

# *IBI Chronic Disease Profile*

## CANCER

March, 2014

A growing recognition of the impact of workforce health on business performance has increased interest in workplace interventions and management strategies for chronic health conditions. In support of this broadened value proposition, IBI is drawing on a variety of information sources to publish a series of “disease profiles” for employers and their benefits partners. The profiles highlight the prevalence, full costs, co-morbidities and intervention approaches for key chronic health conditions.

This month we profile cancer in the workforce.

## Condition Prevalence and Risk Factors

Cancer is a general term for diseases involving abnormal, uncontrolled cell growth. These diseases can develop in several parts of the body, creating new, abnormal cells that invade other organs and tissue. Without treatment, cancer can cause illness and death.<sup>1</sup>

In the U.S., there were about 524 new cancer cases per 100,000 people in 2013. Rates for specific diseases ranged from about 12 per 100,000 for oral cancers, to about 107 per 100,000 for genitourinary cancers (e.g., prostate, uterine). The incidence rate of skin cancer – which is not required to be reported in cancer registries – may be much higher. One report estimates 2 million diagnoses per year in the U.S. While some people have a genetic predisposition towards cancer, external factors also play a role. Exposure to certain chemicals and radiation are known to increase the risk of cancer, as are infectious agents such as hepatitis B and C and human papillomavirus. Tobacco use is a well-known cause of cancer – particularly lung cancer, which accounts for the largest share of all cancer deaths – but other unhealthy behaviors such as heavy use of alcohol, poor nutrition, physical inactivity and unhealthy body weight are also known contributors. Early detection and effective treatments can help reduce mortality and speed recovery for several types of cancer.

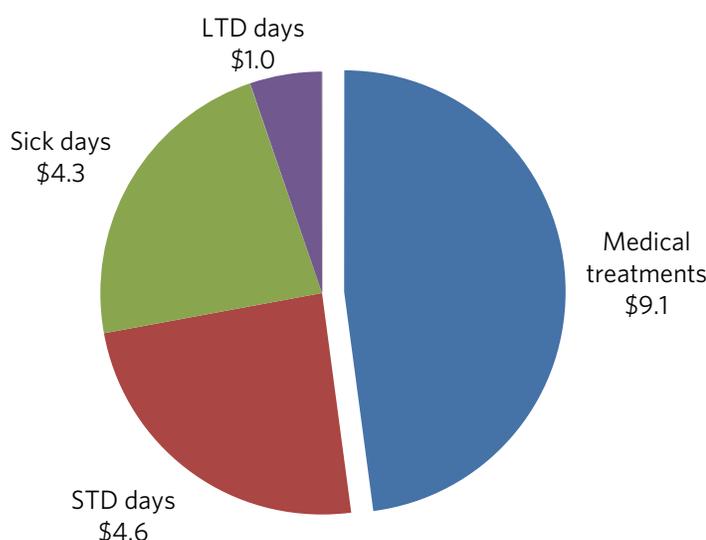
## Total Costs of Cancer

In addition to its human toll, cancer imposes economic costs on society and employers.

For every 100 employees in the workforce, cancer costs employers about \$19,000 annually. At any given time, about one fourth of employees with a history of cancer are currently in treatment (at an average cost of about \$7,000 per person). This brings the total medical and pharmacy treatment costs for cancer to about \$9,100 for every 100 workers. The costs associated with lost work time – both wage replacements and other opportunity

costs such as overtime, overstaffing and lost revenues – comprise about 52% of the total costs associated with cancer (see the Appendix section for the underlying assumptions used in the calculations).

### Annual cancer costs per 100 employees (\$ thousands)



Total costs per 100 = \$19,000; total lost work time costs per 100 = \$9,900  
STD = Short-term disability; LTD = Long-term disability

## Co-Morbidities

Importantly, compared to employees without cancer, we estimate that employees with a history of cancer lose the equivalent of two more work days per year due to presenteeism (i.e., underperformance at work due to illness). However, all of the observed presenteeism losses can be attributed to co-morbidities (we found a similar pattern when focusing only on employees currently in treatment for their cancer).

Employees with cancer have an average of 4.1 other conditions that can complicate care management strategies. The most prevalent co-morbid conditions that also negatively impact productivity include: depression (16% of employees with cancer), chronic fatigue (22%), obesity (19%), chronic back or neck pain (23%), anxiety (14%), high cholesterol (30%) and hypertension (24%). By the same token, cancer complicates the management of these conditions, and could contribute to higher costs and lower productivity.

## Workplace Issues and Evidence for Interventions

While employers can benefit from a better understanding of their workers' risk factors for cancer, cancers present complex challenges for the workplace. At a basic, human level, a cancer diagnosis is a frightening, sometimes emotionally devastating event. It is natural that co-workers and supervisors will want to provide support to a friend and colleague when told that he or she has cancer. At the same time, balancing issues of privacy and workplace accommodation are critical but sensitive issues. Many employees with cancer will frequently feel too sick to work, while others report that remaining on the job keeps them "connected" and provides a sense of routine as they undergo treatments.<sup>2</sup> Supervisors may not be fully aware of an employee's capabilities nor of the organization's responsibilities under the law.

Fortunately, many employers provide wellness and disease management benefits that can promote healthy lifestyles and facilitate early detection and prompt treatment. This not only helps preserve quality of life for people with cancer, but reduces the social and organizational costs of cancers in the workforce as well. While not always addressing productivity issues directly, several studies point to the advantages of workplace-based cancer screening.

- Compliance rates with cancer screening guidelines are highest when there is access through insurance plan coverage.<sup>3</sup>
- Workplace educational programs have been shown to raise awareness of and screening for colorectal cancer.<sup>4</sup>
- Workplace screening for breast cancer reduces lost productivity compared to off-site screening.<sup>5</sup>
- Employees whose breast cancer was detected early through on-site mammography experienced half as many lost workdays for treatment as employees whose cancer was detected later.<sup>6</sup>
- Providing job accommodations or other workplace stay-at-work or return-to-work opportunities has been shown to help employees with cancer remain on the job.<sup>7</sup>

## Additional Information

More information about the causes, treatment and prevention of cancer can be found at the following sources:

The American Cancer Association's "[Working During and After Cancer Treatment](#)" resources.

The National Cancer Institute's pages on [Screening](#) and [Treatment](#).

The Centers for Disease Control and Prevention's [Community Guide](#) on Cancer Prevention and Control.

## Appendix: Incidence Rates, Cost Assumptions and Data Sources

The following information is utilized to produce comparable cancer costs.

In a population of 100 working people:

- 5% will have a history of cancer.<sup>8</sup>
- 27.1% of employees with a history of cancer will be currently in treatment for cancer (about 1.3% of the total population).<sup>9</sup>
- There will be 17 STD days for cancer.<sup>10</sup>
- There will be 10 LTD days for cancer.<sup>11</sup>
- Workers Compensation claims for cancer are inconsequential – we would only expect about one cancer claim per 100,000 covered employees.<sup>12</sup>

People with cancer:

- Are absent 3.8 more days per year than people without cancer.
  - 2.6 of these days are attributable to cancer rather than co-morbidities.<sup>13</sup>
- Have the equivalent of 1.8 more days of presenteeism than people without cancer.
  - All of these days are attributable to co-morbidities.<sup>14</sup>

Economic assumptions:

- Average daily wages and benefits for sick days and presenteeism are \$249.<sup>15</sup>
- Average daily wages and benefits for STD days are \$185.<sup>16</sup>
- Average daily wages and benefits for LTD days are \$102.<sup>17</sup>
- The average person with any treatment for cancer has total medical and pharmacy costs of \$6,977.<sup>18</sup>
- For every missed work day, in addition to wage replacements, we assume that an employer experiences opportunity costs in lost revenues, overtime and overstaffing equal to 38% of daily wages and benefits.<sup>19</sup>
- There is no lost productivity for LTD (i.e., we assume employers will replace most workers permanently).

## Sources

---

- <sup>1</sup> This section draws primarily from the American Cancer Society, "[Cancer Facts and Figures 2013](#)."
- <sup>2</sup> See for example Vickie Elmer, "[Working with Cancer: A Brave New Professional World](#)," *Fortune*, April 25, 2013.
- <sup>3</sup> Musich, S. A., Schultz, A. B., Burton, W. N., & Edington, D. W. (2004). [Overview of Disease Management Approaches: Implications for Corporate-Sponsored Programs](#). *Disease Management & Health Outcomes*, 12(5), 299-326.
- <sup>4</sup> Bagai, A., Parsons, K., Malone, B., et al. (2007). [Workplace Colorectal Cancer-Screening Awareness Programs: An Adjunct to Primary Care Practice?](#) *Journal of Community Health*, 32(3), 157-167; Hannon, P. A., Vu, T., Ogdon, S., et al. (2013). [Implementation and Process Evaluation of a Workplace Colorectal Cancer Screening Program in Eastern Washington](#). *Health Promotion Practice*, 14(2), 220-227.
- <sup>5</sup> Schrammel, P., Griffiths, R. I., & Griffiths, C. B. (1998). [A Workplace Breast Cancer Screening Program: Costs and Components](#). *AAOHN Journal: Official Journal of the American Association of Occupational Health Nurses*, 46(11), 523-529.
- <sup>6</sup> Burton, W., & Hoy, D. (1996). The Economic Benefit of a Corporate-Sponsored Mammography Program. *AWHP's Worksite Health*, 3(2), 27-33.
- <sup>7</sup> Moskowitz, M.C., Todd, B.L., Chen, R, and Feuerstein, M. Function and Friction at Work: a Multidimensional Analysis of Work Outcomes in Cancer Survivors. *Journal of Cancer Survivorship*. DOI 10.1007/s11764-013-0340-4. 2013
- <sup>8</sup> Centers for Disease Control and Prevention, [National Health Interview Survey \(NHIS\)](#), 2010.
- <sup>9</sup> Integrated Benefits Institute, [HPQ Select](#) and [Health & Productivity Snapshot](#). Results are adjusted for age, sex, and occupation.
- <sup>10</sup> Integrated Benefits Institute, [IBI Health and Productivity Benchmarking](#), 2012. STD claims for almost three new cancer claims per 1,000 covered lives, with an average of 58 lost workdays per closed claim. We assume that our hypothetical pool is 100% STD eligible.
- <sup>11</sup> Integrated Benefits Institute, [IBI Health and Productivity Benchmarking](#), 2012. LTD claims for about 0.6 active cancer claims per 1,000 covered lives, with an average of 161 lost workdays per calendar year. We assume that our hypothetical pool is 100% LTD eligible.
- <sup>12</sup> Integrated Benefits Institute, [IBI Health and Productivity Benchmarking](#), 2012.
- <sup>13</sup> Integrated Benefits Institute, [HPQ Select](#) and [Health & Productivity Snapshot](#). Results are adjusted for age, sex, occupation and co-morbidities. The marginal values of lost productivity are used to make the results consistent with the single-cause costs for medical treatments and disability claims.
- <sup>14</sup> Integrated Benefits Institute, [HPQ Select](#) and [Health & Productivity Snapshot](#). Results are adjusted for age, sex, occupation and co-morbidities. The marginal values of lost productivity are used to make the results consistent with the single-cause costs for medical treatments and disability claims.

---

<sup>15</sup> Bureau of Labor Statistics (BLS), [Occupational Employment Statistics; National Compensation Survey](#). Average daily wages of \$174, plus average daily benefits of \$75. We assume that 100% of employees are eligible for paid sick days.

<sup>16</sup> Bureau of Labor Statistics (BLS), [Occupational Employment Statistics; National Compensation Survey; Employee Benefits Survey](#). Average daily benefits of \$75 plus the lesser of 63% of daily wages or \$112 per day.

<sup>17</sup> Bureau of Labor Statistics (BLS), [Occupational Employment Statistics; National Compensation Survey; Employee Benefits Survey](#). The lesser of 59% of daily wages or \$375 per day.

<sup>18</sup> Agency for Healthcare Research and Quality (AHRQ), [Medical Expenditure Panel Survey \(MEPS\)](#), 2011 data. Results are for adults aged 18-64 with private insurance. Includes out-of-pocket expenses and payments by non-private insurance.

<sup>19</sup> The method for valuing lost productivity is adapted from Nicholson, S., Pauly, M. V., Polsky, D., Sharda, C., Szrek, H., & Berger, M. L. (2006). [Measuring the effects of work loss on productivity with team production](#). *Health Economics*, 15(2), 111-123.