

# Improving Quality of Care in Oncology Through Healthcare Payment Reform

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As of January 2014, 14.5 million Americans with a history of cancer were alive. By 2024, this number of cancer survivors is projected to increase to 19 million.<sup>1</sup> In 2010, the estimated cost of cancer care in the United States was \$125 billion, which is projected to increase by 38% to \$173 billion in 2020.<sup>2</sup> This rising cost of cancer care has far outpaced US overall inflation rates, which hovered between 0.8% and 1.1% from 2014 to 2016.<sup>3</sup> The American Society of Clinical Oncology (ASCO) provided a synopsis of the many challenges currently facing the US cancer care system in its 2016 State of Cancer Care in America report.<sup>4</sup> In brief, there has been progress made in the care of patients with cancer, with new drugs approved and new tests for the diagnosis and management of patients with cancer alongside improvements in 5-year survival rates for many types of cancer.<sup>4</sup> However, growth in the number of new patients with cancer and survivors, inequities across racial and ethnic groups, and disparities between rural versus urban regions remain, and exponentially increasing cancer care costs have put the system in crisis.<sup>4</sup> It is also of great concern that variations in healthcare delivery across different sites of care can lead to diverse outcomes.<sup>5-7</sup>

A 2013 report from the Institute of Medicine (now known as the National Academy of Medicine [NAM]), "Delivering High-Quality Cancer Care: Charting a New Course for a System in Crisis," states that cancer care often is not patient-centered nor evidence-based and that many patients do not receive palliative care.<sup>8</sup> NAM defines healthcare quality as the degree to which health services and technologies for individuals and populations increase the likelihood of evidence-based desired health outcomes.<sup>9</sup> To improve the quality of cancer care, a component of the NAM conceptual framework is that payers should transition to new payment models that demonstrate both increased quality and affordability.<sup>8</sup> To improve quality and stem the rising cost of cancer care, multiple public and private payers have been experimenting with alternative payment models (APMs) in oncology care in recent years. The primary goal of oncology-specific APMs is to link high-quality cancer care with payment reform. To a great extent, the driving force behind implementing

## ABSTRACT

**OBJECTIVES:** To provide an overview of alternative payment models (APMs) and describe how leading national organizations involved with oncology care and payment are linking quality improvement initiatives and payment reform.

**STUDY DESIGN:** Literature review.

**METHODS:** For this review, we summarized the literature on APMs and their goals of improving healthcare quality while jointly controlling the cost of care. We described the types of APMs that have been examined in the real-world setting, specifically in the area of oncology, and how they have affected the quality of oncology care.

**RESULTS:** Currently, the following types of APMs are actively being explored by public- and private-sector insurers, specifically in oncology: accountable care organizations, bundled payments, clinical pathways, and patient-centered medical homes. To a great extent, the driving force behind implementing APMs tied to quality can be attributed to the initiatives of several leading national organizations, including the National Academy of Medicine, the American Society of Clinical Oncology, the National Committee for Quality Assurance, HHS, and CMS. Real-world evidence of APMs shows that progress is being made toward improving the quality of oncology care in the United States while simultaneously reducing costs.

**CONCLUSIONS:** The effective pairing of quality initiatives with healthcare reimbursement structures will likely be key to the long-term success of such APMs.

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TAKEAWAY POINTS

- ▶ Examples of alternative payment models (APMs) being implemented in real-world settings include accountable care organizations, bundled payments, clinical pathways, and patient-centered medical homes.
- ▶ The driving force behind APMs tied to quality can be attributed to several leading national organizations that are involved in developing and endorsing quality measures, developing guidelines and care improvement models, accrediting and certifying providers and health plans, and using data to monitor outcomes and for public reporting.
- ▶ Although sparse and lacking in many important reported health outcomes, real-world evidence of APMs shows that progress is being made toward improving the quality of oncology care in the United States while simultaneously reducing costs.

APMs tied to quality can be attributed to the initiatives of several national leading organizations, including those of NAM, ASCO, the National Committee for Quality Assurance (NCQA), HHS, and CMS. These organizations have been involved collaboratively with 1 or more of the following initiatives: developing and endorsing quality measures, developing guidelines and care improvement models, accrediting and certifying providers and health plans, and using data to monitor outcomes and for public reporting.

The objectives of this review were to provide an overview of APMs and to describe how leading national organizations instrumental in oncology care and payment are involved with linking quality improvement initiatives and payment reform. Additionally, we present real-world applications of APMs in the area of oncology and how they have complemented quality improvement with payment reform.

Shift Toward Tying Payments to Quality and Value

APMs have the goals of improving healthcare quality while jointly controlling the cost of care.<sup>4,10</sup> In January 2015, HHS announced 2 internal goals: 1) By the end of 2016, tie 30% of Medicare payments to quality or value through APMs, and 2) tie 85% of Medicare fee-for-service (FFS) payments to quality or value.<sup>11</sup> HHS has invited private payers to match or exceed these internal goals of Medicare.<sup>11</sup> In April 2015, the Medicare Access and CHIP Reauthorization Act

(MACRA) was passed to help achieve the HHS goals. MACRA changes how Medicare pays providers in 3 ways: 1) It ends the Sustainable Growth Rate formula for determining Medicare payments, 2) it creates a new framework for rewarding healthcare providers for providing quality care, and 3) it combines the existing quality reporting programs into 1 new system.<sup>11,12</sup>

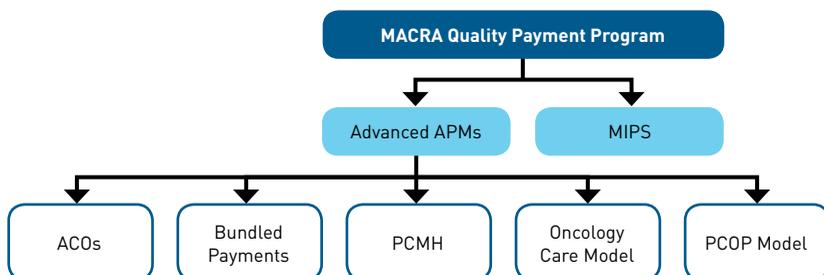
MACRA's goals are to more rapidly achieve paying for value and better care and to make it easier to participate in the CMS quality programs with the Merit-Based Incentive Payment System

(MIPS) or APMs, scheduled for implementation in January of 2019 (Figure 1).<sup>12,13</sup> The performance measuring period for determining MIPS payments began in 2017.<sup>13</sup> MIPS consolidates 3 existing programs, Meaningful Use, the Physician Quality Reporting System, and the Value-Based Payment Modifier, into a single program<sup>11,12</sup> and will assess individual physician performance in 4 categories: quality, resource use, meaningful use of certified electronic health record (EHR) technology, and clinical practice improvement activities.<sup>11,12</sup> APMs are defined as any of the following under MACRA: 1) an innovative payment model expanded under the Center for Medicare and Medicaid Innovation (CMMI), including Comprehensive Primary Care initiative participants, but not Health Care Innovation Award recipients; 2) a Medicare Shared Savings Program Accountable Care Organization (ACO); and 3) participants in the Medicare Health Care Quality Demonstration Program or Medicare Acute Care Episode Demonstration Program or another demonstration program required by federal law.<sup>11-13</sup>

A subset of APMs (ie, Advanced APMs) will be eligible to earn incentive payments and be exempt from MIPS reporting requirements under the Quality Payment Program of MACRA.<sup>12</sup> Advanced APM participants must use quality measures comparable to those of MIPS, use certified EHR technology, bear more than “nominal financial risk” or be a medical home expanded under CMMI, and have increasing percentages of payments linked to value through Medicare or all-payer APMs.<sup>12,14</sup>

The CMMI recently implemented the Oncology Care Model (OCM), which, under MACRA, is considered an APM with potential for qualifying as an Advanced APM.<sup>15-17</sup> The OCM Medicare FFS model incorporates a 2-part payment system for participating practices: 1) a monthly \$160 per beneficiary care management payment and 2) a performance-based payment for episodes of chemotherapy care.<sup>15-17</sup> Practices utilizing the OCM will have to provide these core functions<sup>15</sup>: patient navigation; documenting a care plan that contains the 13 components in the Care Management Plan outlined in the

FIGURE 1. Shift Toward Value-Based Payment System



ACO indicates accountable care organization; APM, alternative payment model; MACRA, Medicare Access and CHIP Reauthorization Act; MIPS, Merit-based Incentive Payment System; PCMH, patient-centered medical home; PCOP, Patient-Centered Oncology Payment.

previously mentioned NAM report<sup>8</sup>; providing patient access to a clinician 24 hours a day, 7 days a week; treating patients with therapies consistent with nationally recognized guidelines; using data to drive continuous quality improvement; and using a certified EHR.

Under the OCM, quality is measured by the degree to which practices provide such services in efforts to increase the chances of achieving desired health outcomes.<sup>15-17</sup> In March 2016, CMS started testing the OCM to evaluate the impact of a shift in oncology payments from FFS to fee-for-value.<sup>15-17</sup> The OCM started July 1, 2016, and will run through June 30, 2021. As of February 2018, 191 practices and 14 payers were participating in the OCM.<sup>16</sup>

ASCO has critiqued the OCM in that it is a hybrid model and does not totally replace the FFS reimbursement policy<sup>18</sup> and has proposed the Patient-Centered Oncology Payment (PCOP) model.<sup>4</sup> The PCOP APM will provide supplemental nonvisit payments to oncology practices performing the following activities<sup>4,19</sup>: new patient treatment planning, care management during treatment, care management during active monitoring, and participation in clinical trials.

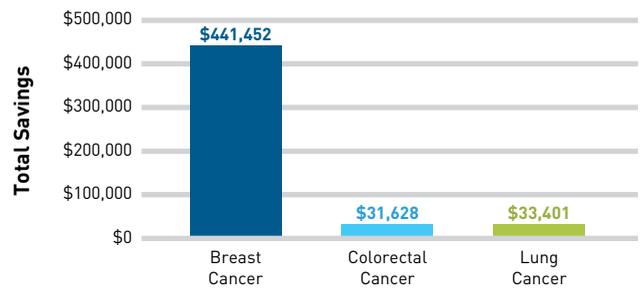
These payments are in addition to payments under the Medicare Physician Fee Schedule for evaluation and management services, infusions of chemotherapy, advanced care planning, testing and imaging, and other procedures and services received by patients.<sup>19</sup> Participating practices would also continue to be paid for drugs provided to patients.<sup>19</sup> Oncology practices that participate in the PCOP system would be accountable for providing high-quality evidence-based care.<sup>4,19</sup> ASCO and CMS are working together to develop quality measures, specifically in the area of oncology, and to ensure the design of the PCOP is aligned with the objectives of MACRA.<sup>19</sup>

### Real-World Evidence of APMs

ACOs are healthcare providers or systems accountable to a third-party payer for the overall care, quality, and cost for a population of beneficiaries.<sup>20</sup> The ACO APM still involves FFS payments to clinicians/providers, but via changes made in care delivery to ensure a coordinated continuum of care, a shared savings framework is built.<sup>9</sup> To receive a portion of the shared savings, providers are monitored and held accountable for the quality of care they deliver.<sup>21</sup> An example of an ACO in oncology is the partnership between Aetna, Texas Oncology, and the Innovent Oncology Program (McKesson Specialty Health), which launched 3 programs: implementation of level I pathways, which are treatment guidelines for an evidence-based oncology program; patient support services; and advance care planning.<sup>22</sup> Patient support services include a telephone nursing intervention program to support patients receiving chemotherapy.<sup>22</sup> The goals of these programs are to demonstrate that applying evidence-based guidelines pathways to cancer care can help reduce variability in care and lead to equal or better health outcomes at lower costs.<sup>22</sup>

A prospective study of 221 patients with cancer enrolled in the Innovent Oncology Program from June 2010 through May 2012 examined the impact of the program on compliance with level I

**FIGURE 2. Pilot Innovent Oncology Program (2-Year Study): Total Savings for Breast, Colorectal, and Lung Cancer Cohorts<sup>a</sup>**



<sup>a</sup>For each member, costs were compared with expected costs to determine total member-level savings.<sup>21</sup>

pathways and the rates and costs associated with chemotherapy-related emergency department (ED) visits and hospital admissions.<sup>22</sup> Comparisons were made with a population with similar characteristics in the 12 months prior to initiation of the program. During the study, adherence to level I pathways improved from 63% to 76% and 81% of patients participated in the nursing support services. Among patients with lung, breast, or colorectal cancer, ED visits, hospital admissions, and hospital days declined 48%, 34%, and 44% from baseline, respectively. A total savings of \$506,481 was reported, with the majority resulting from patients with breast cancer (Figure 2). The authors explained that there was a predominance of young patients receiving adjuvant chemotherapy for breast cancer, which may explain why the majority of savings came from the breast cancer cohort. The results of the pilot Innovent Oncology Program provide preliminary evidence that forming an oncology-specific ACO APM can improve evidence-based treatment and reduce costs. Currently, ACOs remain dependent on FFS reimbursement and many are skeptical of their financial structure as a mechanism to achieve quality and value in cancer care.<sup>18</sup>

A bundled payment refers to a set payment for the multiple services patients receive during an episode of care and is actively being explored in the CMS OCM.<sup>15,23</sup> UnitedHealthcare tested an episode-based payment model linked with quality data as an incentive to improve quality in 5 oncology practices caring for 810 patients with breast, colon, or lung cancer.<sup>24</sup> The program had the practices register all patients with these cancers and provide clinical data to the payer. The study was retrospective and included a control cohort from a large national payer registry of FFS patients with cancer. Between October 2009 and December 2012, oncology practices were paid a single payment at the initial visit of a patient and all chemotherapy medications were reimbursed at the average sales price. Oncology practices annually reviewed data on cost and quality outcomes (Table 1<sup>24</sup>). Use of the episode-based bundled payment resulted in a net savings of 34% in total costs, with \$33 million saved using

**TABLE 1.** Quality and Use Measures From the UnitedHealthcare Episode Payment Program\*

Episode	Quality and Use Measures
Each clinical episode (19 episodes)	<ul style="list-style-type: none"> <li>• Total cost of care</li> <li>• Emergency department and hospitalization rates</li> <li>• Parenteral drug costs per episode</li> </ul>
Aggregate	<ul style="list-style-type: none"> <li>• Average drug cost per episode</li> <li>• Admissions for cancer symptoms</li> <li>• Admission for treatment-related symptoms</li> <li>• Time to first progression for relapsed patients</li> <li>• Number of lines of therapy for relapsed patients</li> <li>• Hospice days for patients who died</li> <li>• Days from last chemotherapy to death</li> <li>• Costs in the last 30 days of life</li> <li>• Survival from date of condition enrollment (relapsed patients only)</li> <li>• Cost per admission and length of stay</li> <li>• Diagnostic radiology use</li> <li>• Laboratory service use</li> <li>• Durable medical equipment use</li> <li>• Surgical services, use and cost</li> <li>• Febrile neutropenia occurrence rate</li> <li>• Granulocyte colony-stimulating factor usage rate</li> <li>• Erythropoietin use</li> </ul>

Adapted from reference 24.

\*All medical groups were identified in the results reporting.

episode-based payments versus the registry-predicted FFS cost. Although there was a net savings in total costs, costs for chemotherapy drugs increased despite incentives to lower drug expenses. There was no difference in monitored quality measures observed between the cohort with the episode-based bundled payment and a control cohort. The investigators of the study concluded that the costs of caring for patients with cancer can successfully be reduced without sacrificing quality. The findings of this study challenge the assumption that reducing healthcare resource utilization results in worse quality outcomes in patients with cancer. In October 2015, United Healthcare announced that 5 additional oncology practices, including 550 oncologists, were joining the program.<sup>25</sup>

Anthem's Cancer Care Quality Program is a cancer quality initiative and payment model developed to improve cancer outcomes and promote access to evidence-based and cost-effective care.<sup>26</sup> In July 2014, 6 commercial health plans in the Midwest and Georgia implemented the program, in which oncologists received an additional reimbursement of \$350 per month per patient when following an evidence-based treatment pathway for breast, lung, or colorectal cancer.<sup>26</sup> Among 5538 registered patients, pathway adherence was 43% for breast cancer, 65% for colorectal cancer, and 51% for non-small cell lung cancer (eAppendix Figure). These results demonstrated that the new payment model of enhanced reimbursement for following a treatment pathway is feasible, although further interventions may be required to increase pathway adherence. The Anthem clinical pathway program was initiated in 2014 and improvement in health outcomes has not yet been reported.

In April 2010, the first level III oncology Patient-Centered Medical Home (PCMH) recognized by the NCQA was the 9-physician Consultants in Medical Oncology and Hematology (CMOH) practice outside of Philadelphia.<sup>27,28</sup> To become recognized by NCQA as a PCMH, practices must meet up to 30 elements in 9 standards: 1) communication and care access, 2) tracking patients and participating in registries, 3) care management, 4) providing resources for patient self-management, 5) electronic prescribing, 6) tracking test results, 7) tracking referrals, 8) performance measurement and improvement, and 9) electronic communication with advanced technology.<sup>29</sup> CMOH implemented the 9 standards of NCQA and had significant reductions in resource use within a year, including ED visits by 68%, hospital admissions with chemotherapy by 51%, and hospital length of stay by 21%. The overall savings for CMOH payers were estimated at \$1 million annually per physician.<sup>30</sup> However, this improvement in costs for CMOH payers was associated with financial consequences to the physicians of CMOH, largely resulting from providing services that may not be reimbursed by payers. This was specifically observed in regard to ED visits, because the physicians provided care for patients after hours instead of sending them to the ED and were not adequately reimbursed. Therefore, the authors of the study concluded that it is important for the sustainability of PCMHs in oncology to complement quality improvement with payment reform.<sup>30</sup> However, the focus of this study was on outpatient ED utilization; the effects of PCMHs on other outcomes were not evaluated.

Prior to instituting the OCM, CMS awarded several grants to oncology medical homes (OMHs), including a grant to Innovative Oncology Business Solutions (IOBS) in 2012.<sup>30</sup> IOBS developed its Community Oncology Medical Home (COME HOME) model in 7 oncology practices throughout the United States.<sup>30,31</sup> The COME HOME model incorporates 7 strategies to provide high-quality care: use of EHRs, best-practice care driven by triage and clinical pathways, team-based care, active disease management, enhanced access, enhanced care, and financial support for the medical home infrastructure.<sup>30</sup> Preliminary results demonstrated that the COME HOME model improved patient outcomes, including a 23% to 28% reduction in patients with ED visits (eAppendix Figure), fewer hospitalizations, and shorter hospital lengths of stay compared with control groups.<sup>30</sup> However, the savings in healthcare costs remained at the payer level and not the provider level.

IOBS and the practices of the COME HOME program recently launched efforts to utilize bundled payments/shared savings with initiatives of developing a data analytics infrastructure to track improved outcomes and costs and a series of limited bundled payment pilots with small patient pools.<sup>30</sup> At the national level, CMS has discontinued funding for the COME HOME program and is pursuing the OCM, which incorporates many of the same advances in quality oncology care as the COME HOME program and is aimed toward shifting from the FFS payment system to fee-for-value.<sup>15,30</sup>

**TABLE 2.** Summary of Real-World Evidence of APMs in Oncology

Example	Description	Outcomes
ACO <sup>22</sup>	<ul style="list-style-type: none"> <li>Aetna partnered with Texas Oncology and the Innovent Oncology Program and launched 3 programs: implementation of pathways, patient support services, and advance care planning.</li> <li>A prospective study of 221 patients examined program impact on compliance with level I pathways and rates and costs associated with chemotherapy-related ED visits and hospital admissions.</li> </ul>	<ul style="list-style-type: none"> <li>Preliminary evidence showed that an oncology-specific ACO APM can improve evidence-based treatment and reduce costs.</li> </ul>
Bundled Payment Model <sup>24</sup>	<ul style="list-style-type: none"> <li>UnitedHealthcare tested an episode-based payment model linked with quality data.</li> <li>A single payment at the initial visit of a patient and all chemotherapy medications were reimbursed at the average sales price.</li> <li>A retrospective study was conducted with 810 patients.</li> <li>Oncology practices annually reviewed data on cost and quality outcomes (including ED visits and hospital admissions).</li> </ul>	<ul style="list-style-type: none"> <li>The episode-based bundled payment system resulted in a net savings of \$33 million (vs the registry-predicted FFS cost).</li> <li>Costs for chemotherapy drugs increased, despite incentives to lower drug expenses.</li> <li>No difference in quality measures was observed between the episode-based bundled payment and the control.</li> </ul>
Clinical Pathway <sup>26</sup>	<ul style="list-style-type: none"> <li>Six commercial health plans implemented the Cancer Care Quality Program.</li> <li>Oncologists received an additional reimbursement of \$350 per month per patient when following an evidence-based treatment pathway for breast, lung, or colorectal cancer.</li> <li>Pathway adherence was evaluated among 5538 patients for 6 months.</li> </ul>	<ul style="list-style-type: none"> <li>The new payment model of enhanced reimbursement for following a treatment pathway is feasible.</li> </ul>
PCMH <sup>27,28,30</sup>	<ul style="list-style-type: none"> <li>NCQA recognized the 9-physician CMOH practice.</li> <li>CMOH implemented the 9 standards of NCQA, including measuring practice-wide clinical quality parameters and patient outcomes (including ED visits and hospital admissions).</li> </ul>	<ul style="list-style-type: none"> <li>Within 1 year, CMOH had significant reductions in resource use, including ED visits, hospital admissions with chemotherapy, and hospital length of stay.</li> <li>Overall savings to CMOH payers were estimated at \$1 million annually per physician.</li> <li>The improvement in costs was also associated with financial consequences to CMOH physicians, largely resulting from the FFS payment system.</li> </ul>
Oncology Medical Home <sup>30,31</sup>	<ul style="list-style-type: none"> <li>IOBS developed its COME HOME model in 7 oncology practices.</li> <li>The COME HOME model incorporated 7 strategies to provide high-quality care: use of EHRs, best-practice care driven by triage and clinical pathways, team-based care, active disease management, enhanced access, enhanced care, and financial support for the medical home infrastructure.</li> <li>Patient outcomes included ED visits and inpatient admissions.</li> </ul>	<ul style="list-style-type: none"> <li>Preliminary results demonstrated that the model helped lower ED and inpatient visit rates and that there were fewer inpatient days.</li> <li>The savings in healthcare costs remained at the payer level, not the provider level.</li> </ul>

ACO indicates accountable care organization; APM, alternative payment model; CMOH, Consultants in Medical Oncology and Hematology; COME HOME, Community Oncology Medical Home; ED, emergency department; EHR, electronic health record; FFS, fee-for-service; IOBS, Innovative Oncology Business Solutions; NCQA, National Committee for Quality Assurance; PCMH, patient-centered medical home.

Currently, however, the OCM is an FFS model integrated with a bundled payment.<sup>15-17</sup>

Based on the results of these early studies of the evidence of real-world APMs, there is significantly more to learn when instituting payment reform in oncology care, as there is scant information on the impacts on patient outcomes, such as survival, recurrence, and adverse events, as well as longer-term financial consequences. As new APMs are being implemented rapidly with the passage of MACRA, it will be crucial to follow their evolution and distinguish the positive and negative outcomes for providers, payers, and patients. To date in oncology, many costly services, such as surgery and the delivery of radiation therapy, have not been adequately addressed by APMs. A summary of recent studies that evaluated the development and effectiveness of different APMs specifically in oncology care in real-world settings is presented in [Table 2](#).<sup>21,24,26-28,30,31</sup>

### Recommendations for Oncology-Specific APMs

In July 2015, the Turning the Tide Against Cancer initiative of the American Association for Cancer Research, the Personalized Medicine Coalition, and Feinstein Kean Healthcare convened a roundtable discussion that resulted in 5 policy considerations regarding oncology APMs.<sup>32</sup> The 5 policy considerations are directed toward ensuring the delivery of value-based cancer care<sup>32</sup>:

*APMs should keep pace with rapidly emerging science by incentivizing the adoption of innovative medicines and technologies that have the potential to improve patient outcomes and make healthcare more efficient.*

*APMs should include mechanisms to encourage patient participation as appropriate in clinical trials as well as ongoing post-market clinical research.*

Clinical pathways should be transparent and evidence-based, and updated regularly to reflect current scientific evidence and clinical advances within the overall continuum of care.

When providers and patients are making treatment decisions, patients should be given a clear, comprehensive picture of their treatment options, including cost information that is tailored to the specific patient's insurance coverage and treatment plan.

APMs should require that clinical data be aggregated and integrated into providers' workflows via EHRs in order to support learning healthcare systems. Providers should have access to data that will support their shared decision-making with patients. Similarly, patients should have access to research results collected through a learning healthcare system.

## CONCLUSIONS

Although sparse and lacking in many important reported health outcomes, real-world evidence of APMs shows that progress is being made toward improving the quality of oncology care in the United States while simultaneously reducing costs. As quality linked to payment reform has gained momentum and is being mandated at the national level, it is imperative to rapidly implement more real-world applications of quality initiatives linked to oncology-specific APMs and the educational framework needed to support them. The effective pairing of quality initiatives with the healthcare reimbursement structure will likely be key to the long-term success of such APMs in cancer care. ■

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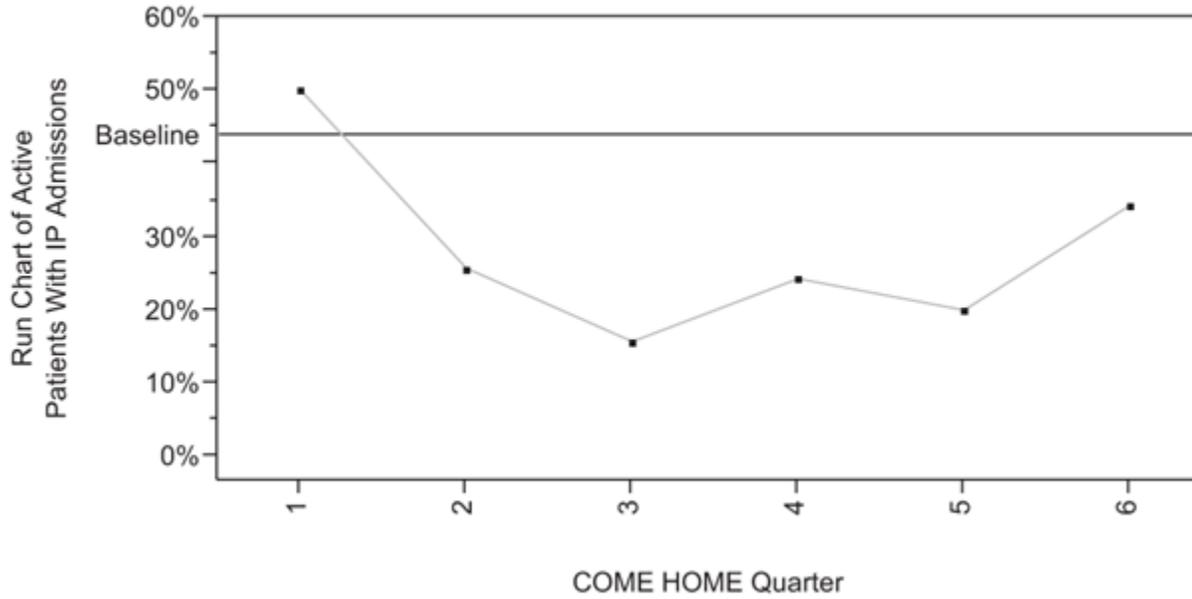
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**eAppendix Figure.** Community Oncology Medical Homes: Physician-Driven Change to Improve Patient Care and Reduce Costs<sup>31</sup>

The COME HOME Beta Site Percent of Patients with Emergency Department Visits



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