Evaluation of the Oncology Care Model

Impacts by Risk Arrangement

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Erratum

In ***Chapter 7 of The Final Evaluation Report*** we reported that OCM was associated with a reduced probability of an emergency department (ED) visit without hospital admission among Hispanic patients relative to non-Hispanic White patients, which was driven by a reduction in the probability of this outcome measure among Hispanic patients treated by OCM practices. However, the measure of ED visit without hospital admission did not pass our baseline parallel trends test among Hispanic patients, and so these two findings should be interpreted with caution.

Contents

Executive Summary

Model Background

In February 2015, the Centers for Medicare & Medicaid Services (CMS) invited oncology physician group practices to participate in the Oncology Care Model (OCM), an alternative payment model based on six-month episodes for cancer care for Medicare fee-for- service (FFS) beneficiaries undergoing chemotherapy treatment.[1] The six-year OCM began with six-month chemotherapy treatment episodes, starting on July 1, 2016, and operated for 11 consecutive six-month performance periods (PPs). The last episodes ended on June 30, 2022.

OCM tested whether payment reform and health care delivery redesign can improve quality and reduce Medicare spending for patients undergoing chemotherapy for cancer, by combining attributes of medical homes—patient-centeredness, care coordination, accessibility, evidence-based guidelines, and continuous quality improvement—with financial incentives for providing services efficiently and with high quality.[2]

In this report, we estimate separate impacts for five distinct groups of practices based on their level of OCM participation, as broken out by how long they remained in the model and whether they eventually elected a two-sided risk component to their financial incentive. This contrasts with the Final Evaluation Report, which aggregated impacts across all practices.

IN THIS REPORT, WE EXAMINE VARIATION IN IMPACT BY:

Length of time before model exit

- **Early-exiting practices** were under one-sided risk and terminated participation before Performance Period 8. These practices indicated that the primary reason for exit was difficulty meeting model requirements and reporting burden.
- **Late-exiting practices** were under one-sided risk and terminated participation in Performance Period 8 or later. These practices indicated that the primary reason for exit was concern about mandatory adoption of two-sided risk.

Final risk arrangement at the end of the model for participants who did not terminate

- **One-sided risk practices** could earn performance-based payments by reducing total costs but did not owe recoupments if costs increased. To remain in one-sided risk through the end of the model, practices had to earn at least one performance-based payment by Performance Period 4.
- **Two-sided risk practices** could earn larger performance- based payments by reducing total costs but would owe recoupments back to CMS if costs increased. Although this option was offered beginning in Performance Period 2, only four practices had exercised this option by Performance Period 7. Beginning in Performance Period 8, all practices that had not earned at least one performance-based payment by Performance Period 4 were required to take on two-sided risk or CMS would terminate their participation. Thus, nearly all two-sided risk practices were in a two-sided risk arrangement for four or fewer performance periods.
- **PBP opt-out practices** took advantage of a flexibility that CMS offered near the end of Performance Period 8 in response to the COVID public health emergency, which allowed them to continue to receive Monthly Enhanced Oncology Services payments without being subject to financial reconciliation or quality scoring. All but one practice that exercised this option had originally accepted two-sided risk beginning in Performance Period 8, but opted out of risk altogether when given the opportunity to do so.

[1] Chemotherapy is defined for OCM purposes as cytotoxic chemotherapy, biologic therapy, immunotherapy, or hormonal therapy for cancer.

[2] More information about OCM can be found at https://innovation.cms.gov/initiatives/oncology-care/.

SUMMARY OF KEY FINDINGS

Practices that participated in two-sided risk in the latter half of the model (hereafter "practices with two-sided risk") were the main driver of OCM payment reductions. None of the other four groups of practices we analyzed achieved significant reductions in total episode payments. Practices that adopted two-sided risk succeeded in reducing payments for Part A, Part B, and Part D payments, but they did not reduce the probability of costly inpatient admissions or emergency department visits, nor did they improve access to timely hospice care at the end of life. After accounting for Model payments, practices that adopted two-sided risk by the end of the model achieved net savings for Medicare in 10 of 11 performance periods, totaling $299.6 million. All other practices achieved net Medicare losses in all performance periods, with losses largest for practices remaining in one-sided risk.

Practices with two-sided risk also earned the highest performance-based payments and were most likely to achieve the quality thresholds necessary to keep all performance-based payments, demonstrating that these practices not only achieved the highest financial impacts but also the highest quality, on average.

Relative to other practices, practices with two-sided risk were more likely to be independent of a hospital or health system, on average, although our results do not imply this was a necessary condition for success. These practices also stood out in the extent to which they expanded or implemented changes in care processes in response to the model.

Importantly, our results cannot distinguish whether adoption of two-sided risk in the last two to three model years enhanced performance or was merely correlated with improved performance. Practices that ultimately elected to participate in two-sided risk contracts showed evidence of greater OCM impacts than comparison practices starting in the first performance period, suggesting that these higher-performing practices had more confidence they would succeed in two-sided risk arrangements. However, impacts increased after the adoption of two-sided risk, and so we cannot rule out the possibility that the additional incentives of two-sided risk spurred practices to achieve greater impacts than they would have remaining under one-sided risk.

Whether or not adoption of two-sided risk led to better performance, the payment impacts generated by practices that did adopt two-sided risk demonstrate that episode-based oncology models have the potential to yield net savings for Medicare.

Model Incentives

OCM featured a two-pronged financial incentive strategy. First, participating practices were able to bill Medicare a $160 Monthly Enhanced Oncology Services (MEOS) fee for Medicare FFS beneficiaries, which was intended to support practices in providing enhanced oncology services. Second, practices were made financially accountable for all Medicare services provided during the episode, including drugs. Practices could earn money in the form of retrospective performance-based payments (PBPs) if they were able to meet OCM payment and quality goals.

OCM Risk Arrangements

All practices began in a one-sided risk status. One-sided risk for OCM meant that they had the possibility of earning PBPs if total expenditures (including MEOS payments from CMS) were below the benchmark. At the same time, practices under one sided risk were not responsible for recoupments if their total expenditures for episodes exceeded the benchmark. Beginning in 2017 (PP2), participants could opt to

IMPORTANT ACRONYMS

MEOS: Monthly Enhanced Oncology Services payment. The additional $160 per-beneficiary monthly fee that participating practices may bill for to help support their transformation efforts.

PBP: Performance-based payments. Incentive payments that participants can earn based on their success in achieving quality goals and reducing expenditures enough to meet OCM requirements.

PP: Performance period. Six-month windows into which episodes were assigned based on chemotherapy start date.

PHE: COVID-19 public health emergency, affecting PP7–11.

TEP: Total episode payments. Total of all payments for Medicare-covered services provided to chemotherapy patients during six-month chemotherapy episodes. Does not include MEOS, PBP, or beneficiary copayments (other than beneficiary cost-sharing for Part D drugs).

undertake two-sided risk in exchange for the possibility of larger PBPs. No practice exercised this option until early 2019, when a lone practice took on two-sided risk. This increased to four practices by mid-2019. At the start of 2020, any practice that had not earned at least one PBP in the first two years of the model was required to undertake two-sided risk or CMS terminated their participation.

In June 2020 (roughly six months after practices made decisions to take on two-sided risk or exit the model), CMS offered practices a third option in response to the COVID-19 public health emergency (PHE). Under this arrangement, practices could continue to submit monthly bills for MEOS but waive their eligibility for any PBPs by opting out of financial reconciliation and performance measurement ("PBP opt-out"). Practices that would otherwise have been required to take two-sided risk or exit the model were able to remain in the model and continue receiving MEOS payments, without concerns about owing a recoupment under two-sided risk. Since there was no downside risk to remaining in a one-sided arrangement for practices that had earned at least one PBP in the first two years of the model, all but one of the practices that selected the PBP opt out had originally selected a two-sided risk arrangement. The opt-out was applied retroactively to all of PP8, even though the option was not offered until near the end of the period.

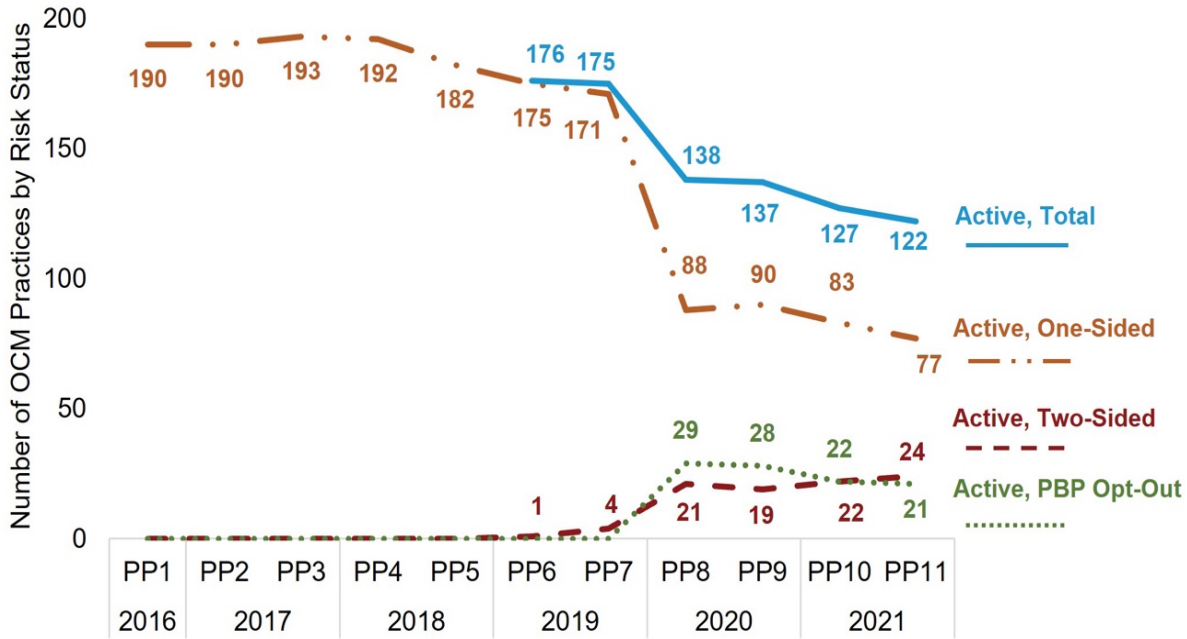
OCM Participation

Participation in OCM changed in response to model risk sharing requirements and COVID flexibilities.

Exhibit ES-1 summarizes changes in participation status for the 202 unique practices that participated in OCM.

A small number of practices terminated their participation after the first year of the model, with four practices leaving in the latter half of 2018 and a total of 27 practices leaving OCM by the middle of 2019. Model exit accelerated at the beginning of 2020 with the introduction of mandatory two- sided risk for practices that had not achieved performance- based payments in the first two model years: overall, 37 additional practices exited the model in the second half of 2019. Exit interviews and surveys suggested that practices that exited by mid-2019 primarily terminated due to difficulty meeting model requirements, while most terminations occurring after mid-2019 were primarily due to concerns related to two-sided risk.

Exhibit ES-1: Over Half of OCM Practices Changed Their Participation Status or Risk Status in Performance Period 8 when Two-Sided Risk became Mandatory for Some Practices



Source: OCM program data.
Note: Active, one-sided practices are eligible for PBPs under one-sided risk (no repayments to CMS if total episode payments exceed benchmark target). Active, two-sided practices are eligible for PBPs under two-sided risk: potential earnings are higher, but practices repay CMS some amount if total payments exceed target. Active, PBP opt-out practices are those that exercised a COVID flexibility allowing them to receive monthly payments, but not be eligible for PBPs. Terminated practices are those that no longer participate in OCM. PP: Performance period. PBP: Performance-based payment.

More than half of participating practices changed their participation status in the first half of 2020 due to the mandate to take on two-sided risk or terminate participation among practices that had not earned a PBP by the end of PP4 (mid-2018). In total, 37 practices terminated participation altogether at the start of 2020, while 17 additional practices adopted two-sided risk, and 29 practices took advantage of the COVID flexibility to opt out of PBPs (all but one of which did so after initially selecting a two-sided risk arrangement). Of the 21 practices that had adopted two-sided risk by the start of 2020 (including four that had adopted in 2019), 10 were eligible to remain in one-sided risk, while the other 11 were required to adopt two-sided risk in order to remain in OCM, due to the CMS mandate. The three additional practices that adopted two-sided risk by PP11 did so voluntarily.

The three levels of risk selection among remaining practices, and two broad cohorts of exiting practices, motivated five separate groups for our analysis, detailed in **Exhibit ES-2** below.

Exhibit ES-2: Five Subgroups of OCM Participants

Practice Subgroup	Number of Practices	Proportion of Episodes[a]	OCM Participation
Practices that terminated participation			
Early-Exiting Practices	24	4.0%	Terminated between PP3 and PP7
Late-Exiting Practices	53	18.9%	Terminated between PP8 and PP11
Practices active through the end of OCM – status in final performance period			
PBP Opt-Out	21	14.9%	Active through entire model, but opted out of financial reconciliation and performance measurement in PP8 as part of a COVID flexibility to avoid two-sided risk requirement
One-Sided Risk	77	28.3%	Active through entire model with one-sided risk
Two-Sided Risk	24	33.9%	Active through entire model with two-sided risk in at least one performance period

Source: OCM program data.

Notes: We assigned groups based on a practice's status in the final performance period. Two practices in the "two-sided risk" group had only one performance period under two-sided risk. Seven "late-exiting" practices participated through PP10 before exiting the model prior to the 11th and final performance period, including one practice that was under two-sided risk in PP8-9. Eight practices opted out of PBPs in PP8 and then opted back in to one-sided or two-sided risk before the end of the model: we assigned these practices to the group they were in as of the final performance period. Although the model included 202 unique practices, the five groups only sum to 199. Two practices exited the model and immediately rejoined with two new IDs, while one practice was acquired by another OCM participant and was incorporated under the new owner's existing ID. We therefore treated these six unique practices as three distinct entities for the purposes of assigning practices to subgroups

PBP = Performance-based payments. PP = Performance period.

[a]Refers to episodes in the OCM Evaluation analytic file, not episodes used for reconciliation. The analytic file included episodes attributed to practices after program exit.

Medicare Payments and Net Savings/Losses

OCM aimed to lower Medicare spending while maintaining or improving quality of care. The main measure of Medicare spending used in this evaluation is total episode payments (TEP), which includes total Medicare FFS payments incurred during an episode, but not MEOS or PBPs. Results from ***The Final Evaluation Report***, which included episodes attributed to practices after they had exited the model, showed that average reductions in TEP totaled $616 ($p<0.01$). In this report, we examine the impact of OCM on TEP for the five groups outlined above.

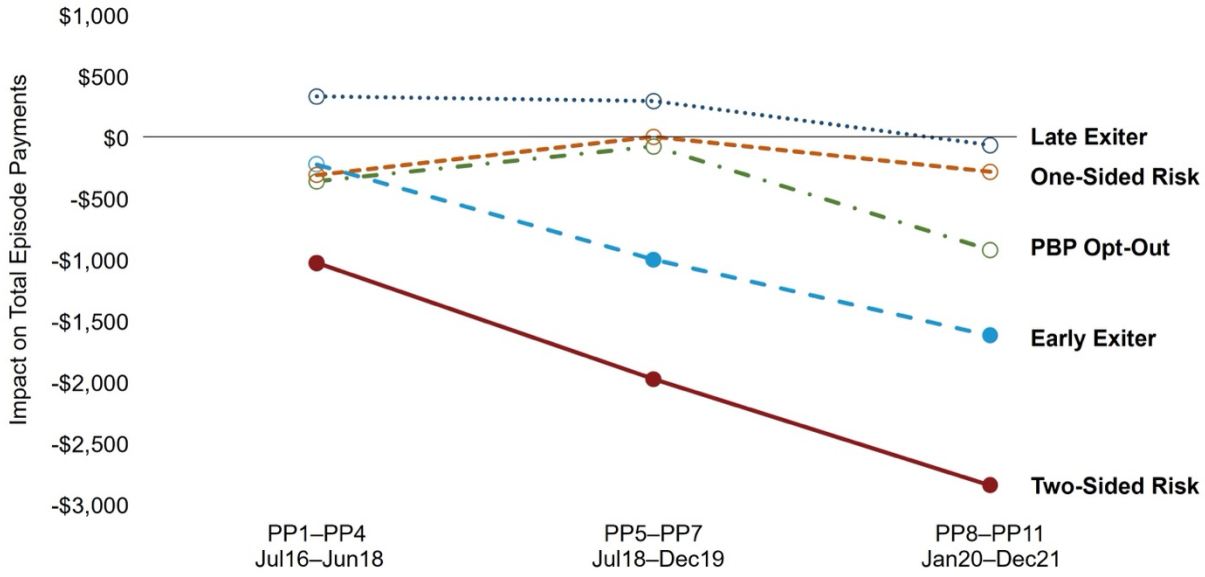
Practices that took on two-sided risk in the second half of the model accounted for most of the overall TEP reductions.

Practices with two-sided risk reduced TEP by $1,994 ($p<0.01$) on average, and this increased from $1,014 in the first two years of the model to $2,832 in the last two years of the model (**Exhibit ES-3**). Practices with one-sided risk and practices that opted out of PBPs but remained in OCM did not achieve significant reductions in TEP in any performance period.[3]

Practices with two-sided risk achieved significant reductions in payments for Part A ($453; $p<0.01$), Part B ($753; $p<0.01$), and Part D ($721; $p<0.01$). Practices with one-sided risk significantly reduced Part B payments, which were offset by (non-significant) increases in Part D payments. None of the other three groups reduced payments for Parts A, B, or D, on average.

Part D payment reductions are notable given that our aggregate findings from *The Final Evaluation Report* indicated that OCM did not reduce Part D payments overall. Results suggest that Part D payment increases among practices with one-sided risk may have offset some of the reductions achieved by practices with two-sided risk in the aggregate results.

Exhibit ES-3: Practices with Two-Sided Risk Achieved Significant TEP Reductions, Accounting for the Majority of Overall TEP Impacts



Source: Medicare claims 2014–2022. OCM program data.
Notes: Estimates with empty circles (○) indicate estimates that were not statistically significant, while solid circles (●) indicate statistically significant at $p<0.10$. Although early and late-exiting practices were no longer part of OCM after their exit from the model, we were still able to track outcomes relative to their original comparison groups. TEP = Total episode payments. PP = Performance period. PBP = Performance-

[3] Practices that exited early reduced TEP significantly over the last seven PPs. However, confidence intervals were large (e.g., impacts in PP8—11 had a 90—percent confidence interval of -$2,732, -$486), and early-exiting practices did not significantly reduce Part A, Part B, or Part D payments. Early-exiting practices accounted for only 4 percent of OCM volume, so their TEP impacts had only marginal influence on the aggregate results presented in *The Final Evaluation Report*.

After accounting for OCM MEOS and performance-based payments, practices with two-sided risk yielded net Medicare payment reductions in 10 of 11 performance periods, totaling $299.6M. All other groups of practices increased net payments (Exhibit ES-4).

Practices with two-sided risk achieved TEP reductions that covered the cost of MEOS in every performance period. Practices that opted out of PBPs covered MEOS costs in PP8-11. Practices that exited the model and practices that remained with one-side risk through the end of the model did not cover MEOS costs in any performance period.

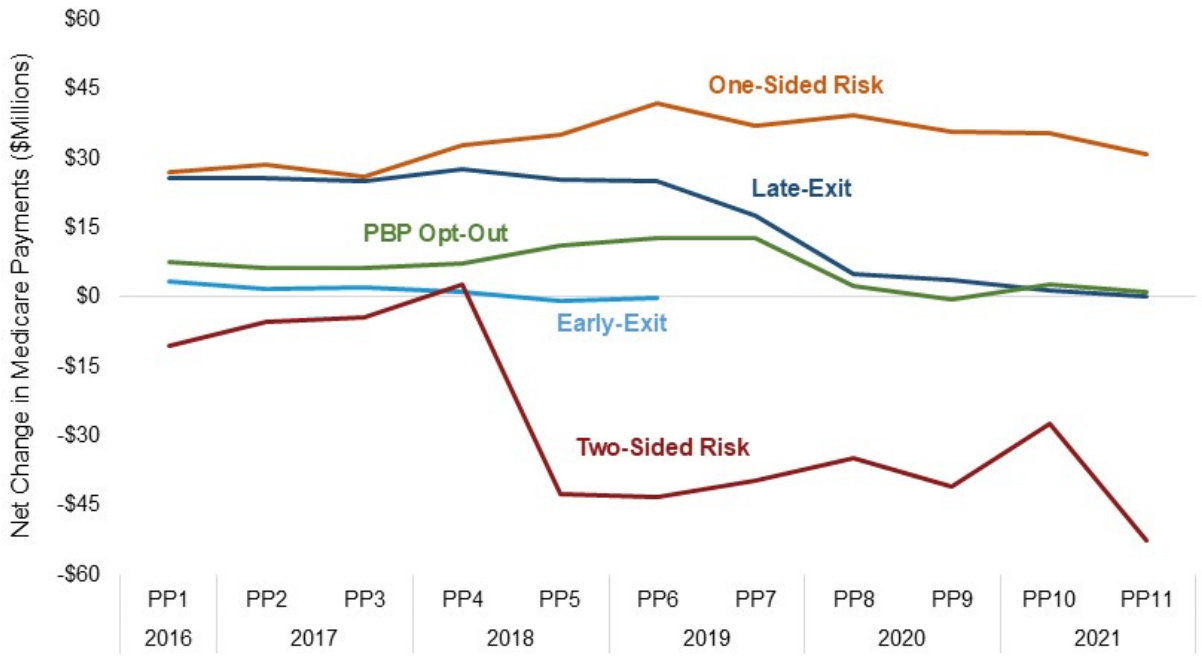
Utilization and Quality

OCM practices had financial incentives to reduce costly inpatient admissions and emergency department (ED) visits and were held accountable for ED visits that did not lead to hospitalization as part of the model quality measures. Care redesign activities required by the model, including patient navigation and care coordination, were intended to facilitate the use of appropriate outpatient care outside of the acute setting. OCM also held practices accountable for access to hospice at the end of life, and practices described efforts to improve this outcome during case studies.

Despite these incentives and reported efforts by participating practices to influence these outcomes, no practice subgroup reduced the probability of an inpatient admission or ED visit, and no practice subgroup had increases in the likelihood of timely hospice care receipt at the end of life.

The inability of the otherwise successful two-sided risk practices to affect these outcomes suggests that practices face challenges in influencing the utilization of hospital services and hospice use. At the same time, these findings also demonstrate that failure to influence these measures was not a barrier to financial success in the model.

Exhibit ES-4: Practices with Two-Sided Risk Were the Only Group to Achieve Net Medicare Savings; Net Costs Were Largest for Practices with One-Sided Risk



Source: Medicare claims 2014–2022 and OCM program data.
Notes: Some late-exiting practices did not terminate participation until PP11, which is why net cost calculations continue through the last performance period. PP: Performance period.
Net Costs to Medicare = (number of OCM episodes x estimated OCM impact on total episode payments) + monthly payments for enhanced services + performance-based payments

Practice Performance-Based Payments and Quality Scores

Practices were eligible for PBPs if they achieved quality goals and average total episode spending in a given performance period was below a set target price. OCM included several quality measures that were tied to PBPs: PBPs earned by OCM practices could be reduced if practices did not achieve at least 75 percent of possible points on the Aggregate Quality Score (a summary score across all quality measures).

Practices with two-sided risk earned the highest PBPs and were also most likely to achieve the quality-score threshold required to retain all PBPs earned.

Practices with two-sided risk averaged $754 per-episode in PBPs and achieved the quality benchmark 56 percent of the time. Practices with one-sided risk averaged $686 per-episode in PBPs and achieved the quality benchmark 48 percent of the time. That one-sided risk practices earned substantial PBPs (which required reducing payments below a benchmark level), but did not significantly reduce TEP or achieve net Medicare savings (which would have required reducing payments more than their matched comparison practices), suggests that there was a disconnect between performance against their benchmark and performance relative to their matched comparison group.

Practice Care Transformation

CMS gave practices wide latitude in meeting model requirements and pursuing higher quality. We analyzed clinician survey data to understand the extent to which OCM encouraged implementation or expansion of 20 different care processes related to clinical care, access to care, care coordination, routinely sharing elements of care plan with patients in writing, psychosocial health, and end-of-life care.

Among measures with statistically significant variability across groups, clinicians from two-sided risk practices were most likely to report adding or enhancing care processes in response to OCM, while clinicians from late exiting practices were least likely to report adding or enhancing processes.[4]

Specifically, clinicians from two-sided risk practices were significantly more likely to report restructuring their care team in response to OCM and adding or enhancing efforts to set aside slots for same-day appointments, educate all patients to "call us first," and routinely conduct screening for psychosocial distress.

Conclusion

Overall impact estimates across the entire model indicated that, on average, OCM reduced TEP by $616 ($p<0.01$). However, these estimates were based on data that included episodes from practices that exited before the end of the model and did not assess whether impacts varied based on the level of risk assumed by practices. Aggregate reductions in TEP were driven almost entirely by a subset of 24 practices that took on two-sided risk for at least one of the 11 performance periods. These practices reduced TEP by $1,994 ($p<0.01$), while practices that remained in one-sided risk or opted out of PBPs did not achieve significant reductions in TEP. Notably, practices with two-sided risk significantly reduced TEP early in the model and had achieved payment reductions of $1,964 before most practices switched from a one-sided to two-sided risk arrangement. This suggests that practices strategically selected into two-sided risk, because of the increase in upside gains associated with reducing TEP under a two-sided risk arrangement. Unfortunately, our results do not allow us to distinguish if the larger TEP reductions among two-sided risk practices in the last two years of OCM were due to the continuation of their prior efforts or a result of additional changes made by practices in response to increased model incentives.

Practices with two-sided risk earned the largest PBPs and were most likely to achieve the quality threshold required to retain all PBPs, demonstrating that payment reductions did not come at the expense of quality. However, despite achieving notably higher payment impacts, practices with two-sided risk did not reduce costly inpatient admissions or ED visits, nor did they increase receipt of timely hospice at the end of life.

Practices with two-sided risk achieved reductions in total episode spending that covered the cost of MEOS in all performance periods, and these practices generated net Medicare savings in 10 out of 11 performance periods, totaling $299.6M. All other practice categories yielded net Medicare losses in all 11 performance periods, offsetting the savings achieved by two-sided risk practices. Practices that opted out of PBPs did succeed in covering the cost of MEOS in the last two years of the model, but no other group of practices covered MEOS costs in any time period.

Clinicians from practices with two-sided risk were more likely than those in other groups to report implementing or enhancing care processes to improve quality and

[4] Early-exiting practices were excluded from the clinician survey results, since most practices in this group exited the model prior to the survey fielding period.

efficiency in response to OCM. These results suggest that the willingness and/or ability to revise care delivery processes in response to OCM may have been a key driver of success. Practices with two-sided risk were also larger on average, and more likely to be multi-specialty, though this was true of opt-out practices as well. The main practice characteristic that stood out for two-sided risk practices relative to other groups was lack of ownership by a hospital or health system, particularly ownership by a hospital or system with an academic affiliation. Practice independence may have contributed to the success of two-sided risk practices, although we cannot assess whether this characteristic was causally related to model success. If practice independence did contribute to success, our results do not suggest that this was a necessary condition for success, as not all two-sided risk practices were independent.

LESSONS LEARNED

Overall, the results presented in this report suggest several lessons learned beyond those identified in the *Final Evaluation Report*:

- **Practices can achieve rapid and sustained success in episode-based payment models, even without substantial reductions in the utilization of costly hospital-based care.** Even though practices with two-sided risk did not reduce the probability of costly emergency department visits or inpatient admissions, large payment reductions for Part B non-chemotherapy drugs and Part D drugs sufficed to reduce payments relative to a comparison group and earn substantial performance-based payments. Focusing on these outcomes may provide an initial pathway to success among participants in the Enhancing Oncology Model.
- **Episode-based oncology models have the potential to yield net savings for Medicare.** While OCM yielded net losses overall, practices that ultimately selected into two-sided risk achieved sufficiently large impacts to cover Monthly Enhanced Oncology Services and performance-based payments in 10 out of 11 PPs and covered the cost of Monthly Enhanced Oncology Services in all performance periods. Identifying the reasons for their success and disseminating them to other oncology practices may foster net savings under EOM or other future oncology models.
- **Measurable changes in acute care utilization remain elusive, even among practices with two-sided risk.** Although practices with two-sided risk achieved substantially higher payment impacts than the other practices while achieving high quality scores, these practices did not significantly reduce emergency department visits or inpatient admissions, nor did they improve timely access to hospice at the end of life.
- **Tackling chemotherapy costs remains a challenge, although there were encouraging findings for Part D spending among practices with two-sided risk.** We observed reductions in Part B non-chemotherapy drug payments in the whole population examined and Part D drug payments were reduced among practices that took on two-sided risk. However, none of the subgroups of practices examined reduced payments for Part B chemotherapy drugs, which comprised the largest component of total episode payments.

Background and Methods

The Centers for Medicare & Medicaid Services (CMS) operated the Oncology Care Model (OCM) to test whether fostering coordinated, and value-based cancer care could reduce Medicare payments and improve the quality of care for patients with cancer. OCM focused on Medicare fee-for-service (FFS) patients with cancer who underwent chemotherapy treatment.[5] OCM combined attributes of medical homes (patient-centeredness, accessibility, evidence-based guidelines, and continuous monitoring for improvement opportunities) with financial incentives to provide services efficiently and with high quality.[6,7] The six-year OCM began with six-month chemotherapy treatment episodes, starting on July 1, 2016, and operated for 11 consecutive six-month performance periods (PPs). The last episodes ended on June 30, 2022.

The goal of OCM was to use appropriately aligned financial incentives to enable improved care coordination, appropriateness of care, and access to care for beneficiaries undergoing chemotherapy. OCM featured a two-pronged financial incentive strategy to support enhanced services for patients and encourage practices to identify opportunities to lower treatment costs. First, practices were able to bill Medicare a $160 Monthly Enhanced Oncology Services (MEOS) fee the duration of the six-month episode, or up to $960 for each Medicare FFS beneficiary with a chemotherapy episode who was attributed to the practice. These MEOS payments were intended to support enhanced oncology services, including 24/7 clinician access, patient navigation, a documented care plan covering recommended items from the Institute of Medicine, adherence to nationally recognized clinical guidelines, and use of data for continuous quality improvement. Second, practices had the potential to receive performance-based payments (PBPs) if they were able to meet model cost and quality goals.

Through these enhanced services and financial incentives, CMS intended OCM to improve care quality, including more screening for pain and depression; improved patient-reported outcomes (care ratings, mental health, and symptom management); and more timely access to hospice care. CMS also intended for financial incentives to facilitate higher-value treatment choices (e.g., substituting less expensive alternatives with similar efficacy) that would directly lead to reductions in total episode payments (TEP). Lastly, OCM encouraged reductions in unnecessary emergency department (ED) visits and hospital stays, as well as reductions in high-intensity end-of-life care, which would both improve quality and reduce episode payments. CMS expected that as quality improved, reductions TEP, would yield net savings to Medicare over and above the cost of the incentive payments.

All participating OCM practices joined the model voluntarily and could terminate at any time throughout the life of the model. Initially all OCM practices were in a one-sided risk arrangement where practices could earn PBPs if episode payments were below the target amount but were not responsible for recoupment if their episode payments exceeded the target amount. Beginning in PP2 (early 2017), practices could voluntarily remain in a one-sided risk arrangement or adopt two-sided risk (see Box below). In exchange for taking on more risk, high-performing practices could earn a larger PBP under two-sided risk than under one-sided risk. Beginning at the start of 2020, two-sided risk was required for those practices that did not earn at least one PBP in the first two years of the model, or else CMS terminated their participation. Out of the 24 practices that ended the model in two-sided risk, 10 of them did so in 2020 to avoid program termination. Adoption of two-sided risk, which some practices opted into starting at the beginning of 2019, helped increase the PBPs earned by participants relative to prior performance periods.

[5] Chemotherapy is defined for OCM purposes as systemic therapies including cytotoxic chemotherapy, hormonal therapy, biologic therapy, immunotherapy, and combinations of these therapies.

[6] Demartino JK and Larsen JK. Equity in cancer care: pathways, protocols, and guidelines. J Natl Compr Canc Netw Oct. 1, 2012;10, Supplement 1:S1–S9.

[7] Page RD, Newcomer LN, Sprandino JD, et al. The Patient-Centered Medical Home in Oncology: From Concept to Reality. 2015 American Society of Clinical Oncology (ASCO) Educational Book.

ONCOLOGY CARE MODEL RISK ARRANGEMENTS

The model featured three risk arrangements for OCM practices and pools:

One-Sided Risk

Initially, all OCM practices and episodes had **a one-sided risk arrangement** with a **4-percent Medicare discount.** OCM practices received a performance-based payment if total expenditures for episodes (including Monthly Enhanced Oncology Services) were below the benchmark (i.e., the expected price for each episode after adjusting for trends and novel therapy use) minus 4 percent, and they achieved quality targets. Under one-sided risk, practices were not responsible if their total episode expenditures exceeded the benchmark. Practices could continue indefinitely in one-sided risk if they had earned at least one performance-based payment through the first two years of the model.

Two-Sided Risk

Beginning in 2017, practices could elect **a two-sided risk arrangement** with a **2.75-percent Medicare discount.** OCM practices received a performance-based payment if total expenditures for episodes were below the benchmark price minus 2.75 percent. They **were responsible** for expenditures that exceeded the benchmark minus 2.75 percent. Gains and losses were **capped at 20 percent of their average episode benchmark prices.**

Beginning in 2019, practices could elect an **alternative two-sided risk arrangement** with a **2.5-percent Medicare discount.** OCM practices received a performance-based payment if total expenditures for episodes were below the benchmark price minus 2.5 percent. They were responsible for repayment for expenditures that exceeded the benchmark. Notably, the 2.5 percent discount was applied when calculating performance-based payments but was not applied when calculating repayment amounts.

Out of 24 practices that ended the model in a two-sided risk arrangement, 22 adopted the alternative two-sided risk arrangement.

Performance-Based Payment Opt-Out

In June 2020, in response to the COVID public health emergency, CMS offered OCM practices the opportunity to avoid risk bearing altogether by opting out of performance-based payments, while continuing to receive Monthly Enhanced Oncology Services payments. Performance-based payment opt- out was applied retroactively to the start of 2020.

In June 2020 (near the end of PP8), CMS offered OCM practices the opportunity to opt out of PBPs in response to the COVID-19 public health emergency (PHE). Since this option was not offered until nearly six months after the start of mandatory two-sided risk, all but one practice that exercised this option had accepted mandatory two-sided risk for PP8 before opting out. The PBP opt-out subgroup in this report is thus primarily comprised of practices that did not earn PBPs in the first two years of the model, opted to take on two-sided risk rather than exit the model beginning in PP8, but then opted out of PBPs (rather than face two-sided risk) when given the opportunity to do so near the end of PP8.

Additional details about OCM are available on the CMS OCM website.

We previously summarized impacts for OCM in the *Final Evaluation Report*. Those results were based on all practices that had ever joined OCM, even if they terminated participation before the end of the model. This report additionally summarizes OCM impacts on payments, and the use of hospital-based and hospice care, stratified by the level of risk adopted among practices that remained in the model through the end, and by the timing of model exit for practices that did not remain. We also explore the relationship between participation status and practice success in the model, as measured by PBPs earned, and aggregate quality scores achieved.

1.1 Practice Participation Categories

Participation in OCM changed in response to model risk sharing requirements and COVID flexibilities.

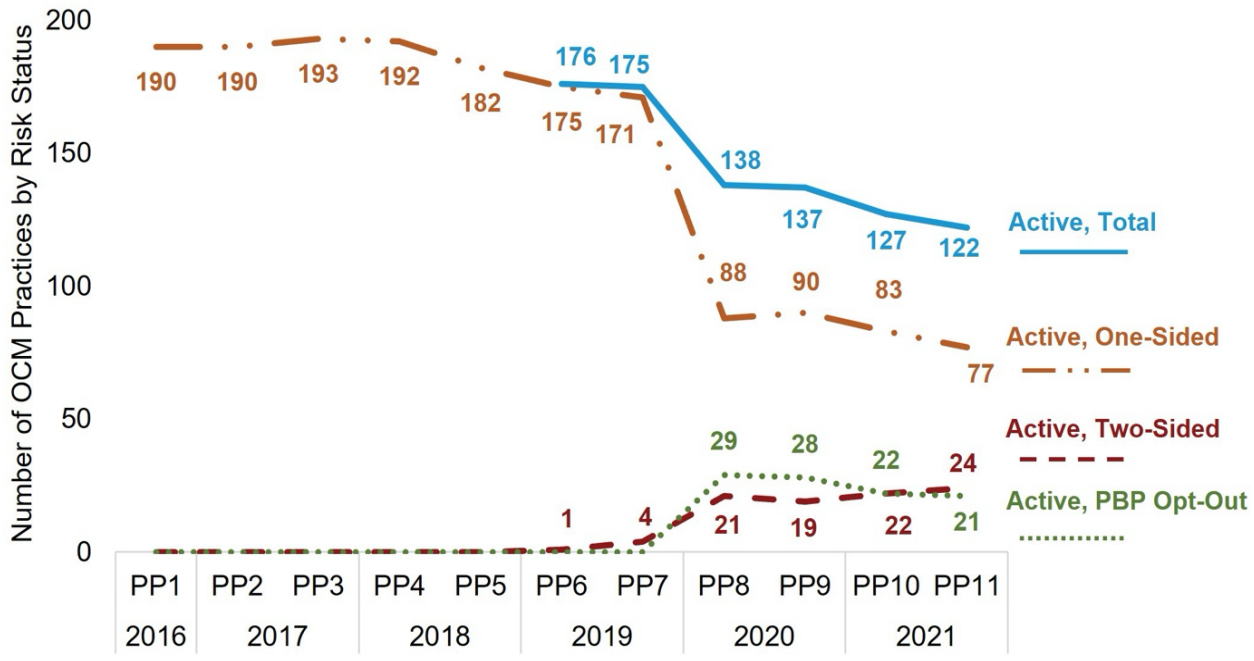
Exhibit 1 shows the status of OCM participants across each of the 11 performance periods covered in this report. A total of 202 unique practices joined OCM, and all OCM practices began participation in a one-sided risk status. Practices with one-sided risk could earn PBPs if total expenditures (including MEOS payments from CMS) were below the benchmark but were not responsible for recoupments if their total expenditures for episodes exceeded the benchmark.

Practices that were unable to earn at least one PBP by the end of PP4 (early 2018) were required to terminate participation by PP8 (early 2020) or take on two-sided risk effective in PP8.

Practices that believed they could succeed under two-sided risk were encouraged to select that risk status early in OCM. Because of the COVID-19 PHE, CMS offered a third option, beginning in 2020, where practices could continue to submit monthly bills for MEOS but waive their eligibility for any PBPs by opting out of financial reconciliation and performance measurement. By opting out of reconciliation, practices that otherwise would have been required to take two-sided risk were able to continue receiving the OCM MEOS payments, without concerns of owing a recoupment as they might have under the two- sided risk arrangement. Additional detail about two-sided risk and PHE-related flexibility are provided in **Chapter 1.2 of the *Final Evaluation Report***.

A total of 122 practices participated through the full model and concluded under one-sided risk, two-sided risk, or by opting out of PBPs (**Exhibit 1**). The remaining practices exited the model. Of practices that exited the model, 24 did so between PP3 and PP7. We refer to this group as **early exiting.** Interviews with these early-exiting practices indicated that the majority terminated due to difficulty meeting model requirements (in particular, lacking the capability to provide all enhanced oncology services), and reporting burden. An additional 53 practices exited in PP8 or later (the **late-exiting** group): 37 of these exited in the second half of 2019, before the PHE spurred CMS to offer the option to opt out of PBPs. Survey data confirmed that nearly all did so due to concerns related to two-sided risk. An additional 16 practices terminated participation after 2019, though we did not collect data from the practices about their reasons for leaving OCM at that time.

Exhibit 1: Over Half of OCM Practices Changed Their Participation Status or Risk Status in Performance Period 8



Source: OCM program data.

Notes: Active, one-sided practices are eligible for PBPs under one-sided risk (no repayments to CMS if total episode payments exceed benchmark target). Active, two-sided practices are eligible for PBPs under two-sided risk: potential earnings are higher, but practices repay CMS some amount if total payments exceed target. Active, PBP opt-out practices are those that exercised a COVID flexibility allowing them to receive monthly payments, but not be eligible for PBPs. Terminated practices are those that no longer participate in OCM. Prior to PP6, all active practices were in one-sided risk. PP: Performance period. PBP: Performance-based payment.

These patterns of risk selection and exit decisions motivated five separate groups for our analysis, detailed in **Exhibit 2** below. In total 77 practices (roughly 1 in 3) exited the model before OCM was complete, mostly in the last two years of the model. Of the remaining practices, the majority (77) remained in **one-sided risk**, while 24 ended the model in **two-sided risk** and 21 ended the model having opted out of PBPs altogether (the **PBP opt-out** group).

Despite accounting for just over 10 percent of participants, practices that took on two-sided risk accounted for roughly one in three attributed episodes – the plurality of attributed episodes (**Exhibit 2**). Practices that took on one-sided risk and practices that exited the model (early or late) each accounted for roughly one in four attributed episodes, with the remainder attributed to opt-out practices.

Exhibit 2: Five Subgroups of OCM Participants

Practice Subgroup	Number of Practices	Proportion of Episodes[a]	OCM Participation
Practices that terminated participation			
Early-Exiting Practices	24	4.0%	Terminated between PP3 and PP7
Late-Exiting Practices	53	18.9%	Terminated between PP8 and PP11
Practices active through the end of OCM – status in final performance period			
PBP Opt-Out	21	14.9%	Active through entire model, but opted out of financial reconciliation and performance measurement in PP8 as part of a COVID flexibility to avoid two-sided risk requirement
One-Sided Risk	77	28.3%	Active through entire model with one-sided risk
Two-Sided Risk	24	33.9%	Active through entire model with two-sided risk in at least one performance period

Source: OCM program data.

Notes: We assigned groups based on a practice's status in the final performance period. Two practices in the "two-sided risk" group had only one performance period under two-sided risk. Seven "late-exiting" practices participated through PP10 before exiting the model prior to the 11th and final performance period, including one practice that was under two-sided risk in PP8-9. Eight practices opted out of PBPs in PP8 and then opted back in to one-sided or two-sided risk before the end of the model: we assigned these practices to the group they were in as of the final performance period. Although the model included 202 unique practices, the five groups only sum to 199. Two practices exited the model and immediately rejoined with two new IDs, while one practice was acquired by another OCM participant and was incorporated under the new owner's existing ID. We therefore treated these six unique practices as three distinct entities for the purposes of assigning practices to subgroups. PBP = Performance-based payments. PP = Performance period.

[a]Refers to episodes in the OCM Evaluation analytic file, not episodes used for reconciliation. The analytic file included episodes attributed to practices after program exit.

1.2 Average Subgroup Characteristics

Appendix Exhibit A-1 summarizes average practice-level characteristics, and Exhibit A-2 summarizes the proportions of episodes covering patients from historically underserved populations, across each of the five participant subgroups.

Smaller, single-specialty practices that did not employ nurse practitioners or physician assistants were more likely to exit the model. Exit decisions did not appear to be correlated with the proportion of episodes for patients from historically underserved populations, affiliation with a hospital or health system, nor participation in an accountable care organization (ACO).

Relative to practices that remained through the end of OCM, both early- and late-exiting practices were:

- Less likely to be among the largest quartile of practices
- Less likely to be multi-specialty vs. single specialty
- Less likely to employ nurse practitioners or physician assistants

Two-sided risk practices were different from other practices on several key dimensions.

Among practices that participated through the end of OCM, there were several distinct patterns between opt-out practices, and those with one-sided or two-sided risk.

- Practices with two-sided risk were most likely to be independent versus hospital or system owned; opt-out practices were also more likely than those with one-sided risk to be independent.
    - Opt-out practices affiliated with another hospital or health system tended to be affiliated with academic hospitals/systems, while two-sided risk practices affiliated with another hospital or health system tended to be affiliated with non-academic hospitals/ systems.
- Opt-out practices were most likely to be in the largest quartile of practice size, though two-sided risk practices were still noticeably more likely to be in the largest size quartile than one-sided risk practices.
- Practices with two-sided risk and opt-out practices were similarly more likely than those with one-sided risk to be multi-specialty versus single specialty practices.
- Practices with two-sided risk were least likely to participate in an ACO.
- Practices with two-sided risk and opt-out practices treated lower proportions of dual-eligible patients, and patients from high-Area Deprivation Index neighborhoods than practices from the other three subgroups. Practices with two-sided risk also treated lower proportions of Black patients than the other subgroups.

These findings suggest that two-sided risk practices were different from other practices on several key dimensions, despite certain similarities to opt-out practices. Practices with two-sided risk were most likely to be independent (and rarely academically affiliated when not independent) and least likely to belong to an ACO. The independence of two-sided risk practices (particularly from the influence of academic hospitals/systems or ACOs) seems to be the key differentiator for these practices. While practices with two-sided risk were larger, more likely to be multi-specialty, and less likely to treat underserved populations than practices with one-sided risk, the same was true for opt-out practices as well, suggesting that those factors had less direct influence on decisions regarding risk level.

1.3 Methods

Appendix A of the *Final Annual Report* provides a detailed review of the key methods underlying this report, including data sources, episode attribution, comparison group selection, outcome specifications, and regression adjustment. To assess differences in impacts between OCM practices with one-sided and two-sided risk, we used a "difference-in-difference-in-differences" (DDD) approach, which compares multiple population-specific difference-in-difference estimates to one another. We provide additional detail regarding the DDD evaluation design in Appendix E-1 of the *Final Annual Report*. Net impact calculations are described in Section 2.3 of *The Final Annual Report*. Clinician survey data presented in this report were collected in mid-2018. A description of the survey data collection and analysis is presented in Appendix A of the *Performance Period 1-3 Evaluation Report*.

Did Impacts Vary by Practice Participation Category – Payment and Utilization

The Oncology Care Model (OCM) aimed to lower Medicare spending while maintaining or improving quality of care. The main measure of Medicare spending used in this evaluation is total episode payments (TEP), which includes total Medicare fee-for-service (FFS) payments attributed to an OCM episode, but not Monthly Enhanced Oncology Services (MEOS) payments or performance- based payments (PBPs).

Results from The Final Evaluation Report, which included episodes attributed to practices after they had exited the model, showed that average reductions in TEP totaled $616 ($p<0.01$). This was primarily attributable to Part B payment reductions (-$340; $p<0.01$), especially payments for non-chemotherapy drugs (-$288, $p<0.01$). Significant reductions in Part A payments contributed as well (-$176; $p<0.01$). Results from The Final Evaluation Report showed no overall reduction in Part D payments, though there was evidence of payment reductions in the last few performance periods (PPs).

Although OCM significantly reduced Part A and B payments, we found no significant impact of OCM on the probability of an emergency department (ED) visit not leading to inpatient admission, nor on the probability of an inpatient admission – two substantial components of Part B and Part A payments, respectively. Similarly, we found no impact on the probability that a patient received at least three days of hospice care at the end of life, despite OCM quality measures directly incentivizing increased access to timely hospice care at the end of life.

Although OCM achieved overall payment reductions of $616 per episode, the model resulted in net losses of $639M as PBPs and MEOS payments exceeded gross savings attributable to the model.

In this chapter, we examine impacts stratified by practice participation subgroup, to understand whether practices that remained in OCM achieved different impacts relative to practices that exited, and to understand the extent to which OCM impacts may vary by selected risk category among practices that were active through the end of OCM. We also present stratified net payment calculations to understand how exit and risk-selection decisions may have affected net Medicare payments within each subgroup.

KEY FINDINGS

Key objectives for OCM included reducing Medicare payments, use of unnecessary emergency department and inpatient services, and better access to hospice care at the end of life. Impacts among the five groups of OCM practices are summarized below.

Practices with at least one performance period in two-sided risk drove aggregate impacts.

Practices with two-sided risk reduced total episode payments by $1,994 ($p<0.01$) on average, and this increased from $1,014 in the first two years of the model to $2,832 in the last two years of the model. Practices with one-sided risk, and practices that opted out of performance-based payments but remained in OCM, did not achieve significant reductions in total episode payments in any time period.

All practices that remained eligible for performance-based payments (one-sided or two-sided risk) significantly reduced Part B payments, primarily through reductions in Part B non-chemotherapy drugs.

Practices with two-sided risk reduced Part B payments by $753 ($p<0.01$), of which $495 was attributable to reductions in non-chemotherapy drugs ($p<0.01$). Practices with one-sided risk reduced Part B payments by $402 ($p<0.05$), of which $302 was attributable to reductions in non-chemotherapy drugs ($p<0.01$). Neither group reduced payments for Part B chemotherapy even though this was the largest component of total episode payments.

Practices with two-sided risk were the only group to reduce Part D payments.

Practices with two-sided risk reduced Part D payments by $721 ($p<0.01$) driven by reductions in payment for lung cancer, multiple myeloma, and chronic leukemia episodes. Part D payment increases of $252 (non-significant) for practices with one-sided risk offset most of the Part B payment reductions for this subgroup: relatively greater Part D payments relative to their comparison group account for the lack of significant total episode payments reductions among these practices.

Practices with two-sided risk yielded large net savings, while all other practices increased net costs.

In total, practices with two-sided risk yielded net payment reductions of $299.6M. OCM yielded net payment increases in each of the other groups, totaling $369.5M for one-sided practices, $69.7M for opt-out practices, $182.3M for late-exiting practices, and $7.3M for early-exiting practices.

Practices with two-sided risk achieved net savings in 10 of 11 performance periods and covered the cost of Monthly Enhanced Oncology Services (MEOS) payments in all 11. Opt-out practices covered MEOS in PP8-11, while practices with one-sided risk did not cover MEOS costs in any performance period.

No group of practices reduced the probability of an emergency department visit or inpatient admission, nor did any improve the likelihood of receiving timely hospice care at the end of life.

2.1 Stratified Payment Impacts

Most TEP reductions attributable to OCM were driven by practices with two-sided risk (Exhibit 3).

Practices with two-sided risk reduced TEP by an average of $1,994 (6.7%) across all 11 performance periods (p<0.01). Practices that remained in one-sided risk or opted out of PBPs did not significantly reduce TEP.

Practices that exited early reduced TEP by $788 (2.8%) during OCM (p<0.10). Given that these practices only accounted for 4 percent of OCM episode volume, these notable reductions would contribute only marginally to the aggregate estimate reported in The Final Evaluation Report. Moreover, we interpret these reductions with caution given wide 90 percent confidence intervals ($1,479 to $97).

Exhibit 3: Two-sided Risk Practices Achieved the Largest TEP Reductions

Practice Subgroup	PP1-PP11 OCM Impact on TEP Relative to Comparison Group	Size of Impact
Early-Exiting Practices	-$788	2.8% of baseline
Late-Exiting Practices	$181	0.6% of baseline
PBP Opt-Out	-$479	1.6% of baseline
One-Sided Risk	-$209	0.7% of baseline
Two-Sided Risk	-$1,994	6.7% of baseline

Shading indicates statistically significant estimates at p≤0.01, p≤0.05, and p≤0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022. OCM program data.
Notes: TEP: Total episode payment. PP: Performance period.

Practices with two-sided risk reduced payments for Part A, Part B, and Part D (Exhibit 4).

Practices with two-sided risk reduced Part A payments by $453 (p<0.05), Part B payments by $753 (p<0.05), and Part D payments by $721 (p<0.05). Practices with one- sided risk achieved Part B payment reductions of $402 (p<0.05), although these were mostly offset by (non- significant) increases in Part D payments. No other group of practices reduced payments for Part D.

To assess trends in outcomes over the life of the model (particularly as practices began to exit the model) we estimated TEP impacts over three distinct phases of the model (**Exhibit 5**).[8]

- Phase 1: PP1–PP4 indicates the period when nearly all practices were active. PP4 was the deadline to earn at least one PBP to avoid a mandatory shift to two-sided risk beginning in PP8.
- Phase 2: PP5–7 captures the middle period when most practices were still active and in one-sided risk, before changes in risk track and potential disruptions from the COVID-19 public health emergency (PHE).[9]
- Phase 3: PP8–11 captured the period most directly influenced by the COVID-19 PHE (which began in the middle of PP8), and also captured the period where the majority of practices left one-sided risk arrangements to either take on two-sided arrangements, opt out of PBPs altogether, or exit the model.

Practices with two-sided risk achieved substantial reductions in the first two years of the model and impacts nearly tripled over time.

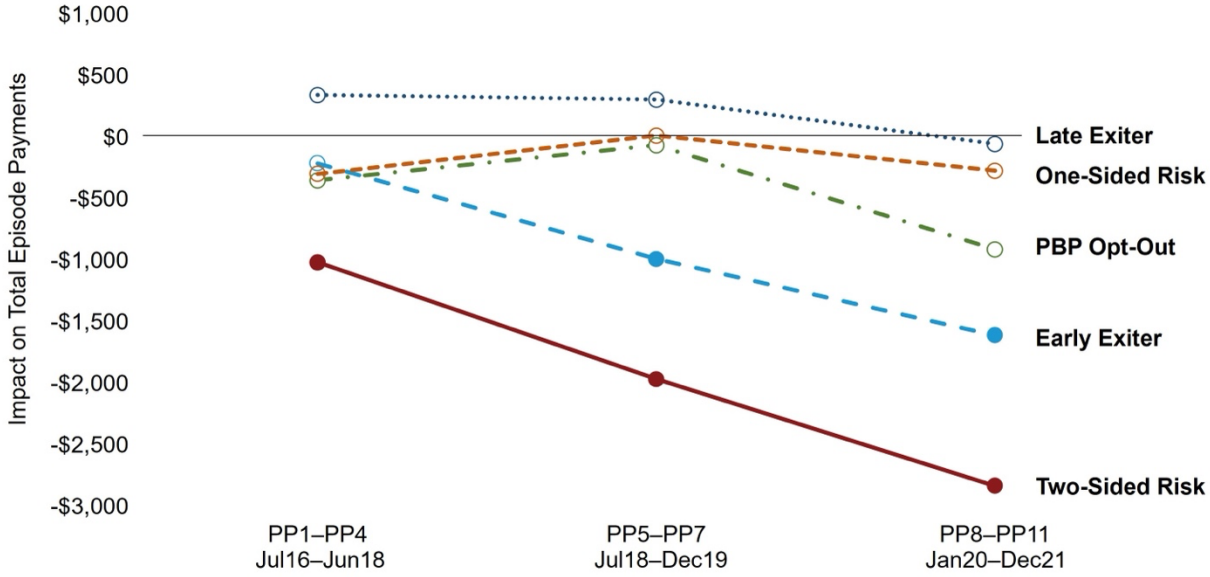
Results show that practices with two-sided risk achieved reductions in TEP relative to their corresponding comparison group of $1,015 (p<0.01) in PP1–4, increasing to $1,964 (p<0.01) in PP5–7, and $2,832 (p<0.01) in PP8–11. The trend of increasing. TEP reductions over time for practices that took two-sided risk indicates that practices continued identifying successful strategies for reducing TEP over time, which may have been accelerated by taking two-sided risk.

[8] We did not have sufficient sample size to disaggregate each of the five groups across 11 individual PPs.
[9] Episodes initiated in PP7 could overlap with the PHE but were not as directly affected as later periods.

Exhibit 4: Practices that Took Two-Sided Risk Reduced Payments for Parts A, B, and D

Shading indicates statistically significant estimates at p≤0.01, p≤0.05, and p≤0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022. OCM program data.
Notes: PBP = Performance-based payments. ^ indicates outcome did not pass baseline parallel trends and should be interpreted with caution.

Exhibit 5: Practices with Two-Sided Risk Achieved Significant TEP Reductions in the First Two Years, and Were the Primary Drivers of TEP Impacts



Source: Medicare claims 2014–2022. OCM program data.
Notes: Estimates with empty circles (○) indicate estimates that were not statistically significant, while solid circles (●) indicate significant at p<0.10. Although early and late exiting practices were no longer part of OCM after their exit from the model, we were still able to track outcomes relative to their original comparison groups. PP = Performance period. PBP = Performance-based payments.

Early-exiting practices achieved significant TEP reductions after leaving OCM.

This was despite not receiving MEOS payments and not being subject to PBPs and corresponding quality measures. These practices had fairly large 90 percent confidence intervals (e.g., impacts in PP8-11 had a 90 percent confidence interval of -$2,732, -$486). These practices did not significantly reduce Part B or D payments in any phase of the model, and only significantly reduced Part A payments (p<0.10) in the final two years (**Appendix Exhibits** B-6 to B-8). These practices also contributed a relatively small number of episodes (roughly 4 percent) to the aggregate total, so the influence of these practices on the aggregate TEP findings is small.

No other practice subgroup achieved significant TEP reductions in any period analyzed.

The results suggest that PBP opt-out practices were trending towards TEP reductions in the last two years of OCM, but the estimated impact for that period is non-significant. Late-exiting and active one-sided practices showed no evidence of reductions relative to their corresponding comparison groups.

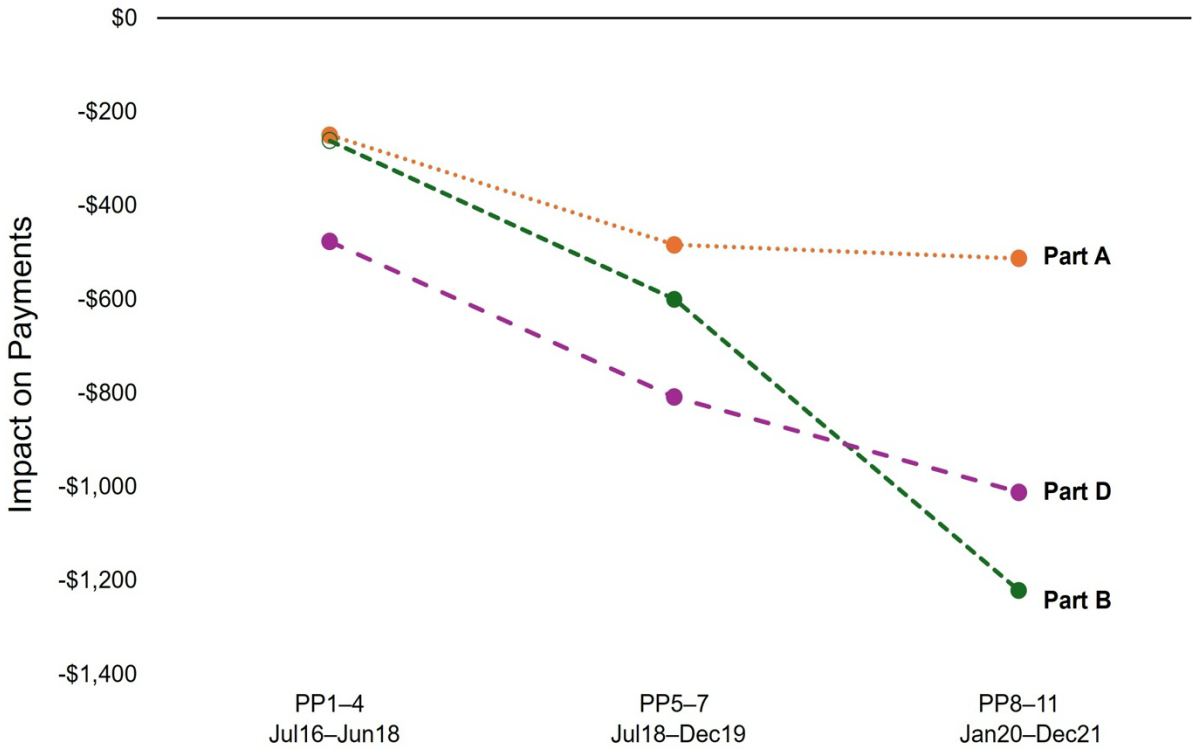
Growth in TEP impacts among practices with two-sided risk corresponded with growth in impacts across Parts A, B, and D (Exhibit 6).

Part B payments contributed the most to growth in TEP impacts, particularly in the last two years of OCM (PP8–11). Part B payment reductions grew from $262 (not significant) to $1,222 (p<0.01). Part D payment reductions also grew notably from $477 (p<0.01) to $1,017 (p<0.01). Part A payment reductions grew from $250 (p<0.10) to $513 (p<0.01), though nearly the entire increase in impact occurred by PP5–7.

Two-sided and one-sided risk r through reduced payments for non-chemotherapy drugs (Exhibit 7).

Out of the total $753 in reduced Part B payments attributable to two-sided risk practices, $395 in payment reductions were for non-chemotherapy drugs (p<0.01). Out of the $402 in Part B payment reductions attributable to one-sided risk practices, $302 in payment reductions were for non-chemotherapy drugs (p<0.01). Practices with two-sided risk significantly reduced payments for administration of chemotherapy (-$39, p<0.05) and for imaging (-$36, p<0.05) but significantly

Exhibit 6: Among Two-Sided Risk Practices, Payment Reductions for Part B and D Grew Consistently Throughout OCM, While Part A Payment Reductions Flattened After PP4



Source: Medicare claims 2014–2022. OCM program data.
Notes: Estimates with empty circles (○) indicate estimates that were not statistically significant, while solid circles (●) indicate significant at p<0.10. PP: Performance period.

increased payments for labs ($32, p<0.05). Practices with one-sided risk also significantly reduced payments for imaging (-$26, p<0.05) but did not significantly impact any other subcomponent of Part B payments.

Neither group reduced Part B chemotherapy payments, consistent with aggregate findings from The Final Evaluation Report. However, it is notable that two-sided risk practices failed to do so despite large impacts, including in areas where no other group succeeded (e.g., substantial Part D payment reductions).

As shown in the final column of **Exhibit 7**, Part B payment impacts were not significantly different between two-sided and one-sided risk practices, and differences in impacts for Part B payment components were modest, and generally insignificant. Two exceptions included payments for chemotherapy administration, which had significantly larger reductions among two-sided risk practices relative to one-sided risk, while payments for labs had significantly larger increases among two-sided risk practices.

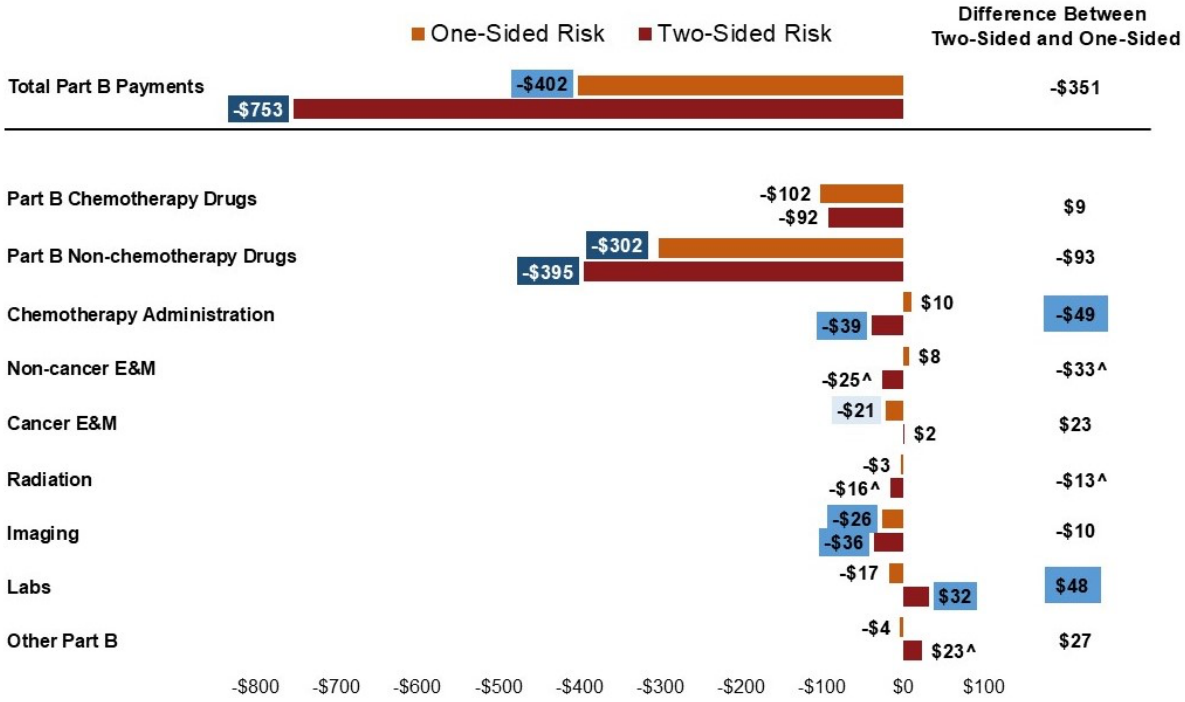
Part D payment reductions achieved by two-sided risk practices were driven by three cancer types: lung cancer, multiple myeloma, and chronic leukemia (Exhibit 8).

Practices with two-sided risk decreased Part D payments for lung cancer by $1,486 (p<0.10), for multiple myeloma by $1,711 (p<0.05), and for chronic leukemia by $2,819 (p<0.01). Two-sided risk practices also decreased Part D payments for low-risk breast cancer by $74 (p<0.10), although this reduction is relatively small compared to the overall Part D impact, suggesting it was not a key driver of Part D impacts.

Practices with one-sided risk significantly increased Part D payments for non-reconciliation eligible cancers and high-intensity prostate cancer.

As shown in **Exhibit 8**, Part B payment reductions among one-sided risk practices were offset by increased Part D payments. Practices with one-sided risk did not significantly reduce Part D payments for any cancer type, and significantly increased payments by $1,067 (p<0.10) for non-reconciliation eligible cancers and by $1,415 (p<0.05) for high-intensity prostate cancer. Although other differences were not significant, increases of over $1,000 per episode for multiple myeloma and chronic leukemia suggest that Part D payments may have increased for other high-volume cancer types as well for episodes attributed to these practices.

Exhibit 7: Among Two-Sided Risk Practices, Payment Reductions for Part B and D Grew Consistently Throughout OCM, While Part A Payment Reductions Flattened after PP4



Shading indicates statistically significant estimates at p≤0.01, p≤0.05, and p≤0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022. OCM program data.
Notes: E&M: Evaluation and management. ^ indicates outcome did not pass baseline parallel trends and should be interpreted with caution.

Exhibit 8: Part D Payment Reductions by Two-Sided Risk Practices Primarily Driven by Lung Cancer, Multiple Myeloma, and Chronic Leukemia

	Active One-Sided (A)	Active Two-Sided (B)	Differential (A-B)
Cancer Type			
Low-Risk Breast Cancer	$109^ (19.6%)	-$74 (-14.1%)	-$183
High-Risk Breast Cancer	-$14 (-0.2%)	-$373 (-5.3%)	-$359
Low-Intensity Prostate Cancer	$32 (8.9%)	-$114 (-30.8%)	-$147
Lung Cancer	$552 (17.8%)	-$1,486 (-39.3%)	-$2,038
Lymphoma	-$420 (-5.8%)	-$823 (-11.5%)	-$403
Colorectal/Small Intestine Cancer	-$170 (-6.4%)	$172 (7.0%)	$342
Multiple Myeloma	$1,094 (4.1%)	-$1,711 (-6.3%)	-$2,805
Non-Reconciliation Eligible Cancers	$1,067 (8.3%)	$279 (1.9%)	-$789
High-Intensity Prostate Cancer	$1,415 (7.7%)	-$311 (-1.6%)	-$1,726
Chronic Leukemia	$1,285 (4.5%)	-$2,819 (-9.9%)	-$4,104

Shading indicates statistically significant estimates at p≤0.01, p≤0.05, and p≤0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022. OCM program data.
Note: ^Indicates outcome did not pass baseline parallel trends test and results should be interpreted with caution. The category "non-reconciliation eligible cancers" refers to cancer types that were not eligible for performance-based payments, because baseline volumes were too low to calculate accurate benchmarks. These cancers were still eligible for Monthly Enhanced Oncology Services Payments.

2.2 Stratified Net Payments

We calculated net savings or losses to Medicare over the life of the model (PP1 through PP11) for each of the five practice categories. We also examined whether savings generated from TEP reductions covered the costs of MEOS (excluding PBPs) for any of the practice categories.

Practices with two-sided risk yielded large net savings, while all other practices increased net costs (Exhibit 9).

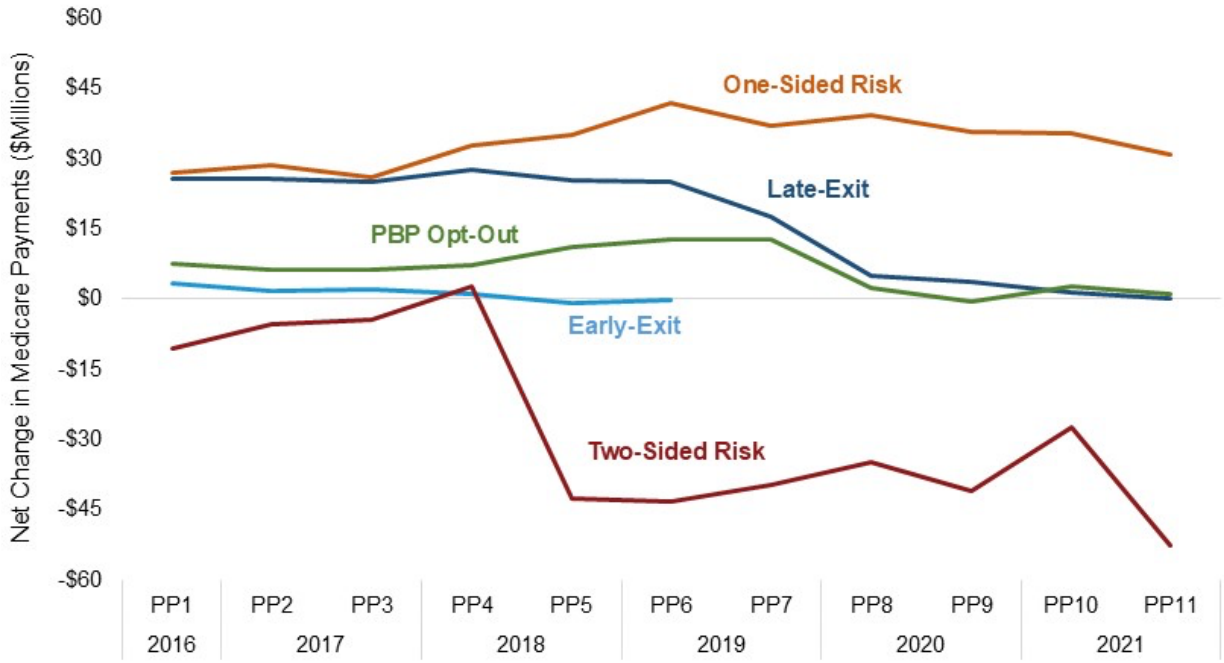
In total, practices with two-sided risk yielded net payment reductions of $299.6M. OCM yielded net payment increases in each of the other groups, totaling $369.5M for one-sided risk practices, $69.7M for opt-out practices, $182.3M for late-exiting practices, and $7.3M for early-exiting practices.

Practices with two-sided risk achieved net savings in 10 of 11 PPs, while practices with one-sided risk had net losses in all 11 PPs.

Practices with two-sided risk covered the full cost of MEOS and PBPs beginning in PP1, achieving net savings of $10.5M (**Exhibit 10**). These practices yielded net losses of $2.8M in PP4 but achieved net savings in excess of $27M in PP5–11, with a maximum of $52.6M in PP11. Practices with one-sided risk lost $26.9M in PP1 and $31.0M in PP11, with a maximum loss of $41.7M and a minimum loss of $26.1M (**Exhibit 11**).

Opt-out and late-exiting practices had decreasing losses over time, as practices exited or opted out of PBPs, and as opt-out practices achieved greater TEP reductions in PP8-11. Early exiting practices achieved net savings of <$1M in PP5 and PP6.

Exhibit 9: Practices with Two-Sided Risk Were the Only Group to Achieve Net Medicare Savings; Net Costs Were Largest for Practices with One-Sided Risk

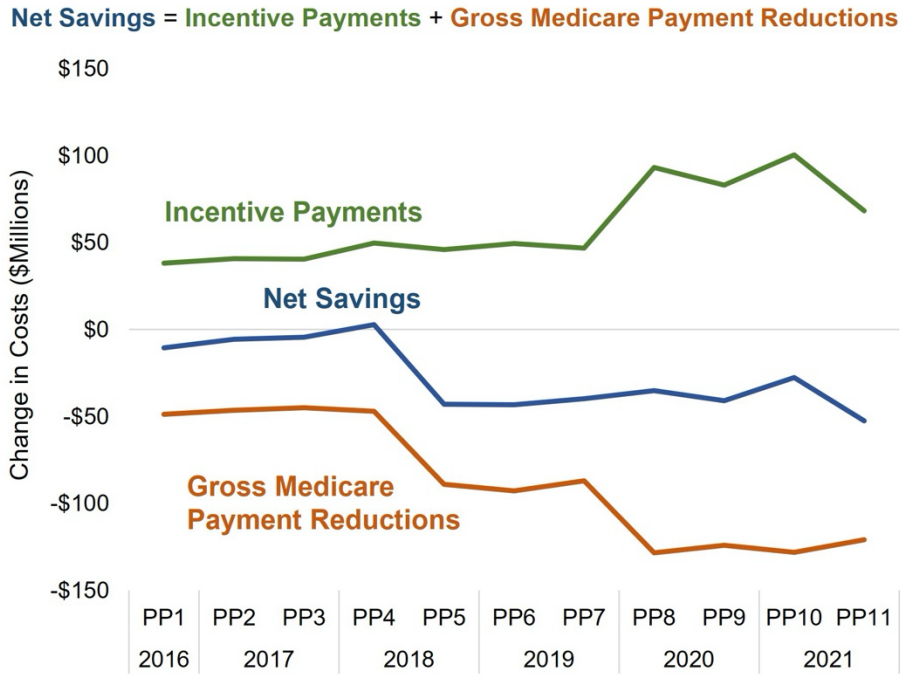


Source: Medicare claims 2014–2022 and OCM program data.

Notes: Some late-exiting practices did not terminate participation until PP11, which is why net cost calculations continue through the last performance period. PP: Performance period.

Net Costs to Medicare = (number of OCM episodes x estimated OCM impact on total episode payments) + monthly payments for enhanced services + performance-based payments

Exhibit 10: Practices with Two-Sided Risk Achieved Sufficient Medicare Payment Reductions to Yield Net Savings to Medicare in All but One Performance Period, Despite Outlays for Performance-Based Incentive Payments



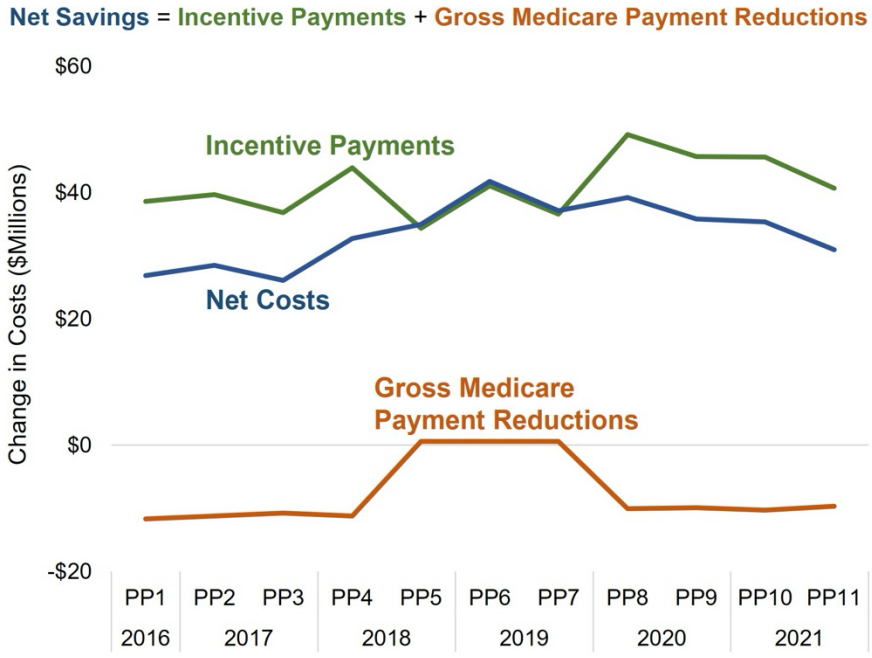
Gross Medicare payment reductions nearly tripled over time

Performance-based **incentive payments** increased sharply in PP8 due to higher payment reductions and model policy changes, but decreased in later periods

Reductions in Medicare payments exceeded **incentive payments** in every PP but one, resulting in **net savings to Medicare**

Source: Medicare claims 2014–2022 and OCM program data.
Notes: Incentive payments included $160 per-beneficiary in Monthly Enhanced Oncology Services payments, as well as performance-based payments for achieving payment and quality thresholds. Gross payment reductions were equal to the average reduction in total episode payments multiplied by the total number of episodes. PP: Performance period.

Exhibit 11: Practices with One-Sided Risk Yielded Net Costs to Medicare in All Performance Periods



Gross Medicare payment reductions were small, and even negative at times (i.e., payment increases)

Performance-based **incentive payments** increased in PP8 due to model policy changes

Incentive payments exceeded **reductions in Medicare** payments in all performance periods, yielding **net costs to Medicare**

Source: Medicare claims 2014–2022 and OCM program data.
Notes: Incentive payments included $160 per-beneficiary in Monthly Enhanced Oncology Services payments, as well as performance-based payments for achieving payment and quality thresholds. Gross payment reductions were equal to the average reduction in total episode payments multiplied by the total number of episodes. PP: Performance period.

One-sided risk practices did not cover the cost of MEOS in any performance period. Opt-out practices covered monthly payments in PP8-11.

As shown in **Section 2.1**, practices with one-sided risk did not achieve statistically significant payment reductions, overall, or in any of the three time periods we analyzed, and MEOS payments thus exceeded TEP reductions by roughly $15M-$30M in each performance period. While TEP reductions were likewise not statistically significant for opt-out practices, non-significant reductions of $909 per episode in PP8-11 were sufficient to cover the cost of MEOS (See **Appendix B-9** for detailed findings).

2.3 Stratified Utilization and End-of-Life Care

We present full results for measures of utilization and hospice use at the end of life in **Appendix Exhibits B-10** to **B-13**. Our results showed no changes in the probability of an inpatient admission or an emergency department (ED) visit without admission, nor in the number of admissions or ED visits, for OCM practices in any of the five subgroups we analyzed. Likewise, there were no impacts in any subgroup on the probability of a hospice stay of three or more days.

2.4 Discussion

Pooled estimates from The Final Evaluation Report indicated that OCM reduced average TEP by $616 (2.1 percent) per episode, on average. Our stratified impact estimates suggest that practices with two- sided risk were the primary drivers of those payment reductions. These practices reduced TEP by an average of $1,994 (6.7 percent of baseline) across the entire performance period, with reductions averaging $2,832 (9.5 percent of baseline) in the last two years of the model. While other groups of practices managed to reduce Part B payments, particularly through reductions in payments for Part B non-chemotherapy drugs, no other group significantly reduced Part A or Part D payments.

Practices with one-sided risk, the majority of OCM practices, did not achieve significant TEP reductions, overall, or for any of the three periods of the model we analyzed. While these practices did achieve significant reductions in Part B payments, these were offset by large (but non-significant) increases in Part D payments. Notably, practices that remained in one-sided risk arrangements had to earn at least one PBP by PP4 in order to avoid mandatory two-sided risk. That these practices did not significantly reduce TEP relative to their comparison group across PP1-4 indicates that modest payment reductions achieved by these practices were matched by similar reductions in the comparison group.

We also found evidence that practices that exited prior to PP8 achieved significant reductions in TEP. These practices reported that a primary reason for exiting the model was difficulty meeting model requirements, and reporting burden. Results for these practices should be interpreted with caution given that reductions in Part A, B, and D payments were all non-significant, and small sample sizes yielded large confidence intervals. Ultimately, despite the reduction, this group contributed little to our aggregate estimate, since these practices comprised just 4 percent of OCM episodes in the analytic sample.

Late-exiting practices and practices that opted out of PBPs did not achieve TEP reductions, nor significant reductions in Part A, B, or D payments. Nearly all practices in these two groups failed to earn PBPs in the first two years of the model and would have been required to take on two-sided risk. Lack of payment impacts for these two groups suggest that decisions to exit the model or opt out of PBPs when faced with a two-sided risk arrangement were based on practices' accurate assessment of their likelihood of achieving financial success.

Practices with two-sided risk earned net savings beginning in PP1 that reached over $52.5M by PP11. In total, these practices saved Medicare $299.6M over the course of the model. These savings were offset by net increases in the other four groups. In particular, practices with one-sided risk failed to earn net payment reductions in any performance period and incurred net losses of $369.5M. Net losses attributable to other practices only fell over time as they exited the model or opted out of PBPs. While opt-out practices covered MEOS payments from PP8-11, no other participant category managed to achieve this (except for two-sided risk practices that covered MEOS payments and PBPs combined).

OCM practices had strong financial incentives to avoid costly hospitalizations and ED visits. They were also held accountable for ED visits that did not lead to hospitalization as part of the model quality measures. Despite financial incentives and demonstrated efforts to influence these outcomes on the part of participating practices, no subgroup reduced the probability of an ED visit or inpatient admission. While it is notable that even two-sided risk practices failed to reduce the utilization of hospital-based care, these findings demonstrate that challenges in reducing the use of hospital-based services were not a barrier to success in the model. Practices with two-sided risk achieved substantial reductions in TEP through reductions in payment for Part B non-chemotherapy drugs and Part D drugs.

Lastly, OCM held practices accountable for access to hospice at the end of life, and practices described efforts to improve this outcome during case studies. However, no practice subgroup increased timely hospice care receipt for patients at the end of life. Interviews with participants highlighted several challenges in changing hospice use patterns, for both oncologists and patients, including: personal preference, lack of caregiver support, religious beliefs, cultural influences, and interests in experimental treatments. Our results highlight the difficulty of overcoming these challenges, even among the most successful and motivated practices.

Did Quality and Performance-Based Payments Vary by Practice Participation Category, and How Did This Relate to Care Transformation Activities?

From the perspective of participants, reductions in total episode payments (TEP) primarily matter to the extent that they translate to performance-based payments (PBPs). PBPs thus serve as a measure of success in the model from participants' perspective. OCM included several quality measures that were tied to PBPs, and failure to achieve quality benchmarks could result in financial penalties in the form of reduced PBPs. According to the ***Participants' Perspective Report***, achieving person-centered care improvements was also cited by nearly two-thirds of practices interviewed as their main reason for participating in OCM. Quality thus serves as an additional measure of success from the practices' perspectives.

CMS gave practices wide latitude in meeting model requirements and pursuing higher quality care delivery. In the second half of this chapter we summarize results originally presented in ***Evaluation of the Oncology Care Model: Performance Periods 1–3*** detailing some of the ways in which clinicians from practices in each participation category reported implementing care redesign efforts. Assessing which practices made the most change in response to OCM, and understanding what processes they focused on changing, allows us to better understand potential drivers of the differences in impacts between practices with two-sided risk and practices in the other four groups.

3.1 Results of Descriptive Quality and Performance-Based Payment Analyses

Practices eligible for PBPs through the end of OCM (one-sided or two-sided) were more likely to beat their target price and earned substantially larger PBPs than practices that exited OCM or opted out of PBPs (Exhibit 12).

Active two-sided risk practices earned the largest PBPs, averaging $754 per episode, with one-sided risk practices close behind at $686 per episode. Practices that exited the model or opted out of PBPs earned less than $200 per episode. Active two-sided risk practices were also the most likely to beat their target price (the average practice beat their target price in 56 percent of eligible performance periods), with active one-sided risk practices beating their target in 47 percent of eligible performance periods, on average. Practices that opted out of PBPs only beat their target price 15 percent of the time, and late-exiting practices only beat their target price 18 percent of the time. The higher likelihood of beating their target price among practices with one- or two-sided risk suggests that higher average PBPs for these practices were not driven by a handful of high-earning practices, but by a higher likelihood of earning PBPs across-the-board.

KEY FINDINGS

OCM requirements including for monthly enhanced oncology services payments were intended to transform the way practices delivered care to lead to better care quality. OCM included several quality measures that were tied to performance-based payments, including:

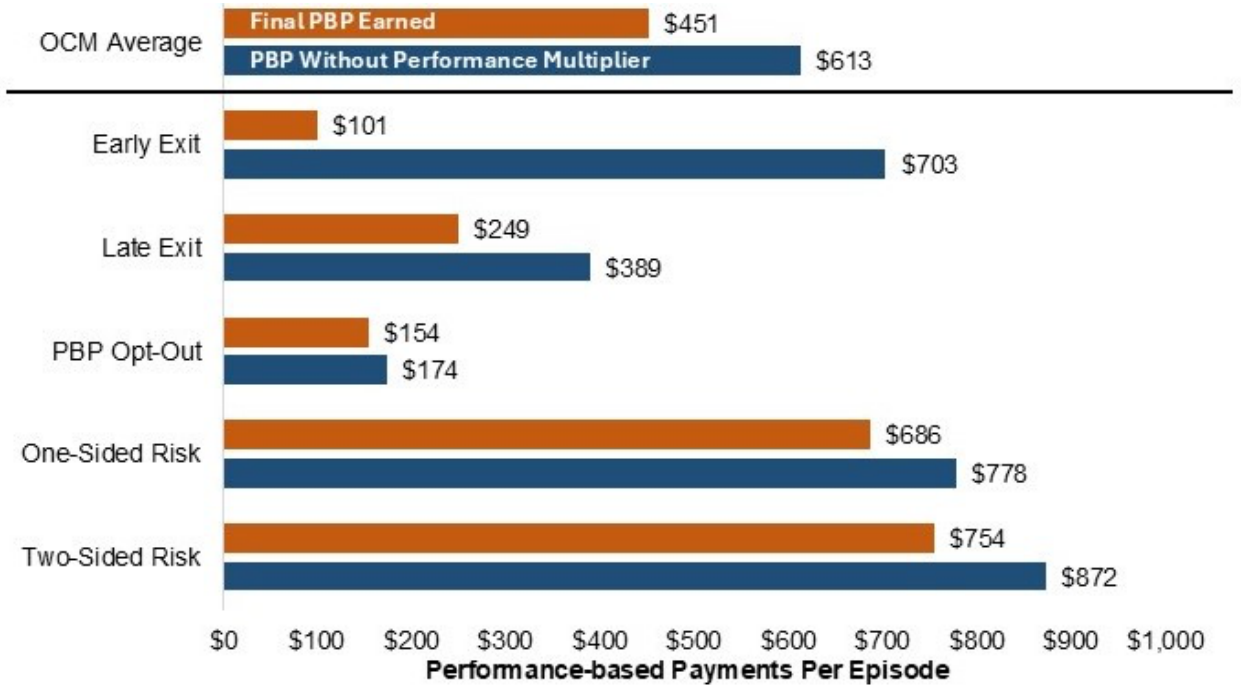
- claims-based measures relating to emergency department visits without an inpatient admission;
- use of hospice for at least three days among patients who died;
- practice-reported screening and management of pain and depression;
- and patient-reported care experiences

Performance-based payments earned by OCM practices could be reduced if practices did not achieve at least 75 percent of possible points on the Aggregate Quality Score (a summary score across all quality measures).

Practices with two-sided risk earned the highest performance-based payments and were also most likely to achieve the quality-score threshold required to retain all performance-based payments earned.

Practices with two-sided risk were most likely to report implementing or enhancing care-transformation processes in response to OCM.

Exhibit 12: Active Two-Sided Practices Earned the Highest PBPs and Were More Likely to Achieve Spending Below Their Target Price in a Given Performance Period



Proportion of Performance Periods Where Spending Was Below the Target Price					
OCM Average	Early Exit	Late Exit	PBP Opt-Out	One-Sided Risk	Two-Sided Risk
37%	40%	20%	15%	47%	56%

Source: OCM program data.
Note: PBP = Performance-based payment

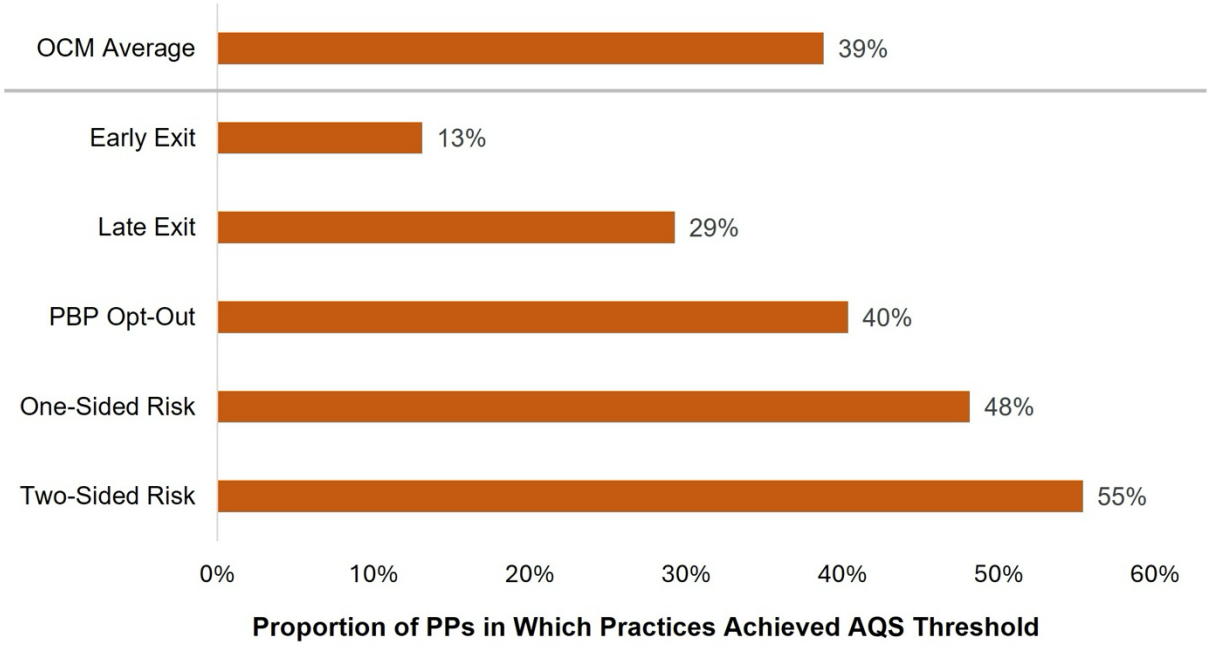
Notably, early-exiting practices were more likely to beat their target price than late exiting or opt-out practices and earned large PBPs ($692) prior to quality adjustment. However, the quality adjustment for PBPs reduced the average PBP to $100. **Early exiters were least likely to achieve the full performance multiplier (Exhibit 13) to retain all earned PBPs,** consistent with the large gap between PBPs with and without the performance multiplier applied. In particular, early-exiting practices scored particularly low on practice-reported process measures (pain assessment and management, and depression screening and follow-up plan) (Appendix Exhibit C-1).

Practices with two-sided risk were most likely to achieve the full performance multiplier to keep all earned PBPs, while those with one-sided risk also had relatively high rates of achieving the full multiplier; opt-out and exiting practices had lower rates of achieving the full multiplier.

Two-sided risk practices had the highest quality score for four of the five individual measures we analyzed (Appendix Exhibit C-1).[10] Trends over time also indicate that two-sided risk practices consistently had the highest quality scores over the last three years of the model and were most likely to achieve the full performance multiplier over that period (Appendix Exhibit C-2).

[10] Note that OCM practices did not improve the claims-based OCM quality measures relative to comparison practices, as reported in Chapter 2. For the purpose of calculating the performance multiplier, the rates of the claims-based measures of quality were compared with historical benchmarks. Rates of emergency department visits and hospital-based care were decreasing over time and rates of hospice use increased over time for both OCM and comparison practices.

Exhibit 13: Active Two-Sided Practices Were Most Likely to Achieve Full Performance Multiplier for Performance-Based Payments, While Practices that Exited the Model were Much Less Likely to Achieve Full Multiplier



Source: OCM program data.
Note: PBP: Performance-based payments. PP: Performance Period. AQS: Aggregate Quality Score.

3.2 Care Transformation Activities

OCM included Monthly Enhanced Oncology Services (MEOS) payments to support additional services for patients undergoing chemotherapy treatment and encouraged improved care quality through model-specific requirements.[11] In exchange for MEOS, practices needed to meet four requirements that focused on increased access and patient navigation. One requirement included providing each patient undergoing chemotherapy with a care plan that included 13 elements of care highlighted in a 2013 **Institute of Medicine Report**. Elements included items such as communication about prognosis, information about out-of-pocket costs, and survivorship care planning. OCM practices were also incentivized to implement care delivery enhancements through earning PBPs, which were reduced if practices did not score at least 75 percent of possible points on the Aggregate Quality Score (AQS).[12]

This section describes the care delivery transformations implemented by OCM practices as captured by the OCM Evaluation Clinician Survey, which collected responses from oncologists, advanced practice providers (nurse practitioners and physician assistants), and clinical care coordinators. A description of the data collection and analytic methods used for the OCM Evaluation Clinician Survey can be found in the technical appendix of a prior report, ***Evaluation of the Oncology Care Model: Performance Periods 1–3***. The survey data provides the most information on which activities practices newly implemented or expanded due to OCM, as reported by individual clinicians.

We stratified survey responses across clinicians from late-exiting practices, PBP opt-out practices, one-sided risk practices, and two-sided risk practices (early exiting practices were insufficiently represented in the data, which were collected around PP4 and PP5). The goal of the analysis was to ascertain whether the higher quality and larger financial impacts achieved by two- sided risk practices were attributable to any differences in clinician reports of care processes that were in place prior to OCM or that clinicians reported to be enhanced or expanded in response to OCM. Full results are available in **Appendix Exhibits C-3** and **C-4**.

[11] Centers for Medicare & Medicaid Services. Oncology Care Model Fact Sheet. 2016 Jun 29. Available at: https://www.cms.gov/newsroom/fact-sheets/oncology-care-model.
[12] From PP6 on, the AQS included five equally weighted quality measures: OCM-2, "Risk-adjusted proportion of patients with all-cause ED visits or observation stays that did not result in a hospital admission within the six-month episode"; OCM-3, "Proportion of patients who died who were admitted to hospice for three days or more"; OCM-4, "Pain assessment and management"; OCM-5, "Depression screening and follow-up plan"; and OCM-6, "Patient-reported experience of care.".

Prior to OCM, clinicians from practices with two-sided risk were most likely to report providing care plan elements in writing.

In particular, the subgroups differed significantly ($p<0.01$) in their likelihood of sharing expected prognosis, goals of treatment, expected response to treatment, and estimated out-of-pocket costs. The subgroups also differed significantly prior to OCM in the extent to which they reported providing access to outpatient palliative care ($p<0.10$) and educated patients to call the practice before going to the emergency department (ED) ($p<0.05$). However, both of these processes were common, with more than 80 percent of practices in each subgroup reporting that they implemented them before the model began.

Clinicians from two-sided risk practices were most likely to report adding or enhancing processes, with late exiting practices least likely.

The subgroups differed significantly in their probability of adding or enhancing several processes, including:

- Restructuring the care team ($p<0.05$)
- Setting aside slots for same-day appointments ($p<0.05$)
- Educating all patients to "call us first" ($p<0.05$)
- Routinely initiating proactive outreach telephone calls to high-risk patients ($p<0.05$)
- Routinely screening for psychosocial distress ($p<0.10$)
- Adding or enhancing processes to provide written advance care planning stored in the electronic health record ($p<0.05$)
- Providing estimated out-of-pocket costs ($p<0.01$).

Relative to the other subgroups, clinicians from two-sided risk practices were most likely to report adding or enhancing four of these seven measures and, for initiation of proactive outreach telephone calls, were more likely to report adding or enhancing than two of the three other groups. While two-sided risk practices were least likely to add or enhance processes to estimate out-of-pocket costs, they were by-far the most likely to have such processes in place before OCM.

Clinicians from late-exiting practices stood out for being least likely to report implementing these changes. Clinicians from opt-out practices were more likely than those from one-sided risk practices to report adding or enhancing five of the seven processes and were more likely even than two-sided risk practices to add or enhance two of the seven.

3.3 Discussion

Success in OCM from practices' perspective entailed earning PBPs and scoring sufficiently high on the AQS to retain all earned PBPs. Practices with two-sided risk achieved the most success in both dimensions. These results demonstrate that the large TEP reductions achieved by these practices translated to PBPs and did not come at the expense of quality. From this perspective, practices that remained in one-sided risk were also successful, achieving similar PBPs to two-sided risk practices, and achieving the AQS threshold to retain all PBPs nearly as frequently. However, PBPs for practices with one-sided risk did not correspond to reductions in TEP relative to the comparison group. While we are unable to calculate practice-level impacts, our results suggest that among one-sided risk practices, decreases in TEP among some practices (which generated PBPs) were offset by increases in TEP among other practices, resulting in non-significant impacts despite fairly substantial PBPs per episode.

Early-exiting practices earned substantially higher PBPs than late-exiting or opt-out practices, approaching the level earned by one-sided risk practices. However, these practices were least likely to achieve the AQS multiplier necessary to retain all PBPs, and the actual value of the PBPs retained was the lowest of all five groups. Although these practices had generally lower performance across all five quality measures we considered, they particularly lagged the other groups with regards to the two practice-reported measures (pain assessment and management, and depression screening and follow-up). This finding is consistent with exit interviews with these practices, which indicated that difficulty meeting OCM requirements was a major contributor to model exit.

Late-exiting practices and opt-out practices earned lowe PBPs than the other three groups. This is consistent with their decision to either exit OCM or opt out of PBPs, particularly when faced with two-sided risk. However, opt-out practices were more likely than late-exiting practices t achieve the AQS threshold necessary to keep all PBPs. Results from the clinician survey showed that, among measures with significant differences across practi subgroups, clinicians from late-exiting practices were least likely to report implementing or expanding care processes in response to OCM, whereas clinicians from opt-out practices were more likely to repo

implementing or expanding care processes than even clinicians from one-sided risk practices. The decision of opt-out practices to remain in OCM rather than join the late-exiting practices may signal greater commitment to or investment in OCM than was the case among the late-exiting practices, which may also explain their higher achievements on the AQS relative to late-exiting practices.

Several processes we asked about in the clinician survey could help two-sided risk practices pre-empt costly ED visits or hospital stays: for example, adding or enhancing processes related to proactive outreach to high-risk patients, same-day appointments for urgent needs, and educating patients to "call us first." Insights from case studies summarized in the ***Participants' Perspectives Report*** confirmed that reducing hospital-based care was a key emphasis of care delivery redesign under OCM for many practices. That two-sided risk practices were unable to reduce ED visits or hospitalizations relative to the comparison group despite these changes in care delivery highlights the challenge practices face in trying to influence these outcomes.

Conversely, many of the processes we asked about in the clinician survey cannot be directly linked to OCM impacts by two-sided risk practices (e.g., few of the processes would be expected to reduce payments for Part D drugs or Part B non-chemotherapy drugs). However, it remains notable that the two-sided risk practices had clinicians most likely to report implementing or enhancing care processes in response to OCM also achieved the largest OCM impacts. Thus, while efforts by two-sided risk practices to implement these particular measures may not have been the primary driver of their success in OCM, they may signal an ability or openness to change that directly ties to other processes that were not covered by our survey. It is also possible that the higher levels of independence from hospitals or health systems among these practices allowed for more flexibility in processes adoption or expansion.

Conclusions

This report presents evaluation findings over the full duration of the Oncology Care Model, stratified by practice categories defined by participation and risk-bearing decisions, and is an addendum to our previous *Final Evaluation Report*. This addendum compares outcomes between practices that chose to exit the model and those that remained, and between practices that opted to take on two-sided risk, practices that remained in one-sided risk, and practices that opted out of financial risk altogether (when they otherwise would have had to exit or take on two-sided risk).

Results from the *Final Evaluation Report* averaged impacts over all these groups, including episodes from practices that had exited the model, and practices that were not subject to the full model incentives after opting out of performance-based payments (PBPs). These aggregate estimates indicated that OCM reduced total episode payments (TEP) by $616 overall, increasing over time from $37 in performance period 1 (PP1) to $1,282 in PP11. The $616 per episode savings were driven primarily by reductions for Part B non-chemotherapy drugs ($288) and Part A payment reductions ($176). Our analysis found some evidence of Part D payment reductions in the last two years of the model. Despite reductions in TEP, OCM resulted in net losses totaling roughly $639M because the Monthly Enhanced Oncology Services (MEOS) payments and PBPs were not offset by the TEP reductions.

We found no evidence that OCM impacted the use of high-cost hospital-based services such as emergency department (ED) visits or inpatient admissions, nor the timely use of hospice care at the end of life.

The subgroup results in this report demonstrate that the aggregate impacts were driven almost entirely by practices that took on two-sided risk in the last two years of the model. These practices accounted for the plurality of episodes (33.9 percent) and achieved significant impacts of $1,994, on average. Initial impacts of $1,015 increased to $2,832 by the end of the model. The main differentiator for these practices was success in reducing Parts A and D payments (in addition to reducing Part B savings) – something no other group achieved.

The other practices that remained through the entire model, whether remaining in one-sided risk, or opting out of PBPs, did not achieve significant reductions in TEP. While practices with one-sided risk significantly reduced Part B payments, primarily through reductions in payments for non-chemotherapy drugs, these reductions were offset by (non-significant) increases in Part D payments. Opt-out practices and practices that exited later in the model did not achieve significant payment reductions for any category of Medicare payments.

We found evidence suggesting that early-exiting practices achieved significant TEP reductions of $788 ($p<0.10$). However, these practices did not significantly reduce payments for Medicare Parts A, B, or D. The wide 90-percent confidence interval for estimated TEP reductions (-$1,479 to -$97) highlights uncertainty in the magnitude of the impacts.

Practices with two-sided risk achieved net payment reductions in 10 of 11performance periods and covered the cost of MEOS in each performance period. Total net savings for these practices totaled $299.6M. Practices with one-sided risk posted net losses in excess of $25.0M in each performance period, and their total net losses of $369.5M exceeded the net losses incurred by opt-out and exiting practices combined ($257.4M). Practices with one-sided risk also failed to cover MEOS payments in any performance period.

Descriptive analysis of program data indicated that practices with two-sided risk were most likely to earn PBPs, consistent with their larger financial impacts.
These practices were also most likely to achieve the quality threshold necessary to retain full PBPs and averaged the highest score on four of the five measures we analyzed. These results indicate that financial impacts did not come at the expense of quality but were rather strongly correlated with higher quality as captured by OCM quality measures.

Descriptive analysis of clinician interview data indicated that, among care processes with significant differences across practice subgroups, clinicians from practices with two-sided risk were more likely than clinicians from other practices to report implementing or expanding new care processes in response to OCM.

However, despite these efforts, and despite substantially larger payment impacts than the other practice categories, even practices with two-sided risk did not decrease ED visits or inpatient admissions relative to their comparison group. This illustrates the challenges faced by oncology practices trying to reduce use of costly hospital-based services, but also demonstrates that practices can achieve financial success in the model without substantial impacts on these measures.

Practices with two-sided risk also failed to improve access to timely hospice during the end of life. This finding is consistent with prior qualitative findings from the OCM Evaluation, which identified several challenges in increasing use of timely hospice enrollment and end-of- life care, for both oncologists and patients, including: patient and family preferences, lack of caregiver support, religious beliefs, cultural influences, and interests in experimental treatments. The two-sided risk practices that were successful in other domains were unable to overcome these challenges, in aggregate, which suggests that new approaches may be needed to improve this particular outcome in the future.

While two-sided risk practices tended to be larger than one-sided risk practices, and were more likely to be multi-specialty, the same was true of opt-out practices as well. What seemed to set two-sided risk practices apart was greater likelihood of independence from hospitals/health systems, particularly independence from academically affiliated hospitals/systems. Two-sided risk practices were also less likely to belong to an accountable care organization (ACO), although this may be a function of their independence (that is, most OCM participants in an ACO likely became involved through an affiliated hospital or health system).

Two-sided risk practices were also notably less likely than practices in most other groups to treat beneficiaries from historically underserved populations; this was true of opt-out practices as well. Moreover, estimated subgroup impacts from the *Final Evaluation Report* suggest that payment impacts, and impacts for claims- based measures of quality, were very similar among historically underserved populations relative to their reference populations (e.g., outcomes for Black beneficiaries were nearly identical to those of White beneficiaries).[13] This all suggests that two-sided risk practices' success in OCM was not *because* they were less likely to treat underserved populations.

Although two-sided risk practices were disproportionately large and independent, it is not the case that all two-sided risk practices were large or independent. Likewise, many opt-out practices were both large and independent and did not achieve the same impacts or quality outcomes. While our results suggest that scale and independence can contribute to success, our results do not indicate that size or independence are either necessary or sufficient to achieve success in an episode-based oncology model.

Our results suggest that practices strategically selected into two-sided risk after experiencing early success in OCM. We cannot assess the extent to which the additional incentive of two-sided risk may have spurred practices on to additional success. Practices with two-sided risk achieved larger impacts during the first two years of the model than ever achieved by practices with one-sided risk, and their impacts increased steadily over time even prior to taking on two-sided risk. With that said, we cannot rule out the possibility that impacts would have flattened in the last two years of OCM in the absence of two-sided risk, with the additional incentives facilitating additional impacts in the last two years.

LESSONS LEARNED

Findings from this report provide several additional lessons beyond the aggregate results in the *Final Evaluation Report*.

- **Practices can achieve rapid and sustained success in episode-based payment models, even without substantial reductions in the utilization of costly hospital-based care.**
  Practices with two-sided risk achieved large payment reductions for Part B non-chemotherapy drugs and Part D drugs despite not reducing the probability of an emergency department visit or inpatient admission. Focusing on these outcomes may provide an initial roadmap for success among participants in the Enhancing Oncology Model (EOM).

- **Episode-based oncology models have potential to yield net savings for Medicare.**
  Practices that ultimately selected two-sided risk achieved net savings for Medicare in every performance period but one. With the right strategies and processes, practices can reduce total episode payments sufficiently to cover Monthly Enhanced Oncology Services and performance-based payments. Identifying and disseminating those strategies to EOM participants may enhance the potential for net savings under EOM.

- **Measurable changes in acute care utilization and chemotherapy spending remain elusive, even among practices with two-sided risk.**
  Despite the unparalleled success of the practices with two-sided risk in reducing total episode payments and achieving high quality scores, these practices did not meaningfully reduce emergency department visits or inpatient admissions, nor improve timely access to hospice care at the end of life.

- **Tackling chemotherapy costs remains a challenge, although there were encouraging findings for Part D spending among practices with two-sided risk.**
  Practices with two-sided risk achieved large and significant reductions in Part D payments in all three model phases we analyzed. However, no Practice subgroup we analyzed succeeded in reducing Part B chemotherapy drug payments.

[13] Proportions of underserved populations treated reflect practice-level measures that may not correspond to the overall proportion of underserved beneficiaries treated by practices in each group. For example, one-sided risk practices are nearly twice as likely as two-sided risk practices to be in the fourth (highest) quartile of proportion of episodes for high-Area Deprivation Index (ADI) patients. However, since two-sided risk practices are larger, on average, two-sided risk practices treat more high-ADI beneficiaries overall than do one-sided risk practices.

Appendices

Appendix A – Practice-Level Characteristics

Exhibit A-1: OCM Practice Characteristics

Practice-Level Characteristics	OCM Practices						p-value
	All OCM	Early Exit	Late Exit	PBP Opt-Out	One-Sided	Two-sided	
Sample Size	199	24	53	21	77	24	N/A
Practice Type							
Independent Practice	46.7%	45.8%	41.5%	66.7%	36.4%	75.0%	< 0.001
Affiliated with Non-Academic Hospital or System	36.2%	50.0%	37.7%	4.8%	44.2%	20.8%	< 0.001
Affiliated with Academic Hospital or System	17.1%	4.2%	20.8%	28.6%	19.5%	4.2%	< 0.001
Practice Size							
Practice Size Quartile 1 (1 to 5.3 oncologists)	8.5%	16.7%	13.2%	0.0%	6.5%	4.2%	< 0.001
Practice Size Quartile 2 (5.4 to 11.3 oncologists)	18.1%	25.0%	20.8%	4.8%	19.5%	12.5%	< 0.001
Practice Size Quartile 3 (11.4 to 22.9 oncologists)	30.7%	45.8%	34.0%	9.5%	33.8%	16.7%	< 0.001
Practice Size Quartile 4 (23.0 to 408.8 oncologists)	42.7%	12.5%	32.1%	85.7%	40.3%	66.7%	< 0.001
Multi-Oncology Specialty (radiation, gynecologic, and surgical)							
Yes	59.8%	45.8%	45.3%	81.0%	62.3%	79.2%	< 0.001
No	40.2%	54.2%	54.7%	19.0%	37.7%	20.8%	
Presence of Nurse Practitioners and/or Physician Assistants							
Yes	87.9%	62.5%	84.9%	100.0%	92.2%	95.8%	< 0.001
No	12.1%	37.5%	15.1%	0.0%	7.8%	4.2%	
ACO practice							
Yes	50.8%	54.2%	49.1%	57.1%	53.2%	37.5%	< 0.001
No	49.2%	45.8%	50.9%	42.9%	46.8%	62.5%	

Source: Medicare administrative data 2014-2022. Provider Enrollment, Chain, and Ownership System (PECOS) and National Plan & Provider Enumeration System (NPPES) data 2014-2022. Welch and Bindman, 2016; updated through 2020 based on various websites of medical school oncology/hematology departments, divisions, and institutes.
Notes: Practice size could change over time, so for each practice we averaged over the number of oncologists present in each performance period, which resulted in non-integer values. Quartiles are thus defined as fractions of oncologists, since averages over time did not need to be whole numbers. For each practice, we calculated a practice-level average of each characteristic across all performance periods in which that practice was active. We then calculated a subgroup-level average of the practice-level values across all practices within each subgroup. P-values are based on an F-test of equality across all five subgroups. PBP: Performance-based payment. ACO: Accountable care organization.

Exhibit A-2: Proportion of Historically Underserved Populations Served by Practices

Practice-Level Quartiles of Historically Underserved Populations	OCM Practices						
	All OCM	Early Exit	Late Exit	PBP Opt-Out	One-Sided	Two-sided	p-value
Proportion of Practices' Episodes Treating Black or African American Beneficiaries							
Quartile 1	25.1%	33.3%	24.5%	9.5%	23.4%	37.5%	< 0.001
Quartile 2	25.1%	29.2%	24.5%	23.8%	23.4%	29.2%	< 0.001
Quartile 3	25.1%	25.0%	22.6%	33.3%	24.7%	25.0%	< 0.001
Quartile 4	24.6%	12.5%	28.3%	33.3%	28.6%	8.3%	< 0.001
Proportion of Practices' Episodes Treating Hispanic Beneficiaries							
Quartile 1	25.1%	25.0%	28.3%	9.5%	27.3%	25.0%	< 0.001
Quartile 2	25.1%	16.7%	24.5%	23.8%	29.9%	20.8%	< 0.001
Quartile 3	25.1%	20.8%	24.5%	42.9%	19.5%	33.3%	< 0.001
Quartile 4	24.6%	37.5%	22.6%	23.8%	23.4%	20.8%	< 0.001
Proportion of Practices' Episodes Treating Beneficiaries with Dual Eligibility							
Quartile 1	25.1%	20.8%	24.5%	33.3%	19.5%	41.7%	< 0.001
Quartile 2	25.1%	45.8%	15.1%	38.1%	22.1%	25.0%	< 0.001
Quartile 3	25.1%	20.8%	28.3%	14.3%	29.9%	16.7%	< 0.001
Quartile 4	24.6%	12.5%	32.1%	14.3%	28.6%	16.7%	< 0.001
Proportion of Practices' Episodes Treating Beneficiaries from High-Deprivation Neighborhoods							
Quartile 1	25.1%	29.2%	26.4%	33.3%	22.1%	20.8%	< 0.001
Quartile 2	25.1%	33.3%	26.4%	23.8%	20.8%	29.2%	< 0.001
Quartile 3	25.1%	12.5%	17.0%	38.1%	28.6%	33.3%	< 0.001
Quartile 4	24.6%	25.0%	30.2%	4.8%	28.6%	16.7%	< 0.001

Source: Medicare claims and enrollment data 2014-2022. Area Deprivation Index.

Notes: For each practice, we calculated the practice-level proportion of episodes with beneficiaries from each population served by a given practice. We then calculated a subgroup-level average of the practice-level values across all practices within each subgroup. P-values are based on an F-test of equality across all five subgroups. PBP: Performance-based payment.

Appendix B – Impact Analyses

Exhibit B-1: Impact of OCM on TEP by Practice Subgroups

Practice Subgroup	OCM			COMP			Impact Estimates through PP11			
	Number of Episodes	Baseline Mean	Int. Mean	Number of Episodes	Baseline Mean	Int. Mean	DID	90% LCL	90% UCL	Percent Change
Early Exit	69,710	$27,845	$32,923	241,125	$26,676	$32,542	-$788	-$1,479	-$97	-2.8%
Late Exit	329,843	$29,252	$37,050	584,399	$29,024	$36,641	$181	-$393	$755	0.6%
PBP Opt-Out	260,335	$29,732	$37,384	144,731	$28,660	$36,791	-$479	-$1,247	$289	-1.6%
One-Sided Risk	493,703	$28,658	$35,981	607,153	$28,664	$36,196	-$209	-$634	$215	-0.7%
Two-Sided Risk	592,777	$29,921	$36,054	314,245	$29,924	$38,051	-$1,994	-$2,536	-$1,452	-6.7%

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: TEP: Total episode payments. OCM: OCM intervention group. COMP: Comparison group. Int.: Intervention period. PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit.

Exhibit B-2: Impact of OCM on Part A Payments by Practice Subgroups

Practice Subgroup	OCM			COMP			Impact Estimates through PP11			
	Number of Episodes	Baseline Mean	Int. Mean	Number of Episodes	Baseline Mean	Int. Mean	DID	90% LCL	90% UCL	Percent Change
Early Exit	69,710	$5,987	$5,423	241,125	$5,579	$5,245	-$231	-$510	$48	-3.9%
Late Exit	329,843	$6,214	$5,803	584,399	$6,132	$5,868	-$148	-$363	$68	-2.4%
PBP Opt-Out	260,335	$6,340	$5,917	144,731	$6,002	$5,722	-$143^	-$439	$154	-2.2%
One-Sided Risk	493,703	$6,089	$5,706	607,153	$6,087	$5,694	$10	-$145	$165	0.2%
Two-Sided Risk	592,777	$6,252	$5,543	314,245	$6,400	$6,144	-$453	-$695	-$211	-7.2%

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: OCM: OCM intervention group. COMP: Comparison group. Int.: Intervention period. PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. ^ indicates outcome did not pass baseline parallel trends and should be interpreted with caution.

Exhibit B-3: Impact of OCM on Part B Payments by Practice Subgroups

Practice Subgroup	OCM Number of Episodes	OCM Baseline Mean	OCM Int. Mean	COMP Number of Episodes	COMP Baseline Mean	COMP Int. Mean	Impact Estimates through PP11 DID	90% LCL	90% UCL	Percent Change
Early Exit	69,710	$16,613	$19,947	241,125	$15,987	$19,665	-$344	-$821	$134	-2.1%
Late Exit	329,843	$17,136	$21,971	584,399	$16,857	$21,592	$100	-$300	$501	0.6%
PBP Opt-Out	260,335	$17,508	$22,195	144,731	$16,937	$21,875	-$250	-$758	$257	-1.4%
One-Sided Risk	493,703	$17,077	$21,491	607,153	$16,787	$21,602	-$402	-$702	-$102	-2.4%
Two-Sided Risk	592,777	$18,004	$22,101	314,245	$17,986	$22,836	-$753	-$1,134	-$372	-4.2%

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: OCM: OCM intervention group. COMP: Comparison group. Int.: Intervention period. PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit.

Exhibit B-4: Impact of OCM on Part D Payments by Practice Subgroups

Practice Subgroup	OCM Number of Episodes	OCM Baseline Mean	OCM Int. Mean	COMP Number of Episodes	COMP Baseline Mean	COMP Int. Mean	Impact Estimates through PP11 DID	90% LCL	90% UCL	Percent Change
Early Exit	56,342	$6,367	$9,343	195,357	$6,181	$9,368	-$211	-$702	$280	-3.3%
Late Exit	281,341	$6,864	$10,930	491,077	$7,011	$10,832	$245	-$67	$557	3.6%
PBP Opt-Out	219,240	$6,884	$10,997	120,844	$6,664	$10,920	-$142^	-$591	$306	-2.1%
One-Sided Risk	410,294	$6,475	$10,524	504,855	$6,864	$10,660	$252	-$18	$522	3.9%
Two-Sided Risk	480,547	$6,699	$10,172	267,258	$6,706	$10,901	-$721	-$1,061	-$382	-10.8%

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: Part D payments were calculated as the sum of low-income cost-sharing and reinsurance amounts, as reflected on the Part D Event file. OCM: OCM intervention group. COMP: Comparison group. Int.: Intervention period. PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. ^ indicates outcome did not pass baseline parallel trends and should be interpreted with caution.

Exhibit B-5: Impact of OCM on TEP by Practice Subgroups, Stratified by PP

Practice Subgroups	Impact Estimates PP1–PP4			Impact Estimates PP5–PP7			Impact Estimates PP8–PP11		
	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL
Early Exit	-$210	-$809	$390	-$988	-$846	-$74	-$1,609	-$2,732	-$486
Late Exit	$345	-$104	$795	$308	-$292	$908	-$52	-$870	$766
PBP Opt-Out	-$349	-$895	$196	-$63	-$937	$811	-$909	-$2,033	$215
One-Sided Risk	-$295	-$648	$59	$16	-$509	$541	-$270	-$830	$290
Two-Sided Risk	-$1,015	-$1,450	-$580	-$1,964	-$2,684	-$1,245	-$2,832	-$3,658	-$2,005

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.

Source: Medicare claims 2014–2022.

Notes: TEP: Total episode payments. PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit.

Exhibit B-6: Impact of OCM on Part A Payments by Practice Subgroups, Stratified by PP

Practice Subgroups	Impact Estimates PP1–PP4			Impact Estimates PP5–PP7			Impact Estimates PP8–PP11		
	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL
Early Exit	-$83	-$334	$167	-$344	-$755	$66	-$495	-$923	-$68
Late Exit	-$121	-$331	$89	-$180	-$410	$49	-$193	-$489	$103
PBP Opt-Out	-$119^	-$377	$138	-$74^	-$384	$236	-$217^	-$648	$215
One-Sided Risk	-$135	-$285	$14	$168	-$22	$359	$57	-$174	$287
Two-Sided Risk	-$250	-$475	-$26	-$484	-$801	-$167	-$513	-$798	-$228

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.

Source: Medicare claims 2014–2022.

Notes: PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. ^ indicates outcome did not pass baseline parallel trends and should be interpreted with caution.

Exhibit B-7: Impact of OCM on Part B Payments by Practice Subgroups, Stratified by PP

Practice Subgroups	Impact Estimates PP1-PP4			Impact Estimates PP5-PP7			Impact Estimates PP8-PP11		
	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL
Early Exit	-$118	-$590	$355	-$434	-$1,085	$216	-$573	-$1,392	$247
Late Exit	$136	-$221	$494	$280	-$173	$733	$9	-$530	$547
PBP Opt-Out	-$24	-$437	$389	-$136	-$725	$453	-$691	-$1,376	-$5
One-Sided Risk	-$391	-$662	-$119	-$391	-$752	-$30	-$420	-$826	-$15
Two-Sided Risk	-$262	-$694	$169	-$600	-$1,052	-$147	-$1,222	-$1,754	-$690

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit.

Exhibit B-8: Impact of OCM on Part D Payments by Practice Subgroups, Stratified by PP

Practice Subgroups	Impact Estimates PP1-PP4			Impact Estimates PP5-PP7			Impact Estimates PP8-PP11		
	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL
Early Exit	$40	-$342	$422	-$216	-$825	$393	-$612	-$1,459	$235
Late Exit	$411	$131	$690	$214	-$131	$558	$100	-$291	$490
PBP Opt-Out	-$256^	-$607	$95	$106^	-$352	$564	-$81^	-$779	$617
One-Sided Risk	$295	$84	$506	$307	$0	$615	$173	-$199	$545
Two-Sided Risk	-$477	-$696	-$257	-$809	-$1,224	-$395	-$1,012	-$1,533	-$492

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: Part D payments were calculated as the sum of low-income cost-sharing and reinsurance amounts, as reflected on the Part D Event file. PP: Performance period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. ^ indicates outcome did not pass baseline parallel trends and should be interpreted with caution.

Exhibit B-9: Two-Sided Risk Practices Covered the Cost of MEOS Payments in All Performance Periods, and PBP Opt-Out Practices Covered the Cost of MEOS Payments in Performance Periods 8–11

Practice Type	Gross Impact on TEP	MEOS Payments	Total Cost to Medicare†	Number of Episodes	Per Episode Net Cost to Medicare‡
		PP1			
Early Exit	-$1,710,959	$4,293,476	$2,582,516	8,147	$317
Late Exit	$8,549,992	$15,872,490	$24,422,483	24,783	$985
PBP Opt-Out	-$6,495,575	$13,984,403	$7,488,828	18,612	$402
One-Sided Risk	-$11,692,333	$27,900,053	$16,207,721	39,635	$409
Two-Sided Risk	-$48,700,715	$37,226,650	-$11,474,065	47,981	-$239
		PP2			
Early Exit	-$1,406,407	$3,025,077	$1,618,670	6,697	$242
Late Exit	$8,319,315	$15,797,950	$24,117,266	24,114	$1,000
PBP Opt-Out	-$6,296,806	$12,629,518	$6,332,713	18,042	$351
One-Sided Risk	-$11,241,401	$26,758,630	$15,517,229	38,106	$407
Two-Sided Risk	-$46,359,110	$36,988,824	-$9,370,286	45,674	-$205
		PP3			
Early Exit	-$1,115,994	$2,478,275	$1,362,282	5,314	$256
Late Exit	$8,448,140	$15,195,897	$23,644,038	24,487	$966
PBP Opt-Out	-$6,334,939	$12,449,022	$6,114,083	18,152	$337
One-Sided Risk	-$10,748,900	$25,278,572	$14,529,672	36,437	$399
Two-Sided Risk	-$45,017,020	$35,589,323	-$9,427,697	44,352	-$213
		PP4			
Early Exit	-$698,415	$1,784,152	$1,085,736	3,326	$326
Late Exit	$9,155,527	$16,779,954	$25,935,480	26,538	$977
PBP Opt-Out	-$6,650,725	$13,050,619	$6,399,895	19,057	$336
One-Sided Risk	-$11,220,215	$26,578,691	$15,358,475	38,035	$404
Two-Sided Risk	-$46,923,762	$37,125,169	-$9,798,593	46,230	-$212
		PP5			
Early Exit	-$1,646,719	$861,582	-$785,137	1,667	-$471
Late Exit	$8,076,477	$15,654,679	$23,731,156	26,222	$905
PBP Opt-Out	-$1,189,103	$12,350,951	$11,161,847	18,875	$591
One-Sided Risk	$592,773	$25,485,333	$26,078,105	37,048	$704
Two-Sided Risk	-$88,941,704	$34,541,350	-$54,400,354	45,286	-$1,201
		PP6			
Early Exit	-$577,980	$133,760	-$444,220	585	-$759
Late Exit	$8,977,996	$14,828,432	$23,806,428	29,149	$817
PBP Opt-Out	-$1,330,475	$14,189,639	$12,859,164	21,119	$609
One-Sided Risk	$632,304	$27,583,326	$28,215,630	39,519	$714
Two-Sided Risk	-$92,690,980	$36,379,170	-$56,311,810	47,195	-$1,193
		PP7			
Early Exit	n/a	n/a	n/a	n/a	n/a
Late Exit	$8,260,753	$8,512,376	$16,773,129	26,821	$625
PBP Opt-Out	-$1,290,080	$14,105,863	$12,815,783	20,477	$626
One-Sided Risk	$589,951	$25,776,242	$26,366,193	36,872	$715
Two-Sided Risk	-$86,824,512	$34,513,412	-$52,311,100	44,208	-$1,183
		PP8			
Early Exit	n/a	n/a	n/a	n/a	n/a
Late Exit	-$353,684	$3,485,572	$3,131,888	6,802	$460
PBP Opt-Out	-$19,452,779	$14,808,053	-$4,644,727	21,400	-$217
One-Sided Risk	-$10,034,872	$24,528,451	$14,493,579	37,166	$390
Two-Sided Risk	-$128,207,472	$34,581,126	-$93,626,346	45,271	-$2,068

PP9					
Early Exit	n/a	n/a	n/a	n/a	n/a
Late Exit	-$334,259	$2,480,148	$2,145,889	6,428	$334
PBP Opt-Out	-$19,311,948	$14,914,129	-$4,397,819	21,245	-$207
One-Sided Risk	-$9,887,311	$25,243,873	$15,356,562	36,620	$419
Two-Sided Risk	-$124,030,272	$34,630,548	-$89,399,724	43,796	-$2,041
PP10					
Early Exit	n/a	n/a	n/a	n/a	n/a
Late Exit	-$44,526	$327,737	$283,211	856	$331
PBP Opt-Out	-$19,870,499	$14,650,869	-$5,219,630	21,860	-$239
One-Sided Risk	-$10,262,160	$25,299,254	$15,037,094	38,008	$396
Two-Sided Risk	-$128,091,360	$34,923,379	-$93,167,981	45,230	-$2,060
PP11					
Early Exit	n/a	n/a	n/a	n/a	n/a
Late Exit	-$15,731	$50,819	$35,088	303	$116
PBP Opt-Out	-$18,744,920	$9,464,210	-$9,280,709	20,621	-$450
One-Sided Risk	-$9,703,800	$16,521,964	$6,818,164	35,940	$190
Two-Sided Risk	-$120,821,616	$23,242,790	-$97,578,826	42,663	-$2,287

Source: Medicare claims 2014–2022.

Notes: As MEOS was a cost incurred, for program net impact estimate, MEOS for all episodes includes MEOS paid related to episodes with COVID-19 diagnosis. Gross impact was estimated as total program episode multiplied by the DID. Overall DID is a weighted estimate. †Total Cost to Medicare was calculated as the sum of the Gross Impact on TEP plus MEOS payments. ‡Per episode net cost to Medicare was calculated as the sum of the Gross Impact on TEP and total MEOS payments, divided by the number of episodes. PBP: Performance-based payments. TEP: Total episode payments. MEOS: Monthly Enhanced Oncology Services. PP: Performance period. DID: Difference-in-

Exhibit B-10: Impact of OCM on Utilization Outcomes by Practice Subgroups

Utilization Measure	Number of Episodes		OCM		COMP		Impact Estimates through PP11			
	OCM	COMP	Baseline Mean	Int. Mean	Baseline Mean	Int. Mean	DID	90% LCL	90% UCL	Percent Change
Early Exit										
Probability of any inpatient admission	69,710	241,125	26.9%	23.5%	25.6%	22.6%	-0.4 pp	-1.3 pp	0.4 pp	-1.5%
Probably of ED visit without hospital admission	69,710	241,125	24.4%	23.8%	24.7%	23.2%	0.8 pp	-0.9 pp	2.5 pp	3.3%
Late Exit										
Probability of any inpatient admission	329,843	584,399	28.6%	24.5%	25.7%	22.2%	-0.7 pp	-1.3 pp	0.0 pp	-2.4%
Probably of ED visit without hospital admission	329,843	584,399	24.1%	22.4%	25.1%	23.6%	-0.2 pp	-0.9 pp	0.5 pp	-0.8%
PBP Opt-Out										
Probability of any inpatient admission	260,335	144,731	27.9%	23.8%	26.3%	22.4%	-0.2 pp	-1.4 pp	1.1 pp	-0.7%
Probably of ED visit without hospital admission	260,335	144,731	23.5%	21.2%	24.0%	22.2%	-0.5 pp	-1.5 pp	0.6 pp	-2.1%
One-Sided Risk										
Probability of any inpatient admission	493,703	607,153	27.7%	24.0%	27.5%	23.9%	-0.1 pp	-0.5 pp	0.4 pp	-0.4%
Probably of ED visit without hospital admission	493,703	607,153	25.4%	23.7%	25.8%	23.9%	0.1 pp	-0.4 pp	0.7 pp	0.4%
Two-Sided Risk										
Probability of any inpatient admission	592,777	314,245	27.5%	23.9%	25.7%	22.3%	-0.2 pp	-0.8 pp	0.5 pp	-0.7%
Probably of ED visit without hospital admission	592,777	314,245	24.2%	22.8%	24.8%	22.9%	0.6 pp	-0.3 pp	1.4 pp	2.5%

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.

Source: Medicare claims 2014–2022.

Notes: OCM: OCM intervention group. COMP: Comparison group. PP: Performance period. Int.: Intervention period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. pp: Percentage points. ED: Emergency department.

Exhibit B-11: Impact of OCM on Utilization Outcomes by Practice Subgroups, Stratified by PP

Utilization Measure	Impact Estimates PP1-4			Impact Estimates PP5-7			Impact Estimates PP8-11		
	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL
Early Exit									
Probability of any inpatient admission	0.0 pp	-0.9 pp	1.0 pp	-0.6 pp	-1.5 pp	0.4 pp	-1.2 pp	-2.6 pp	0.2 pp
Probably of ED visit without hospital admission	0.1 pp	-1.0 pp	1.2 pp	1.3 pp	-0.7 pp	3.3 pp	1.6 pp	-2.0 pp	5.3 pp
Late Exit									
Probability of any inpatient admission	-0.2 pp	-0.2 pp	-0.2 pp	-0.9 pp	-1.6 pp	-0.1 pp	-1.0 pp	-1.8 pp	-0.1 pp
Probably of ED visit without hospital admission	0.2 pp	-0.4 pp	0.8 pp	0.1 pp	-0.7 pp	0.9 pp	-0.5 pp	-1.3 pp	0.3 pp
PBP Opt-Out									
Probability of any inpatient admission	-0.1 pp	-1.4 pp	1.1 pp	0.6 pp	-1.1 pp	2.3 pp	-1.0 pp	-2.0 pp	0.0 pp
Probably of ED visit without hospital admission	-0.3 pp	-1.2 pp	0.7 pp	-0.6 pp	-1.9 pp	0.6 pp	-0.9 pp	-2.2 pp	0.3 pp
One-Sided Risk									
Probability of any inpatient admission	-0.2 pp	-0.7 pp	0.3 pp	0.0 pp	-0.5 pp	0.6 pp	0.0 pp	-0.6 pp	0.6 pp
Probably of ED visit without hospital admission	0.3 pp	-0.3 pp	0.9 pp	0.4 pp	-0.3 pp	1.1 pp	-0.2 pp	-0.9 pp	0.4 pp
Two-Sided Risk									
Probability of any inpatient admission	0.0 pp	-0.5 pp	0.5 pp	-0.2 pp	-0.9 pp	0.5 pp	-0.2 pp	-1.0 pp	0.6 pp
Probably of ED visit without hospital admission	0.5 pp	-0.2 pp	1.2 pp	0.5 pp	-0.5 pp	1.5 pp	0.7 pp	-0.4 pp	1.7 pp

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. pp: Percentage points. ED: Emergency department.

Exhibit B-12: Impact of OCM on End-of-Life Measure, Hospice of Three or more days, by Practice Subgroups

Practice Subgroups	Number of Episodes		OCM		COMP		Impact Estimates through PP11			
	OCM	COMP	Baseline Mean	Int. Mean	Baseline Mean	Int. Mean	DID	90% LCL	90% UCL	Percent Change
Early Exit	8,044	27,484	59.8%	59.6%	58.3%	59.1%	-1.0 pp	1.5 pp	-3.6 pp	-1.7%
Late Exit	38,128	69,400	57.5%	58.8%	55.3%	58.0%	-1.6 pp	-2.9 pp	-0.2 pp	-2.8%
PBP Opt-Out	31,697	16,389	57.0%	58.6%	57.5%	58.7%	0.4 pp	-2.0 pp	2.9 pp	0.7%
One-Sided Risk	61,182	73,823	57.2%	60.3%	56.6%	58.6%	1.1 pp	-0.5 pp	2.7 pp	1.9%
Two-Sided Risk	74,300	38,295	59.8%	62.5%	57.4%	60.1%	0.0 pp	-1.9 pp	2.0 pp	0.0%

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: OCM: OCM intervention group. COMP: Comparison group. PP: Performance period. Int.: Intervention period. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. pp: Percentage points. ED: Emergency department.

Exhibit B-13: Impact of OCM on End-of-Life Measure, Hospice of Three or more days, by Practice Subgroups, Stratified

Practice Subgroups	Impact Estimates PP1-4			Impact Estimates PP5-7			Impact Estimates PP8-11		
	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL	DID	90% LCL	90% UCL
Early Exit	-0.6 pp	-3.0pp	1.8 pp	-1.0 pp	-4.5 pp	2.5 pp	-2.4 pp	-5.9 pp	1.1 pp
Late Exit	-0.5 pp	-2.1 pp	1.0 pp	-2.7 pp	-4.5 pp	-1.0 pp	-2.0 pp	-3.6 pp	-0.4 pp
PBP Opt-Out	0.9 pp	-1.6 pp	3.5 pp	0.6 pp	-2.2 pp	3.3 pp	-0.2 pp	-3.4 pp	3.1 pp
One-Sided Risk	1.2 pp	-0.4 pp	2.9 pp	1.2 pp	-0.6 pp	2.9 pp	0.9 pp	-1.0 pp	2.8 pp
Two-Sided Risk	-0.4 pp	-2.3 pp	1.4 pp	1.9 pp	-0.2 pp	4.0 pp	-1.2 pp	-3.7 pp	1.2 pp

Shading indicates statistically significant estimates at p<0.01, p<0.05, and p<0.10, indicated by dark blue, medium blue, or light blue shading.
Source: Medicare claims 2014–2022.
Notes: OCM: OCM intervention group. COMP: Comparison group. PP: Performance period. Int.: Intervention period. pp: Percentage points. DID: Difference-in-differences. LCL: Lower confidence limit. UCL: Upper confidence limit. pp: Percentage points. ED: Emergency department

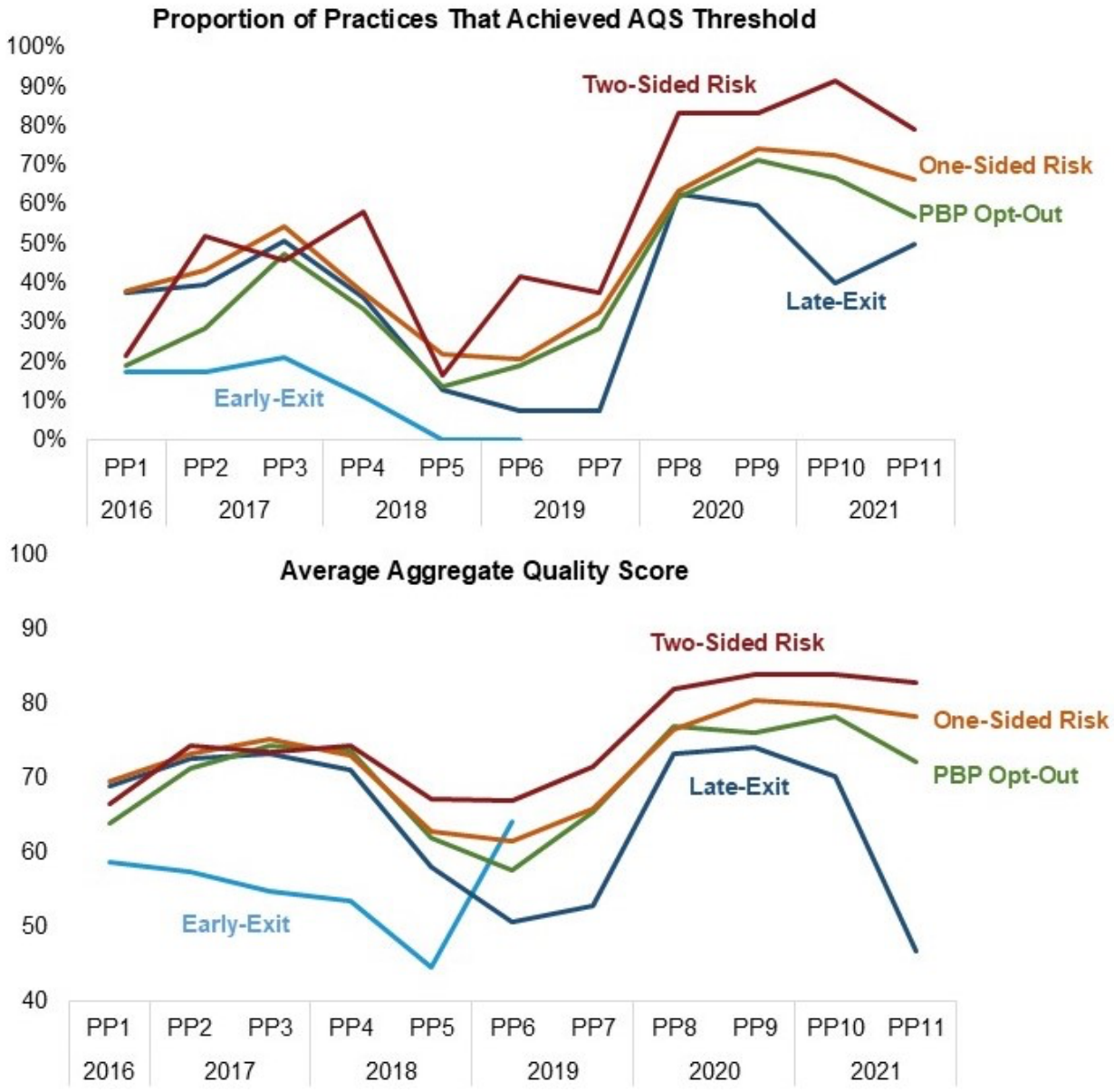
Appendix C – Quality and Care Transformation

Exhibit C-1: Average Payment and Quality Measures for OCM Practices by Practice Subgroups

Payment and Quality Measures	OCM Practices						p-value
	All OCM	Early Exit	Late Exit	PBP Opt-Out	One-Sided	Two-Sided	
Sample Size	199	24	53	21	77	24	
Payment Outcome Measures							
PBP per-episode	$451	$101	$249	$154	$686	$754	< 0.001
PBP per-episode without performance multiplier	$613	$703	$389	$174	$778	$872	< 0.001
Percent of episodes with spending below episode target price	37%	40%	20%	15%	47%	56%	< 0.001
Quality Outcome Measures							
% AQS Multiplier = 100%*	39%	13%	29%	40%	48%	55%	< 0.001
OCM-2 - All-cause ED visits	22.8	23.9	23.6	22.1	22.3	22.4	< 0.001
OCM-3 - Hospice of 3 or more days	52.1	52.6	51.3	51.0	52.2	54.1	< 0.001
OCM-4 - Pain assessment and management	83.9	78.4	77.9	84.4	86.9	90.0	< 0.001
OCM-5 - Depression screening and follow-up plan	67.5	52.7	60.4	61.3	73.0	77.6	< 0.001
OCM-6 - Patient reported care experience	8.29	8.25	8.29	8.30	8.28	8.33	< 0.001

Source: OCM program data.
Notes: For each practice, we calculated a practice-level average of program data across all performance periods in which that practice was active. We then calculated a subgroup-level average of the practice-level values across all practices within each subgroup. P-values are based on an F-test of equality across all five subgroups. PBP: Performance-based payments. AQS: Aggregate quality score. ED: Emergency department.

Exhibit C-2: Changes in Quality Scores Over Time



Source: OCM program data.
Notes: Achieving the AQS threshold required achieving an AQS of at least 75 out of 100. The items comprising the AQS changed over time, which resulted in lower overall scores in PP5–PP7, and higher overall scores in PP8–11. Quality scores also increased, on average, for all practice subgroups in PP8–11 due to COVID-related reductions in emergency department visits that improved performance on that measure. For more information, see the OCM payment methodology. PP: Performance period. AQS: Aggregate quality score.

Exhibit C-3: Care Processes in Place Before OCM

Process Already in Place	Late-Exit	PBP Opt-Out	One-Sided	Two-Sided
Clinical Care				
Typically use treatment pathways to guide treatment decisions	52.6	61.3	57.1	74.5
Provide access to outpatient palliative care*	90.0	98.3	93.8	89.0
Restructured care teams since OCM began	N/A			
Access to Care				
Slots set aside for same day appointments during normal clinic hours	66.7	66.0	79.7	81.9
Evening/weekend appointments for patients with urgent needs	21.1	21.9	32.4	22.8
Care Coordination				
Routinely telephone patients taking oral chemotherapy drugs to monitor side effects and refill needs	69.5	79.3	69.4	76.9
Educate all patients to "call us first" before going to the emergency department**	83.0	90.4	95.9	86.1
Routinely initiate proactive outreach telephone calls to high-risk patients	32.2	48.2	35.8	43.8
Routinely Sharing Elements of Care Plan in Writing with Patients				
Expected prognosis***	36.6	37.7	43.2	68.4
Goals of treatment***	63.1	61.6	73.4	85.2
Expected response to treatment***	39.2	60.2	42.1	69.0
Potential harms from treatment	87.7	91.6	88.7	94.2
Advance care planning (stored in electronic health record)	76.1	78.2	85.5	79.1
Estimated out-of-pocket costs***	60.5	70.1	62.1	86.0
Discussion of survivorship plans	68.2	56.2	75.2	72.7
Psychosocial Health				
Routine screening for depression	92.1	91.8	96.2	95.7
Routine screening for psychosocial distress	87.6	83.3	87.4	79.7
End-of-Life Care				
Use of "trigger events" or another standard to decide when to discuss hospice care with cancer patients	27.8	33.1	35.4	36.0

Source: OCM Clinician Survey. OCM Program data.

Notes: N=1,253 clinicians. Estimates were weighted for sampling and nonresponse. *p<0.01 **p<0.05 ***p<0.01

Exhibit C-4: Care Processes Added or Enhanced During OCM

New or Enhanced Process	Late-Exit	Opt-Out	One-Sided	Two-Sided
Clinical Care				
Typically use treatment pathways to guide treatment decisions	63.8	71.7	56.4	51.1
Provide access to outpatient palliative care	29.7	49.8	37.6	37.2
Restructured care teams since OCM began**	55.8	70.2	66.3	83.4
Access to Care				
Slots set aside for same day appointments during normal clinic hours**	33.2	47.2	49.5	56.9
Evening/weekend appointments for patients with urgent needs	43.7	45.8	48.0	51.6
Care Coordination				
Routinely telephone patients taking oral chemotherapy drugs to monitor side effects and refill needs	42.9	45.5	52.3	50.7
Educate all patients to "call us first" before going to the emergency department**	35.2	46.5	43.7	61.9
Routinely initiate proactive outreach telephone calls to high-risk patients**	51.4	81.1	66.1	75.4
Routinely Sharing Elements of Care Plan in Writing with Patients				
Expected prognosis	59.6	79.3	69.4	68.1
Goals of treatment	54.0	50.8	53.6	66.7
Expected response to treatment	57.4	48.5	70.1	58.9
Potential harms from treatment	24.6	38.9	28.5	29.6
Advance care planning (stored in electronic health record)**	60.6	78.1	57.4	61.4
Estimated out-of-pocket costs***	44.6	35.4	58.2	39.3
Discussion of survivorship plans	62.7	69.7	78.2	77.5
Psychosocial Health				
Routine screening for depression	70.1	79.9	71.7	76.4
Routine screening for psychosocial distress*	67.9	78.4	65.5	80.0
End-of-Life Care				
Use of "trigger events" or another standard to decide when to discuss hospice care with cancer patients	57.1	64.1	56.1	54.6

Source: OCM Clinician Survey. OCM Program data.

Notes: N=1,253 clinicians. Estimates were weighted for sampling and nonresponse. *p<0.01 **p<0.05 ***p<0.01