Impact of Increasing Out-of-Pocket Costs for Insured Cancer Patients

May 17, 2009

Health plans are increasingly shifting costs to plan members to share the burden of rising health care costs. A survey of the published literature and conference presentations was conducted to examine the contributors and burden of out-of-pocket costs (OPCs) for persons with diagnosed cancer. This review indicates that the OPCs for cancer patients covered by health plans are increasing and becoming a financial burden that may be exacerbated by a concomitant loss of income. Furthermore, caregivers also acquire certain costs in the care of patients, such as loss of income or prospects for career advancement. The trend toward cost shifting may also have a negative impact on patient care. Further study of this issue is warranted and should include a complete analysis of all patient costs to gauge the full impact on the quality of medical care. Health plans need to evaluate whether pursuing cost-shifting strategies is in the best interests of both patients and health plans over the long term. (Drug Benefit Trends. 2009;21:145-153)

Significant advances have been achieved in the treatment of persons with cancer, resulting in an increased survival benefit. Improvements in treatment across all stages of various cancers coupled with advances in screening methods offer the hope that many cancers once thought to be fatal may be treated as chronic diseases or even cured. However, innovations in treatment come at a price. The NIH estimated overall costs of cancer in 2008 at $228.1 billion. These costs break down as $93.2 billion for direct medical costs, $18.8 billion for indirect morbidity costs (cost of lost productivity because of illness), and $116.1 billion for indirect mortality costs (cost of lost productivity attributed to premature death). Cancer-related costs will probably continue to increase as most cancer patients are older and the baby boomer population is expected to swell the 65 years and older population from 42.5 million in 2005 to almost 70 million by 2030.

As costs continue to climb for health plans, employers, patients, and health care providers, the plans are pursuing measures to better manage their risk. Many health plans have implemented policies to constrain drug costs, including increased cost shifting to patients through higher copayments and out-of-pocket costs (OPCs), mandating use of generics, requiring mail delivery, and expanding use of formularies. A multiyear study of 25 employers found that doubling copayments reduced overall prescription drug spending by 19% to 33%. Similarly, Medicaid programs with associated drug copayments were found to result in fewer prescriptions filled compared with those with no copayment. Such findings raise concerns about adverse health consequences resulting from cost-containment measures, particularly for persons who are chronically ill.

While the direct medical costs of cancer care can be
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Published on Psychiatric Times (http://www.psychiatrictimes.com)

Easily quantified, until recently little consideration was given to the direct and indirect nonmedical costs incurred by persons with cancer (Figure). Direct medical costs include physician visits, medical supplies, hospitalizations, treatments, prosthetics, counseling, home care, medical equipment and nutrition, and other services. Direct nonmedical costs include child care, transportation, lodging, and meals related to obtaining treatment. Indirect costs include loss of income and productivity because of illness. Indirect costs are also incurred by an unpaid caregiver who is often a family member and include transportation costs and loss of wages. Recent data from studies are reviewed that demonstrate that a growing burden is being placed on the insured patient and this financial burden may impact cancer care. Approaches that may contain or reduce such patient-related costs are suggested.

Surveying the Literature

Systematic searches of PubMed and the American Society of Clinical Oncology (ASCO) annual meeting abstract databases were conducted to identify reports concerning patient costs related to the treatment of cancer. The time frame was limited to studies published from 2000 to the present. Search terms for the PubMed database included the term “cancer” in conjunction with the following identifiers: patient copayment (or copay); patient OPCs; caregiver costs; transportation costs; patient (and caregiver) loss of income (or wages); direct medical costs and cancer; and indirect medical costs and cancer. The ASCO abstract database was selected because of its comprehensive coverage of cancer treatment and related issues, and similar identifiers were used to search this database.

Patient Out-of-Pocket Costs

In 2003, 48.8 million persons were estimated to have spent more than 10% of their family income on health care expenses, an increase of 11.7 million persons since 1996. Of the 48.8 million, about 18.7 million persons were spending more than 20% of family income. Approximately 29% of patients younger than age 65 with any cancer diagnosis incurred OPCs greater than 10% of their after-tax income and 11.4% spent more than 20% of their income on OPCs (Table 1). A number of studies have documented that persons with cancer are burdened with increasingly higher OPCs. A comparison of costs at 7 Blue Cross Blue Shield health plans for patients with breast, lung, non-Hodgkin lymphoma, or colorectal cancer diagnoses showed that patient OPCs had increased by 109% from 2003 to 2006 during the year of diagnosis, the period when treatment typically yields the greatest benefit for patients (Table 1). Furthermore, the OPC burden for cancer patients during the year of diagnosis is rising at a much greater rate than health plan costs: 109% for patients compared with 57% for health plans during the period from 2003 to 2006. From 2005 to 2006, patient costs increased by 54.3%, resulting in patient OPCs in excess of $5000 on average. Several additional studies confirm this trend of increased patient cost sharing and the impact of this burden.

The burden of OPCs can be even greater for low-income patients because of the greater proportional impact of OPCs. An analysis of costs incurred by a cohort of 156 patients with breast cancer covered by Medicare, Medicaid, or commercial health insurance revealed that patients in lower-income households bear disproportionate costs. OPCs accounted for an average of 98%, 41%, and 26% of monthly income for patients with annual household incomes of $30,000 or less, $30,001 to $60,000, and greater than $60,000, respectively. OPCs and lost-income costs averaged $1455 per month and varied widely, with most OPCs incurred as copayments for hospitalizations and physician visits. Insurance coverage provided reimbursement for OPCs for only 3% of the women.
What other contributors account for increasing patient OPCs in addition to medical and health care costs? Table 2 summarizes contributors identified from several studies. One major contributor is lost productivity and wages of both patients and their caregivers. A survey of 181 lung cancer patients with a median income of $60,000 revealed that 33% worked full-time and 11% worked part-time; 11% were on paid medical leave; and 39% were retired, unemployed, or identified as homemakers. Monthly average wage losses reported by patients and caregivers totaled $1697 and $564, respectively. Transportation and prescription drug costs accounted for more than half of total OPCs.

A study of 162 patients with recently diagnosed breast cancer examined the nature of such OPCs. More than 95% of patients reported an increase in total monthly OPCs following their cancer diagnosis. The most common OPCs were for transportation (79%), medications (70.4%), physician visits (56.2%), and restaurant meals (50.6%). The most costly OPCs were for hospital stays ($233), physician visits ($87), medications ($49), and prosthetics ($48). The mean total monthly OPC was $632 and varied by payer type: $505 for Medicare, $718 for private insurance, $163 for HMOs, and $302 for other types of insurance.

How might patients’ OPCs affect their health care? Policies that increase patients’ share of health care expenses may decrease the use of discretionary health services and reduce the use of preventive care, such as routine cancer screening. The number of Medicare health plans with patient cost sharing for mammography (defined as requiring a copayment of more than $10 or coinsurance of more than 10% for screening mammography) increased from 3 in 2001 (representing 0.5% of women) to 21 in 2004 (11.4% of women). Biennial screening rates were 8.3 percentage points lower among women enrolled in cost-sharing plans (69.2%) compared with plans that provided full coverage (77.5%). The negative effect of cost sharing was greater among women residing in low-income areas or who had attained lower educational levels. Mammography rates decreased by 5.5% among women enrolled in 7 plans that instituted cost sharing in 2003, compared with an increase of 3.4% in 14 plans that did not require cost sharing.

Similar trends were noted in an analysis of a high-deductible health plan that fully covered mammography, Pap tests, and fecal occult blood testing (FOBT) but not colonoscopy, flexible sigmoidoscopy, or double-contrast barium enemas. Results indicated that if appropriate screening tests are fully covered in high-deductible health plans, rates of breast, cervical, and colorectal cancer screening remain stable. However, when patients had to pay out-of-pocket for a colonoscopy, this caused many to opt instead for the much less expensive FOBT, which is less sensitive and specific than colonoscopy.

Medical Costs and Bankruptcy

Nearly 1.5 million American families filed for bankruptcy in 2001. Medical costs were cited by half of respondents in a survey on bankruptcy contributors. This indicates that 1.9 million to 2.2 million Americans (filers plus dependents) experienced medical bankruptcy. Among those whose illnesses led to bankruptcy, OPCs averaged $11,854 even though 75.7% had insurance at that time. Medical debtors were 42% more likely than others to experience lapses in health care coverage. Furthermore, there is evidence to suggest that this trend is increasing. From 1981 to 2001, the rate of medical bankruptcies increased 23-fold. The study authors noted that the number of bankruptcy filings rose 11% in the 18 months after the completion of their data collection, indicating that the absolute number of medical bankruptcies almost surely continues to increase.

Effect on Treatment Adherence

The RAND Health Insurance Experiment, which investigated the outcome of higher cost sharing, concluded that patients may reduce health care spending by as much as 30% with minimal or no effect on adverse health outcomes. More recent interpretation of this study, however, suggests
that negative consequences associated with reduced use of beneficial services were masked by the
reduction of harmful medical services, which may lead to worse health outcomes.\textsuperscript{18} Increases in cost sharing resulted in the decreased use of medications for diabetes (223%), hypertension (210%), and cholesterol lowering (221%).\textsuperscript{18}

The finding that higher OPCs affected access to preventive services raises a major concern that persons with cancer may jeopardize treatment by denying themselves access to care or by not being fully adherent to treatment, once initiated. This could have adverse consequences for patients on oral therapies that are administered daily and taken over the course of years. Further study focusing on the oncology setting is warranted to determine the scope of this problem and associated costs. A recent study highlighted the financial consequences of lack of adherence to oral cancer therapy in terms of the additional medical costs associated with such patient behavior.\textsuperscript{19}

Imatinib is an oral targeted therapy used to treat chronic myelogenous leukemia and GI stromal tumors. Imatinib is self-administered once or twice daily with patients often continuing on therapy for years.

Patient adherence was measured by medication possession ratio (MPR). Poor adherence to imatinib therapy was associated with significantly higher total medical costs (approximately $121,000) and total health care (including pharmacy) costs (approximately $57,000).\textsuperscript{18} Patients with poor adherence levels had approximately 31 times the number of inpatient hospital stays compared with patients who had high levels of adherence, while patients with medium adherence levels had 4 times the number of patient stays. Hospital stays were longer for patients with poor (9.1-fold longer) and medium (2.08-fold longer) adherence levels.\textsuperscript{19} Another study of 267 patients with chronic myelogenous leukemia revealed a mean MPR of 77.7% with 31% of patients experiencing a treatment interruption.\textsuperscript{20} Again, lack of adherence was associated with higher medical and health care costs. This suggests that there are potential cost offsets to health plans that would encourage patient adherence.

**Discussion**

Although the costs of medical care for cancer treatment have been investigated extensively, patient OPCs associated with cancer care have rarely been estimated in a systematic manner. Our review of the literature and conference reports reveals few studies of this increasingly important issue. Precise information regarding the financial burden of cancer patients is lacking. Additional study, whether by prospective or retrospective investigation, is warranted to assess both the direct and the indirect costs for cancer patients, identify the factors that influence patient OPCs, and evaluate the influence of OPCs on patient outcomes resulting from cancer treatment.

Beneficiaries purchase health insurance to protect themselves against the risk of a catastrophic illness that might financially overburden themselves and their families. A common definition is that a person or family is considered underinsured if they would have to spend more than 10% of their income on out-of-pocket medical expenses in the event of a catastrophic illness.\textsuperscript{11} However, given the trend of cost shifting, plan members and patients may find their insurance coverage to be inadequate and they may be, in essence, underinsured. Further, members may be unaware of their circumstance until the need to access health care.

Is it cost-effective to place a disproportionate amount of the cost burden on insured persons with cancer and their families? Insured persons with a cancer diagnosis may expect to share some costs of their health care, but it is the disproportionate burden that can have serious financial consequences and may ultimately affect treatment. Furthermore, their caregivers are frequently overlooked in analyses of the costs of cancer care, although they incur substantial costs and loss of income. However, the example of the lack of patient adherence with imatinib therapy, an oral cancer medication taken daily, highlights the additional costs that may be incurred by health plans, if such behavior were driven by a patient's inability to pay OPCs. Patients' inability to pay may also adversely affect the financial well-being and efficiency of the oncologist's practice.
mitigate rising OPCs (Table 3)? The identification of appropriate patient populations who will derive clinical benefit from their treatment has become a major focus for the oncology community and has associated cost benefits for health plans. The use of biomarkers and predictive or prognostic factors for treatment has made great strides in recent years. The standard of care for patients with breast cancer that is estrogen receptor/progesterone receptor–positive is initial treatment with tamoxifen or an aromatase inhibitor and to treat patients with HER2-positive breast cancer with trastuzumab.21 Efforts continue to refine selection of patients for therapy. The MINDACT and TAILORx trials are evaluating the use of multigene expression profiling assays to assess the risk of recurrence for women with early-stage breast cancer and whether these assays can be used to assign patients to the most appropriate and effective treatment.22,23 The potential benefits of these evaluations are that only women who need chemotherapy would receive it, thus reducing toxicity, adverse effects, and, ultimately, cancer treatment costs. Emerging data have demonstrated that patients with metastatic colorectal cancer mutated for the KRAS gene (about 40% of patients) do not benefit from treatment with the anti-EGFR therapies cetuximab and panitumumab.24-26 Advances in personalized medicine and identification of patients who will benefit from therapy will allow for more targeting of such therapies and potentially constrain patient OPCs. Such approaches to personalized medicine where treatment can be tailored will identify patients who will benefit from treatment and result in the cost-effective use of cancer therapies. These efforts, along with evidence-based medicine approaches to treatment, will offer possible solutions to rising costs. The example of a decrease in the proportion of women with a copay requirement accessing mammography screening suggests that full coverage will promote appropriately greater use of evidence-based preventive and screening services, such as mammography, colonoscopy, and Pap smears, with demonstrated benefit and potential overall cost savings. Beneficiaries, for their part, require more assistance and support with education about their coverage so they can identify and proactively manage their financial risk. Employers, health plans, and oncologists should strive to provide such educational resources to beneficiaries, on an ongoing basis, so they keep abreast of any changes to their coverage. Finally, within the context of any discussion of treatment options for a patient, oncologists are faced with the daunting challenge of choosing the optimal course of treatment that might benefit the patient while balancing the financial considerations of such a course of action. Patient discussion with the oncologist is a primary source of information about treatment. Oncologists need to discuss the financial costs of treatment and the patient’s ability to meet such costs in an appropriate manner. Making assumptions, information, and decisions explicit and transparent is in the best interest of patients and their physicians. To this end, the ASCO has developed resources addressing cost-related issues for both patients and oncologists.27

**Acknowledgment:** Support for third-party writing assistance for this manuscript was provided by Genentech, Inc.

**Editorial Comment:**

**Understanding Insurance Limitations**

For persons with cancer, health insurance and a treatment plan encompassing medical care, caregiver support, nutrition, diet, and exercise recommendations, plus adequate disposable income are key factors contributing to favorable outcomes. As the accompanying article indicates, direct and indirect costs of cancer and cancer care are significant and growing. Health insurance no longer covers all direct costs. In recent years, out-of-pocket expenditures have become a growing concern to patients who have health insurance. Once patients receive a proper diagnosis, the involvement of a variety of medical and health-related personnel can optimize the quality of life for them and their families. Adherence to evidence-based practices and care delivered by oncologists are most likely to result in the best possible outcomes. Drug therapy can be costly, and rising out-of-pocket costs (OPCs) can limit the use of promising therapeutic options. For patients with limited incomes and without insurance coverage, it may be possible to enroll in a compassionate treatment program offered by a pharmaceutical company at minimal or no cost.

Patients with prescription drug insurance must examine their coverage options to see if they can reduce their costs. Obtaining a 90-day supply may be less expensive than 3 monthly refills. Sometimes pharmaceutical companies offer special pricing to PBMs. In other instances, the contract between the employer and PBM enables patients to save in out-of-pocket expenditures by using mail service.

Consider the following example. The cost to a patient for the cancer drug Xeloda (capecitabine) 500 mg is based on the average wholesale price of $2939.91 per month, although the actual amount is...
often less. If the coinsurance portion is 20%, the patient pays up to $587.98 (plus a dispensing fee) while the employer is responsible for the remaining 80%. The actual amount depends on the contract with the PBM. The employer cost may be as high as $2351.93 ($2939.91 minus $587.98) per month. In this example, the patient’s OPCs for the drug over a 12-month period could be as high as $7055.76 ($587.98 multiplied by 12).

Patients need to know how their pharmacy benefit works and understand the limits of their health care coverage and plan accordingly, preferably before seeking care, while health plans need to structure coverage so that patients can continue to afford care.

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Reference

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