



Capitating Cancer

The Challenge to Reduce Costs per Case and Continue Quality Care

Kent Giles

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All discussions of health care reform eventually revolve around three basic issues: cost, quality, and access.

Health reform plans that guarantee universal access and ensure quality will result in higher costs, namely higher taxes and/or premiums. If higher costs are unacceptable, and if quality and access are to be maintained, the only alternative is to find ways to provide higher volumes of quality care at a lower cost per case. Since the costs associated with cancer care currently consume 20 percent of the U.S. health care dollar and are projected to consume 25 percent of that same dollar by the year 2000, the success of health care reform will in large part be dependent on the stewardship of cancer care providers. In essence, our challenges are to provide care for an increasing number of patients, further enhance quality, and reduce costs per case (i.e., to do more—or better—for less).

Many have suggested that capitation is a way to reduce health care costs. While the term *capitation* (along with other terms such as *integrated network*, *partnering*, and *risk pooling*) is often proclaimed, the word has different meanings to different people. The American Heritage Dictionary defines capitation as “a tax fixed at an equal sum per person.” Although it would be interesting to explore the use of the word *tax* in discussions of health reform, the term capitation in this article will be defined simply as “an equal sum paid per person for guar-

Kent Giles, M.P.P.M., is Executive Director, HCA West Paces Cancer Center, Atlanta, Ga.

by Kent Giles, M.P.P.M.

anteed access to a defined set of health care services.” Under this definition, capitation can be used to describe single fee-for-service strategies. Such a strategy would include, for example, a global fee for an autologous bone marrow transplant that covers all professional and hospital services for six months of care for a single fee of \$125,000. Or, it might include an insurance product that provides cancer services to a plan subscriber for a fee of \$73 per month.

Successful efforts at capitation have been demonstrated in cardiac services. A number of health systems have developed capitated rates for a defined set of cardiac services or particular interventions such as a coronary artery bypass. The Medicare DRG system required cardiac service administrators to determine costs, assess outcomes, and identify variability. Many institutions have used DRG-specific information as a basis for developing comprehensive fees for services that combine professional fees, diagnostic tests, hospital fees, and even follow-up services. With managed care increasing the need for cost control, it is not surprising that institutions that have developed comprehensive fees for cardiac services have gained significant market share. The success of capitation strategies in cardiac centers is encouraging cancer centers to pursue similar strategies.

CAPITATION FOR CARDIAC AND CANCER SERVICES

While the DRG system has provided an excellent framework from which to develop capitated rates for cardiac services, the longer courses of treatment and multidisciplinary nature of cancer care limit the use-

fulness of the DRG system as a starting point for capitation. Cancer encompasses more than 100 diseases, can affect any part of the body, is treated by multiple specialists, and generally is chronic in nature. These complexities make oncology a difficult product line to capitate (Table 1).

Heart disease is a disease of a single organ system and has a period of intervention that may be measured in weeks or months. Heart disease is treated primarily by two specialists—the cardiologist and the cardiovascular surgeon—and there is little variation in either clinical outcomes or costs among patients with the same diagnosis. In contrast, the accurate diagnosis and effective treatment of cancer can require the involvement of many specialists (medical oncologist, general surgeon, thoracic surgeon, radiation oncologist, urologist, gynecologist, plastic surgeon, neurosurgeon, interventional radiologist, etc.), and there is much greater variability in both costs and clinical outcomes among patients with the same diagnosis.

Most cardiac patients receive one or more of four interventions: 1) medication, diet, and exercise; 2) catheterization; 3) surgery; and 4) transplantation or a combination of these treatment options. The technology of cardiac care has advanced to the point that the period of intervention for cardiac patients is generally less than three months. Most patients who survive an initial heart attack without major organ damage can be expected to do well. The high degree of consistency in costs and outcomes makes the capitation of cardiac services a relatively straightforward process. These factors have allowed many cardiac centers to cover the breadth of treatment options with as few as 10 capitated fees.

For cancer patients, a single intervention such as surgery is often just a starting point in a treatment process that can require many other types of treatment, such as radiation therapy, immunotherapy, hormonal therapy, chemotherapy, and reconstructive surgery. Multidisciplinary treatment may require several years. In many cases, only after five years of disease-free survival is an oncology patient considered cured.

**CANCER CAPITATION:
THREE APPROACHES**

Three broad strategies for capitating cancer include: 1) the historical analysis method, 2) the traditional insurance approach, and 3) the clinical pathway method.

Historical cost method. The historical cost method (Table 2) seeks to determine the actual cost of treating patients with specific diseases by analyzing historical data from insurance company records, professional and hospital databases, or other similar sources of information.

This method is capable of establishing only the historical costs of providing care for patients with the same diagnosis and does not have the potential to assist in improving the standard of care or identifying unnecessary costs. This method is, therefore, limited to providing historical costs of patient care and lacks the ability to develop more effective strategies.

The difficulties of using this method in establishing the total costs for cancer care are that few, if any, databases contain an accurate accounting of all costs associated with the care of cancer patients throughout their entire course of disease. Few insurance companies have the medical expertise required to fully assess the data in a manner that allows the information to be

used to establish capitated rates. The institutions that have the medical expertise lack the systems and financial expertise necessary to capture all of a patient's costs of care (home care, medications, nonhospital diagnostic services, physician charges). Lastly, the historical approach provides information on only what was charged for specific services and is not likely to contain true cost information.

One use of this approach may be in identifying the most comprehensive database (probably one from an insurance company) and developing analysis teams of medical, financial, and statistical experts. These experts would sort and analyze data, allowing them to determine the historical cost of treating specific illnesses and to develop a system that more effectively captures necessary information on future patients. Once costs were developed, capitated rates could be established. This method could be used by an organization as an interim step for capitating cancer while more outcome and quality-focused approaches were developed.

Traditional insurance approach. In the second method for capitating cancer, the traditional insurance approach (Table 3), developers of capitated rates use estimates, actuarial or otherwise, to project cancer treatment costs and develop per person rates for coverage. While this method is widely used among insurance companies to develop premiums or dues, it has rarely been applied to the establishment of premiums for coverage of a single disease. Most current cancer policies only supplement existing insurance coverage or are very limited in scope.

Traditional insurance approaches that could be used to develop capitated rates for cancer include:

1) determining the average costs of treating specific cancers; 2) combining this data with actuarial tables or incidence rates; and then 3) applying these projections to insured populations. Similar approaches are used by insurance companies to establish premiums or dues for customers. Another strategy is to combine cost estimates and projected incidence rates for each disease and produce a capitated or per person rate for cancer care. In any of these scenarios, the provider of coverage needs to establish the necessary cash reserves (generally three to six months' claims expense) to smooth out fluctuating medical expenses and acquire reinsurance (i.e., insurance provided to the insurance company) in a sufficient amount to meet federal and state regulations.

Institutions might gain great market share if they 1) wanted to pursue a strategy of rapid entry into the marketplace with capitated rates and 2) had an insurance partner with the reinsurance and capital reserves to offset potential losses in the early stages (when the volume of insured patients and premiums were smaller and medical management systems were less effective).

The success or failure of this strategy is likely to depend on market share (volume of patients across which to spread financial risks), the ability to control costs and provide acceptable outcomes, the perception of the institution in the marketplace, and the accuracy of cost projections and/or depth of financial reserves. Clearly, for any capitation strategy to succeed it must provide greater value and less financial risk to the customer than current reimbursement strategies.

Clinical pathway method. This method is designed to focus attention on the specific process involved

Table 1. Comparison of capitation of cardiac and cancer services

	Heart disease	Cancer
Organs directly affected	heart and circulatory system	all systems can be affected
Specialists required for primary treatment	2	12+
Time of primary intervention	weeks	months/years
Variance in clinical outcomes among patients	little variance	wide variance
Capitated rates required to cover all heart services	less than 12	more than 350

KEYS TO SUCCESSFUL CAPITATION

Regardless of which approach to capitation is selected, the long-term success of any strategy will require:

- Information systems that are sufficient to collect clinical and financial data and relate them in an evaluable manner
- Procedure- and diagnosis-specific cost-accounting systems
- Financial systems that are clinically focused rather than billing focused
- Quality indicators that are outcome based
- Patient and physician involvement in decision making
- Ability to provide value (best outcome for least cost)
- Teamwork between physicians and other providers (hospitals, surgery centers, radiation centers, etc.)
- Sharing of information between all parties
- Executives who value accurate data and foster a culture of continuous quality improvement and objective decision making
- Ability to generate large market share (A direct relationship has been demonstrated repeatedly between high volume and high quality and high volume and lower costs.)
- Integration of health systems to create networks of providers who can meet all patient needs, including academic relationships for research and tertiary care.

in the care of patients (Table 4). When this tool is used to focus on clinical outcomes, it provides opportunities for proactively engineering the best treatment plans. By design, the clinical pathway method is outcome driven and requires that a multidisciplinary work team determine the best course(s) of therapy for each clinical indication. The work team includes representatives from surgery, medical oncology, radiation oncology, pathology, radiology, and other relevant specialties as required by the specific disease in process, as well as representatives

from nursing, administration, finance, and other support areas.

The FOCUS-PDCA model and other models of continuous quality improvement can be used in the development and refinement of a clinical pathway. The basic steps involved in pathway development are as follows:

- Identify a disease/illness for development.
- Organize a knowledgeable multidisciplinary team.
- Clarify current knowledge of how the process works.
- Understand the causes of variation in outcomes.
- Select or create the best available treatment plan(s).
- Design the pathway.
- Implement the pathway.
- Monitor and evaluate results. (For example, why is there variance?)
- Select a specific component of the process to improve.
- Modify and improve the process continually.

At West Paces Medical Center in Atlanta, we are using the clinical pathway as a tool for identifying ways to improve clinical outcomes, enhance patient services, reduce unnecessary costs, and develop capitated rates. The goal is to create greater value by developing a process of care that produces better clinical outcomes, improves resource utilization, and eliminates unnecessary costs.

Clinical pathways also help prevent opportunities for medical mismanagement by creating a clear understanding of which treatment strategies are appropriate for which patients at any stage of decision making. For example, a clinical pathway for a patient with metastatic breast cancer who is responding to combination chemotherapy would include a decision point that suggests the patient be considered for high-dose therapy (HDT) with autologous bone marrow/peripheral stem cell rescue earlier in the course of treatment rather than after receiving multiple cycles of combination chemotherapy, which lowers chemosensitivity and renders HDT less effective.

The clinical pathway helps pinpoint waste and inefficiencies within the system. In a prostate clinical pathway meeting, for example, a urologist noted that he had to open two surgical trays in the operating room in order to acquire all the

instruments used for a radical prostatectomy. Each time a tray was opened, the cost was approximately \$125 (sterilization, sorting, loading, delivery, etc.). The simple solution was to develop a urological tray that included all the necessary instruments used by all urologists. The additional cost of this larger tray was less than \$10, and this simple process improvement reduced five minutes of lost time in the operating room.

Once a clinical pathway is developed, the pathway is broken down into individual elements and entered onto a spreadsheet. Individual elements are items for which a cost can be determined and may include all the times for which a hospital or a physician charges, such as minutes in the operating room, a specific surgical procedure, or a medication. These individual elements are the financial building blocks used to determine the total cost of treating patients with the same diagnosis. Once all elements of service and cost are identified and unnecessary costs have been eliminated, a capitated rate can be established. Then, the clinical pathway can be used to assess the impact of changes in treatment strategy and clinical trials on both outcomes and costs.

At the University of Alabama, Birmingham (UAB) Comprehensive Cancer Center, the multidisciplinary team of physicians and administrative staff developed a clinical pathway that outlined how breast cancer patients were treated. The boundaries for the clinical pathway started at referral to UAB and ended at year five. The individual cost items were defined and entered onto a financial spreadsheet. Once all identifiable cost/charge items (office visits, mammograms, radiology interpretations, surgeries, etc.) were input, an administrative team worked to identify the costs and charges associated with each of these elements. The entire process from schema to pricing required cooperation from ten separate billing offices and six months of effort. In the end, team members agreed that the final pathway had sufficient accuracy for use in establishing a capitated rate.

The time required to establish pathways can be greatly reduced by developing a common working file that contains cost information for each billable item, including procedure, supply, and visit.

THE CHALLENGE AHEAD

Meaningful health care reform will require the best efforts of the oncology community. Successful organizations will be those that can capture significant market share and do more, or better, for less. Of the three methods for developing capitated rates for cancer, the clinical pathway method offers the greatest potential for improving quality of care, eliminating unnecessary costs, fostering a quality culture, and establishing the kind of information systems that will empower oncology teams to focus on healing rather than billing.

The greatest weakness of the historical and traditional insurance methods are that they fail to directly address quality improvement and cost reduction. Instead, these two methods are best thought of as tools for establishing service rates. While some have argued that any strategy of capitation will result in cost reductions because providers will be forced to provide services for a specific and limited amount, one should not assume that all providers will become more cost-effective just because they are paid less. It should be noted that some providers could reduce access or lower quality to "live within the capitated fee," and organizations that lack the tools and expertise to perform quality improvement activities might have no other choice.

The real challenge we face as providers of oncology care is how to become better stewards of our shrinking resources. The clinical pathway method provides a tool that empowers us to identify the best clinical outcome for our customers; the educational, care, and support services that are necessary to enhance quality of life; and a process for making the best usage of resources. In this context it is important to remember that the most cost-effective form of health care is effective prevention and early detection. By establishing clinical pathways that begin with prevention and foster earlier detection, we will be able to improve access, reduce costs, and enhance quality of life. Often the most cost-effective solutions are investments in preventing cancer from occurring or identifying cancer early when higher cure rates are possible and costs are much less. ■

Table 2. Advantages and disadvantages of the historical cost method

Advantages

- Does not require large amounts of physician time
- Allows for gathering of large statistically valid samples

Disadvantages

- Keepers of databases (primarily insurance companies) may lack the medical expertise to evaluate the data.
- Cooperation may be difficult because medical providers and insurance companies often regard one another as adversaries.
- Most medical centers have multiple and separate billing systems for physician practices, hospital services, agency services, hospice care, and other services.
- No single database is likely to include all costs of care.
- Treatment pathways may have changed since the data was collected.
- The method does not focus on process improvement or cost reduction.

Table 3. Advantages and disadvantages of the traditional insurance approach

Advantages

- Requires less time to develop and market
- Services customers who are already accustomed to buying insurance products
- Services clients who are already under contract

Disadvantages

- Lacks focus on quality improvement or cost reduction
- Lacks focus on outcomes
- Requires the kind of expertise that is generally maintained only by insurance companies, third-party administrators, and health maintenance organizations
- Not likely to eliminate the administrative costs (10 to 25 percent) that are currently charged by insurance companies

Table 4. Advantages and disadvantages of the clinical pathway method

Advantages

- Provides a logical multidisciplinary approach to treatment planning
- Focuses on improving outcomes (i.e., quality)
- Clarifies treatment processes for all caregivers
- Provides opportunities for improving patient education
- Encourages proactive decision making
- Identifies duplicate or unnecessary steps/processes/wasted resources
- Provides a basis for accurate cost analysis and evaluation
- Serves as a basis for capitated rates
- Regards clinical trials as a tool for improving quality

Disadvantages

- Requires large amounts of time to establish
- Requires individuals with training in CQI tools
- Requires ongoing attention (i.e., costing and pricing)
- May foster serious disagreement among physicians
- May be perceived by physicians as an attempt to develop "cook book" medicine
- May be insupportable because of weak hospital accounting systems
- Requires a strong product line management structure