INST 760 - Project User Guide

CODENAME: </ CANCER>

Visualization project aimed to aid improvement in cancer treatment and future research

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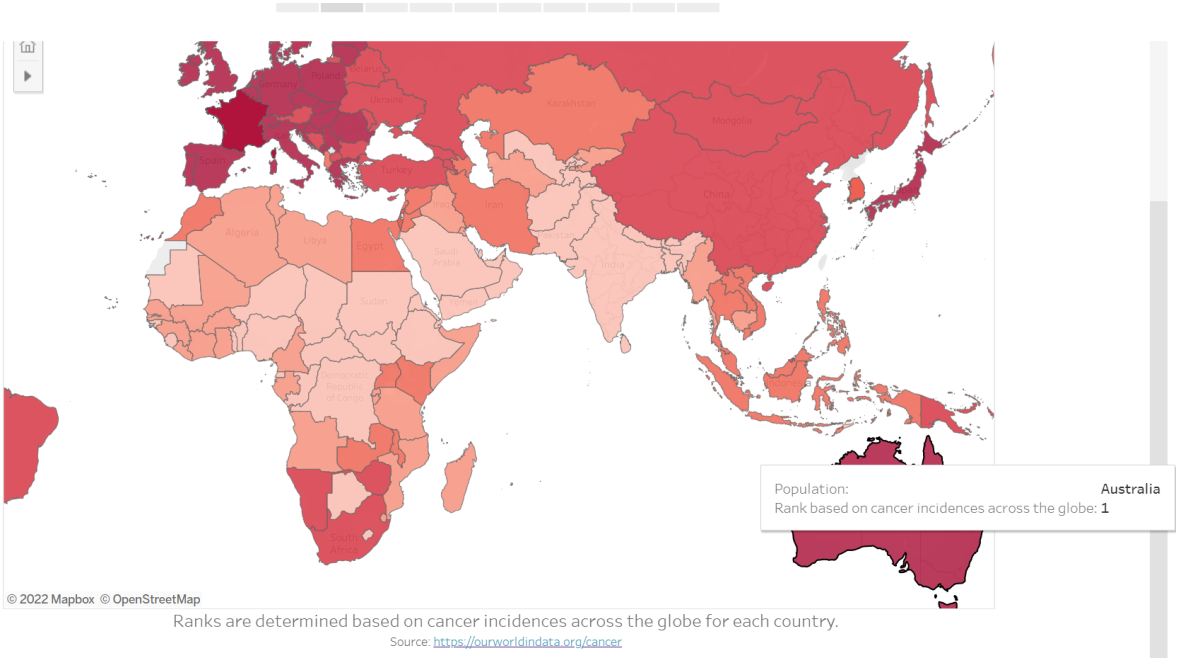
This article is a user guide for our project titled </CANCER> (End Cancer). The visualization tool which we have built for the purpose of this project is available here.

User Guide

- Visualization 1

Title - Country Rankings by incidences

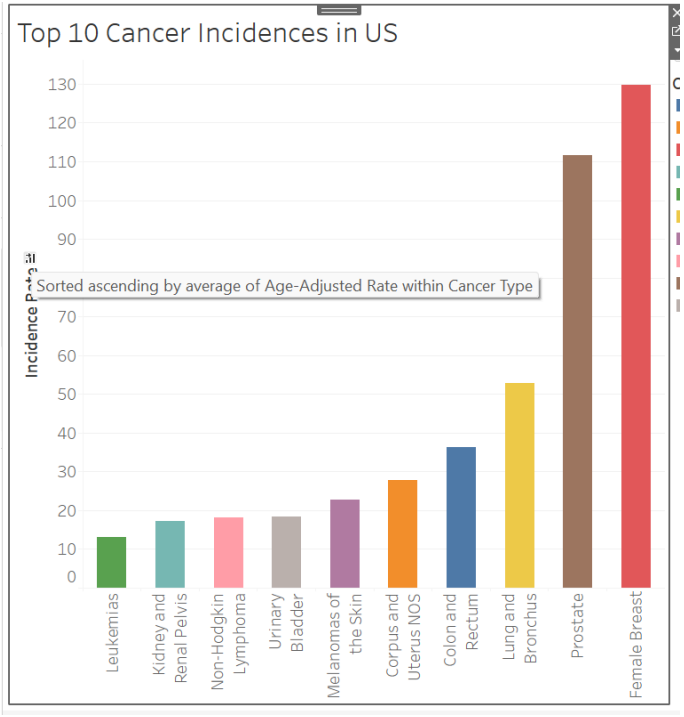
Description- The color 'red' depicts the country rankings by Cancer Incidences across the globe for each country.



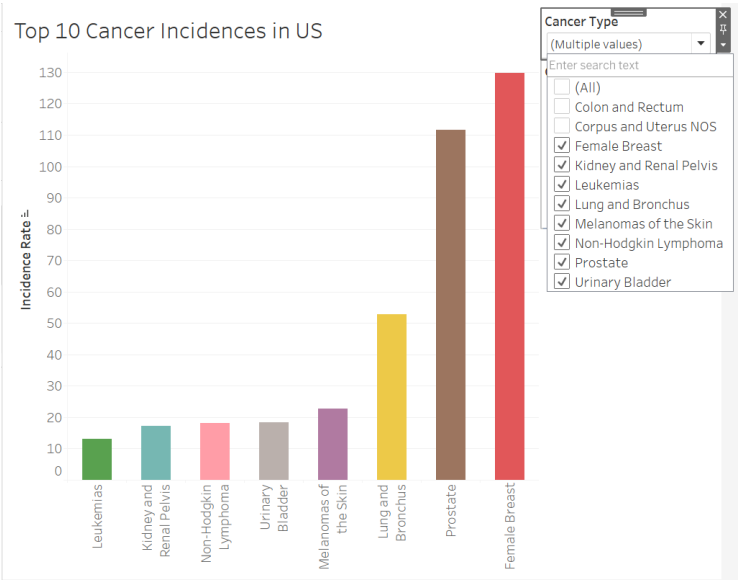
- Visualization 2 -

Title - Top 10 Cancer Incidences in the US

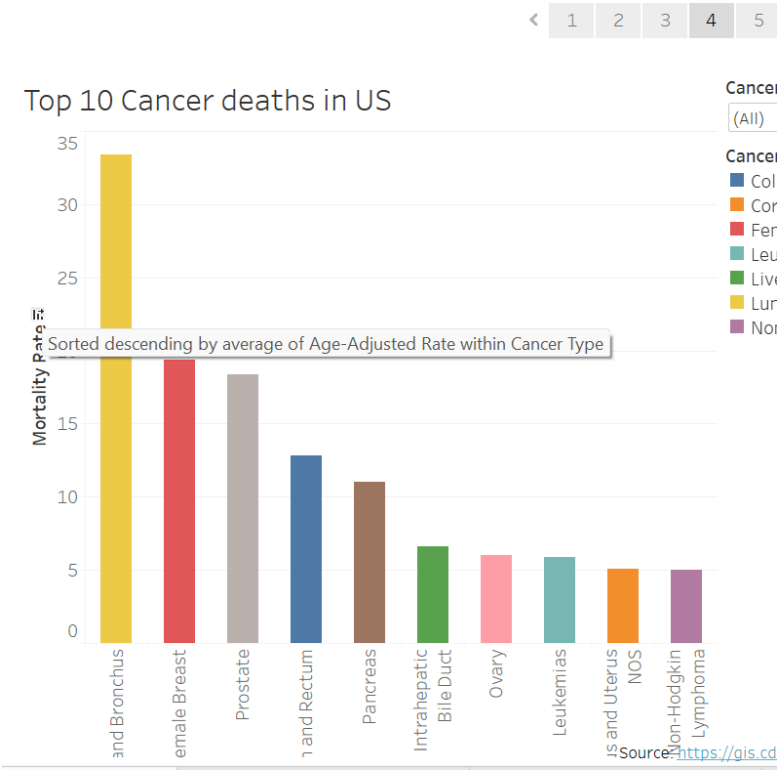
Sorting - You can sort the types of cancer into ascending or descending order by clicking on the sort icon near the title in the y axis.



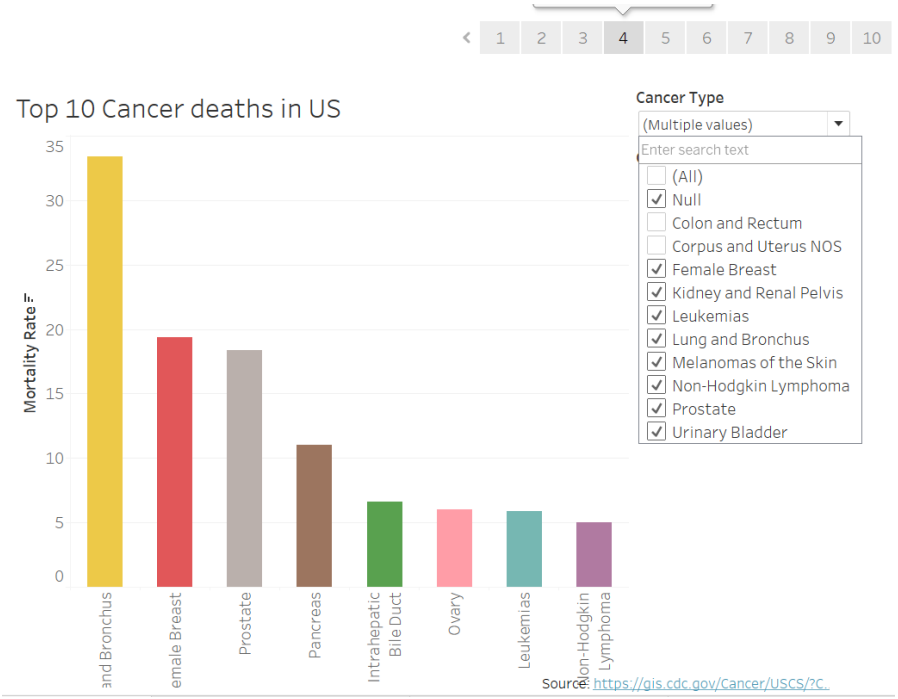
Filtering - You can click on the check box to filter the type of cancer to see the cancer incidences for any specific types of cancers.



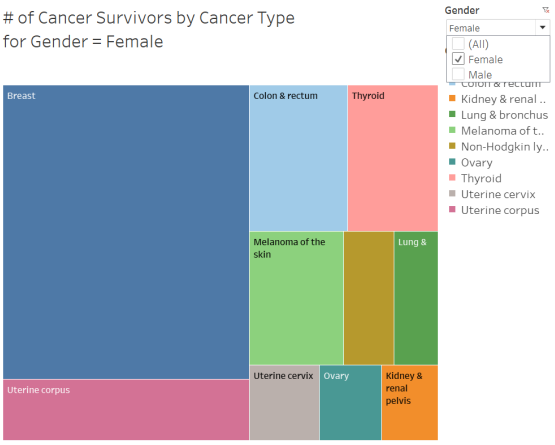
- Visualization 3
  Title - Top 10 Cancer deaths in US
  Sorting - You can sort the types of cancer into ascending or descending order by clicking on the sort icon near the title in the y axis.



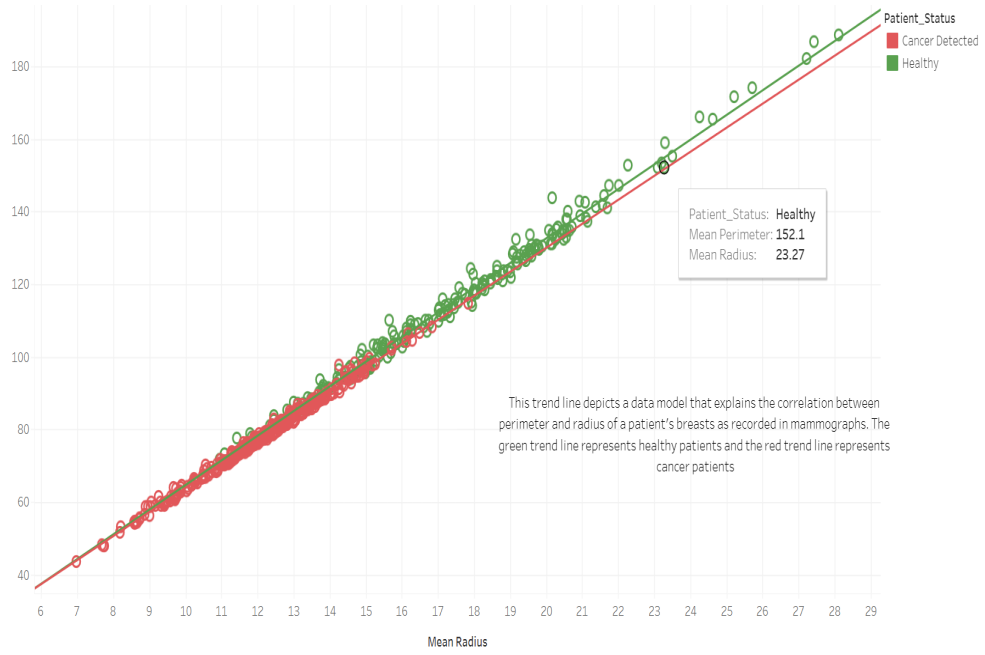
Filtering - You can click on the check box to filter the type of cancer to see the cancer mortality rate for any specific types of cancers.



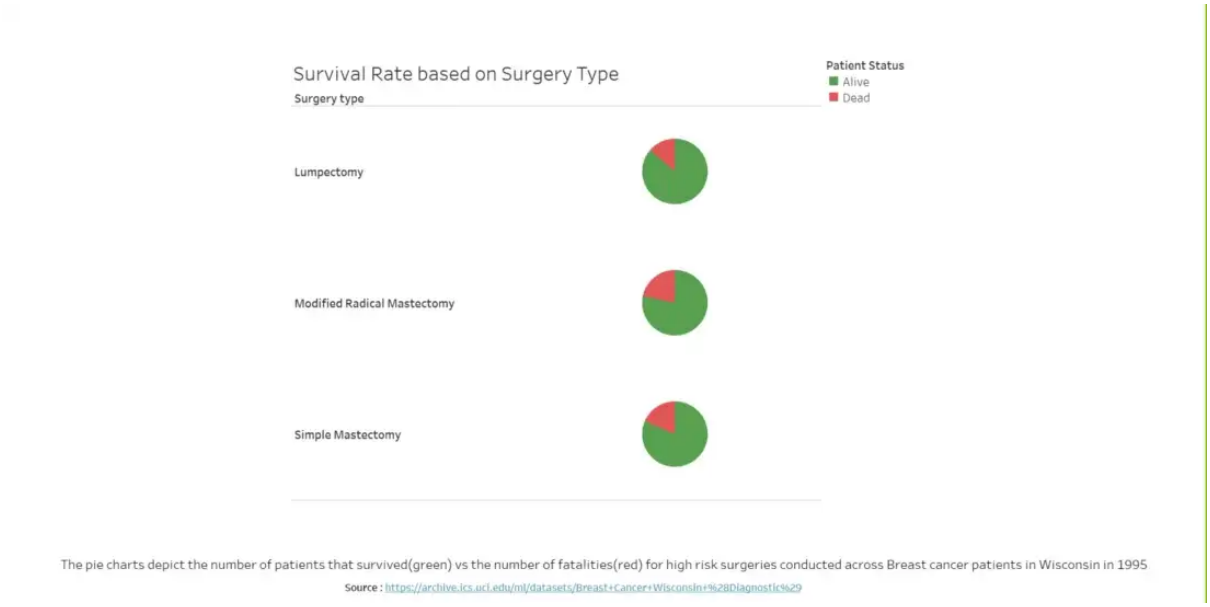
- Visualization 4
  Title - # of Cancer Survivors by Cancer Type
  Filtering- You can click on the check box to filter the gender to see the number of cancer survivors by specific gender.

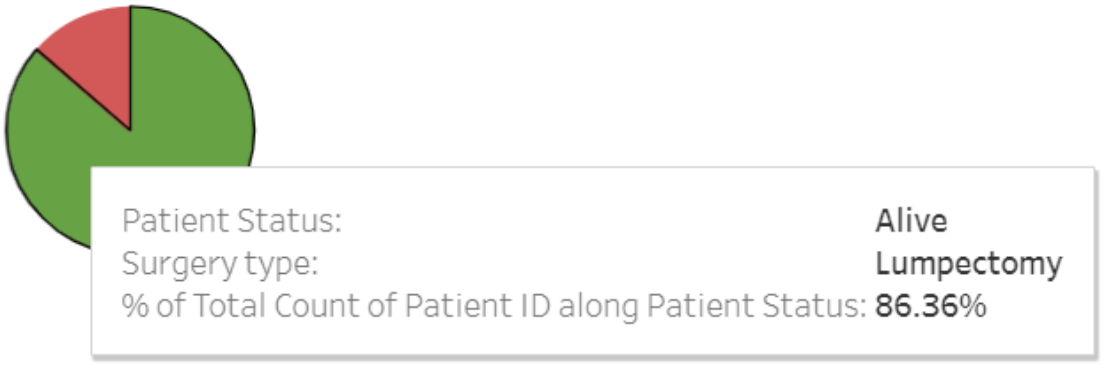


- Visualization 5 -
  Title - Breast Cancer Model
  Description - You can hover the trend line of the breast cancer model to predict the relationship.This trend line depicts a data model that explains the correlation between perimeter and radius of a patient's breasts as recorded in mammography. The green trend line represents healthy patients and the red trend line represents cancer patients.

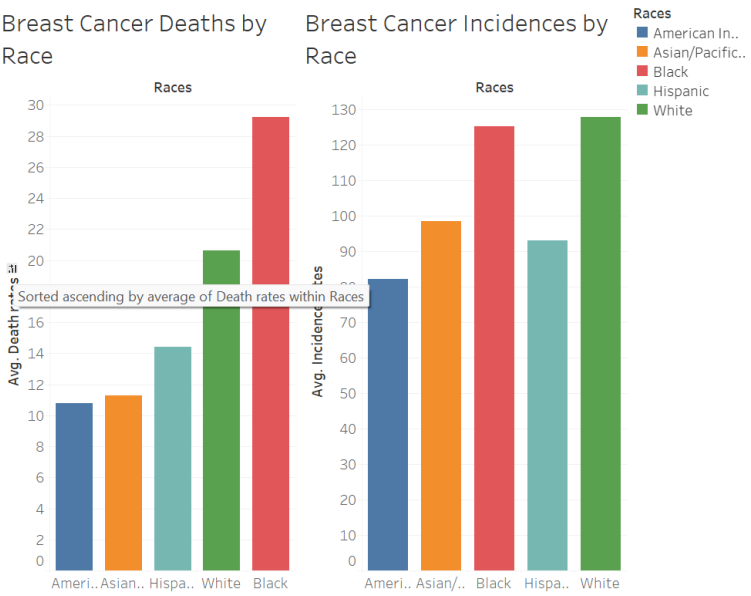


- Visualization 6
  Title - Survival Rate by Surgery Type
  Description - The pie charts depict the number of patients that survived(green) vs the number of fatalities(red) for high risk surgeries conducted across Breast cancer patients in Wisconsin in 1995.

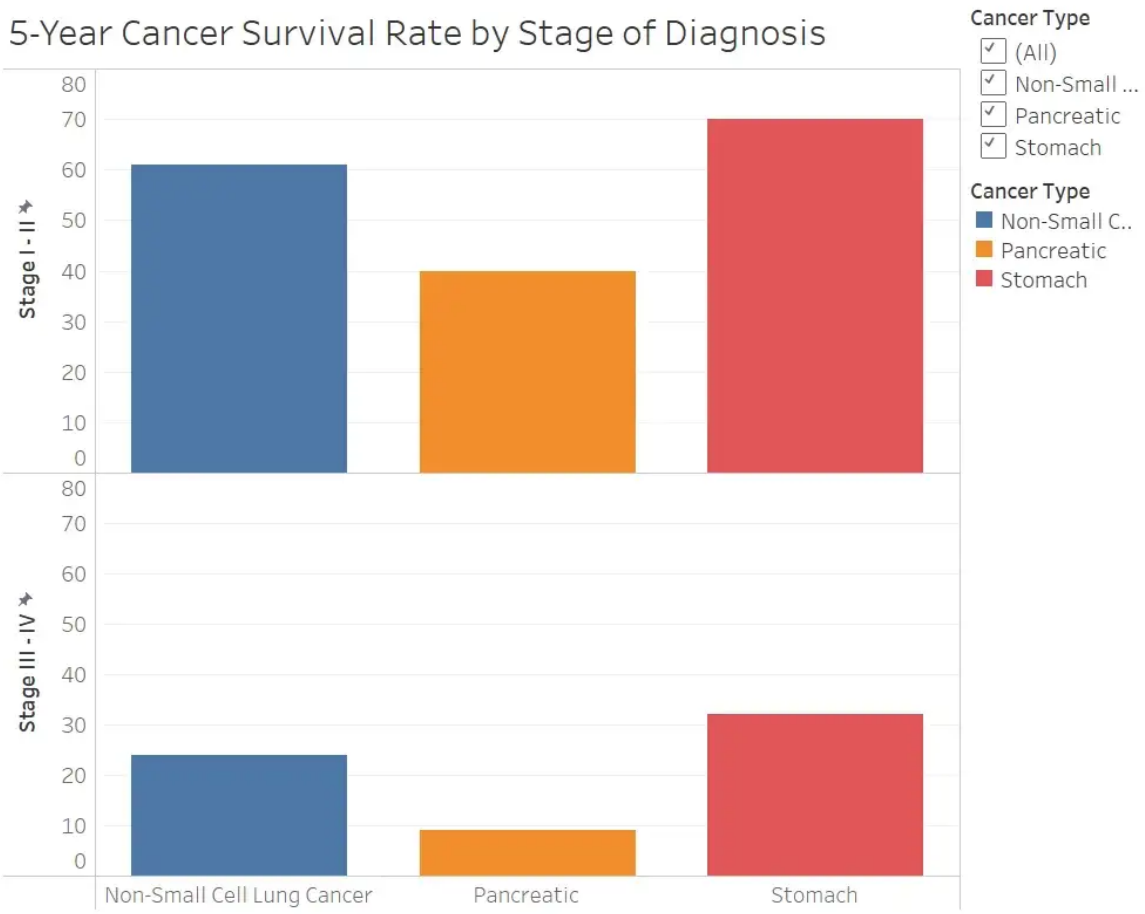




- Visualization 7 -
  Title - Breast Cancer Death/Incidences by Race
  Sorting - You can sort the death/incidence rates into ascending or descending order by clicking on the sort icon near the title on the y axis.

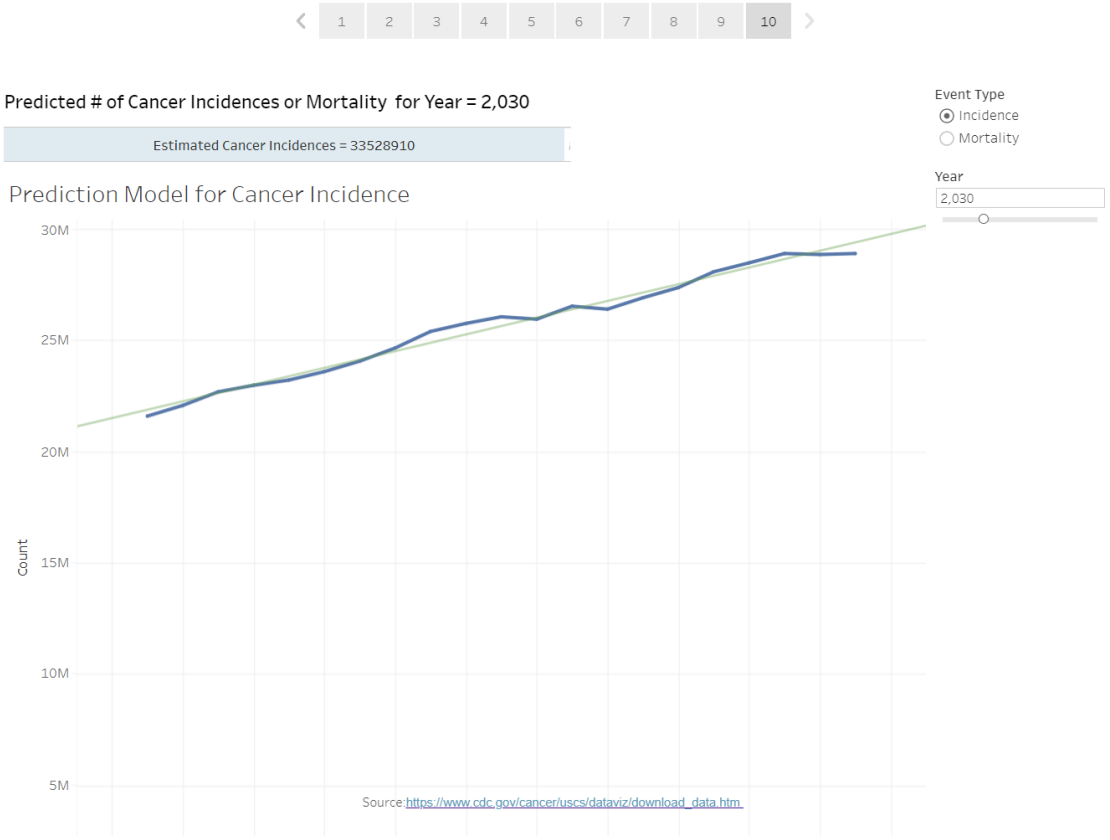


- Visualization 8 -
  Title- Cancer Diagnosis by Stage
  Filtering - You can click on the check box to filter the cancer type to see the survival rate by cancer type for different cancer stages.



Source: https://avalere.com/insights/earlier-cancer-detection-improves-quality-of-life-and-patient-outcomes

- Visualization 9 -
  Title - Prediction Model for Cancer Mortality
  Filtering - You can click on the check box to filter the prediction model for cancer incidence/mortality.



Description - The model can be used to predict the number of incidences/ deaths based on the year. The following are the linear regression equations to predict the incidences and mortality.

This visual represents the linear regression models that we built to predict the number of cancer incidences and cancer-related deaths based on historical data captured from the CDC for the past 20 years. The user can select a year in the future, and this model will help predict the number of cancer incidences or deaths in the United States for that year.

Incidence -

P-value: < 0.0001
R-square: 0.98
Equation:
Count = 375997*Year + -7.29745e+08

Mortality -

P-value: < 0.0001
R-square: 0.96
Equation:
Count = 38647.9*Year + -7.07211e+07