OPTIMIZING CARE AND CASE MANAGEMENT FOR COLORECTAL CANCER PATIENTS*

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ABSTRACT

Obstacles to optimal care of patients with cancer include reduced compliance with chemotherapy regimens and changes in reimbursement that affect both the selection of chemotherapy agents and the setting for delivery of care. This article reviews care management and case management, and addresses reimbursement and drug spending trends. Care management focuses on the clinical aspects of care and includes multifaceted strategies such as prevention, online health and wellness education, shared decision making among patients, providers, and payors, and tiered performance assessments of providers to ensure quality of care. Case management focuses on the economic issues associated with providing care for high-cost patients, such as those with colorectal cancer. In one case management model, strategies such as home care coordination, collaboration with care support, and modification of benefits to cover hospice care significantly reduced hospitalizations, emergency room visits, chemotherapy use, and hospital days.

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groups, particularly those that are small, question whether to provide healthcare coverage at all after assessing the cost of chemotherapy and cancer care.

**Care Management Strategies**

Although patient compliance with chemotherapy is suboptimal in several respects, it is amenable to improvement with a number of care management strategies, largely because cancer is a “death perception problem” that motivates patients who are concerned about proximate death to be as compliant as possible. In this context, care management strategies support the patient in optimizing compliance and clinical care.

This is in stark contrast to the historically poor compliance observed with a number of simpler, less expensive, and less toxic lifesaving therapies. Recent data indicate that the median time of persistence with statin therapy after a myocardial infarction and anti-hypertensive therapy with angiotensin-converting enzyme inhibitors and angiotensin receptor blockers is 4 months. After 4 months, compliance with therapy declines dramatically.

Care management strategies in place under the plan at Blue Cross/Blue Shield of Minnesota (BCBSM) are multifaceted, encompassing both disease management and ancillary therapy for patients with CRC and other cancers. Because 33% of patients with CRC who are covered by BCBSM are in clinical trials, disease management of the remaining 66% begins with an assessment of what treatment the patient is receiving, whether the treatment is appropriate for the patient’s disease stage, whether the patient is being treated in accordance with National Comprehensive Cancer Network (NCCN) guidelines, and how well the patient is complying with therapy. Specific management strategies include prevention, online health and wellness education, shared decision making, provider strategies, care support, care management, and end-of-life care.

**Prevention and Education**

Preventive strategies include health risk assessments, lifestyle coaching focusing on nutrition, free smoking cessation programs, and early detection screening (eg, colonoscopy and mammography), and help with diagnostic decisions. The latter includes telephone counseling and benefits consultations to ensure that appropriate health benefits, such as preventive services coverage, are in place to encourage positive changes in the patient’s behavior.

Because employers providing health benefits through BCBSM consider cancer one of their main economic concerns, information about cancer and health and wellness is often available in the workplace. Information about prevention is also available in health journals and other print materials prepared by BCBSM and at the BluePrint for Health online wellness center, which also provides information about symptoms, diagnosis, and treatment options.

**Shared Decision Making**

Shared decision making involves the patient, the oncologist, and the payor. It provides decision support and serves as a patient advocate by presenting clinical and economic information and guiding patients through the process.

Shared decision making utilizes Health Facts/Health Grades, an online cost and quality tool; NexCura, Inc., a tool that incorporates validated national guidelines to guide the patient through the decision process; and the BluePrint for Health online wellness center.

**Provider Strategies**

Provider strategies to optimize care management include transparent provider performance, tiered networks, and Blue cancer centers. As shown in Figure 1, a provider’s performance is assessed in relation to that of his or her peers, in addition to a benchmark, with quality adjustments—not cost adjustments—made for severity of illness. Although provider performance typically assesses family practitioners, internists, and pediatricians, BCBSM also assesses oncologists, in large part because of employers’ concerns that the cost of

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**Figure 1. Transparent Provider Performance**

<table>
<thead>
<tr>
<th>Beyond Transparency</th>
<th>Parameter Measures</th>
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<tbody>
<tr>
<td><strong>Physician Name</strong></td>
<td><strong>Dr Welby only</strong></td>
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<tr>
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<tr>
<td>Average of</td>
<td><strong>Benchmark</strong></td>
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<tr>
<td>specialty-matched</td>
<td></td>
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<tr>
<td>peers</td>
<td></td>
</tr>
<tr>
<td>Adjusted for illness severity</td>
<td></td>
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</tbody>
</table>

*Significance of difference from average.
†Significance of difference from benchmark.
providing coverage for cancer treatment will bankrupt their groups.

Using performance as the base, BCBSM ranks oncologists primarily by quality of care, which includes treating and monitoring to NCCN guidelines, and secondarily on cost to create tiered oncologist networks, which are in place in major metropolitan areas in Minnesota. Tiered-network metrics based on quality- and risk-adjusted episode cost include radiation therapy following breast-conserving surgery, hepatic enzyme monitoring for patients receiving antimycotic drugs, and appropriate monitoring for patients receiving methotrexate or tamoxifen. Early results suggest considerable variation in monitoring of adverse drug effects.4 Efforts to identify other common denominators to use as guidelines and benchmarks at Blue Cross/Blue Shield plans nationwide are under way.

**Care Support**

Care support under BCBSM is an integral part of the care or disease management of 13 different cancers, including CRC. Care support walks the patient through all phases of cancer management (ie, detection and referral, surveillance and support, active treatment, and advanced cancer). It is usually handled over the phone by an oncology nurse, and addresses such issues as symptoms, side effects, and whether treatment can be given on an inpatient or outpatient basis. It may also involve issues related to the patient's benefit plan. For example, does the plan require that the patient have a primary care gatekeeper? Does it cover treatment at any cancer center or does it restrict the patient to certain hospitals?

**Case Management**

Although case management is a care management strategy, there is an important difference between them. Whereas care management and support are concerned with the clinical aspects of cancer treatment, case management is concerned with caring for patients whose treatment costs have crossed an economic threshold, typically $50 000. Many patients with CRC cross that threshold, and many employers will ask BCBSM to provide case management rather than usual care for these and other high-cost cases, often during the last few weeks of life.

Case management involves modification of health plan benefits, price negotiation for durable medical equipment (eg, infusion pumps), home care coordination, and collaboration with care support. It also involves changes in medical policy with regard to new oncology technology. For example, depending on the specific issue and the severity of the patient's condition, authorizations for bone marrow transplantation and different types of chemotherapy, including off-label use of drugs, are subject to changes. At BCBSM, a medical ethicist assists with some of these decisions.

End-of-life care involves decision making with regard to advanced directives, home care coordination, collaboration with care support, and hospice care. In Minnesota, most plans include a hospice benefit, but this is not the case nationwide unless the patient is eligible for Medicare.

A recently published study illustrates changes in resource utilization and the ultimate cost effectiveness of case management (ie, end-of-life care) versus usual care in patients with CRC or other cancers and other life-limiting illnesses.5 As shown in the Table, case management was associated with fewer hospitalizations, emergency room visits, and hospital days and less chemotherapy use but more home care and hospice days. When the changes in resource utilization were translated into dollars and cents, the costs associated with usual care were nearly $19 000 higher than those associated with case management.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Care Management vs Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalizations</td>
<td>-38%</td>
</tr>
<tr>
<td>Emergency room visits</td>
<td>-30%</td>
</tr>
<tr>
<td>Chemotherapy use</td>
<td>-42%</td>
</tr>
<tr>
<td>Hospital days</td>
<td>-36%</td>
</tr>
<tr>
<td>Home care days</td>
<td>+22%</td>
</tr>
<tr>
<td>Hospice days</td>
<td>+62%</td>
</tr>
<tr>
<td>Survival</td>
<td>No change</td>
</tr>
<tr>
<td>Lifespan</td>
<td>No change</td>
</tr>
<tr>
<td>Usual care costs:</td>
<td>$68 341</td>
</tr>
<tr>
<td>Case management costs:</td>
<td>$49 742</td>
</tr>
</tbody>
</table>

*All patients were covered by Blue Shield of California from February 2003 through December 2004. Data from Sweeney et al.5*
Reimbursement Issues and Drug Spending Trends

Reimbursement for cancer care reflects an interplay of mandatory and voluntary coverage, purchasers of coverage, and payors (Figure 2). Increasingly, employer groups are looking at the high cost of many oncology drugs versus their relatively modest increases in survival. Similarly, payors looking at formal pharmaco-economic cost-effectiveness analyses are finding that the modest increase in survival benefit and perhaps quality of life provided by some drugs does not justify their high cost.

Given these circumstances and the current political climate at both the federal and state levels, it is increasingly likely that coverage for cancer care will be mandated. The trade-off for providing mandated coverage is the grade of evidence demonstrating the efficacy of a particular drug (ie, evidence from randomized, controlled trials [grade A, the strongest evidence], from published trials, and from peer-reviewed trials presented at scientific meetings), with higher grades of evidence more likely to be covered. Drug coverage and reimbursement will no longer be based on compendia listings.

To overcome the historical resistance of oncologists to changes in pricing, reimbursement, and resource utilization, and to prevent employers from discontinuing healthcare coverage because of the high costs of cancer treatment, BCBSM has worked with oncologists and employers to resolve these issues. One strategy to save on drug costs was to shift injectable drugs, given on either an inpatient or outpatient basis, from a medical procedure reimbursement formula to a pharmacy reimbursement formula. BCBSM also instituted the maximum allowable cost (MAC) for drugs, thus oncologists are reimbursed the same MAC amount whether they order a brand-name drug or its generic equivalent.

Injectable drug trends from one year to the next on a per member per month basis indicate a reasonably static relationship—in other words, no significant increase in injectable drug costs and no increase in premiums—over the past 4 to 5 years. With regard to costs for injectable drugs by therapeutic class (excluding those used for immunization), 17 therapeutic classes accounted for 80% of all drug expenditures on a medical benefit. Anti-inflammatory drugs such as infliximab accounted for nearly 12%, followed by miscellaneous antineoplastics (10%), leukocyte stimulants (9%), hematinsics (9%), alkylating agents (6%), and antineoplastic antibody antigens (6%).

In contrast, 20 therapeutic classes accounted for 97% of injectable drug expenditures on a pharmacy benefit. Antihemophilia products accounted for 25% of costs, followed by agents to treat multiple sclerosis (21%), hematopoietic growth factors (17%), and monoclonal antibodies (11%).

Most injectable drug costs (90%) were driven by physicians and other practitioners in 5 medical specialties, with multispecialty practice accounting for 37%, pediatrics for 35%, medical oncology for 12%, rheumatology for 3%, and internal medicine for 3%.

Similar to many other health plans, BCBSM adopted Medicare average sales pricing in July 2006, a change that resulted in lower reimbursements for drugs. Because oncologists are familiar with Medicare pricing and reimbursement, their practice patterns were largely unaffected. However, rheumatologists are not as familiar with Medicare, and their practice patterns were significantly affected by the drop in reimbursement. They prescribed infliximab less often, but wrote more prescriptions for etanercept, which is given by subcutaneous injection. The result was reduced utilization of infusion centers.

The integrated medical and pharmacy spend trend for specialty drugs (Figure 3) indicates a fairly stable trend over the past 2-plus years and reflects what BCBSM has done to keep benefits affordable. The plan's major goals in working with oncologists and

Figure 2. Cancer Care Reimbursement

ASO = administrative service organization; HMO = health maintenance organization; PPO = preferred provider organization.
employers are to maintain health coverage to ensure adequate treatment and improve clinical outcomes. Patients with no coverage are far more likely to forgo medical care for economic reasons and more likely to die of cancer or other high-cost diseases.

**CONCLUSIONS**

Obstacles to patient compliance with chemotherapy include the complexity and expense of the regimens and the unpleasant side effects. However, many patients with cancer are motivated to comply with therapy and care management strategies directed toward optimizing care because they are concerned about dying.

Other obstacles to optimal cancer care are changes in reimbursement that affect the selection of chemotherapy agents and the setting for delivery of care.

Care management focuses on clinical care and disease management and includes strategies such as prevention, patient education, shared decision making, tiered performance assessments for providers, and care support. In contrast, case management focuses on the economic aspects of caring for high-cost patients who have crossed an economic threshold, typically $50,000.

Case management, which includes modification of benefits, home care coordination, and collaboration with care support, is more cost effective than usual care in high-cost patients. Although case management is associated with more home care days and hospice days than usual care, costs are considerably lower with case management because it is also associated with reduced utilization of hospitals, emergency rooms, and chemotherapy.

Because patients with no health coverage are far more likely to forgo medical treatment and die of cancer or other diseases, it is in everyone’s interest to keep health benefits affordable and provide optimal care.

**DISCUSSION HIGHLIGHTS**

**TIERED NETWORKS AND GUIDELINES**

_Dr Waddell:_ Dr Heaton, do you have metrics for oncologists?

_Dr Heaton:_ Yes, we have metrics for many different subspecialists. We’ve asked them to define their national standards and put forth this guideline as something we can then benchmark as a quality indicator. We did this for oncology.

_Dr Iacovelli:_ All patients are different. Sometimes we lose sight of our patients because of guidelines. I wish we could line up 100 patients with breast cancer or patients with CRC at the door and they’d all fit into the guidelines, but they just don’t.

_Mr Solimando:_ Sometimes the guidelines don’t agree because there are several sets of guidelines. This is not so much the case with CRC, but with breast cancer we’ve had guidelines from the American Cancer Society, the American Society of Clinical Oncology, and the NCCN. They don’t always agree on some of the details.

_Dr Heaton:_ Absolutely. The same holds true for hypertension and other conditions. I hear it all the time, “My patients are older.” “My patients are sicker.” “My patients are different.”

_Dr Iacovelli:_ They’ll use that as an excuse. You could line up 100 patients with high blood pressure at the door and give them all 25 mg of captopril and it will lower blood pressure in a large majority of patients.

_Dr Heaton:_ Or, 12.5 mg of hydrochlorothiazide.

_Dr Iacovelli:_ Right, but you can’t do that with patients with cancer. It’s not because they are different or because they are sicker. It’s because cancer is a different disease process.
Dr Heaton: I'm not arguing that point. I'm just saying that we're asking oncologists for common denominators that they agree upon as guidelines. We're not trying to create the guidelines. We're trying to see what guidelines oncologists can agree upon and then use them as a benchmark.

**Health Savings Accounts**

Dr Waddell: Are patients required to have $10,000 in their health savings accounts before they can get the lower premium?

Dr Heaton: No. HSAs were created for employers to help employees pay healthcare expenses. They can contribute $1500, $1000, $500, or whatever. Employees can also fund this. It works like a 401k, and it carries over from year to year. If you don't use it in 1 year, you can keep it and it can build up. It's also a way of sheltering more money because it's tax free if you use it for healthcare.

The Internal Revenue Service (IRS) says you have to have a certain level of deductibility to have the benefit, and the current minimum is $1500. Therefore, if you have a $1500 deductible, you pay the first $1500 out of pocket, either pharmacy or medical.

Dr Waddell: In other words, you've got the $1500 in your HSA.

Dr Heaton: Exactly. You go to a drug store to fill a prescription and the cost is drawn from your account. The IRS allows up to a $10,000 front-end deductible. We have groups that have gone to HSAs because they allow employers to reduce their premium costs by shifting as much as $10,000 onto employees.

Because a $10,000 deductible coming out of your pocket can cause a great deal of consternation, the IRS has allowed healthcare plans to provide coverage for preventive services that do not apply to the deductible. That way, people can come in for a cholesterol screening or a colonoscopy without using their accounts for the year, and they can carry them over. The balance keeps adding up, and it can be used for retirement as well. For young, healthy people, an HSA is a very attractive way of sheltering money for a very long period of time.

Dr Ignoffo: The rollover is very nice. That's better than the plan I had where I had to predict or estimate what I thought my extra healthcare costs would be. And, if I didn't spend it, it was gone.

Dr Heaton: That's the health reimbursement account. You can't roll it over. You use it or lose it.

Dr Waddell: Getting back to colon cancer specifically, you reimburse 100% for colonoscopy.

Dr Heaton: Yes, we do. We've eliminated the economic barrier. However, some people decide not to have a colonoscopy for reasons that have nothing to do with money.

**Case Management Issues**

Dr Waddell: I was impressed by the 42% reduction in chemotherapy utilization in the case management model. What are the reasons for the reduced utilization?

Dr Heaton: It reflects omission and commission. Many patients who realize that they're dying want to know how much additional time a particular regimen will give them. When you talk about a median survival time of 2 months, that's the 50th percentile. Half the patients get 2 months or more, the other half get 2 months or less. We try to look at this from the patient's perspective and work with their physicians to see what's realistic.

For example, we've had patients who said, “I want to see my son graduate from high school.” We understand that. We've also had others who said, “No more treatment. I have everything in order. I have my advanced directives. I do not want to be coded.” We work with them on that.

One of the biggest things we do, even though the data I presented were from California and not Minnesota, is the hospice benefit. That's something we think about a lot with the Medicaid and Medicare products, but we don't think about it in terms of commercial insurance.

Dr Waddell: Do you routinely reimburse for a palliative care specialist?

Dr Heaton: By and large, yes, but there is variation. I've got about 20,000 groups. However, many groups do not choose that as a covered benefit.

Dr Waddell: Obviously, case management doesn't come free. You have highly trained people doing this.

Dr Heaton: You have a differential of roughly $20,000 per case. Typically, disease management/case management returns on investment with nurses and pharmacists have been around 2.5 to 3:1.

**Liver Function Data**

Dr Waddell: Are you seeing low hepatic monitoring rates with hepatically metabolized or hepatotoxic chemotherapy?

Mr Rutledge: We're adamant about making sure
that it’s done routinely on a per-cycle basis to assess if there has been any change from the previous cycle. We’re looking at it all the time.

Dr Waddell: I believe the monitoring rate would be higher if a trained oncology pharmacist were involved. I know I wouldn’t allow patients to go more than 1 month without getting new liver data.

Dr Heaton: I agree with that. If you look at the sites that have better monitoring rates, it’s because they utilize a team approach. They have people who are looking at the drug specifically. Our methodology for doing this is to pick up billing codes to see that the test was done, not necessarily what the result was.

Dr Valgus: We have looked at both the inpatient and outpatient sides, and we were shocked at how infrequently we had monitored things that should have been standard. What we did was to go across the board and indicate in the different order sets in which monitoring happens automatically on chemotherapy orders or inpatient admission orders.

Dr Heaton: I was very impressed with your order form, which had the monitoring “baked in” with the drug order.

LIFETIME BENEFITS

Mr Bullard: What’s happening with lifetime benefits? Are you starting to see people bump against those with all of the new agents out there? What strategy would a full-risk carrier like Blue Cross/Blue Shield think about in terms of modifying benefits to accommodate that?

Dr Heaton: Good question. Most healthcare plans are associated with some type of lifetime maximum. I can tell you that $1 million, which was the standard years ago, doesn’t get you too far anymore. It’s gone. We still sell some $2 million coverage plans, but most of our plans now have a $5 million lifetime maximum. We are also selling some plans with a $10 million lifetime maximum.

Most plans also have a maximum out-of-pocket amount to prevent really catastrophic cases from thoroughly destroying a family or an employer. Maybe you’ve got a $2 million lifetime maximum, and every year you may have a $5000 or $10 000 cap on what you would pay out of pocket. We’re now selling-products for self-insured groups that have no out-of-pocket maximum. In other words, the employer is making the decision to shift cost to the employee to get a lower premium, and there is no catastrophic protection there. That’s how drastically things are changing in the market.

Mr Bullard: Could you speculate on how much that shift has increased or contributed to the increase in premium costs to employers?

Dr Heaton: It actually goes the other way in some respects because what we’re seeing is to get the $10 million lifetime maximum. Yes, the premium goes up. On the other hand, if I make the trade and say, $10 000 out-of-pocket maximum on an annual basis is gone, then that premium shift goes down. It’s a conscious tradeoff of, “Okay, I’ll cover you longer over your lifetime, but you are not going to have any catastrophic coverage over the short term.”

Mr Bullard: So, it’s a combination of cost shifting.

Dr Heaton: Yes, and it’s a risk basis. It’s major national employers trying to cover an aging, sicker population.

REFERENCES