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Specialty Payment Model  
Opportunities Assessment  
and Design

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Environmental Scan for Oncology  
(Task 2): Final Version

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## Table of Contents

<b>1. Introduction</b> .....	3
<b>2. Methodology</b> .....	4
2.1. Literature review methodology .....	4
2.2. Stakeholder interview methodology.....	5
<b>3. Opportunities for better care and lower costs</b> .....	6
<b>3.1 Common stakeholder themes</b> .....	6
3.2 Payments .....	7
3.3 Resource allocation and cost drivers in oncology .....	7
<b>4 Model Opportunities</b> .....	8
4.2 Model 1: Clinical Pathways .....	11
<b>4.2.1 Care delivery structure</b> .....	<b>11</b>
<b>4.2.2 Payment structure</b> .....	<b>12</b>
<b>4.2.3 Data infrastructure to support the model</b> .....	<b>15</b>
<b>4.2.4 Minimum requirements for provider groups</b> .....	<b>16</b>
<b>4.2.5 Potential undesirable consequences</b> .....	<b>16</b>
4.3 Model 2: Patient-Centered Oncology Medical Home.....	17
<b>4.3.1 Care delivery structure</b> .....	<b>17</b>
<b>4.3.2 Payment structure</b> .....	<b>19</b>
<b>4.3.3 Data infrastructure to support the model</b> .....	<b>21</b>
<b>4.3.4 Minimum requirements for provider groups</b> .....	<b>22</b>
<b>4.3.5 Potential undesirable consequences</b> .....	<b>22</b>
4.4 Model 3: Bundled Payments .....	23
<b>4.4.1 Care delivery structure</b> .....	<b>23</b>
<b>4.4.2 Payment structure</b> .....	<b>25</b>
<b>4.4.3 Data infrastructure to support the model</b> .....	<b>26</b>
<b>4.4.4 Minimum requirements for provider groups</b> .....	<b>26</b>
<b>4.4.5 Potential undesirable consequences</b> .....	<b>27</b>
4.5 Model 4: Oncology Accountable Care Organizations .....	28
<b>4.5.1 Care delivery structure</b> .....	<b>28</b>
<b>4.5.2 Payment structure</b> .....	<b>29</b>
<b>4.5.3 Data infrastructure to support the model</b> .....	<b>30</b>
<b>4.5.4 Minimum requirements for provider groups</b> .....	<b>30</b>
<b>4.5.5 Potential undesirable consequences</b> .....	<b>31</b>

4.6	Stakeholder Perspective on Model Design.....	32
<b>4.6.1</b>	<b>Provider perspective .....</b>	<b>32</b>
<b>4.6.2</b>	<b>Payer perspective .....</b>	<b>32</b>
<b>4.6.3</b>	<b>Care management organization perspective .....</b>	<b>33</b>
<b>4.6.4</b>	<b>Patient perspective .....</b>	<b>34</b>
4.7	Other proposed components.....	35
<b>5</b>	<b>Performance Measures.....</b>	<b>36</b>
5.2	Overview .....	36
5.3	Structural measures .....	39
5.4	Process measures.....	40
5.5	Outcomes measures.....	41
<b>5.6</b>	<b>Next wave of oncology measures .....</b>	<b>42</b>
<b>6</b>	<b>Data Needs .....</b>	<b>43</b>
6.2	Areas for data improvement.....	43
6.3	Stakeholder perspective.....	43
<b>6.3.1</b>	<b>Provider perspective .....</b>	<b>43</b>
<b>6.3.2</b>	<b>Payer perspective .....</b>	<b>44</b>
<b>6.3.3</b>	<b>Care management organization perspective .....</b>	<b>44</b>
<b>6.3.4</b>	<b>Patient perspective .....</b>	<b>44</b>
<b>7</b>	<b>Feasibility and Implementation.....</b>	<b>45</b>
7.2	Multi-payer approach .....	45
7.3	Model design feasibility.....	45
	<b>Appendix A: Stakeholders .....</b>	<b>48</b>
	<b>References.....</b>	<b>50</b>

## 1. Introduction

Many of the current issues plaguing the American health care system—uncoordinated care delivery, fragmentation, and volume-based payments—are manifested in the delivery and payment of cancer care. Substantial progress in the efficacy of cancer treatment is expected, and numerous opportunities exist to improve the quality of care provided. These include greater patient engagement, the use of the best and latest evidence-based treatments, and the prevention of complications from treatment and the disease itself. However, cancer care will likely be a primary driver of projected increases in health care spending over the next two decades due to an aging population, improved survival for patients with many types of cancer that can now be managed longer term, increased life expectancy, and the introduction of a wide range of more-personalized treatment options. A recent projection predicts that cancer care will cost the American health system \$157 billion in 2020.<sup>1</sup> Therefore, a major issue in American health care moving forward is how we will pay for cancer care. Presently, we reimburse with payment systems that support high-cost procedures rather than with assisting providers in improving the outcomes of patients and maximizing the value of care delivered.

Key stakeholders interviewed for this report agreed that payment reform for cancer care is timely and necessary, though opinions diverged on the level of comprehensiveness of a future model. All of the alternative payment models attempt to reduce the reliance on the current fee-for-service (FFS) mechanism, and to increase the use of case- or patient-level payments that are linked to performance measures. In general, consensus is on enhancing payments for services not currently reimbursed, and doing so around episodes of care in medical oncology. The most common proposal for an incremental step forward is a case management fee—overlaid on the current FFS system—that can be scaled up to include additional services and domains not currently reimbursed, such as after-hours, telephone, or online services; medication management; and care coordination. At the same time, or subsequently, existing FFS payments for certain types of oncology-related services may be scaled down; for example, FFS payments for certain office services or chemotherapy administration might be replaced with a flat fee.

The aim of this environmental scan is to (a) identify and describe potential alternative oncology

payment models, (b) identify information related to the need or potential for new oncology payment models, and (c) identify and describe models that commercial or public payers are testing. Knowledge of past and current payment models for oncology care will help direct the development of potential payment models, evaluate models currently being tested, and locate areas where implementation is feasible. The environmental scan is the first stage of this project, and will inform the technical expert panel and model design and simulation phases.

Section 2 of this report details the methodology the project team undertook to conduct an extensive literature review in oncology payment and stakeholder discussions. Section 3 discusses opportunities for better cancer care and the current cost drivers related to the delivery of oncology care. Section 4 delineates the delivery and payment structures; data infrastructure; and minimum requirements and undesirable consequences of four illustrative alternative payment models—clinical pathways, patient-centered oncology medical homes (PCOMHs), bundled payment models, and oncology-specific accountable care organizations (ACOs). This section also summarizes provider, payer, and other stakeholder perspectives of these models. Section 5 reviews the oncology performance measures landscape and areas for future measurement development. Section 6 covers the data needs to support better care. Finally, Section 7 describes the feasibility and implementation issues related to each model outlined in Section 4.

## **2. Methodology**

The project team conducted a comprehensive environmental scan that included the following: (1) a literature review of the existing peer-reviewed and gray literature and popular media, and (2) semi-structured interviews of thirty-one key stakeholders.

### **2.1. Literature review methodology**

The project team developed and specified Medical Subject Headings search terminology to gain the maximum number of relevant citations compiled by PubMed, Academic Ovid, EconLit, Google Scholar, and LexisNexis. In addition to searching for articles in these databases, relevant articles were identified from bibliographies of retrieved articles. The project team included

literature published in English since 1993.

Below are the search stems and additional terms added to each search string. These search stems and strings were used in each of the above databases.

- 1.1.1. Oncology *or* cancer *or* cancer care *or* tumor *or* tumor care
- 1.1.2. 1.1.1 *and* payment *or* payment model *or* finance *or* incentive *or* compensation
- 1.1.3. 1.1.1 *and* prospective payment system *or* PPS
- 1.1.4. 1.1.1 *and* capitation *or* salary *or* per member per month *or* PMPM *or* full capitation *or* partial capitation
- 1.1.5. 1.1.1 *and* episode payment *or* episode-based payment *or* case payment *or* case-based payment
- 1.1.6. 1.1.1 *and* retrospective payment
- 1.1.7. 1.1.1 *and* bundle *or* bundled payment *or* aggregate payment
- 1.1.8. 1.1.1 *and* medical home *or* patient-centered medical home *or* medical neighborhood
- 1.1.9. 1.1.1 *and* accountable care organization *or* accountable care *or* care coordination *or* ACO
- 1.1.10. 1.1.1 *and* shared savings *or* risk sharing *or* integrated delivery system
- 1.1.11. 1.1.1 *and* fee-for-service *or* fee for service *or* FFS
- 1.1.12. 1.1.1 *and* value-based *or* value-based care *or* pay for performance *or* P4P
- 1.1.13. 1.1.1 *and* competitive bidding
- 1.1.14. 1.1.1 *and* Competitive Acquisition Program *or* CAP
- 1.1.15. 1.1.1 *and* pathways *or* clinical pathways *or* value-based pathways

## **2.2. Stakeholder interview methodology**

The project team identified a list of potential stakeholders to interview and conducted thirty-one one-hour semi-structured strategic interviews with stakeholders and thought leaders spanning the oncology space. This group of selected stakeholders included academic researchers, providers in community and academic settings, payers, patient advocates, representatives of care management organizations, leaders of companies that offer services and commodities to oncologists and health systems, and heads of specialty organizations, among others. While the environmental scan was comprehensive and representative of the oncology field, there is potential for bias due to the survey methods used and the stakeholders selected. This should be taken into account when interpreting this report.

Following each recorded interview, comprehensive notes were transcribed by one member of the

research team. The transcripts were then coded and summarized by two separate team members, and the summaries were combined into one final interview summary. Stakeholder responses were consolidated by stakeholder category and incorporated into the conceptual framework used to present each alternative model.

### **3. Opportunities for better care and lower costs**

#### **3.1 Common stakeholder themes**

There is widespread agreement among the interviewed stakeholders that movement toward payment models that incent higher-value cancer care is imminent and essential. Indeed, a transition from volume-based FFS reimbursement to a system that focuses on payment for episodes of care would align physician reimbursement with facets of care delivery that improve the overall quality and experience for the patient. Stakeholders interviewed agree that payment models should tie quality metrics to performance, and should include incentives to control costs. However, opinions diverge in how best to design a new model, specifically its level of comprehensiveness and the degree to which it shifts away from FFS. Some believe that the model should be built on top of the existing FFS structure to avoid creating overly complex models that might create higher administrative burden and drive smaller practices to consolidate with larger provider networks. Others think that more-innovative payment reform is necessary, both to provide stronger incentives for changes in practice and to avoid cost increases. Respondents also highlighted areas that future payment models must consider, such as workforce issues, site-of-service cost differentials, and the focus on true payment reform and not simply on reform of drug reimbursement policy.

The stakeholders interviewed generally agreed that, moving forward, opportunities for payment reform in oncology should center on reimbursement around episodes of care that are managed by a medical oncologist. While future reform efforts may be expanded to include additional specialties that provide care to cancer patients, such as radiation and surgical oncology, at this time an incremental transition to case-based payments to medical oncologists would provide a positive step in improving the delivery of cancer care at lower costs. Moreover, medical

oncologists are responsible for the plurality of cancer care for most payer types.

### **3.2 Payments**

Reimbursement in the current FFS system has helped provide access to needed care, including many innovative treatments, for patients with cancer. However, FFS payments undervalue or fail to reimburse for services that are known to improve health and reduce costs, such as patient education, preventive health-care services, specialized care teams, and care coordination.

Meanwhile, FFS payment encourages a high degree of cost variation. Spending for chemotherapeutics, for example, is highly variable and frequently not evidence-based, and such variation is often unrelated to outcomes of care. Third-party FFS payments have also contributed to rapid cost growth in cancer care over time. Reforming the payment system in such a way that it provides more support for valuable services not currently reimbursed and more accountability for avoiding unnecessary costs would be beneficial for patients, providers, and payers alike.

Many payment reforms are being developed and implemented that are intended to improve the quality and efficiency of cancer care.

### **3.3 Resource allocation and cost drivers in oncology**

Due to the cost drivers of cancer care, the total cost of treating cancer is projected to increase from \$124 billion to \$157 billion between 2010 and 2020.<sup>1</sup> The top five cancer sites—breast, prostate, colorectal, lung, and lymphoma—are expected to cost the health system approximately \$88 billion by 2020. The primary cost drivers in cancer care are chemotherapeutics, imaging, personalized medicines, radiation oncology, inpatient and emergency room use, and site-of-service cost differentials. Regarding site-of-service cost differentials, Medicare payments for oncology care in a hospital setting are currently greater than payments for the same care in a community setting.<sup>2-4</sup> Over the past decade, differences in payment policies for each setting have resulted in a tripling of hospital setting reimbursement and a decrease in physician setting payments by 14 percent without, a similar shift in the volume of procedures.<sup>5</sup>

Stakeholders interviewed who are involved in shared savings arrangements have found that the



primary savings recouped have been from reducing complication rates and hospital readmissions, reducing unnecessary imaging and high-cost laboratory tests, improving care coordination, and increasing the number of physician-led care teams. These positive steps promote standardization of care and symptom management in a cost-effective way. Furthermore, multiple providers indicate that the total cost of oncology care includes services such as surgery, radiation, and diagnostic services that are beyond the scope of a medical oncologist. Figure 1 supports this notion and shows that surgery, radiation, and other physician services represent more than 50 percent of Medicare expenditure on cancer.

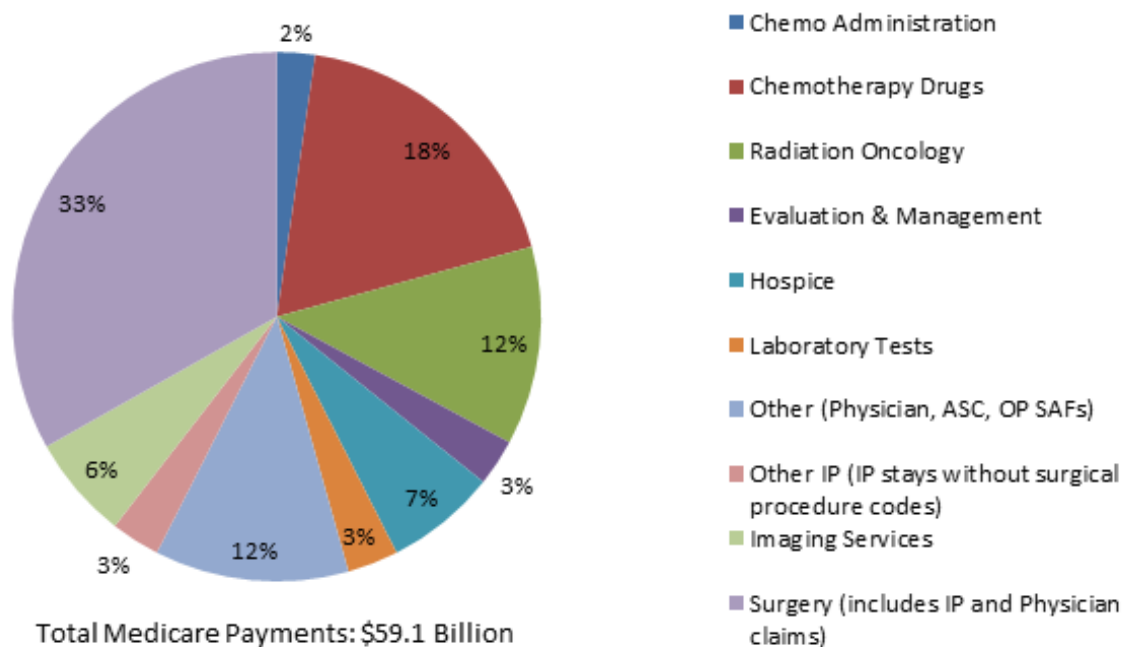


Figure 1: Total Payments for Oncology Services, 2008–2009 (standardized to 2010 dollars).  
*Source:* The Moran Company, 2011.<sup>6</sup>

#### 4 Model Opportunities

The model opportunities for oncology care, described in substantial detail below, progressively move away from FFS toward approaches that are more outcomes-oriented and population-based. These models represent the predominant alternatives found in the literature and discussed during stakeholder engagement. Figure 2 describes where various forms of each model lie in terms of

payment aggregation across providers and level of comprehensiveness of the payment. To move beyond the labels on payment reforms, it is important to consider their implications for payment and how those changes may relate to changes in care delivery. Each alternative model, to varying degrees, works toward transitioning to a more comprehensive episode- or case-based payment, and reducing or limiting FFS payments for some services. In particular, key questions include these:

1. *Does the payment reform shift payments away from FFS, or add to FFS?* All the models include some payments that are not based on volume and intensity, but that differ in whether they simply add a new type of payment to FFS or actually shift away from existing FFS payments. This has implications for both the strength of the incentives to modify current practices and the flexibility and new financial risk that oncologists face in shifting to the new payment system.
2. *What is the size and scope of the case- or person-level payment?* All of the payment reforms include at least a component of payment that is tied to the case, episode, or beneficiary, rather than the volume and intensity of care. How big is this payment, and how broad are the services included? Does the case payment include only the oncology practice, or does it also include other aspects of care such as radiology, surgery, chemotherapy, and hospital services? The answers to these questions relate to how “accountable” the oncology practice becomes for delivering quality of care across the spectrum of medical services. Broader or larger case-based payments mean stronger incentives to limit costs and more financial opportunities to shift how care is delivered.
3. *Are shared savings included on care outside the case payment?* Many payment reforms can be viewed as partial case payments, intended to cover some but not all of the services for a cancer patient. For those services outside the case payment, do oncologists share in the savings when costs are lower? Do they face any “downside risk” if these costs exceed a target or benchmark? For example, many ACOs give oncologists and other providers an opportunity to share in the savings when FFS payments are lower than a target level, and some ACOs place providers at (limited) financial risk if total payments are higher. This is a

mechanism for providing some incentives for lowering costs outside a bundled payment, without placing providers at full financial risk.

Alongside these key payment reform characteristics, the models also vary in their data infrastructure requirements, in requirements or incentives for providers to adopt new approaches to care, and in possible undesirable consequences of concern—in sum, in the ways in which they would be expected to influence or support efforts by oncologists and other providers to change the delivery of care. In all cases, to help promote quality improvement using the reformed payments, there are reporting requirements for performance measures that also influence payment. Later in this report, we describe some of the commonly used measures and the likely directions for future development of performance measures.

The first model described below is the clinical pathways model, which uses an add-on case payment to encourage adherence to predefined, evidence-based chemotherapy regimens; while this model typically does not alter existing FFS payments, it does provide an additional incentive to use services according to evidence-based pathways. The second model is the PCMOH, which provides a case-based payment to enhance reimbursement for practices that meet a comprehensive set of standards for a high-quality “home” for oncology patients. This model also can be implemented initially without altering existing FFS payments. The third model is the bundled payment approach, which includes case-based payments that replace FFS payments for some portion of oncology services. Finally, the oncology ACO model moves toward person-level payments for a broader range of oncology services, or all services—mostly starting with a shared savings payment incentive related to reducing overall FFS costs. At this time, most oncology ACOs retain strong elements of FFS payment, but there is substantial interest in moving toward a global payment approach.

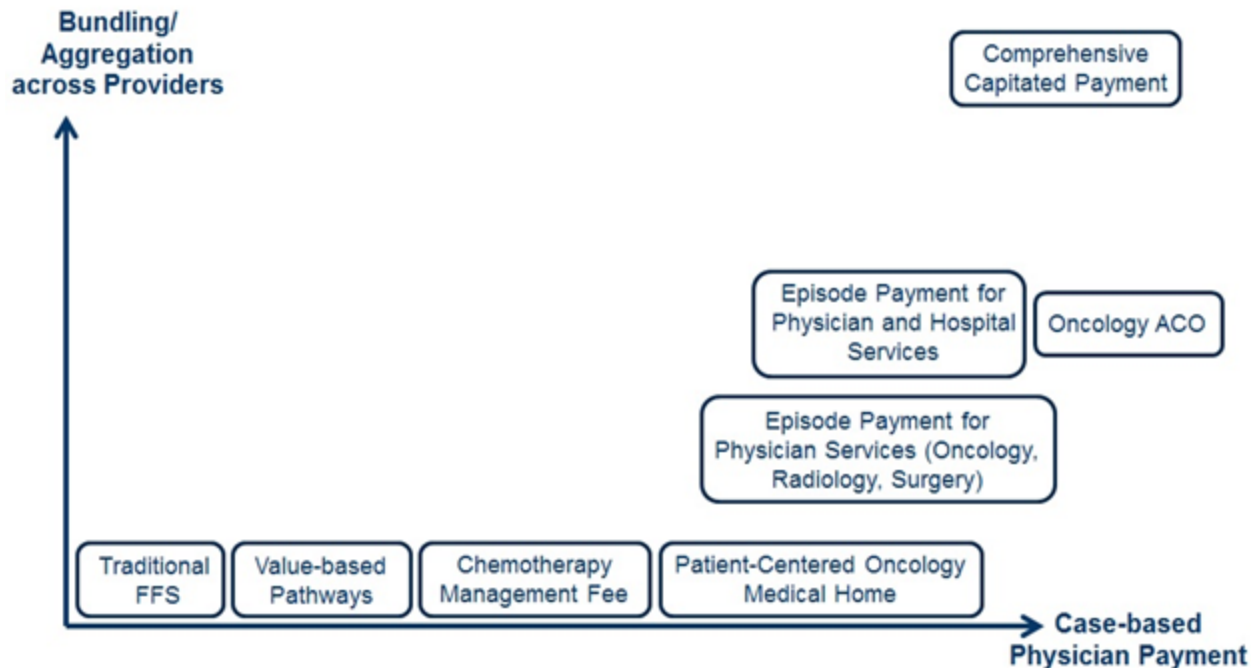


Figure 2: Model Progression by Case-based Physician Payment and Bundling/Aggregation across Providers. *Source:* The Brookings Institution, 2013.

## 4.2 Model 1: Clinical Pathways

### 4.2.1 Care delivery structure

Cancer is a remarkably heterogeneous disease, but treatments for the common cancers, even within the various subtypes of a particular cancer, generally follow a standard course. As such, cancer care lends itself to the development of clinical treatment guidelines and standardized care procedures to ensure high-quality and cost-effective care. The treatment options for each type of cancer abound, and providers often struggle with choosing the most evidence-based regimen. Furthermore, the cost disparity between different lines of therapy is staggering. Therefore, clinical pathways have emerged as a means of standardizing decision-making on the best, most-cost-effective courses of treatment.

In a clinical pathways payment model (Table 1), medical oncologists are encouraged to treat specific clinical conditions with predefined, evidence-based chemotherapy regimens that are selected by a representative body of physicians. The least costly of a range of treatment options

of equal clinical efficacy are selected, and oncologists receive additional payments on the basis of their ability to adhere to the evidence-based pathways. Though pathways might also be beneficial in other domains, such as radiation oncology, most current efforts center on medical oncology. The specific services included and excluded depend on the regimen selected. Providers are generally held to an 80 percent pathway adherence standard, since the use of off-pathways therapies is medically indicated for approximately 20 percent of patients.

The procedure for developing clinical pathways varies widely and has evolved over time. Initially, a group of pioneering practices could choose to convene their own medical oncologists to reach consensus on the pathways they would support and introduce selected options to payers. More often today, payers develop their own pathways to which providers should adhere, and providers choose which pathways to select for inclusion in the model. For example, payers may provide a list of fifteen to twenty approved pathways and require that providers choose three to five regimens that will serve as their bank of options in the model. This provides some flexibility of choice for both the payer and the provider.

The National Comprehensive Cancer Network (NCCN) has developed a list of cancer treatment compendia by cancer site, which often serves as the base for payers and providers to develop their own pathways.<sup>7</sup> One of the primary challenges in pathways implementation is achieving consensus on the pathways to be included in the model,<sup>8</sup> though numerous stakeholders agreed that when providers develop and update the pathways themselves, there is improved adherence and greater provider buy-in. Some provider groups update their pathways quarterly, while others update on a semiannual or annual basis.

#### **4.2.2 Payment structure**

Clinical pathways attempt to minimize the highly variable spending on chemotherapeutics through adherence to evidence-based, cost-effective regimens. The cost of chemotherapy drugs is an important focus since community oncologists in the current buy-and-bill reimbursement system rely predominantly on the margin they receive from chemotherapeutics—currently 6 percent for Medicare (the Average Sales Price plus 6 percent) and variable for commercial

payers—to sustain their practices. There is wide support among payers and providers to create a system that separates the oncologist’s income from drug selection.<sup>9</sup> Many pathways models attempt to separate the income by changing workflow patterns to improve pathway adherence, and then compensating physicians for their time and utilization of pathways with a case management fee. An example of workflow patterns are the additional steps or interventions that change the nature of the interaction at the point of service when chemotherapy is discussed. Clinicians in a pathways model might first consult with their patient, then review charts and potential therapy selection by consulting a computer-based pathways platform (versus no consultation at all, which is typical of usual care).

In a typical pathways model, an additional per patient per month case management fee between \$250 and \$300 is paid, on top of existing FFS reimbursement and drug margins, to incentivize adherence to pathways (Figure 3). Pathways have been shown to be cost-effective by reducing the variation and amount of chemotherapy, thereby reducing costs, while maintaining overall survival rates at the same level as before.<sup>10</sup> Some pilots also involve a shared savings component, which means that any savings recouped from the new model will be shared between the payer and provider groups.<sup>11</sup>

While payers do not presently reimburse a standard amount for the case management fee, most aim to construct a payment that is revenue neutral or slightly favorable to the provider. In general, payers who are piloting a pathways program attribute the case management fee to the provider as a supplement to their existing FFS reimbursement. However, one payer expressed an interest in creating a tiered reimbursement system in the future. In the first year of a tiered reimbursement model, the providers would receive a supplemental case management fee for meeting the pathways adherence benchmark. Then, in subsequent years, quality and performance benchmarks would be introduced and tied to payment, so providers with better outcomes would be paid a greater case management fee. Moving forward, it might also be possible replace the 6 percent margin received on drugs in the current buy-and-bill system with the case management fee. This would go further to curtail provider incentives in the buy-and-bill system that influence the use of more-expensive chemotherapeutic agents and others drugs. It would also represent a step toward delinking payment from the volume of services provided. Reduction in volume of

services would largely come in the form of reduced imaging/laboratory testing, reduced visits to emergency rooms, and lowered incidence of potentially avoidable hospitalizations.

Payment generally triggers with the first administration of chemotherapy and ends upon the conclusion of the regimen prescribed. Documentation of the regimen selected and approximately 80 percent adherence to approved pathways are requisites to payment. In addition, certain quality targets that aim to prevent inappropriate treatment or underutilization of services are included, though they are not usually tied to receiving payment. One payer expressed an interest in ultimately arriving at a tiered reimbursement system, compensating providers at a higher rate for better performance on the measures. The pathways model involves limited provider risk with slightly more accountability—providers are not at risk for the cost of chemotherapeutics, since they are reimbursed at cost for the drugs, and the per patient per month payment supplements the services traditionally billed by oncologists. Similarly, provider accountability rises, since physicians must adhere to the evidence-based pathways to receive payment. One large commercial payer is rolling out a clinical pathways program across its entire network, making participating in the model compulsory.

Early results have shown that pathways programs have blunted cost growth and unnecessarily aggressive treatments.<sup>11,12</sup> In fact, it was shown that drug costs reduced by 37 percent for a cohort of lung cancer patients on US Oncology pathways.<sup>9,10</sup> Some speculate that this would be only a one-time savings and would not continue to lower costs over time. Others, however, argue that widespread use of pathways could cause a disruption in the drug marketplace for chemotherapeutics, thereby driving costs lower across the board. Studies to date have demonstrated that pathways do not drive up cost or worsen outcomes.<sup>10,13</sup> Notwithstanding, these studies do not detail how much of the savings is from avoiding unnecessarily aggressive treatment versus other potential sources.



Figure 3: Clinical pathways payment model schematic contrasted with the current payment model. *Source:* The Brookings Institution, 2013.

#### 4.2.3 Data infrastructure to support the model

In a pathways payment model, the provider must document and submit to the payer a list of prescribed regimens and outcomes data for analysis. The payer must then compute an adherence rate and relay this information to the provider.

Ideally, the practice would have a fully integrated electronic medical record (EMR), and the pathways selection would be seamlessly integrated into the EMR workflow. There would then be a function to export the EMR data for submission to the payer, and a similar function for the payer to electronically push data back to the provider. To move in this direction, commercial entities have begun to provide electronic evidence-based libraries that are fully integrated with pathways and contain a tool for EMR or Web-based entry and export. These commercial entities utilize cloud-based platforms and provide point-of-service metrics that are often unavailable in comprehensive EMRs. The cost of these commercial platforms is variable, but often the cost of such entities is borne by the commercial payer.



#### 4.2.4 Minimum requirements for provider groups

The pathways model requires little structural change to implement, and therefore the requirements are minimal. There must be a group of physicians willing to develop and update the pathways on a regular basis. This group can be nested more locally, such as within a geographic region, or more broadly. Since there are Web-based platforms that can be used for data exchange, a Health Insurance Portability and Accountability Act of 1996 (HIPAA)–compliant, secure Internet connection is the only data requirement. Finally, there must be a payer partner willing to develop and implement a case management fee payment.

#### 4.2.5 Potential undesirable consequences

The primary concern with the pathways model is that providers might undertreat or prescribe a treatment that may be medically contraindicated for a patient to comply with the 80 percent adherence rate necessary for payment. However, incorporating quality benchmarks and allowing providers flexibility on adherence rates will ensure that patients are receiving the proper treatment at the proper time. Another potential solution is to have a control sample or a cohort of patients whose care is not on a pathways model for concurrent examination of this issue.

Table 1: Advantages and Disadvantages of Clinical Pathways Model

Clinical Pathways Model		
Domain	Advantages	Disadvantages
Delivery	<ul style="list-style-type: none"> <li>● Evidence-based treatment</li> <li>● Standardized across providers</li> <li>● Consensus among providers interviewed</li> <li>● Reasonable flexibility in adherence</li> </ul>	<ul style="list-style-type: none"> <li>● Minimal shift from current system</li> <li>● Fear of inappropriate or mis-treatment</li> </ul>
Payment and Quality	<ul style="list-style-type: none"> <li>● Begins to delink reliance on payment from margin on drugs</li> </ul>	<ul style="list-style-type: none"> <li>● Payment overlays on FFS</li> <li>● Payment tied only to process measures</li> <li>● Potential for one-time savings</li> <li>● Minimal change in provider incentives</li> </ul>

## 4.3 Model 2: Patient-Centered Oncology Medical Home

### 4.3.1 Care delivery structure

Recognizing the importance of the doctor–patient relationship, the PCOMH focuses on a physician-led approach to physician and patient engagement and improved quality of care. The PCOMH model aims to reduce emergency room visits and hospitalizations, coordinate care, and encourage patient self-efficacy to improve quality and produce cost savings (Table 2). The model is rooted in many of the same National Committee for Quality Assurance (NCQA) criteria for a patient-centered medical home (PCMH) in primary care, with standards being adapted and reformed for oncology. The current payment for a PCMH model is contingent on the following criteria, which are required for PCMHs to achieve Level III NCQA distinction:<sup>14</sup>

- Increased patient access and enhanced communication
- Patient tracking and registry functions, including reminders for preventive screenings
- Care management and adherence to nationally accepted, evidence-based standards of treatment
- Patient self-management and support as a strategy for avoidance of potential complications of treatment and disease
- Electronic prescribing and physician ordering
- Test tracking and patient compliance monitoring
- Referral tracking
- Continual performance reporting and improvement
- Advanced electronic communications, including a portal for patients and referring physicians

In consideration of how best to implement such a model, stakeholder feedback as well as some analysis of the literature point to a subset of the aforementioned criteria as minimum criteria to qualify for a minimum payment or payment for the initial treatment month.

In addition to the aforementioned criteria, one PCOMH practice has articulated the following

oncology-specific goals, beyond the standard NCQA Level III criteria:<sup>15</sup>

- Streamline and standardize the process of patient evaluation in the medical oncology office.
- Coordinate all aspects of cancer-related evaluations and services beyond the medical oncology office via patient navigators.
- Proactively promote an interdisciplinary approach to management.
- Promote constant collaboration between the clinical support and treatment teams.
- Stress the importance of patient education, engagement, and compliance.
- Enhance patient access via extended hours, telephone triage services, and physicians on call.
- Minimize clinically irrelevant physician activity.
- Fix accountability for care delivery at the physician–patient locus.
- Assume ownership of cancer-related needs in a highly personalized way.

In action, these goals are met in several ways. Providers are expected to maintain a certain level of adherence to a preselected group of clinical pathways to improve evidence-based treatment and prevent overutilization of unnecessary and high-cost drugs. Patient navigators or other care coordinators are incorporated into the practice to assist patients by gathering relevant clinical data, removing barriers to care by making appointments with other specialists and primary care providers, and scheduling all ordered tests. Their job also helps to remove clinically irrelevant work from the duties of a clinician. Extended access to clinical providers via enhanced hours, staffing during off-peak time, and a telephone triage service intends to reduce unnecessary emergency room visits and hospitalizations by increasing the number of next-day office visits. Finally, patient engagement and empowerment—achieved through patient education, shared decision-making, and a patient contract to be actively involved in his or her own care—helps to prevent overutilization of services, symptom management in the home or outpatient setting, and a greater understanding of the goals of all parties involved.<sup>15,16</sup>

At the time of cancer diagnosis, the practice assumes primary responsibility for the coordination of all services related to evaluation and treatment of the cancer. Any non-oncologic or

hematologic medical issues are not within the scope of the PCOMH, and thus care coordination between the oncologist and other providers is necessary. The responsibility for care continues from diagnosis into the survivorship phase of care.

Successful PCOMH models have reported cost reductions via a lower number of emergency room visits and fewer hospital admissions. Early results from one PCOMH showed that emergency room visits fell by 68 percent, hospital admissions per patient treated with chemotherapy per year fell by 51 percent, the length of stay for admitted patients fell by 21 percent, outpatient visits in general fell by 22 percent, and outpatient visits for the chemotherapy population fell by 12 percent.<sup>16,17</sup>

Another related model, the medical neighborhood, provides a collective approach to care that better aligns with the total cost of cancer care across specialties and primary care. The medical neighborhood was not designed to be a payment model, but rather a way to change relationships between physicians, the patient, and the payer in an effort to allow for various providers in a neighborhood to be held accountable for the cost and care of a larger population. It emphasizes care coordination agreements from and with the primary physician, who could be an oncologist if cancer is the dominant illness.<sup>18</sup>

#### **4.3.2 Payment structure**

By and large, PCOMH models use a similar payment format as the pathways model. An additional per patient per month case management fee is paid to supplement existing services provided and billed by the oncologist (Figure 4). This payment is independent of the mode of drug delivery (intravenous or oral) and tumor type. Oncologists do not need to bill for this fee because it is automatically attributed to them each month. This case management fee is intended to directly reimburse for the additional services rendered in this model, such as extended hours, medication therapy management, patient education, meetings between team members, remote telephone triage service, and care coordination. Genetic counseling and psychological counseling are not included, and thus are billed separately. Similarly, reimbursement for evaluation and management codes, infusion fees, and laboratory and imaging fees are unchanged.<sup>19</sup> Compared

to primary care PCMH models, the payments in PCOMH models are larger in magnitude (\$5–\$20 PMPM [per member per month] in a primary PCMH model versus potentially \$200–\$250 PMPM in a PCOMH). In future models, it may be possible for commercial payers to reimburse chemotherapeutics at cost, and transform the margin received on the drugs into the case management fee.

In addition to the case management fee, some stakeholders piloting this model noted the inclusion of payment for infrastructure development to defray the cost of necessary practice transformations such as pathways development, patient navigator programs, patient engagement programs, and advanced care planning and survivorship programs (Figure 4).<sup>19</sup> However, the determination of the payment amount, what the payment covers, and what providers must do to receive this payment all remain unclear.

The payment scheme differs modestly between piloting practices. Some practices have begun shared savings arrangements with certain payers. In one shared savings arrangement, relevant stakeholders noted that 50 percent of the shared savings went to the payer, 25 percent to the provider, and 25 percent to the patient. The patient portion of the shared savings was meant to incent patients to take advantage of the new services that practices provided, such as extended hours, patient education, and remote telephone triage. Additionally, some models involve quarterly infrastructure development payments instead of monthly payments.

Initiation of the payment model begins upon diagnosis and extends into the survivorship phase of care. Payment of the case management fee is contingent upon achieving certain performance and outcomes benchmarks that are incorporated into the reform of the delivery system. Several organizations, including the Community Oncology Alliance (COA), have developed measures for a PCOMH that may serve as a base for further development or adoption of standard measures<sup>20</sup> (see Section 5). In any PCMH model, since the provider agrees to take on care coordination and patient management duties, the provider has increased accountability over the current system. There is minimal risk involved above the additional provider accountability since the payer agrees to reimburse the drugs at cost, and providers are not at risk for emergency room and hospitalization fees. With this combination of delivery and payment reforms, one PCOMH

practice saw aggregated savings on the order of \$1 million per physician per year.<sup>16</sup> These savings have not been reproduced in other settings.

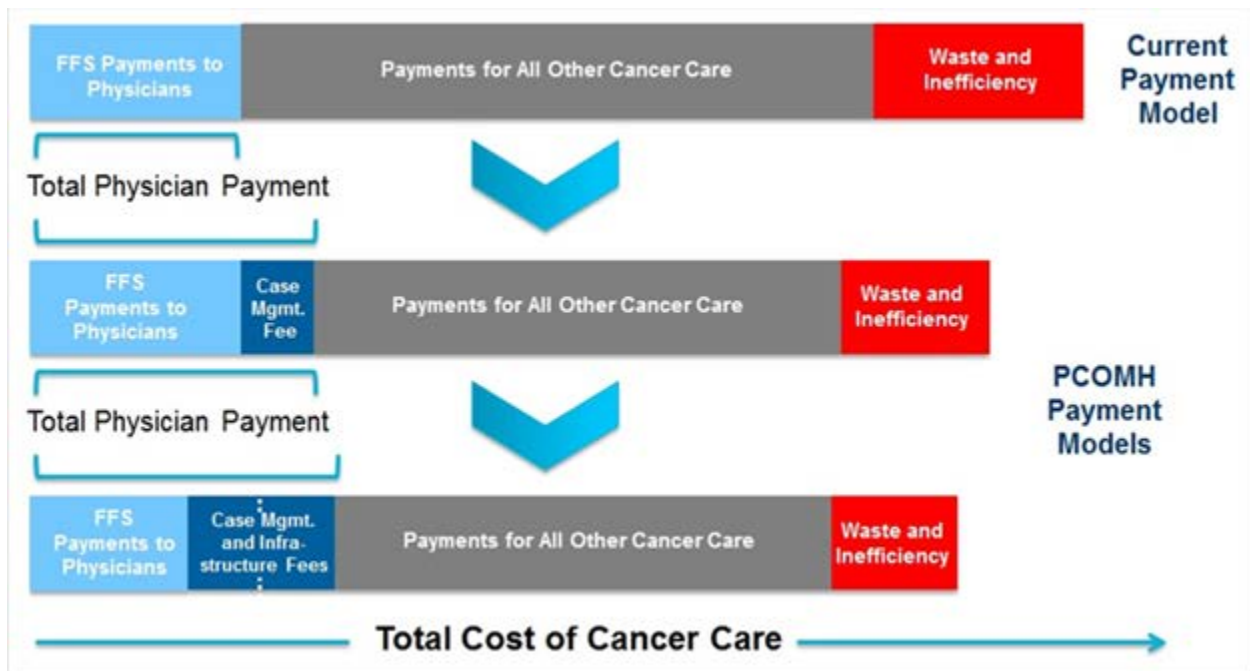


Figure 4: Illustrative schematic of two iterations of the patient-centered oncology medical home payment model contrasted with the current payment model. *Source:* The Brookings Institution, 2013.

### 4.3.3 Data infrastructure to support the model

As a part of the NCQA standards for recognition as a Level III PCMH, practices must demonstrate minimum capabilities in electronic prescribing and ordering by physicians and advanced electronic communications, including a portal for patients and referring physicians.<sup>14</sup> While this level of electronic infrastructure is necessary, it may not be sufficient for true success in this model. Successful practices have developed oncology-specific EMR software that integrates clinical pathways selection, care management tools, and outcomes reporting into the workflow of the visit. The analytic tools inherent to the software also make data exchange with payers more seamless. These investments in more-advanced information technology systems aid practice staff and clinicians in delivering the better care desired in a PCOMH model.

#### 4.3.4 Minimum requirements for provider groups

The primary requirements for provider groups intending to transition to a PCOMH model are predominantly the NCQA PCMH criteria described in Section 4.2.1. In addition, successful practices have adopted many of the oncology-specific features listed after the NCQA PCMH criteria. Beyond the structural and process facets of setting up a PCOMH, stakeholders indicated that true practice transformation in this way requires a physician champion and a willing payer to support the transformation. Several stakeholders interviewed went so far as to say that without such a champion and/or payer partner, the prospect of success is very unlikely.

#### 4.3.5 Potential undesirable consequences

One concern with the PCOMH model is that providers will not save money since more care management services are rendered for patients. However, many of the structural changes inherent to the PCOMH model—such as tying payment to quality benchmarks, improving care coordination, using of patient navigators, improving data acquisition and exchange, and focusing on reducing emergency room visits and hospital admissions—work to counteract that concern.

Table 2: Advantages and Disadvantages of Patient-Centered Oncology Medical Home Model

Patient-Centered Oncology Medical Home		
Domain	Advantages	Disadvantages
Delivery	<ul style="list-style-type: none"> <li>• Patient-centered, coordinated care</li> <li>• Includes use of pathways</li> <li>• Incorporates quality benchmarks</li> <li>• Positive incremental shift from FFS</li> </ul>	<ul style="list-style-type: none"> <li>• Potential administrative burden</li> <li>• Moderate structural changes with higher implementation cost</li> </ul>
Payment and Quality	<ul style="list-style-type: none"> <li>• Tied to quality and performance</li> <li>• Case-based payment</li> <li>• Payment for infrastructure and organizational transformation</li> </ul>	<ul style="list-style-type: none"> <li>• Payments overlay on FFS</li> <li>• Minimal change in provider incentives</li> </ul>

## 4.4 Model 3: Bundled Payments

### 4.4.1 Care delivery structure

In a bundled payment model, payments for certain services, previously reimbursed in an FFS manner, are combined into a more-global payment (Table 3). The term “episodic payment” is often used interchangeably with the term “bundled payment,” but the former means providing more-global compensation for services rendered over a predefined episode of care.

The way care is delivered in a bundled payment model depends greatly on the services included in the bundle. The goal of the model is to encourage providers to more carefully order the services they provide, and to favor lower-cost options of equal effectiveness, because providers will be compensated only a finite, predetermined amount for the care they provide.<sup>21,22</sup> The Centers for Medicare & Medicaid Services (CMS) use bundled payments already for reimbursement of certain services, including renal dialysis. In addition, the CMS Innovation Center has introduced the Bundled Payments for Care Improvement Initiative, aimed at piloting bundled payments for forty-eight different episodes of care.<sup>23</sup>

Proposed models and ongoing pilots have taken a number of forms. Numerous stakeholders have proposed similar, smaller chemotherapy episodic payment as a means of controlling oncology drug costs.<sup>9,22,24,25</sup> The model would involve a one-time payment covering the administration and cost of chemotherapy drugs. The specifics differ modestly among proposals, but in general the payment would cover the cost of chemotherapy drugs, the cost of administering those drugs, and the cost of supportive-care drugs and their administration.<sup>22,25</sup> Generally speaking, there has not been support for bundles including the cost of the drug thus far.

At least one payer has implemented episodic payments in cancer care in an ongoing pilot with five large oncology groups. The groups selected a treatment pathway for each of nineteen discrete clinical episodes in breast, colon, and lung cancer, and committed to 85 percent compliance with their chosen therapies. The length of the episode of care depended on the patient’s cancer status. For intent-to-cure status patients, the episode trigger was the first



administration of chemotherapy and continued until sixty days after the final administration of chemotherapy. For those with incurable cancer, an episode was arbitrarily defined as four months. The payment was calculated by subtracting the average sales price of the drug from the practice's typical reimbursement for the drug under the existing buy-and-bill procedure. A small case management fee was added to that margin. The total was the episode payment for each of the nineteen episodes. Drugs were separately reimbursed at their average sales price. All groups were further required to meet certain performance benchmarks based on survival length, relapse-free survival, hospitalizations for complications, and total cost of care for an episode, among others. They also had to meet with one another to discuss how best to achieve those benchmarks. Early results were reportedly promising.<sup>9,25</sup>

Beyond proposals that aim to delink physician payment from the margin on chemotherapeutics, bundled payments offer the opportunity to include additional services and specialties involved in cancer care. Imaging and radiologic services are examples. Imaging is a crucial feature of the diagnosis and monitoring of cancer, but overutilization of costly imaging studies is a frequent issue. The inclusion of radiologic services in a bundled payment may encourage physicians to better adhere to evidence-based guidelines and to use imaging services only when medically necessary. One proposal for a Stage III colon cancer bundle takes a step in that direction. Included in the bundle is all routine imaging required to monitor treatment. This excludes radiologic testing and costs associated with a colonoscopy and other such pre-surgical or pre-chemotherapy testing. In addition to the routine imaging for monitoring treatment, the bundle also includes the following: development of chemotherapy treatment plan and summary; placement and maintenance of an indwelling central venous catheter for chemotherapy administration; drug administration, including hydration; supportive care and management of side effects; patient and family counseling and education; and all routine laboratory testing required to monitor treatment. A study looked at the distribution of payment by category of services for this proposed Stage III colon cancer bundle.<sup>26</sup> Results demonstrated that the most expensive domain included in the bundle was chemotherapy and its administration, while the least expensive were individual components of outpatient laboratory tests. The largest variations in cost were seen in chemotherapy administration and office-based imaging. The smallest variations in cost were noted in outpatient laboratory tests.

Moving forward, a bundled payment approach to cancer care could be created around adjuvant or metastatic colon cancer or metastatic lung cancer. The bundle might consider the inclusion of some or all of the following: inpatient care; post-acute care; chemotherapy regimen development, drug acquisition, administration, and symptom management; radiological services; oncologist professional services and evaluation and management of patients; radiation oncology services; emergency room visits; hospice stays; durable medical equipment; and care coordination.

#### **4.4.2 Payment structure**

In a bundled payment model, a global payment is prospectively or retrospectively paid for a group of services previously reimbursed in an FFS manner, usually at a discounted cost when compared to the prior sum of FFS payments (Figure 5). The method of developing the payment differs depending on the services included in the model. The initiation of payment depends on the intent of the cancer treatment and type of cancer being treated. For intent-to-cure status patients, the episode is generally defined from the first administration of chemotherapy and proceeds through the end of the chemotherapy and often for a specified post-treatment period. For those patients with incurable cancer, an arbitrary episode length—one month or four months—is generally used. Exceeding certain performance and outcomes benchmarks is a necessary feature of receiving payment in this model. The level of risk in this model depends entirely on which services are included. For a smaller chemotherapy episodic payment model, the level of risk is relatively low since chemotherapeutics are reimbursed separately and the payment itself overlays onto the existing FFS structure. However, as the number of services included in the model increases and as higher-cost services are incorporated, the level of provider risk increases accordingly.

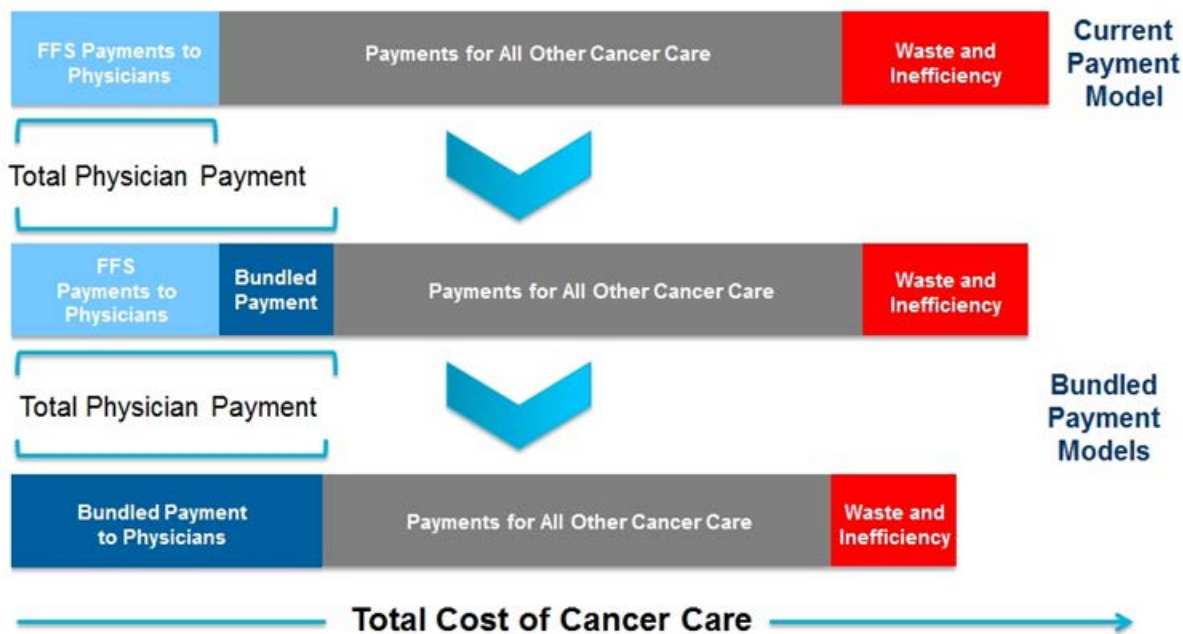


Figure 5: Schematic of two iterations of the bundled payment model contrasted with the current payment model. *Source:* The Brookings Institution, 2013.

#### 4.4.3 Data infrastructure to support the model

Data are essential for both the development and success of bundled payment models. First, accurate data on cost, utilization of services, and staging are necessary for the development of the bundled payment itself. In addition, the timely marriage of clinical and claims data is indispensable, since providers must have feedback on their practice patterns and costs in order to alter their behavior toward higher-value care. Ideally, this would be accomplished with an interoperable EMR system, specific to oncology, that would allow selection of regimen and performance and outcomes reporting for providers and analysis, and coding on the payer side. In addition, the selection of performance and outcomes measures is necessary at the outset of the pilot.

#### 4.4.4 Minimum requirements for provider groups

There are few minimum requirements for practices looking to transition to a bundled payment model. First is volume for certain cancers—it is not clear if bundled payments are a sensible

option if there is a small case volume. Another is a willing payer partner to help design the payment composition. In addition, consensus on a set of quality, performance, and outcomes measures that are tied to the case management payment are required.

#### 4.4.5 Potential undesirable consequences

One primary concern with the bundled payment model is that with higher provider risk and thus the perception of constrained resources, the quality of care provided will go down and patients will not receive the right care at the right time. In addition, the development of the payment itself must include careful consideration so that providers have enough resources to provide high-quality care without being overpaid. Finally, consensus should be reached to understand how best to distribute bundled payments to the providers involved in the care of the patient.

Table 3: Advantages and Disadvantage of Bundled Payment Model

Bundled Payment Model		
Domain	Advantages	Disadvantages
Delivery	<ul style="list-style-type: none"> <li>• Can include other specialties and domains</li> <li>• Flexibility in services included in bundle</li> </ul>	<ul style="list-style-type: none"> <li>• Lower feasibility due to large shift from current system</li> <li>• Greater potential for inappropriate or mis-treatment</li> </ul>
Payment and Quality	<ul style="list-style-type: none"> <li>• More-global payment, encouraging efficiency and flexibility in adjusting services to needs of patient</li> <li>• Stronger provider incentives to improve performance measures and reduce costs</li> <li>• Greater shift for numerous current FFS payments</li> <li>• Tied to quality and performance</li> </ul>	<ul style="list-style-type: none"> <li>• Does not support coordination of care outside bundle, may encourage too many bundles</li> <li>• Difficult to design and define bundles</li> <li>• Perception of constrained resources</li> </ul>

## 4.5 Model 4: Oncology Accountable Care Organizations

### 4.5.1 Care delivery structure

ACOs afford the opportunity to provide comprehensive payment and delivery models, where an organized group of providers agrees to be held accountable for the cost, quality, and overall care of the providers' patient population (Table 4). In a fully mature ACO, ACO providers are reimbursed on a partial or full capitation basis, and thus payment focuses on covering the whole of the care for a population. With standardized performance and outcomes benchmarks in place, ACOs receive the promise to share in the savings recouped by meeting those benchmarks and other financial targets by delivering care in a more effective and more efficient way than under FFS payment. Defining where oncology fits in a traditional ACO has been difficult, however, in light of the fact that oncology is such a high-cost and high-intensity specialty.

Recently there have been efforts piloting oncology ACOs. With regard to delivery structure, according to relevant stakeholders, existing pilots began with a series of US Oncology protocols, agreed to tight quality metrics, expanded access to after-hours care, and trained care coordinators to help manage the care of the patient as a whole. Since the structure is as an ACO, all care provided is considered a part of this model. Results from the first year showed that every quality metric in place was exceeded. There were significant reductions in hospital admissions and readmissions, better generic drug prescribing rates, tighter adherence to pathways and evidence-based protocols, better use of drugs, and better coordination of end-of-life care.

Similar to the discussion in Section 4.3.1, oncology ACOs present an opportunity to examine imaging costs and utilization for cancer care. Interestingly, some argue that payment for radiologists should be reimbursed under FFS in an ACO arrangement because if imaging were paid under a capitation model, without risk corridors that control utilization history, there would be no incentive for referring physicians to limit utilization of imaging services. But if imaging were paid under FFS, other physicians would more closely monitor imaging utilization since overuse would mean less shared savings.<sup>27</sup>

#### 4.5.2 Payment structure

As mentioned earlier, in the most mature form an ACO is essentially a global payment for services (Figure 6). In other ACO models providers can be compensated with FFS, bundled, or episodic payments (Figure 6). Ideally, ACOs would function with providers under global capitation arrangements; in the ongoing oncology ACO pilots, relevant stakeholders mentioned a desire to eventually transition to a global payment model. However, they have not yet reached that stage. Instead, they still operate within a primarily FFS model with a shared savings component. The payer, provider, and patient all share in the savings recouped from more-efficient, better-coordinated, higher-quality, and higher-value care, although the share is reportedly unequal among the three. The initiation of coverage begins when the patient is first attributed to an ACO provider, and ends upon the conclusion of treatment by an ACO provider. Relevant stakeholders noted that most of the savings to date has been recouped by reducing complication rates after hospitalization, coordinating care better to avoid hospital readmissions, allowing access to a provider after hours—whether by phone or in person—and providing access to a next-day appointment.

Achieving certain predetermined quality and performance targets is requisite for shared savings payment and success in the ACO model. Commercial ACOs have not adopted a standard set of performance and quality measures. However, all Medicare ACOs use the same group of thirty-three measures<sup>28</sup> and must exceed benchmarks to share in the savings recouped.

The ACO model, in relation to all others described in this report, harbors the greatest degree of provider accountability for patients. Provider groups agree to full accountability for their patient population in exchange for shared savings arrangements with the payer. Depending on the way the payment system is set up, ACOs may also bear substantial financial risk. In the current oncology ACO pilots, risk is modest because the providers still operate within a primarily FFS environment with an additional shared savings component. However, if providers were paid with a bundled or global payment mechanism, then provider risk greatly increases.

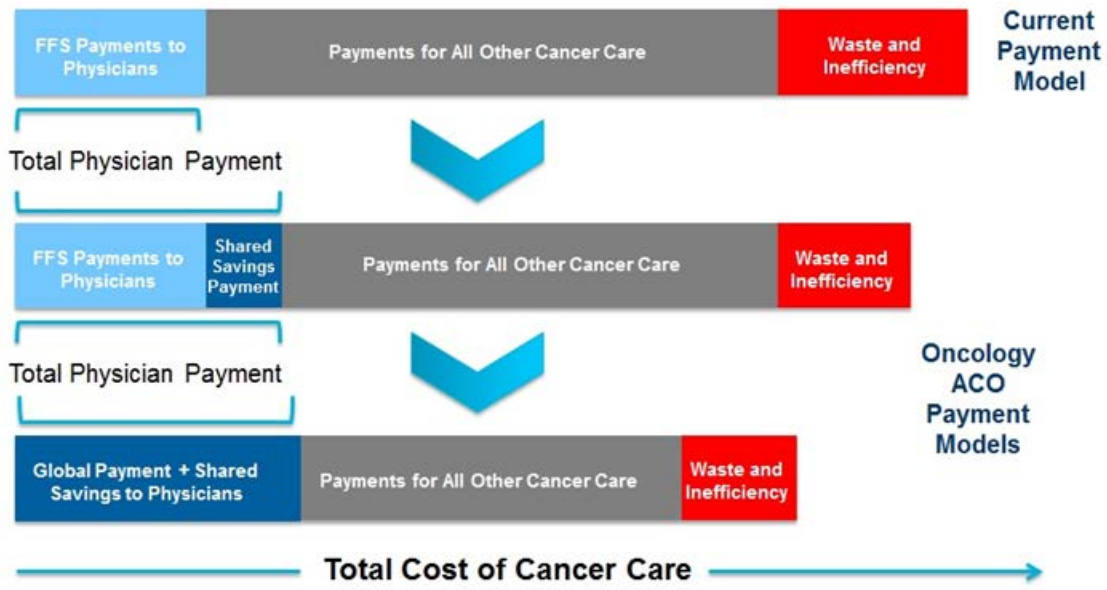


Figure 6: Schematic of two iterations of the oncology ACO model contrasted with the current payment model. *Source:* The Brookings Institution, 2013.

### 4.5.3 Data infrastructure to support the model

A fundamental part of the ACO model is the ability for partner providers within an ACO to coordinate care across the continuum of care. As such, EMR infrastructure that is interoperable across the ACO network is essential. The Medicare ACO program currently employs a Web interface for data submission to CMS. Ideally, the EMR infrastructure would have the ability to seamlessly analyze and export performance and outcomes data to the payer and other providers directly from the software.

Two-way information flows are a common theme in all payment models but are incredibly relevant in ACOs or any other finance mechanism that involves increased financial risk.

Providing relevant, timely data is a minimum necessity from the payer in an ACO model.

### 4.5.4 Minimum requirements for provider groups

Not all provider groups are large enough to form a cohesive, coordinated ACO network. As such, a larger provider network is an important feature of a successful ACO. Furthermore, the EMR capacity to coordinate care across the network is a fixture of a successful ACO. Finally, the

ability to reach consensus on and meet a series of performance and outcomes measures is necessary for the model to work.

#### 4.5.5 Potential undesirable consequences

The ACO model creates the potential misaligned incentive to reduce care in order to save on costs. It is thus necessary to ensure that providers are adhering to performance and outcomes measures to avoid that issue. In addition, depending on how the payment model within the ACO is set up, specialties that are not included, such as radiology discussed above, may lose the incentive to ascribe to evidence-based guidelines and reduce unnecessary testing. Thus, careful planning of the model is necessary to be sure that all incentives are aligned.

Table 4: Advantages and Disadvantage of Oncology Accountable Care Organization Model

Oncology Accountable Care Organization Model		
Domain	Advantages	Disadvantages
Delivery	<ul style="list-style-type: none"> <li>• Increased provider accountability</li> <li>• Can include other specialties and domains</li> <li>• Comprehensive delivery model</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to create provider networks</li> <li>• Potential for inappropriate or mis-treatment</li> <li>• Lower feasibility due to large shift from current system</li> </ul>
Payment and Quality	<ul style="list-style-type: none"> <li>• Potential for global payment</li> <li>• Potential for high provider risk</li> <li>• Flexibility in payment arrangement</li> <li>• Tied to quality and performance</li> </ul>	<ul style="list-style-type: none"> <li>• Perception of constrained resources</li> <li>• High up-front costs that make it difficult for smaller provider groups to form an oncology ACO</li> <li>• High-cost specialty inclusion, such as radiation and surgical oncology, difficult in an oncology ACO</li> </ul>



## **4.6 Stakeholder Perspective on Model Design**

### **4.6.1 Provider perspective**

Some providers are currently receiving a case management fee for care coordination and care management. These providers indicate that the case management fee should be of sufficient denomination that it mitigates reimbursement from chemotherapeutic drug margins, if it is to eventually replace the margin currently received on drugs. This would delink payment from decisions surrounding choice of chemotherapeutic agents and other supportive drugs. The fee could be in the form of an additional fee code, a management fee tied to quality and efficiency, or an opportunity to share in savings. In the shared savings model, the risk corridors need to be small—the model could begin as a one-sided risk model and then develop into a two-sided model. In addition, a quality reporting or monitoring system must be incorporated to tie back to the additional payment, and physicians should have to opt out of the quality reporting system.

In light of complex requirements, some providers highlight that PCOMH and ACOs will be more successful in practices that have some or all of the following: an existing EMR, or at least a willingness to invest in advanced information technology; high levels of care coordination; advanced care planning that involves the patient; and a set of standard pathways that can be measured. The main barriers to implementing a PCOMH model, according to providers interviewed, are the high-cost burdens on practices, gaining payer support to engage in the transformation of practices, accounting for varying payer models that may or may not include shared savings, reimbursement for evaluation and management services, and a PMPM fee for chemotherapy-related services. While some providers view the PCOMH as a structurally complex model, it could be scaled up to include radiation oncologists and surgical oncologists, and be implemented in a stepwise process.

### **4.6.2 Payer perspective**

Payers are supporting a wide range of the pilots described above. Certain payers are piloting solely clinical pathways programs, while other payers are involved in PCOMH or oncology ACO

arrangements. Payers tend to disagree on whether more-comprehensive changes are beneficial or even necessary. Those payers who have taken on pilots with expanded delivery reforms believe that cost savings can be best achieved through greater change to the delivery structure.

Conversely, those payers taking on less-comprehensive pilots believe that large changes are administratively burdensome and difficult to roll out and scale up, and are subject to a lack of support from providers.

#### **4.6.3 Care management organization perspective**

Although ACOs and PCOMHs are receiving substantial attention in oncology payment reform discussions, many of the care managers interviewed believe that these models are too difficult to implement and scale for the short term. Both models require substantial infrastructure development and resources, and it is fundamentally difficult to encourage providers to coordinate care. While PCOMHs and ACOs are certainly in reach for mature and integrated health systems such as Geisinger Health System, Banner Health, or Kaiser, care managers believe that changes of this magnitude may not be pragmatic for smaller or less-mature practices. Indeed, for existing pilots, large commercial payers are underwriting small practices, which, according to care managers, payers are doing because they have a vested interest in improving the quality of care to patients. Thus, care managers believe it would be difficult for Medicare to execute these models effectively because of the upfront payment that would be required to incent providers to transition to an alternative approach.

One care manager recommended that in designing a new model, the consideration of economic incentives should come only after determining the best way to deliver the care. The goal of the model should be to modify provider behavior and subsequently align payment. This approach would improve the quality of care and reduce costs.

In aggregate, care managers support either a discrete, bundled payment approach or a blended payment approach. The bundled payment approach is pragmatic because it generally requires less upfront change to the way care is delivered, and thus would be feasible to scale broadly across the clinical domains. A blended payment approach reinforces care coordination efforts

and creates an adequate incentive to other providers who may be providing these auxiliary services inconsistently. This incremental approach would be a promising model for Medicare because the model is relatively straightforward and makes it easier to treat and manage patients. Furthermore, as the case rate payment is added on top of the FFS payment physicians already receive, physicians are not opposed to a non-risk-adjusted case rate.

#### **4.6.4 Patient perspective**

Stakeholders with expertise in the patient perspective generally advocated for more-comprehensive models that support providers through a case-based payment in lieu of direct FFS payments, or they proposed ideas that were not under current consideration. Broadly, the patient advocates believe that any new models should incorporate and provide support for providers for care planning and management, shared decision-making, palliative care, preventive care, and patient education, and should recognize the roles of non-physician providers in cancer care.

One stakeholder discussed two programs, one funded by the U.S. military and the other by a commercial business, intended to incentivize participants to reduce their risk for lung cancer via tobacco cessation, which is also covered under Medicare. In so doing, these programs would improve patients' quality of life and health while also reducing downstream costs of cancer care. The stakeholder suggested that enhancing existing evaluation and management fee codes might compensate physicians for this type of service.

Beyond augmenting FFS codes, patient advocates reported that bundled payments and oncology PCOMHs would likely increase care coordination, realign incentives for quality care, support patient education efforts, and recognize the entire cancer care team. Specifically, bundled payments have the potential to encourage payment for important ancillary services and end-of-life care. However, bundled payments pose challenges. Primarily, patient advocates worried that since there is a disparity in the number of treatment options for certain cancers versus others, and treatments for certain cancers are more costly, then margins might be different for providers depending on their patient mix, which might incentivize providers to cherry pick the most profitable patients.

PCOMHs have gained substantial traction, and some patient advocates believe the model has great potential. This type of model would allow oncologists to be the primary home for cancer patients, which could save oncologists, primary care physicians, hospitals, social workers, patients, and others time by taking away the referral requirement. This model would also incentivize coordinated care, and build a system where the other team members can practice and be included in the payment model. One advocate noted that there is currently a Patient-Centered Outcomes Research Institute (PCORI) grant on payment reform models that is working with Consultants in Oncology and Hematology with American Society of Clinical Oncology (ASCO), the RAND Corporation (RAND), National Coalition for Cancer Survivorship (NCCS), NCQA, and others.

#### **4.7 Other proposed components**

In discussing opportunities for payment reform with relevant stakeholders, several of the patient advocates interviewed proposed ideas outside the current pilots in testing. One advocate noted that there is no reimbursement for social work in most domains of medical billing. Some social workers can bill on mental health codes, but generally social workers are hired by hospitals and are paid out of the hospital's bottom line. Finding a payment model that includes team members other than physicians is important. This resembles restructured care team approaches that some providers have already implemented. In such models, oncologists, advanced practice nurses, and physician assistants have distinct, delineated roles that are appropriately linked to the top of their licenses. Moreover, oncologists design the treatment plan and champion a pathway, nurses administer chemotherapy and educate the patient, and laboratory technicians draw uncomplicated procedures.

Another stakeholder proposed an innovative idea that would meet many of the goals of patient advocates as well as providers, payers, and other key stakeholders. The idea is built on greater palliative care engagement for cancer patients, and might manifest as either a palliative care ACO or a medical neighborhood with focus on palliative care. In either model, palliative care physicians serve as the primary clinician. Stakeholders would develop patient satisfaction measures that assess whether the patient's goals have been met; a financial bonus for meeting

benchmarks might be included. Additionally, the patient has an active role on the care team. The goal of the model is to further integrate palliative care, and accordingly cost savings, into cancer care delivery and payment. Both ideas involve redirecting resources that are not efficiently used at this time to services, such as social work and palliative care, that have the potential to greatly reduce the costs associated with inefficient care while improving the quality of care provided. A possible limitation to the palliative care ACO model is the shortage of available palliative care clinicians.

## **5 Performance Measures**

### **5.2 Overview**

A core element to the success and effectiveness of all four models described above is appropriate performance measures paired with systems to evaluate quality improvement and link performance to payment. While many providers agree that it is reasonable to hold physicians accountable for the provision of quality care, it is vital that performance measures capture accurate and meaningful data that oncologists and other physicians can use to improve the quality of their care. Moreover, data integration and real-time analysis through defined feedback loops are equally important to enhance the implementation and monitoring of performance measures that support quality improvement.

In response to misaligned financial incentives, inadequate data coordination, and limited consensus on quality targets, multiple efforts have emerged in the past ten to twenty years to augment the quality of cancer care.<sup>29</sup> The National Cancer Data Base, which the American College of Surgeons and the American Cancer Society established in 1989, allows comparative benchmarking for the eleven most commonly diagnosed cancers.<sup>30</sup> Furthermore, the Data Base has developed multiple Web-based tools, including the Electronic Quality Improvement Packet, the Cancer Program Practice Profile Report, and the Rapid Quality Reporting System, that act as feedback mechanisms, provide real-time data, and allow providers to compare performance to other providers. ASCO has also developed the Quality Oncology Practice Initiative (QOPI)<sup>31</sup> to address oncologists' need to demonstrate quality improvement through a standardized tool to

measure performance.<sup>11,32,33</sup> More than 700 practices are voluntarily enrolled in QOPI and use the structured tool to better understand their practice's strengths and weakness as a means to improve the quality of care delivered to the patient.<sup>33</sup>

Many organizations have developed a variety of performance measures to collect and interpret data on practice structure, function, and effectiveness. For example, ASCO's QOPI includes more than 100 performance indicators that measure structure, process, and outcomes of quality (see Table 5 for the core measures).<sup>31</sup> Similarly, COA has developed and amended a group of twenty total quality measures<sup>20</sup> that serve as the base for many quality care initiatives (Table 6). Many payers have used, or have expressed interest in using, COA's quality measures, which are often adapted based on individual payment mix and market. Furthermore, the National Quality Forum (NQF) has endorsed more than fifty oncology-related quality measures in an effort to standardize a core, well-defined set of measures that can promote comparability and reduce administrative burden.<sup>34</sup> Both payers and providers recognize the need to prevent under-treatment and other undesirable clinical consequences by tying payment to quality measures. Existing pilots for PCMHs, bundled payments, and ACOs have tied payment to different types of measures, including structure, efficiency, and outcomes measures.

Table 5: Core Quality Oncology Practice Initiative Measures

QOPI #	QOPI Core Measure Title	NQF #
1	Pathology report confirming malignancy	
2	Staging documented within one month of first office visit	#0386 (adapted)
3	Pain assessed by second office visit	#0383/#384 (adapted)
4	Pain intensity quantified by second office visit (includes documentation of no pain)	#0384 (adapted)
5	Plan of care for moderate/severe pain documented	#0383/#384 (adapted)
6	Pain addressed appropriately (defect-free measure, 3, 4, and 5)	#0383 (adapted)
7	Effectiveness of narcotic addressed on visit following prescription	
8	Constipation assessed at time of narcotic prescription or following visit	
9	Documented plan for chemotherapy, including doses, route, and time intervals*	
10	Chemotherapy intent (curative vs palliative) documented*	
11	Chemotherapy intent discussion with patient documented	
12	Number of chemotherapy cycles documented	
13	Chemotherapy planning completed appropriately (defect-free measure, 9, 10, and 12)	
14	Signed patient consent for chemotherapy	
15	Patient consent documented in practitioner note QOPI®	
16	Patient consent for chemotherapy (combined measure, 14 or 15)	
17	Chemotherapy treatment summary completed within 3 months of chemotherapy end	
18	Chemotherapy treatment summary provided to patient within 3 months of chemotherapy end	
19	Chemotherapy treatment summary provided or communicated to practitioner(s) within 3 months of chemotherapy end	
20	Chemotherapy treatment summary process completed within 3 months of chemotherapy end (defect-free measure, 17, 18, and 19)	
21	Smoking status/tobacco use documented in past year	#0028 (adapted)
22a	Smoking/tobacco use cessation counseling recommended to smokers/tobacco users in past year	#0028 (adapted)
22b	Tobacco cessation counseling administered or patient referred in past year	#0028A (adapted)
23	Smoking/tobacco cessation counseling administered appropriately in the past year (defect-free measure, 21, 22a and 22b)	#0028A (adapted)
24	Patient emotional well-being assessed by the second office visit	
25	Action taken to address problems with emotional well-being by the second office visit	
25a	Documentation of patient's advance directives by the third office visit (Test Measure)	
25b	Height, weight, and BSA documented prior to curative chemotherapy (Test Measure)	

Table 6: Community Oncology Alliance Measures

<b>Patient Care</b>
% of cancer patients that received a treatment plan prior to the administration of chemotherapy
% of cancer patients with documented clinical or pathologic staging prior to initiation of first course of treatment
% of chemotherapy treatments that have adhered to NCCN guidelines or pathways
Antiemetic drugs given appropriately with highly emetogenic chemotherapy treatments
% of cancer patients undergoing treatment with a chemotherapy regimen with a 20% or more risk of developing neutropenia and also received GCSF/white cell growth factor
Appropriate use of advanced imaging for early stage breast cancer patients
Appropriate use of advanced imaging for early stage prostate cancer patients
Presence of patient performance status prior to treatment
<b>Resource Utilization</b>
# of emergency room visits per chemotherapy patient per year
# of hospital admissions per chemotherapy patient per year
<b>Survivorship/Outcome</b>
% of cancer patients that received a survivorship plan with X days after the completion of chemotherapy
% of chemotherapy patients that received psycho/social screening and received measurable interventions as a result of the psycho/social screening
Survival rates of Stage I through IV breast cancer patients
Survival rates of Stage I through IV colorectal cancer patients
Survival rates of Stage I through IV NSC lung cancer patients
<b>End of Life</b>
% of patients that have Stage IV disease that have end-of-life care discussions documented
Average # of days under hospice care (home or inpatient) at time of death
% of patient deaths where the patient died in an acute care setting
A measurement of chemotherapy given near end of life
<b>Other</b>
Patient satisfaction and scoring

### 5.3 Structural measures

Structural measures are indicators that track whether a system or infrastructure is in place, such as EMR capabilities. For example, NCQA includes structural measures to assess whether a practice meets the requirements for PCMH distinction.<sup>14</sup> Providers have expressed support for the use of structural measures since they allow providers to assess practice capability. Table 7 includes a list of NQF-endorsed oncology measures in this domain.

Table 7: National Quality Forum–Endorsed Structural Measures

<b>NQF Measure</b>	<b>Measure Title</b>	<b>Measure Steward<sup>1</sup></b>
#2020	Adult current smoking preference	CDC
#0650	Staging documented within one month of first office visit	AMA-PCPI
#0509	Pain assessed by second office visit	AMA-PCPI

<sup>1</sup> Measure Stewards:  
 AMA-PCPI American Medical Association – Physician Consortium for Performance Improvement  
 CDC Centers for Disease Control and Prevention



## 5.4 Process measures

Process measures aim to analyze and combine resource use with quality metrics and have the potential of improving the providers' use of evidence-based, cost-effective treatments.

Adherence to surgical, chemotherapy, and radiation guidelines or clinical pathways is considered a process measure. NCCN has been a leader in the development of clinical pathways that provide guidelines by primary site diagnosis.<sup>7</sup> Numerous providers are currently using NCCN pathways, in conjunction with ASCO's QOPI and COA's performance measures, to tie performance to payment. Generally, providers have been receptive to the pathways approach as long as there is the possibility for medically relevant deviations from clinical pathways. Some payers or vendors, such as the Moffitt Cancer Center, have created their own pathways to include the whole patient cycle from diagnosis through workup, investigations, labs, and so on, for most of the common cancer types.

Other measures stewards, including the American Medical Association's Physician Consortium for Performance Improvement (AMA-PCPI), NCQA, RAND, and the Society of Thoracic Surgeons, have developed process measures that are now NQF endorsed. Table 8 lists a selection of these NQF-endorsed process measures.

Table 8: Selection of National Quality Forum–Endorsed Process Measures

NQF Measure	Measure Title	Measure Steward <sup>1</sup>
#0028	Smoking status/tobacco use documented in past year	AMA-PCPI
#0032	Cervical cancer screening	NCQA
#2010	Proportion receiving chemotherapy in the last fourteen days of life	ASCO
#2010	Chemotherapy administered within the last two weeks of life	AMA-PCPI
#2011	Proportion with more than one emergency visit in the last days of life	ASCO
#2013	Proportion admitted to the ICU in the last thirty days of life	ASCO
#2015	Proportion not admitted to hospice	ASCO
#2015	For patients not referred, hospice or palliative care discussed within the last two months of life	AMA-PCPI
#2016	Proportion admitted to hospice for less than three days	ASCO
#2016	Hospice enrollment within three days of death	AMA-PCPI
#2025	Number of lymph nodes documented for resected colon cancer	AMA-PCPI
#2025	Twelve or more lymph nodes examined for resected colon cancer	AMA-PCPI
#0381	Treatment summary communication	AMA-PCPI
#0382	Radiation dose limits to normal tissues	AMA-PCPI
#0383/384	Plan of care for moderate/severe pain documented	AMA-PCPI
#0383/384	Pain assessed by second visit	AMA-PCPI
#0384	Pain intensity quantified	AMA-PCPI
#0386	Staging documented within one month of first office visit	AMA-PCPI
#0455	Recording of clinical stage for lung cancer or esophageal cancer resection	STS
#0457	Recording of performance status prior to lung or esophageal cancer resection	STS
#0508	Inappropriate use of “Probably Benign” assessment in mammography screening	AMA-PCPI
#0559	Chemotherapy recommended within four months of diagnosis for women under with AJCC stage I (T1c) to III ER/PR negative breast cancer	AMA-PCPI
#0562	Overutilization of imaging studies in melanoma	AMA-PCPI
#0572	Colonoscopy before or within six months of curative colorectal resection or completion of primary adjuvant chemotherapy	AMA-PCPI
#1626	Patients admitted to ICU who have care preferences documented	RAND
#1628	Patients with advanced cancer screened for pain at outpatient visits	RAND
#1790	Risk-adjusted morbidity and mortality for lung resection for lung cancer	STS
#1857	Trastuzumab received when Her-2 is negative or undocumented	AMA-PCPI
#1858	Trastuzumab recommended for patients with AJCC stage I (T1c) to III Her-2/neu positive for breast cancer	AMA-PCPI

<sup>1</sup> Measure Stewards:

AMA-PCPI	American Medical Association – Physician Consortium for Performance Improvement
ASCO	American Society of Clinical Oncology
NCQA	National Committee for Quality Assurance
RAND	RAND Corporation
STS	The Society of Thoracic Surgeons
AJCC	American Joint Committee on Cancer

## 5.5 Outcomes measures

Outcome measures track the effectiveness of a treatment course by assessing performance status after treatment, morbidity, and mortality. Several payers note the importance of outcomes measures to make reimbursement clinically relevant and to ensure the highest quality of care. Furthermore, providers report a willingness to participate in outcomes measures reporting, but believe that this is an area for improvement in the future. Table 9 lists NQF-endorsed outcome measures.

Table 9: National Quality Forum–Endorsed Outcome Measures

NQF Measure	Measure Title	Measure Steward <sup>1</sup>
#0209	Comfortable dying: Pain brought to a comfortable level within 48 hours of initial assessment	NHPCO
#0460	Risk-adjusted morbidity and mortality for esophagectomy for cancer	STS
#1790	Risk-adjusted morbidity and mortality for lung resection for lung cancer	STS
#0459	Risk-adjusted morbidity: Length of stay > 14 days after elective lobectomy for lung cancer	STS

<sup>1</sup> Measure Stewards:  
 NHPCO National Hospice and Palliative Care Organization  
 STS The Society of Thoracic Surgeons

NQF has also endorsed a set of patient experience measures (Consumer Assessment of Healthcare Providers and Systems or CAHPS) that are relevant to patients with cancer, though they were designed for the assessment of care by broad populations of patients.

### 5.6 Next wave of oncology measures

Despite innovations in performance measurement, areas for improvement that can promote person-centered change in oncology care still exist. The recent Institute of Medicine flagship report details recommendations to promote the constantly evolving field of oncology performance measures with the intent of improving evidence-based care.<sup>35</sup> These recommendations include (a) creating a core common set of measures by expanding the type of data that are collected, measured, and made available to physicians and payers; (b) developing a coordinated health information technology infrastructure for real-time data loops; and (c) creating a national strategy to build on existing public reporting efforts and promote outcome measures. Moreover, there is a clear need to develop better outcomes and care experience measures that account for the unique circumstances of cancer care, which often involves end-of-life and palliative care.<sup>32</sup>

Some key performance domains that require more work to reach consensus and standardization across stakeholders are:

- Measurement of the multidisciplinary approach to care;
- End-of-life and palliative care metrics;
- Patient-reported outcomes (e.g., functional status, pain);
- Shared decision-making; and

- Patient experience in care.

## **6 Data Needs**

Improving data collection, analysis, and dissemination efficiently has the potential to drive cost savings into the future. In general, the health-care industry follows a similar structure for data collection and analysis. Providers submit information to payers in some form—either electronic or claims billing—about treatment regimens selected, tests ordered, and the outcomes of previously arranged quality metrics. Payers then aggregate the data, analyze the data, and report back to practices, often on a quarterly basis. One payer reported using a Web-based platform, since Internet access was the lowest common denominator across all practice settings and many providers do not have fully functional EMR systems. In that model, practices access a Web system to log data, and exchange occurs through the Web portal.

### **6.2 Areas for data improvement**

As the health-care field adopts new forms of health information technology, electronic collection of data, robust analysis, and subsequent dissemination may be an attainable goal across all settings. However, the principal issues that remain are that the current EMR systems available to providers are not interoperable with other practices, cannot connect and exchange data appropriately with the systems used by payers, and are not capable of doing data analytics and dissemination in real time. Certain mature practices have contracted with EMR software companies to design specialized software that integrates into their workflow and allows data reporting, but those systems are unique, not widely available, and expensive.

### **6.3 Stakeholder perspective**

#### **6.3.1 Provider perspective**

Providers have identified that a primary driver for cost savings would be implementing a truly interoperable medical records system that goes beyond our current system of electronically

indexed paper records. A robust EMR system that is linked to a clearly delineated quality improvement strategy is particularly important for community oncology practices and integrating pathways into physician workflows. Given the importance of EMR innovation, some providers note that current EMRs are not fully operable and more work should be done in this field.

### **6.3.2 Payer perspective**

In the future, payers would like data entry and exchange to occur seamlessly and in real time on a platform compatible across all payers and providers. To function in this capacity, the EMR would instantly aggregate and sort data, connect with existing systems on both the payer and provider ends, and provide real-time information on how the provider is doing relative to peers. This would also greatly reduce the human burden associated with processing and integrating data.

### **6.3.3 Care management organization perspective**

The care managers interviewed stressed the essential role of technology in the proper functioning of any new payment systems. Technology has the capacity to greatly lower the administrative burden of care delivery and complicated payment structures, while also improving care with more data. It is important to gather data and improve the health information technology infrastructure to make these two goals a reality. Texas Oncology employs a specialized real-time EMR platform that makes the expanded role of nurses possible. By allowing rapid exchange of information between providers and other vested entities, payment can be properly aligned with high-quality care initiatives.

### **6.3.4 Patient perspective**

Conversations during the interviews regarding data collection, analysis, and dissemination were limited with patient advocates. However, some patient advocates mentioned that care planning and shared decision-making processes would be made easier by workflow integration using an oncology-specific EMR.

## **7 Feasibility and Implementation**

### **7.2 Multi-payer approach**

Presently, there is great interest in moving toward a more collaborative, multi-payer approach to oncology payment reform, as making changes to incent high-quality, cost-effective cancer care is a uniform goal of all payers. Such an effort is being tested in primary care with the CMS Innovation Center's Comprehensive Primary Care Initiative. At this time, however, there is little leadership or movement on making this a reality in the oncology space. As the largest payer in the United States, CMS is in a unique place to begin to foster a multi-payer approach in oncology, as it has done in primary care.

### **7.3 Model design feasibility**

The models described above vary in comprehensiveness and therefore difficulty of implementation. A new payment model based on clinical pathways is the least comprehensive model presented here, though its implementation would be the most straightforward. There is multilateral agreement that improving adherence to evidence-based regimens and thus standardizing care between providers is a positive step toward the provision of high-quality cancer care. In addition, payers support this model because they can choose the method for pathway development and which pathways to endorse, and because it incentivizes cost-effective care. Since a model built on clinical pathways is minimally comprehensive, the implementation process would be less difficult. However, payment for adherence to clinical pathways does not take a large step in transitioning away from FFS reimbursement. Furthermore, payment for clinical pathways could be a feature included in a more comprehensive reform effort. In addition, there is no reliable figure indicating how many providers have already adopted the use of evidence-based pathways. Most of the information to date is anecdotal.

The PCOMH is more comprehensive than pathways in that it focuses on quality improvement for the entirety of the cancer practice, typically supported by a per case payment in addition to the usual FFS payments.

Bundled payments and oncology ACOs represent shifts in payment away from FFS, providing potentially stronger incentives to limit costs and more flexibility to direct resources to the services that may matter for patients but that are not well reimbursed in FFS. A fully bundled payment or a fully capitated payment in an ACO or integrated care plan would delink compensation from the volume and intensity of care. However, relevant stakeholders generally do not seem to regard such large payment reforms as feasible in the short term. Both models, if implemented to reimburse with a global payment, would represent a large jump from the current system, and thus provider buy-in and infrastructure development would be more difficult.

However, bundled payments have been more widely proposed and implemented that include some but not all services—for example, evaluation services, chemotherapy administration services, and routine imaging services. Limiting the scope of services included in the bundle also simplifies the problem of determining an appropriate payment, further easing implementation. Many ACOs have been implemented that include shared savings, a limited shift away from FFS that enables providers to gain more experience with data and systems reforms before facing substantial financial risk. Some more-advanced ACOs, typically after gaining more experience with patient-level care coordination, have moved to taking two-sided risk and partial capitation contracts. These reforms suggest that a blended version of bundled payment or oncology ACO implementation, in which oncologists experience some shift from FFS to case-based or capitated payments, may be an appropriate initial model that could fit well with the more-advanced oncology payment reforms in the private sector. As experience with such blended models increases, they could shift over time toward more reliance on case- or person-based payments, with a smaller share of payments tied to FFS. Finally, bundled or ACO payments can be combined with additional payments for quality improvement (as in clinical pathways) or for structural reforms in oncology practices (as in PCOMHs). Indeed, such quality-related case payments could be viewed as initial bonuses or funding for practice investments to help practices start on the shift from FFS payments to payments related to quality and efficiency.

Table 10 describes the individual features encompassed by the various payment models, and the degree to which each model takes on valuable attributes of future payment models.

Table 10: Comparison of Model Approaches by Delivery Structure, Payment Structure, Quality, and Comprehensiveness

Domain	Model Features	Clinical Pathways	PCOMH	Bundled Payment Model	ACOs
Delivery Structure	Use of evidence-based pathways	✓	✓	✓	✓
	Use of quality and performance standards	✓	✓	✓	✓
	High level of provider accountability		✓	✓	✓
	Patient-centered focus		✓		✓
	Care coordination focus		✓	✓	✓
	Structural transformation required		✓		✓
	Careful provision of care encouraged		✓	✓	✓
	Low administrative burden	✓			
	Potential inclusion of other specialties/areas		✓		✓
Payment Structure	Case-based payment	✓	✓	✓	✓
	Current FFS payments shifted into case payments			✓	✓
	Existing pilots in progress	✓	✓		✓
	Shared savings for reducing FFS spending				✓
	Potential for continued savings over time		✓	✓	✓
	Care coordination payment shared across providers			Some	✓
	Potential for global payment			✓	✓
	Level of provider risk	Minimal	Minimal	High	High
Quality	Payment tied to quality and performance			✓	✓
	Standardized patient-reported outcomes				
Comprehensiveness	Level of shift from current system	Minimal	Moderate	High	High
	Level of comprehensiveness of model	Minimal	Moderate	High	High



## **Appendix A: Stakeholders**

<b>Organization</b>	<b>Stakeholder Type</b>
Aetna	Payer
American College of Physicians – American Society for Internal Medicine University of Pennsylvania School of Medicine	Care Delivery/Provider
American College of Surgeons Division of Health Policy and Advocacy Physician Consortium for Performance Improvement	Patient Experience, Research, and Quality
American Society of Clinical Oncology	Provider Organization and Networks
Association of Community Cancer Centers Pen Bay Medical Center	Patient Experience, Research, and Quality
Baptist Cancer Center American College of Surgeons, Commission on Cancer	Care Delivery/Provider
Blue Cross Blue Shield of Florida The Healthcare Financial Management Association	Payer
Boston Medical Center Massachusetts Society of Clinical Oncologists	Provider Organization and Networks
Cardinal Health Specialty Solutions	Payer
CareCore	Provider Organization and Networks
Community Oncology Alliance	Provider Organization and Networks
Dana-Farber Cancer Institute	Provider Organization and Networks
Eviti Coalition of Cancer Cooperative Groups Eastern Cooperative Oncology Group Drexel University Clinical Trials Research Center	Provider Organization and Networks
Humana	Payer
The John A. Hartford Foundation Patient with Cancer	Advocacy/Patient Experience
McKesson Specialty Health	Provider Organization and Networks
Memorial Sloan Kettering Center Health Policy and Outcomes	Payment Policy
Moffitt Medical Center Moffitt Medical Group	Care Delivery/Provider
National Coalition of Cancer Survivorship	Advocacy/Patient Experience
National Comprehensive Cancer Network	Advocacy/Patient Experience
National Patient Advocate Foundation Patient Advocate Foundation	Advocacy/Patient Experience
New Century Health	Care Delivery/Provider
New Mexico Hematology Oncology	Care Delivery/Provider
Northwest Georgia Oncology Centers Community Oncology Alliance	Care Delivery/Provider

<b>Organization</b>	<b>Stakeholder Type</b>
Oncology Patient Centered Medical Home Delaware County Memorial Hospital Regional Cancer Center	Care Delivery/Provider
Pharmaceutical Research and Manufacturers of America	Payment Policy
Prevent Cancer Foundation	Advocacy/Patient Experience
The Rector and Visitors of the University of Virginia	Patient Experience, Research, and Quality
Swedish Medical Center ASCO Payment Reform Working Group	Care Delivery/Provider
Texas Oncology American Society of Clinical Oncology	Care Delivery/Provider
Texas Oncology US Oncology	Provider Organization and Networks
UCLA Jonsson Comprehensive Cancer Center	Care Delivery/Provider
United Healthcare	Payer
The University of Chicago Medicine	Patient Experience, Research, and Quality
University of Colorado ASTRO	Payment Policy
The University of Texas MD Anderson Cancer Center	Provider Organization and Networks
Veterans Affairs Greater Los Angeles Health Care System WellPoint	Payer

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