# Economic cost of cancer mortality is high in US, regardless of how cost is measured

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The economic cost of death due to cancer is high in the United States, regardless of whether researchers estimate the economic impact in lost work productivity or in a more global measure using the value of one year of life, according to two studies published online December 9 in the *Journal of the National Cancer Institute.*

Researchers can estimate the economic burden of cancer mortality in terms of lost years of work (the human capital approach) or using the willingness-to-pay approach, which calculates the impact based on how much people would pay to gain one additional year of life ($150,000 based on prior studies in the U.S.).

To gain a more comprehensive understanding of the economic impact of cancer mortality, Robin Yabroff, Ph.D., of the Health Services and Economics Branch of the National Cancer Institute in Bethesda, Md., and colleagues used the willingness-to-pay approach, while Cathy J. Bradley, Ph.D., of Virginia Commonwealth University and the Massey Cancer Center in Richmond, Va., and colleagues used the human capital approach.

In 2000, cancer deaths cost the United States $115.8 billion in lost productivity, Bradley reports. That estimate jumped to $147.6 billion for 2020, due to changes in the population size and age. An annual 1 percent reduction in mortality, compared with current trends from leukemia and lung, breast, colorectal, pancreatic, and brain cancer, would reduce the estimate by $814 million per year. When Bradley and colleagues

included the value of caregiving and household duties lost, as well as regular wage earning jobs, the cost of cancer mortality more than doubled to $232.4 billion in 2000 and $308 billion for 2020.

The estimates were even larger when Yabroff and colleagues used the willingness-to-pay approach. In that case, the cost of cancer mortality was $960.7 billion in 2000 and was predicted to be $1,472.5 billion in 2020. An annual decrease in mortality of 2 percent reduced the projected cost of breast cancer mortality from $121.0 billion in 2020 to $80.7 billion, of colorectal cancer from $140.1 billion to $93.5 billion, for lung cancer from $433.4 billion to $289.4 billion, and for prostate cancer from $58.4 billion to $39.0 billion.

Lung cancer alone accounted for 25 percent or more of the costs in the two models.

"Regardless of the method used to estimate the societal value of premature deaths, these mortality costs are an important component of the burden of disease," write Yabroff and colleagues. Moreover, Bradley and colleagues note that the cost of cancer mortality is high when compared with other diseases, such as diabetes or influenza.

"Decision makers can use the information we provide as a basis to assess the costs of inter¬ventions relative to their benefits to determine how to best allocate resources among these strategies," write Bradley and colleagues. "From a productivity loss perspec¬tive, investments in programs that reduce lung, breast, colorectal, leukemia, and/or pancreatic cancer mortality are likely to yield the largest annual reduction in productivity costs for US society."

In an accompanying editorial, Scott Ramsey, M.D., Ph.D., of the Fred Hutchinson Cancer Research Institute in Seattle notes that both papers provide important, but somewhat incomplete, estimates of the cost of

cancer. Despite the limitation, the numbers provide important information that can help policy makers. For example, he points out that by either measure the current investment in cancer research in the United States is low. "Clearly, these two studies suggest that the value of that information far exceeds our research investment (the National Cancer Institute's budget for 2008 is about $4.8 billion)," he writes.

"As a tool for advocacy, dollar values can be powerful, particularly when they are weighed against other programs that influence human life and health under limited budgets," he concludes.

Source: Journal of the National Cancer Institute