,” *Health Affairs Forefront*, 2019, <https://www.healthaffairs.org/content/forefront/mssp-participation-following-recent-rule-changes-does-tell-us>; J. Michael McWilliams et al., “Getting More Savings from ACOs — Can the Pace Be Pushed?,” *New Engl J Med* 2019;380(23):2190–92; Peter F. Lyu, Michael E. Chernew, and J. Michael McWilliams, “Benchmarking Changes And Selective Participation In The Medicare Shared Savings Program,” *Health Aff* 2023;42(5): 622–31.

<sup>6</sup> J. Michael McWilliams et al., “Early Performance of Accountable Care Organizations in Medicare,” *New Engl J Med* 2016;374(24):2357–66; McWilliams et al., “Medicare Spending after 3 Years of the Medicare Shared Savings Program”; J. Michael McWilliams, Michael E. Chernew, and Bruce E. Landon, “Comment RE: [CMS–1701–P] Medicare Program; Medicare Shared Savings Program; Accountable Care Organizations—Pathways to Success; Proposed Rule,” 2018, [https://hmrmlab.hcp.med.harvard.edu/files/hmrtest2/files/comment\\_on\\_mssp\\_proposed\\_rule\\_cms-1701-p\\_-\\_mcwilliams\\_chernew\\_landon\\_01.pdf](https://hmrmlab.hcp.med.harvard.edu/files/hmrtest2/files/comment_on_mssp_proposed_rule_cms-1701-p_-_mcwilliams_chernew_landon_01.pdf).

<sup>7</sup> “2023 Shared Savings Program Fast Facts,” Centers for Medicare and Medicaid Service, 2023, <https://www.cms.gov/files/document/2023-shared-savings-program-fast-facts.pdf>; J. Michael McWilliams and Alice J. Chen, “Understanding The Latest ACO ‘Savings’: Curb Your Enthusiasm And Sharpen Your Pencils—Part 1,” *Health Affairs Forefront*, 2020, <https://www.healthaffairs.org/doi/10.1377/forefront.20201106.719550/full/>.

<sup>8</sup> “2023 Shared Savings Program Fast Facts.”

<sup>9</sup> Liran Einav et al., “Voluntary Regulation: Evidence from Medicare Payment Reform,” NBER Working Paper, 2020; Andrew D. Wilcock et al., “Hospital Responses to Incentives in Episode-Based Payment for Joint Surgery: A Controlled Population-Based Study,” *JAMA Intern Med* 2021;181(7): 932–40.

affected by the ratchet effect mediated by the effect of an ACO's savings on its regional spending growth rate used to determine its benchmark. In addition to the ratchet effects, the blending of historical benchmarks with regional spending widened the distribution of expected shared savings across prospective participants, lowering the prospects for shared savings for those with high spending. This increased their risk of incurring net losses in attempts to lower spending (at least in the short term). For those providers, the imposition of downside risk eroded the would-be cushion supplied by the APM bonus that would have otherwise hedged that risk.

In sum, the advanced APM bonus was simply not sufficient to overcome these limitations in the design of ACO incentives. *Recently, the MSSP underwent major rule changes* that I believe better navigate the various tradeoffs at play to strengthen provider incentives to participate and save and to maximize savings to Medicare in a voluntary model.<sup>10</sup> These include steps to mitigate rebasing, greatly lessen the benchmark reductions caused by regional blending for ACOs with high spending, offer advance investment payments for lower-revenue organizations, and incorporate an *administrative* component into the rate of benchmark growth (see discussion of administrative vs. empirical benchmarks below). When coupled with additional participation incentives, I believe these changes and their continued refinement could greatly accelerate the success of the MSSP. *However, these changes do not take effect until 2024, after the advanced APM bonus is set to expire.*

- 2) *Emphasis on downside risk in qualifying criteria for the APM bonus misses key participants:* Only providers with sufficient shares of revenue or patients covered by *advanced* APMs have been eligible for the *advanced* APM bonus. To qualify as an *advanced* APM, an APM generally must impose on participants some downside risk for spending in excess of benchmarks. I believe the decision to omit one-sided shared-savings ACO contracts was misguided for several reasons. First, evaluation of the MSSP suggests that provider responses to one-sided contracts can generate net savings to Medicare, particularly among lower-revenue organizations like physician groups.<sup>11</sup> In fact, organizational structure is a powerful modifier of risk-sharing provisions in an ACO contract.<sup>12</sup> ACO incentives to reduce unnecessary spending are much stronger when that spending is another provider's revenue and thus does not pose offsetting losses in FFS profits to the ACO when reduced. Incentives for low-revenue providers in one-sided shared-savings contracts can thus be stronger than incentives for high-revenue providers in two-sided contracts with downside risk. Given these conceptual considerations and empirical evidence, we should therefore encourage participation in one-sided ACO contracts.

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<sup>10</sup> "Calendar Year 2023 Medicare Physician Fee Schedule Final Rule Fact Sheet," Centers for Medicare and Medicaid Services, <https://www.cms.gov/newsroom/fact-sheets/calendar-year-cy-2023-medicare-physician-fee-schedule-final-rule-medicare-shared-savings-program>; "HHS Finalizes Physician Payment Rule Strengthening Access to Behavioral Health Services and Whole-Person Care," Centers for Medicare and Medicaid Services, <https://www.cms.gov/newsroom/press-releases/hhs-finalizes-physician-payment-rule-strengthening-access-behavioral-health-services-and-whole>.

<sup>11</sup> McWilliams et al., "Early Performance of Accountable Care Organizations in Medicare"; McWilliams et al., "Medicare Spending after 3 Years of the Medicare Shared Savings Program."

<sup>12</sup> Vinay Rath, J. Michael McWilliams, and Eric T. Roberts, "Getting Incentives Right in Payment Reform: Thinking Beyond Financial Risk," *Ann Intern Med* 2020;172(6): 423–24.

Second, one-sided contracts involve risk of losses, too. Efforts to reduce spending entail costs and may not be rewarded with shared savings. Thus, an APM participation bonus is likely to increase participation in one-sided contracts, too. Indeed, ACOs in one-sided contracts have been more likely to exit the MSSP when not earning shared-savings, despite a lack of penalties for exceeding their benchmarks.<sup>13</sup> Third, the risk of *losses* from downside risk is not as motivating as the prospect of *greater or lesser savings* in a voluntary APM, because providers facing losses from downside risk can exit the APM. If a successful APM is ultimately one that gives all providers a chance to lower spending reliably below their benchmark to reliably share in gains with Medicare from providing more efficient care, then the risk of losses for spending in excess of benchmarks should play a lesser role in program success. Currently, a very high percent of ACOs choosing to participate in the MSSP have spending that is below their benchmarks.

Fourth, it is not clear that the advanced APM bonus encouraged entry into APMs with downside risk, or that downside risk has increased savings. In the MSSP, ACOs accepting downside risk have largely been those already bonusing (i.e., with spending already below their benchmarks) whether from previously lowering spending under one-sided contracts or selectively participating when their pre-existing spending levels are predictably below benchmarks.<sup>14</sup> While the proportion of ACOs in contracts with downside risk increased after the implementation of the advanced APM bonus, that increase also coincided with the selection opportunities afforded by regionalized benchmarks. There has been no rigorous research establishing that entry into two-sided contracts accelerates savings. Any acceleration would be more likely due to the higher shared-savings rate available in two-sided contracts, not the risk of shared losses, since ACOs generally enter two-sided contracts voluntarily after already qualifying for shared savings.

- 3) *Structuring the advanced APM bonus as a proportion of Part B revenue limits effectiveness for low-revenue providers:* For qualifying provider entities, the advanced APM bonus has been calculated as 5% of the entity's Medicare Part B revenue for professional services rendered to *all* of the entity's patients (not just those assigned to the entity under the APM contract). For ACOs, for example, this means that the size of the bonus is much smaller in absolute terms (dollars) for lower-revenue provider groups such as primary care groups and much higher for higher-revenue providers such as health systems (the former have much lower Part B revenue and a much higher proportion of that revenue devoted to assigned beneficiaries). While consistently proportional to revenue across providers, the bonus is therefore inconsistently proportional to the financial risk providers face as ACOs, which is more similar across providers with higher or lower revenue. A low-revenue ACO may incur the same costs from efforts to manage care and face similar upside or downside consequences of those efforts as a high-revenue ACO, but the participation bonus for the low-revenue ACO is much smaller as a proportion of those costs and potential gains or losses. For example, a primary care group's Part B revenue for professional services may be just 5% of total Medicare spending for their patients; thus, an APM bonus that is 5% of Part

<sup>13</sup> For an analysis of this, see McWilliams et al., "Comment RE: [CMS-1701-P] Medicare Program; Medicare Shared Savings Program; Accountable Care Organizations—Pathways to Success; Proposed Rule."

<sup>14</sup> Ibid; Lyu, Chernew, and McWilliams, "Benchmarking Changes And Selective Participation In The Medicare Shared Savings Program."

B revenue would amount to just 0.25% of total spending. A bonus of this size may be insufficient to encourage participation. In contrast, a high-revenue ACO's bonus could be many-fold greater by virtue of the ACO including numerous specialists and earning Part B revenue for specialty care for both ACO-assigned and unassigned patients.<sup>15</sup> In this way, the structure of the bonus favors larger, higher-revenue organizations (the bonus is much greater relative to total Medicare spending per ACO-assigned patient). In concert with the downside risk requirements to qualify for a bonus, this has implications for provider competition. The MSSP holds potential to encourage provider competition by giving low-revenue providers an opportunity to compete with larger organizations on the basis of efficiency, but only if participation incentives are sufficiently strong and even-handed. As noted above, lower-revenue organizations realize greater gains from reducing spending, making the MSSP more attractive. But as a participation incentive, the advanced APM bonus favors higher-revenue organizations. Since CMS started categorizing ACOs as low-revenue or high-revenue in 2019, the number of low-revenue ACOs in the MSSP is unchanged (252 vs. 251).<sup>16</sup>

- 4) *Structuring participation incentives as fee increases weakens APM incentives to save:* Structuring the advanced APM bonus as a proportion of Part B revenue also means that the bonus is functionally equivalent to a fee increase. For ACOs, this acts to erode incentives to lower spending, as reducing the provision of unnecessary services reduces the size of the bonus; conversely, increasing provision increases the bonus. This is particularly true for high-revenue ACOs, as they provide more of the care that their patients receive. The replacement for the advanced APM bonus starting in 2026 is also structured (directly) as a fee increase.

### ***Recommendations for the APM Bonus***

I have the following recommendations for the advanced APM bonus:

1. *Extend the APM bonus for at least 5 years.* Given that the advanced APM bonus has not coincided with a period of optimally designed incentives in APMs, I believe an extension of the APM bonus is worthwhile. As the challenges of APM design are addressed in response to what has been learned to date (these refinements are already under way), we should expect a greater synergistic impact of APM design and APM participation incentives on APM success. Extending the bonus will also permit it to be restructured in a way that better supports the goals of APMs and the Medicare program. Whether the APM bonus should be made permanent depends on the direction taken in APM design, specifically in the approach to benchmarking (see footnote discussion of administrative vs. empirical benchmarks).<sup>17</sup>

<sup>15</sup> Robert Mechanic and Andrew Perlman, "Medicare Physician Payment Reform - Enhancing Incentives for Value-Based Care," *New Engl J Med* 2021;385(8): 675–77.

<sup>16</sup> "MSSP Program Data," Centers for Medicare and Medicaid Services, 2023, <https://www.cms.gov/medicare/medicare-fee-for-service-payment/sharedsavingsprogram/program-data>.

<sup>17</sup> A final consideration is whether an APM bonus extension should be temporary or permanent. This depends on the approach taken in the design of the APM, specifically on whether the benchmarking allows providers to collectively accrue a new cushion – or "wedge" between their benchmark and spending – as they generate savings. Benchmarks that include an administrative component decouple benchmark growth from spending growth to some extent (by setting benchmarks or the wedge to grow at a pre-determined rate). Under this approach, all providers have a chance to lower their spending below their benchmarks. Assuming APMs have been designed with strong incentives and providers have responded accordingly, a participation bonus can then in principle expire after a transition period without eroding participation in the APM. In contrast, empirical benchmarks track with

2. Broaden qualifying criteria to include one-sided ACO contracts. Areas of demonstrated success should be encouraged. The only period of the MSSP in which net savings to Medicare were demonstrated (albeit modest) was one in which all ACOs were in one-sided shared savings contracts and there was no APM bonus.<sup>18</sup> Savings to Medicare have been unclear during a more recent period of emphasis on downside risk in MSSP agreements and the definition of an advanced APM.<sup>19</sup> One-sided contracts are not riskless, participation in them may therefore be sensitive to additional participation incentives, and they are sufficient to create strong incentives for lower-revenue organizations to lower total spending. The design of the MSSP could then in turn modify eligibility a bonus for participating in a one-sided contract by varying eligibility for one-sided contracts by ACO revenue status (which the MSSP already does).
3. Structure the bonus as a flat dollar amount per assigned beneficiary, independent of a participant's Part B revenue. To provide an equally effective participation bonus and encourage competition, rather than entrench the competitive advantage of providers with higher FFS revenue, the APM bonus should be structured as a flat dollar amount per beneficiary assigned under the APM and not vary with provider revenue. Functionally, this would be analogous to a benchmark increase for APM participants.
4. Finance the extension of the bonus with measures that support APM participation and are compatible with APM incentives. To be budget neutral, an extension of the APM bonus will need to be financed with cuts elsewhere. Congress should ensure that those measures advance the goals of the bonus, or at least not undermine them. The currently scheduled differential fee increase for APM participants offers partial financing for an extended bonus and should be converted into bonuses structured as described above so as not to weaken APM incentives to save. As an additional financing measure, Congress could continue to pursue proposals to make outpatient payment site neutral and consider targeting the elimination of higher fees in the hospital outpatient department setting to providers not participating in APMs. This would encourage APM participation by hospital-based organizations, which have inherently weaker incentives to reduce spending in APMs.

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observed or realized average spending growth and thus claw back the savings as they are generated. As participants collectively succeed, benchmarks are commensurately reduced (the goal post moves) making continued savings harder; only some participants can ever beat their benchmark in a given year (about half when participation in the APM is 100% because only about half of participants can be below an average among participants, by definition). Under a system of purely empirical benchmarks, a participation bonus must be made permanent to sustain full participation in a voluntary APM (absent other participation incentives). The cost implications of the two approaches (i.e., administrative benchmarks plus a temporary APM bonus or empirical benchmarks plus a permanent bonus) may be similar; both can produce the same savings to Medicare. The difference is that an administrative benchmark approach effectively incorporates a participation incentive into the benchmarks over time; average benchmarks are allowed to rise above average spending as participants collectively slow spending growth. Since empirical benchmarks instead chase spending as it slows, we should not expect APMs employing empirical benchmarks to sustain widespread participation unless separate participation incentives are continued or introduced. The larger point is that optimal duration of a participation bonus depends on APM design. (For more see: Chernew ME, Heath J, McWilliams JM. The merits of administrative benchmarks for population-based payment programs. *Am J Manage Care* 2021).

<sup>18</sup> McWilliams et al., "Medicare Spending after 3 Years of the Medicare Shared Savings Program."

<sup>19</sup> McWilliams and Chen, "Understanding The Latest ACO 'Savings.'"

Subsequent convergence of APM benchmarks to common regional rates, as outlined in a recent Request for Information issued by CMS,<sup>20</sup> could then eventually establish site neutrality within APMs.

## The MIPS

### ***The MIPS Is Particularly Flawed, but Pay-for-performance Suffers from Deeper Problems***

I will not belabor the many design problems with the MIPS. The issues have been detailed by many,<sup>21</sup> including a thorough evisceration by MedPAC.<sup>22</sup> They include a level of complexity that has spawned a cottage industry of consulting, measure proliferation and questionable measure validity,<sup>23</sup> a lack of comparability in performance assessments as a result of allowing providers to choose from many measures and reporting options, weak incentives, ease of gaming,<sup>24</sup> inadequate risk adjustment with attendant risks of exacerbating disparities,<sup>25</sup> and concerns that the burden on providers will exacerbate clinician burnout and accelerate consolidation by imposing disproportionate costs on organizations without the wherewithal to comply effectively.

Aside from advancing the quality of care delivery, a major goal of the MIPS was to prepare providers for entry into APMs. While we cannot know the causal impact of the MIPS on APM readiness and participation, the widespread characterization of the MIPS as a costly distraction, and the evidence to date on the effectiveness of pay-for-performance programs in eliciting quality improvement, would question that proposition. *For some providers with the resources and know-how to expertly game the MIPS, the MIPS may have even discouraged APM participation by offering bonuses that are easier to attain.* In the MSSP, for example, participants must qualify for a shared savings bonus to gain from high-performance on quality measures.

Many, including MedPAC, have called for the MIPS to be eliminated. There is broad consensus that, at the very least, it should be scaled back considerably. I believe that a scaled-back MIPS would be better than the present MIPS, but we should be wary of expectations that a scaled-back MIPS, or any pay-for-performance program, will meaningfully improve quality of care as a whole, advance the goals of payment reform, or make Medicare beneficiaries better off. The MIPS may be a particularly flawed pay-for-performance program, presenting opportunities for

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<sup>20</sup> “CY 2023 Physician Fee Schedule,” Federal Register, 2022, <https://www.federalregister.gov/documents/2022/07/29/2022-14562/medicare-and-medicaid-programs-cy-2023-payment-policies-under-the-physician-fee-schedule-and-other>.

<sup>21</sup> Vinay Rathi and J. Michael McWilliams, “First-Year Report Cards From the Merit-Based Incentive Payment System (MIPS): What Will Be Learned and What Next?,” *JAMA* 2019;321(12): 1157–58; J. Michael McWilliams, “MACRA: Big Fix or Big Problem?,” *Ann Intern Med* 2017;167(2): 122–24; Eric C. Schneider and Cornelia J. Hall, “Improve Quality, Control Spending, Maintain Access — Can the Merit-Based Incentive Payment System Deliver?,” *New Engl J Med* 2017;376(8): 708–10.

<sup>22</sup> “MedPAC Report,” 2018, [https://www.medpac.gov/wp-content/uploads/import\\_data/scrape\\_files/docs/default-source/reports/mar18\\_medpac\\_entirereport\\_sec\\_rev\\_0518.pdf](https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/reports/mar18_medpac_entirereport_sec_rev_0518.pdf).

<sup>23</sup> 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* 2022;328(21): 2136–46.

<sup>24</sup> Eric T. Roberts et al., “Changes in Patient Experiences and Assessment of Gaming Among Large Clinician Practices in Precursors of the Merit-Based Incentive Payment System,” *JAMA Health Forum* 2021;2(10): e213105.

<sup>25</sup> Kenton J. Johnston et al., “Association of Clinician Minority Patient Caseload With Performance in the 2019 Medicare Merit-Based Incentive Payment System,” *JAMA* 2021;325(12): 1221–23.

clear improvement, but a better version of the MIPS would still suffer from several problems with pay-for-performance that are more intractable.<sup>26</sup> These include:

1. *Inherently weak added incentives to improve quality as a whole*: Quality of care is a hard-to-measure, complex, multi-dimensional construct. As such, the added financial incentives to improve quality broadly are inherently weak, whether pay-for-performance dollars are spread over numerous measures in attempt to cover all of quality (in which case the added incentive to improve in any one area is small) or concentrated in a few measures (in which case incentives may be stronger but only for narrow aspects of quality). In addition, paying on measurable aspects of care can divert resources and attention away from harder-to-measure aspects of care that may be equally important (if not more important). Extrinsic financial incentives (or associated non-financial managerial pressure in response to such incentives at an organizational level) can also undermine the intrinsic motivation of clinicians to provide the care that they think is best for their patients.<sup>27</sup> Accordingly, pay-for-performance is often implicated as a contributor to the current epidemic of clinician demoralization and burnout,<sup>28</sup> although there is no rigorous research assessing this. Taking these incentive problems into account, pay-for-performance may be expected to have a minimal impact on its target measures, and, even if it does improve performance on targeted measures, quality as a whole may not improve, and may even worsen, as a result of deterioration elsewhere.
2. *Wasteful behaviors to boost performance*: When tied to objective performance measures, extrinsic financial incentives encourage not just better quality, but also better scores.<sup>29</sup> Boosting performance scores through gaming or teaching-to-the-test is often easier (less costly) than redesigning systems of care to improve quality. Outcome measures are not immune to this concern, as the risk-adjustment of outcomes can be manipulated by providers, too (e.g., coding of diagnoses). Thus, pay-for-performance encourages behaviors that may improve true quality minimally, or not at all, but nevertheless consume societal resources. This can further distort markets or exacerbate disparities, depending on which providers are best positioned to excel in these score-boosting behaviors.
3. *Risk adjustment challenges*: Particularly for health outcomes, risk adjustment in pay-for-performance arrangements is critical to mitigate perverse incentives for providers to attract patients with low risks of poor outcomes and avoid those with high risks, and to ensure that payments are not unfairly distributed. A major concern about pay-for-performance is that, when risk adjustment is inadequate, it results in inequitable financial transfers from providers serving sicker or marginalized populations to those serving healthier or privileged

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<sup>26</sup> J. Michael McWilliams, "Pay for Performance: When Slogans Overtake Science in Health Policy," *JAMA* 2022;328(21): 2114–16.

<sup>27</sup> Marylene Gagne, "Self-determination Theory and Work Motivation," *Journal of Organizational Behavior* 2005;26(4): 331–62.

<sup>28</sup> Lisa Rosenbaum, "Reassessing Quality Assessment — The Flawed System for Fixing a Flawed System," *New Engl J Med* 2022;386(17):1663–67; Pamela Hartzband and Jerome Groopman, "Physician Burnout, Interrupted," *New Engl J Med* 2020;382(26):2485–87."

<sup>29</sup> S. Kerr, "On the Folly of Rewarding A, While Hoping for B," *Academy of Management Journal. Academy of Management* 1975;18(4): 769–83.

populations.<sup>30</sup> While more robust adjustments for patient characteristics can help address this concern, it is impossible to adjust for all relevant factors, and a competing concern is that more adjustment undermines the intended incentives. For example, adjusting outcomes such as mortality or functional status for a history of stroke weakens provider incentives to improve those outcomes by preventing strokes. However, not adjusting for stroke may result in providers being penalized for serving populations with a higher stroke risk because of historical disadvantage. The broader point is that because risk adjustment is inherently imperfect, we should expect some unintended consequences of pay-for-performance.

These issues have been long described conceptually in the economics, management, and health services literatures, and we now have over a decade of rich empirical research on the impact of pay-for-performance in health care that has found consistently little benefit, substantial costs, and worrisome distributional consequences. The research spans many Medicare pay-for-performance programs, including the MIPS,<sup>31</sup> Value-based Payment Modifier<sup>32</sup> (the precursor to the MIPS), Premier Hospital Quality Incentive Demonstration,<sup>33</sup> Hospital Value-based Purchasing Program,<sup>34</sup> Hospital Readmissions Reduction Program,<sup>35</sup> Hospital-acquired Condition Reduction Program,<sup>36</sup> and MA quality bonus program.<sup>37</sup>

In sum, the quality of care delivery is not as directly contractible through the payment system as the current emphasis in policy would suggest. It makes for good slogans – e.g., “paying for quality instead of quantity” or “health instead of health care” – but not good results. Pay-for-performance may achieve some scattered wins here and there, but it should not be at the center of Congressional efforts to improve quality of care.

A final problem is that the reliability of quality measurement deteriorates as samples grow smaller. The clinician focus of the MIPS has made this a particular challenge. But moreover, this

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<sup>30</sup> Michael L. Barnett, John Hsu, and J. Michael McWilliams, “Patient Characteristics and Differences in Hospital Readmission Rates,” *JAMA Intern Med* 2015;175(11):1803–12; Eric T. Roberts et al., “Assessment of the Effect of Adjustment for Patient Characteristics on Hospital Readmission Rates: Implications for Pay for Performance,” *JAMA Intern Med* 2018;178(11):1498–1507; Eric T. Roberts, Alan M. Zaslavsky, and J. Michael McWilliams, “The Value-Based Payment Modifier: Program Outcomes and Implications for Disparities,” *Ann Intern Med* 2018;168(4): 255–65; Karen E. Joynt and Ashish K. Jha, “Characteristics of Hospitals Receiving Penalties Under the Hospital Readmissions Reduction Program,” *JAMA* 2013;309(4):342–43.

<sup>31</sup> Bond et al., “Association Between Individual Physician MIPS Score and Patient Outcomes.”

<sup>32</sup> Roberts et al., “Changes in Patient Experiences and Assessment of Gaming Among Large Clinician Practices in Precursors of the Merit-Based Incentive Payment System”; Roberts, Zaslavsky, and McWilliams, “The Value-Based Payment Modifier.”

<sup>33</sup> Ashish K. Jha et al., “The Long-Term Effect of Premier Pay for Performance on Patient Outcomes,” *New Engl J of Med* 2012;366(17):1606–15.

<sup>34</sup> Andrew M. Ryan et al., “Changes in Hospital Quality Associated with Hospital Value-Based Purchasing,” *New Engl J of Med* 2017;376(24): 2358–66.

<sup>35</sup> Christopher Ody et al., “Decreases In Readmissions Credited To Medicare’s Program To Reduce Hospital Readmissions Have Been Overstated,” *Health Aff* 2019;38(1):36–43; J. Michael McWilliams et al., “Did Hospital Readmissions Fall Because Per Capita Admission Rates Fell?,” *Health Aff* 2019;38(11): 1840–44.

<sup>36</sup> Roshun Sankaran et al., “Changes in Hospital Safety Following Penalties in the US Hospital Acquired Condition Reduction Program: Retrospective Cohort Study,” *BMJ* 2019;366: l4109.

<sup>37</sup> Adam A. Markovitz et al., “The Medicare Advantage Quality Bonus Program Has Not Improved Plan Quality,” *Health Aff* 2021;40(12):1918–25.

problem is worsening rapidly, as MA and APMs grow, causing the residual population in FFS Medicare to dwindle and exacerbating the reliability issue. Thus, even if one likes the MIPS at present, its performance data will become increasingly uninformative because of noise.

***Alternative Broad Strategies by Which the Federal Government Can Improve Quality of Care***

The conceptual concerns with, and the damning evidence on, pay-for-performance should not be interpreted to mean that quality measurement is unimportant. Measuring quality is vital to identify problems, develop interventions, evaluate their impact, track system performance, and direct plans and providers to areas in need of improvement. To support these objectives, we should prioritize efforts to build data systems that support monitoring and learning, improve interoperability, facilitate data sharing, and ease reporting burden. Such data systems serve as public goods. Their creation requires government involvement to solve collective action problems. Pay-for-performance has distracted us from more fundamental objectives of improving information in health care.

For example, when our clinicians are better informed, they can better serve their patients. Simply informing providers about their performance – even privately – has been shown to improve quality.<sup>38</sup> Providers are intrinsically motivated to improve but may be unaware of the need to do so or where to best devote their attention. Supplying actionable information to providers should be a primary focus of the Medicare program. Examples include state prescription drug monitoring programs, peer comparison feedback,<sup>39</sup> and real-time benefit check systems that allow clinicians to know which medications are covered by their patients’ insurance coverage at the point of prescribing.<sup>40</sup> Another fruitful direction is supplying clinicians with accurate information about patients’ provider networks at the point of referral. Similarly, care delivery is understudied and underfunded, leading to other information gaps. There is widespread demand for knowing “what works” but too little funding to support large-scale trials of promising strategies. Effective interventions will not diffuse as well if they are not known to be effective.

In addition to better guiding the *intrinsic* motivation of providers with information and tools, performance data could be used to build a quality surveillance system with the goal of identifying and deterring *poor* quality. The idea would be to use sources of data that impose minimal reporting burden on providers to develop a sufficiently reliable signal of potentially poor quality that, when detected, would trigger a deeper investigation of the provider organization’s practices. This is an undeveloped idea, but one that has been proposed<sup>41</sup> and, if successful, could serve as an effective deterrent against egregious lapses in quality.

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<sup>38</sup> Adam Sacarny et al., “A Randomized Trial Of Letters To Encourage Prescription Monitoring Program Use And Safe Opioid Prescribing,” *Health Aff* 2023;42(1): 140–49; Jason N. Doctor et al., “Opioid Prescribing Decreases after Learning of a Patient’s Fatal Overdose,” *Science* 2018;361(6402): 588–90; Adam Sacarny et al., “Effect of Peer Comparison Letters for High-Volume Primary Care Prescribers of Quetiapine in Older and Disabled Adults: A Randomized Clinical Trial,” *JAMA Psychiatry* 2018;75(10):1003–11; Jonathan T. Kolstad, “Information and Quality When Motivation Is Intrinsic: Evidence from Surgeon Report Cards,” *Am Econ Rev* 2013;103(7): 2875–2910.

<sup>39</sup> Sacarny et al., “Effect of Peer Comparison Letters for High-Volume Primary Care Prescribers of Quetiapine.”

<sup>40</sup> Sunita M. Desai et al., “Effects of Real-Time Prescription Benefit Recommendations on Patient Out-of-Pocket Costs: A Cluster Randomized Clinical Trial,” *JAMA Intern Med* 2022;182(11): 1129–37.

<sup>41</sup> Michael E. Chernew and Mary Beth Landrum, “Targeted Supplemental Data Collection — Addressing the Quality-Measurement Conundrum,” *New Engl J Med* 2018;378(11): 979–81.

Finally, the primary *extrinsic* incentive for providers to delivery high-quality care arises from competition. As long as providers face competition, they have to compete for patients and clinicians. Patients and clinicians value receiving or delivering high-quality care, have knowledge about what high-quality care entails (particularly in the case of clinicians), and will vote with their feet. The evidence that competition improves quality of care is stronger than the evidence supporting pay-for-performance.<sup>42</sup> Competition policy is beyond the scope of today's hearing but it is closely related to the goals of MACRA and the Medicare program. Above, I noted how the implications for provider competition should be considered in the structuring of the APM bonus and its financing (including site neutral payments). Limiting non-compete provisions in clinician employment contracts is another policy direction at the intersection of competition and health care quality that is worthy of attention.

The broader point is that the federal government can support quality improvement in health care through strategies other than pay-for-performance, which has been a costly failure. Based on theory and evidence, I do not believe we should expect meaningful progress from pay-for-performance version 2.0; instead, we should invest in other strategies. Medicare payment policy has been dominated by the instinct to address concerns about quality by deploying more and more measures with linked payment incentives and requirements. Such steps are relatively easy to conceive and serve as evidence that the federal government is doing something about the problem. But they are not effective, and, though they may seem innocuous incrementally, in aggregate they are distracting and costly. Thus, this instinct must be resisted going forward.

### ***Recommendations on the MIPS***

The first of these recommendations is specific and directly relevant to MACRA. The ensuing recommendations are more general and may be beyond the scope of legislative efforts to update MACRA. They are intended to summarize alternative directions to achieve the underlying goals of the MIPS and thus to emphasize that ending the MIPS is not conceding defeat. Of note, continued growth of MA and successful expansion of APMs would make the first recommendation moot (or a formality to enact and implement), as the MIPS would then become obsolete and unworkable due to the challenge of reliably measuring provider quality with small samples. Any scaled-back replacement program would face the same challenge.

1. *Eliminate the MIPS and do not replace it with a scaled-back pay-for performance program.*
2. *Prioritize efforts to build better data systems that support better care, research, and learning.*
3. *Increase funding for research on care delivery.*
4. *Follow recommendation by anti-trust experts to protect competition in health care.*<sup>43</sup>

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<sup>42</sup> Zack Cooper et al., "Does Hospital Competition Save Lives? Evidence from the English NHS Patient Choice Reforms," *Economic Journal* 2011;121(554): F228–60; Hannah T. Neprash and J. Michael McWilliams, "Provider Consolidation and Potential Efficiency Gains: A Review of Theory and Evidence," *Antitrust Law Journal* 2019;82(2): 551–78; Marah Noel Short and Vivian Ho, "Weighing the Effects of Vertical Integration Versus Market Concentration on Hospital Quality," *Med Care Res and Rev* 2020;77(6): 538–48; Nancy D. Beaulieu et al., "Changes in Quality of Care after Hospital Mergers and Acquisitions," *N Engl J Med* 2020;382(1):51–59.

<sup>43</sup> E.g., see testimony of Leemore Dafny before the House Committee on the Judiciary, 2021: <https://docs.house.gov/meetings/JU/JU05/20210429/112518/HHRG-117-JU05-Wstate-DafnyL-20210429.pdf>.