



# Implications of coding and risk-adjustment in primary care payment reform

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Implemented by the Centers for Medicare and Medicaid Services, alternative payment models (APMs) provide financial incentives to clinicians and health care organizations (HCOs) for delivering high-quality, cost-efficient care to patients (1). In APMs, clinicians and HCOs are held accountable for specific clinical conditions, episodes, or populations. Whereas in the traditional-fee-for-service payment system, clinicians and HCOs have been financially rewarded for providing a high volume of services to patients regardless of their health status, APMs have promoted a shift toward payment that is linked to the cost and/or quality of care (2). APMs have demonstrated promising results in the quest for health care value, but they also present concerns. One issue critical to the success of APMs is ensuring appropriate and fair risk adjustment.

As risk adjustment links payment to outcomes, it serves many functions. It may help protect against health care disparities, by preventing clinicians and HCOs from cherry-picking healthier patients, or inappropriately bearing negative financial consequences from caring for sicker patients. However, one major challenge is that risk adjustment depends on the diagnosis codes captured in insurance claims. Claims are generated for billing purposes, not for clinical reasons, so there may be a gap between the type of data captured in claims and true clinical risk (and its associated financial implications). Furthermore, because coding is at least partially at the discretion of clinicians and HCOs, another challenge is that different clinicians and

HCOs may code differently or may not code uniformly. This can lead to intentional or inadvertent “upcoding” (when clinicians and HCOs code for more diagnoses to secure higher payments) (3), as well as spurious differences in the estimated risk of patient populations driven by coding practices, not actual clinical complexity.

Markovitz and colleagues examined this issue of risk coding in the context of accountable care organizations (ACOs) (4). ACOs are comprised of clinicians and HCOs that voluntarily work together to provide coordinated care while assuming financial accountability for containing costs below a defined spending benchmark (5). If ACOs successfully reduce spending while also meeting quality benchmarks, they are able to share in the savings. ACOs are important because they have been implemented broadly, by public and commercial insurers alike.

In their study, Markovitz and colleagues evaluated ACOs in the Medicare Shared Savings Program (MSSP) and how beneficiaries’ risk scores related to MSSP ACO attribution, as well as the relationship between beneficiaries’ risk and clinicians’ panel risk and entry into or exit from the program (4). They found that in general, ACO attribution (5) was not associated with changes in the risk scores of beneficiaries or entry into MSSP, but that beneficiaries’ risk and clinicians’ panel risk were each associated with program exit. Additionally, whereas risk-score growth accounted for exit by beneficiaries more so than risk-score level, the converse was true for clinicians.

The authors determined that exit from MSSP could be in part due to ACOs dropping higher-risk beneficiaries or clinicians with higher-risk panels, as well as submitting claims that did not factor into MSSP ACO attribution. These results are important because changes in risk scores did not seem related to MSSP ACO attribution, though sicker beneficiaries in the baseline period were more likely to be dropped regardless of how their risk evolved (4). Clinicians also were dropped based on their panel risk. The rigor of the study's design, which included beneficiary fixed effects such that beneficiaries were used as their own controls, makes alternative explanations for these observations much less likely. Therefore, while not definitive, these findings collectively suggest that MSSP ACOs paid attention to and acted on beneficiaries' risk in response to program incentives. This may not have been in the best interest of patients or aligned with APM intentions.

Risk adjustment is relevant for all Medicare APMs. In particular, it ensures that clinicians and HCOs are paid fairly while deterring them from upcoding (3,6). However, such protections may occur at the expense of caring for higher-risk patients, whom APM participants may drop directly or indirectly through their respective clinicians. The approach used by Medicare for ACOs shares common elements with its other APM programs, but also differs along some dimensions (*Table 1*) (5,7-19). Each approach to risk adjustment presents trade-offs. For example, though most programs adjust payments according to patient case mix, historical spending, or the ability of participants to meet certain quality metrics, variation exists. Some programs may evaluate beneficiaries' risk scores regionally (e.g., Comprehensive Care for Joint Replacement), while others do so across the entire covered population (e.g., Medicare Advantage) (11,14-16). One drawback of a regional risk adjustment approach—especially in the presence of geographic variation in beneficiaries' health care spending or utilization—is the missed opportunity to compare beneficiary risk scores program-wide and improve practices among all participating clinicians and HCOs (20,21). Yet, regional adjustment reduces the likelihood that clinicians and HCOs are financially penalized should there be broader geographic variation in beneficiaries' health status.

Another dimension by which risk adjustment approaches differ is whether payment depends on assigned beneficiary risk tiers (e.g., Comprehensive Primary Care Plus), or how beneficiary costs compare to predicted spending (e.g., Medicare Advantage) (12-16). Thresholds for risk tiers may

be arbitrary, with beneficiaries' degrees of risk unevenly scaled across percentiles (in Comprehensive Care Primary Plus, risk tier thresholds include the 25th, 50th, 75th, and 90th percentiles), such that beneficiaries on either side of these thresholds (e.g., at the 49th and 51st percentiles) may not have meaningful differences in their risk scores. However, risk tiers may prevent clinicians and HCOs from dropping individual higher-risk patients from their care, especially if they can discern how payments will be risk-adjusted.

These considerations are particularly relevant in light of the recently announced payment models under the Primary Care Initiative (22), which involve greater financial risk and thus are likely to intensify the emphasis on and stakes surrounding risk coding. As part of an effort to avoid the financial penalties introduced by two-sided APMs, clinicians may feel more pressured to increase their coding intensity or shift toward lower-risk panels.

Moving forward with primary care payment reform, several policy changes are worth consideration. First, there are advantages to changing from retrospective to prospective attribution, as this would enable greater predictability of attribution and more focused clinical management of at-risk beneficiaries (4,23,24). Advantages also include protecting against the possibility that clinicians and HCOs avoid higher-risk beneficiaries before attribution (i.e., adverse selection), such that beneficiaries will be attributed to a clinician or an HCO only if they received care from them in the year before. Second, policymakers could consider shifting their focus to adjusting for risk-score growth instead of risk-score levels before attribution. This may mitigate concerns that clinicians and HCOs are dropping chronically or acutely ill patients in APMs (4).

Third, allowing upward risk score adjustments may address concerns from clinicians and HCOs about increasingly sicker beneficiaries (4,23). While the recently implemented MSSP "Pathways to Success" program includes a 3% cap on cumulative risk score changes over the performance period (25), there are nonetheless limitations to this cap. Specifically, once clinicians and HCOs reach that limit, they may have weaker incentives to take on higher-risk beneficiaries (4). As such, policymakers may want to consider shifting toward other frameworks for implementing risk adjustment, such as risk tiers (12,13). Even though risk tiers would allow for HCOs to determine how beneficiaries' risk scores generally compare to others', they would not face the same incentives to cherry-pick between beneficiaries who fall within the same tier. Finally,

**Table 1** Risk adjustment in select Medicare payment models

Program name	Year of program launch	Episode- or population-based payment model?	Participants	Prospective or retrospective payment?	Downside risk required?	Role of risk adjustment
Medicare Shared Savings Program	2010	Population-based	Physicians, hospitals, health care organizations	Retrospective	Yes	Financial benchmarks are adjusted according to beneficiaries' risk scores and historical spending
Bundled Payments for Care Improvement-Advanced	2018	Episode-based	Physician group practices, hospitals	Retrospective	Yes	Target prices include adjustments for patient case mix and peer group characteristics
Comprehensive Care for Joint Replacement	2016	Episode-based	Hospitals	Retrospective	Yes	Target prices are determined for every hospital using a risk stratification methodology, based on its individual historical spending and regional spending
Comprehensive Primary Care Plus	2018	Population-based	Primary care practices	Prospective	No	Individual beneficiaries are assigned to risk tiers according to their regional reference population, with higher-risk tiers corresponding to higher payments
Medicare Advantage	1997	Population-based	Health plans	Prospective	No	Costs are estimated by considering the risk of beneficiaries in the entire program, with payments made in incrementally lower or higher amounts depending on whether beneficiaries' costs are lower or higher than the average predicted costs
Oncology Care Model	2016	Episode-based	Physician group practices, payers	Retrospective	No	Target prices include adjustments for historical data, patient characteristics, and region

in designing a mechanism for risk adjustment, policymakers may decide to use approaches that compare beneficiary risk scores both regionally and program-wide. One strength of this approach is that beneficiaries' risk scores could reflect regional and national trends alike.

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## References

- Centers for Medicare and Medicaid Services. APMs Overview. Available online: <https://qpp.cms.gov/apms/overview>
- Porter ME, Lee TH. From volume to value in health care: the work begins. *JAMA* 2016;316:1047-8.
- Geruso M, Layton T. Upcoding: evidence from Medicare on squishy risk adjustment: National Bureau of Economic Research; 2018. Available online: <https://www.nber.org/papers/w21222>
- Markovitz AA, Hollingsworth JM, Ayanian JZ, et al. Risk adjustment in Medicare ACO program deters coding increases but may lead ACOs to drop high-risk beneficiaries. *Health Aff (Millwood)* 2019;38:253-61.
- Centers for Medicare and Medicaid Services. Shared Savings Program 2019. Available online: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html>
- Landon BE, Mechanic RE. The paradox of coding-policy concerns raised by risk-based provider contracts. *N Engl J Med* 2017;377:1211-3.
- US Government Accountability Office. Voluntary and mandatory episode-based payment models and their participants. Available online: <https://www.gao.gov/assets/700/696264.pdf>
- Conrad DA. The theory of value-based payment incentives and their application to health care. *Health Serv Res* 2015;50 Suppl 2:2057-89.
- Centers for Medicare and Medicaid Services. Target price specifications: Model Years 1 and 2 2018. Available online: <https://innovation.cms.gov/Files/x/bpciadvanced-targetprice-my1-2.pdf>
- Centers for Medicare and Medicaid Services. BPCI Advanced 2019. Available online: <https://innovation.cms.gov/initiatives/bpci-advanced>
- Centers for Medicare and Medicaid Services. Medicare program; Comprehensive Care for Joint Replacement payment model for acute care hospitals furnishing lower extremity joint replacement services 2015. Available online: <https://www.federalregister.gov/documents/2015/11/24/2015-29438/medicare-program-comprehensive-care-for-joint-replacement-payment-model-for-acute-care-hospitals>
- Center for Medicare and Medicaid Innovation. CPC+ payment methodologies: beneficiary attribution 2017. Available online: <https://innovation.cms.gov/files/x/cpcplus-methodology.pdf>

13. Centers for Medicare and Medicaid Services. Comprehensive Primary Care Plus 2019. Available online: <https://innovation.cms.gov/initiatives/comprehensive-primary-care-plus>
14. Kaiser Family Foundation. Medicare Advantage 2017. Available online: <https://www.kff.org/medicare/fact-sheet/medicare-advantage/>
15. Centers for Medicare and Medicaid Services. Report to Congress: risk adjustment in Medicare Advantage 2018. Available online: <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/RTC-Dec2018.pdf>
16. Cubanski J, Swoope C, Boccuti C, et al. A primer on Medicare: key facts about the Medicare program and the people it covers: Kaiser Family Foundation; 2015. Available online: <https://www.kff.org/report-section/a-primer-on-medicare-how-does-medicare-pay-providers-in-traditional-medicare/>
17. Centers for Medicare and Medicaid Services. Oncology Care Model Overview 2019. Available online: <https://innovation.cms.gov/Files/slides/ocm-overview-slides.pdf>
18. Centers for Medicare and Medicaid Services. Oncology Care Model 2015. Available online: <https://www.cms.gov/newsroom/fact-sheets/oncology-care-model-0>
19. Kivlahan C, Walradt J. Oncology Care Model: what AMCs need to know: Association of American Medical Colleges; 2015. Available online: <https://www.aamc.org/download/433276/data/oncologycaremodel101.pdf>
20. Committee on Geographic Variation in Health Care Spending and Promotion of High-Value Care; Board on Health Care Services; Institute of Medicine. Variation in Health Care Spending: Target Decision Making, Not Geography. Newhouse JP GA, Graham RP, et al, eds. Washington, DC: National Academies Press, 2013.
21. Wennberg DE, Sharp SM, Began G, et al. A population health approach to reducing observational intensity bias in health risk adjustment: cross sectional analysis of insurance claims. *BMJ* 2014;348:g2392.
22. Inserro A. HHS announces 5 new primary care payment models to encourage value-based care: *American Journal of Managed Care*; 2019. Available online: <https://www.ajmc.com/newsroom/hhs-announces-5-new-primary-care-payment-models-to-encourage-valuebased-care>
23. Jaffery J, Ronk K, Smith M. Does beneficiary switching create adverse selection for hospital-based ACOs? Bethesda, MD: Health Affairs Blog; 2019. Available online: <https://www.healthaffairs.org/doi/10.1377/hblog20190410.832542/full/>
24. Glass D, Serna L, Stensland J. Medicare shared savings program performance: MedPAC; 2019. Available online: <http://medpac.gov/docs/default-source/default-document-library/aco-april-2019-public.pdf?sfvrsn=0>
25. Centers for Medicare and Medicaid Services. Medicare Program; Medicare Shared Savings Program; Accountable Care Organizations-Pathways to Success and Extreme and Uncontrollable Circumstances Policies for Performance Year 2017-2018. Available online: <https://www.federalregister.gov/documents/2018/12/31/2018-27981/medicare-program-medicare-shared-savings-program-accountable-care-organizations-pathways-to-success>

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