

# Cancer and the collapse of the global economy

As well as devastating people's lives, cancer also has the capacity to wreak economic havoc.

**Dr Arnold Baskies, Dr Amit Kumar and Robert A. Berman** outline a series of measures to lessen the impact

**C**ancers cause profound loss to patients and their families. Eight million people worldwide are expected to die from cancer related illnesses this year. The loss of that many lives, together with the pain and suffering of those afflicted with cancers, should be incentive enough to bring the world together in a cooperative effort to reduce cancer related deaths. But for some people, altruism isn't sufficient to evoke action. For some people, self-preservation and protection of net worth are more effective motivators. Cancers are already having a significant negative impact on the global economy. If current trends continue, there is a high probability of economic devastation, both nationally and globally.

The most obvious financial implications of cancers are the costs of diagnosing and treating the diseases. A 2011 study in the *Journal of the National Cancer Institute* determined that the cost of cancer care in the US totalled \$124.5bn in 2010. Assuming constant incidence, survival and treatment costs, that number is expected to increase to \$154.7bn by 2020. But incidence, survival rates and treatment costs are not remaining constant. Although tremendous strides have been made in diagnoses and treatments over the last 20 years, cancer survival rates are not decreasing fast enough to keep pace with increases in the incidences of cancer and cancer treatment costs. Due to our aging populations and a variety of other factors, the number of people afflicted with cancers will continue to increase. Based upon the latest statistics from the American Cancer Society, one out of two men and one out of three women in the US will get some type of cancer during their lifetimes.

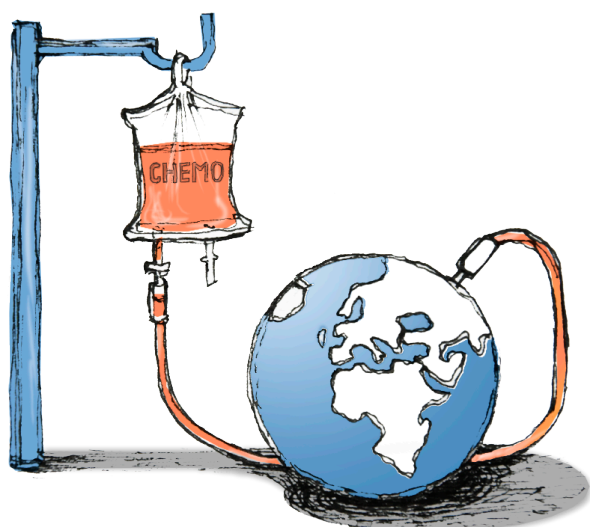
The costs of cancer treatments are spiraling out of control. The average cost of newer cancer treatments such as targeted therapies can be as high

as \$10,000 to \$120,000 per month. The newest wave of treatments, called 'customised' therapies such as CART treatments, are expected to cost \$450,000 and higher. For those patients that have medical insurance, co-payments for treatments such as these are enough to cause financial ruin. In addition, the financial consequences to US employers and health insurance companies that will be expected to pay the majority of the costs for such treatments will be catastrophic.

Although rising cancer treatment costs are a concern, the biggest economic impact of cancers is in terms of loss of life and productivity. The American Institute of Cancer Research estimates that Americans lost 83 million years of healthy life because of cancer deaths and disabilities in 2008. Another report from the American Cancer Society indicates that in 2008, the total economic impact of premature death and disability from cancers worldwide was \$895bn, representing 1.5 % of the world's GDP. That number was estimated to have increased to \$1.16tn by 2010. When including the costs for treating cancers, the annual total global cost of cancers in 2010 was estimated to be \$2.5tn. If we don't break the current pattern of higher incidences of cancers, escalating treatment costs, and increasing losses in productivity due to higher numbers of cancer related deaths, the result will be a global economic crisis.

## What can be done?

There are both short- and long-term actions that we can take to lessen the impact of cancers on the global economy. In the short-term, we need to focus on cancer prevention and in particular on reducing tobacco use, and eliminating the spread of viruses known to cause cancer. The cost of tobacco related cancers exceeds \$200bn a year. If the current rates of tobacco use continue, tobacco will kill

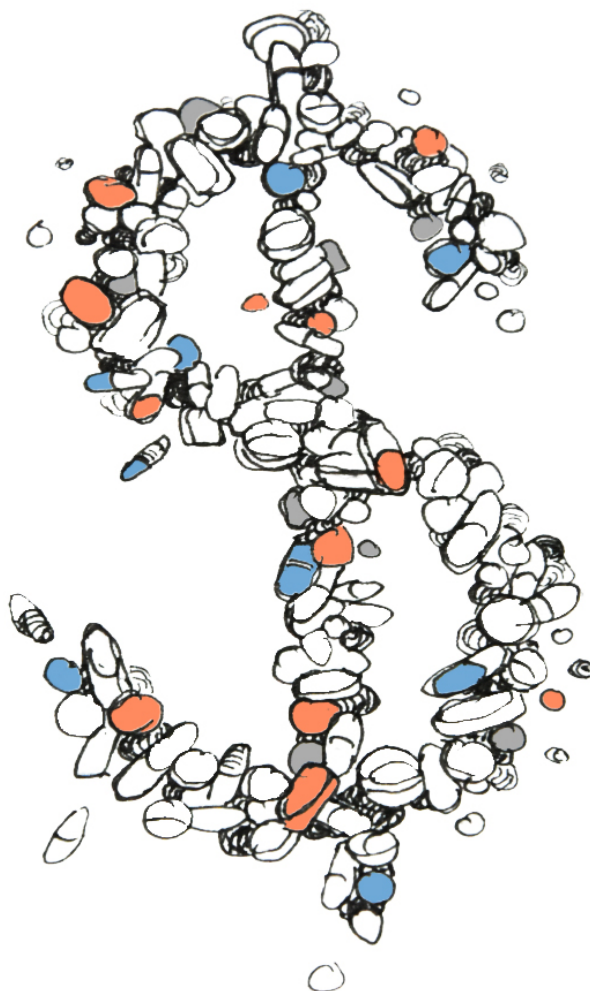


## “From an economic perspective, early cancer detection will reduce the cost of cancer treatments”

seven million people per year by 2020, eight million people per year by 2030, and between now and the end of the century, a total of one billion people will die from tobacco related cancers. We need worldwide government cooperation and assistance to better educate the public in low income countries about the serious consequences of tobacco use. We also need to prevail upon governments throughout the world to increase excise taxes on all tobacco products. The World Health Organization estimates that by increasing tobacco taxes by 50%, we could reduce the number of smokers by 49 million within the next three years and ultimately save 11 million lives. Such an increase in excise taxes would also result in countries around the world collecting an extra \$101bn in revenue.

Next, we need to build upon existing programmes to vaccinate the worldwide population against Hepatitis B and HPV, which lead to high incidences of cervical and liver cancers. Chronic infections are responsible for approximately 15% of all cancers around the world, but in some regions, such as impoverished countries, nearly one third of all cancer cases are caused by infections. The HPV vaccine can eliminate up to 70% of cervical cancers, and the HBV vaccine is similarly effective in preventing liver cancers. The GAVI Alliance, a public-private partnership, has been successful in negotiating lower prices for HPV and HPB vaccines for lower income countries, and should be used as a model for other similar partnerships.

Longer term, we need to invest the research dollars necessary to develop cancer screening and early cancer detection technologies that are affordable and widely available. In many lower income countries, as high as 80% of the patients have advanced cancers before beginning treatment. Late stage cancers are much more expensive to treat and treatments are much less effective. From an economic perspective, early cancer detection will reduce the cost of cancer treatments and reduce cancer mortality rates, both key factors in lessening the economic burden of cancers.



The implosion of the US housing market in 2007 led to the worst financial crisis since the Great Depression and quickly wreaked havoc on capital markets and economies throughout the world. The ongoing cancer pandemic has the potential to overwhelm public health systems, bankrupt private health insurers, impoverish patients, deprive the world of the equivalent of hundreds of millions of years of productivity cut short by premature death, and cripple economic growth and development. The financial consequences of such devastation will be well beyond those resulting from 2007. Whether out of altruism, self preservation, or some other motivation, let this be a call to action.

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Dr Arnold Baskies is the Chairman of the National Board of Directors of the American Cancer Society, a fellowship trained surgical oncologist and a member of the Board of Directors of ITUS Corporation. Dr Amit Kumar and Robert Berman are the Executive Chairman, and CEO of ITUS Corporation (NASDAQ: ITUS), a publicly traded company which is developing a platform of blood tests called Cchek for the early detection of cancer.