

## **The Need for Cancer Innovation: Facts at a Glance**

### ***Cancer Incidence in the U.S.***

Innovative new cancer treatments are sorely needed due to the fact that cancer is the nation's most costly disease and the second most common cause of death in the U.S. Moreover, cancer affects everyone through its toll in lives lost, human suffering, lost productivity and cost to the economy. According to the latest statistics:

- About 1,665,540 new cancer cases are expected to be diagnosed in 2014.
- Of these new cases, the most common types will be prostate cancer (233,000), breast cancer (232,670), lung and bronchus cancer (224,210), and colon and rectum cancer (136,860).
- About 77 percent of new cancer cases will be diagnosed in people 55 years of age and older.
- The risk for an American to develop cancer is 40.8 percent over his or her lifetime.
- Overall cancer incidence rates are higher among men than women.
- Among racial and ethnic groups, there are more new cases among African American men and white women and fewer new cases among Asian/Pacific Islanders of both sexes.
- While cancer is much less common among children than among older adults, approximately 1 in 285 children in the U.S. will be diagnosed with the disease before the age of 20.
- Cancers that develop in children and adolescents (ages 0-19) differ from those in adults. The most common pediatric cancers are leukemia (26 percent), cancers of the brain and central nervous system (CNS) (18 percent), and lymphoma (14 percent).

### ***Death Rates Are Dropping, Due in Large Part to Innovative New Therapies***

Scientific discoveries have netted new and better ways to prevent, detect, diagnose and treat the more than 200 types of cancer. As a result, death rates are dropping and the population of cancer survivors is steadily increasing. The latest statistics tell the story:

- Since 1991, overall cancer deaths have dropped 20 percent while 5-year survival rates now average 68.5 percent, up from 48.7 percent in 1975.
- Looking at specific cancers, studies document a steady decline in death rates for the four most common cancers: lung, colorectal, breast and prostate.
- There has also been a drop in death rates over the past decade (2000-2009) in chronic myeloid leukemia (8.4 percent), cancers of the stomach (3.1 percent) and colorectum (3.0 percent), and non-Hodgkin lymphoma (3.0 percent).
- In light of these developments, the American Cancer Society translates the reduction in overall cancer death rates into approximately 1.18 million fewer deaths from cancer since 1991, with 152,900 of these deaths averted in 2009 alone.

- At the same time, the National Cancer Institute has charted significant increases in survival as more therapies are developed. Between 1975 and 1979, the 5-year survival rate was less than 50 percent. By 2004, survival rose to 67.3 percent.
- Between 1975 and 2004, 5-year survival went up 19 percent for women with breast cancer (75.5 percent to 89.9 percent), 50 percent for men with prostate cancer (66.4 percent to 99.9 percent), 35 percent for patients with colon and rectum cancer (48.7 percent to 65.9 percent), and 46 percent for lung and bronchus cancer (11.5 percent to 16.8 percent).
- As a result, there are now more than 13.7 million cancer survivors in the United States, almost 2 million more than in 2008.

### ***Despite Great Progress, There Remains an Urgent Need for Medical Innovation***

Despite major strides in the biomedical discovery, cancer kills thousands of Americans every day and extracts a heavy toll on the U.S. economy. Furthermore, we face a future where the incidence of cancer is expected to rise dramatically as the “baby boom” population ages.

According to recent published reports:

- As many as 585,720 Americans are expected to die of cancer in 2014, or about 1,600 every day.
- Cancer is the second leading cause of death (following accidents) in children ages 5-14.
- Even now, the rates for some cancers in the U.S. are rising. This includes melanoma, non-Hodgkin lymphoma, leukemia, myeloma, childhood cancers, and cancers of the esophagus, liver, kidney, pancreas and thyroid.
- In addition, mortality rates for certain cancers remain stubbornly high, especially for liver, pancreatic and uterine cancers.
- Cancer costs the U.S. economy \$216.6 billion in 2009 (latest figures available). Of this total amount, \$86.6 billion was for direct medical costs (total of all health expenditures) and \$130.0 billion was attributed to indirect mortality costs (cost of lost productivity due to premature death).
- Around the world, cancer has emerged as the leading cause of death, surpassing heart disease. A new report from the World Health Organization (WHO) shows there are more than 14 million cancer diagnoses each year globally.
- The economic toll from cancer internationally is 20 percent higher than for any other major disease, at \$895 billion in 2008, which doesn't include the direct costs of treating cancer.
- Looking to the future, cancer cases are expected to jump nearly 45 percent by 2030. This translates into 13 million more lives lost to cancer.

### ***Medical Innovation Improves Cancer Outcomes***

Because scientific discoveries have netted new and better ways to prevent, detect, diagnose and treat cancer, survival rates are steadily increasing. Advances in cancer research and development not only save lives, but the economic investment also produces substantial returns in other ways: improved outcomes have resulted in gains to the U.S. economy through reduced spending on hospitalizations and physician care and increased productivity. According to new findings –

- New cancer drugs introduced over the past 30 years have increased the life expectancy of cancer patients by almost one year.
- Research attributes 50-60 percent of the increases in cancer survival rates since 1975 to improvements in cancer medicines.
- New cancer therapies also are associated with 50 million life years saved over the last 15 years, as well as reduced spending on hospital and physician care, amounting to an economic gain of \$1.2 million per person.
- This translates into \$3.2 trillion per year in national wealth added to the economy between 1970 and 2000, a value equal to about half the annual Gross Domestic Product (GDP) over this 30 year period. Further breakthroughs will have similar results, with a substantial portion of health care.
- The American Society of Clinical Oncology identified 17 major cancer treatment advances in 2012 that have the potential to reduce cancer mortality. Of these, 11 are related to new medicines, better ways to use existing medicines, or newly approved medicines.
- Nearly half of the new anticancer drugs approved by the FDA in 2013 target specific defects in cancers.

### ***Major Barriers to Cancer Innovation Must Be Addressed***

Although the majority of Americans believe that accelerating research and drug discovery is a top priority, the sobering reality is that cancer research is slowing and the rate of private sector capital and drug development is declining.

- Investment by venture capitalists in the biotechnology sector has declined since 2007, and government investment has declined in the last several years to levels not seen since 2004.
- Only 2–5 percent of adult patients enroll in cancer clinical trials.
- While 77 percent of cancers in the United States are diagnosed in people 55 and older, studies find that only 25 percent of the participants in national clinical trials are over 65 years of age.
- Cancer drug development is an uncertain process in which an estimated 19 out of every 20 experimental drugs never make it to market.
- Compared to an average time of two years from discovery to approval for HIV drugs, it takes nine or more years to bring a new cancer therapy to patients.
- According to a 2010 Tufts University study, the cost of developing one innovative cancer drug can be upwards of \$1 billion.