

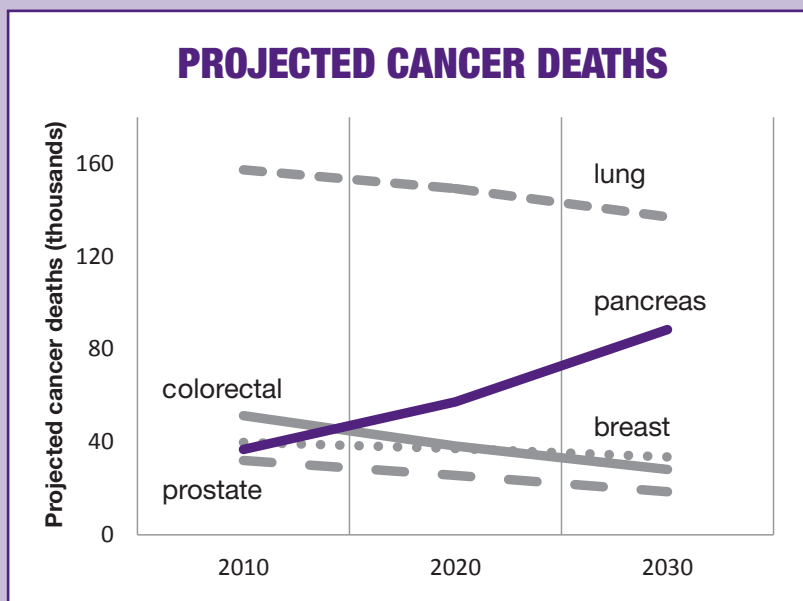
THE ALARMING RISE OF PANCREATIC CANCER DEATHS IN THE UNITED STATES: *WHY WE NEED TO STEM THE TIDE TODAY*

EXECUTIVE SUMMARY

Pancreatic cancer is the fourth leading cause of cancer death in the U.S., and is the only one of the most commonly diagnosed cancers with a five-year relative survival rate in the single digits, at just six percent. Projections based on the changing demographics of the U.S. population and changes in incidence and death rates reveal the startling observation that **pancreatic cancer is anticipated to move from the fourth to the second leading cause of cancer death in the U.S. by 2020**. An increase in the number of older adults and minorities in the nation will raise the number of total cancer cases. However, this will be offset by decreases in death rates for most cancer types due to improvements in early detection and/or treatment so that the number of anticipated cancer deaths will remain largely unchanged.

Pancreatic cancer is one of a handful of cancer types for which an increase in the number of new cases due to demographic

changes is unusually large. Even more striking is the realization that pancreatic cancer is unique among the top five cancer killers (currently lung, colorectal, breast, pancreas and prostate) in that both the incidence rate and death rate are increasing. The result of the combination of these factors is that both the projected number of new pancreatic cancer cases and pancreatic cancer deaths will more than double by 2030. By as early as 2015, the number of deaths from pancreatic cancer will exceed those from breast and colorectal cancer, and be surpassed only by the loss of life from lung cancer.



Projected cancer deaths for the major cancer killers. Projections of the number of deaths from the current top five cancer killers indicate that pancreatic cancer will become the second leading cause of cancer deaths as early as 2015. The estimated number of deaths in 2010 is from the 2010 American Cancer Society Facts & Figures. Projections were calculated by considering expected changes in the number of new cases for that cancer site and the average annual change expected in the death rate (number of deaths/100,000 population). Separate values were calculated for men and women and then combined to obtain the value for the total population. The projected number of new cases for 2020 and 2030 were calculated using age-, sex-, race-, and origin-specific incidence figures from Smith et al (*JCO* 27:2758, 2009, Table 1) and applying the delay-adjusted average annual percent changes in incidence rate calculated by Ehemann et al (*Cancer* 118:2338, 2012, Table 1). These figures were further adjusted by the average annual percent changes in death rate calculated by Ehemann et al (*Cancer* 118:2338, 2012, Table 2).

What is particularly alarming is that there are currently no early detection tools or effective treatments for pancreatic cancer. The research advances that have markedly changed the death rate for so many other cancers have not translated into clinical benefits for pancreatic cancer patients. Specific biological challenges have impeded efforts to reduce the mortality rate from pancreatic cancer, including the anatomical location of the pancreas,

an unusually dense and impenetrable barrier that inhibits the delivery of therapeutic drugs to the tumor, and genetic alterations which elude targeted therapies. These challenges have been compounded by a historically small, fragmented and underfunded research community dedicated to studying the disease. Funding for pancreatic cancer research lags significantly behind the other current top five cancer killers. The largest source of cancer research funding in the U.S. is the National Cancer Institute (NCI). NCI research investment towards pancreatic cancer is just two percent of the NCI's total budget, representing only one-third to one-sixth the amount dedicated to the other top cancer killers. The long lag time between laboratory research advances and clinical benefit for patients facing the disease, coupled with the alarming rise projected for pancreatic cancer deaths, indicates that never has it been more urgent that a national effort become focused on research that will lead to improvements in the outcomes from a pancreatic cancer diagnosis.

Real progress in changing the trajectory of the rise in deaths from pancreatic cancer will require not only increased funding, but a carefully considered, long-term and comprehensive strategic plan to ensure that our limited federal resources target the areas of greatest need and potential for patient benefit. Congress is currently debating the *Pancreatic Cancer Research & Education Act* (S. 362/H.R. 733), which asks the NCI to create a long-term, comprehensive strategic plan to bring the intellectual and infrastructural resources of the nation to bear on this urgent problem. It is critical that this country take steps to shine a light on this disease so that we can identify new pathways to success.

Pancreatic cancer does not need to be the death sentence that it is for most patients today. The Pancreatic Cancer Action Network set a bold goal in 2011 to double the pancreatic cancer survival rate by 2020 as an important step in stemming the rapidly rising threat of pancreatic cancer. This initiative, and the passage of legislation like the *Pancreatic Cancer Research & Education Act*, will help lead to a plan to develop new approaches for the early detection and treatment of pancreatic cancer and accelerate urgently needed improvements in patient outcomes. By understanding the findings outlined in this report and heeding the warnings they offer, we can change the statistics and the course of this disease.

