Bending the Cost Curve in Cancer Care

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Annual direct costs for cancer care are projected to rise — from $104 billion in 2006[1] to over $173 billion in 2020 and beyond.[2]

This increase has been driven by a dramatic rise in both the cost of therapy[3] and the extent of care.[4]

In the United States, the sales of anticancer drugs are now second only to those of drugs for heart disease, and 70% of these sales come from products introduced in the past 10 years. Most new molecules are priced at $5,000 per month or more,[5] and in many cases the cost-effectiveness ratios far exceed commonly accepted thresholds.[6]

This trend is not sustainable.[7,8]

We must find ways to reduce the costs of everyday care to allow more people and advances to be covered without bankrupting the health care system. Brody recently challenged each medical specialty to identify at least the top five tests or treatments for which costs could be substantially reduced without depriving any patient of meaningful benefit.[9] Medical oncologists directly or indirectly control or influence the majority of cancer care costs, including the use and choice of drugs, the types of supportive care, the frequency of imaging, and the number and extent of hospitalizations. Here, we respond to Brody's challenge by suggesting five changes in medical oncologists' behavior (Table 1) and five changes in their attitudes and practice (Table 2) that will bend the cancer-cost curve downward. We recognize that these changes will cause discomfort and adjustments, since all of them will inevitably result in dissatisfaction for important constituents such as patients, physicians, or payers. Unless otherwise stated, our recommendations are restricted to the care of patients with incurable solid tumors and not those with curable cancers.

Changing Oncologists' Behavior

Targeting Surveillance Testing or Imaging

The American Society of Clinical Oncology (ASCO)[10] and National Comprehensive Cancer Network (NCCN)[11] guidelines agree that there is no benefit to surveillance testing with serum tumor markers or imaging for most cancers, including those of the pancreas, ovary,[12] or lung,[13] yet these tests are commonly used in many settings. In breast cancer, randomized studies showed that scheduled (not symptom-guided) imaging does not detect curable recurrences or alter survival. Twenty years ago, the estimated cost of wasted medical resources in the United States for patients with breast cancer was $1 billion per year.[14] The common exception is colon cancer, for which some patients do benefit from scheduled carcinoembryonic antigen testing and computed tomography.[15]

Changing practice will not be easy. Patients want reassurance that things will be “caught early,” and it can be troubling to both patients and doctors to confront the realization that detecting liver metastasis when the lesion measures 1 cm rather than 2 cm does not alter the prognosis. Many practices earn ancillary income from ordering laboratory and imaging tests. Advocates for testing who believe that modern advances in treatment justify routine testing should attempt to confirm this contention by means of randomized trials or prospective studies, just as for other innovations.

Besides lowering costs, targeting testing has other benefits. Switching to a new norm of less testing and better survivorship counseling could reduce patient anxiety.[16] To increase the use of effective testing strategies, we envision a multipronged social-marketing approach that would include printed guidelines distributed at office visits[17] and support from advocacy groups, professional societies, and insurers. We suggest that ASCO add recommendations regarding surveillance testing to its Quality Oncology Practice Initiative (QOPI).[18]

Sequential Monotherapy versus Combination Therapy

This is another area in which the ASCO and NCCN guidelines agree. Using advanced breast cancer as an example, experts recommend “sequential monotherapy . . . in the absence of rapid clinical progression, life-threatening visceral metastases, or the need for rapid symptom

and/or disease control”[19] and state that “there is no compelling evidence that combination regimens are superior to sequential single agents.” [11] A Cochrane meta-analysis showed that combination therapy had a small advantage over single agents for first-line therapy but caused more toxicity, and the review left unresolved the question of whether sequential single agents were a better choice.
[20]

Many of the available combination-agent versus single-agent clinical trials for second-line or later therapy are fatally flawed by not including appropriate crossover to the second therapy.
[21]

There are situations in which combination therapy is better, such as in patients with lymphoma and in second-line treatment in colon cancer, but these are exceptions.

Why is this important? First, patients will live just as long but will avoid toxic effects. Second, society will benefit from cost reductions associated with less chemotherapy, fewer supportive drugs, and fewer toxicity-associated hospitalizations.

Limiting Chemotherapy on the Basis of Performance Status

For patients with advanced metastatic solid tumors, we should think strongly about using chemotherapy based on performance status. Performance status has been consistently shown to be a major independent predictor of treatment response and survival in many types of cancer. Patients with cancer often are elderly, have substantial coexisting illnesses, and have already been treated with multiple therapies. We suggest a simple rule: patients must be well enough to walk unaided into the clinic to receive chemotherapy (i.e., have an Eastern Cooperative Oncology Group performance status of 3 or below, meaning that they are capable of only limited self-care and are confined to a bed or chair more than 50% of waking hours[22]). All the NCCN guidelines that mention performance status are in agreement for solid tumors. Of course, exceptions must be made for patients with functional limitations due to other conditions or with previously untreated, highly responsive disease, such as those with amplified expression of human epidermal growth factor receptor type 2 in breast cancer or myeloma. But these patients constitute a small group as compared with those who have progressive solid tumors. Implementation of such a simple threshold could dramatically decrease the use of chemotherapy at the end of life.

Reducing Chemotherapy Dose in Metastatic Solid Cancers

One of our most expensive drugs does not treat the cancer but helps to stimulate white-cell growth sooner after chemotherapy. Hematopoietic colony-stimulating factors (CSFs) are critical to some aspects of modern chemotherapy, such as dose-dense chemotherapy, induction therapy in leukemia, and intense therapy for lymphoma.[23] Yet the expense is tremendous and the clinical benefit smaller than hoped; for instance, survival is not improved

by using CSFs in two of the most chemotherapy-sensitive cancers, lymphoma [24] and small-cell lung cancer. [25]

To our knowledge, no randomized trial–based evidence for any of the four most common cancers — metastatic, hormone-refractory breast or prostate cancer, non–small-cell lung cancer, and colon cancer — has shown that CSF-supported therapies improve overall cancer survival or quality of life.[26] We commonly observe CSFs being misused in support of low-risk combination therapies ranging from adjuvant therapy for breast cancer to the treatment of metastatic colorectal cancer. ASCO guidelines allow the use of CSFs to avoid hospitalization for patients with febrile neutropenia, but in many settings reducing the chemotherapy dose or administering prophylactic antibiotics [27] represents a common alternative approach.

This change in practice also has a downside. CSFs are expensive (about $3,500 per injection) and generate $1.25 billion a year in sales[28] and substantial profits to oncology practices. In 2011, the revenue earned from each dose of pegfilgrastim (Neulasta, Amgen) prescribed in one large practice in Northern California was 6% ($141) from Medicare patients, 25% ($611) from one of their larger commercial insurers, and 53% ($1,312) from another health plan (Eisenberg P: personal communication). With a decrease in the use of supportive-care agents and chemotherapy, such revenues will fall substantially. ASCO could add the use of CSF (according to indication) to its QOPI recommendations. If nothing else, this suggestion should stimulate discussion about CSF regimens that involve lower doses and costs as well as about possible alternative agents.

Symptom-Directed Care When Chemotherapeutic Success Is Unlikely

We propose a routine switch to nonchemotherapy palliative care for patients with progression of disease after receiving three consecutive regimens. We are asking physicians and patients to follow guidelines such as those for breast cancer[11] or lung cancer[29] and to consider a recent ASCO position paper that reinforces the practice of discontinuing chemotherapy when the chance of success is minimal. [30]

This should not be seen as a “three strikes and you’re out” program but rather as a switch to a different team. Treatment beyond the accepted boundary should be given only as part of a clinical trial or within a prospective registry, with Medicare’s coverage with evidence development as a model.

Changing Attitudes and Practice

There are other ways that the system can improve care while saving substantial amounts of money. However, such steps require adjustments in attitude and are not under the direct control of the oncologist (Table 2). The first step is a frank acknowledgment that changes are needed.

Importance of End-of-Life Discussions

We also drive up costs and provide poorer care as a result of what we fail to do: engage in discussions about the possibility of death, end-of-life choices, and ways patients make the transition to the prospect of dying. In a study at our institution of 75 hospitalized patients with cancer, the oncologist had initiated a discussion of advance directives with only 2 patients.[31] In a prospective, multicenter study of 360 patients, only 37% of the patients and their families could recall having a discussion about impending death with the physician.
[32]

Such a discussion is a prerequisite to good planning. Oncologists wait until symptoms appear or until they believe that nothing more can be done.
[33]

In one study, at 2 months before their death, half the patients with metastatic lung cancer had not had a discussion with their doctors about hospice.
[34]

This may explain why in a recent series the average length of stay in hospice for patients with lung cancer was 4 days.
[35]

The importance of this discussion is now evident: people who have these conversations experience less depression or anxiety, receive less aggressive end-of-life care, and rarely die in an intensive care unit or on a ventilator. Moreover, it allows the surviving caregiver to have a better quality of life and would save our society millions of dollars.[36]

Resetting Expectations

Most patients with cancer have unrealistically optimistic expectations regarding their prognosis and response to therapy.[37] According to one recent study, most of the patients with lung cancer expected to live for more than 2 years even though the average length of survival is about 8 months. [34]

Resetting expectations will be difficult. Tools are available to help the oncologist provide truly

informed consent[38] by sharing anticipated response rates, chances of cure (always near zero for patients with metastatic solid tumors), and side effects; discussing transitional care to hospice [39,40]; and allowing patients and families to make informed decisions[41] and to maintain hope.
[42]

Such tools help reset expectations and assist patients, families, and providers to accept the transition to nonchemotherapy palliative care. Many oncologists do not have these skills,
[43]

so use of a decision aid may help. The purpose of such aids is not to proscribe therapy but to help patients and families understand their options and to assist doctors in recommending care that has been known to help.
[44]

Compensation for Cognitive Services

Since 2000, the salaries of U.S. medical oncologists have risen and are now among the highest of any specialty.[45] It is simply not possible to earn such salaries through reimbursement for services that are designated “evaluation and management.” Medicare data have clearly shown that some oncologists choose chemotherapy in order to maximize income for their practice.
[46,47]

A system in which over half the profits in oncology are from drug sales is unsustainable.

How might the reimbursement system be changed? One way would be to pay all oncologists a fixed fee per unit of cognitive care and compensate the oncology practice separately for support services (e.g., nurses, psychologists, chaplains, or social workers), similar to the system used for the technical component of medical imaging. Another approach would be to shift to monitored-care pathways. U.S. Oncology, the country’s largest private-practice organization, has implemented pathway-driven care, allowing regimens for first-line through third-line treatment but requiring central approval for subsequent chemotherapy. Prospective tracking of their patients with non–small-cell lung cancer showed that survival was the same whether the treatment was on or off the pathway, yet costs were 35% lower when the pathway was used.[48] UnitedHealthcare is piloting a program of episode management, in which there is essentially no profit to be gained from choosing chemotherapy but oncologists’ income is maintained (at least for now). [49]

Many of the responsibilities of oncologists are reimbursed poorly or not at all, such as referring patients to participate in a clinical trial, discussing physicians’ orders for life-sustaining treatment with patients, discussing advance medical directives, and managing unrealistic expectations through family conferences. New approaches to reimbursement for cognitive care are essential, since a future shortage of oncologists is projected to be 40%,[50] and low salaries for extraordinarily hard work will reduce the numbers further.

Better Integration of Palliative Care

We can reduce patients' fears of abandonment by means of better-integrated palliative care. This topic is fraught with misunderstanding given the references to "death panels" during the recent debate concerning health care legislation. In two large, randomized trials, the combination of palliative care and the usual oncologic care was associated with equal[51] or longer survival, as compared with usual care alone.
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Two other trials of palliative care in conjunction with usual care (in a mix of patients with or without cancer) showed equivalent survival and better patient and family satisfaction, as compared with usual care, as well as a cost savings of over $4,800 per patient.
52,53

The Aetna Compassionate Care Program of nurse-managed palliative care alongside usual care in which patients were identified on the basis of administrative claims (thus bypassing the oncologist) was associated with a doubling both of hospice referrals and of hospice length of stay, in addition to dramatically reducing the number of hospital days.
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Data from Medicare indicate substantial variations in hospital death rates and the relative underuse of hospice
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despite good evidence that hospice patients live longer
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without incurring higher costs.
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Improved coordination of care that lets patients choose their course while not requiring an artificial switch from usual care to hospice will be a triple win: better quality and quantity of life plus meaningful cost savings. The impact can be quick and dramatic. According to national statistics, at least 20% of patients with solid tumors are receiving chemotherapy within 2 weeks of their death.[58] The University of Michigan reduced chemotherapy use from 50% to about 20% in the patient's last 2 weeks of life by simply initiating feedback to its physicians about their own practice. [59] A discussion regarding concurrent care models — if we choose to have it — can shift from considering either palliative care or usual care to considering whether these two types of care can be combined.

Comparative-Effectiveness and Cost-Effectiveness Analyses

If we are to be able to afford new drugs and care for more patients, there must be some limits placed on the types and costs of care. Regardless of the method used to allocate limited resources, these decisions will be difficult and will reduce not only treatment choices but also the incomes of some physicians and hospitals. The national imperative is to empower a

transparent, acceptable, equitable, politically independent agency for guidance in making tough choices in the public interest so that doctors do not have to make them at the bedside.[60]

Ultimately, we will have to make decisions based on some criteria, and comparative-effectiveness[61]

and cost-effectiveness[62]

analyses are good ways to align resource use with the greatest health benefit. One core principle we anticipate from this is a more evident link between the pricing and the effectiveness of cancer drugs (or procedures).[63]

For example, the price per cycle of ixabepilone for third-line or fourth-line therapy in metastatic breast cancer, which extends disease-free survival by 2 months with no effect on actual survival, is higher than that of life-saving trastuzumab in patients given adjuvant breast cancer therapy. We are not suggesting that the approval of new drugs be put on hold but rather that we need to be conscious of costs regarding both new and current therapies before they are accepted.[44]

Conclusions

Like the members of Congress who promised to cut the federal budget but now do not want to reduce funding for Medicare, Social Security, or the Department of Defense, we as a society face tough decisions. Some areas of oncology — for example, clinical trials and curative as well as proven adjuvant treatments — should be off limits when it comes to primary cost considerations. We understand that this will be extraordinarily difficult, since one person's cost constraint is another person's perceived lifesaving benefit and yet another's income. We should also recognize that patients facing death have a very different and important perspective on risk.[64] However, we are convinced that we can take these steps if we work together as consumers, advocates, professional societies, and payers. There really is no other way. Our intention is to encourage other specialties to do the same and flatten the cost curve so that patients can continue to get the best new therapies.