Advances in the diagnosis and treatment of cancer in recent decades have dramatically improved the life expectancy, quality of life, and productivity of patients with cancer. Today, a growing number of employees remain in the workforce while they are being treated for cancer or return to work after their treatments are completed. Cancer is being seen as a chronic and manageable disease in the workforce, similar to diabetes or asthma. Henry and colleagues report that the most cited reasons why employees with cancer remain on the job either full-time or part-time are because they need to work, prefer to work, or feel well enough to work. In addition, working patients with cancer are taking on an increased burden for costs related to their cancer treatments through cost-shifting. In response to this cost-shifting environment and subsequent impact on employee cost burden and changing work patterns and productivity, it is imperative that employers and payers, like managed care organizations, work toward developing a better balance of benefit designs and employee contributions/copayments with employee health and productivity.

A 3-Year Collaborative Initiative

In 2005, Amgen launched the Working Patient with Cancer (WPWC) initiative, which was a 3-year program that encompassed several studies, to gain a better understanding of the implications of cancer as a chronic and manageable disease in the active workforce, and the relevance of these implications for payers and employers. This was a collaboration among industry, employers, and payers and involved working with the RAND Corporation and Milliman, Inc; employers, including Coca-Cola and Kodak; and payers, including WellPoint and UnitedHealthcare.

The WPWC initiative was designed to create a clearer profile of the working patient with cancer, identify these patients within the workforce, better understand cancer as a chronic disease, and understand patients’ attitudes about working while receiving cancer treatment. The initiative also reviewed the healthcare spending trends of these working patients, as well as the pressures they encountered with care-related cost-shifting. Implementation of this initiative involved several key milestones, including:

- Profiling the commercially insured working patient with cancer to better understand the impacts on productivity, relationships with coworkers, and how these resultant behaviors affected both employers and payers
- Defining patients’ attitudes about working while receiving cancer treatments and understanding their motivations, behaviors, and needs
- Measuring the changing workplace patterns of the working patient with cancer, including turnover, short-term and long-term disability, replacement worker costs, and the cost of goods and overhead
- Demonstrating the connection between cancer treatment, cost-shifting to employees, and the changing forces driving cancer care costs.

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Treating cancer patients who are working involves a continuum of interrelated direct costs—both medical and nonmedical. Included in the direct medical costs are medical testing, cancer treatment, and laboratory tests; included in the nonmedical costs are direct labor costs and replacement worker costs.

It is important to understand who high-utilizing patients are, increase awareness of their continued presence in the workforce, and create an appropriate benefit design that will have positive implications on better managing these patients. Thus, effective administrative management of the working patient with cancer, in addition to effective clinical management, should result in improved productivity and cost-savings to the payer and the employer.

Profile of the Working Patient with Cancer

In the study conducted by Henry and colleagues, among employees younger than 65 years, 46% cited financial need as their primary reason for continuing to work while receiving chemotherapy or radiation therapy. Although financial need was the most frequently cited reason, other important reasons for continuing to work included maintaining momentum toward potential advancement, being around coworkers and other people, and refusal to let cancer dominate their life or keep them from their routines.

Analysis of HealthCore data showed that individuals in the top 10% of claim costs were responsible for 60% of all healthcare spending in the health plan (Figure 1). Furthermore, the top 2.5% of health plan member costs were responsible for 40% of the total health plan expenditures. Based upon this data set of commercially insured individuals (aged 18-65 years), 69% of patients with cancer were the primary employee, versus...
the employee's spouse or dependent. Breast cancer was the most common type of cancer in the study, affecting 49.7% of patients, followed by gastrointestinal (GI) cancer, affecting 20.8% of patients. The majority of patients (58%) were 51 to 64 years old; however, a relatively high percentage (39%) were in the 31 to 50 age-group.

Drug costs for most cancer types studied, including costs for cancer treatment from inpatient and outpatient pharmacy claims, accounted for an estimated 21% of the total healthcare costs compared with 79% for other medical services. Medical service costs included non–drug-related costs, such as hospitalizations, office visits, and laboratory tests. In addition to the findings of higher medical service costs versus drug costs, there was a notable divergence in total expenditures for patients receiving chemotherapy versus patients not receiving chemotherapy.

Based on paid claims data from HealthCore for the period 2002-2005, the combined total annual cost for working patients undergoing chemotherapy (n = 7693) was approximately $76,000 compared with approximately $21,000 for patients not receiving chemotherapy (n = 3101). Secondary analysis identified that the presence of comorbid conditions also drove up costs. Based on annualized health expenditures for patients with a single cancer type (n = 19,068), both the total costs and the medical service expenditures increased with each additional comorbidity (Figure 2). Medical costs for patients with 3 or more comorbidities are more than twice the costs associated with patients with no comorbidities. These data demonstrated that drug costs increased slightly with each additional comorbidity, but medical services costs, and subsequently total costs, increased at a far greater rate. When cancer is coupled with multiple overlapping chronic diseases, particularly complex conditions such as diabetes or chronic renal disease, the impact on cost increases considerably, especially among patients older than 50 years.

When measuring the cost of cancer there is no representative “average cancer patient,” after considering the wide variations in spending for different types of cancer, treatment variations, and comorbid conditions. It is important to be aware of the range beyond the average, to avoid making faulty decisions based upon a misleading value. When reviewing and making decisions, sub-analysis consideration must be given to the type of cancer and the presence or absence of additional chemotherapy regimens used. This more in-depth analysis should then be overlaid against secondary medical complications and comorbidities.

**Workplace Impact and Productivity Patterns**

The study by Henry and colleagues included nearly 64,000 employees of all ages with cancer, revealing that 43% of those receiving chemotherapy or radiation therapy reported working part-time or full-time during cancer treatment. Side effects associated with cancer and cancer treatment cannot be overlooked as an important factor in managing working patients with cancer. Because side effects can result in lost work time, it is important to build a benefit design that provides a flexible workplace schedule for patients who choose to work while receiving chemotherapy or radiation therapy. Some of the effects of chemotherapy may require patients to limit the number of hours they
can work on a daily basis, particularly in cases of fatigue, nausea, and vomiting.

On average, working patients with cancer in this study missed 26 workdays because of chemotherapy or radiation therapy, and 18 days because of treatment of side effects. Patients with the greatest number of side effects missed significantly more workdays. Some employees assuming a supportive or caregiver role to a working patient with cancer may also miss time from work to accompany a spouse, a child, a friend, or a relative who is receiving active treatments. An estimated 77% of working patients with cancer indicated that they were accompanied by a caregiver on visits for active treatments.

### Oncology Healthcare Cost Drivers and Trends

Two studies were conducted with HealthCore claims data to determine the year-over-year overall healthcare cost trends among oncology patients, including medical and drug costs. A secondary objective was to determine the relative contribution of cancer treatment, including biologics used in therapeutic and supportive roles, to the overall cost of healthcare. HealthCore data were used because of the comprehensive availability of relevant medical and drug cost data, in both the inpatient and ambulatory settings, and sourcing utilization claims from 12 states. The commercially insured study cohort included 74,630 patients with cancer.

Because cancer has become a longitudinal multiyear condition rather than an episodic incident, costs for working patients with cancer were measured within the “index year,” defined as the year of diagnosis, and typically the year of highest utilization. In addition, the complete cost history was reviewed, including all years of continuous enrollment in the plan for the working patient with cancer, beginning with the index year and through disenrollment.

Although medical costs can increase over a patient’s history, the increase is typically much less in latter years than in the index year. The unique impact on out-of-pocket burden during the index year versus the “average” year can be seen in Figure 3.

The “complete history” graph shows that the average annual cost for a working patient with cancer in 2006 was $20,701; assuming patient coinsurance of 10%, the patient would have paid $2070 in out-of-pocket obligations.

Looking at the “index year” graph, the patient’s annual cost was $48,233. Here, with a 10% coinsurance, the patient would pay $4823 in out-of-pocket expenses, which is a substantial financial burden. Also, from 2003 to 2006 in the index year cases, medical costs exceeded drug cost increases in absolute dollars and in year-over-year percent increases, reflecting a changing landscape.

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**Figure 4 Health Plan Paid versus Patient Out-of-Pocket**

<table>
<thead>
<tr>
<th>Study year</th>
<th>Total paid</th>
<th>Plan paid</th>
<th>Patient paid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Costs, $</td>
<td>Change from previous year, %</td>
<td>Costs, $</td>
</tr>
<tr>
<td>2003</td>
<td>39,938</td>
<td>92.6</td>
<td>24,335</td>
</tr>
<tr>
<td>2004</td>
<td>44,172</td>
<td>94.1</td>
<td>25,554</td>
</tr>
<tr>
<td>2005</td>
<td>56,402</td>
<td>92.3</td>
<td>25,949</td>
</tr>
<tr>
<td>2006</td>
<td>62,751</td>
<td>91.9</td>
<td>27,044</td>
</tr>
<tr>
<td>Overall</td>
<td>77</td>
<td>91.1</td>
<td>54</td>
</tr>
</tbody>
</table>

Creating a “cap,” or maximum, of out-of-pocket expenses for routine and office services may also help limit patient financial burden, particularly in the first year. Employers who create more holistic benefit designs that are responsive to the working patient with cancer may reap the rewards of a stable, loyal workforce, and a lower rate of employee turnover.

**Benefit Design for Working Patients with Cancer**

As the healthcare marketplace evolves, there is a growing concern over cost-shifting to the employee, because household income levels are significantly lagging increasing copayments and insurance premiums. Between 2002 and 2004, using Milliman employer data, the domestic cost of living increased by nearly 5%, whereas health plan members’ out-of-pocket costs increased by 29%—more than 5 times faster than the cost of living. Since 2004, these costs have continued to rise, and some patients are headed toward a point of maximum tolerance, where out-of-pocket healthcare costs are beginning to exceed their ability to pay. If out-of-pocket costs become prohibitive, employees may make inappropriate choices, resulting in unintended consequences that affect total healthcare costs and quality of care.

Individuals with the highest healthcare costs bear a disproportionate share of out-of-pocket costs, as has been shown by Willey and colleagues. Based on a household income of $48,000, working patients with cancer who are in the top 1% of the healthcare cost range incur out-of-pocket costs equivalent to 7.5% of their total income. Similarly, patients in the top 5% of the healthcare cost range incur out-of-pocket costs equivalent to 6.3% of their total household income.

It is often wrongly believed that health plan member turnover is high among patients who are severely ill. Enrollment data for HealthCore members from 2002 to 2004 showed that 42% of severely ill health plan members remained continuously enrolled at 48 months, whereas only 4.3% of enrollments were lost due to death. Because patients with cancer younger than age 65 years have a higher rate of survival than the average patient with cancer older than age 65 years, many patients younger than 65 were shown to return to work after their cancer treatment was completed.

Results from employer research conducted by Milliman on annual employee persistency rates showed that 56% of patients with breast cancer were still on the job, with the same employer, 5 years after the initial diagnosis, and 34% of patients were with the same employer after 9 years. Specifically between years 3 and 9, patients with breast cancer had the highest persistency rates.
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Persistency Rate with the Same Employer Compared with Other Types of Cancer, Diabetes, or Asthma. Conversely, employees who had no claims and were assumed to be healthy had a 37% persistency rate with an employer at 5 years, suggesting that employees with chronic illnesses may actually be more likely to continue working with the same employer than healthy employees.

In addressing the multidimensional forces that can influence persistency with an employer, it is critical to remain clinically grounded when interpreting disparities in continuous employment rates based on factors such as aggressive cancer types, staging, and survivability. This study also showed that employees with lymphoma had a 46% persistency rate with the same employer at 5 years, and a 20% rate at 9 years. Those with GI cancer had a 37% persistency rate at 5 years, and 14% at 9 years; patients with lung cancer had a persistency rate of 25% at 5 years, and 8% at 9 years.

Conclusion

Although a lack of consensus exists between the approach of the payer and the employer to burgeoning healthcare challenges, both the payer and the employer face long-term issues, and both seek long-term solutions for the working patient with cancer. Bridging common goals through improved transparency of information and data-driven benefit designs can more appropriately address the evolving role of working patients with cancer into a win-win strategy for bringing value to the employee, the employer, and the payer.

References

3. HealthCore, 2002-2005 claims data set. (HealthCore is a wholly owned subsidiary of WellPoint.)
6. Data presented as a peer-reviewed podium presentation at the 2008 annual meeting of the American Society of Clinical Oncology, May 30-June 3, 2008; Chicago, IL.

STAKEHOLDER PERSPECTIVE

Data-Driven Benefit Design for Chronic Diseases

With recent advances in cancer care, many types of cancer are becoming chronic diseases. And because the incidence of cancer increases after age 55, the prevalence of cancer will be rising with the aging of the baby boomer population; therefore, more working-age patients will return to the workplace during or after their cancer treatment. In this article, Dr Lawless shows that working patients with cancer today are more likely to remain with the same employer for more than 5 years after their initial diagnosis, and that the out-of-pocket (OOP) cost for these patients is particularly high in the first year after cancer diagnosis.

Employers are struggling with how to manage the cost of medical care for their employees in these difficult economic times and escalating healthcare costs. However, failure to manage this cost may add financial stress to an already challenged organization and may affect its ability to compete in a global economy. Recent benefit trends have seen significant cost-shifting to employees as a way of managing medical cost increases. But such an approach may have unintended consequences.

The data presented in this article show that the top 10% of claimants are responsible for almost 60% of medical cost, and cancer patients often fall into this group. Increasing patient OOP cost can negatively affect treatment adherence, which in cancer patients can have serious consequences. It is therefore essential for employers and their benefit consultants to have appropriate data that can help design benefit plans that prevent overutilization yet also do not place a disproportionate financial burden on chronically ill patients. Health benefit designs must be data-driven and balance the need to manage cost effectively with the needs of patients with cancer and other chronic illnesses.

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