Shaping the Future of Oncology: Envisioning Cancer Care in 2030
Outcomes of the ASCO Board of Directors Strategic Planning and Visioning Process, 2011-2012

American Society of Clinical Oncology
Making a world of difference in cancer care
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Foreword: Charting the Future Together

Over fifty years of modern oncology, our profession has delivered scientific advances and improved outcomes for patients, significantly increasing cancer survival and quality of life.

However, the forces that fueled this progress are not the same as those that will shape the future. Oncology leaders, scientists and clinicians agree: we are on the verge of a new age of cancer care, in which emerging scientific, technical and economic trends are likely to alter our work more significantly in the next 20 years than in the prior 50. As a profession, we must anticipate and harness these changes if we are to improve the care of our patients.

By anticipating the future, we can shape it. Over a six-month period, ASCO’s Board of Directors worked to identify and understand the major “drivers of change” and the potential consequences of these changes for our field over the next two decades. Through interviews with thought leaders and a series of strategic planning exercises (see sidebar), we have begun to formulate a vision of oncology in 2030.

The Board identified three key drivers of change that will have the biggest impact on cancer care over the coming decades:

- **“Big data”**: Rapid advances in health information technology (HIT) have created unprecedented opportunities to collect, analyze and learn from vast amounts of real-world data

- **Cancer panomics**: We are coming to understand the complex networks of molecular pathways and characteristics of the tumor microenvironment that interact to drive cancer and will need to be targeted, in combination, to develop prevention strategies and curative therapies

- **Delivering value**: Unsustainable cost increases and improvements in quality metrics are leading to a growing focus on cost effectiveness and “value” in health care

This document reflects the outcomes of the Board’s discussions. It presents one possible vision of the future—by no means the only one—and identifies the major obstacles to achieving that vision. It is intended to spark a dynamic, ongoing discussion with you, ASCO’s members, about where our field is headed and where we want to be in 20 years. And it will help ASCO determine future needs and solutions for the profession that will help us serve you, and help you serve your patients.

ASCO’s Visioning Process

ASCO’s Board of Directors began the work of developing this vision in September 2011. Board members worked with ASCO staff to obtain input from an array of ASCO volunteers and external thought leaders. Key steps in the process included:

- A virtual town hall meeting with physician volunteers from ASCO’s committees
- In-depth interviews with more than 20 external thought leaders, representing diverse backgrounds and fields ranging from clinical research to information technology
- Identification of three major drivers of change based on volunteer and thought leader input
- Identification of likely consequences of each driver, through a facilitated Board discussion in March 2012

This document reflects the outcomes of these discussions. It was developed by ASCO staff and reviewed and approved by the Board in September 2012.
I. Big Data—The Transformation of Cancer Care through Health Information Technology

Rapid progress is being made in the development and implementation of HIT. From improved data storage and processing speeds to new ways of analyzing “unstructured” notes in electronic health records (EHRs), HIT holds the promise to help transform how we care for our patients over the next two decades. 

“The more we work with big data, the more noise we can filter out—even when some of the data is wrong. Accuracy is very important with tiny data streams, but not so much with large data streams.”

—John Seely Brown, visiting scholar and advisor to the Provost, University of Southern California; Independent Co-Chairman, Deloitte Center for the Edge

**Vision for 2030**

**Learning from every patient.** Today, very little is known in the aggregate about the care of most patients with cancer, let alone the efficacy outcomes and toxicity they experience. But in the coming years, HIT advances will enable us to draw insight from vast quantities of “real-world” data that currently are locked away in unconnected servers and file cabinets.

By 2030, we envision that the oncology field will be able to:

- **Analyze and share data on every patient with cancer.** Oncology practices will participate in IT-based systems that interact with EHRs to securely compile and analyze information on patient characteristics (e.g., molecular profiles, comorbidities), treatments, clinical outcomes and long-term side effects and other survivorship issues. ASCO’s CancerLinQ™ initiative, currently in the planning stages, will have been fully implemented and adopted to serve this role.

- **Draw immediate practice-changing conclusions from an immense body of observational data.** By aggregating and analyzing data from millions of patient experiences in real time, CancerLinQ or similar systems will identify trends and associations between myriad variables and generate new hypotheses. Physicians and researchers will evaluate those hypotheses and determine which ones lead to improved care in real-world settings. This routinely will enable clinicians and researchers to apply those conclusions quickly to the care of their patients.

- **Transform clinical guidelines into living, “crowd-sourced” documents.** Instead of relying solely on clinical trials and expert analyses, guidelines will be informed by robust conclusions drawn from real-world care. Through CancerLinQ or other IT-based systems, guidelines, once developed, will be tested continually and refined as the
“We are moving toward a data-driven approach to cancer research and treatment, and away from a model that is only guideline driven. We will be looking for smaller and smaller sub-populations, so it will be critical to engage all providers and collect data across all institutions and practices.”

—Dr. Mia Levy, Director, Cancer Clinical Informatics, Vanderbilt Ingram Cancer Center

Putting Observational Data to Work
While clinical trials will likely remain the gold standard of evidence for cancer therapy, HIT advances promise to help transcend the current limitations of observational data and provide powerful new ways to advance patient care.

The explanatory power of today’s observational databases is severely limited. Most of these, including typical EHR databases, are too small to draw valid conclusions. When larger databases do exist—for example, payer databases or adverse event reporting systems—their narrow scope makes it impossible to answer questions other than those they were designed to address.

A rapid learning system such as ASCO’s CancerLinQ will help overcome these challenges. In essence, CancerLinQ will be designed to accept all available information about the characteristics, care and outcomes of real-world patients. With this massive body of unstructured data, together with the use of advanced HIT tools, it will be possible to:

- “Normalize” similar information even if provided in different formats, overcoming the wide variation in EHR data standards
- Run the data through “correlation engines” and trend analysis tools, revealing connections that had never been visible before
- Draw statistically valid conclusions that extend the findings of clinical research (e.g., in new patient populations or settings)
- Develop robust hypotheses that could be confirmed through streamlined clinical research
- Provide clinical decision support based on observational analysis

Crowd-Sourcing the Evidence Base—A Rapid Learning System in Action

Provide Services
Intake Data
Transform Data
Aggregate Data
Analyze Data
Correlation Analysis
Hypothesis Generation
Peer Review & Feedback
Trend Analysis
resulting outcomes are analyzed in real time. This process will dramatically reduce the time required to synthesize new knowledge: guidelines will become more detailed, more accurate and completed in far less time than it takes today.

**The oncologist’s role, transformed.** By 2030, health care professionals will receive robust and truly informative decision support at the point of care through CancerLinQ or similar systems—a necessity in an age of highly personalized care.

As a result of this real-time guidance, most oncology care will, in effect, be rule-based. The shift to rule-based care will have significant implications for the oncology workforce:

- **Other providers will play a large role in routine oncology care.** For less complex cancer cases and in follow-up care for a growing number of cancer survivors, primary care physicians, physician assistants or nurse practitioners will be equipped to provide care based on CancerLinQ and consultation with oncologists. Oncologists, in turn, will make better use of their deep expertise. They will focus on developing treatment plans, managing care teams, collaborating with primary care providers, and overseeing complex cases where the “rules” remain unclear.

- **The increased involvement of non-specialists will mitigate, though not eliminate, the oncologist shortage that is projected as the population ages and cancer incidence increases.** As oncologists are freed up from activities that do not capitalize on their unique expertise, they will be able to guide or oversee care for larger numbers of patients. However, shortages of primary care professionals will also need to be addressed in order to make this possible and to address the needs of cancer survivors.

“We need to figure out what exactly it means for oncologists to only do what is needed by an oncologist—and allied health workers should do the rest.”

—Dr. Mark McClellan, Director, Engelberg Center for Healthcare Reform, Brookings Institute

**Patients as full partners.** Through personalized, patient-friendly HIT tools, patients will have a much greater opportunity to serve as well-informed advocates for their own care. While not every patient will take advantage of these possibilities, most will. By 2030, the results will include:

- **A significant shift in the doctor-patient relationship.** By the time patients arrive for consultation with an oncologist, most will already know a great deal about their cancer, thanks to personalized information from patient portals in CancerLinQ or other systems. They will expect to contribute to all important decisions about their care, while looking to their physician to suggest alternatives. Although oncologists will give up a measure of “control” in the relationship, they will have much greater confidence that treatment plans truly reflect their patients’ wishes.

- **Through patient-friendly HIT interfaces, patients will stay connected with their oncologists and other providers in real time.** Whenever treatment plans or clinical information are updated in patients’ medical records, they will be able to see and understand the implications. They will take an active role in their care by reporting their health status, side effects and other experiences as they happen—and will rest easier knowing their oncology team is monitoring for anything that warrants special attention.

- **The majority of patients will participate in clinical research, and we will learn valuable information from every patient we encounter.** HIT-driven interfaces will help match patients with appropriate studies from the moment they are diagnosed, based on the molecular profile of their tumors and other characteristics. Patients will have greater understanding and appreciation of clinical research and will come to see it as a part of routine cancer care, in part because enrollment procedures will become simpler and more patient- and provider-friendly.

- **New disparities may arise from the shift in patient involvement.** Since not all patients are equally motivated or equipped to drive their own care, disparities may emerge as patients are expected to play a greater role. The oncology community will have to find ways to continue meeting the needs of individuals who want, or need, to rely more heavily on their physicians to guide their care.

**State-of-the-art oncology goes global.** Global HIT systems will allow physicians and patients anywhere in the world to benefit from the latest, best available knowledge, helping to reduce today’s glaring global disparities in cancer care.

- **Low-resource countries will contribute to, and benefit from, global rapid**
learning networks. The benefits of robust clinical decision support will be greatest in nations where oncologists are in short supply, and where other health providers must provide the lion’s share of cancer care. At the same time, the experiences of patients in these countries will lead to the development of meaningful international clinical guidelines.

• **Cancer research will be a truly global enterprise**, as HIT systems link researchers, patients and research procedures, even in the most remote locations, and as molecular testing—a central element of nearly all clinical cancer research—becomes affordable and ubiquitous.

“The movement from the classic model of physician decision-making to shared decision-making is going to make a big impact on healthcare. Oncology could be in a great position to lead the movement.”

—Dr. John Wennberg, Professor, The Dartmouth Institute

**Obstacles to Overcome**
While we believe the vision above to be realistic, the oncology community will need to overcome several significant obstacles in order to get there. These include:

• **Uncertainty or inconsistency in IT development and adoption.** The vision above assumes that information technologies—from processing power and storage capacity to new data standards and analysis—will continue their rapid advancement and will be effectively adopted as they become available. While IT advances historically have surpassed expectations, there are no guarantees that this will continue. At the same time, the oncology community will need to push the envelope in adopting new IT approaches—something we have not always done well, as in the case of EHRs. We will also need to work together to ensure the interoperability of various systems, a condition that has often not been met with EHRs to date.

• **Looming primary care physician shortages.** Like oncology, the primary care field faces a severe physician shortage in the coming years, reinforcing the need for greater involvement of nurse practitioners and physician assistants in cancer care. Primary care providers will also require significant oncology training, provided by ASCO and other institutions, to take on an increased role.

• **Globally, wide variation in resources and professional capacity and infrastructure.** While HIT advances promise to help patients in any part of the world, their impact won’t be uniform. Countries with the fewest healthcare resources today will be the least equipped to make use of new technologies tomorrow. To avoid further disparities, global health programs may need to include a major focus on improving IT capacity and training in low-resource countries.

• **Limits of patient involvement and expertise.** Our vision may test the limits of what patients are willing or able to take on. Oncologists and patient advocates will need to devote significant time and resources to developing patient-friendly ways of presenting real-time information. Oncologists will also need to remain aggressive advocates for our patients—especially those less able to advocate for themselves.
II. Cancer Panomics—Precision Medicine Realized

While targeted and individualized treatments already have begun to transform cancer care, our growing understanding of the biology of cancer will take targeted therapy to an entirely new level in the coming decades. Instead of targeting individual pathways in cancer cells, we will have the tools to address the panomics of cancer—the complex combination of patient-specific characteristics that drive the development of each person’s disease, response to therapy and long-term toxicities.

“Going forward it will not be acceptable to be satisfied with 20-30% response rates and celebrate the impact. Successes will be more like crizotinib and ALK1—a response rate that our infectious disease colleagues would be proud of. That is where it is going. The question is when.”

—Dr. Harish Dave, Global Therapeutic Head of Hematology and Oncology, Quintiles

**Vision for 2030**

**Smarter care, better care.** Panomics will be the driving force behind the vast majority of cancer care, enabling providers to individualize treatment for each patient. Specifically, by 2030:

- **Panomic tools will be simple, affordable, and ubiquitous.** This will allow not only oncologists, but often primary care teams, to diagnose and characterize the factors driving a given patient’s cancer—the key step in obtaining decision support to guide therapy.

- **A significant share of all cancers will be molecularly well-understood and highly treatable.** While the work of characterizing all cancers will take decades, by 2030 many of the most common cancers—accounting for the majority of patients—will be well understood and effectively targeted.

- **Combination targeted therapy will be the standard of care for most cancers.** Oncologists will understand which panomic “hubs” must be targeted in the complex network of molecular pathways that drive common cancers. By targeting these molecular defects in combination, treatment will lead to better disease control and prevent recurrences for many more patients.

- **Cancer prevention and detection will come of age.** Validated biomarkers will help identify many patients at risk of developing cancer, enabling providers to preempt the cancer’s development through early treatment or prevention strategies. Most of this work will occur in primary care settings, due to greater collaboration between oncologists and other providers, along with ubiquitous access to molecular testing.

**Biospecimens as a common good.** The future of molecularly based cancer care will be built upon access to vast quantities of annotated biospecimens. Aided by the IT advances above, virtually all institutions will participate in systems to collect and share data on biospecimens, increasing the pace of discovery and reinforcing the view that every patient with cancer can contribute to progress.

- **Biospecimen collection and analysis will become standard practice, enabled by quick and affordable technologies and efforts to forge agreement on suitable assays.** The ability to analyze blood or circulating tumor cells, together with advances in interventional radiology, will enable many patients to contribute useful biospecimens without invasive surgical biopsies and procedures.

- **Public dialogue will establish biospecimen contribution as a collective responsibility.** Greater awareness of the benefits of biospecimen collection—by patients, policymakers and the public—will lead to greater
For our early-phase trials I had to boil it down to something really simple: No tissue. No marker. No study.”

—Dr. James Doroshow, Deputy Director, Clinical & Translational Research, National Cancer Institute

willingness to contribute genetic and clinical information as a routine part of care. This shift in attitude will be made possible as data security and privacy concerns are effectively addressed through HIT advances and the streamlining of informed consent to one-time consent for all future use of biospecimens.

Clinical cancer research for the panomic era. As cancer becomes more narrowly defined by patient-specific characteristics, traditional approaches to clinical research will quickly become scientifically and financially untenable. Treatments will essentially consist of many different “orphan drugs” that must be tested in varying combinations among small, molecularly defined patient populations. To adapt to this reality by 2030:

• Research sponsors and the U.S. Food and Drug Administration (FDA) will agree on streamlined trial designs. To ensure that trials can be smaller, faster and cheaper, these stakeholders will need to develop new trial designs and endpoints that can lead to rapid approval. Survival, while still an ideal endpoint, will be replaced in many trials by validated biomarker-based endpoints that correspond to meaningful clinical improvements for patients. ASCO will have played a key role in brokering this change, building on the vision laid out its 2011 Blueprint for Transforming Clinical and Translational Cancer Research.

• Clinical research will be aided by powerful observational research. CancerLinQ or other rapid learning systems will enable researchers to corroborate the findings of smaller, faster clinical trials as drugs are put to use in real-world settings. FDA will accept, and may even require, such post-marketing observational research in order to solidify its provisional approvals, and to provide real-time safety monitoring of new therapies in the field.

• Companies will routinely collaborate on drug development. As drugs are increasingly tested in combination, companies will find this to be the only viable

Targeted Cancer Therapy—Today and 2030

Today

Available drugs target single mutations within the cancer genome, often resulting in only temporary delays in progression and limited impact on survival.

2030

For common cancers, multiple targets and their interactions will be understood. Treatment combinations will be tailored to the individual patient’s molecular profile.
way to continue developing cancer therapies, as well as a powerful way to create efficiencies in testing many different drugs in narrowly defined populations, making research more cost effective.

Obstacles to Overcome
Significant challenges to achieving this vision will include:

• **Threats to drug development.** Revamping clinical research approaches will be a difficult process involving many different stakeholders—physicians, researchers, industry, federal agencies, advocates, health insurers and others. In many cases, these groups will have competing priorities and perspectives. There is an urgent need to find common ground in time to avoid major disruptions in cancer drug development.

• **Unprecedented data storage and management needs.** As data from millions of patient biospecimens are collected, the analysis and storage requirements will dwarf those of all prior genome sequencing efforts. Along with the basic technological challenge of storing data on servers or “in the cloud”, the oncology community will need to reach consensus on who should annotate, store and interpret this information, and how it will be made available to those who need it. New collaborations with mathematicians, computer engineers and physicists will also be required in order to analyze the complex molecular pathways identified through biospecimen analysis.

• **Biospecimen privacy, security and informed consent.** At a fundamental level, we will need to determine how to maintain patient privacy when an individual’s genome is more specific than any other personal information. Will de-identification be possible? In practical terms, we must be able to educate and reassure a public that remains skeptical of medical data-sharing.

• **Limited laboratory infrastructure.** Routine panomic analysis will require laboratory capacity and expertise on a scale that does not yet exist. Building this infrastructure will require significant financial investments, and also hinges on important decisions about where these facilities will be housed and how centralized they should be.

“The placebo controlled trial has been the hallmark of clinical development for decades despite significant scientific advances. The FDA system needs to reform to keep pace with innovation. Otherwise, R&D will become too costly to pursue for many partners.”

—Christopher A. Viehbacher, CEO, Sanofi
Streamlining Clinical Cancer Research: Averting a Crisis Scenario

While many of the priorities for streamlining clinical cancer research are known, there is no guarantee that the necessary changes will be carried out soon, or in a well-coordinated manner. Although ASCO and many others are working on the needed solutions, it is easy to imagine a scenario in which the full shift to an efficient, molecularly driven research system occurs only in response to crisis.

In this crisis response scenario...
Adoption of new trial designs lags throughout the next decade, even as FDA, ASCO, and other thought leaders work to establish consensus on new approaches. The costs of new cancer therapies reach new highs, though payers initially continue to cover these treatments. With relatively few incentives to invest in novel research approaches, many research sponsors continue to employ trial designs that have worked in the past.

Within a decade, however, the flow of hugely expensive drugs places an unsustainable burden on the healthcare system. Public and private payers either shift a large share of costs to patients, many of whom cannot afford to pay, or refuse coverage of new treatments altogether.

Research sponsors are then faced with a choice: Fully embrace new research approaches and lower the costs of new therapies, or exit the oncology market. For a time, the pace of discovery slows as some companies curtail their oncology operations, and promising new treatments remain untested and unavailable to patients.

Faced with this crisis, FDA, researchers, advocates and companies themselves come together to ensure the rapid adoption of new trial designs, paving the way for a new decade of progress.

This is just one of many possible scenarios. We want to hear from you: What do you think is most likely? How can such a crisis be avoided in the first place?
III. Resources—From Cost to Value in Cancer Care

The recent U.S. debate over healthcare reform has made one thing clear: Unsustainable costs are leading to fundamental shifts in the way healthcare, including cancer care, is delivered. There is a growing expectation that healthcare represent good “value,” both for patients and for nations as a whole.

In oncology, this will require tackling two major challenges. First, oncology care professionals will need to adapt to demands for greater quality, efficiency and transparency in all of the care we provide. On this front, we are already leading the way by developing quality measurement and improvement approaches that are leading to better patient care.

Second, and perhaps more difficult, we will need to address the spiraling cost of new cancer therapies, particularly as novel therapies are tested and administered in combinations of two, three or more drugs. With newly approved drugs costing as much $100,000 for a course of treatment, combination therapies could quickly become out of reach for many patients and threaten the viability of cancer drug development. Solving this challenge will require dramatic shifts in the way drugs are developed and new ways of determining what constitutes value.

“In virtually all cases, the issue of cost effectiveness will increasingly be a discussion point...With rising costs, there will be an increasing challenge to say how drugs compare and contrast, and defining cost effectiveness and value.”

—Cary Adams, CEO, Union for International Cancer Control

Vision for 2030

Value as the driver of oncology practice. By 2030, today’s “buy and bill” model of oncology care in the U.S. will have been abandoned in the face of rising costs and new demands from patients, payers and policymakers. Instead, new payment models that promote quality and value will prevail. Specifically:

• Routine quality measurement and improvement will be embedded firmly in oncology practice. Aided by quality monitoring efforts like ASCO’s Quality Oncology Practice Initiative (QOPI®) and by rapid learning systems such as CancerLinQ, oncology providers will know, in real time, how their care stacks up against benchmarks including guidelines and the care received by patients in other practices. Guideline adherence will be monitored continuously through patients’ EHRs, and guidelines themselves will include clear quality measures and will be updated over time as insights emerge from real-time analysis of oncology practice.

• Oncology providers will be compensated according to their ability to demonstrate value and quality. The oncology community and payers will settle on approaches that are shown to maximize quality and patient satisfaction, while discouraging unnecessary investigation, treatments and costs. These systems will have been built upon oncologist-led quality initiatives such as CancerLinQ. As a result, both physicians and payers will accept them as a sound basis for reimbursement.

• Oncologist training programs will teach the skills needed to ensure high-value care. Medical school, residency and CME programs will include significant emphasis on quality measurement, data analysis, staff management and other skills that physicians will need to succeed under new practice models.

• Public reporting of oncologists’ quality of care will be routine. Following the trend already applied to other professions, such as teaching, quality ratings for oncologists and oncology practices will be publicly available, allowing patients to judge potential providers for themselves. The oncology community will take early, proactive
“ASCO has to define metrics of success at the patient level, physician level and federal level. Issues surrounding reimbursement and research funding will be solved by accurate measures of value.”

— Dr. David Agus, Professor of Medicine and Engineering, University of Southern California Keck School of Medicine and the Viterbi School of Engineering; author, The End of Illness

steps to lead the development and adoption of validated quality measures that can be applied uniformly across the oncology community.

- **Cancer care quality will be much more consistent across regions and institutions**, as quality measurement and reporting become fully embedded in oncology practice and practices adapt in response to public reporting. Where disparities still exist, health policymakers will finally have reliable information to guide their decision-making and to monitor the impact of policy changes on patient outcomes over time. Through quality guidelines and insights gained through CancerLinQ, the cost-effectiveness of care will also become much more consistent across regions.

**Keeping new treatments affordable.** To ensure that our expanded scientific knowledge is translated into accessible, life-saving therapies, the following shifts will occur:

- **Streamlined clinical research approaches (see Panomics section) will dramatically reduce the cost of drug development.** Adoption of new trial designs and endpoints; better understanding of how to design drugs to match molecular alterations; and greater collaboration between industry, researchers and FDA will speed clinical trials, reduce research costs and enable drug-makers to price new medicines in a range that remains accessible within the context of quality-driven reimbursement approaches.

- **Greater linkages between clinical trials and real-world care settings will increase the efficiency of research.** For example, drugs may be released into the clinic earlier in their development, based on safety data and promising signs of efficacy from early-stage trials. By measuring their impact on patient outcomes through CancerLinQ and other observational data sources, researchers could determine which combinations of drugs are worthy of the streamlined efficacy trials needed for regulatory approval.

- **Newly marketed therapies will be evaluated quickly in real-world use to guide reimbursement.** Through analysis of data collected through CancerLinQ or similar systems, both clinical guidelines and reimbursement will be settled within a short time after FDA approval—and continuously updated as new insights emerge. This will minimize the use of new agents for patients who are unlikely to benefit, providing significant cost savings.

- **The oncology community will have reached consensus on what constitutes value in new therapies.** Through the advances above, oncologists, researchers, advocates and payers will generally agree on measures that represent value, and on reimbursement mechanisms that favor high-value treatments. Drug developers will understand these criteria and prioritize new therapies with the potential to offer meaningful benefits at reasonable cost.

“In cystic fibrosis, a decision was made to make outcomes data public. There was a risk that sites would drop out of the program, but that didn’t happen. Instead, providers started to devour the data. The poorly performing sites made visits to the high performers. They began to unlock the secrets. This is what happens when data is made public.”

—Dr. Atul Gawande, Professor of Surgery, Harvard Medical School; Professor in the Department of Health Policy and Management, Harvard School of Public Health
Obstacles to Overcome
Significant challenges to achieving this vision will include:

- **The potential for severe government or payer cost and utilization controls.** Policymakers and payers are under intense pressure to reign in the cost of healthcare, and may resort to approaches that limit patient choice and access to care. To head off this potential threat, the oncology community will need to quickly demonstrate leadership in improving the value of cancer care, while advocating on behalf of patients.

- **Political uncertainties.** Given the political complexities of health reform efforts, there is a risk that policymakers will delay important decisions about reimbursement, creating additional uncertainty about the future, or that they will adopt expedient approaches that harm patients and physicians.

- **Risks of public reporting of physician quality.** As we have seen in debates about public reporting in the education field, there is a risk that metrics will be poorly conceived or applied, with resulting harm to oncology practices and access to cancer care. It will be imperative for the oncology community to lead in developing these metrics.

- **Threats to drug development.** As described in the Panomics section above, revamping our nation’s clinical research and laboratory systems will be complex and difficult, and companies may begin to exit the oncology market before solutions can be found. ASCO’s recent Blueprint report lays out the important first steps, but the entire oncology community will need to join in achieving its recommendations.

“We need value-based reimbursement for drugs. We should be paying more for better results.”

—Dr. Mark McClellan, Director, Engelberg Center for Healthcare Reform, Brookings Institute

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**Paying for quality in cancer care: New models**
While this vision imagines changes over the next two decades, ASCO is already advocating for quality-driven reimbursement approaches that are patient-centered and developed in close partnership with oncologists themselves.

Through testimony before the U.S. Congress and in forums within the oncology community, ASCO has presented several care delivery models that should be explored. These include:

- Patient-centered medical homes, a team-based model that aims to provide comprehensive, continuous, high-quality care
- Case management fees that cover the full range of services oncologists provide and are tied to appropriate quality indicators
- Combination approaches involving a mix of a case management fee, clinical pathways and quality incentives

Whichever approaches are ultimately adopted, ASCO believes it is crucial that oncology providers take the lead in defining value in cancer care.

For more on ASCO’s role in U.S. payment reform discussions, visit ascoaction.asco.org.

“Current drug pricing is based on failure—recouping through drug sales the high costs of failed research. The challenge is to do trials better, thereby reducing costs and making pricing more affordable.”

—Dr. David Kerr, Professor of Cancer Medicine, University of Oxford; Past President, European Society for Medical Oncology
On a fundamental level, predicting the future is an impossible exercise. The vision laid out in these pages, while well-researched and carefully considered, may turn out to be off the mark in ways that we cannot imagine from where we stand today.

Yet anticipating—and preparing for—the future is an absolute necessity for the oncology field. With the number of cancer patients projected to grow dramatically in the years ahead in the U.S. and worldwide, we must do everything possible to ensure that we are well-positioned to deliver the care they will need.

This document is the starting point for an ongoing, dynamic discussion. Over the coming year, ASCO will be seeking input from you, our more than 30,000 members, to refine the vision described here. Members will have many opportunities to weigh in. These may include discussion forums on ASCOconnection.org, the professional networking site for ASCO members, as well as live discussions at state affiliate meetings and at ASCO’s Annual Meeting. ASCO will periodically review and update the vision based on feedback and new developments in the oncology field.

Your input is essential. This vision is intended to be a roadmap to guide ASCO’s policy and programmatic activities—and the care of patients—for many years to come. We ask you to participate actively in the discussion.