



Analysis of Cancer Services, Financial Burden, and the effects of the Covid-19 disruptions in Healthcare

DASC - 690 Data Science Capstone Project

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Objective

- ▶ One of the rapidly spreading diseases that affects many individuals worldwide is cancer. A huge amount people come to treat their cancer in United States. Millions of people seeking medical care in the United States have selected from among a vast number of hospitals. Each hospital has a particular reputation that influences patients to pick it over another.
- ▶ The results of this analysis will be used to guide the hospitals in addressing potential problems and implementing improvements in their systems, ultimately improving patient outcomes, and reducing the financial burden on patients. Additionally, hospital reputation plays a crucial role in patient decision-making, and this study aims to provide insights that may enhance the reputation of the hospitals by improving the quality of cancer care they provide.

Project Phases

- ▶ **Phase-1**(Number of Cancer Surgeries (Volume) Performed in California Hospitals)
- ▶ **Phase-2**(Hospital Characteristics List for California Providers in State Fiscal Year 2019-20)
- ▶ **Phase-3**(Patients Leaving California Hospitals Against Medical Advice (AMA))
- ▶ **Phase-4**(Comprehensive list of approved cancer medications created by the Anticancer Fund)
- ▶ **Phase-5**(Financial Burden of Cancer Care)
- ▶ **Phase-6**(Effects of COVID-19 on Hospital Utilization Trends)
- ▶ **Phase-7**(Advanced Stage Breast Cancer Among Women 40 Years and Older, by Medical Service Study Area (MSSA), California Counties, 2010-2014)
- ▶ **Phase-8**(Premise General Population COVID-19 Health Services Disruption Survey 2020)
- ▶ **Phase-9**(Global Burden of Disease)
- ▶ **Phase-10**(An Analysis of Cancer Data in the United States)

Phase-1 (Number of Cancer Surgeries Performed in California Hospitals)

- ▶ The dataset contains information on the volume of annual cancer surgeries in 11 different types of cancer, performed in California hospitals.
- ▶ This data is crucial in evaluating hospital capacity and trends in cancer treatment.
- ▶ The dataset focuses on California hospitals and can help researchers, healthcare providers, and policymakers better understand cancer treatment in the state and assess the need for additional resources.

Phase-2(Hospital Characteristics List for California Providers in State Fiscal Year 2019-20)

- ▶ The dataset lists 15 characteristics for California hospitals: The dataset contains information on 15 characteristics for hospitals serving California during the fiscal year 2019-20, such as OSHPD ID, HCAI Provider Name, and Designated Neonatal Intensive Care Unit status.
- ▶ The dataset covers various hospital statuses and rates: The dataset provides details on hospital statuses, such as Non-designated Public Hospital, HCAI Rural Hospital status, and DHCS Designated Remote Rural status. Additionally, it includes rates such as Cost-to-Charge Ratio, Wage Index Value, and Rehab Rate.
- ▶ The dataset is specific to California hospitals: The dataset is specific to hospitals in California and focuses on their characteristics during the fiscal year 2019-20.
- ▶ The dataset is useful for healthcare research and policy evaluation: The dataset can be valuable for healthcare providers and policymakers to gain insights into California's hospital landscape and evaluate healthcare policies and interventions.

Phase-3(Patients Leaving California Hospitals Against Medical Advice (AMA))

- ▶ The dataset features discharge numbers and breakdowns: The dataset provides information on discharge numbers and a detailed breakdown of counts for patients who left against medical recommendation.
- ▶ The data is organized into various groups: The information in the dataset is separated into different groups based on factors such as year of discharge, admission type, patient age, anticipated payer, primary diagnosis, race/ethnicity group, and sex.
- ▶ The dataset is valuable for healthcare research: The dataset can be useful for healthcare researchers and providers in understanding the patterns and trends of patient discharges and those who leave against medical recommendation. The data can also help evaluate the effectiveness of healthcare policies and interventions in reducing patient noncompliance.

Phase-4(Comprehensive list of approved cancer medications created by the Anticancer Fund)

- ▶ The CancerDrugs DB is a database of approved cancer drugs: The CancerDrugs DB is a curated database of approved medications used to treat cancer. The source data is obtained from multiple sources, including the NCI, FDA, and EMA.
- ▶ The database is easily filterable: The goal of the CancerDrugs DB is to offer a user-friendly database of approved cancer medications that can be easily filtered by researchers, doctors, and regulators.
- ▶ Diagnostic drugs, investigational medicines, and supportive care drugs are excluded: The CancerDrugs DB only includes drugs approved for cancer treatment and excludes drugs used for diagnostic purposes, those used to treat cancer symptoms, and those utilized in clinical trials.

Phase-5(Financial Burden of Cancer Care)

- ▶ The national cancer-attributed medical care costs in the United States refer to the total expenditures that the country incurs in the diagnosis, treatment, and management of cancer patients. These costs encompass a wide range of medical services, including hospitalization, outpatient care, physician and other health professional services, prescription drugs, and home healthcare services, among others.

Phase-6(Effects of COVID-19 on Hospital Utilization Trends)

- ▶ This dataset counts in-hospital deaths in three hospital settings.
- ▶ The dataset provides monthly totals for various medical conditions such as asthma, cancer, COVID-19, diabetes, hypertension, and stroke.
- ▶ Monthly totals for each medical condition are provided for the entire state.

Phase-7(Advanced Stage Breast Cancer Among Women 40 Years and Older, by Medical Service Study Area (MSSA), California Counties, 2010-2014)

- ▶ The California Cancer Registry (CCR) provided data on women with breast cancer diagnosed between 2010 and 2014 aged 40 or older.
- ▶ Proportional incidence ratios (PIRs) were computed to compare the percentage of late-stage breast cancer cases in counties and Medical Service Study Areas (MSSAs) with the national average.
- ▶ Geographical locations with a high proportion of late-stage breast cancer cases were identified through this analysis of data.

Phase-8(Premise General Population COVID-19 Health Services Disruption Survey 2020)

- ▶ The COVID-19 Health Services Disruption Survey 2020 consists of surveys measuring the level of disruption to health services caused by the pandemic and governmental directives.
- ▶ 76 countries participated, with 52,492 respondents from the general population using Premise data gathering technology on their smartphones.
- ▶ The survey focused on the impact of COVID-19 on access to healthcare professionals and prescription drugs, rather than the overall quality of health service delivery.

Phase-9(Global Burden of Disease)

- ▶ This dataset covers 30 years of health data to provide timely and relevant assessments of critical health outcomes.
- ▶ The data can be analyzed to compare health outcomes for 5-10 years, including cancer disease.
- ▶ The dataset is obtained from the GHDx database maintained by the Institute for Health Metrics and Evaluation; a non-profit research organization focused on promoting population health.

Phase-10(An Analysis of Cancer Data in the United States)

- ▶ The dataset contains information on cancer incidence and mortality rates in the United States for 2023, including estimates for new cancer cases and deaths by cancer type and gender.
- ▶ It also includes historical data on cancer death rates by gender from 1930-2020 and cancer incidence rates from 2015-2019 and death rates from 2016-2020 based on cancer type, ethnicity, and age group.
- ▶ The dataset provides information on cancer survival rates for different cancer types based on stages from 2012-2018 and the probability of developing cancer from 2017-2019, obtained from the American Cancer Society portal.

Data Cleaning



Data Cleaning

- ▶ Data cleaning is a crucial step in the data preparation process to ensure accurate and reliable data for analysis, modeling, visualization, or other purposes.
- ▶ The process involves several steps, including data profiling, identifying and correcting errors, filling missing values, removing duplicates and outliers, and validating the data for accuracy and consistency.
- ▶ Incomplete data, inconsistent formatting, software glitches, data entry errors, or incomplete/missing values are some of the issues that need to be addressed to prevent inaccurate analysis, flawed business decisions, and misleading insights.
- ▶ Data cleaning enhances data quality and provides accurate and reliable information for making informed decisions, minimizing the risk of data bias, improving data accuracy, and increasing the efficacy of data-driven decisions.
- ▶ The process may also include standardizing formats and transforming data to meet specific requirements.

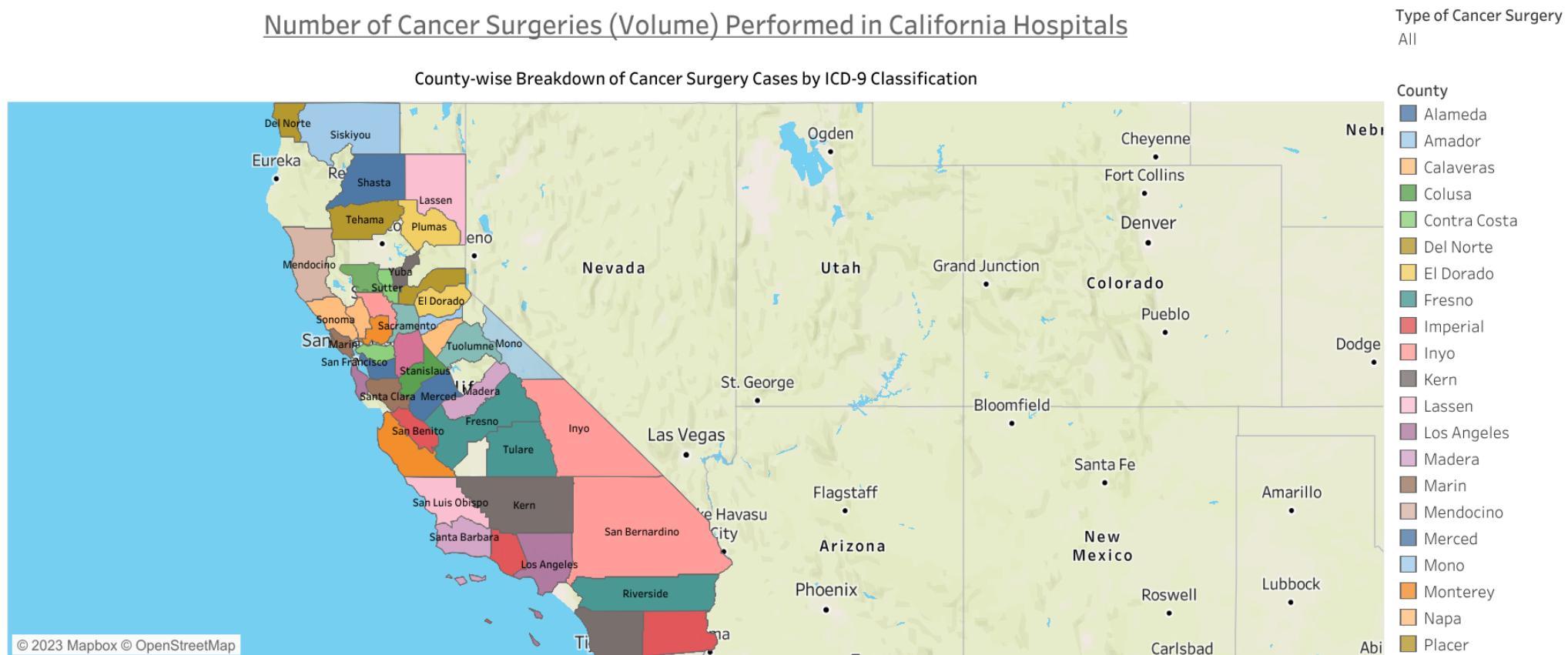
Data Exploration and Analysis

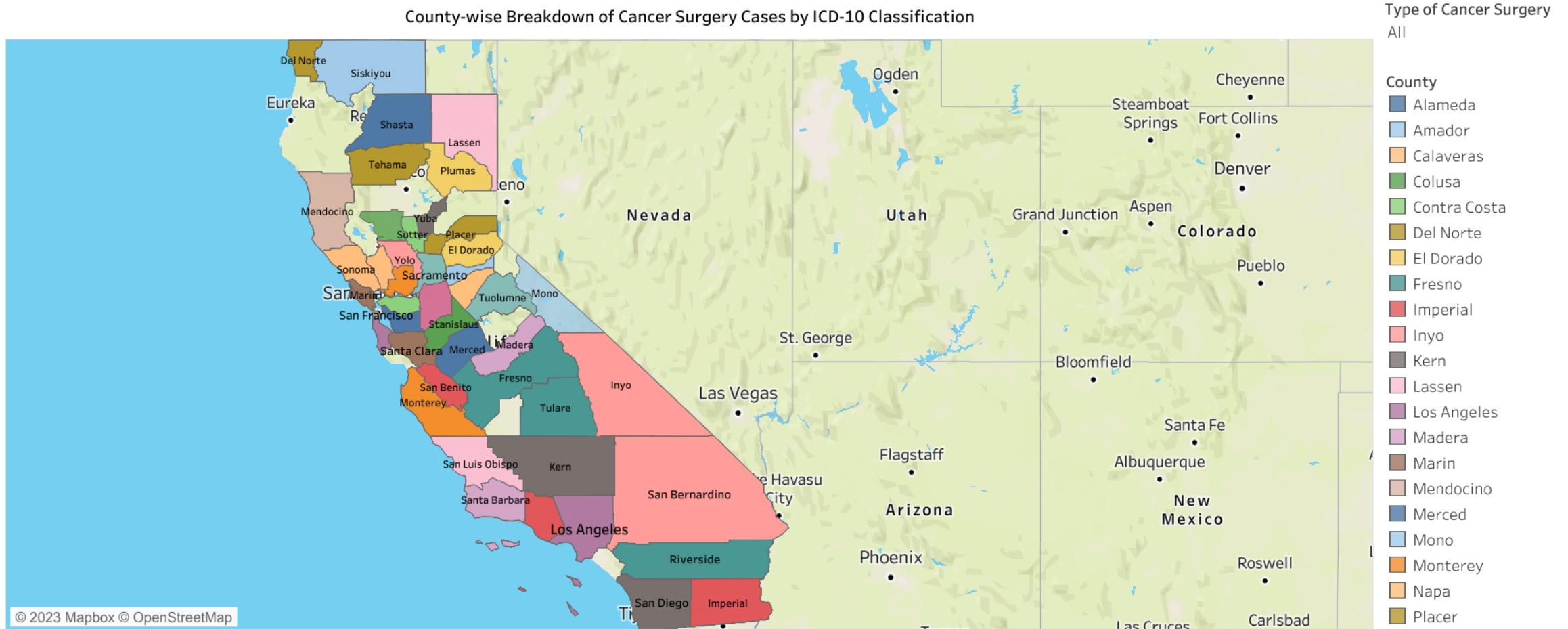


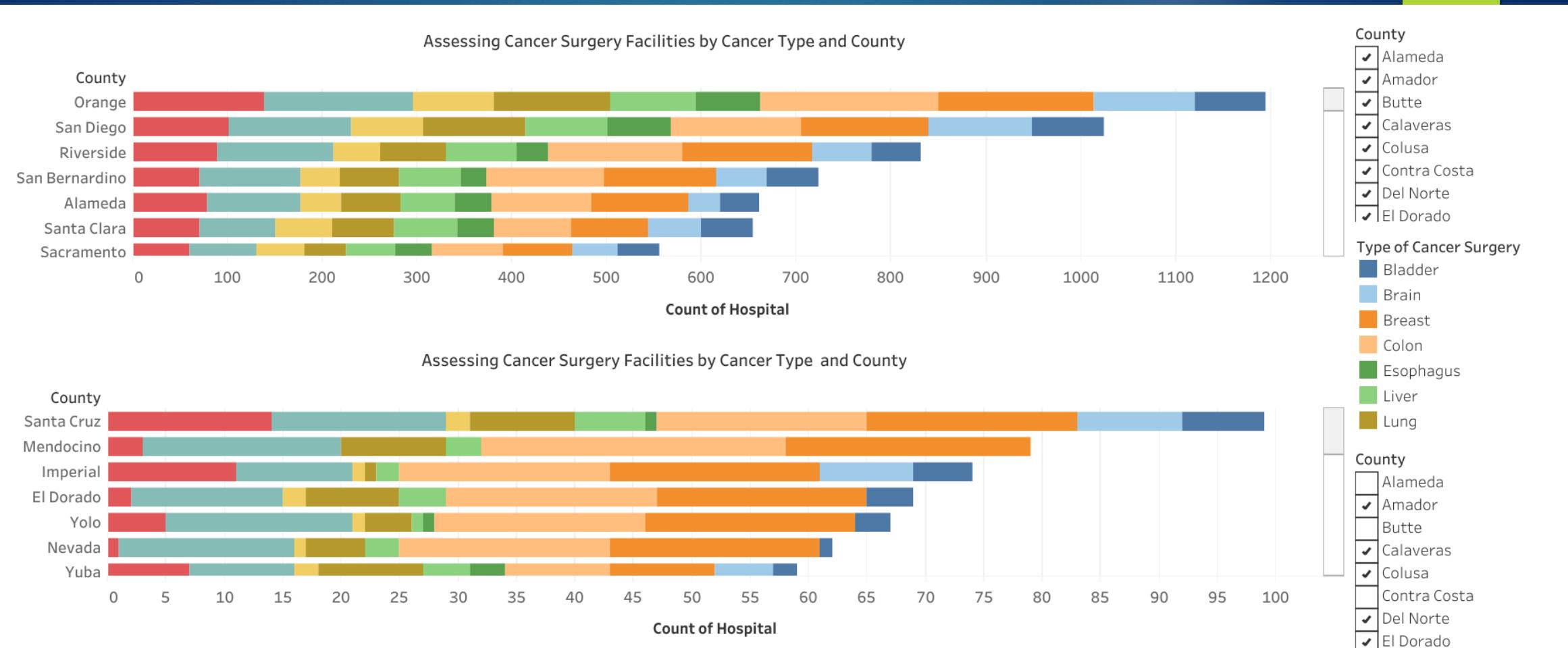
Data Exploration and Analysis

- ▶ Data analysis is a systematic process of examining and assessing data to uncover useful insights that can guide decision-making.
- ▶ In today's business environment, data analysis is essential for companies seeking to make data-driven decisions that can improve their efficiency and effectiveness.
- ▶ By studying data, businesses can gain insights into consumer behavior, market trends, operational inefficiencies, and other factors that impact their performance and profitability.
- ▶ Using this data, businesses can increase customer satisfaction, enhance product and service quality, optimize operations, and run more profitably.
- ▶ Data analysis helps organizations make evidence-based decisions, rather than relying on intuition alone, leading to better outcomes and more informed judgments

An Analysis of California Hospitals: Cancer Surgery Volume, Hospital Characteristics, and Patients Leaving Against Medical Advice (AMA) in Fiscal Year 2019-20

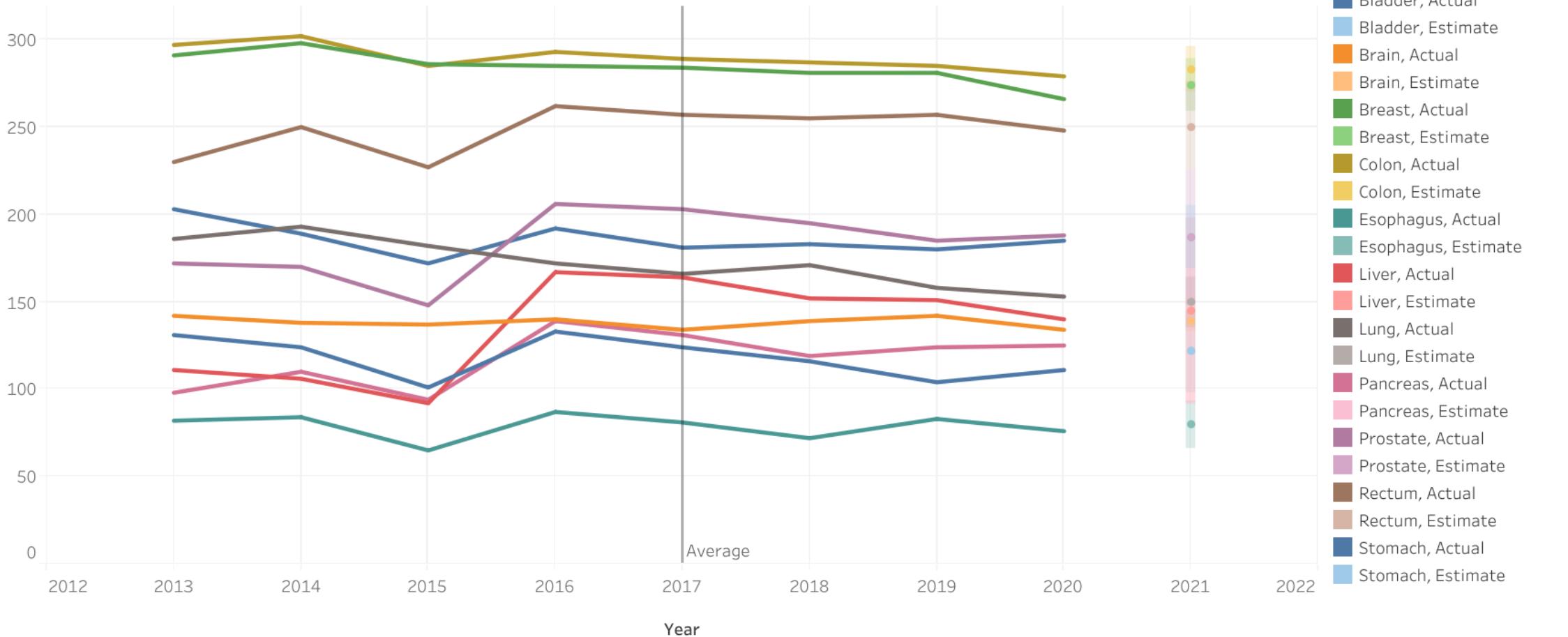




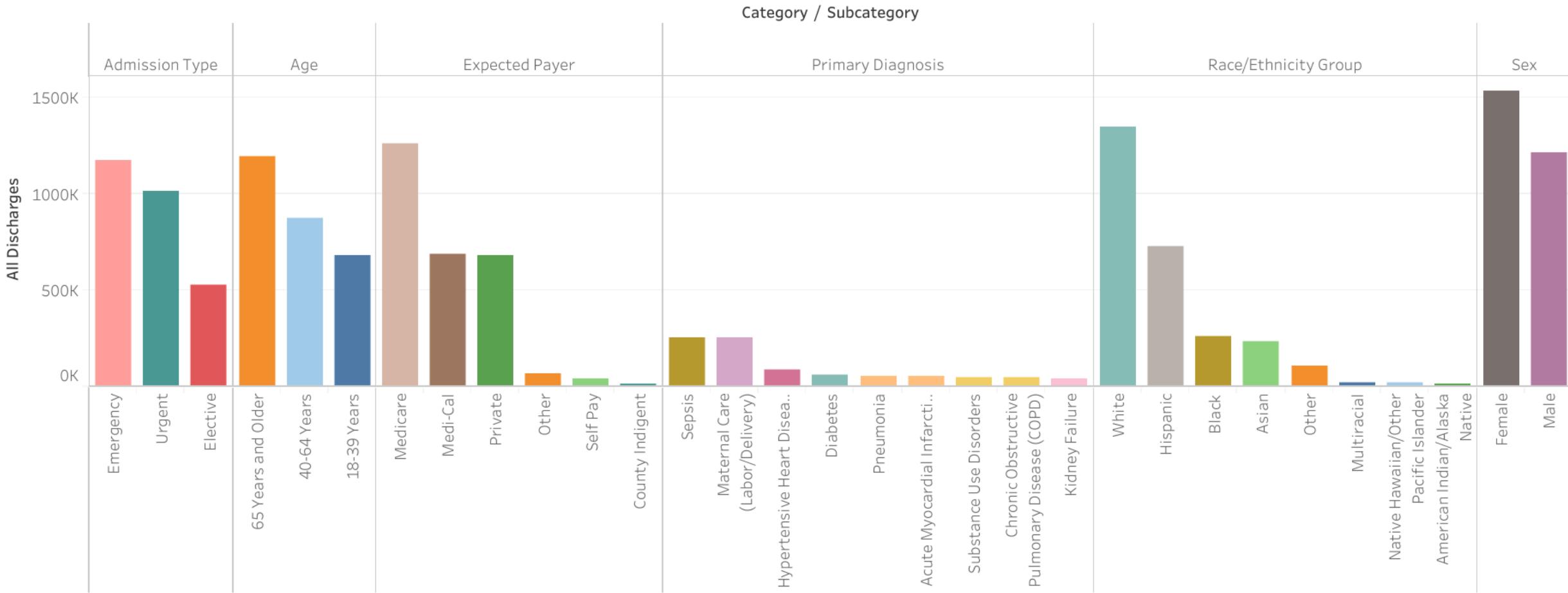


Analysis of Cancer Surgeries Performed from 2013-2021 for Different Types of Cancer

Count of Number of Cancer Surgeries Performed



Exploring Discharge Counts for Various Segments: A Comparative Analysis



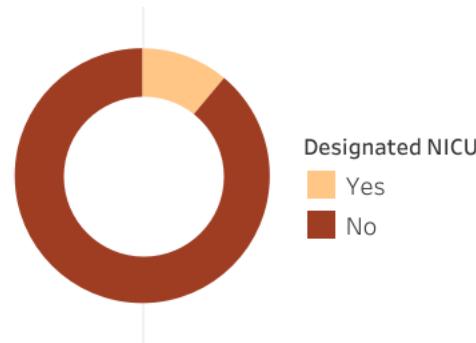
Analyzing the Differences Between All Discharges, AMA Discharges, and Repeated AMA Discharges

Category	Subcategory	AMA Discharges	AMA Discharges More Than Once	All Discharges
Admission Type	Elective	4,841	1,188	524,882
	Emergency	37,360	12,790	1,173,202
	Urgent	22,626	6,597	1,010,976
Age	18-39 Years	20,918	6,579	679,695
	40-64 Years	31,111	10,806	876,807
	65 Years and Older	13,675	3,314	1,191,056
Expected Payer	County Indigent	538	113	11,017
	Medi-Cal	33,784	12,554	685,248
	Medicare	19,325	5,672	1,262,906
	Other	1,891	448	68,809
	Private	8,116	1,484	682,268
	Self Pay	2,036	424	36,774
Primary Diagnosis	Acute Myocardial Infarction	1,144	304	55,890
	Chronic Obstructive Pulmonary Disease ..	1,668	680	45,561
	Diabetes	2,729	1,323	58,681
	Hypertensive Heart Disease	2,650	1,267	89,800
	Kidney Failure	1,132	341	42,514
	Maternal Care (Labor/Delivery)	756	112	250,787
	Pneumonia	1,277	396	56,498
	Sepsis	6,295	1,956	256,169
	Substance Use Disorders	5,418	1,848	46,382
Race/	American Indian/Alaska Native	538	164	14,815

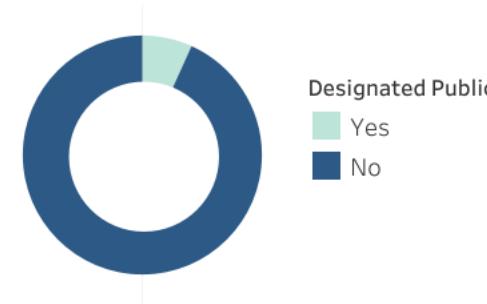
- Category
- Admission Type
 - Age
 - Expected Payer
 - Primary Diagnosis
 - Race/Ethnicity Group
 - Sex

An Overview of Hospital Characteristics: California Providers in State Fiscal Year 2019-20

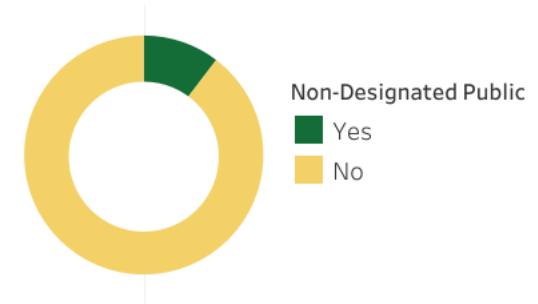
Designated NICU by Department of Health Care Services



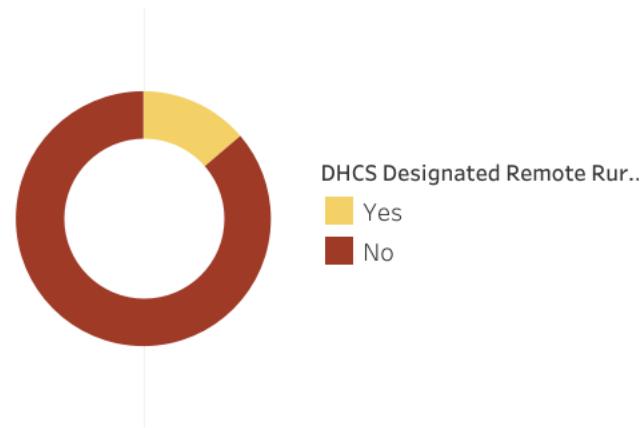
Designated Public Hospital by Department of Health Care Services



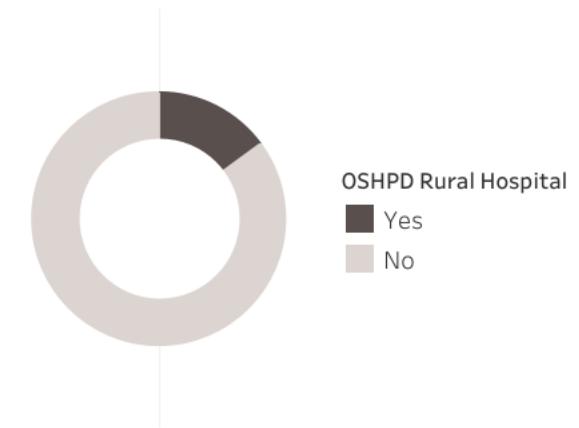
Non-Designated Public Hospital by Department of Health Care Services



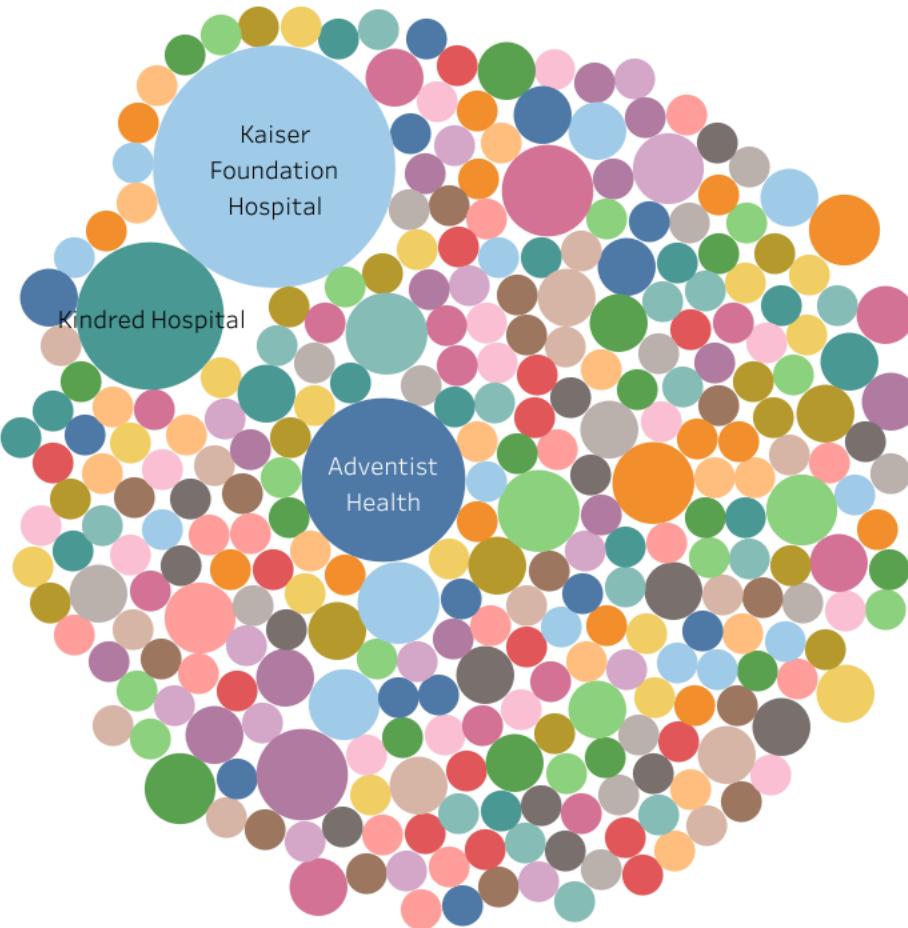
Designated Remoted Rural Hospital by Department of Health Care Services



Designated Rural Hospital by Department of Health Care Services



Analyzing OSHPD Provider Names and Counts: A Study of Licensed Healthcare Facilities in California



OSHPD Provider Name
Adventist Health
AHMC Anaheim Regi..
AHMC Seton Medical ..
Alameda Hospital
Alhambra Hospital M..
Alta Bates Summit M..
Alvarado Hospital M..
Anaheim Global Medi..
Antelope Valley Hos..
Arrowhead Regional ..
Bakersfield Heart Ho..
Bakersfield Memoria..
Bakersfield Rehabilit..
Ballard Rehabilitatio..
Banner Lassen Medic..
Barlow Respiratory ..
Barstow Community ..
Barton Memorial Ho..
Bear Valley Communi..
Beverly Hospital
California Hospital M..
California Pacific Me..
California Rehabilita..
Casa Colina Hospital

Various factors contributing to the characteristics of California hospitals for State Fiscal Year 2019-20

Hospital Characteristics for 2019-2020 - Fairchild Medical Center Provider

OSHPD Provider Name
Fairchild Medical Center
 Show history

Cost-to-Charge Ratio %	0
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Rehabilitation Rate	0
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Unadjusted Statewide Base Rate	14,615
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Wage Adjusted Statewide Base Rate	16,775
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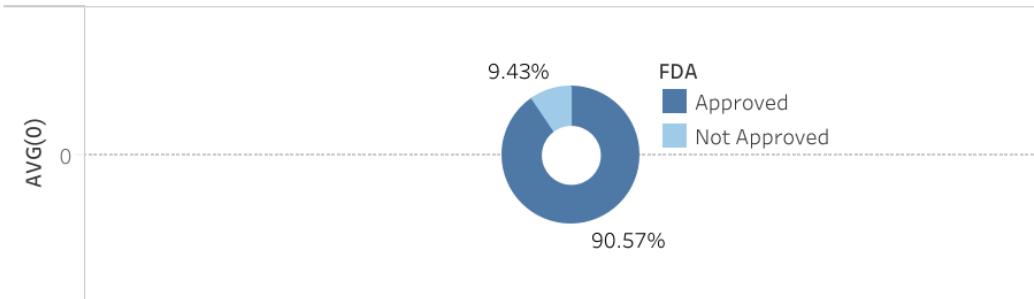
Wage Index Value	1
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Wage Index Value (Adjusted for CA Neutrality Factor)	1
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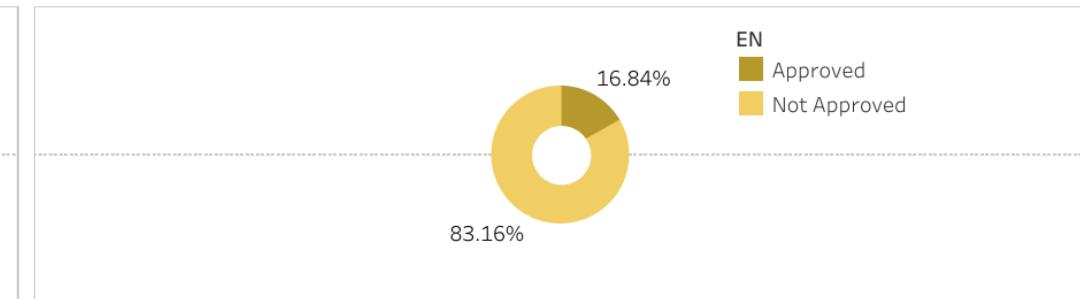
Life-Saving Cancer Treatments: A Comprehensive Guide to Approved Medications

Life-Saving Cancer Treatments: A Comprehensive Guide to Approved Medications

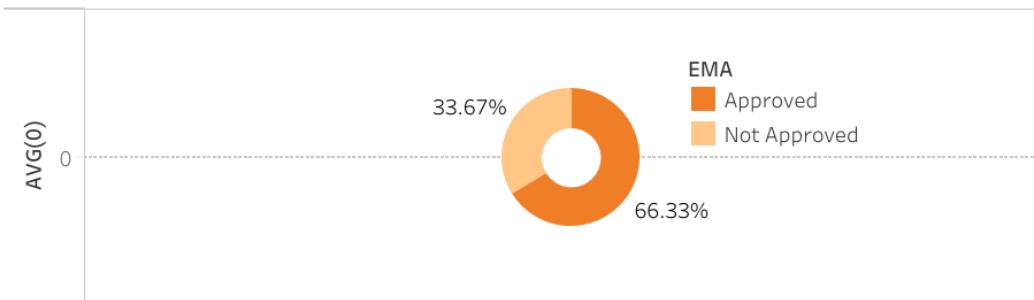
Approved accounts for the majority of 'FDA'



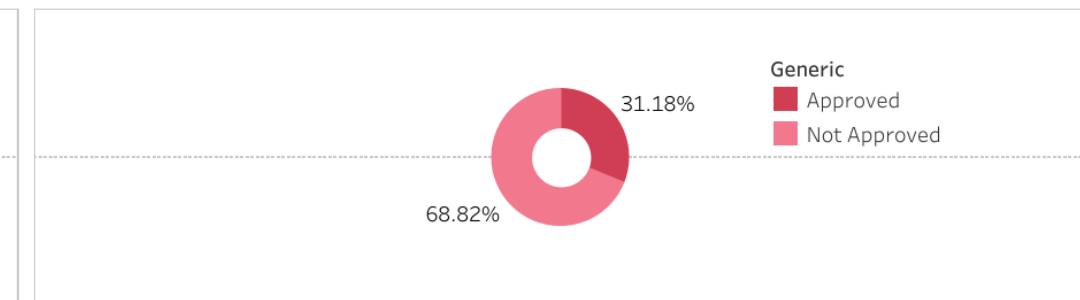
Not Approved accounts for the majority of 'EN'



Approved accounts for the majority of 'EMA'

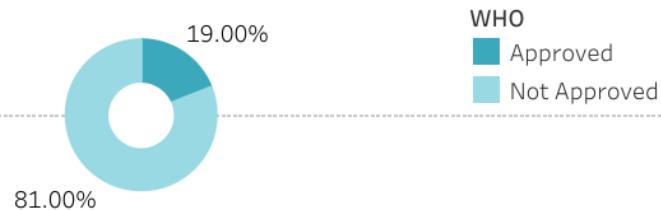


Not Approved accounts for the majority of 'Generic'



Life-Saving Cancer Treatments: A Comprehensive Guide to Approved Medications

Not Approved accounts for the majority of 'WHO'

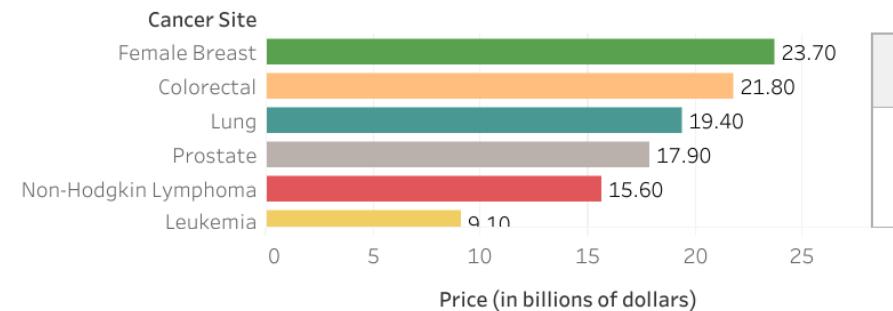


Medications authorized by different provider for various types of cancer treatment			Year	1958	
Product	Indications		EMA	EN	FDA
Dexamethasone	Leukemia, Acute; Malignant Lymphomas; Multiple Myeloma (MM); Mycosis Fungoides (MF)		Approved	Not Approved	Approved

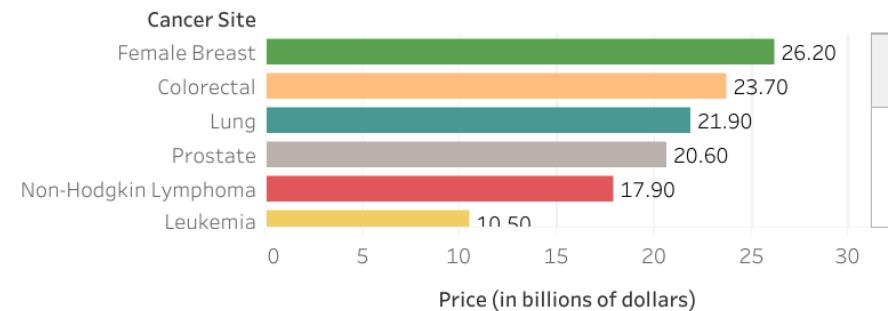
Understanding the Financial Burden of Cancer Care on Patients and Families

Understanding the Financial Burden of Cancer Care on Patients and Families

Estimates of National Expenditures for cancer care (in billions of dollars) by cancer site for 2015

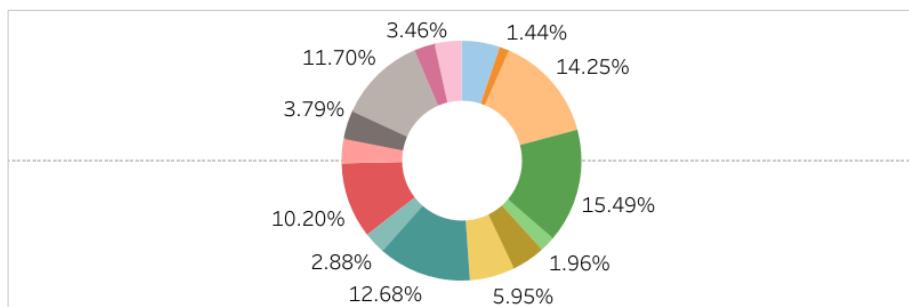


Estimates of National Expenditures for cancer care (in billions of dollars) by cancer site for 2020

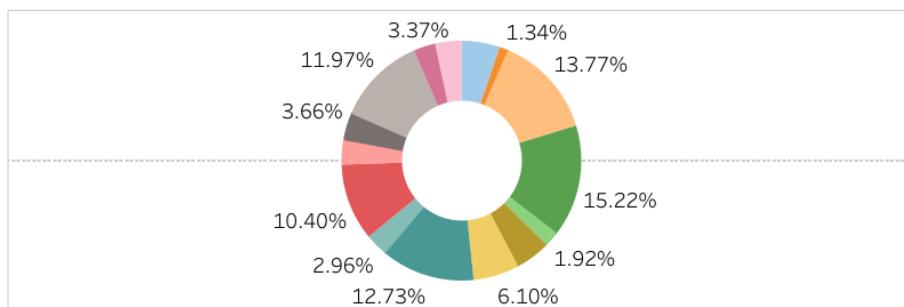


- Cancer Site
- Bladder
- Cervix Uteri
- Colorectal
- Female Breast
- Hodgkin Lymphoma
- Kidney
- Leukemia
- Lung
- Melanoma
- Non-Hodgkin Lympho..
- Oral Cavity
- Ovary
- Prostate
- Thyroid
- Uterus

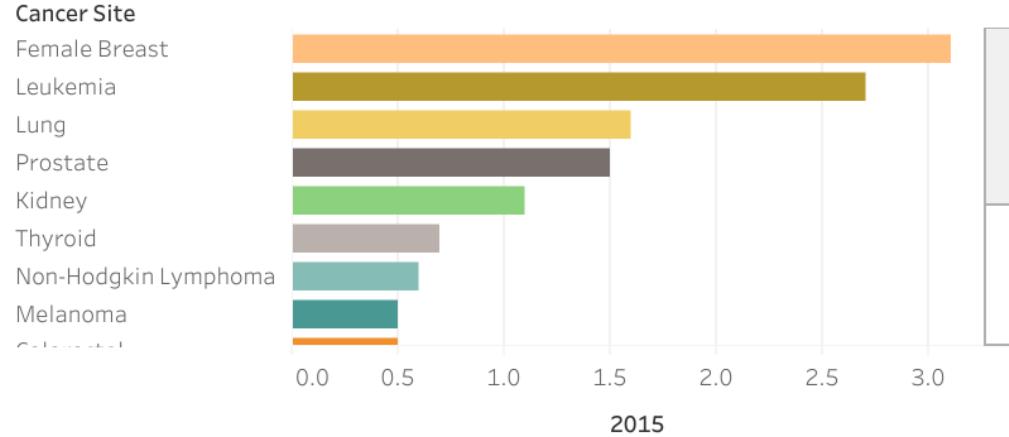
Expenditure Distribution Across Various Cancer Sites for 2015



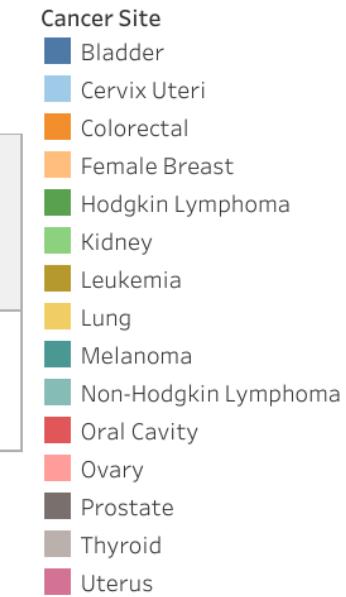
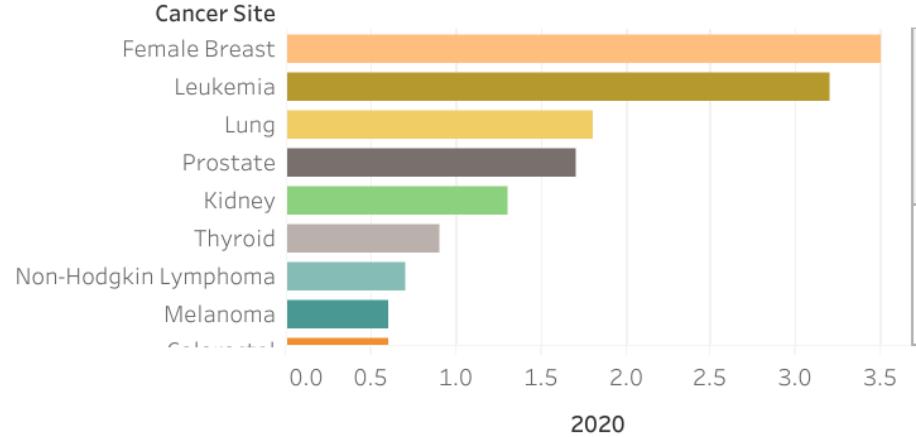
Expenditure Distribution Across Various Cancer Sites for 2020



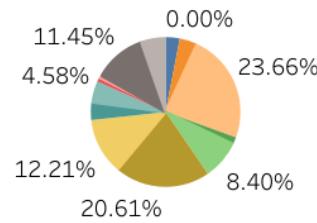
Estimates for medical services related to cancer care (in billions of dollars) by cancer site for 2015



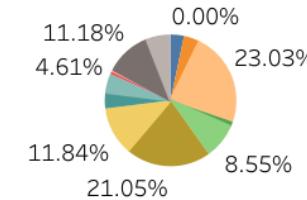
Estimates for medical services related to cancer care (in billions of dollars) by cancer site for 2020



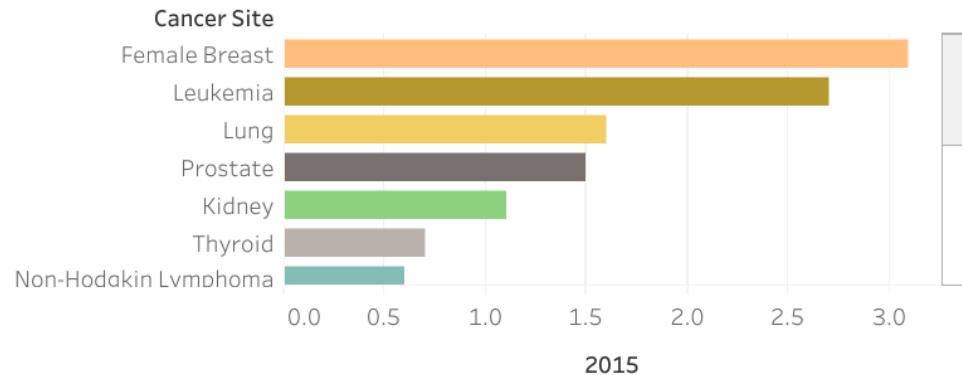
Expenditure Distribution based on Medical Services for Various Cancer Sites for 2015



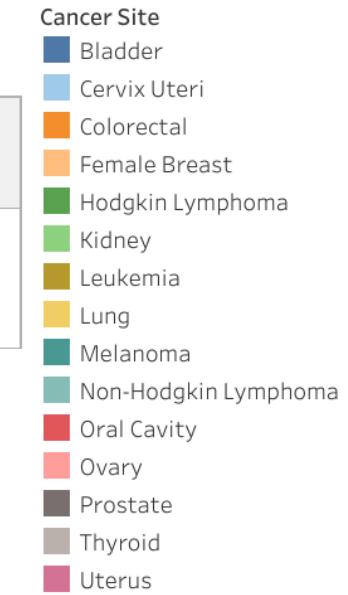
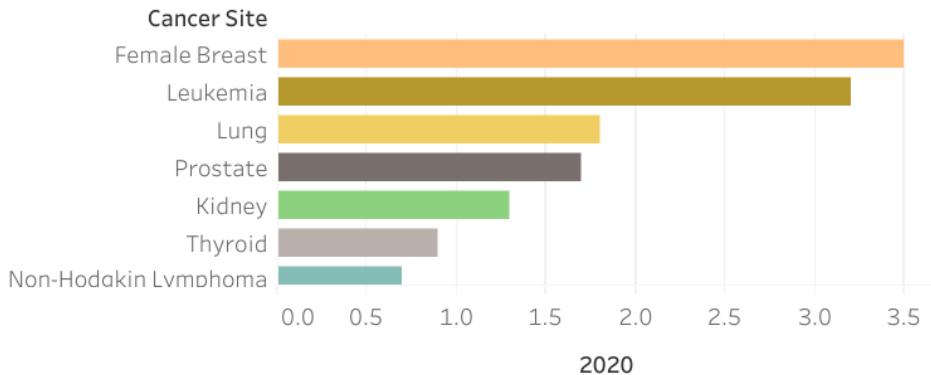
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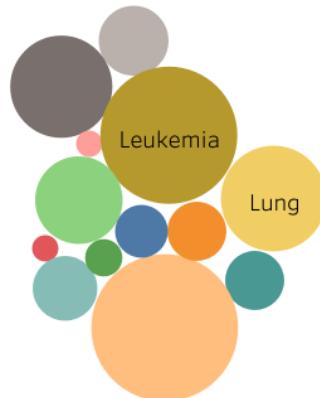
Analyzing Prescription Drug Expenses by Cancer Site in 2015



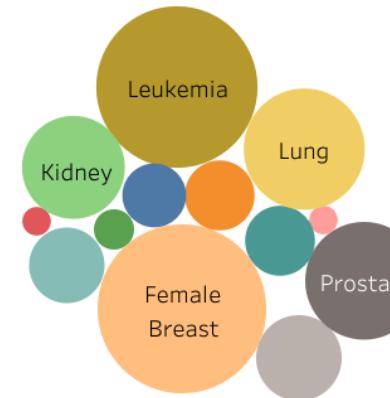
Analyzing Prescription Drug Expenses by Cancer Site in 2020



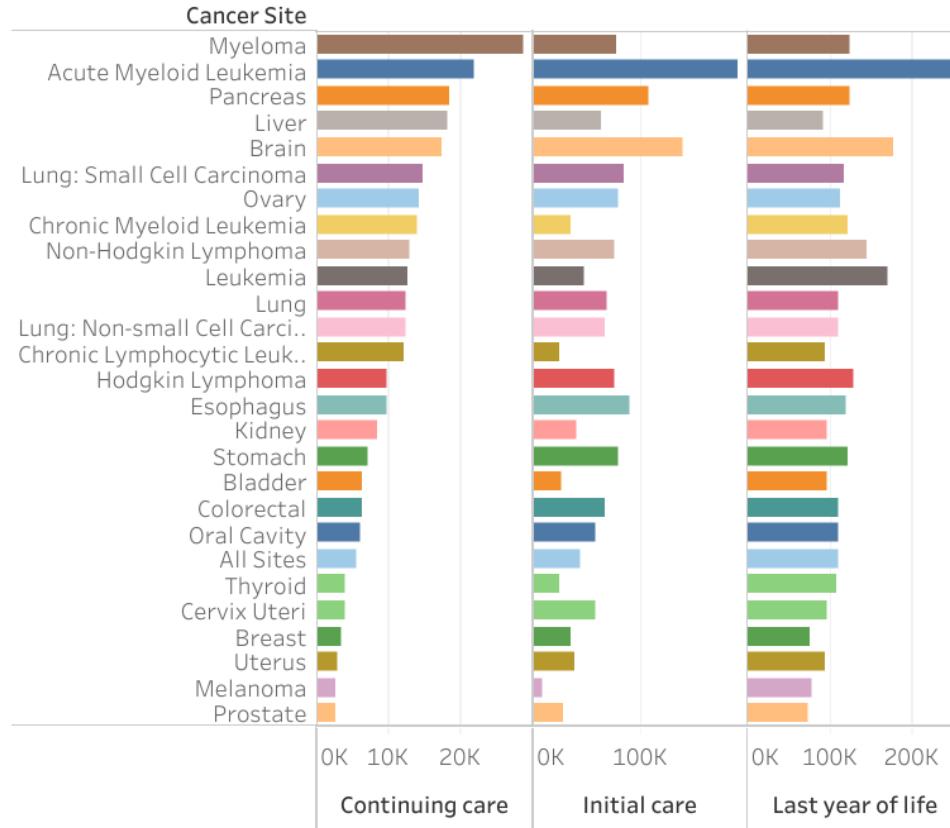
Expenditure Distribution for Prescription Drugs by Cancer Site in 2015



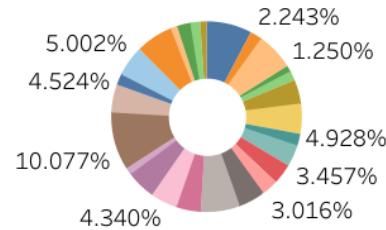
Expenditure Distribution for Prescription Drugs by Cancer Site in 2020



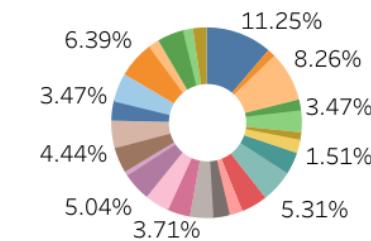
Cancer Costs by Site and Phase of Care: 2007-2013 Annualized Per-Patient Expenses in 2020 USD



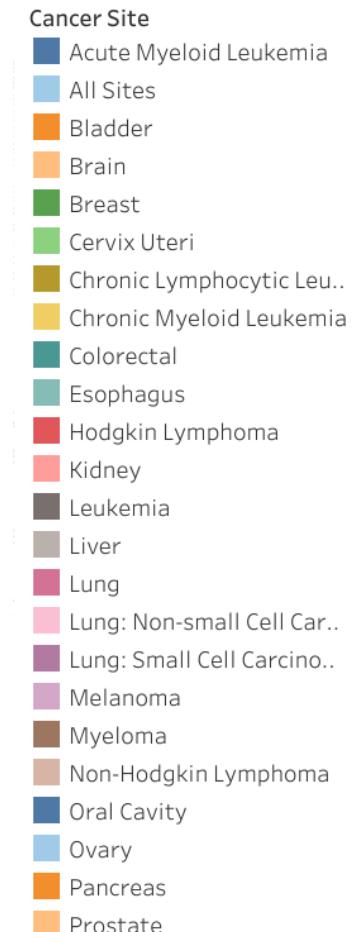
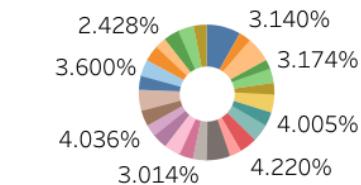
Distribution of Average Annual Medical Expenses per Patient for Continuing Care in USD



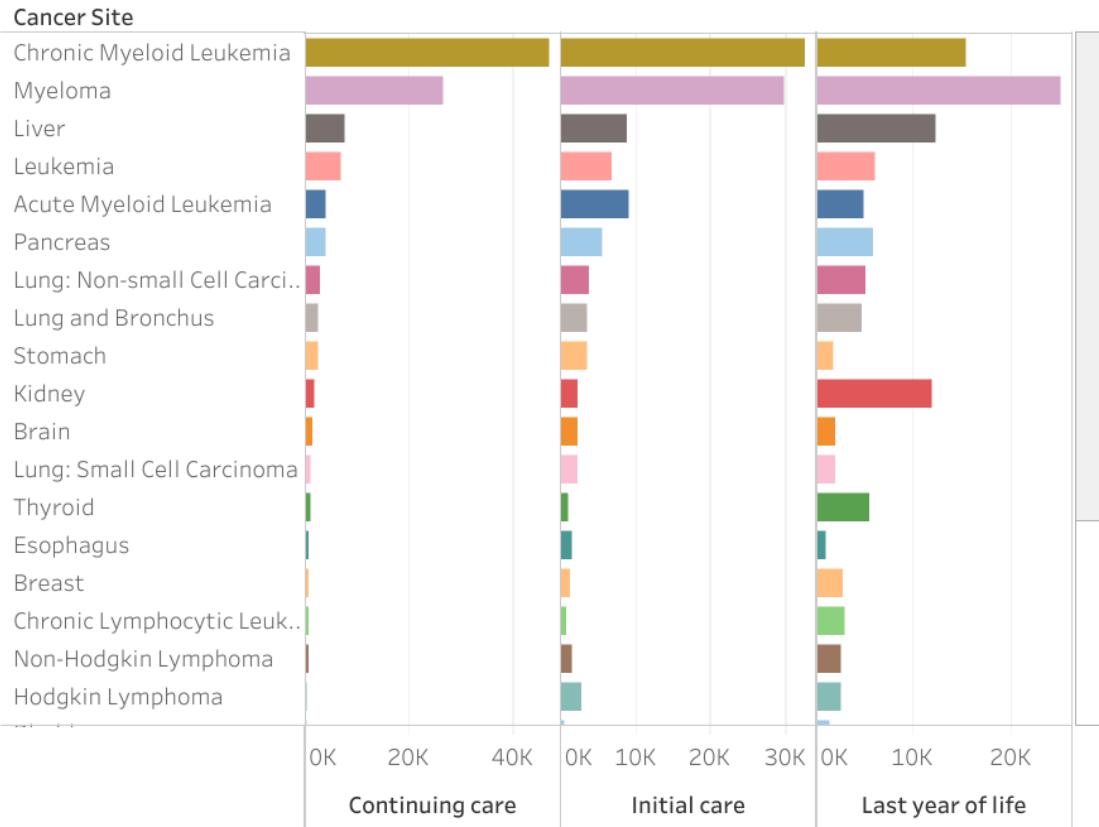
Distribution of Average Annual Medical Expenses per Patient for Initial Care in USD



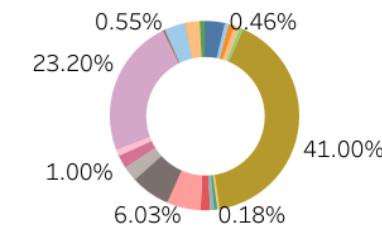
Distribution of Average Annual Medical Expenses per Patient for Last Year of Life in USD



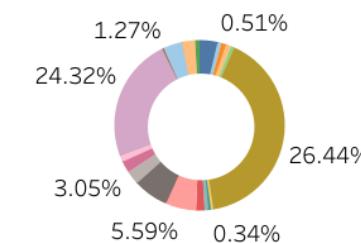
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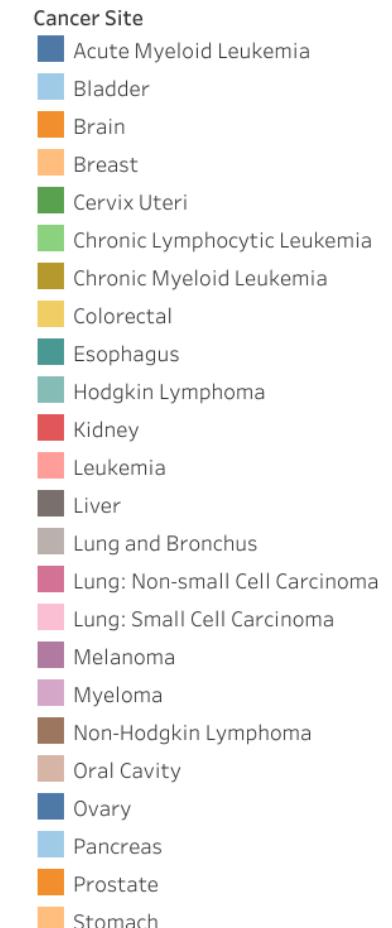
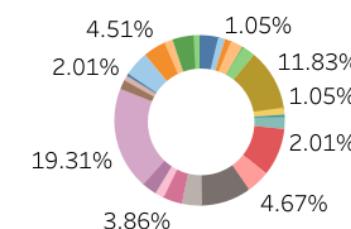
Per-Patient drug expenses for Continuing Care



Per-Patient drug expenses for Initial Care



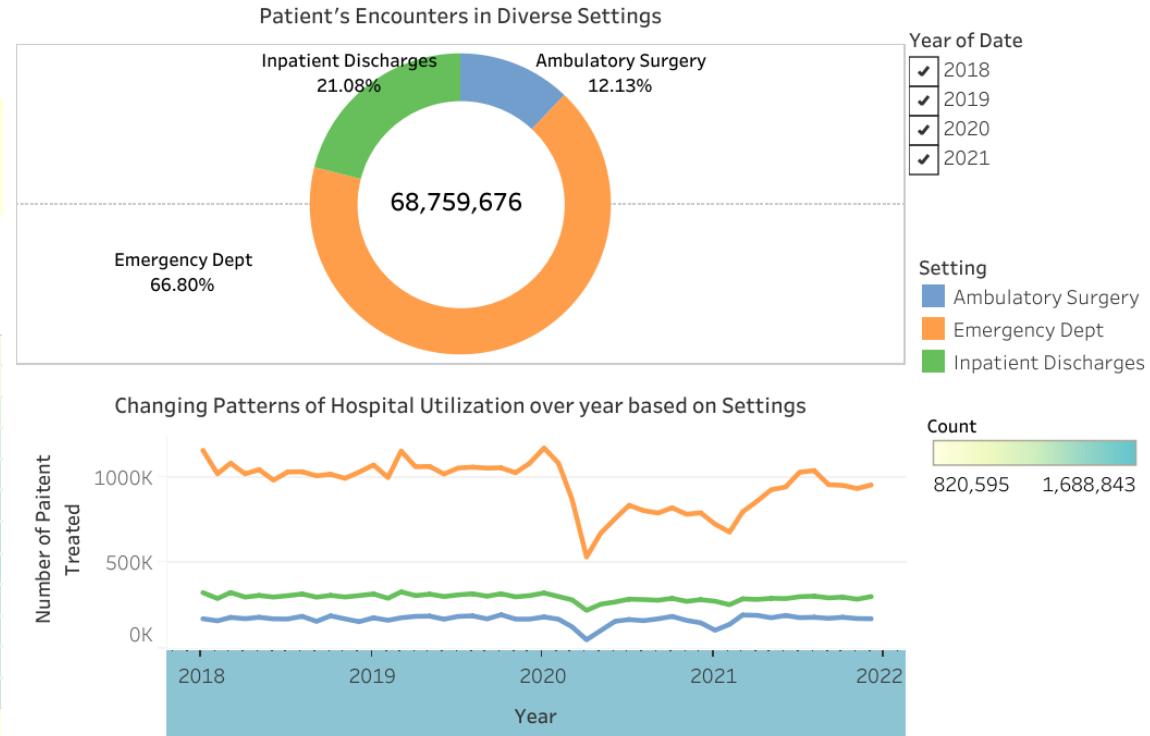
Per-Patient drug expenses for Last Year of Life Care



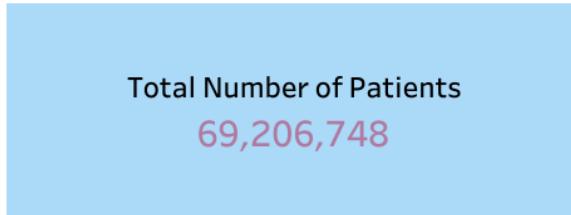
Effects of COVID-19 on Hospital Utilization Trends: Hospital Utilization Trends

Total Number of Patient Encountered				
68,759,676				
How many different Individual Hospital, Care Facility, Clinic or Surgery Center are there ?				
Facility Name : 471				
Monthly Count of Patient				
Month	2018	2019	2020	2021
January	1,666,022	1,579,535	1,688,843	1,120,226
February	1,483,506	1,466,448	1,566,479	1,088,096
March	1,600,539	1,672,788	1,291,239	1,294,184
April	1,504,250	1,567,349	820,595	1,350,755
May	1,546,002	1,579,279	1,047,157	1,409,913
June	1,466,489	1,503,283	1,199,998	1,437,768
July	1,521,113	1,564,289	1,304,176	1,522,016
August	1,548,633	1,578,540	1,264,530	1,537,023
September	1,476,634	1,541,568	1,256,836	1,438,853
October	1,528,270	1,581,609	1,312,687	1,445,493
November	1,477,591	1,509,429	1,234,044	1,407,366
December	1,505,514	1,571,538	1,239,143	1,442,038
Grand Total	18,324,563	18,715,655	15,225,727	16,493,731

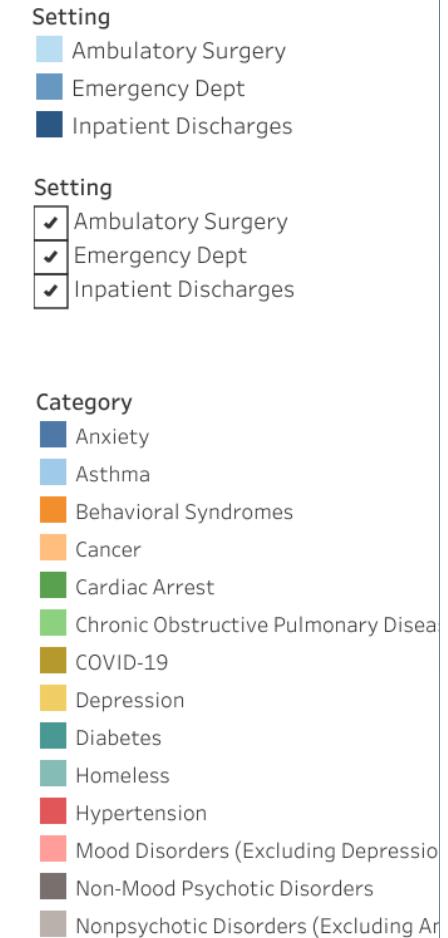
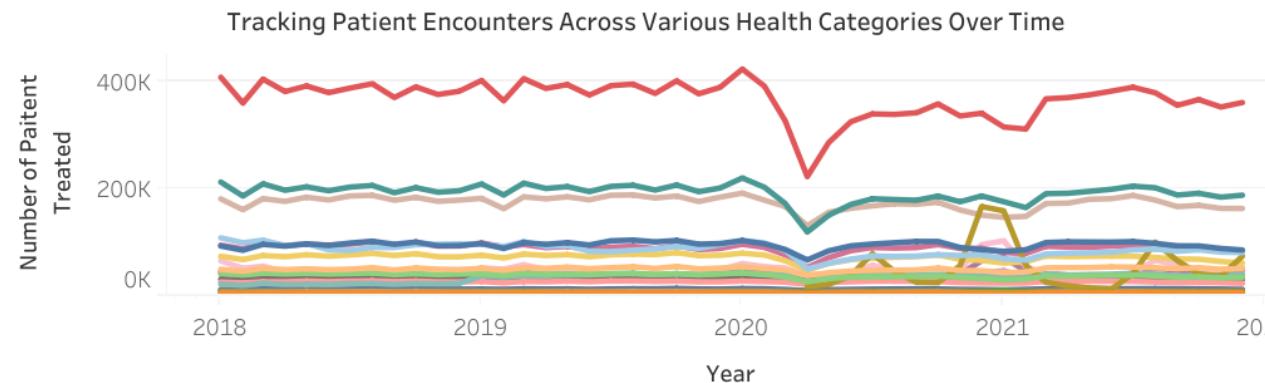
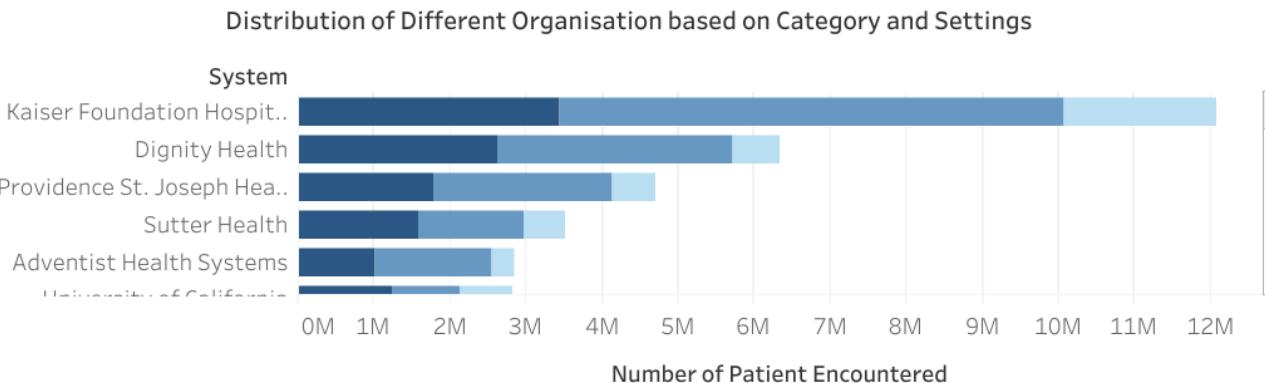
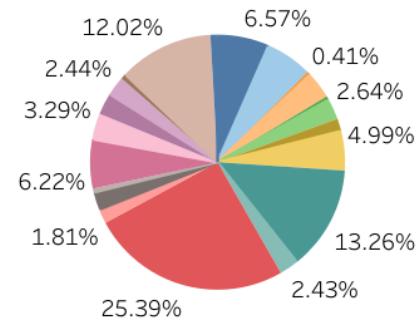
Hospital utilization Trends



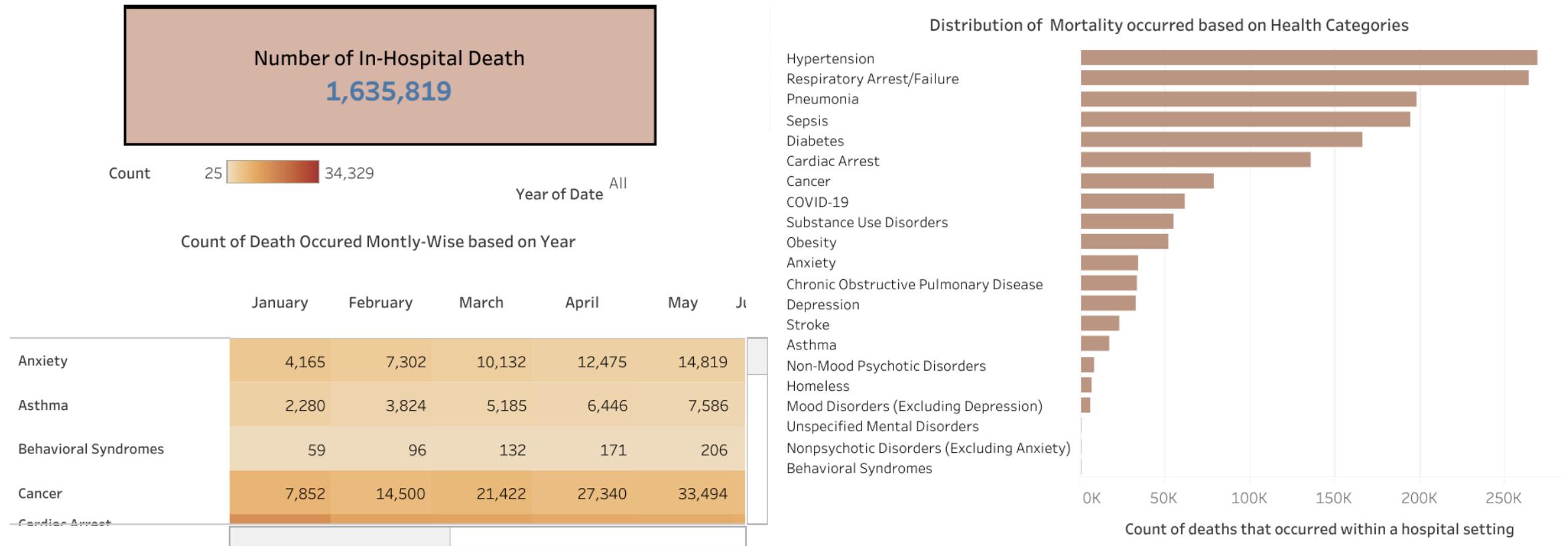
Utilization Trends by Health Category



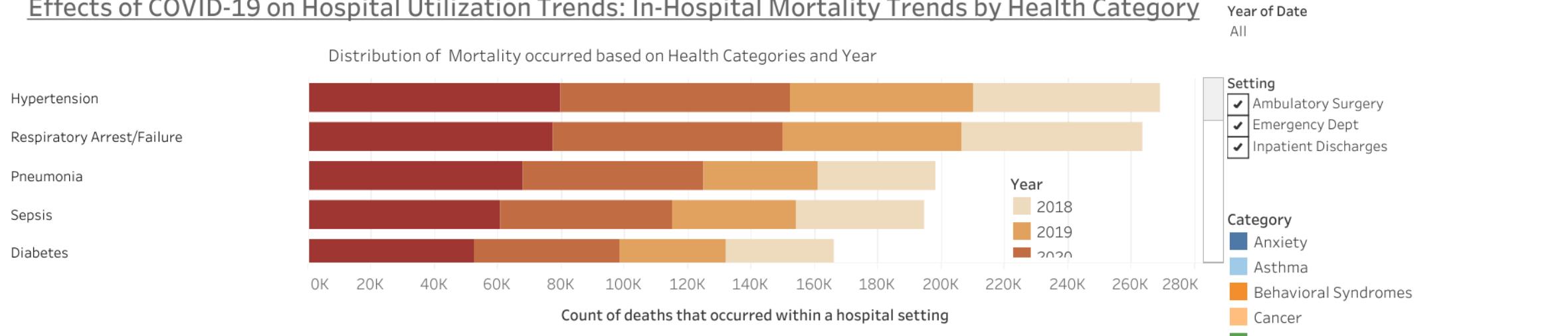
Proportion of patients grouped based on Health Categories



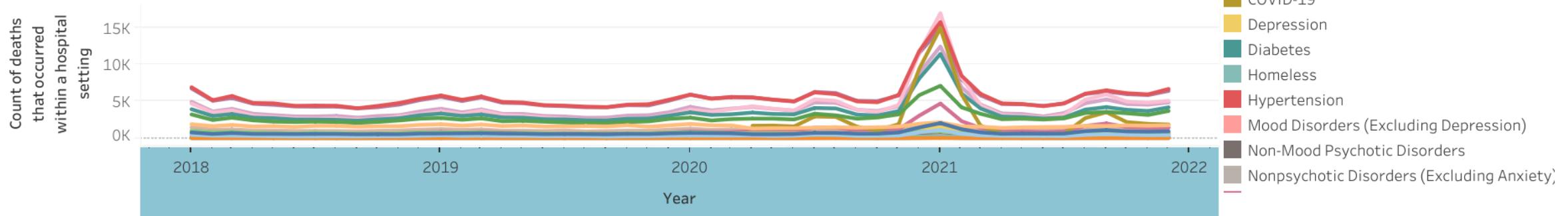
Effects of COVID-19 on Hospital Utilization Trends: In-Hospital Mortality Trends by Health Category



Effects of COVID-19 on Hospital Utilization Trends: In-Hospital Mortality Trends by Health Category

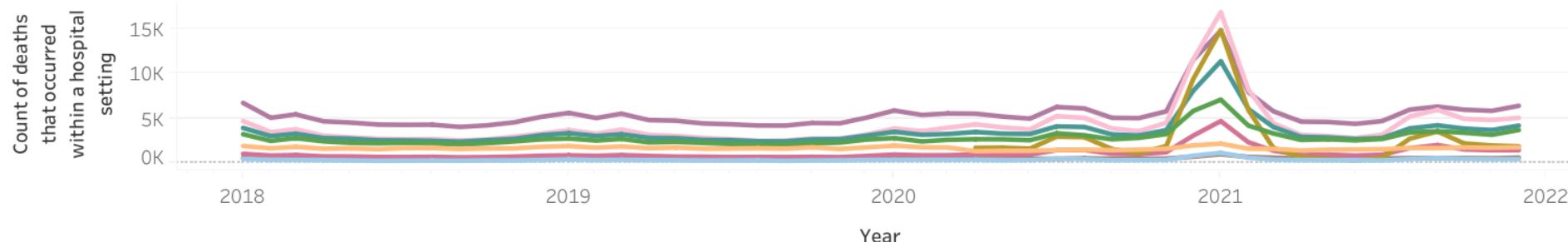


Trends in In-Hospital Mortality based on Health Categories



Effects of COVID-19 on Hospital Utilization Trends: In-Hospital Mortality Trends by Health Category

Trends in In-Hospital Mortality based on few Health Categories



Trends in In-Hospital Mortality based Cancer and COVID-19



Year of Date
All

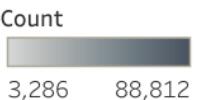
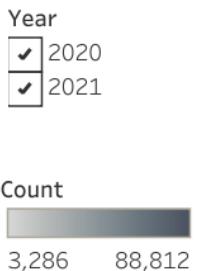
Setting
 Ambulatory Surgery
 Emergency Dept
 Inpatient Discharges

Category
 Asthma
 Cancer
 Cardiac Arrest
 COVID-19
 Diabetes
 Obesity

Year of Date
All

Setting
 Ambulatory Surgery
 Emergency Dept
 Inpatient Discharges

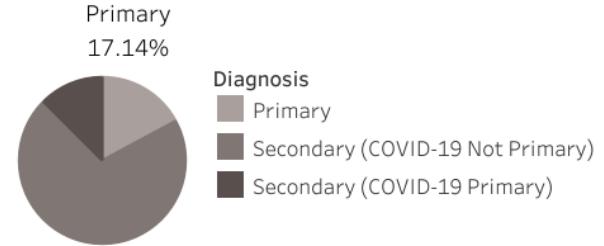
In-Hospital Mortality Trends by Diagnosis Type



Total Number of In-Hospital Deaths based on Diagnosis

Secondary (COVID-19 Primary) 12.51%

Primary 17.14%



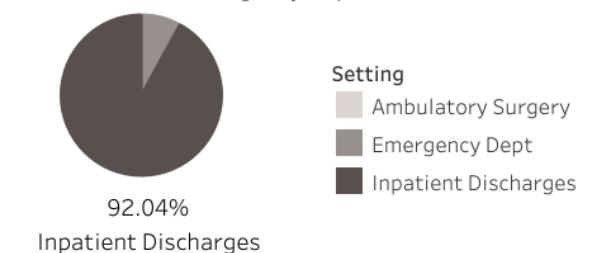
Number of In-Hospital Deaths Month Wise

Diagnosis	January	February	March	April	May	June
Primary	25,681	15,626	12,499	11,163	10,708	10,252
Secondary (COVID-19 Not Primary)	88,812	63,324	58,245	50,418	49,024	46,824
Secondary (COVID-19 Primary)	31,407	12,700	3,286	3,824	3,590	3,371
Grand Total						

Total Number of In-Hospital Deaths based on different Settings

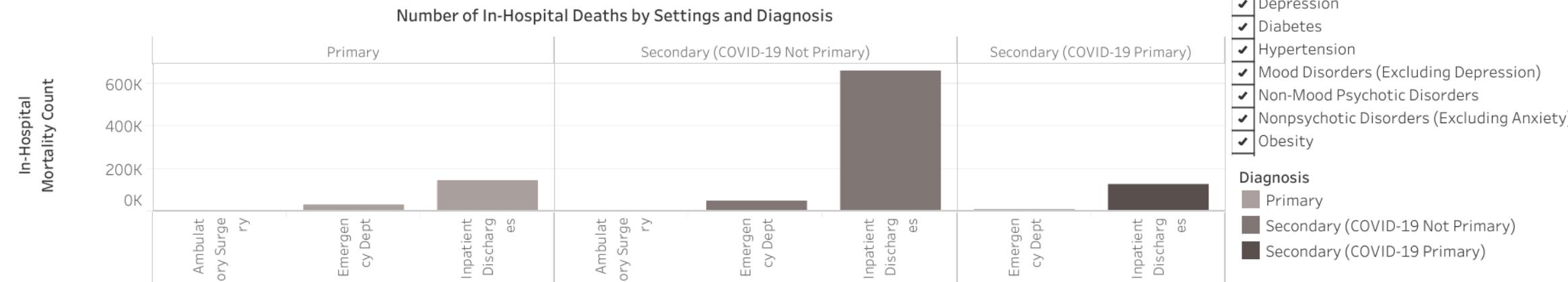
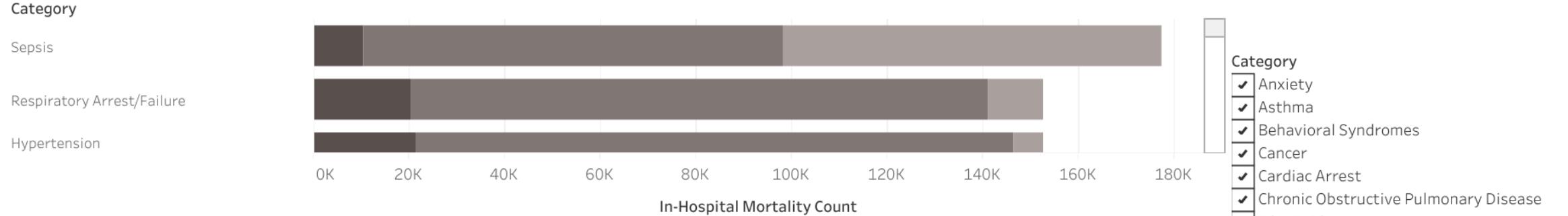
0.04%
Ambulatory Surgery

7.92%
Emergency Dept

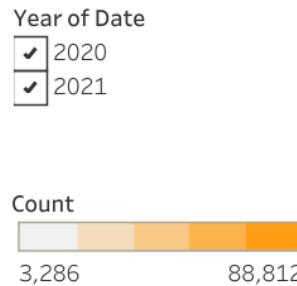
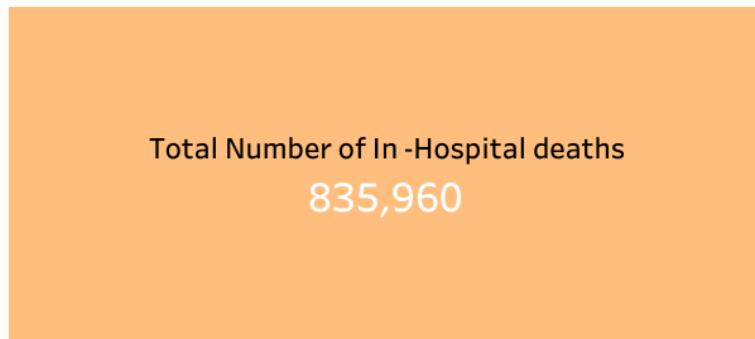


In-Hospital Mortality Trends by Diagnosis Type

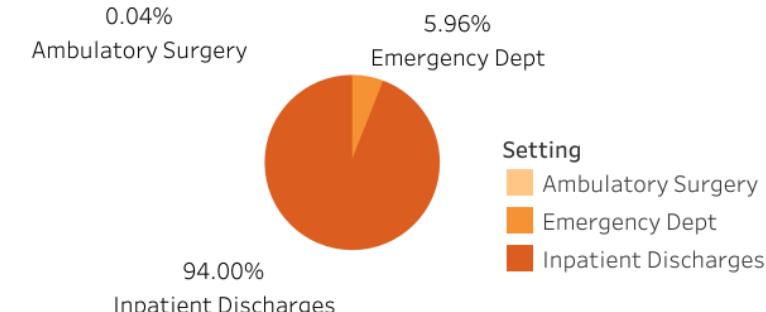
In-Hospital Mortality Trends based on Diagnosis Type



In-Hospital Mortality Trends by Secondary Diagnosis



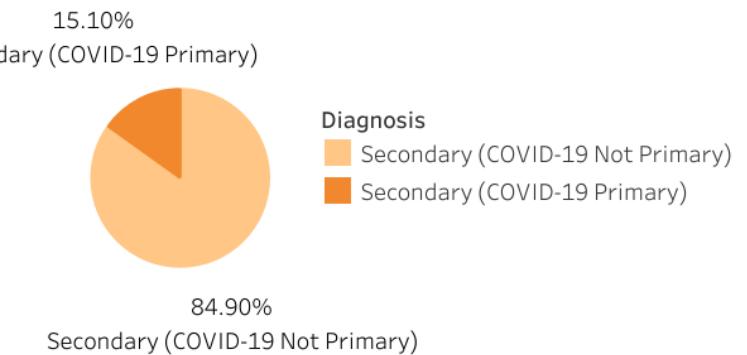
Total Number of In-Hospital Deaths based on different Settings by Secondary Diagnosis



Total Number of In-Hospital Deaths based on Monthly Wise

Diagnosis	Month				
	January	February	March	April	May
Secondary (COVID-19 Not Primary)	88,812	63,324	58,245	50,418	49,
Secondary (COVID-19 Primary)	31,407	12,700	3,286	3,824	3,

Total Number of In-Hospital Deaths based on different Secondary Diagnosis



In-Hospital Mortality Trends by Secondary Diagnosis

In-Hospital Mortality Trends based on Health Category and Secondary Diagnosis

Category

Sepsis



Respiratory Arrest/Failure



Hypertension



Pneumonia



Diabetes



Cardiac Arrest



Cancer



Obesity



Other Health Conditions



In-Hospital Mortality Count

In-Hospital Mortality Trends by Secondary Diagnosis

Count

2020

2021

2022

Year

Setting

- Ambulatory Surgery
- Emergency Dept
- Inpatient Discharges

Category

- Anxiety
- Asthma
- Behavioral Syndromes
- Cancer
- Cardiac Arrest
- Chronic Obstructive Pulmonary Disease
- COVID-19
- Depression
- Diabetes
- Hypertension

Year of Date

- 2020
- 2021

Diagnosis

- Secondary (COVID-19 Not Primary)
- Secondary (COVID-19 Primary)

Geographic Analysis of Advanced Stage Breast Cancer in Women 40 Years and Older: A Study of Medical Service Study Areas and California Counties from 2010-2014

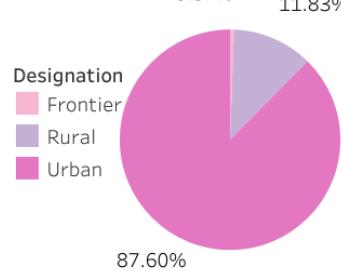
Advanced Stage Breast Cancer among Women 40 Years and Older, by Medical Service Study Area (MSSA) and by California Counties, 2010-2014

Total Breast Cancer Cases among Women 40 Years and Older,
by Medical Service Study Area (MSSA) and by California Counties, 2010-2014

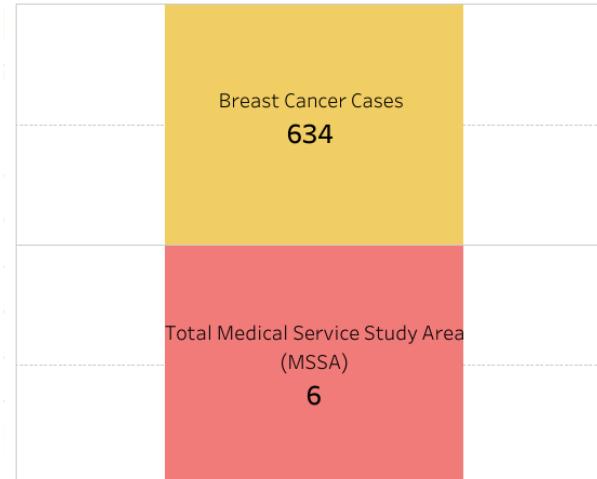
136,092

Measure Names
 White (%)
 Hispanic (%)
 Other/Multi (%)
 Other (%)
 Asian/Pi (%)

Breast Cancer Cases based in Designation

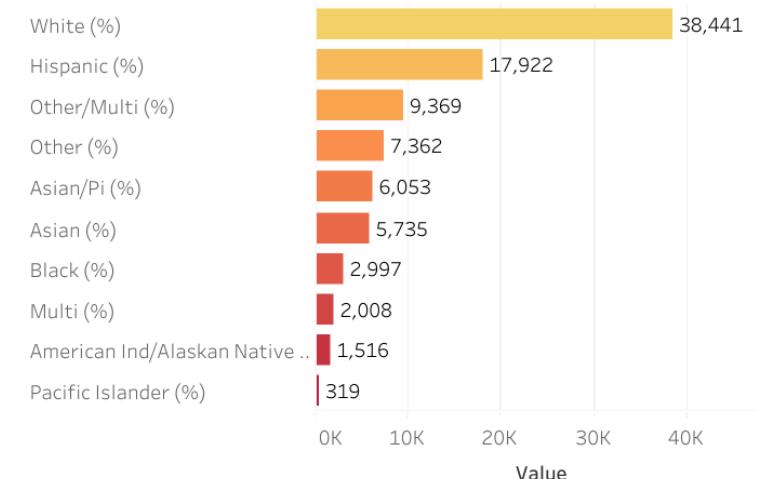


Breast Cancer Cases and MSSA's based on County

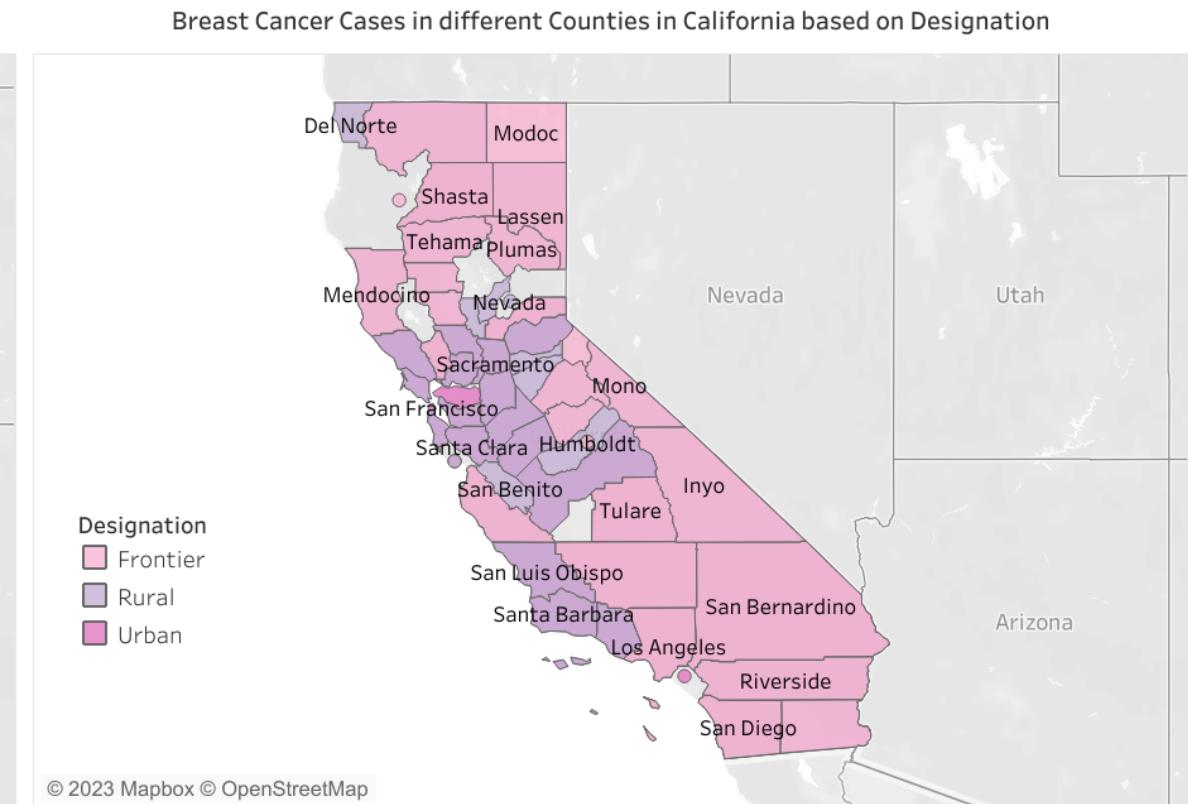
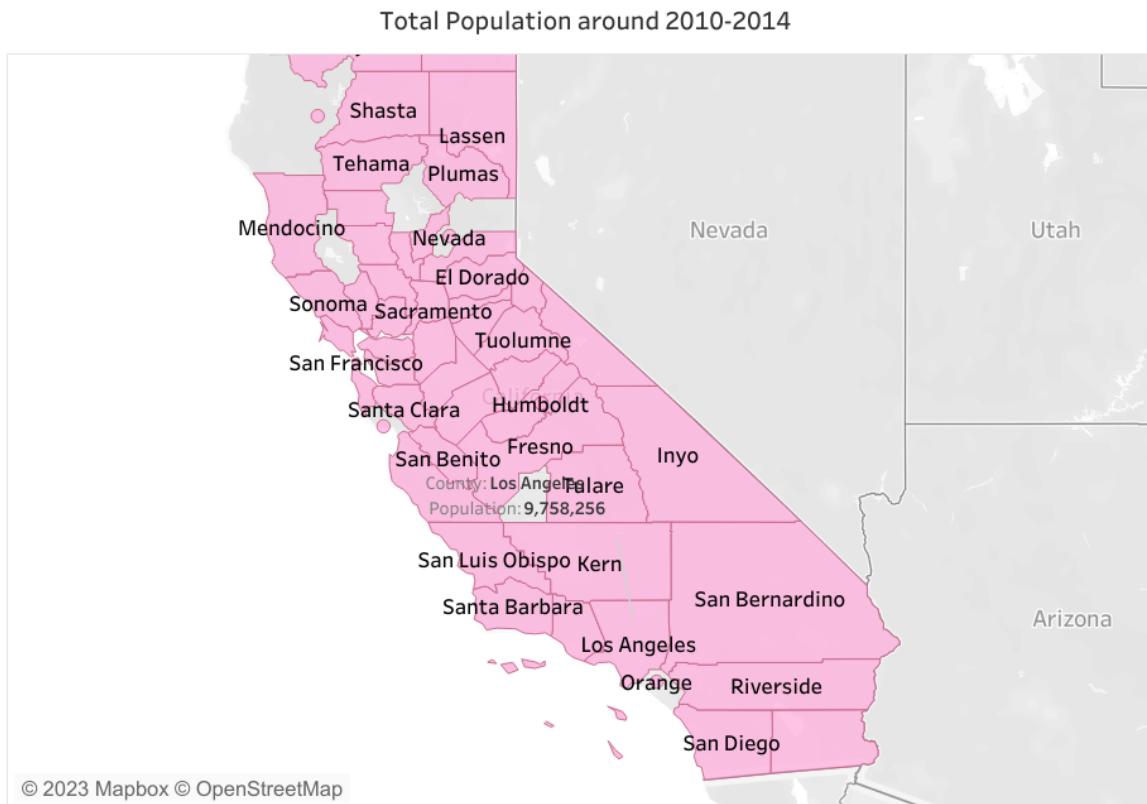


County
Merced

Count of cases based on Ethnicity



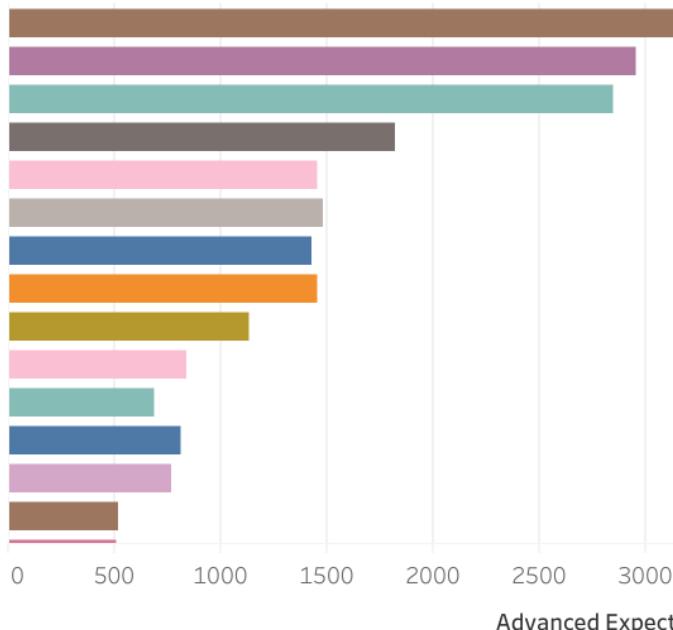
Advanced Stage Breast Cancer among Women 40 Years and Older, by Medical Service Study Area (MSSA) and by California Counties, 2010-2014



Advanced Stage Breast Cancer among Women 40 Years and Older, by Medical Service Study Area (MSSA) and by California Counties, 2010-2014

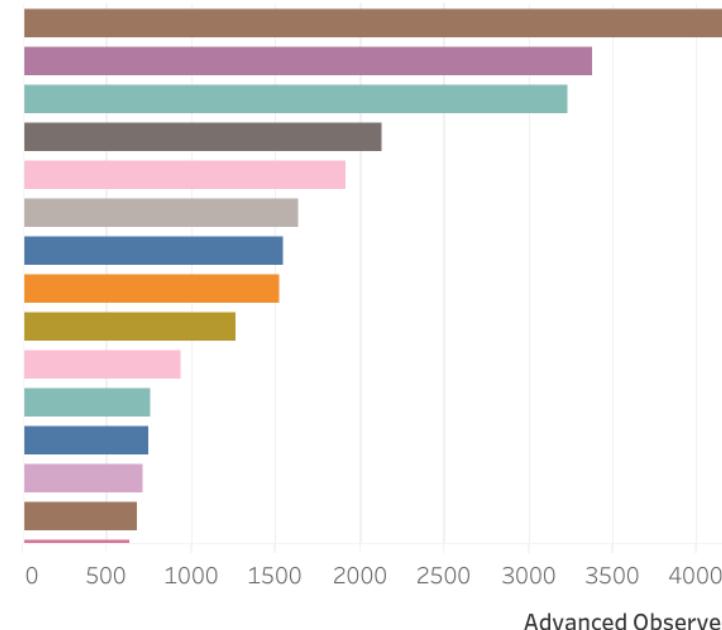
Expected for different Counties

County
 Los Angeles
 San Diego
 Orange
 Riverside
 San Bernardino
 Sacramento
 Alameda
 Santa Clara
 Contra Costa
 Ventura
 Fresno
 San Mateo
 San Francisco
 San Joaquin
 ..



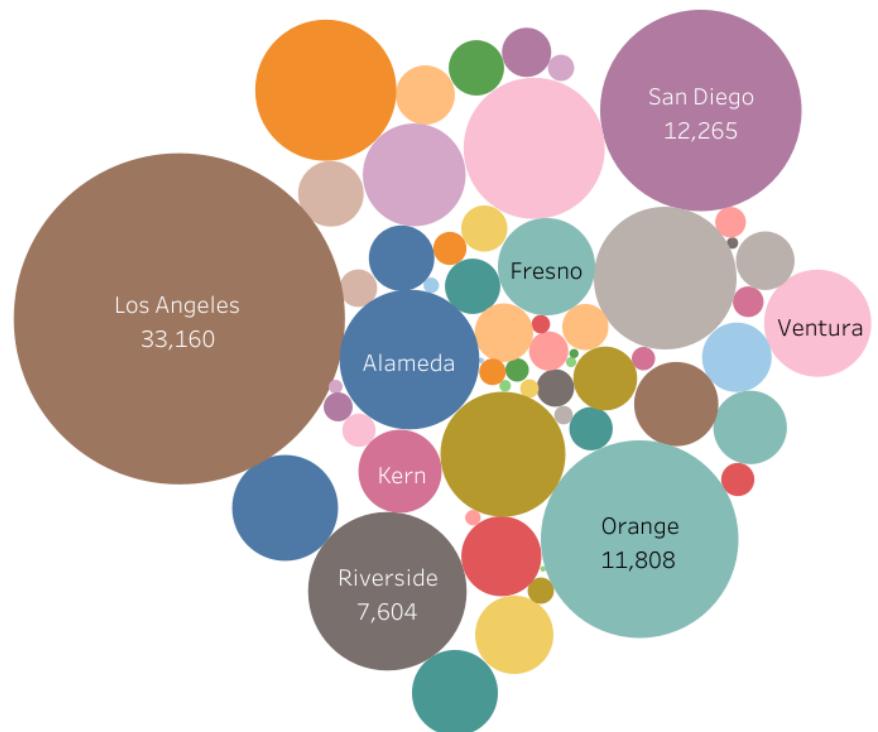
Observed Cases for different Counties

County
 Los Angeles
 San Diego
 Orange
 Riverside
 San Bernardino
 Sacramento
 Alameda
 Santa Clara
 Contra Costa
 Ventura
 Fresno
 San Mateo
 San Francisco
 San Joaquin
 ..



- County
 Alameda
 Alpine
 Amador
 Butte
 Calaveras
 Colusa
 Contra Costa
 Del Norte
 El Dorado
 Fresno
 Glenn
 Humboldt
 Imperial
 Inyo
 Kern
 Kings
 Lake
 Lassen
 Los Angeles
 Madera
 Marin
 Mariposa
 Mendocino
 Merced

Total Number of Cases in different Counties



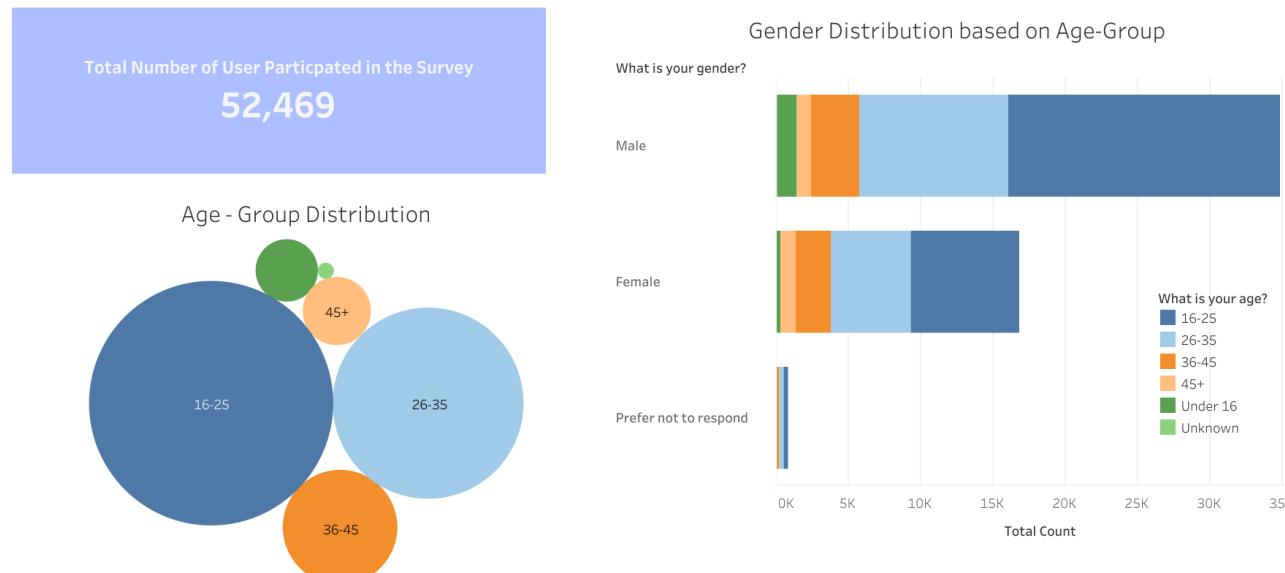
- County
- Alameda
 - Alpine
 - Amador
 - Butte
 - Calaveras
 - Colusa
 - Contra Costa
 - Del Norte
 - El Dorado
 - Fresno
 - Glenn
 - Humboldt
 - Imperial
 - Inyo
 - Kern
 - Kings
 - Lake
 - Lassen
 - Los Angeles
 - Madera
 - Marin
 - Mariposa
 - Nevada

Assessing the Impact of COVID-19 on General Population Health Services: Results from a 2020 Survey

Assessing the Impact of COVID-19 on General Population Health Services: Results from a 2020 Survey



Premise General Population COVID-19 Health Services Disruption Survey 2020



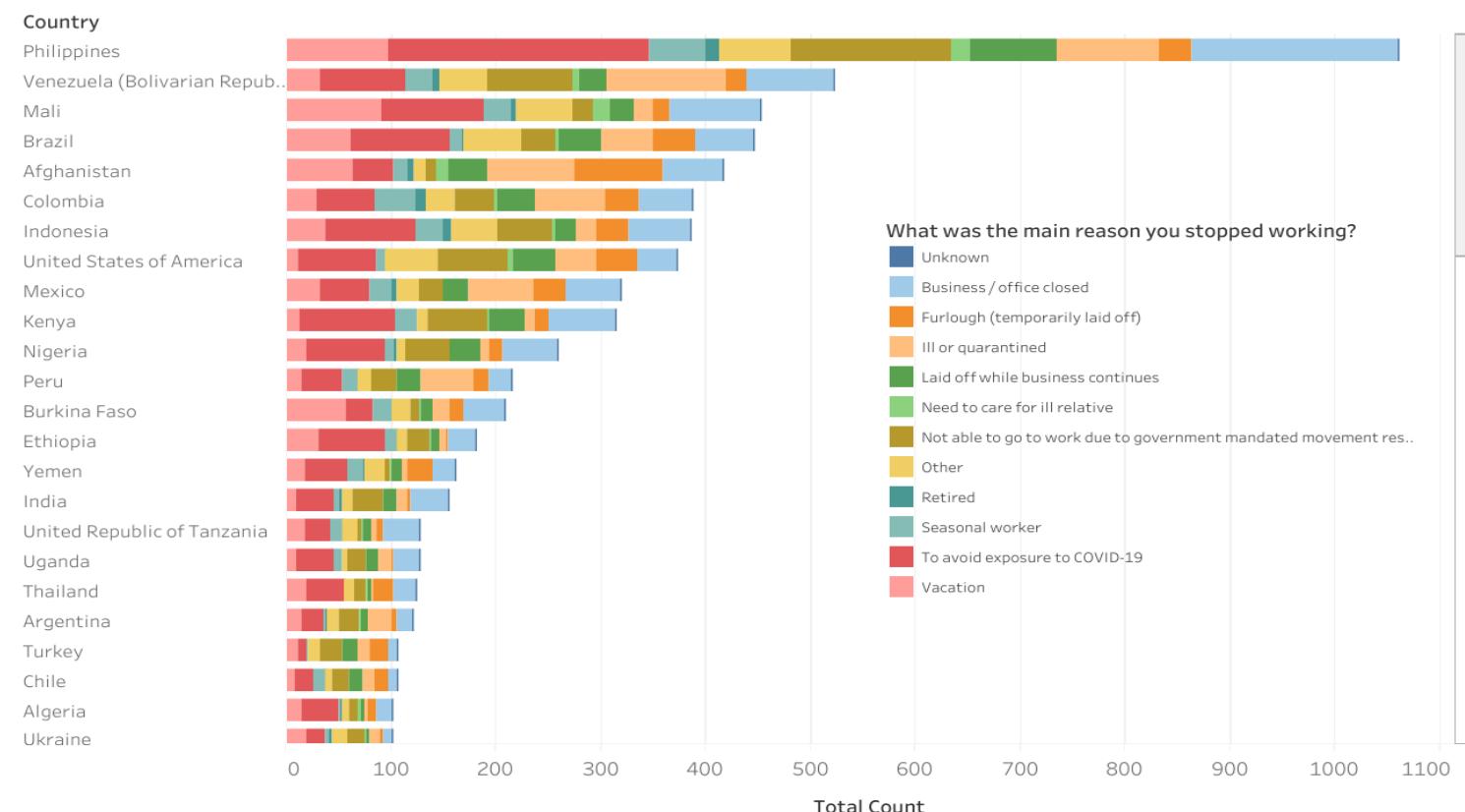
Assessing the Impact of COVID-19 on General Population Health Services: Results from a 2020 Survey



Understanding the Factors Behind Workforce Attrition



Understanding the Factors Behind Workforce Attrition Country-Wise



Assessing the Impact of COVID-19 on General Population Health Services: Results from a 2020 Survey

Premise General Population COVID-19..

Factors's Behind Workforce Attrition

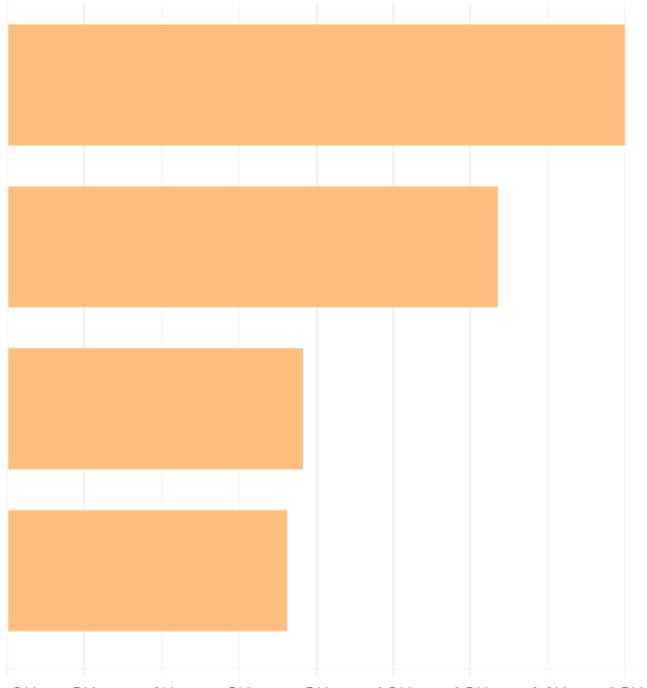
Breakdown of different Employment Status

Survey Areas and its Weight Country-Wise

Exploring the Factors Behind Medication Non-..

Assessing Employment Situation

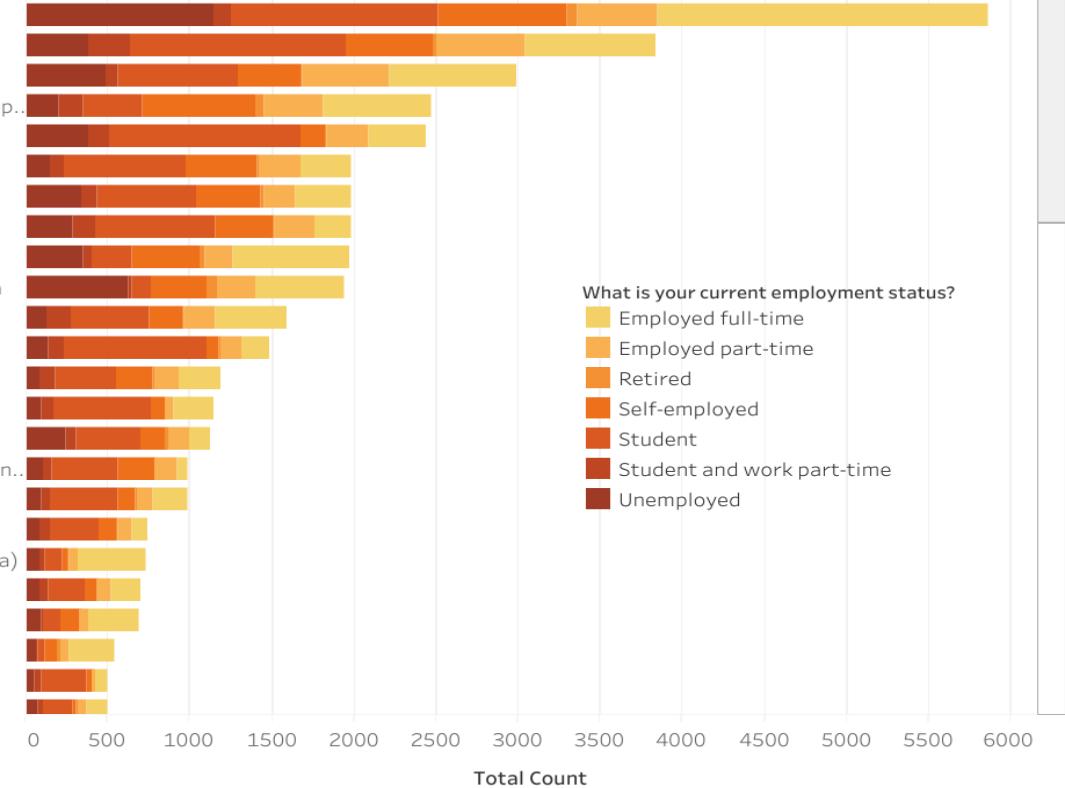
What is your current employment status?



Assessing Employment Situation Country-Wise

Country

Philippines
Afghanistan
Indonesia
Venezuela (Bolivarian Rep.)
Mali
Nigeria
Colombia
Kenya
Brazil
United States of America
Mexico
Burkina Faso
Peru
Ethiopia
Yemen
United Republic of Tanzan...
India
Uganda
Taiwan (Province of China)
Argentina
Thailand
Ukraine
Mozambique
Algeria



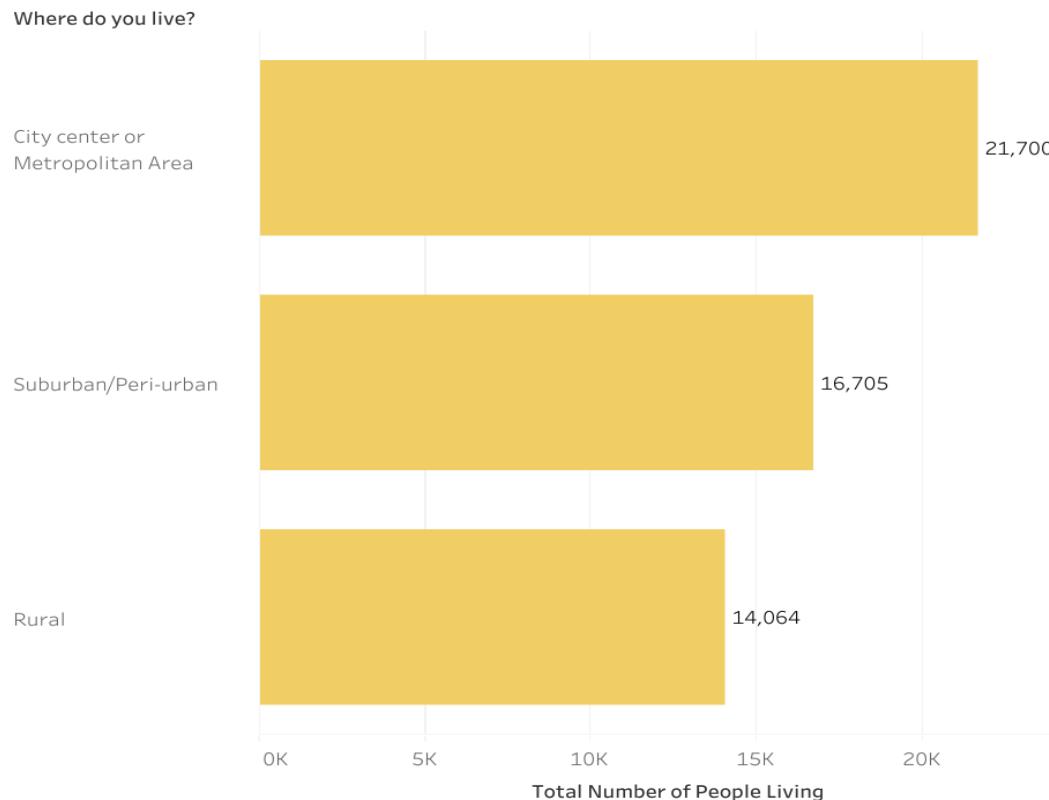
What is your current employment status?

- Employed full-time
- Employed part-time
- Retired
- Self-employed
- Student
- Student and work part-time
- Unemployed

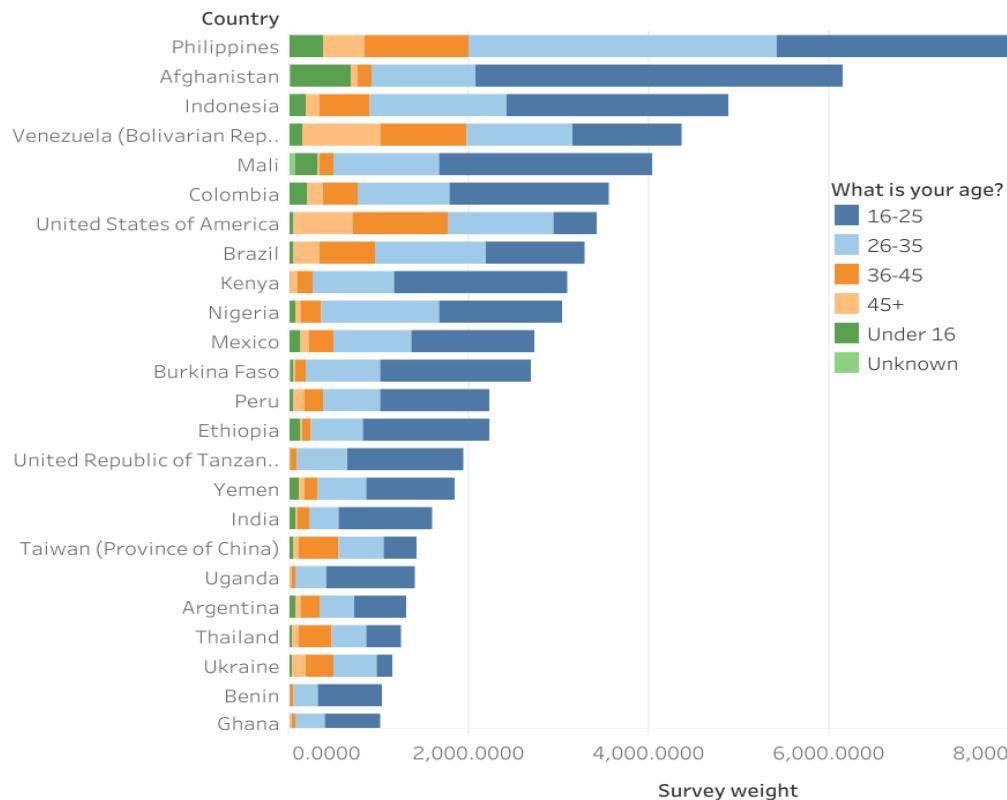
Assessing the Impact of COVID-19 on General Population Health Services: Results from a 2020 Survey



A survey to determine the geographical distribution of Areas



Suvey Weight based on Countries



Assessing the Impact of COVID-19 on General Population Health Services: Results from a 2020 Survey

Factors's Behind Workforce Attrition

Breakdown of different Employment Status

Survey Areas and its Weight Country-Wise

Exploring the Factors Behind Medication Non-Adherence

What was the reason you were not able to see a health provider during December-February?

What was the reason you were not able to see a health provider during December-February?

Lack of money



What was the reason you missed a dose of your medication since March?

What was the reason you were not able to see a health provider since March?

Unknown



Health facility closed

Turned away from health facility

Treatment or tests unavailable

Lack of money

No transportation

Unable to access due to lockdown restrictions

Fear of being infected with COVID-19

0
500
1000
1500
Count

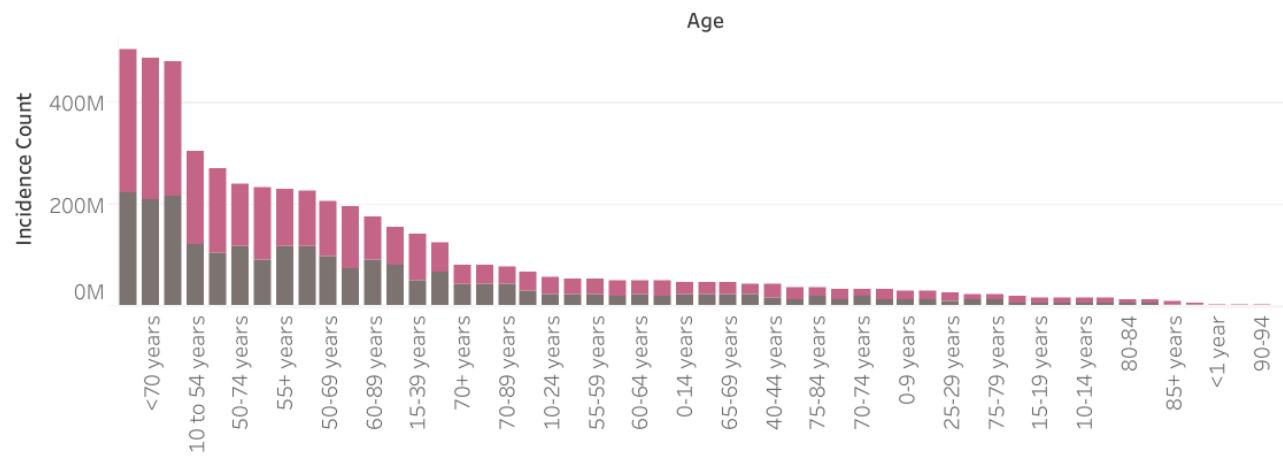
0K
1K
2K
3K
4K
5K
6K
Count

The Global Burden of Cancer: Understanding the Impact on Health and Society

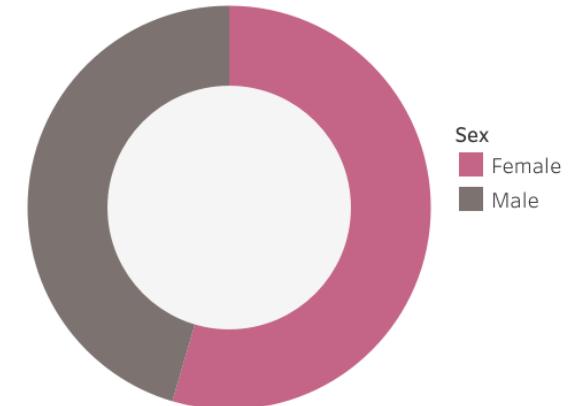
The Global Burden of Cancer: Understanding the Impact on Health and Society

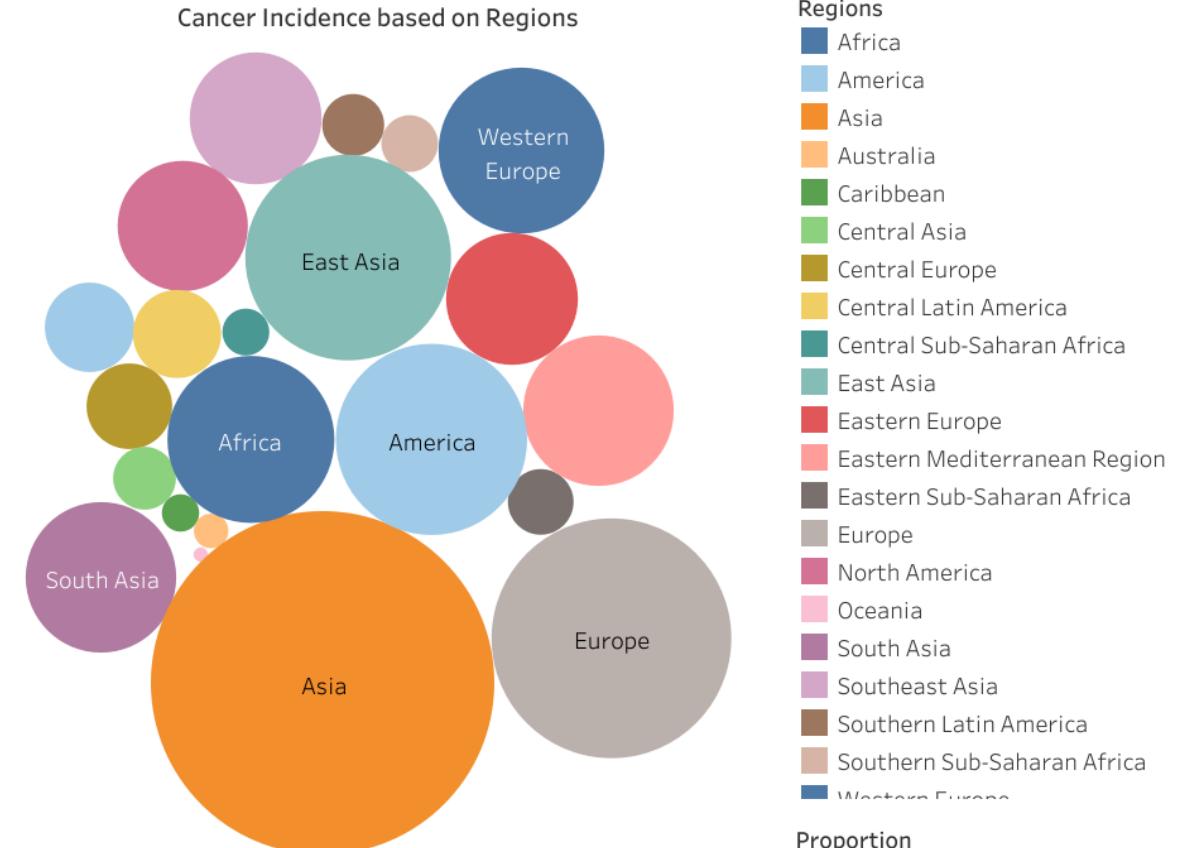
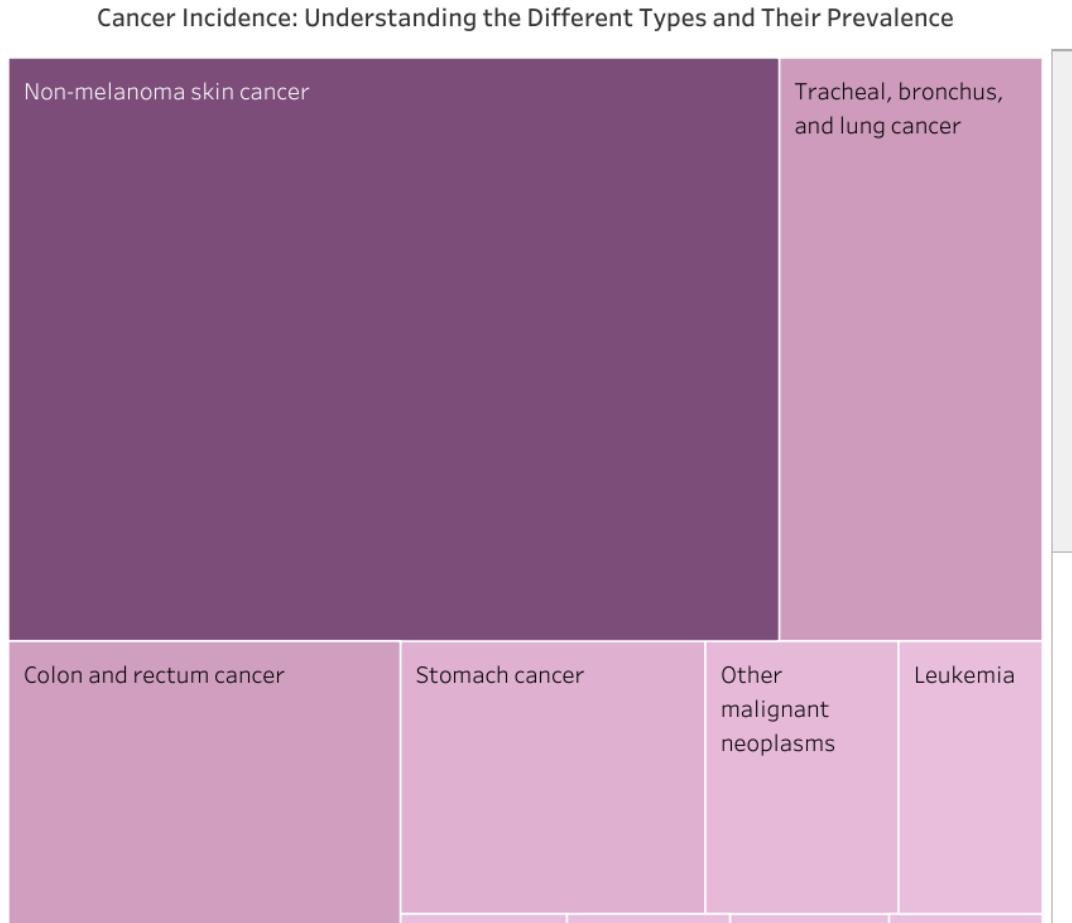
Total Number of Cancer Cases Globally in 2019
5,314,217,450

Distribution of Cancer Incidence based on Age



Examining the Gender Disparities in Total Cancer Cases Worldwide

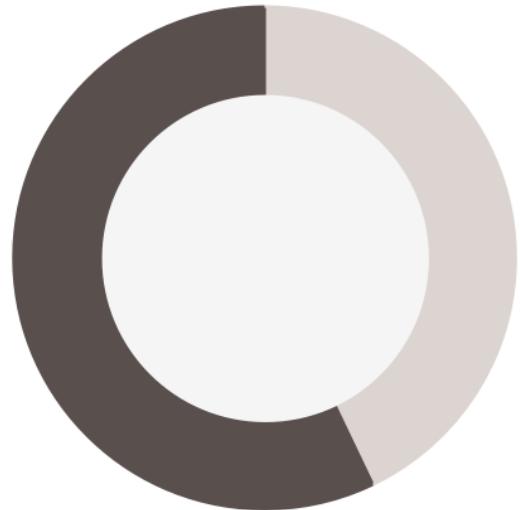




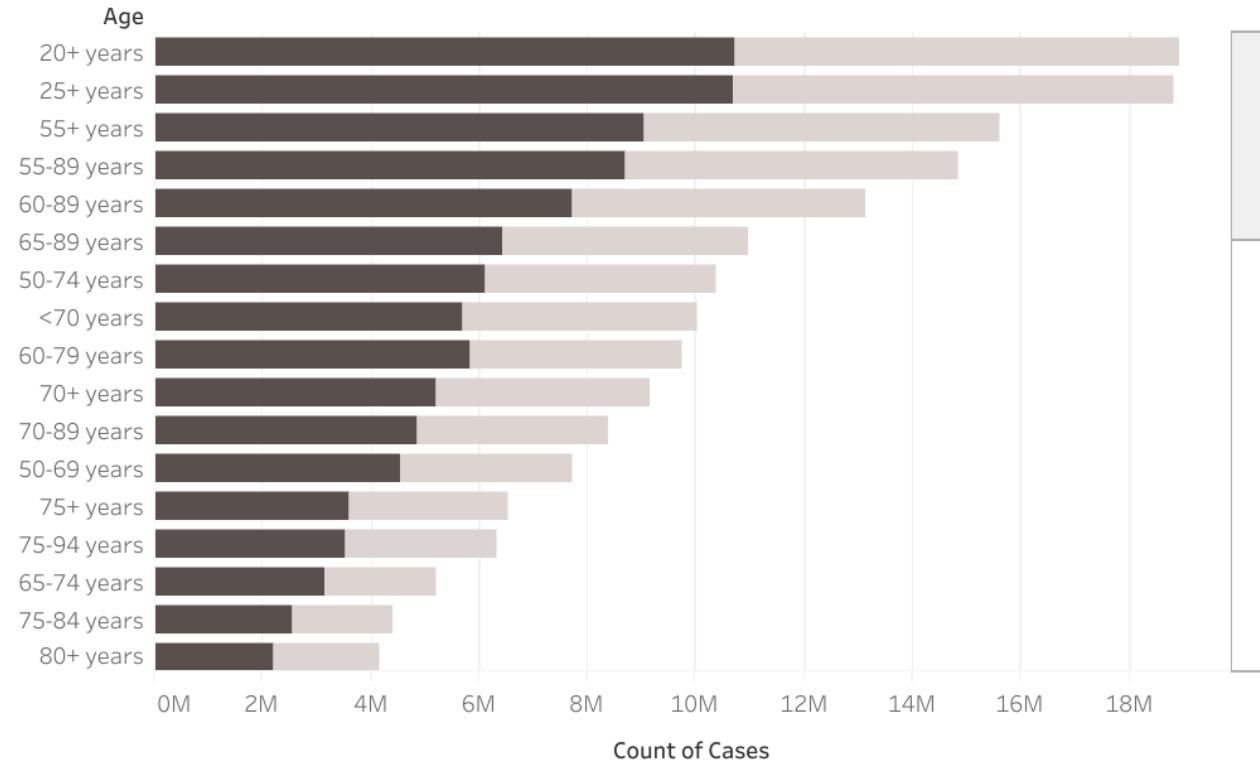
Global Cancer Mortality: Analyzing the Total Number of Deaths in 2019

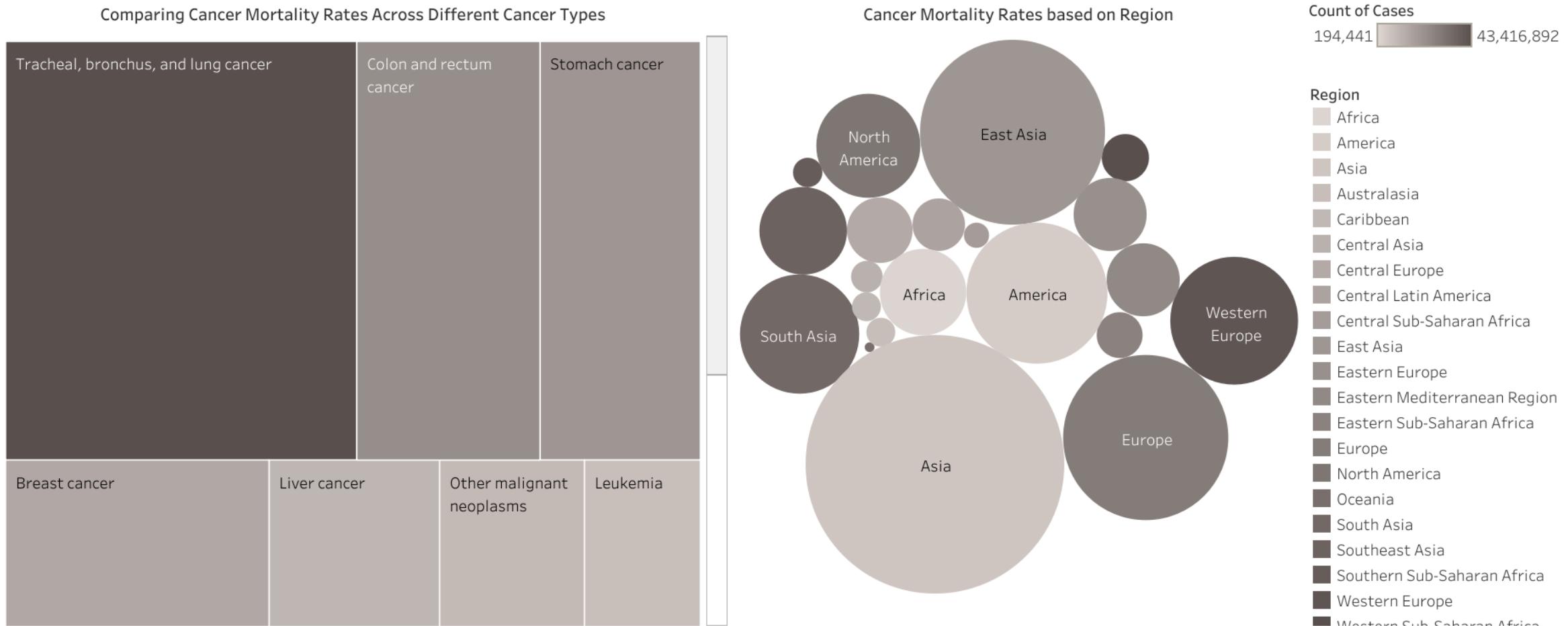
Total number of deaths reported
208,477,841

Proportion of Gender Disparities in Total Cancer Mortality Rate Worldwide



Mortality Rate based on Age and Sex

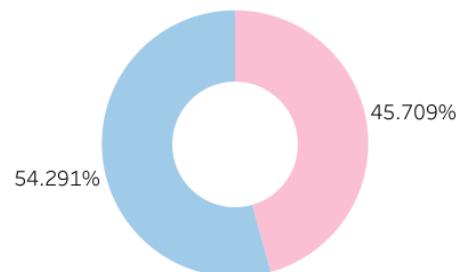




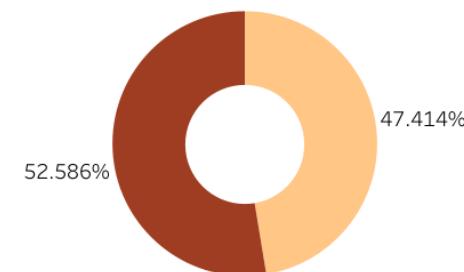
Mapping the Burden of Cancer: A State-by-State Analysis of Cancer Incidence and Mortality in the US

Anticipating the Burden of Cancer in 2023: Projections for New Cases and Impact on Patients and Society

Proportion of Estimated New Cases by Gender



Proportion of Estimated Death Cases by Gender



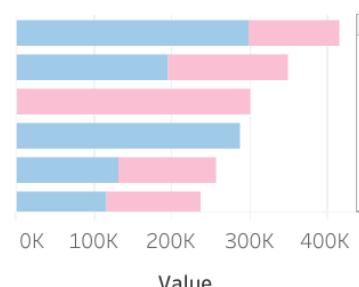
Gender
Female
Male

Gender
Female
Male

Projected Rise in Cancer Cases: A Look at Estimated Numbers for 2023 based on Gender

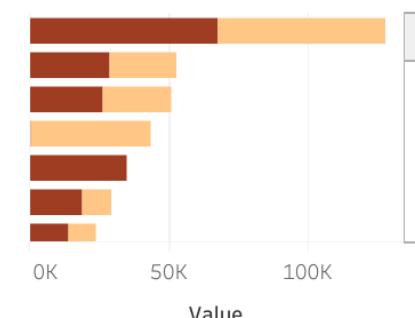
Cancer Type

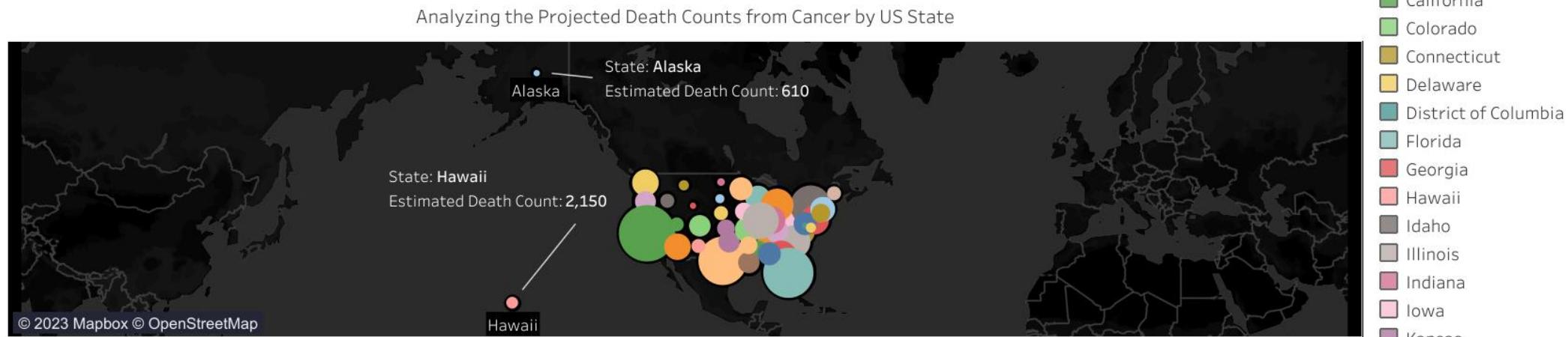
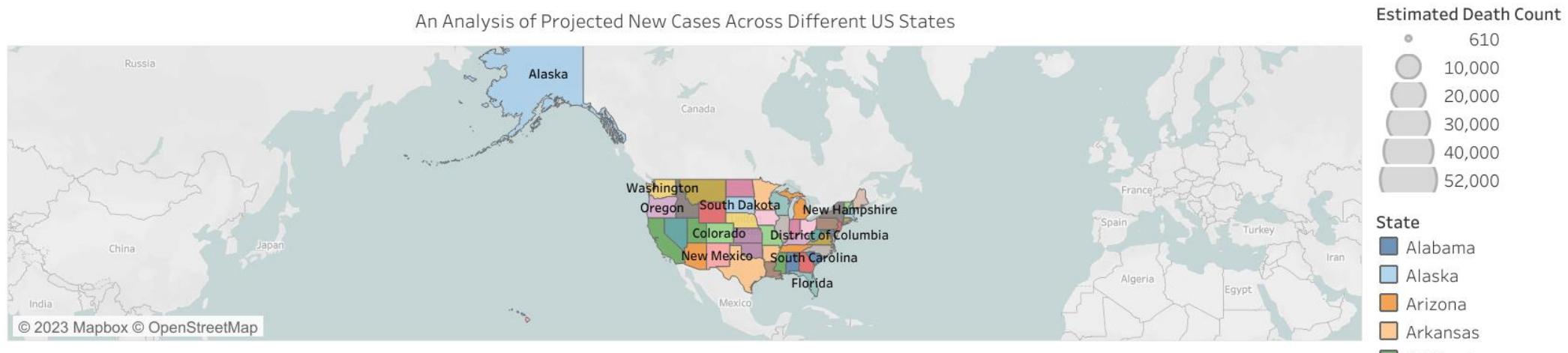
- Genital system
- Digestive system
- Breast
- Prostate
- Respiratory system
- Lung and bronchus



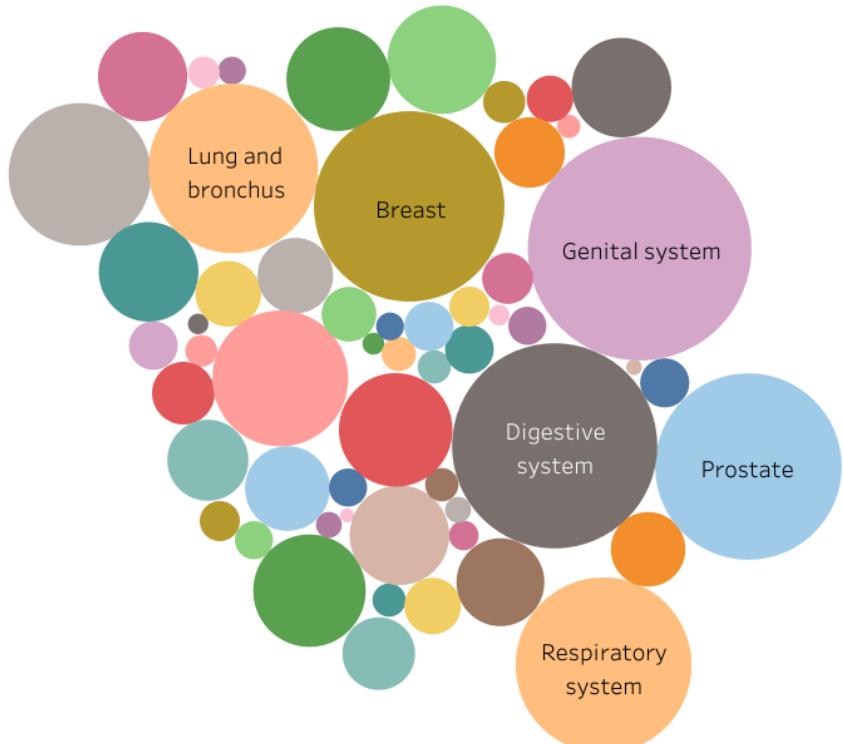
Cancer Type

- Lung and bronchus
- Colorectum
- Pancreas
- Breast
- Prostate
- Liver and intrahepatic bile duct
- Leukemia

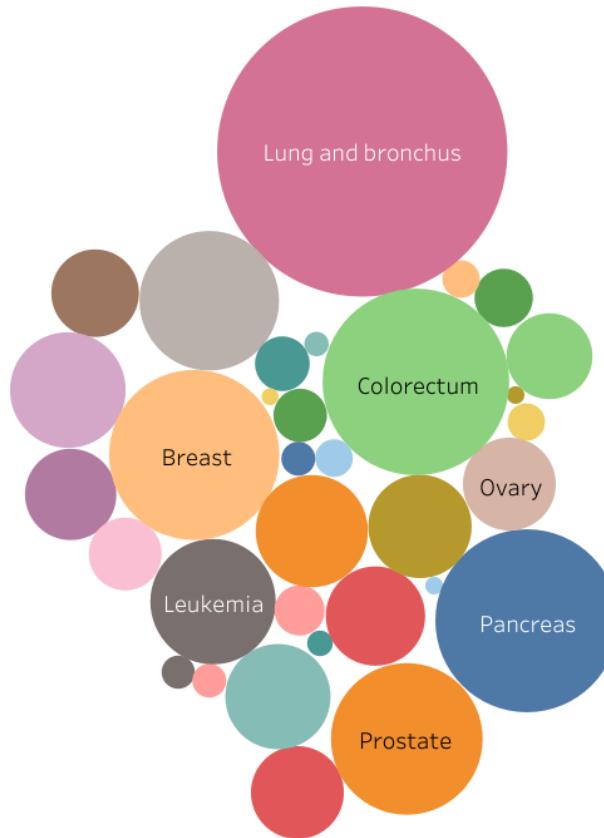




Estimating the Toll of Cancer: Projected Estimated New Counts by Cancer Type in the Coming Year

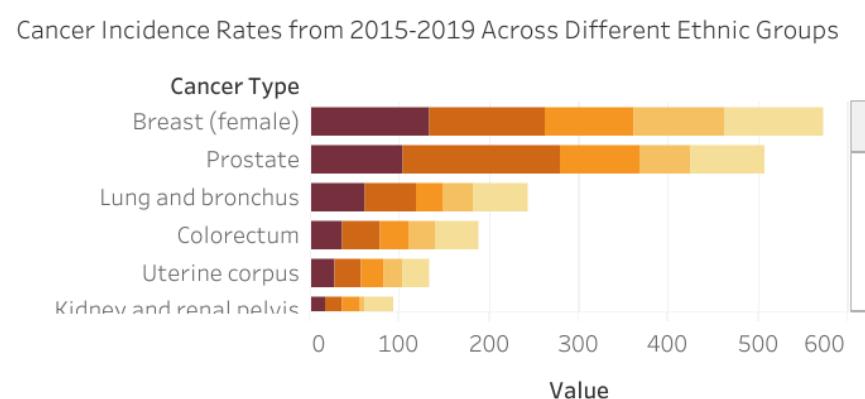
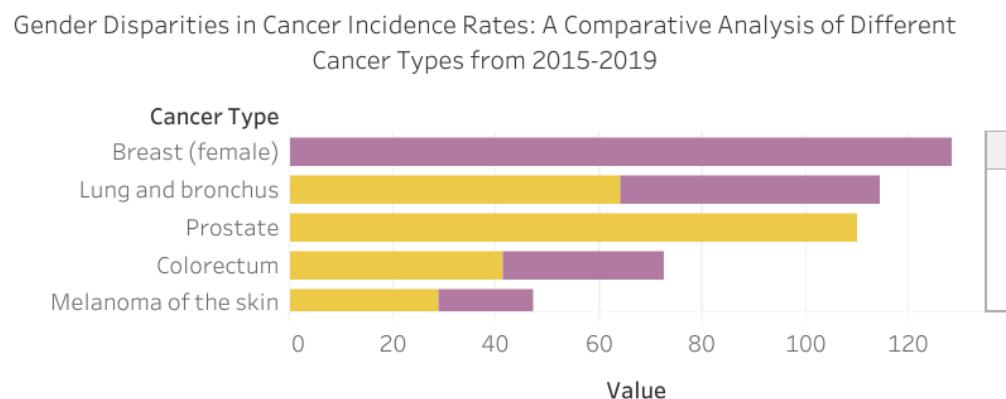
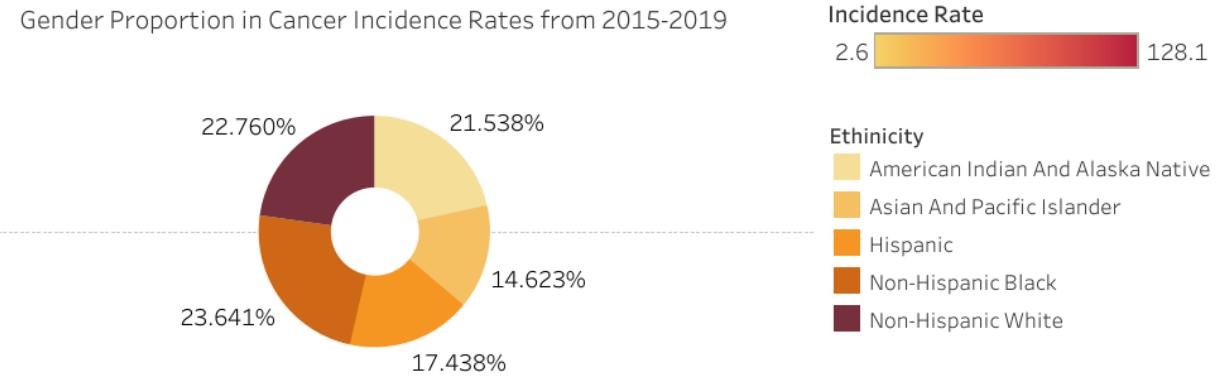
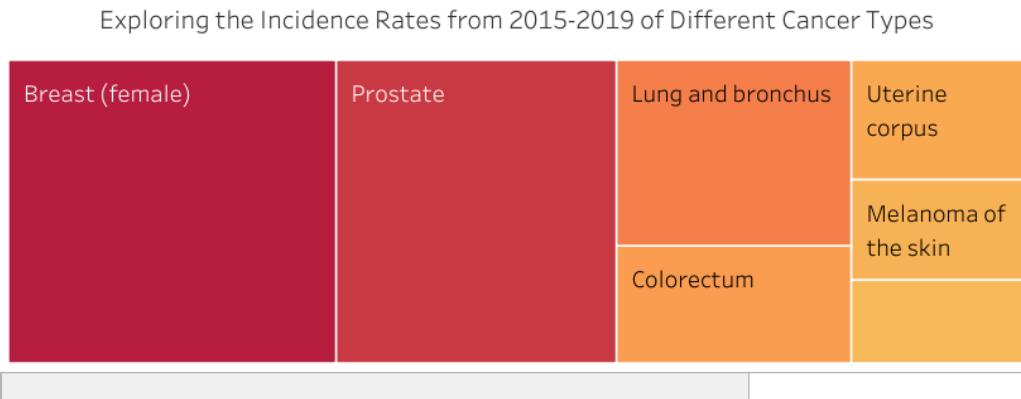


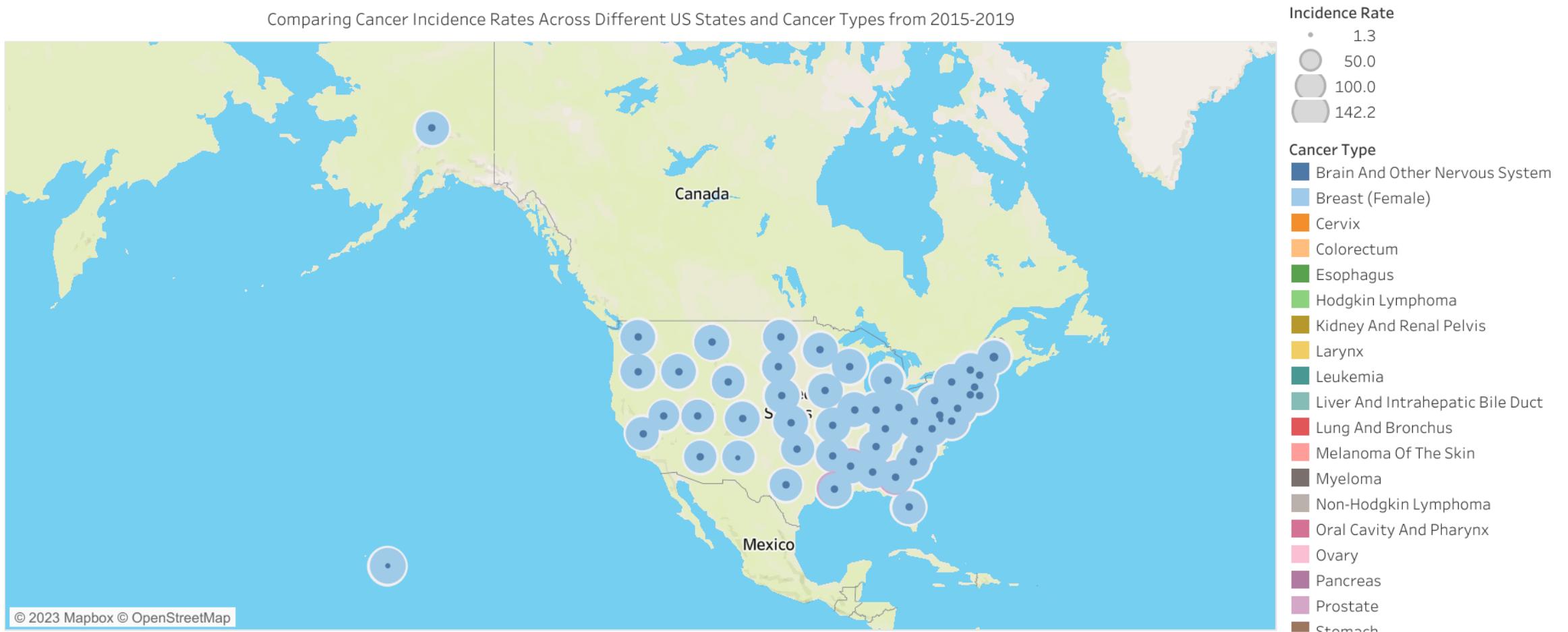
Estimating the Toll of Cancer: Projected Death Counts by Cancer Type in the Coming Year



Cancer Type
Anus, anal canal and anorectum
Bones and joints
Brain and other nervous system
Breast
Cervix
Colorectum
Esophagus
Eye and orbit
Gallbladder and other biliary
Hodgkin lymphoma
Kidney and renal pelvis
Larynx
Leukemia
Liver and intrahepatic bile duct
Lung and bronchus
Melanoma of the skin
Myeloma
Non-Hodgkin lymphoma
Oral cavity and pharynx
Ovary
Pancreas
Penis and other male genital
Prostate
Small intestine

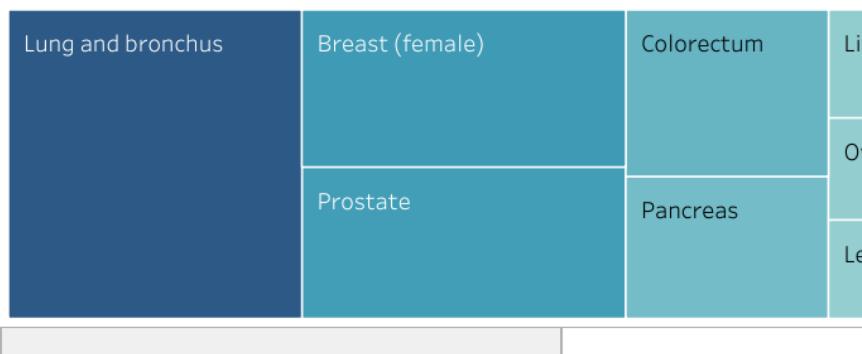
Cancer Incidence Rates (2015-2019): Exploring Variations by Cancer Type, Ethnicity, and Gender



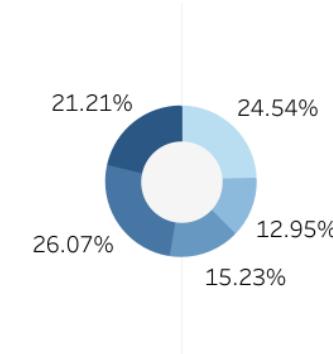


Cancer Death Rates (2016-2020): Exploring Variations by Cancer Type, Ethnicity, and Gender

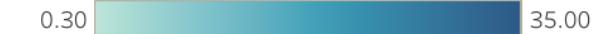
Exploring the Death Rates from 2016-2020 of Different Cancer Types



Gender Proportion in Cancer Death Rates from 2016-2020



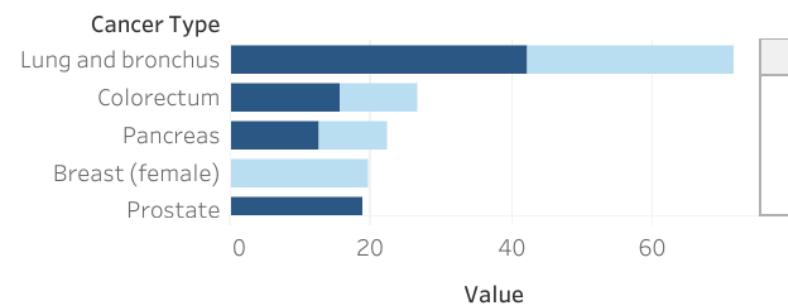
Death Rate



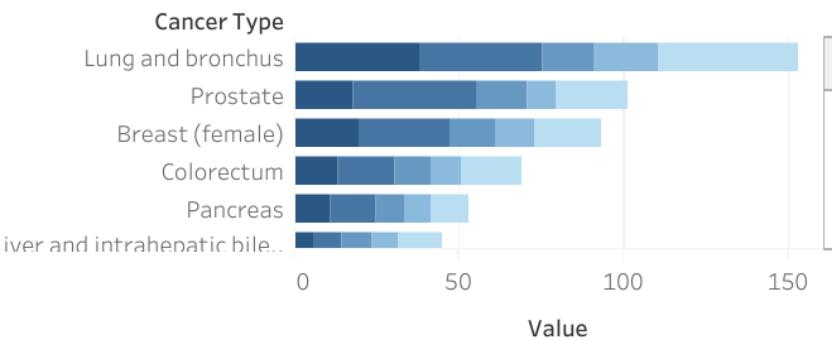
Ethnicity



Gender Disparities in Cancer Death Rates: A Comparative Analysis of Different Cancer Types from 2016-2020



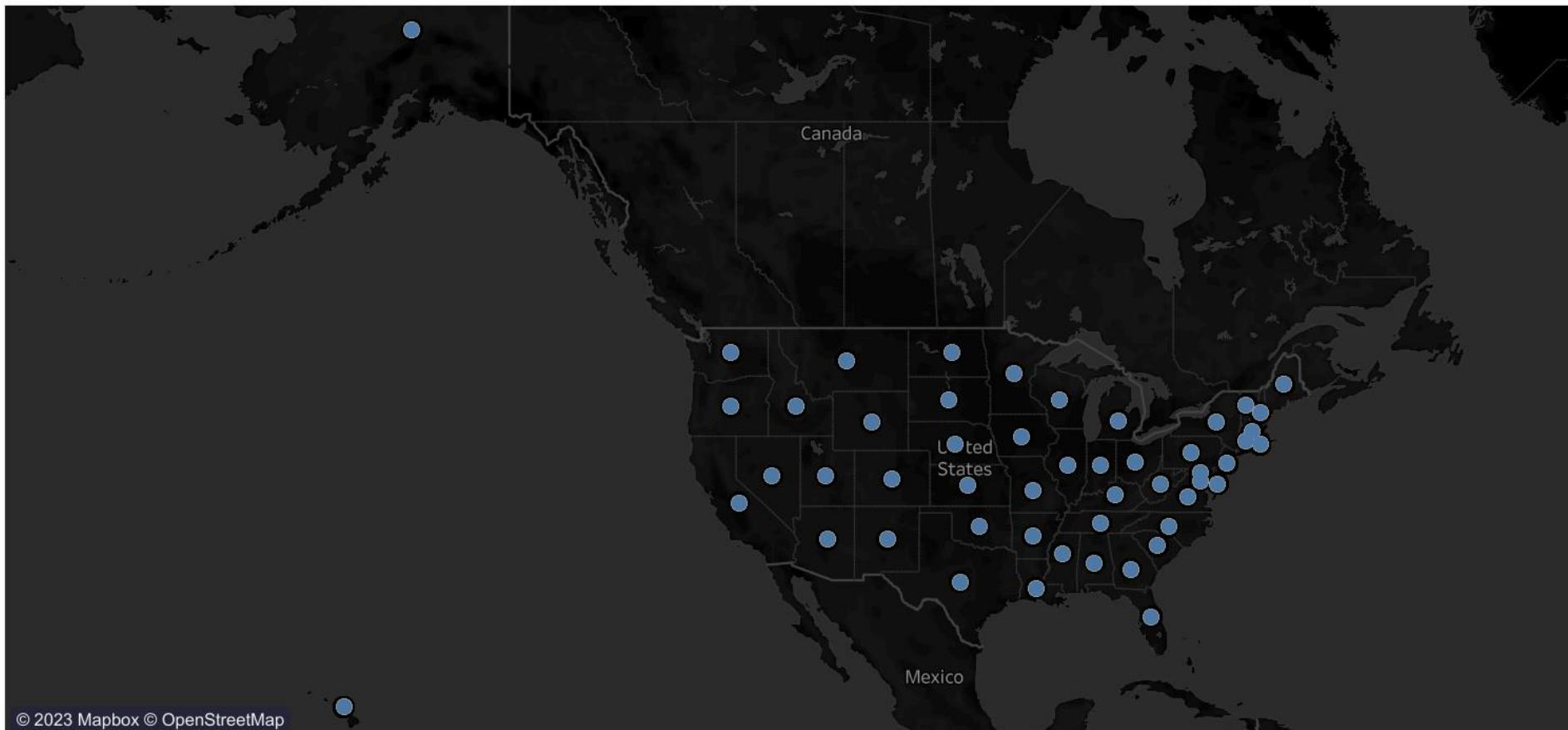
Cancer Death Rates from 2016-2020 Across Different Ethnic Groups



Gender

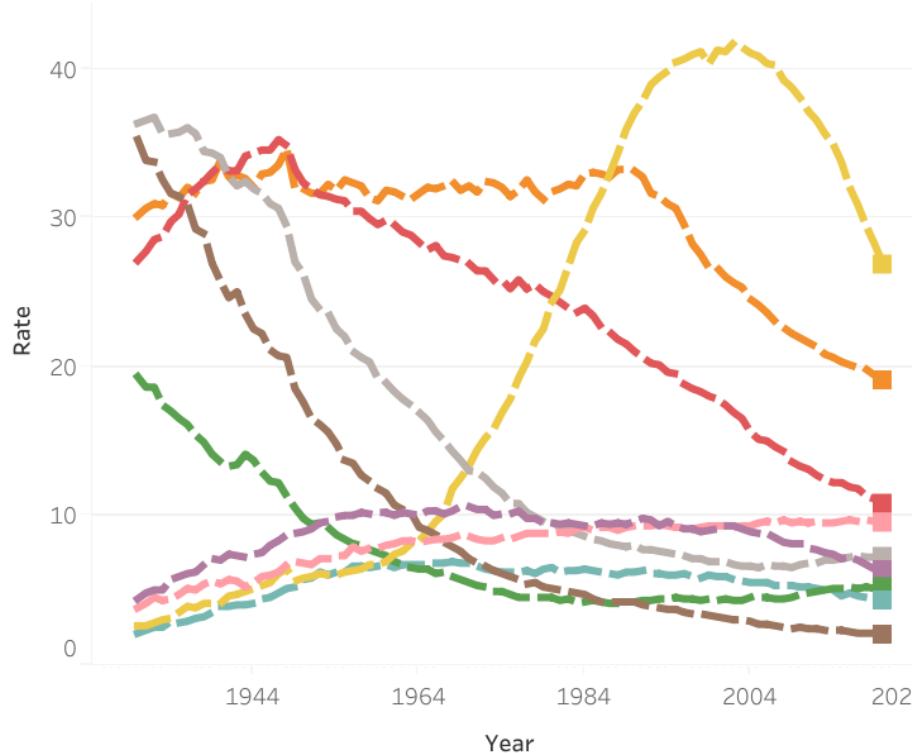


Comparing Cancer Death Rates Across Different US States and Cancer Types from 2016-2020

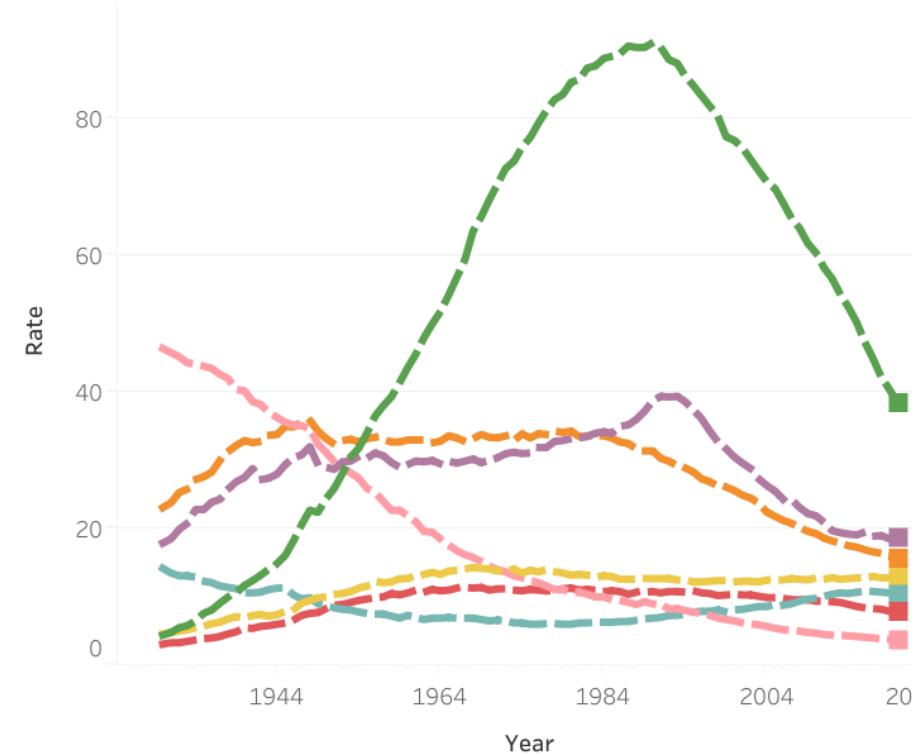


Analyzing Historical Trends in Cancer Death Rates by Cancer Types and Gender

Analyzing Historical Trends in Cancer Death Rates from 1930-2020: A Comparative Study of Different Cancer Types for Females



Analyzing Historical Trends in Cancer Death Rates from 1930-2020: A Comparative Study of Different Cancer Types for Male



Cancer Types
 Breast
 Colorectum
 Leukemia
 Liver and intrahepatic bile duct
 Lung and bronchus

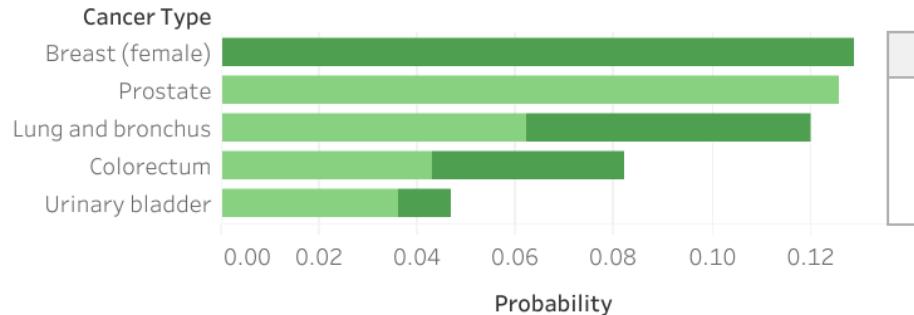
Year of Year
 2020
 Show history

Cancer Type
 Colorectum
 Leukemia
 Liver and intrahepatic bile duct
 Lung and bronchus
 Pancreas

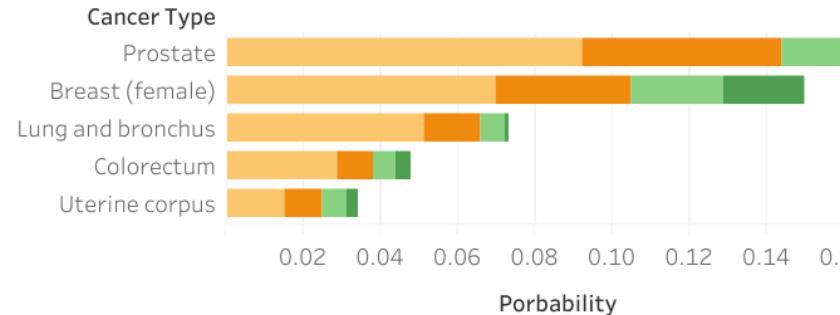
Year of Year
 2020
 Show history

Assesing Cancer Risk By Gender and Age Group

Assessing Cancer Risk by Gender: An Analysis of Probability of Developing Cancer from 2017-2019



Assessing Cancer Risk by different Age-Group: An Analysis of Probability of Developing Cancer from 2017-2019



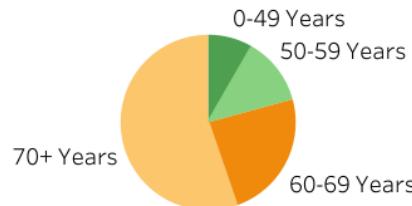
Gender

- Female
- Male

Age-Group

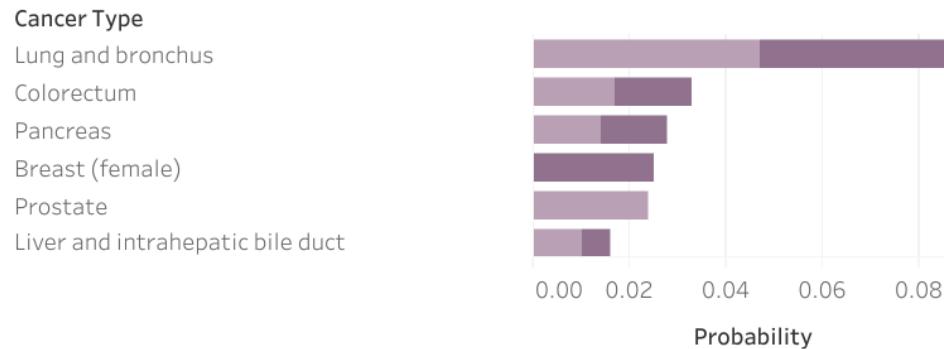
- 0-49 Years
- 50-59 Years
- 60-69 Years
- 70+ Years

Proportion of Cancer Cases Across Different Age Groups

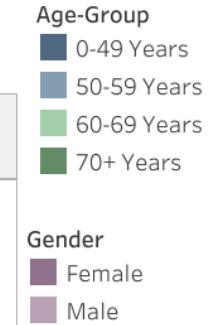
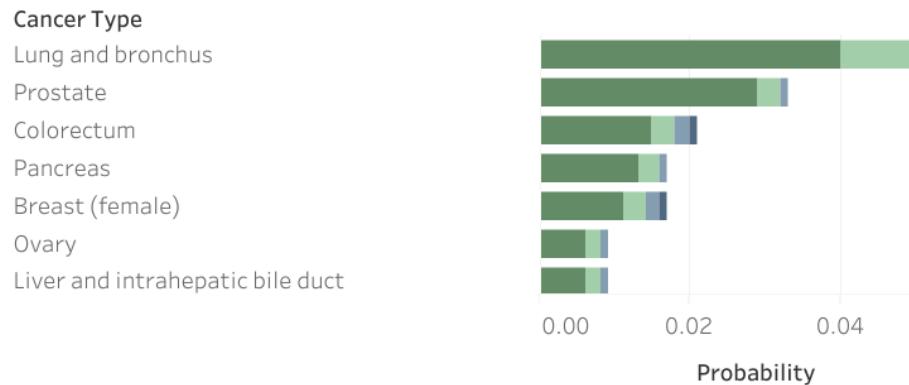


Evaluating Cancer Mortality Risk by Age and Gender: A Comparative Study

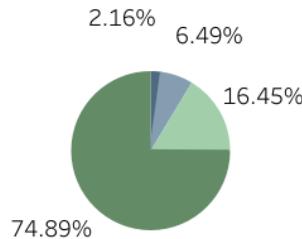
Examining the Probability of Cancer Mortality by Gender: An Analysis of Death Rates from 2017-2019



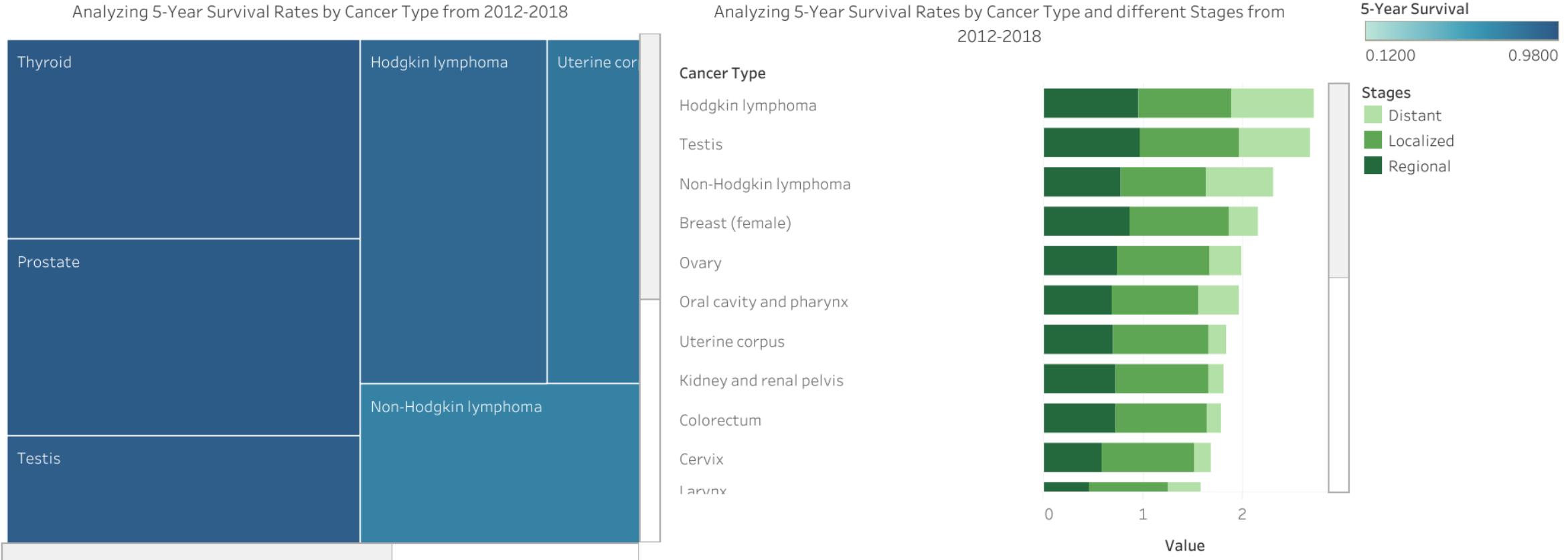
Gender Differences in Cancer Mortality: An Analysis of 2017-2019 Death Rates



Proportion of Cancer Mortality Cases Across Different Age Groups



Examining 5-Year Survival Rates of Different Cancer Types from 2012-2018



Conclusion



Conclusion

- ▶ The dashboards discussed provide valuable insights into cancer cases, procedures, and healthcare facilities in California, allowing healthcare practitioners and the general public to better understand the distribution of cancer treatments and costs.
- ▶ The information presented in these dashboards is helpful for healthcare organizations, pharmaceutical firms, and insurance companies to create preventative, treatment, and coverage plans, and to identify regions with high cancer incidence or mortality rates.
- ▶ The data can be used to develop targeted interventions to address the issue of breast cancer in California and to lower the fatality rate and enhance patient outcomes.
- ▶ Businesses in the healthcare industry may find it helpful to use the data from these assessments to better understand how COVID-19 has affected patient behavior and employee attrition.
- ▶ The employment-related insights might assist firms in better understanding the labor market and making knowledgeable hiring and staffing decisions.

Conclusion

- ▶ The data provided in the dashboards can assist healthcare professionals and researchers in gaining a better understanding of the cancer treatment landscape and the various medications available for treating different types of cancer.
- ▶ By providing a detailed breakdown of patient encounters across different health categories and settings, the dashboards offer a comprehensive understanding of healthcare demand in various regions.
- ▶ The mortality trends analysis helps to identify leading causes of death and their distribution across different diagnosis types and settings, ultimately benefiting both patients and healthcare providers.
- ▶ The information obtained from these dashboards can eventually lead to improved healthcare outcomes for cancer patients and communities.
- ▶ Overall, the dashboards offer a wealth of information for healthcare professionals and business stakeholders to monitor and analyze hospital utilization and in-hospital mortality trends, and to optimize healthcare operations and improve patient outcomes.

Tableau Dashboard Links

-  [An Analysis of California Hospitals: Cancer Surgery Volume, Hospital Characteristics, and Patients Leaving Against Medical Advice \(AMA\) in Fiscal Year 2019-20](#)
-  [Life-Saving Cancer Treatments: A Comprehensive Guide to Approved Medications](#)
-  [Understanding the Financial Burden of Cancer Care on Patients and Families](#)
-  [Effects of COVID-19 on Hospital Utilization Trends: Hospital Utilization Trends](#)
-  [Geographic Analysis of Advanced Stage Breast Cancer in Women 40 Years and Older: A Study of Medical Service Study Areas and California Counties from 2010-2014](#)
-  [Assessing the Impact of COVID-19 on General Population Health Services: Results from a 2020 Survey](#)
-  [The Global Burden of Cancer: Understanding the Impact on Health and Society](#)
-  [Mapping the Burden of Cancer: A State-by-State Analysis of Cancer Incidence and Mortality in the US](#)

References

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- <https://data.chhs.ca.gov>
- <https://hints.cancer.gov>
- <https://data.cdc.gov>
- <https://www.anticancerfund.org/>
- <https://seer.cancer.gov/>
- <https://cancerstatisticscenter.cancer.org/>
- <https://progressreport.cancer.gov/>
- <https://cdphdata.maps.arcgis.com/apps/webappviewer/index.html?id=8612fd4394784bdea7b0bdca5e34fc2e>
- <https://www.tableau.com/>



Thank you