

Oncology patient-centered medical home and accountable cancer care

John D. Sprandio, MD

Consultants in Medical Oncology and Hematology, PC, Drexel Hill, PA

With the passage of healthcare reform and the call for improved quality, value, and demonstration of results, the primary care patient-centered medical home (PCMH) concept has gained considerable traction across the United States. In 2004, we began re-engineering our processes of cancer care delivery in our medical oncology practice concurrently with the implementation of an oncology-specific electronic medical record and the development of customized software to better suit practice/patient needs and to facilitate data collection. These custom software applications were designed to support comprehensive processes of care that were also required for level III medical home recognition by the National Committee for Quality Assurance (NCQA). We have been tracking our data for the past 5 years, documenting improvements in disease management—notably the reduction in emergency room utilization and hospital admissions. We have engaged local and national payers with the goal of developing collaborative pilot programs. Furthermore, we are establishing formalized relationships with other like-minded medical oncology and primary care PCMH practices, as we continue to refine our delivery of cancer care within an oncology PCMH model.

Medical oncologists are playing an ever-expanding role in the delivery of cancer care. The current and future challenges they face in their efforts to deliver effective, efficient, and appropriate cancer care are broad, and solutions to the rising costs of cancer care continue to be sought. The patient-centered medical home (PCMH) model has emerged as a partial solution to the fragmented delivery of primary healthcare. In many instances, the delivery of cancer care is also fragmented—fraught with deficiencies in communication, coordination, and accountability. The oncology PCMH (OPCMH) model of cancer care may potentially serve as a practice framework for oncologists. The OPCMH model attempts to promote a value-based agenda that facilitates physician accountability, encourage clinical integration between like-minded medical oncology groups, enhance communication and coordination of care with primary care PCMH models, and collaborate with payers while maintaining a focus on patient needs and evidence-based care.

A backward glance at the PCMH model

A combination of factors has led to the rapid acceptance of the PCMH model in the delivery of primary care: (1) physician and patient recognition of the PCMH model as a partial solution to the unacceptable fragmentation of healthcare delivery; (2) the availability of electronic medical records (EMRs) and the actionable information that can be mined from clinical databases; (3) the alignment of incentives among stakeholders, including the largest employers in the United States, medical professional societies, consumers, insurance companies, academic institutions, patient advocacy groups, state Medicaid agencies, and the Centers for Medicare & Medicaid Services; and (4) early results from medical home demonstration projects, suggesting that elements of the model may have a positive effect on quality, cost, and satisfaction of the patient and clinical team.^{1,2}

Unacceptable fragmentation of care

In order to address the fragmentation of care, there are a number of actions that physicians should take:

care for patients across the continuum, improve the coordination of care, establish a standardized comprehensive process of care, adhere to established practice guidelines, utilize a care-team approach, engage and educate patients to enhance involvement in their care, and create innovative ways of communicating with all parties involved.

EMR systems

When fully implemented and enhanced, EMR systems have the potential to promote a culture of continuous improvement that creates practice efficiencies. Furthermore, EMRs can potentially allow physicians to concentrate on their primary responsibilities of making complex medical decisions based on real time, evidence-based data while establishing and maintaining personal relationships with their

Manuscript received November 16, 2010; accepted December 3, 2010.

Correspondence to: John D. Sprandio, MD, Consultants in Medical Oncology and Hematology, PC, 2100 Keystone Avenue, Suite 502, MOB, Drexel Hill, PA 19026; telephone: 610-622-3818; fax: 610-622-6407; e-mail: jsprandio@cmoh.org.

Commun Oncol 2010;7:565-572

patients. Customized software can allow for streamlining and standardizing care, tracking multiple disease management data points in patients with co-morbid conditions, and facilitating the identification and measurement of potential complications of therapy and disease.

Alignment of interests

The various stakeholders embracing the medical home model of care have specific interests and perspectives. Their individual and collective assessment of currently provided medical services is critical in molding the future definition of value in healthcare. The value of the medical home model in primary care is clear: by engaging more proactively with chronic disease patients to manage symptoms and chart disease progression over time, providers can reduce acute events, thus decreasing resource utilization while improving outcomes. These same principles can be applied to the delivery of cancer care, where the financial and clinical stakes are often higher.

Application of the PCMH model of care to oncology

Patients with cancer currently receiving active treatment represent less than 1% of the commercially insured population, but they account for approximately 10%–12% of healthcare expenditures. The cost of cancer care in the United States is rising at an unsustainable rate of 15%–20% annually.³ In many instances, the delivery of cancer care is fragmented—fraught with deficiencies in communication, coordination, and accountability. In addition, patients with cancer generally tend to be a vulnerable, older, chronically ill population with multiple co-morbid conditions and unique psychosocial needs.

The financial plight of the primary care physician is well known and long-standing. It is widely recognized that reimbursement for evaluation

TABLE 1

The expanding role of the medical oncologist

- Coordinate complex multimodality treatment plans
- Adhere to established treatment guidelines
- Coordinate care
- Assist patient navigation through care
- Case management
- Educate patients
- Promote patient engagement
- Improve documentation capabilities
- Communicate with referring and consulting physicians
- Deliver and coordinate palliative care
- Have increasing on-demand patient access to care
- Proactively address complications of disease and treatment
- Track testing and appointment compliance
- Create specific disease registries
- Develop and disseminate high-risk patient databases
- Create and execute survivorship care planning
- Plan end-of-life care

and management services has simply not kept pace with the complexity of tasks required of physicians in delivering improved quality care. Virtually every payer nationally recognizes this disconnect and is making adjustments, including the consideration of payment for the PCMH model in primary care.

In many ways, the dilemma of the medical oncologist is the same as that of the primary care physician.⁴ In the community-based oncology arena, these problems have been exacerbated by the perverse methodology of paying physician practices for the drugs they administer after discounts from pharmaceutical companies—a model that has eroded over the past several years.

Historically, up to 85% of cancer care delivery was provided in community-based medical oncology practices.⁵ The previous reimbursement model allowed medical oncology practices to assume an increasing degree of responsibility for navigating patients through the complex, fragmented maze that all too often is cancer care in this country. Medical oncologists have played an ever-expanding role in the delivery of cancer care (Table 1).

More recently, oncologists have been asked to provide financial counseling to address the spiraling cost of drugs and the rising co-payments and

deductibles dictated by the insurance industry. The current medical oncology E&M (evaluation and management) payment schedule has not supported these expanding responsibilities, the current call for improvements in quality care, or the advancement of the concept of value in cancer care.

The healthcare reform legislation, and many of the recently initiated programs in response to it, promotes a critical focus on patient needs, value, quality, and results. The application of a PCMH model to cancer care fits very propitiously at this moment with healthcare reform.

An oncology patient-centered medical home (OPCMH) in action

Consultants in Medical Oncology and Hematology, PC (CMOH), provides hematology and oncology care within three health systems in southeastern Pennsylvania. CMOH became the first oncology practice in the nation to earn level III recognition from the National Committee for Quality Assurance (NCQA) under its Physician Practice Connections–Patient-Centered Medical Home (PPC-PCMH™) program in April 2010. The practice was recognized for using informational systems to measure practice-wide clinical quality parameters and for improving clinical outcomes at the point of care.

The PPC-PCMH program identifies practices that promote partnerships between individual patients and their personal physicians, rather than episodic office visits for patient care. Each patient is tended to by a physician-led care team. The current OPCMH model being developed by CMOH is straightforward. At the time of the diagnosis of cancer, the practice assumes the primary responsibility for the coordination of all related services for patients requiring evaluation and active treatment of their oncologic and hematologic conditions. Responsibility of care delivery continues through all necessary therapy—including surgery, radiation therapy, and chemotherapy—and extends into the survivorship phase of care. The practice does not assume the management of nononcologic medical issues from the patient's primary care physician, necessitating the maintenance of an intense level of communication between the practice and the primary care team. The OPCMH model of care essentially provides a framework for defining and refining the concepts of quality and value in cancer care.

CMOH began to re-engineer its processes of care in 2004. By January 2006, all four offices had transitioned to paperless operations. Practice IT capabilities were fully interfaced with the laboratory, radiology, pathology, and medical record departments of all affiliated hospitals.

The IT infrastructure and the processes of care evolved, allowing for the creation of a unique spectrum of patient services that enhanced the level of coordination of care and the collection and evaluation of clinical data. This cycle of data collection and evaluation fuels continuous improvement within the practice.

NCQA medical home recognition requirements. To achieve level III recognition, the practice satisfied the following nine standards outlined by the NCQA⁶:

- Increased patient access and enhanced communication
- Patient tracking and registry functions, including reminders for preventative 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 monitoring patient compliance
- Referral tracking
- Continual performance reporting and improvement
- Advanced electronic communications including a portal for patients and referring physicians.

Oncology-specific PCMH goals. To apply the PCMH model to cancer care, CMOH focused on the following aspects of care delivery:

- 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
- Constantly collaborate between the clinical support and treatment teams
- Stress the importance of patient education, engagement, and compliance
- Enhance patient access to allow proactive management of symptoms 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.

Customized software. The key to the execution and delivery of OPCMH

services is the re-engineered process of care and the customized software enhancements necessary to support them. Software was developed to better suit physician, patient, and practice needs to format, standardize, and collect critical patient management and utilization data.

Cancer care is plagued by communication and coordination gaps, commonly exposing patients to conflicting information, duplicate procedures, confusion about treatment plans, unanswered questions, and incomplete medical records.⁷ It is generally understood that the ability of current EMR software to support data collection and coordination of care is suboptimal. EMRs have not been designed to readily move information between sites. As a result, patient records are commonly inaccessible to referring and consulting physicians.⁸ Coordination of care is not only essential for delivering quality in cancer care, it is also a prerequisite for maintaining and expanding lines of referral.⁹

Listed below are OPCMH software and process enhancements:

- IRIS oncology physician documentation tool:
 1. Immediate completion of standardized documentation
 2. Timely communication with autofaxing or EMR interfaces
 3. Physician document management review program
 4. Referring/consulting physician portal access
 5. Recorded symptoms as a prompt in the IRIS documentation software, ensuring all active clinical issues are addressed
 6. Standardized nursing assessment and documentation of patient symptoms and ECOG (Eastern Cooperative Oncology Group) performance status, verified by the physician
 7. Current and longitudinal data presented to the physician at the time of the visit
 8. Assessment and plan autopop-

ulated with active clinical issues

9. End-of-life-care discussions prompted based on changes in disease and performance status

- Performance status and NCI (National Cancer Institute)-graded review of system tracking
- Palliative care symptom management
- Telephone triage system and data collection
- Outside testing result and appointment tracking and compliance
- Customized patient education, symptom management instructions
- Enhanced patient queuing and tracking
- Unscheduled visit utilization tracking
- Remote access to most recent medication list and laboratory results
- Health screening and immunizations tracking.

OPCMH patient navigators. In addition to utilizing technologic resources and educational programs, CMOH also trained patient navigators to assist patients. Their tasks include gathering all clinical data, removing barriers to care by arranging all necessary appointments with specialists and primary care physicians, and scheduling all ordered testing to improve the timeliness of care. The CMOH patient navigators are also instrumental in connecting patients to support services and community resources. Full EMR adoption allowed CMOH to retrain administrative assistants to serve in these enhanced patient directive roles within standardized guidelines being overseen by the physician.

OPCMH patient engagement and empowerment. For an OPCMH practice to perform optimally, patients must be fully engaged in their care. Emphasis is placed on patient behavior and a clear understanding of patient and practice responsibilities. OPCMH patient orientation emphasizes the following items:

- The NQA recognition of pa-

tient- and family-centered care

■ Guidelines for patients to become partners in their own care:

1. Prepare questions prior to their appointments
 2. Ask questions until they understand their situation and options
 3. Accept their responsibility to report any and all symptoms early
 4. Understand the concept of early intervention, in relation to emergency room (ER) and hospital admission avoidance
 5. Utilize telephone triage system and enhanced access to care
- Become familiar with how to access and use the features of the patient portal.

Positive results thus far

CMOH has seen positive results since 2005. Particular areas of improvement in care follow:

OPCMH phone triage system. The campaign to make patients more involved in their own care has resulted in a dramatic increase in timely clinical phone calls to CMOH's triage system. Trained nurses utilize customized symptom management algorithms to address clinical issues, resulting in every clinical call being tracked, recorded, and analyzed. Over 75% of all clinical calls resulted in the management of symptoms at home. Approximately 10% of clinical calls resulted in an unscheduled office visit within 24 hours. Less than 5% of clinical calls resulted in ER evaluations.

OPCMH triage ER referrals. The number of incoming clinical calls resulting in ER referral decreased by more than 50% over a 5-year period. The actual number of ER referrals via our telephone triage service remained relatively stable over that same time, despite a 30% increase in patient volume (Figure 1).

OPCMH unscheduled visits. As a result of expanding patient access to the CMOH clinical staff, the number of unscheduled office visits within 24 hours of a clinical call more than

doubled during a 5-year period (Figure 2).

OPCMH chemotherapy patient ER utilization. ER referrals for patients actively on treatment progressively decreased since 2004 (Figure 3). The current practice average is less than one ER visit per patient per year (Commercial, Medicare, and Medicaid populations included). This number compares favorably with ER utilization rates of two per patient per year, reported in a large commercially insured population.³

OPCMH admission data. As CMOH developed and expanded OPCMH-related programs across the practice, it documented a 16% reduction in overall hospital admissions in fiscal year 2009, with an additional 9.7% reduction in fiscal year 2010 (Figure 4).

OPCMH symptom management standardization. CMOH has targeted a series of potentially avoidable complications and standardized the clinical assessment of complication-related symptoms to directly reduce patient morbidity and resource utilization.

■ Standardized dehydration prevention education and management resulted in a dramatic decrease in the incidence of dehydration addressed by ER evaluation and hospital admissions.

■ Longitudinal monitoring of the success of palliative care measures is facilitated, measured, and documented by software enhancements.

■ Standardized management of outpatient diarrhea resulted in a decrease in admissions for the treatment of *Clostridium difficile* enteritis by 50%.

■ A standardized approach to insomnia may have resulted in reduced levels of fatigue and indirectly may have improved performance status. Insomnia-related symptoms are also utilized as a screening tool for depression. Validation of these results is currently in progress.

■ Standardized prevention of delayed chemotherapy-induced nausea and vomiting has decreased the incidence

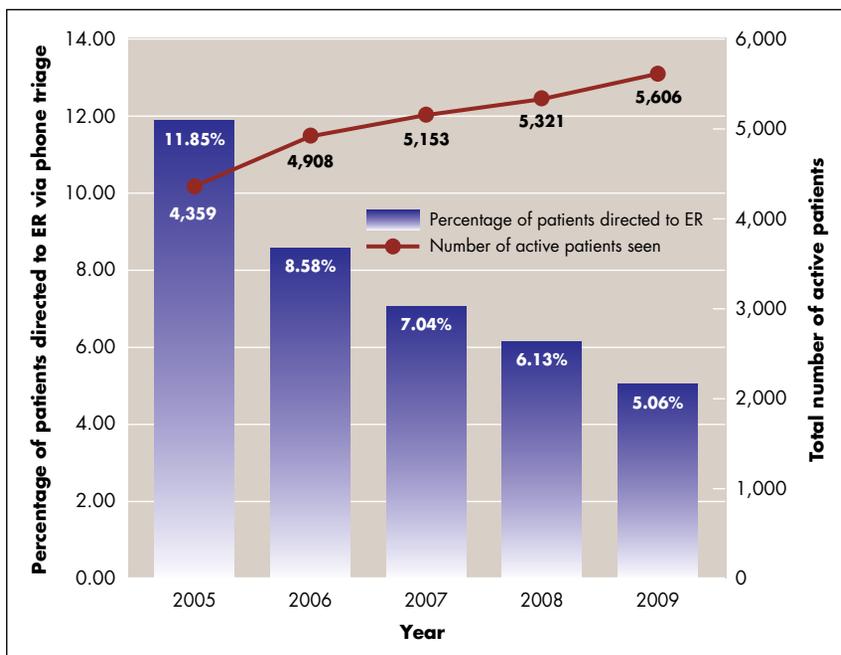


FIGURE 1 Percentage of patients directed to an emergency room (ER) as a result of a clinical call versus the total number of active patients.

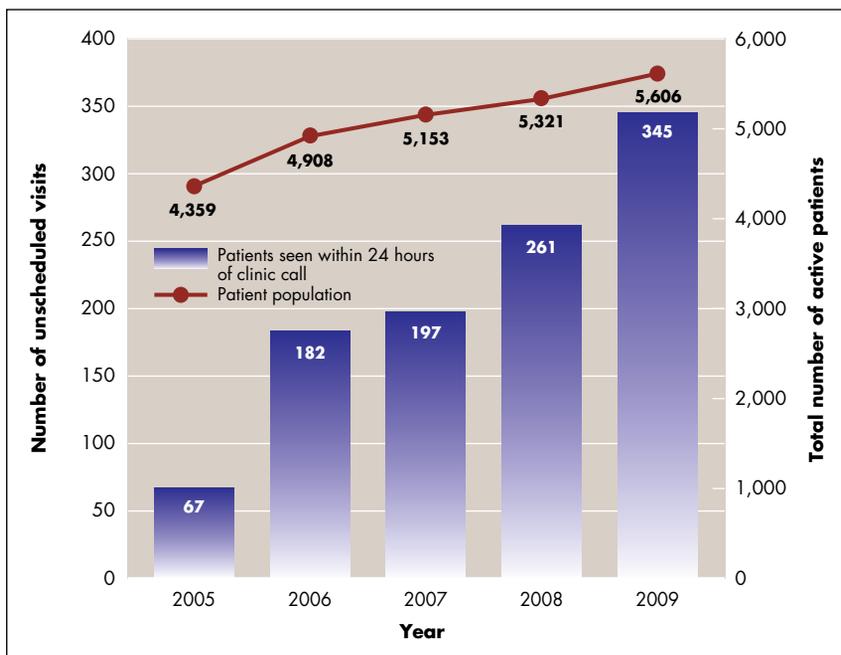


FIGURE 2 Number of patients seen within 24 hours of a clinical call versus the total number of active patients.

of delayed post-treatment nausea. It also resulted in a significant practice-wide reduction in the inappropriate use of oral 5-hydroxytryptamine 3 (5-HT₃) inhibitors for delayed chemotherapy-induced nausea (Figure 5).

OPCMH performance status tracking. Performance status serves as the focal point of patient-centered care. It is the basis for decision-making on the day of planned chemotherapy administration and is used longi-

tudinally as a guide to the initiation of end-of-life-care discussions and timely hospice referrals. From 2005 to 2009, on the day of chemotherapy administration, roughly 90% of treated patients had an ECOG performance status of 0 or 1, and 8.7% had an ECOG performance status of 2.

OPCMH end-of-life care. CMOH recently initiated an internal auditing program to measure physician performance regarding the documentation of end-of-life-care discussions with patients in a noncurative setting (stage IV disease). CMOH measures the documentation of end-of-life-care discussions in the physician assessment at the time of the initial outpatient consultation. Reassessment and confirmation of end-of-life-care discussions are triggered when a patient presents with an ECOG performance status of 3. The progression of this discussion during successive office visits also is monitored. End-points measured in the last 8 weeks of life include ER, intensive care, and hospital admissions (including length of stay); chemotherapy administration; radiation therapy; and hospice enrollment and duration.

OPCMH palliative care. In patients undergoing active treatment for metastatic non-small cell lung cancer, the principles of palliative care have been shown to improve quality of life and median survival while promoting more appropriate end-of-life care.¹⁰ The OPCMH model incorporates palliative care in conjunction with standard oncology care. CMOH physicians can longitudinally track symptoms and performance status in real time, at the point of care. Furthermore, all clinically active issues and symptoms are followed in a running assessment and plan document for reference, with consideration at the time of clinical decision-making.

Adherence to clinical guidelines. Clinical guidelines, based on recommendations from the National Comprehensive Cancer Network and the

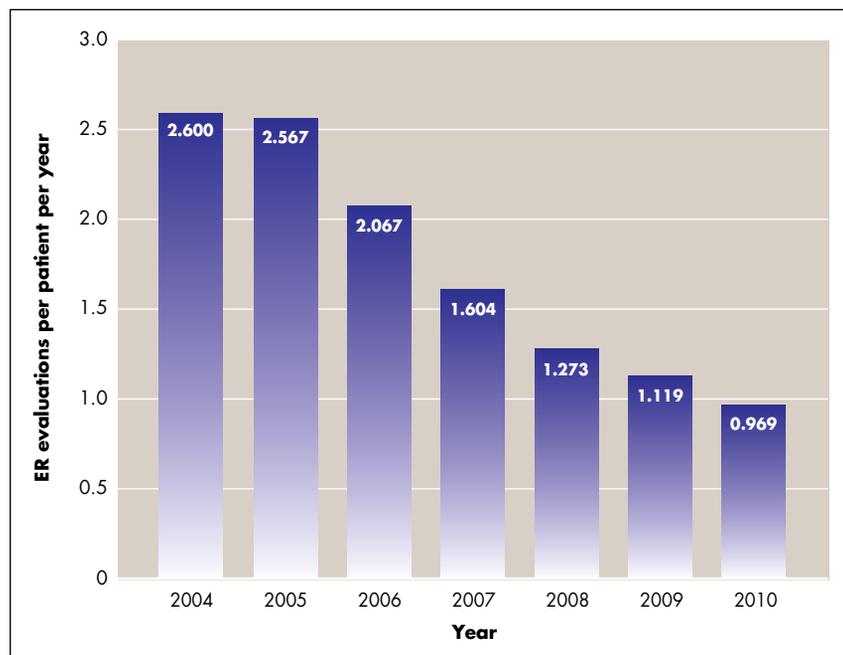


FIGURE 3 Average emergency room (ER) evaluations at Delaware County Memorial Hospital of the Drexel Hill office population per chemotherapy patient per year, 2004–2010 (YTD).

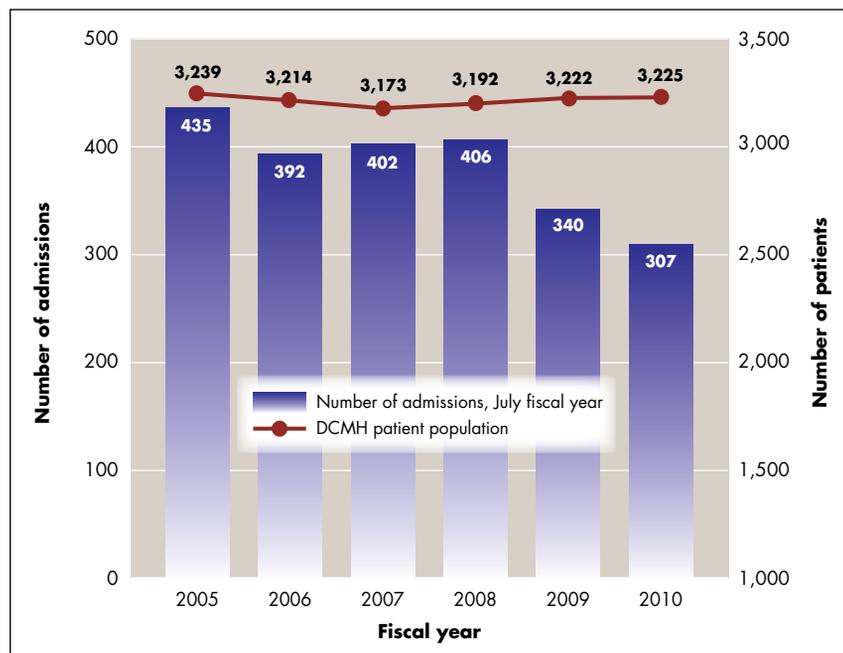


FIGURE 4 Number of admissions to Delaware County Memorial Hospital (DCMH) versus the patient population in the Drexel Hill office during fiscal years 2005–2010.

American Society of Clinical Oncology, are built into treatment care plans within the oncology EMR. Adherence to these guidelines is an essential component in the OPCMH model and is tracked at the

physician and practice levels.

Current and future challenges

Assessing and improving value in cancer care. Scott D. Ramsey, MD,

PhD, the Committee Chair of the Planning Committee on Assessing and Improving Value in Cancer Care Workshop, was recently quoted: “Unlike many areas in health care, the practice of oncology presents unique challenges that make assessing and improving value especially complex.... A practical working description of value in oncology would benefit many stakeholders and serve as a useful model for other fields of medicine.”¹¹

As previously mentioned, the current and future challenges oncologists face in their efforts to deliver effective, efficient, and appropriate care are broad and move well beyond a focus limited to pharmaceutical costs and drug utilization.¹¹ The OPCMH model of cancer care can potentially serve as a practical framework to more effectively address these challenges. The model has the potential to promote a value-based agenda that facilitates physician accountability, encourages clinical integration between like-minded medical oncology groups, enhances the communication and coordination of care with primary care PCMH practices, and productively collaborates with payers while maintaining a focus on patient needs and evidence-based care.

Enhancing physician accountability. At CMOH, accountability for the coordination of cancer care has been placed on the shoulders of the medical oncologist. Standardization of the appropriate extension of physician oversight is a potential answer to the impending oncology physician shortage; a shift of clinical responsibility to nurse practitioners or physician assistants out of necessity due to sheer volume is not.

To promote physician accountability without creating additional burdens, the practice needed to create physician efficiencies. This process was largely accomplished by facilitating and streamlining the approach to tedious data collection, time-consuming documentation, and timely commu-

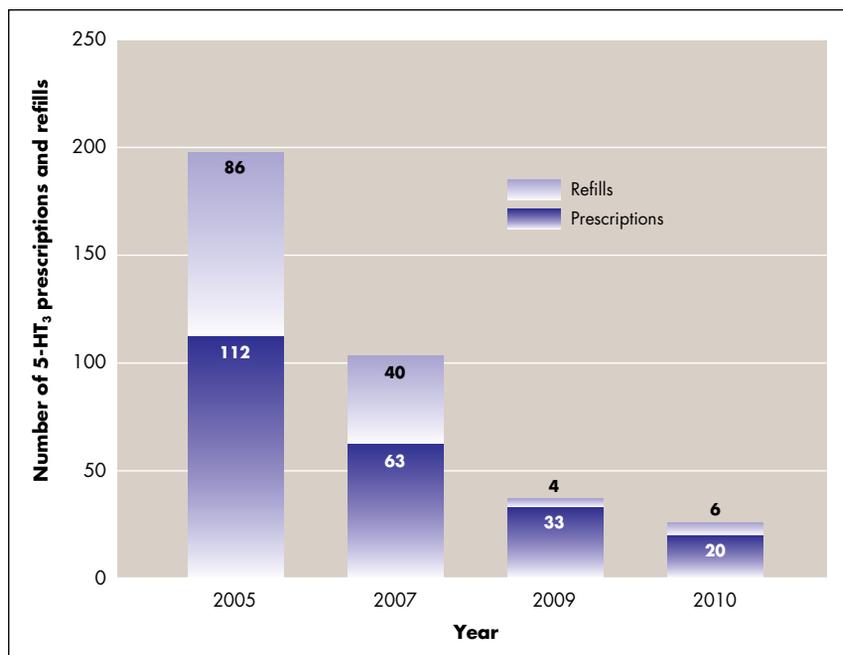


FIGURE 5 Number of prescriptions and refills for oral 5-hydroxytryptamine 3 (5-HT₃) inhibitors during the first 6 months of 2005, 2007, 2009, and 2010.

nication. Coddled by a well-utilized EMR, re-engineered process of care, and custom software programs, the OPCMH structure is capable of minimizing clinically irrelevant physician activity, thereby maximizing physician efficiency and accountability.

Standardizing and integrating clinical care. CMOH strives for continued improvement, anticipating confirmation of the value of a patient-centric approach in the delivery of oncology care by expanding the OPCMH template and infrastructure to others. Through horizontal integration with like-minded medical oncology practices—both academic and community-based—the practice hopes to facilitate the standardization of initial assessment and treatment algorithms. By regimenting data-collection points within the shared or separate EMRs, CMOH plans to track utilization in a larger population. Robust communication and integration also allow for the sharing of strategies in disease management. Extension of the OPCMH template to a similar-sized practice is under way.

In addition, CMOH is engaged in discussion with two large primary care groups for potential clinical integration opportunities. The goal is the development of EMR interfaces to allow data-sharing and better management in the following areas: (1) initial hematology and oncology evaluations; (2) potentially avoidable complications in patients with multiple comorbid conditions; (3) establishment of the point of first triage during cancer therapy; (4) embedding of case management into the process of care; (5) avoidance of duplicative laboratory and radiographic studies; (6) facilitation of end-of-life-care discussions; (7) transitions in care from an inpatient setting; (8) standardization of the referral of high-risk patients at the level of the primary care practice; and (9) standardization of survivorship care plans with an agreed-upon responsibility matrix. The American College of Physicians' Council of Subspecialty Societies recently established the definition of a PCMH neighbor (PCMH-N), the framework for interactions, and the guiding principles

for the development of care-coordination agreements between the primary care PCMH and the specialist PCMH-N.¹²

Encouraging payer collaboration. As the cost of cancer care is rising at an unsustainable rate, payers and government programs are looking for solutions, especially in light of projected increased demands. Other current “oncology management” solutions available to payers are transitional at best. They tend to focus overwhelmingly on chemotherapy costs, which account for approximately 26% of the total amount spent on cancer care.¹³ This narrowly focused approach only partially advances the quality-of-care agenda and does not advance the value proposition from the patient service and disease management perspective.

It has been established that adherence to chemotherapy treatment pathways does result in the standardization of drug utilization and cost reduction.¹⁴ An OPCMH practice is constructed with a fully deployed treatment pathways program, providing more predictable chemotherapy costs. The medical home model of cancer care, as discussed, looks beyond chemotherapy drug pathway compliance. Practices with OPCMH capabilities will be positioned to become future providers of choice, capable of transitioning to value-based payment models.¹⁵

The OPCMH is potentially transformational. None of the other efforts that payers are considering provides a sustainable business model for community oncologists. The OPCMH infrastructure does. Focused on the essential demand for improved quality and value, irrespective of the payment model or the organizational structure of the parties adopting it, OPCMH is flexible enough to accommodate whatever payment changes may come in the future. CMOH has encouraged payers to collaborate to further refine and verify this model.

References

1. Evidence of quality. Patient-Centered Primary Care Collaborative. <http://www.pcpc.net/content/evidence-quality>. Accessed December 5, 2010.
2. Paulus RA, Davis K, Steele GD. Continuous innovation in health care: implications of the Geisinger experience. *Health Aff (Millwood)* 2008;27:1235–1245.
3. Cancer patients receiving chemotherapy: opportunities for better management. Milliman Client Report. <http://publications.milliman.com/research/health-rr/pdfs/cancer-patients-receiving-chemotherapy.pdf>, released March 30, 2010. Accessed December 5, 2010.
4. Alice G. Gosfield, JD, of Philadelphia's Alice G. Gosfield and Associates, PC [personal communications]. March 2009.
5. NCI Community Cancer Centers Program Pilot: 2007–2010. National Cancer Institute Web site. <http://ncccp.cancer.gov/Media/FactSheet.htm>. Accessed December 5, 2010.
6. PPC-PCMH Content and Scoring summary. <https://ncqa.org/LinkClick.aspx?fileticket=vDHh2t5aLSE%3d&tabid=631&mid=2435&forcedownload=true>. Accessed December 5, 2010.
7. USA Today, Kaiser Family Foundation, and Harvard School of Public Health. National survey of households affected by cancer. November 2006. <http://www.kff.org/kaiserpolls/upload/7591.pdf>. Accessed December 5, 2010.
8. O'Malley AS, Grossman JM, Cohen GR, Kemper NM, Pham HH. Are electronic medicine records helpful for care coordination? experiences in physician practices. *J Gen Intern Med* 2010;25:177–185.
9. 2008 Update on Consumers' Views of Patient Safety and Quality Information, October 2008. The Henry J. Kaiser Family Foundation. <http://www.kff.org/kaiserpolls/upload/7819.pdf>. Accessed December 5, 2010.
10. Temel JS, Greer JA, Muzikansky A, et al. Early palliative care for patients with metastatic non-small-cell lung cancer. *N Engl J Med* 2010;363:733–742.
11. Schickedanz A. Assessing and Improving Value in Cancer Care: Workshop Summary. Rapporteur, Institute of Medicine. http://www.nap.edu/catalog.php?record_id=12644. Accessed December 5, 2010.
12. Kirschner N, PhD. Senior Associate, Insurer and Regulatory Affairs, American College of Physicians [personal communications]. September 2010.
13. Klein I. Aetna, Medical Director [personal communications]. November 2010.
14. Neubauer MA, Hoverman JR, Kolodziej M, et al. Cost effectiveness of evidence-based treatment guidelines for the treatment of non-small-cell lung cancer in the community setting. *J Oncol Pract* 2010;6:12–18.
15. Cancer at the Crossroads: Achieving Market Differentiation While Positioning for Success in the Era of Accountable Care. The Advisory Board Company. Washington, D.C. Oncology Round Table National Meeting Series. 2010–2011.

ABOUT THE AUTHOR

Affiliation: Dr. Sprandio is the lead physician of Consultants in Medical Oncology and Hematology, PC, an independent private practice located in Drexel Hill, Ridley Park, Newtown Square, and Brinton Lake, PA.

Conflicts of interest: Development of the oncology patient-centered medical home (OPCMH) model was self-funded by the practice, Consultants in Medical Oncology and Hematology, PC (CMOH). There were no external corporations or institutions affiliated with the development of the OPCMH model. The author has an ownership interest in both the practice, CMOH, and Oncology Management Services Ltd, the developers of the custom software enhancements specifically designed to support the OPCMH model of cancer care. Dr. Sprandio currently does not serve on any corporate advisory boards.