

# Nevada Cancer Summit

Carpenters International Training Center  
Las Vegas

## A Look at Cancer in Nevada Policy & Data Impacts in the Silver State

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# Outlines

## ❑ Nevada Demographics

- ❑ Geography
- ❑ Population

## ❑ Cancer

- ❑ Definition
- ❑ Types
- ❑ Staging
- ❑ Characteristics
- ❑ Causes
- ❑ Determinants & Risk Factors
- ❑ Primary & Secondary Prevention

## ❑ Leading Causes of Death

## ❑ Cancer Epidemiology

- ❑ Incidence
- ❑ Mortality
- ❑ Historical trends
- ❑ Type-specific
- ❑ Modifiable risk factors
- ❑ Access to healthcare

## ❑ Cancer Prevention

## ❑ Reversing Cancer Trends

## ❑ Next Steps

## ❑ Questions

# 7<sup>th</sup> Largest

17 counties

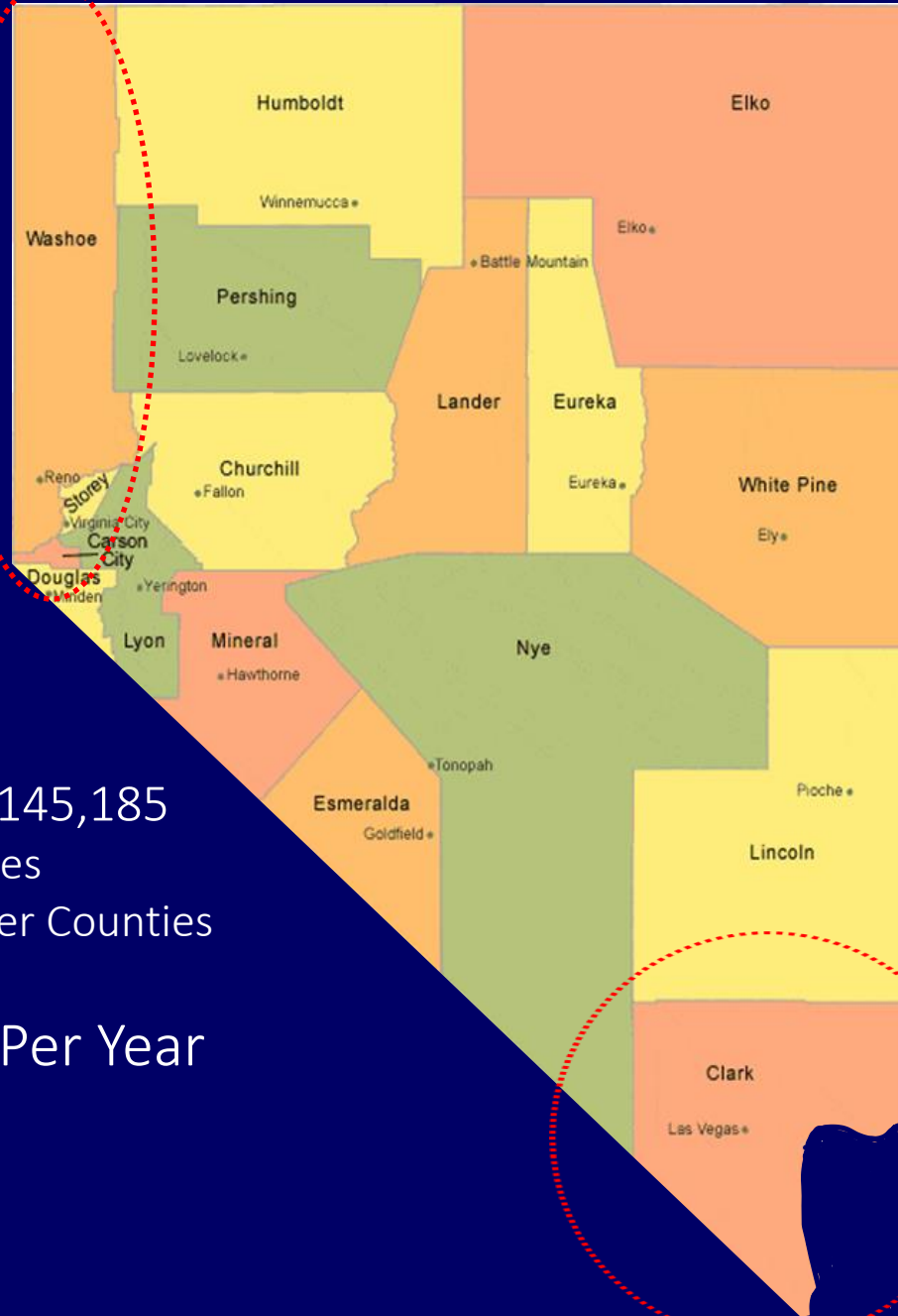
- 2 urban
- 15 rural or frontier

In 2020

Nevada Population 3,145,185

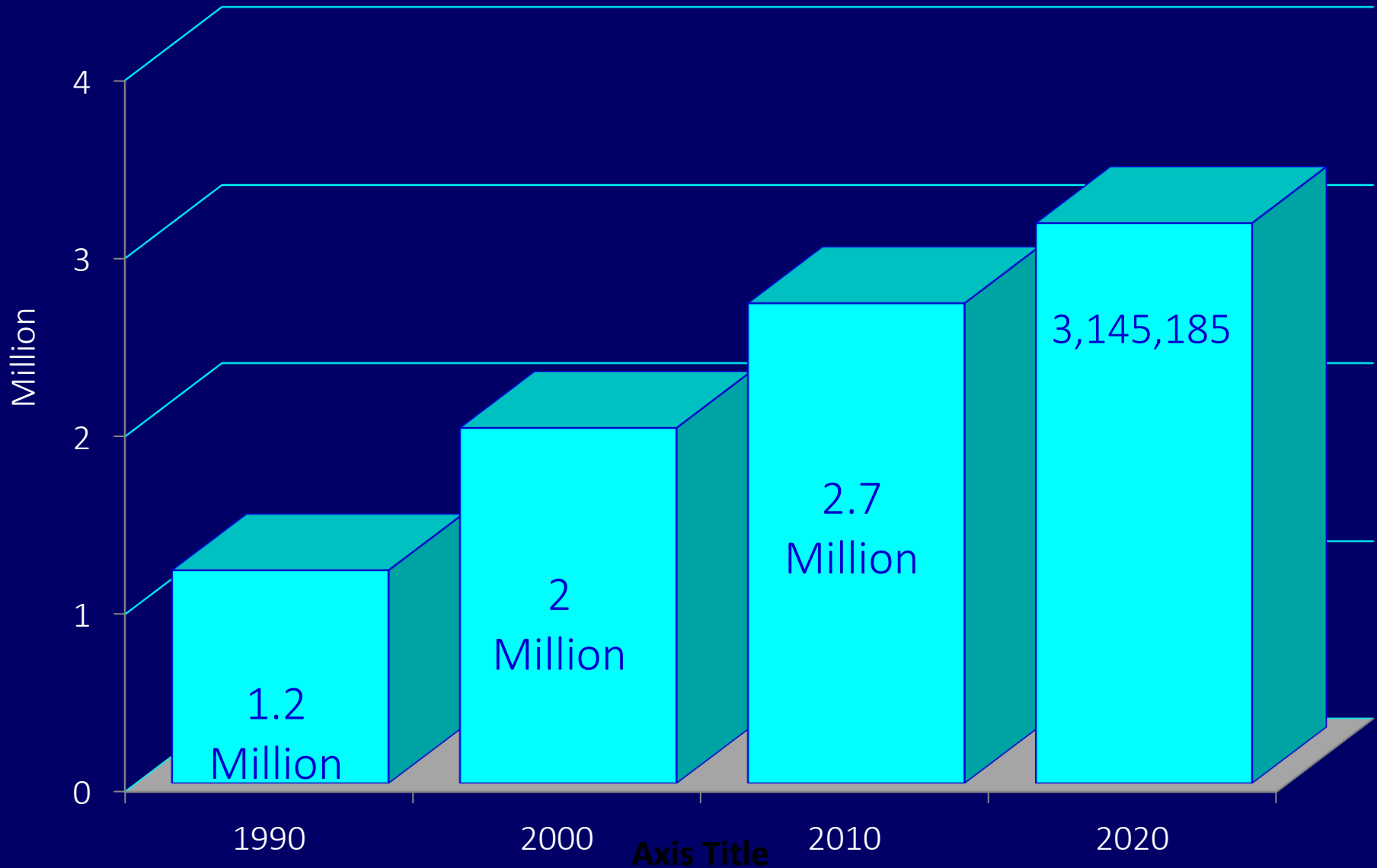
- 90.6% Urban Counties
- 9.4% in Rural/Frontier Counties

48 Million Tourist Per Year

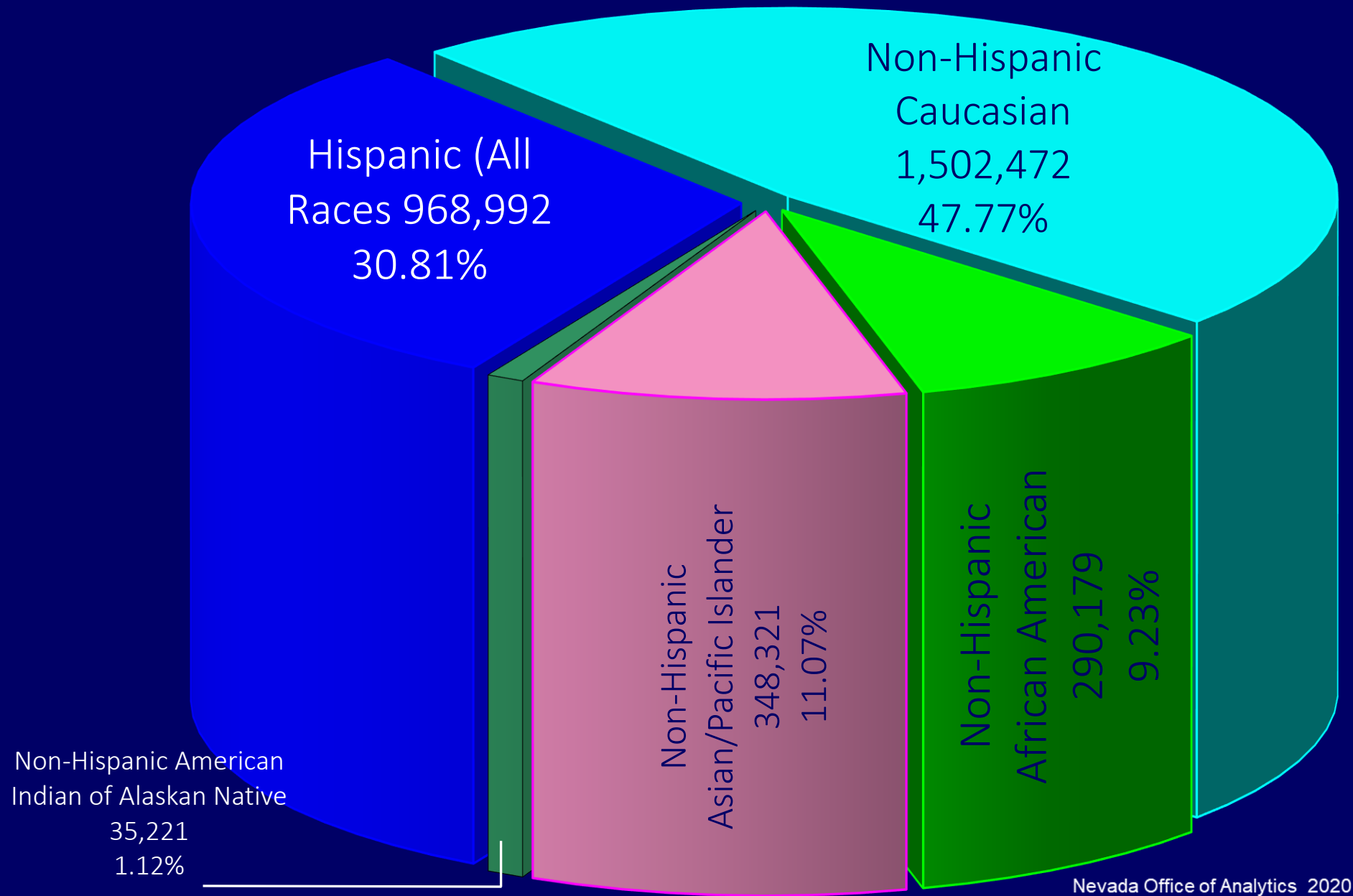


# N E V A D A

# Population Growth – Nevada 2020



# Population by Race/Ethnicity Nevada - 2020



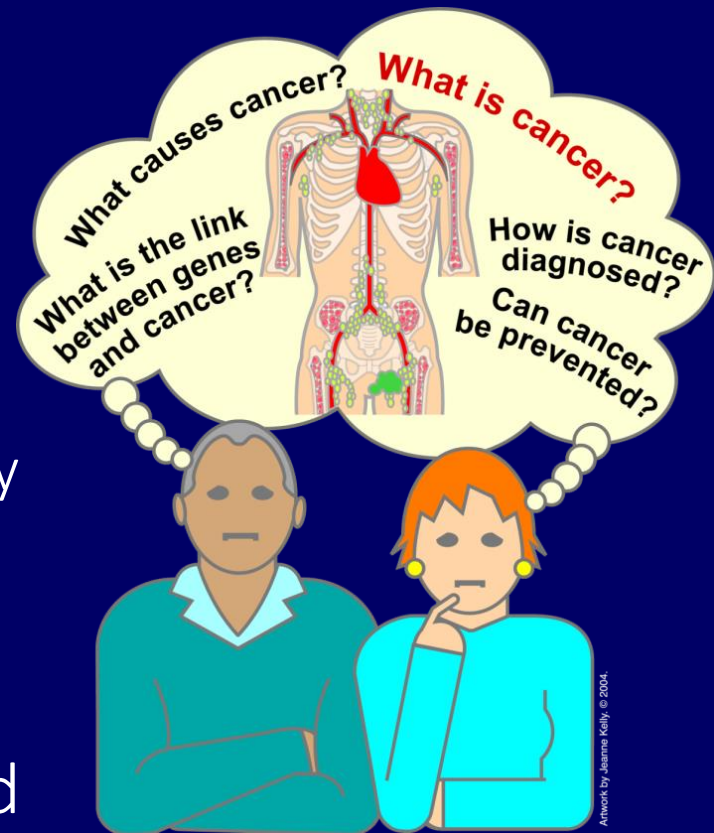
# Cancer definition

Group of chronic disorganized neoplastic illnesses. Invasive persistent progressive cellular/tissue growth “tumors” caused by external and internal factors

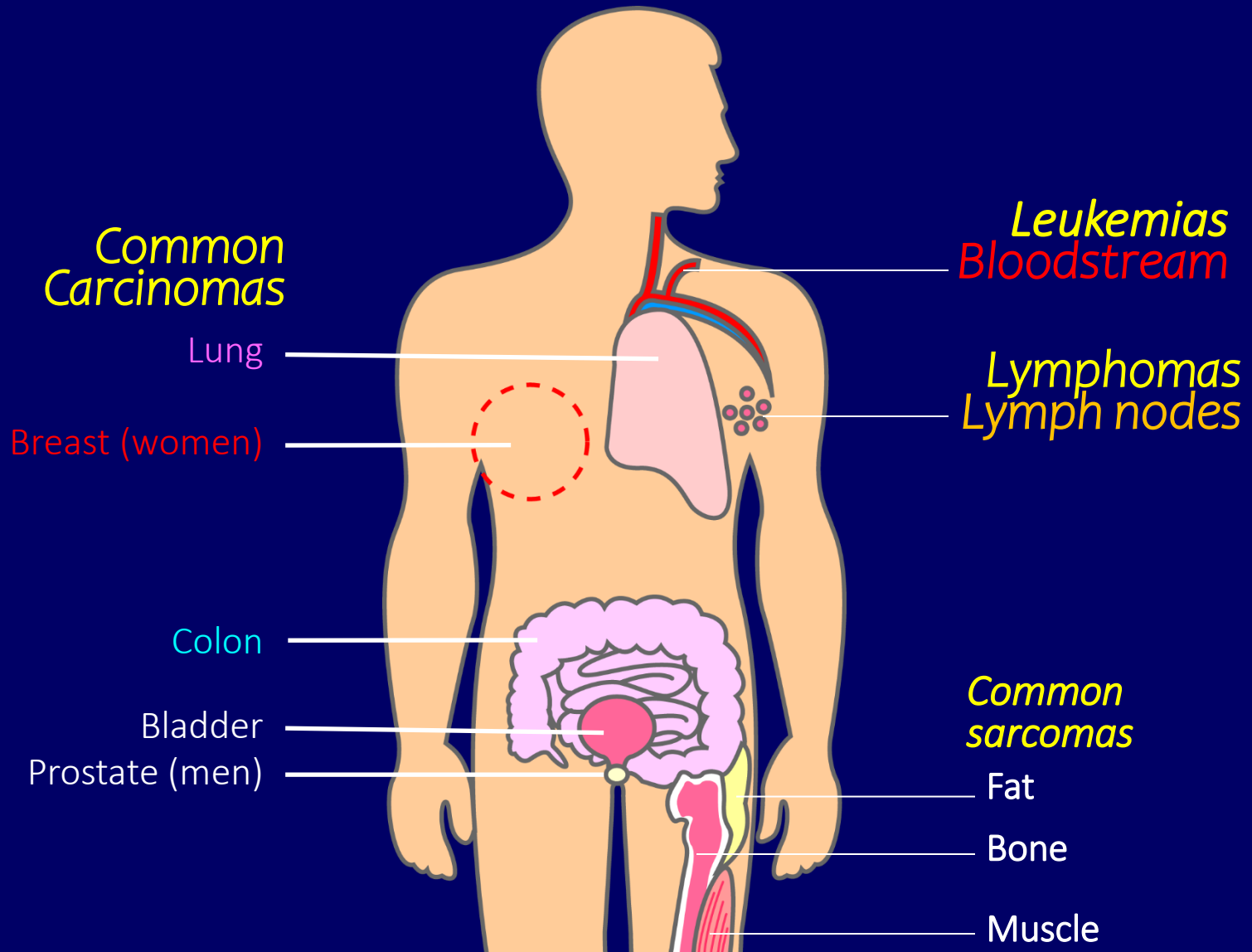
## Characterized by....

- ❑ Long latency “incubation” period
- ❑ Out-of-control growth of abnormal cells
- ❑ Local/regional/systemic spread

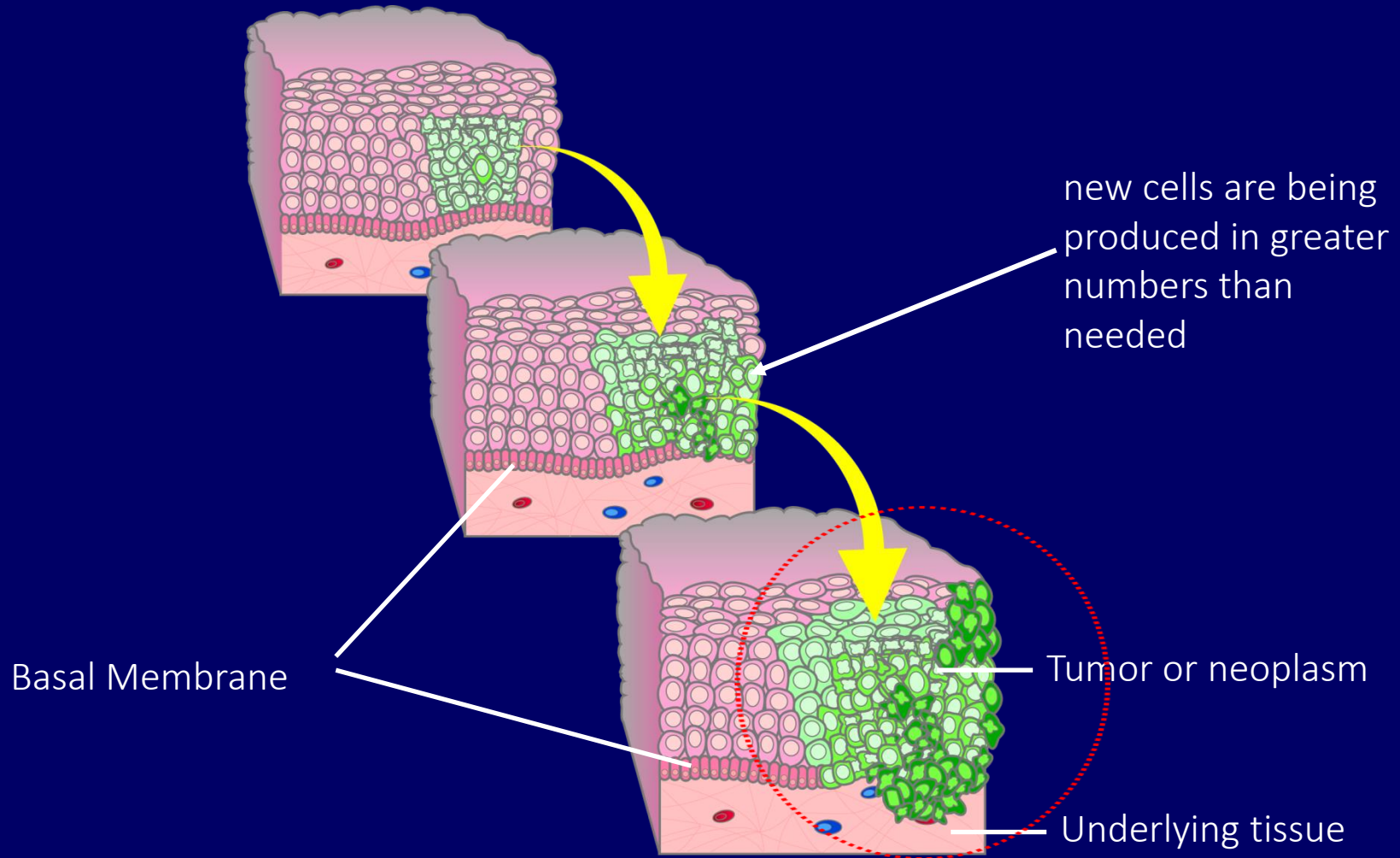
2nd Most Frequent/Prevalent Disease  
2nd Leading Cause of Death



# Types of Cancer

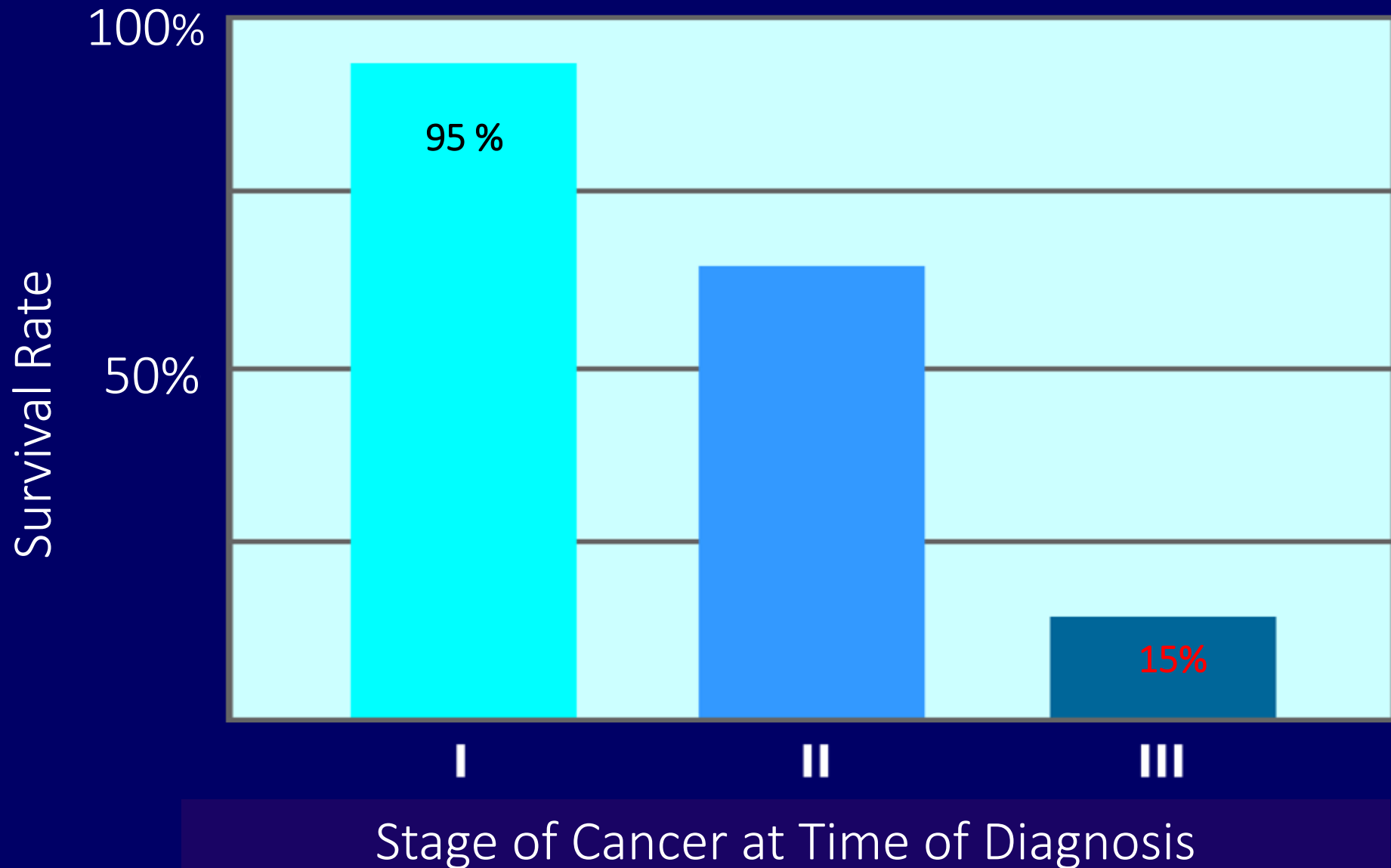


# “Malignant” Neoplasm Infiltrating Adjacent Tissues

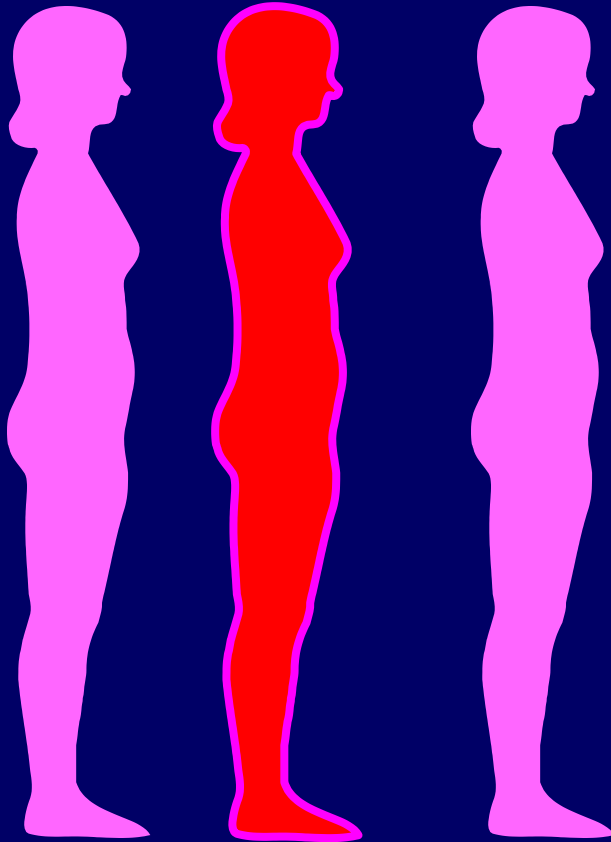




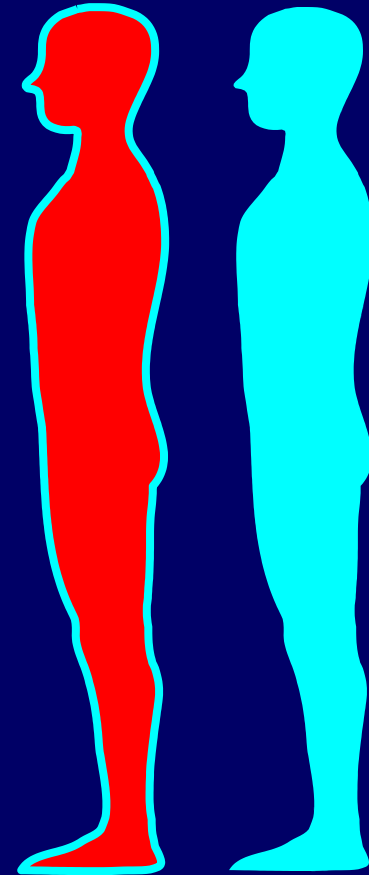
# Melanoma Five-Year Survival Rate



*Contrary to popular belief cancer is NOT rare*



1 in 3 females



1 in 2 males

# Some Characteristics of Cancer

- ❑ Long latency period
- ❑ High (Incidence, Prevalence, Disability & Death) Rates
- ❑ Invasive neoplasia
- ❑ Prolonged course of illness
- ❑ Does not resolve spontaneously
- ❑ Requires ongoing healthcare and treatment
- ❑ High ongoing cost
- ❑ Widest disparity health gap among racial/ethnic groups
- ❑ Deteriorating quality of life
- ❑ Heavy medical, societal, emotional and financial burden
- ❑ Complex causality
- ❑ Multiple risk factors
  - ❑ Modifiable
    - ❑ Behavioural
    - ❑ Environmental
    - ❑ Socio-economic
    - ❑ Iatrogenic
  - ❑ Non-modifiable; Biological
    - ❑ Age
    - ❑ Gender
    - ❑ Race
    - ❑ Genetics
- ❑ Many cancers are preventable

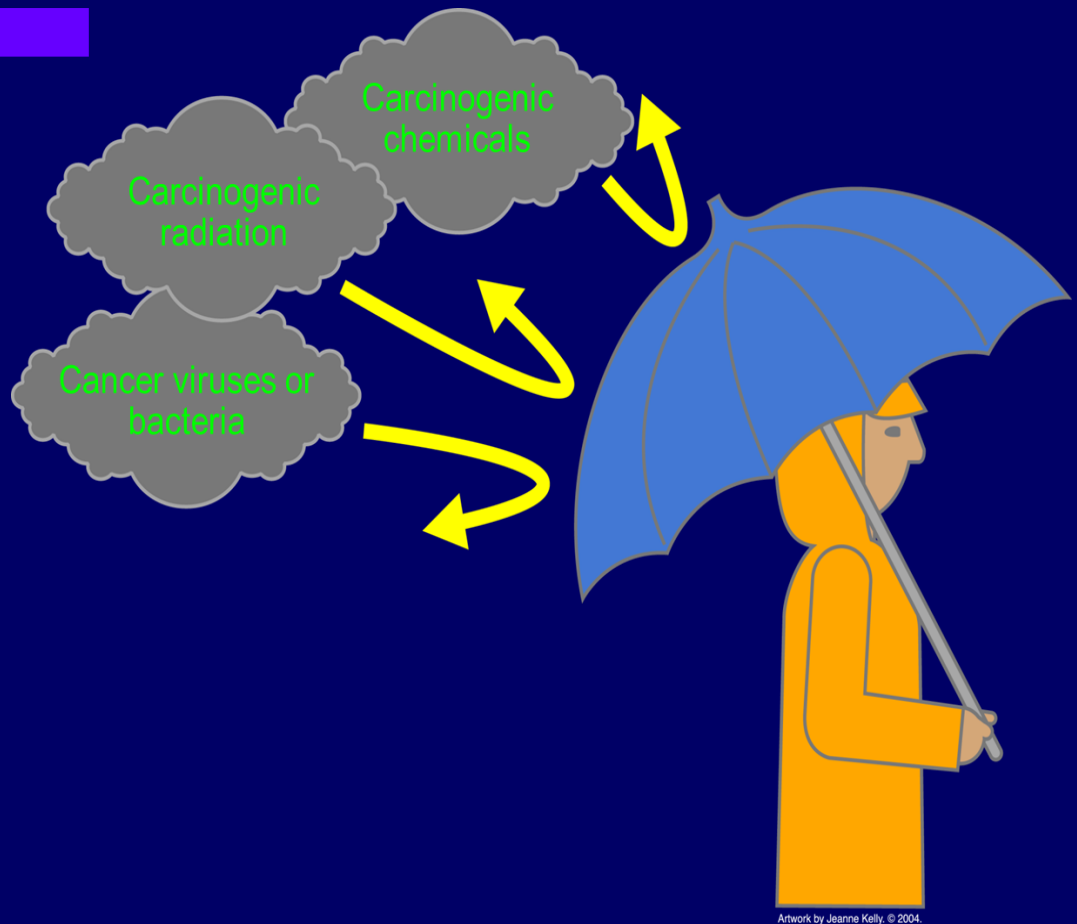
# What Causes Cancer?

Some viruses or bacteria

Some chemicals

Radiation

Genetics  
Diet  
Hormones



Artwork by Jeanne Kelly. © 2004.

Artwork by Jeanne Kelly. © 2004.

# Cancer-Causing Chemicals Tobacco Use and Cancer

aminostilbene

arsenic

benz[a]anthracene

benz[a]pyrene

benzene

benzo[b]fluoranthene

benzo[c]phenanthrene

benzo[f]fluoranthene

cadmium

chrysene

dibenz[a c]anthracene

dibenzo[a e]fluoranthene

dibenz[a h]acridine

dibenz[a j]acridine

dibenzo[c g]carbazone

N-dibutyl nitrosamine

2,3-dimethylchrysene

indeno[1,2,3-c d]pyrene

S-methylchrysene

S-methylfluoranthene

*alpha*-naphthylamine

nickel compounds

N-nitrosodimethylamine

N-nitrosomethylethylamine

N-nitrosodiethylamine

N-nitrosornicotine

N-nitrosoanabasine

N-nitrosopiperidine

polonium-210



25 YEARS AGO  
THEY WOULD HAVE GIVEN US SOME  
DUMB REASONS FOR NOT  
SMOKING.

25 years ago the worst they could say was  
"Nice girls don't smoke" or "It'll stunt your growth."

Now we know:

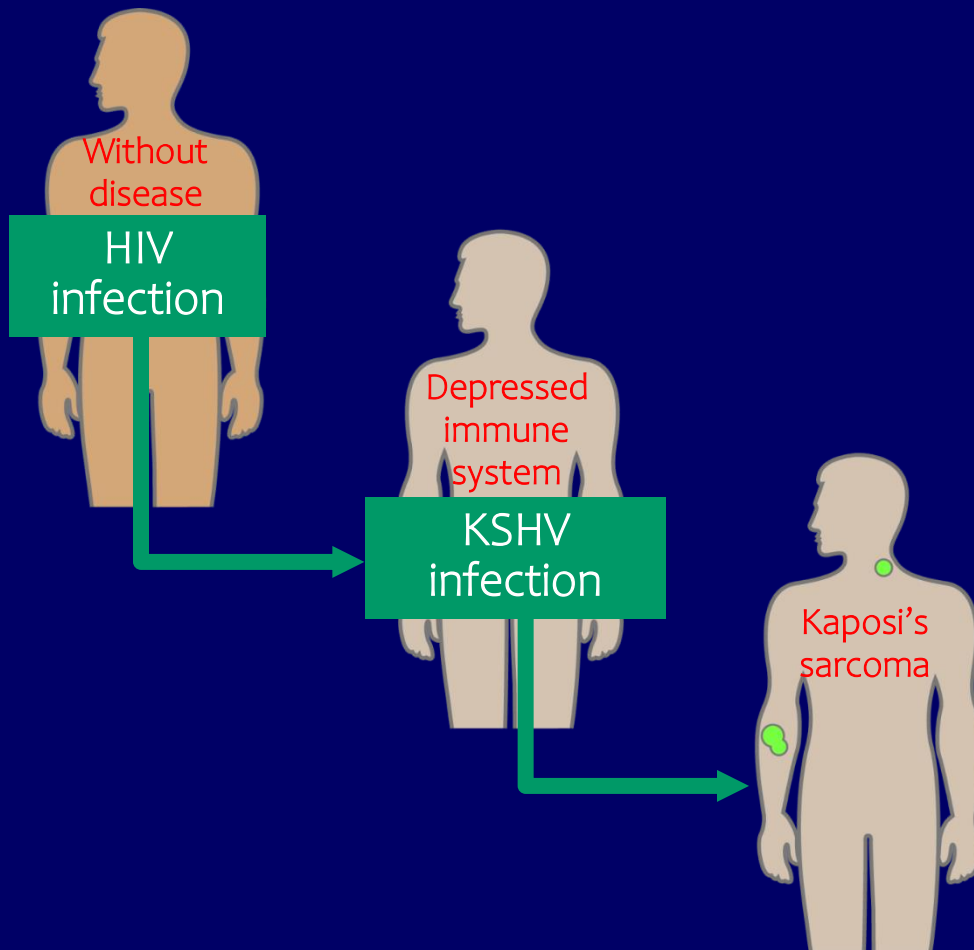
Women who smoke are dying of lung cancer and other  
smoking-related diseases at twice the rate of women who don't.  
These days there's no such thing as a dumb reason for not smoking.

1 in 3 Cancer Deaths  
is Due to Smoking

LANDMARK

On January 11,  
Luther L. Terry, M.  
General of the U

# Cancer Causing Viruses (e.g., HIV, HPV)



HPV Infection Increases Risk for Cervical Cancer

High

Cervical Cancer Risk

Low

Noninfected women

Women infected with HPV



# Excessive Sunlight



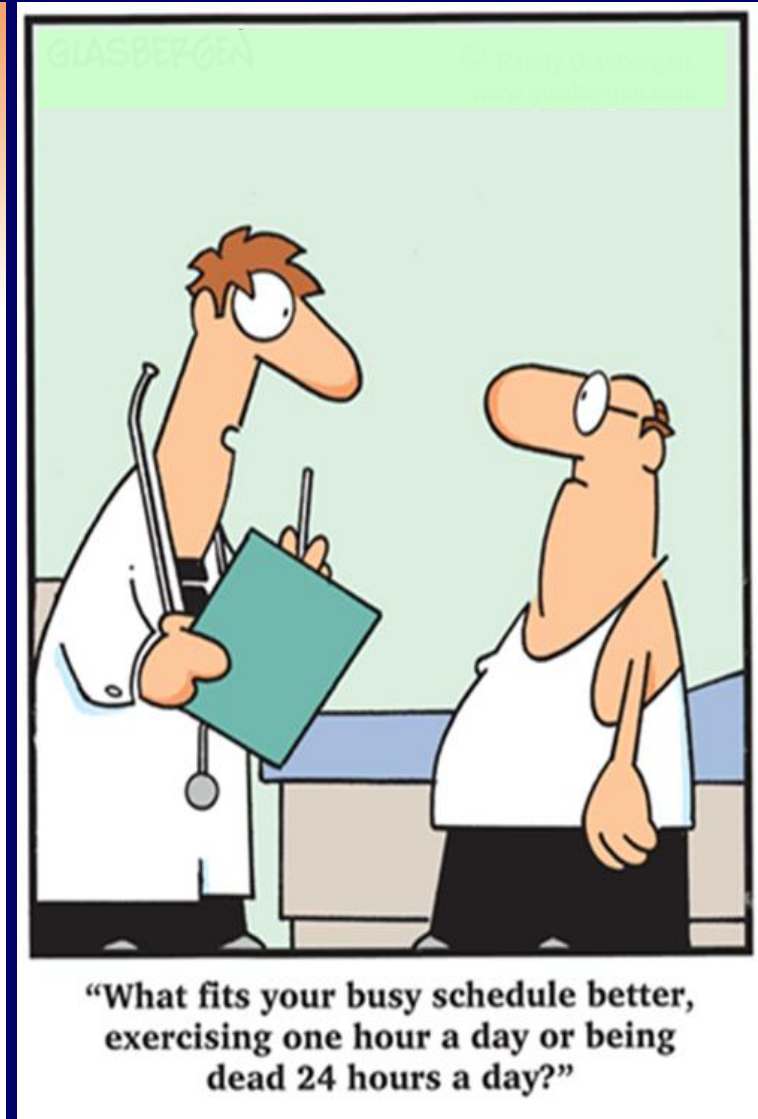
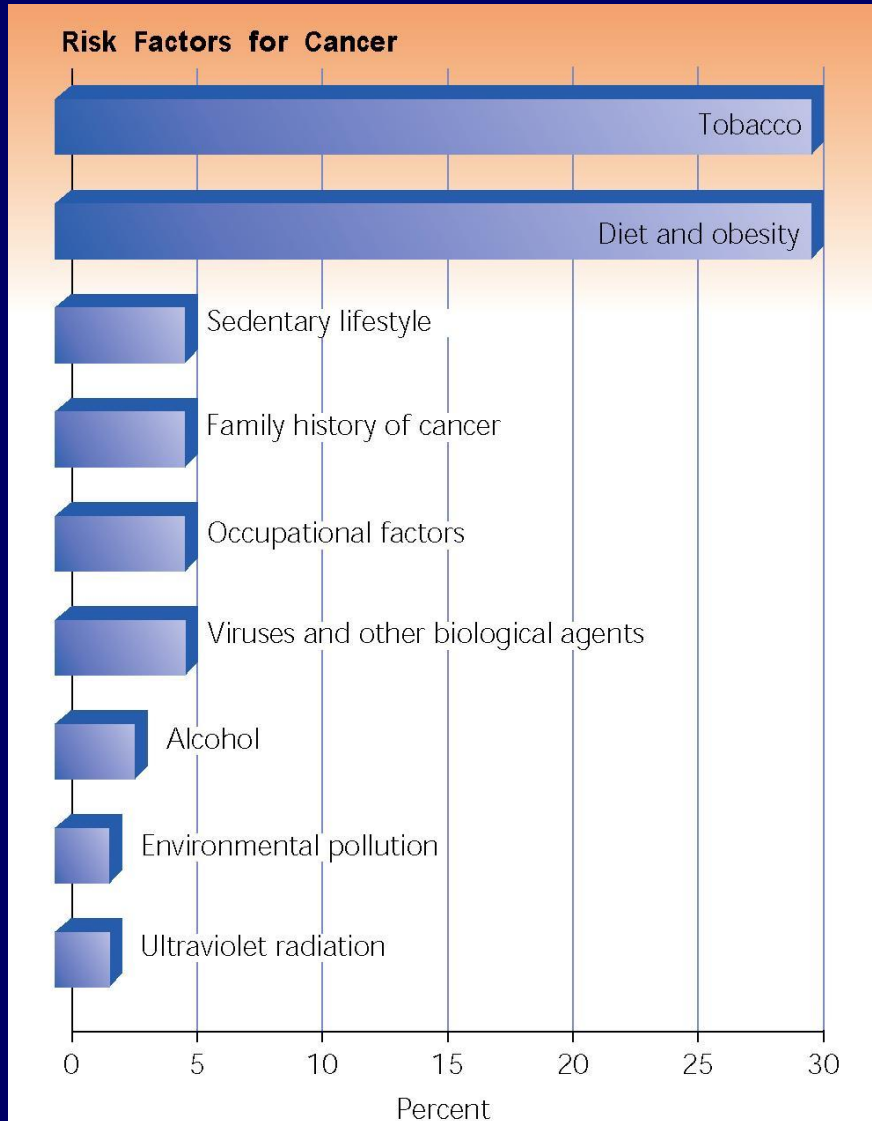


# Smoking Morbid Obesity, Lack of Physical Activity & Unhealthy Food



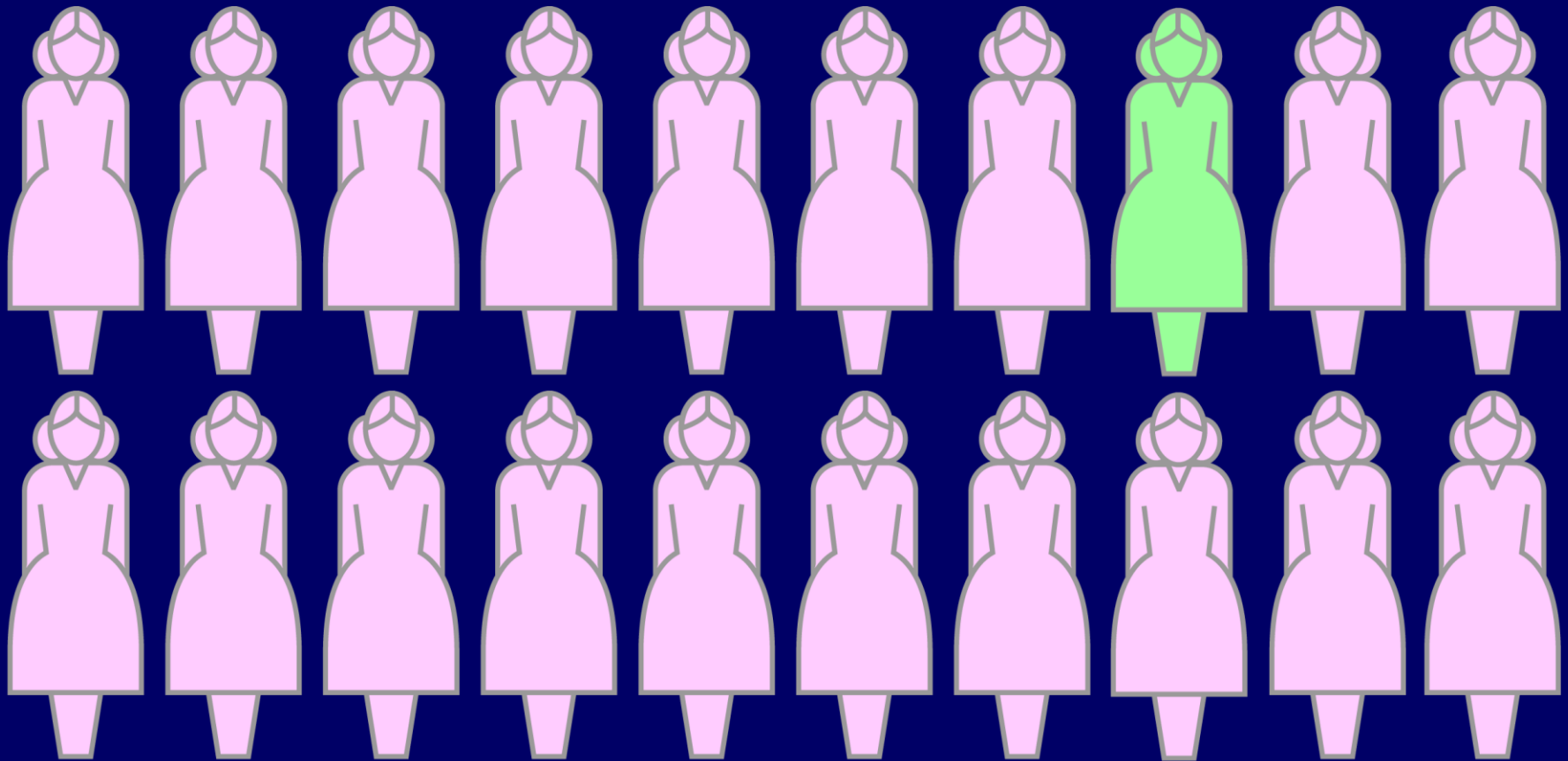


# > 82% of Cancer Death is Attributed to Modifiable Risk Factors



# Genetics and Cancer

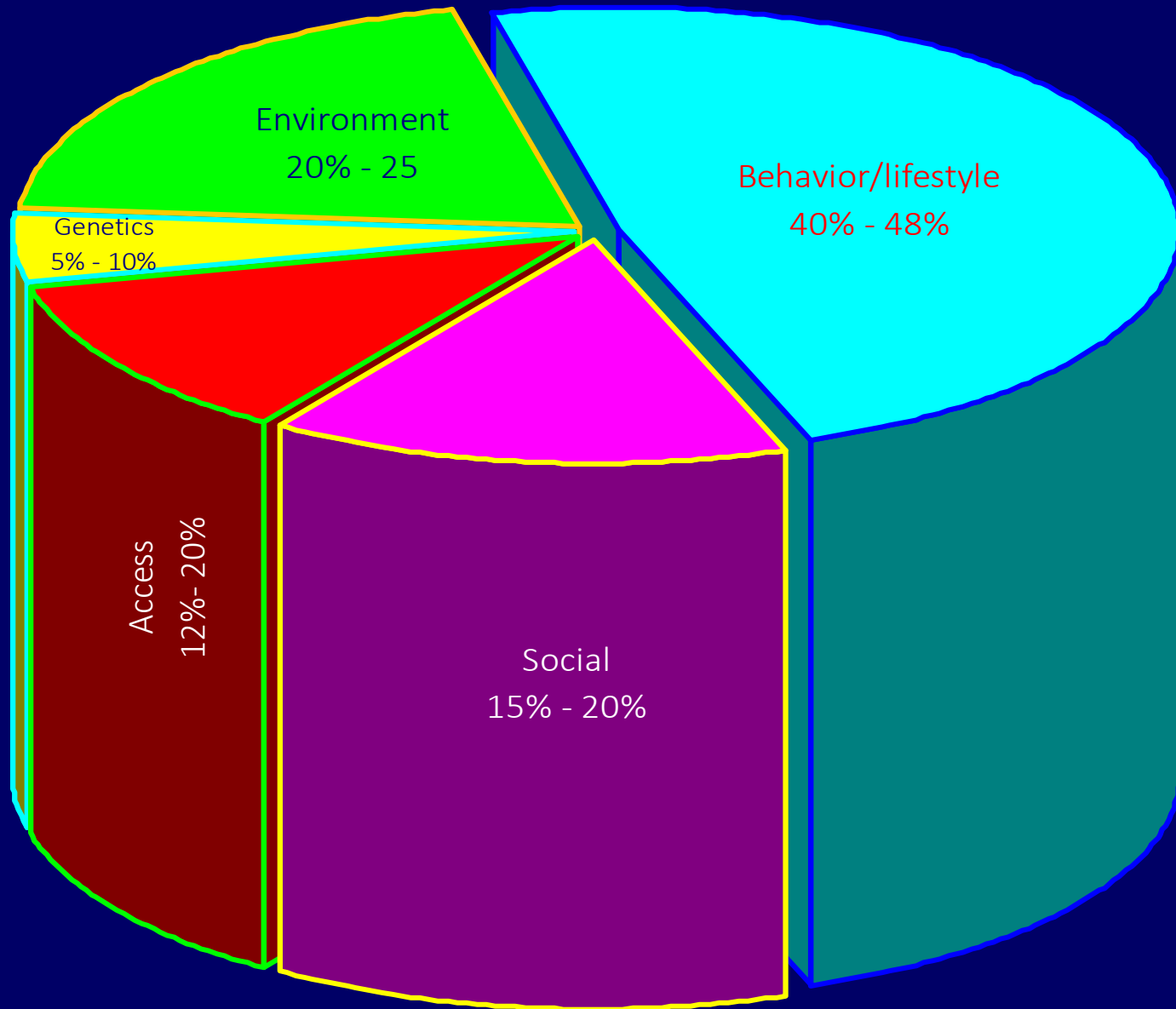
## Breast Cancer Patients



Artwork by Jeanne Kelly. © 2004.

-  Inherited Risk factors
-  Other Risk factors

# Determinants of Health and Sickness



# Cancer Prevention

## Primary

- ✓ Public Education
- ✓ Health Promotion – Health Fairs
- ✓ Immunizations (Vaccinations)
- ✓ Avoid harmful environmental exposures

## Secondary

- ✓ Screening
- ✓ Early Detection
- ✓ Timely Intervention/s

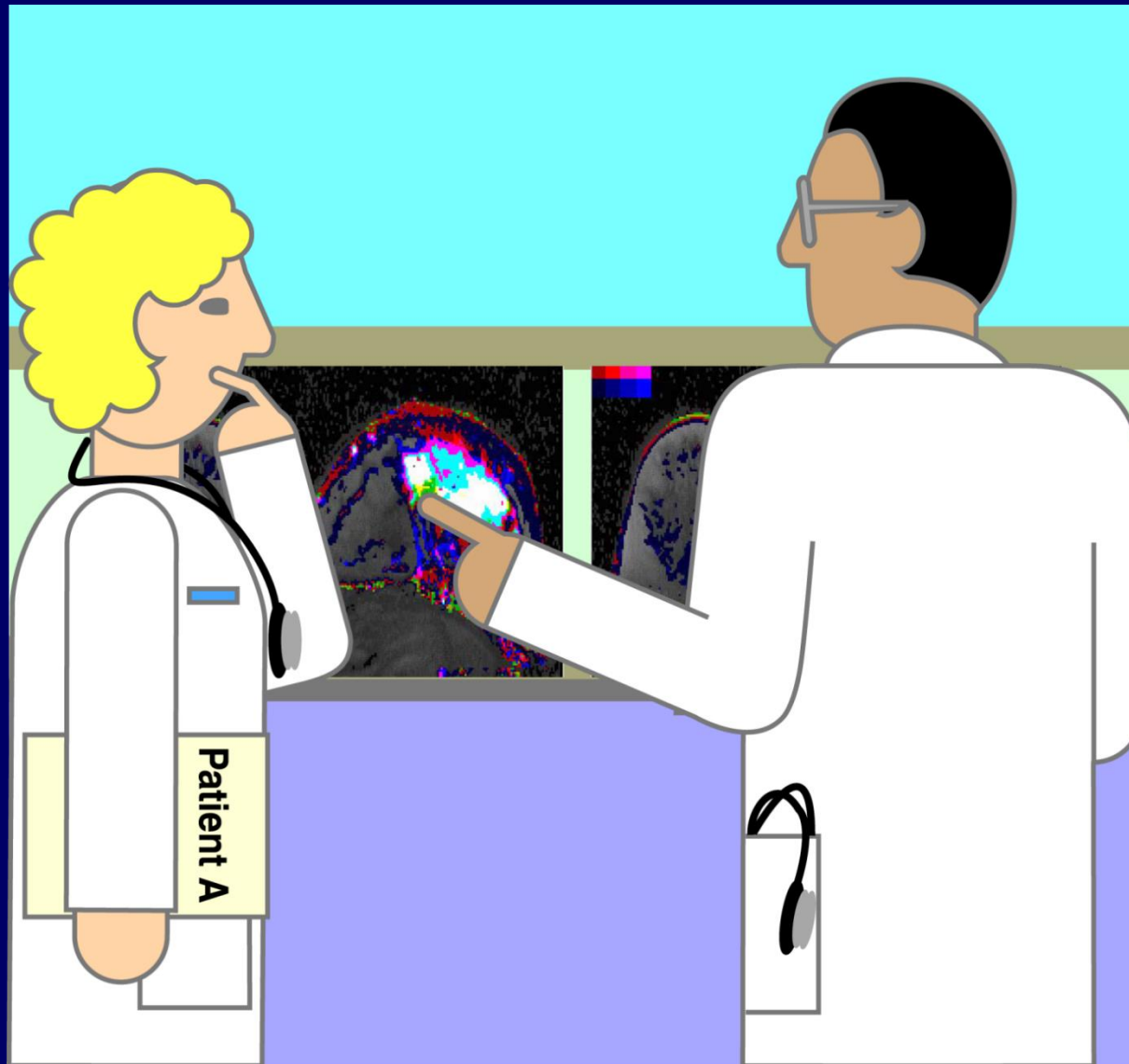


*"The doctor will see you now."*

# Healthy Diet - Fruits and Vegetables



# Cancer Early Detection (e.g., Mammogram)



28

ZIGGY

TOM WILSON

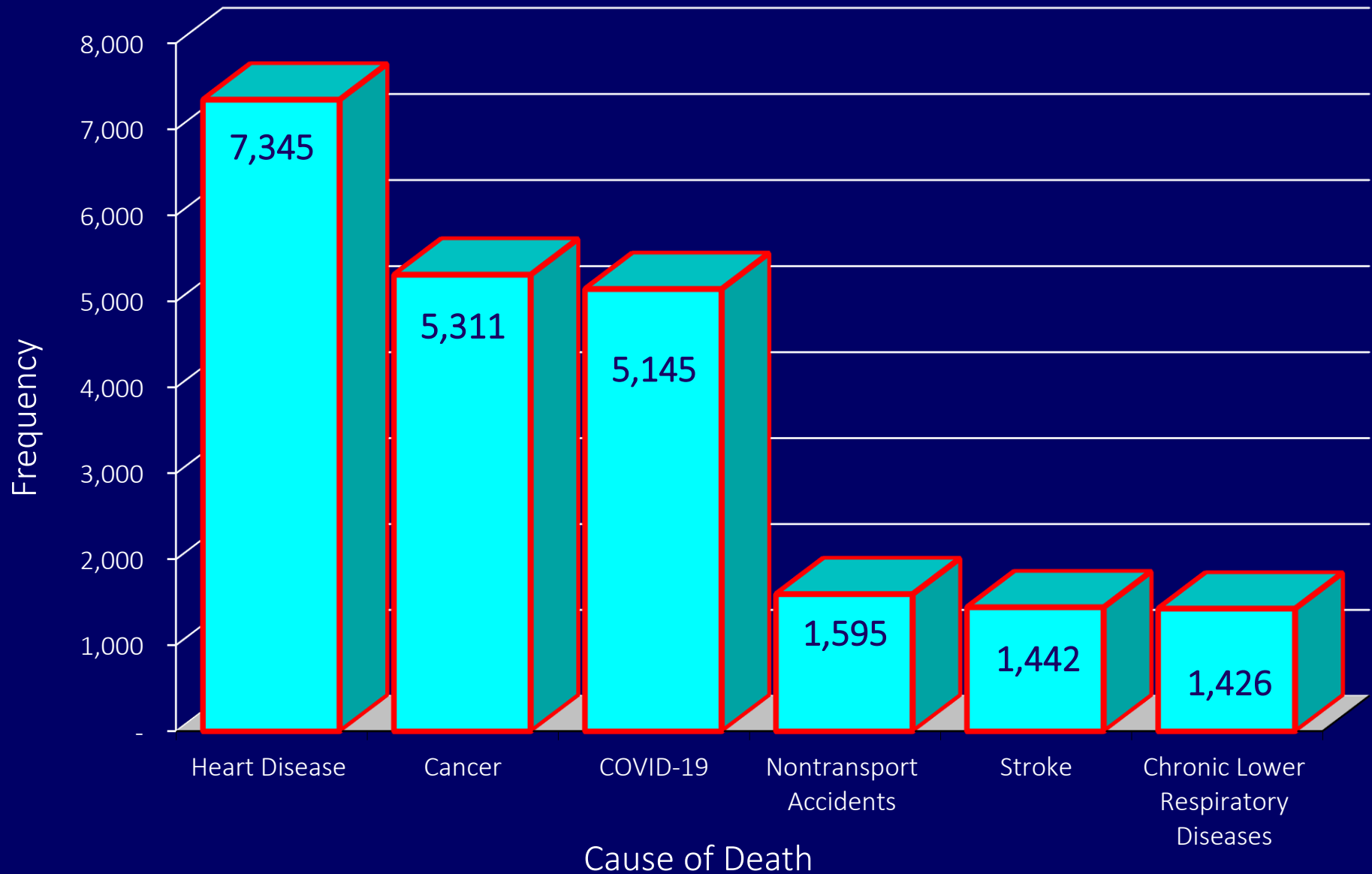
© 1985 Universal Press Syndicate

THE DOCTOR SPECIALIZES  
IN PREVENTIVE MEDICINE...  
SO IF YOU'RE ALREADY SICK,  
HE'S NOT INTERESTED.





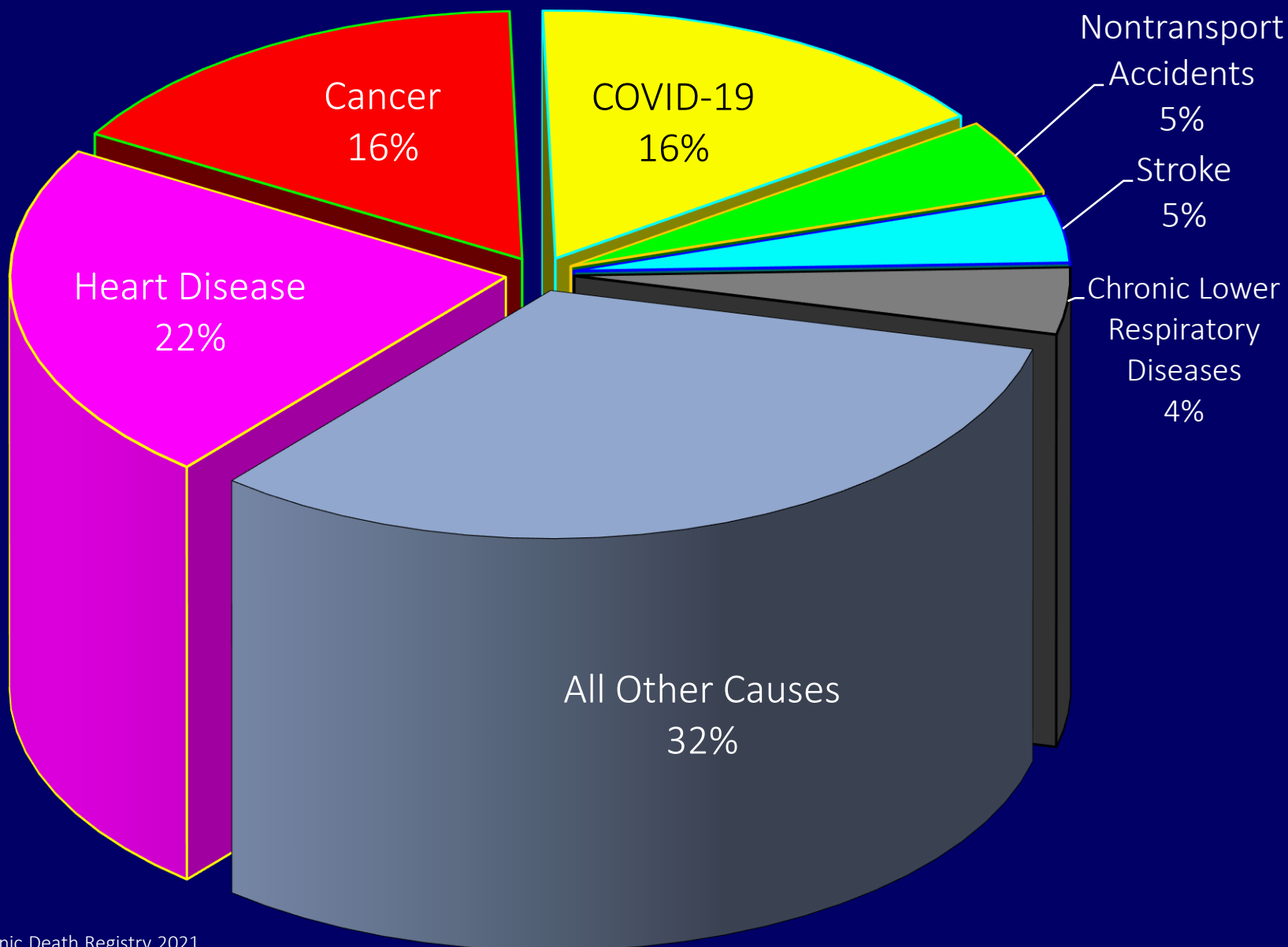
# Leading causes of Death Nevada 2021





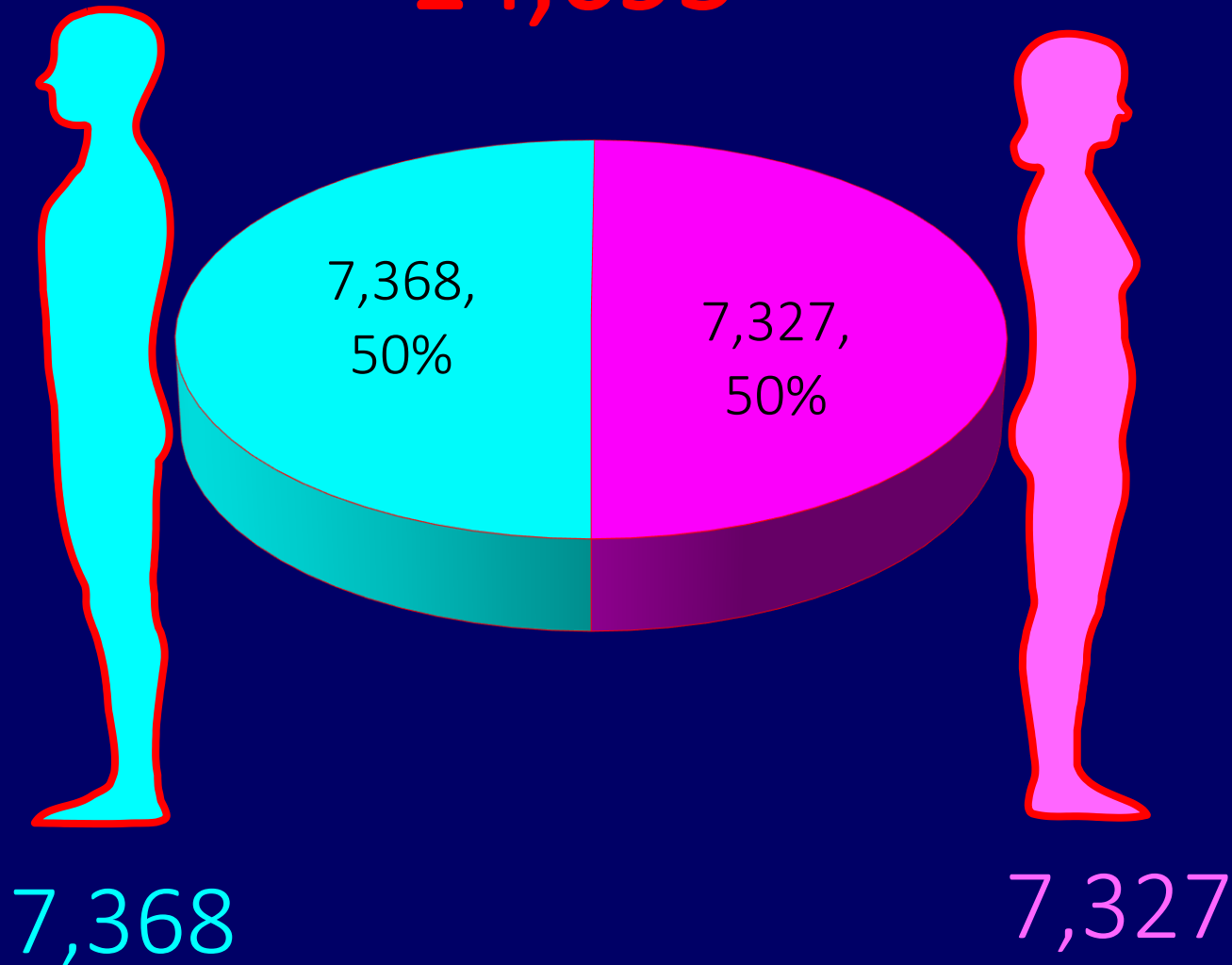
# 1 in 6 Deaths is Due to Cancer

## Nevada in 2021

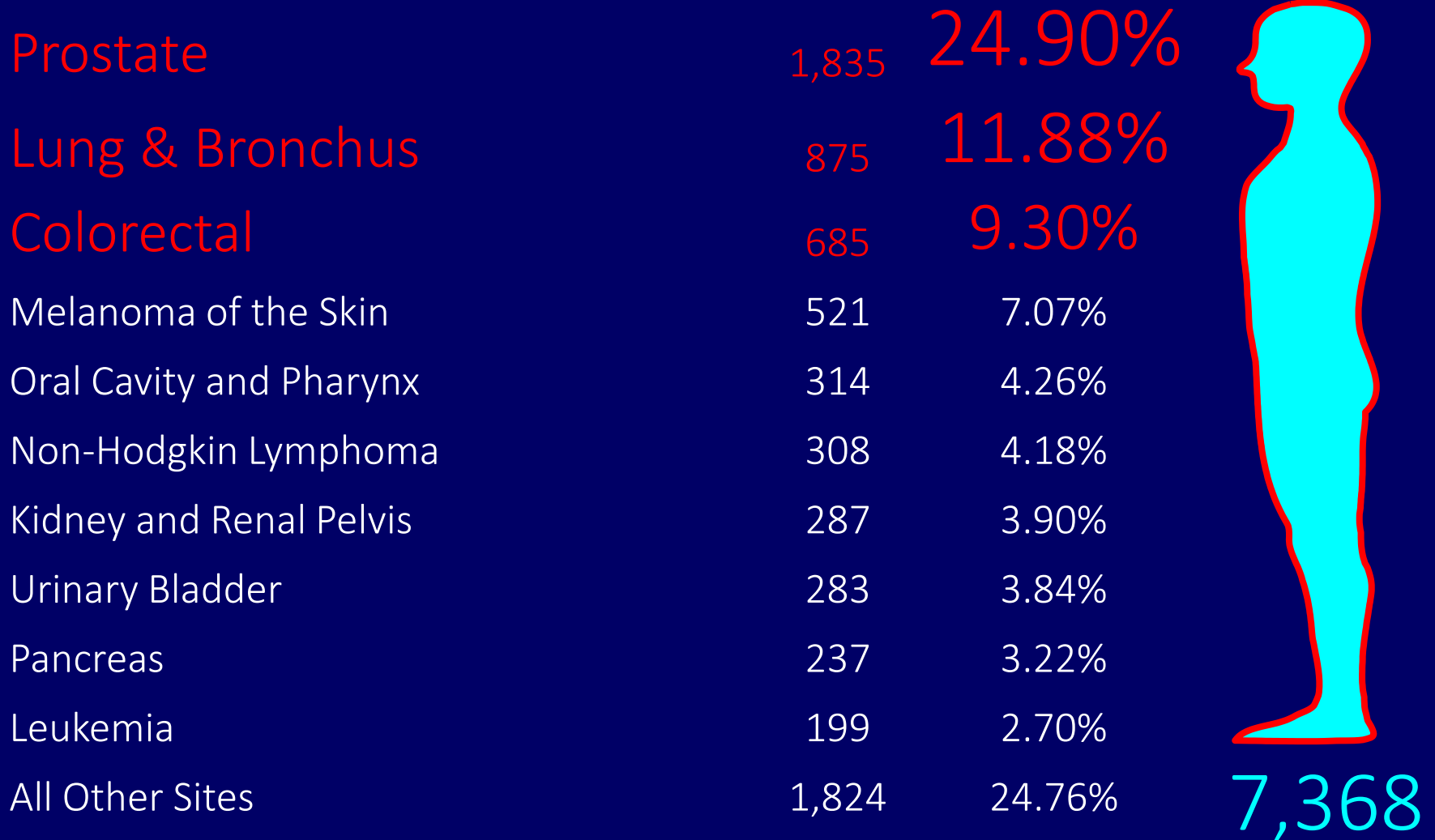


# Annual Frequency of Newly Diagnosed Cancer Cases Nevada 2020

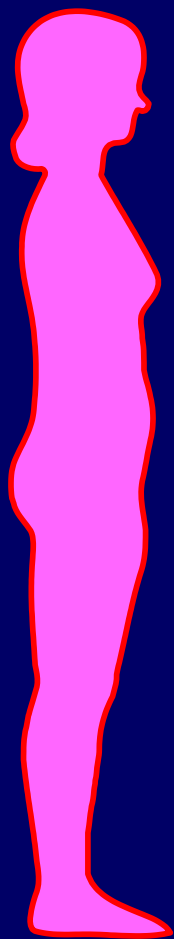
14,695



# Ten Most Diagnosed Cancers among Males Nevada 2020



# Ten Most Diagnosed Cancers among Females Nevada 2020

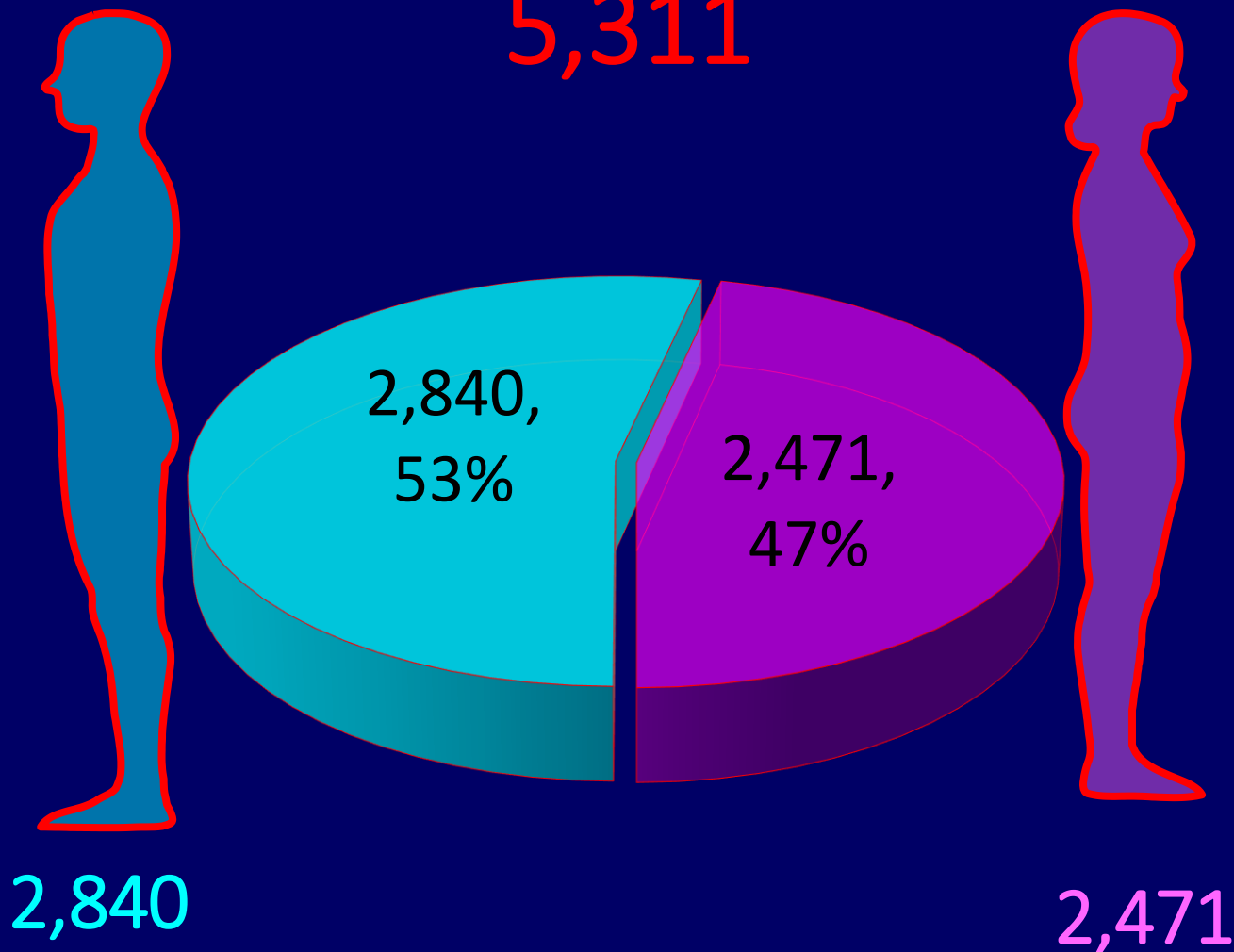


Breast	2,165	29.55%
Lung & Bronchus	844	11.52%
Colorectal	542	7.40%
Uterine Corpus	431	5.88%
Melanoma of the Skin	351	4.79%
Non-Hodgkin Lymphoma	225	3.07%
Thyroid	292	3.99%
Pancreas	209	2.85%
Kidney and Renal Pelvis	172	2.35%
Leukemia	170	2.32%
All Other Sites	1,926	26.29%

7,327

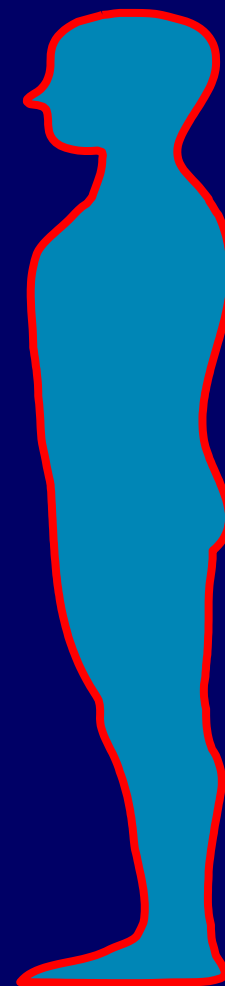
# Annual Cancer Deaths Nevada 2021

5,311



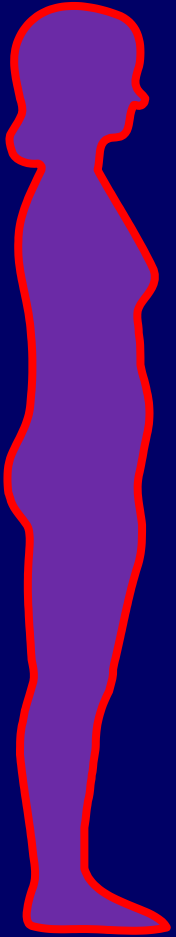
# Ten Most Deadly Cancers among Males Nevada 2021

Lung and Bronchus	549	19.33%
Prostate	315	11.09%
Colorectal	304	10.70%
Pancreas	237	8.35%
Liver and Intrahepatic Bile Ducts	147	5.18%
Leukemia	132	4.65%
Esophagus	124	4.37%
Non-Hodgkin Lymphoma	106	3.73%
Urinary Bladder	95	3.35%
Brain & Other CNS Malignant	75	2.64%
All Other Cancers	756	26.62%



2,840

# Ten Most Deadly Cancers among Females Nevada 2020

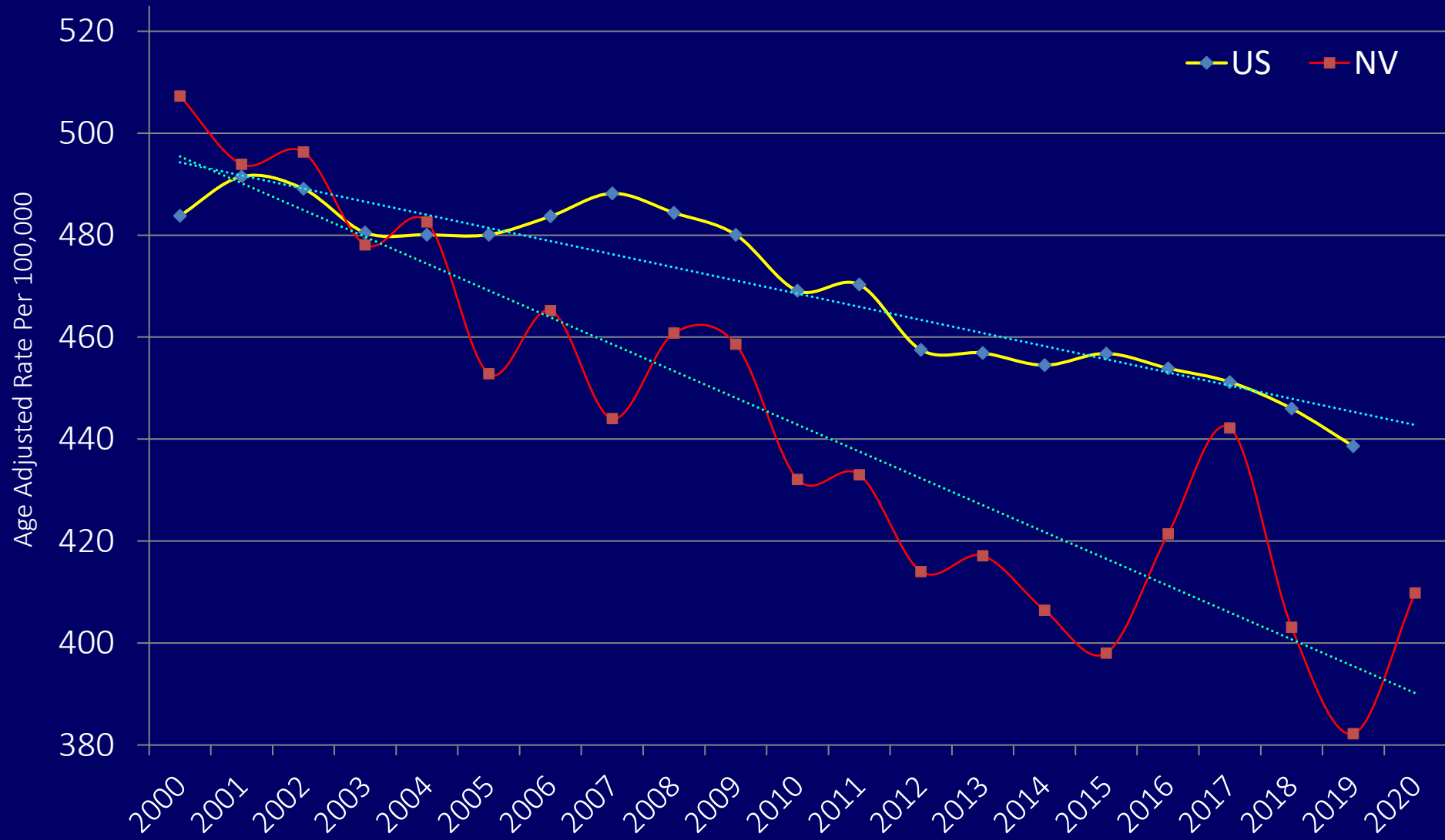


2,471

Lung and Bronchus	531	21.49%
Breast	388	15.70%
Colorectal	240	9.71%
Pancreas	171	6.92%
Ovary	108	4.37%
Liver and Intrahepatic Bile Ducts	95	3.84%
Corpus Uteri and Uterus NOS	94	3.80%
Non-Hodgkin Lymphoma	74	2.99%
Leukemia	67	2.71%
Brain & Other CNS Malignant	62	2.51%
All Other Cancers	641	25.94%

# Cancer Incidence Rates Historical Trends

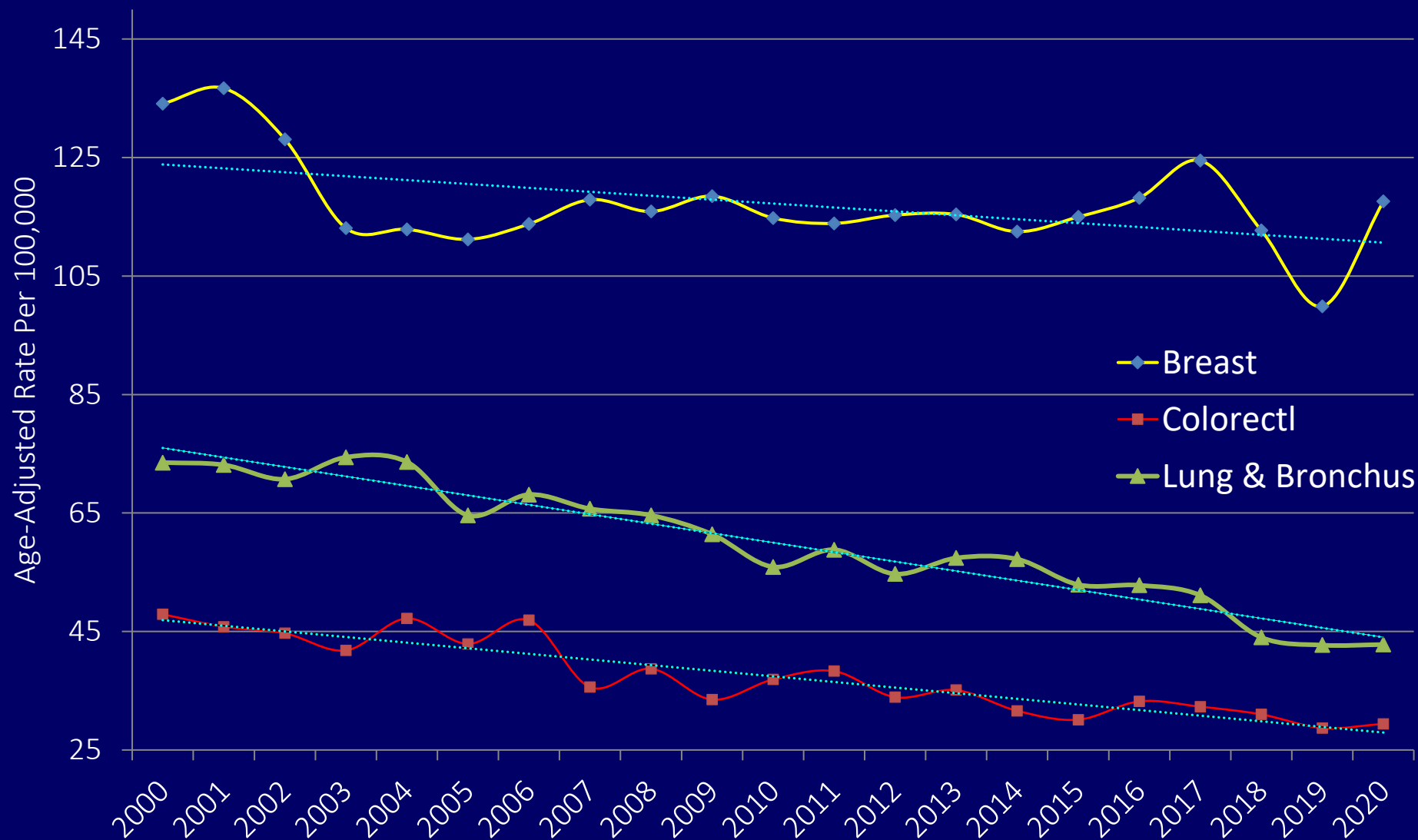
## Nevada & US (2000 – 2020)





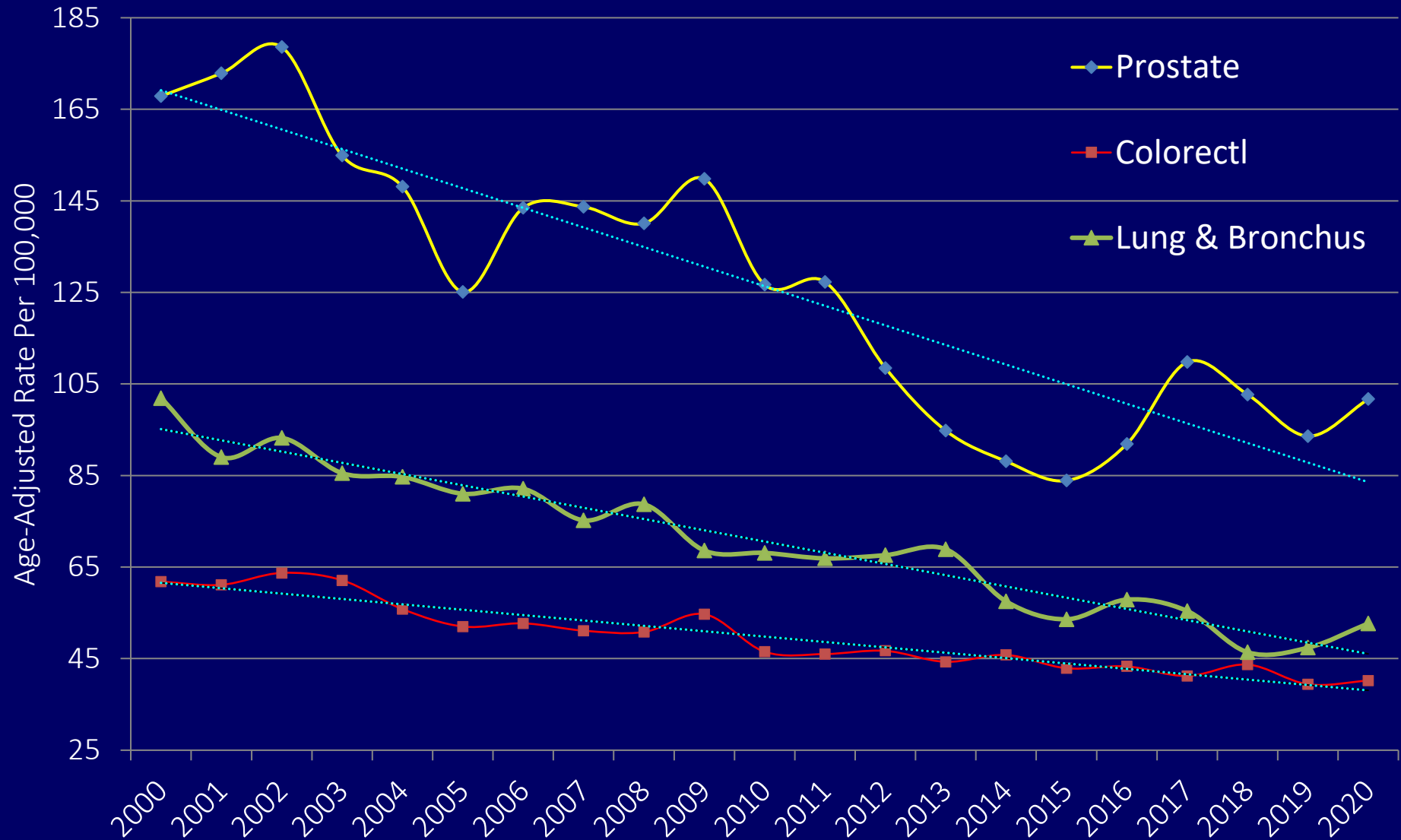
# Three Most Common Female Cancers

## Nevada Incidence Rates Historical Trends (2000 – 2020)

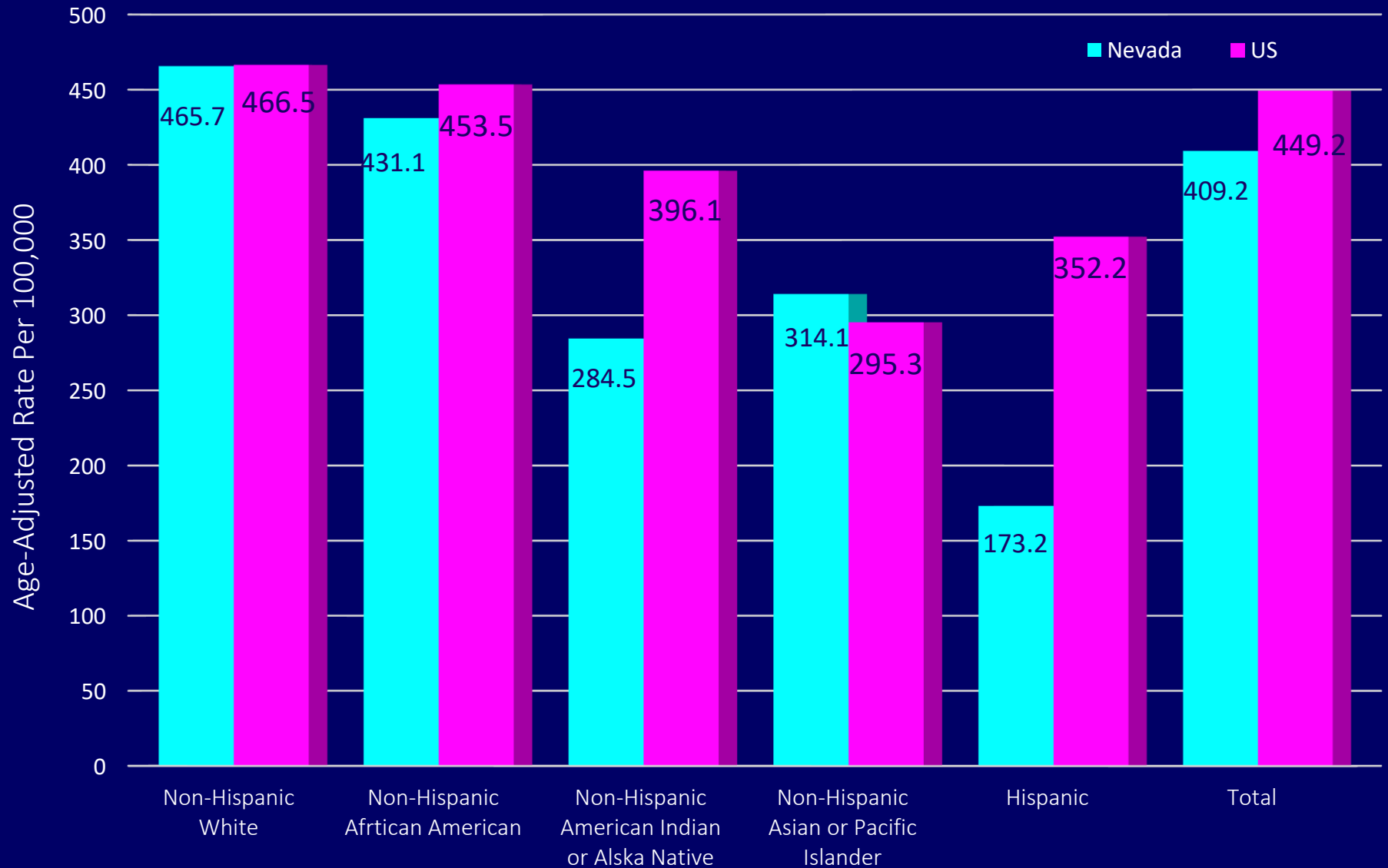


# Three Most Common Male Cancers

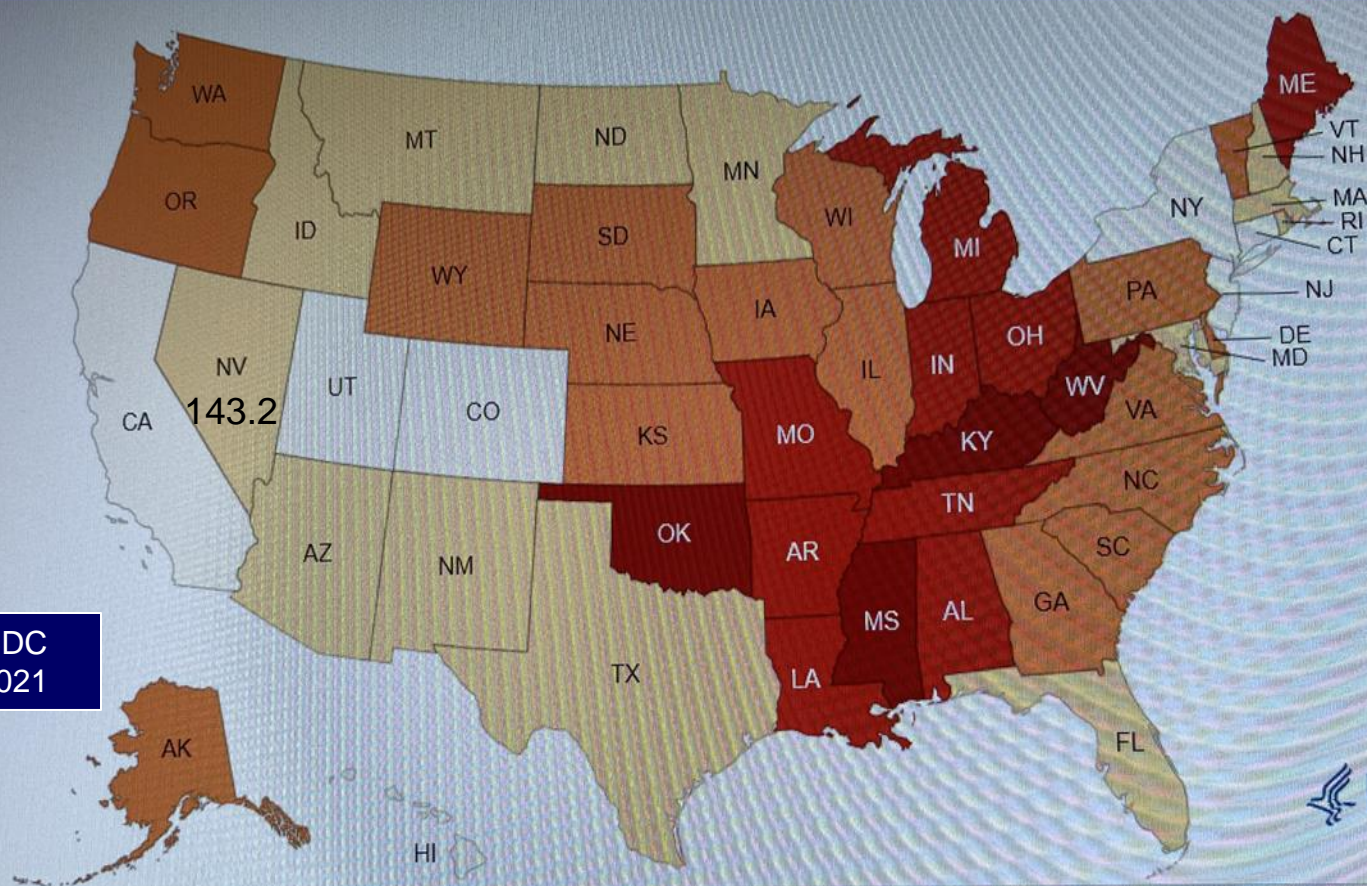
## Nevada Incidence Rates Historical Trends (2000 – 2020)



# Cancer Average Incidence Rate by Race/Ethnicity Nevada & US (2015 – 2019)



# Age-Adjusted Death Rates by State U.S. 2021



CDC  
2021



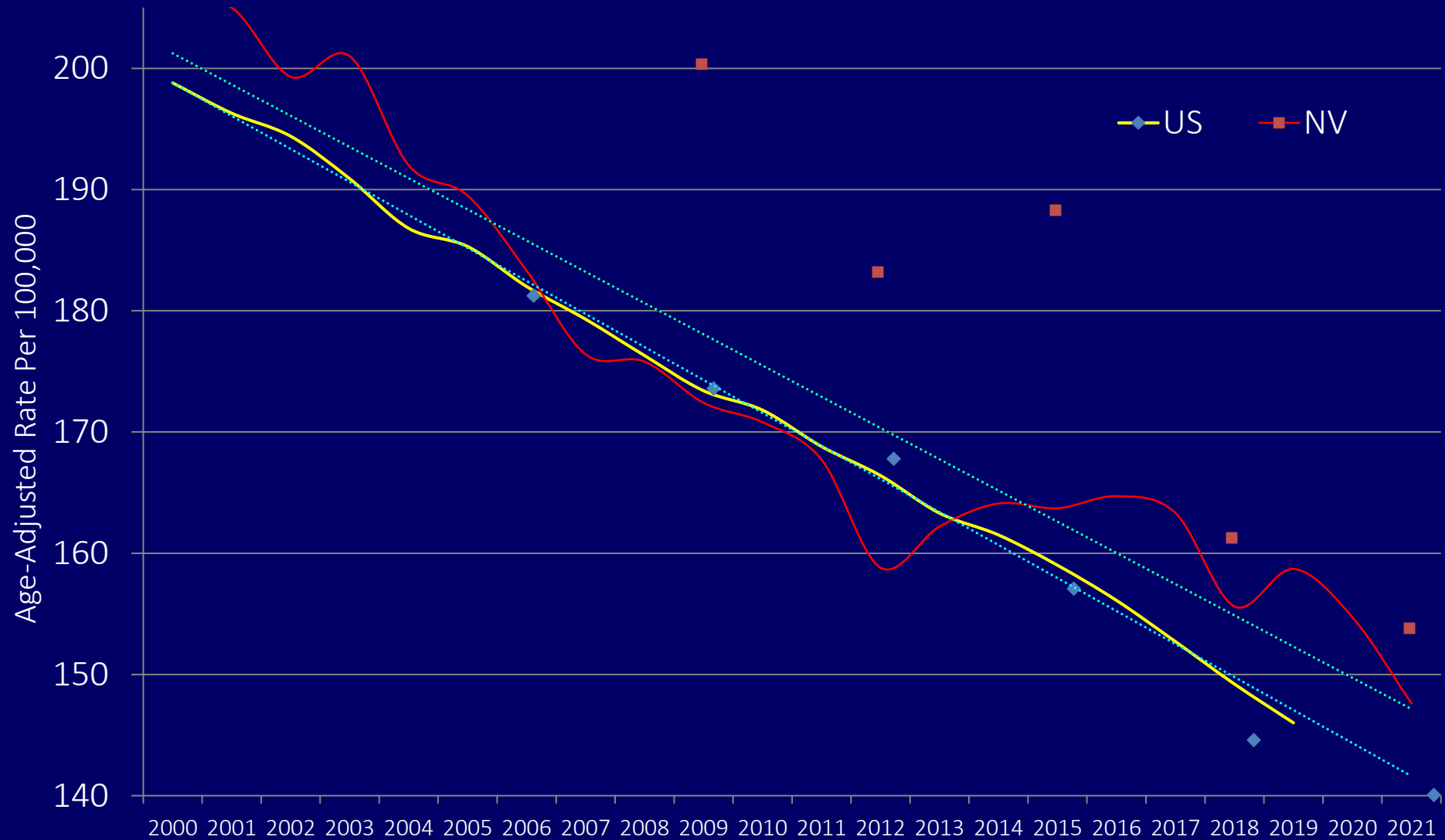
## Age-Adjusted Death Rates<sup>1</sup>

- 121 - < 133.74
- 146.48 - < 159.22
- 171.96 - 184.7

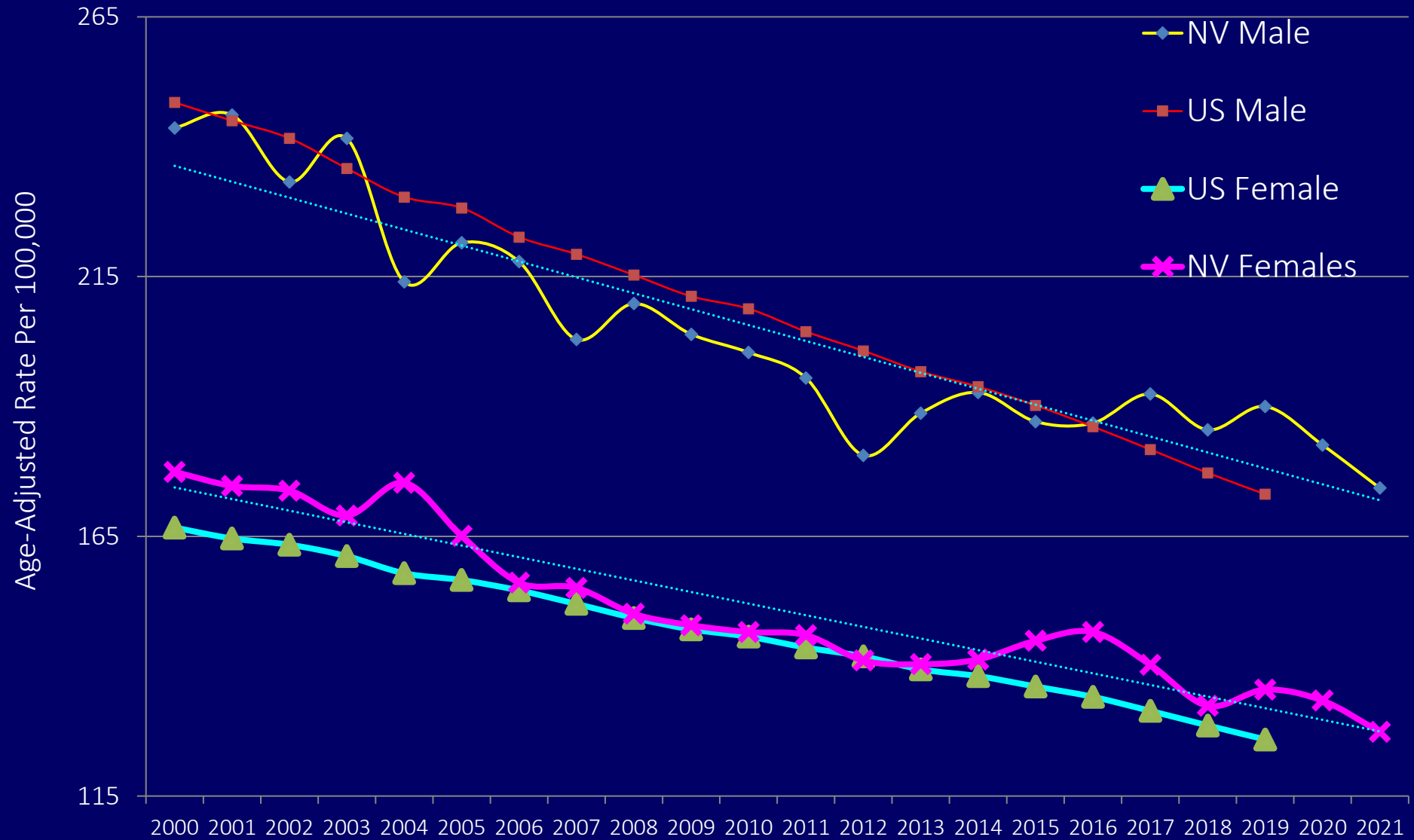
● 133.74 - < 146.48

● 159.22 - < 171.96

# Cancer Mortality Rates Historical Trends Nevada and the US (2000 – 2021)



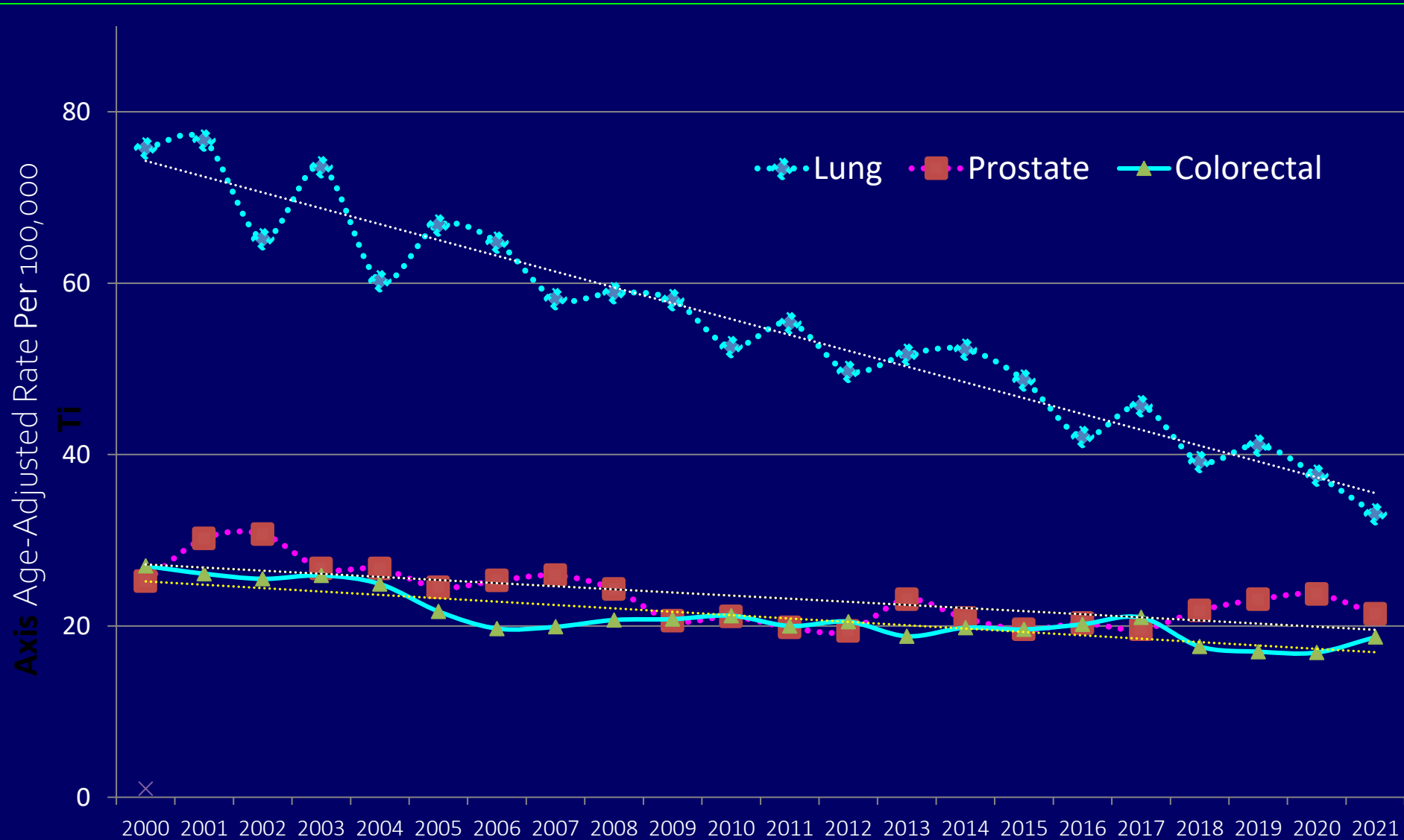
# Cancer Mortality Rates by Gender Historical Trends Nevada & US (2000 – 2021)





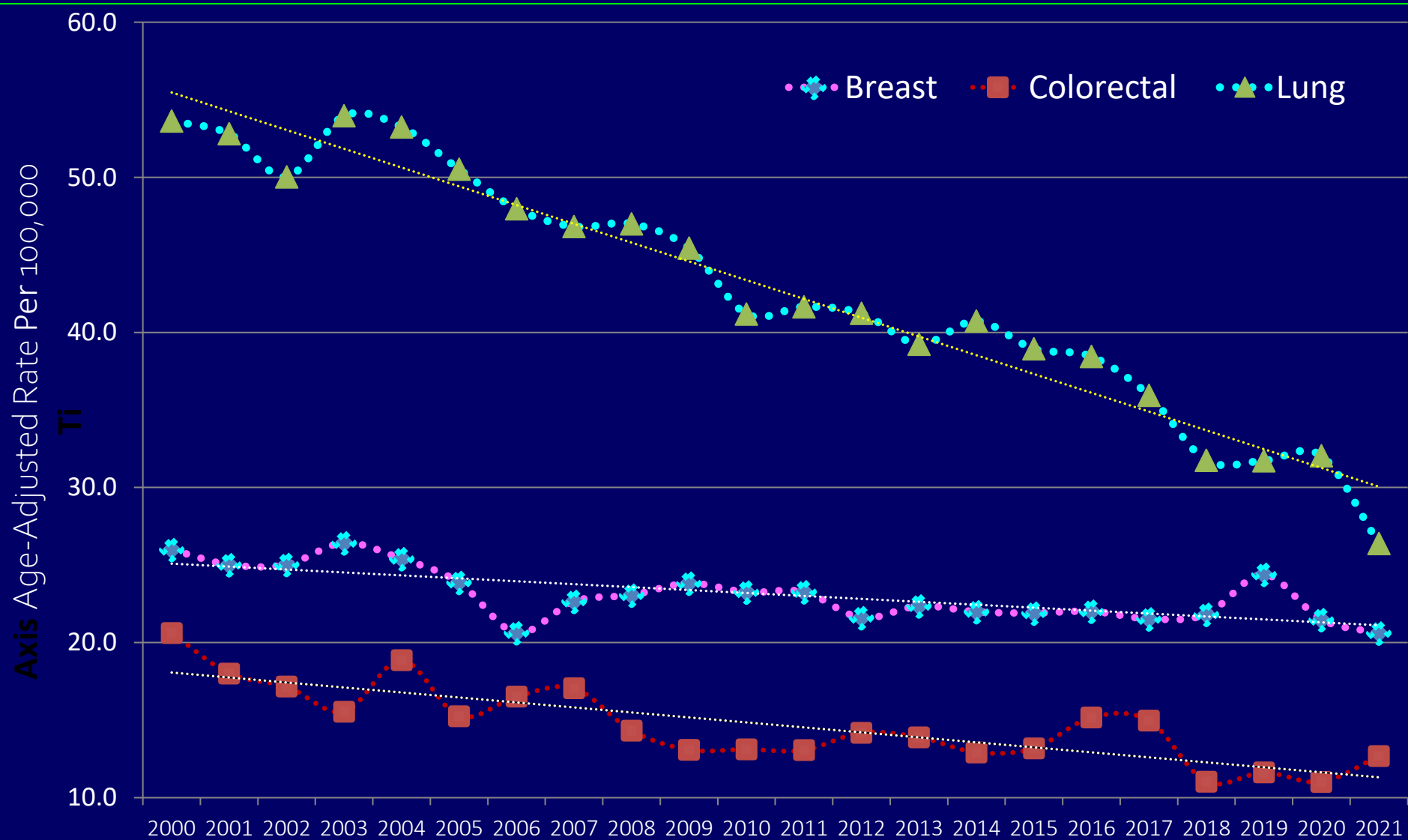
# Cancer Mortality Rates Historical Trends

## Nevada Males (2000 – 2020)



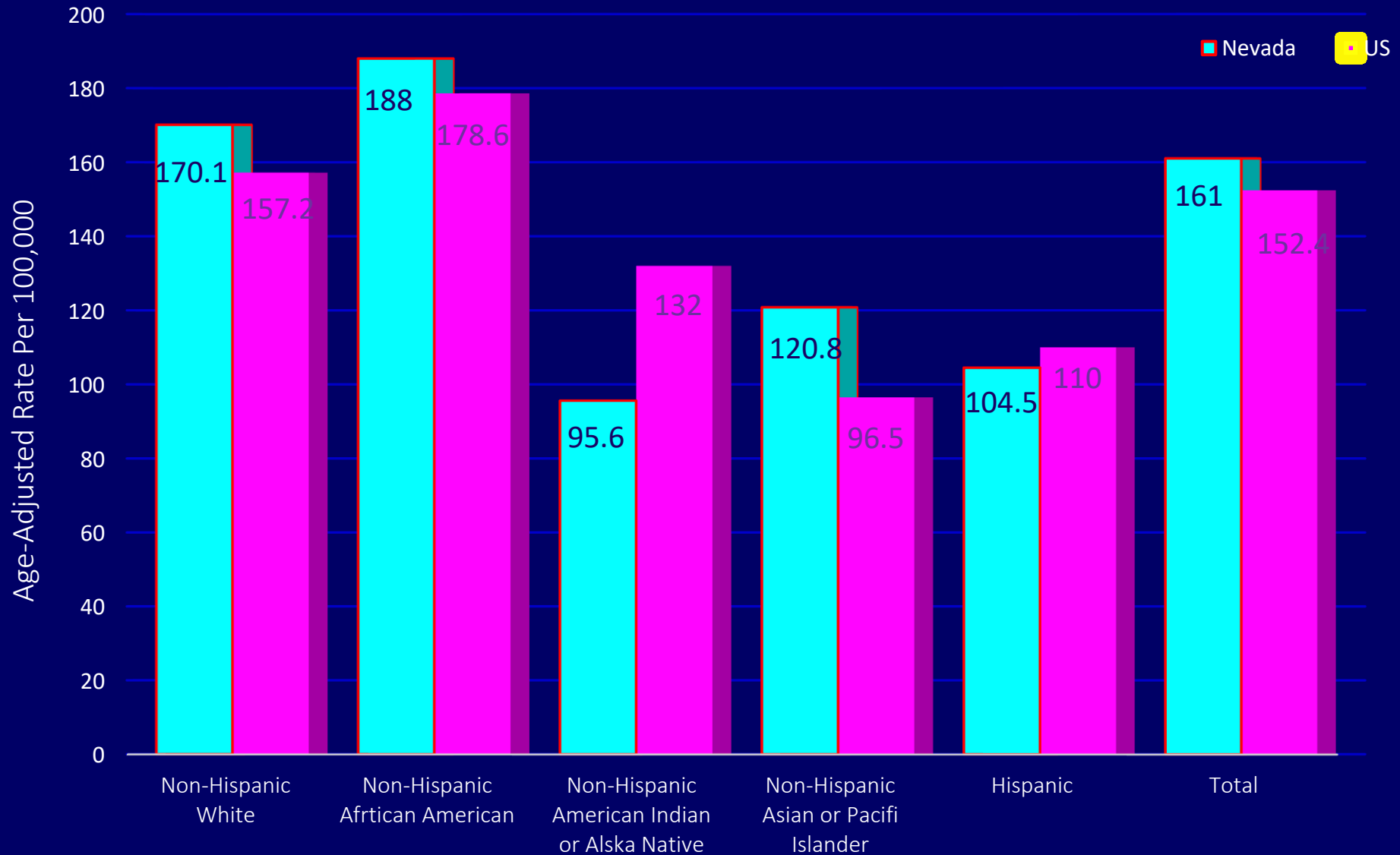
# Cancer Mortality Rates Historical Trends

## Nevada Females (2000 – 2020)





# Cancer Average Mortality Rate by Race/Ethnicity Nevada & US (2015 – 2019)



# Reverse Alarming Trends of Cancer

## ❑ Increase community awareness

- ❑ Conduct public and professional education events (Primary and Secondary Prevention)
- ❑ Sponsor health promotion and cancer prevention events
- ❑ Encourage and support smoking and vaping cessation
- ❑ Promote healthy lifestyles and behaviors
- ❑ Promote healthy nutrition
- ❑ Promoting physical activity
- ❑ Prevent morbid obesity

## ❑ Develop new partnerships and enhance existing ones with local communities

## ❑ Reduce cancer morbidity and mortality through education, prevention, early detection and timely treatment

- ❑ Provide healthcare coverage to everyone
- ❑ Ensure access to healthcare/preventive healthcare services
- ❑ Encourage annual well check for adults and children
- ❑ Early detect and promptly treat pediatric cancer
- ❑ Increase female access to cancer early detection and timely treatment
- ❑ Enhance cancer screening and early detection of cancer (e.g., breast, colorectal, skin, lung....)
- ❑ Increase minority access to preventive culturally competent healthcare services
- ❑ Develop effective interventions to reduce/eliminate health disparities
- ❑ Improve patient-provider interactions and communication
- ❑ Conduct regular immunization clinics

*"Life is like riding a bicycle.  
To keep your balance,  
you must keep on moving."*

—

*Albert Einstein*

# Next Steps

- ❑ Increase support to the state Cancer Registry (i.e., funding, staff, training, equipment...)
  - ❑ Improve timely reporting of cancer data (i.e., real time electronic)
  - ❑ Enhance Nevada Central Cancer Registry (NCCR) data collection, management and analysis (e.g., completeness, reliability, validity, usability...)
  - ❑ Translate NCCR data into meaningful community interventions
- ❑ Improve Nevada cancer surveillance (e.g., person, place and time)
- ❑ Identify high risk populations including hard to reach disabled individuals
- ❑ Monitor trends of cancer for each county; statewide; neighboring states and nationally
  - ❑ Lung, breast, colorectal, skin and cervical cancers constitute the most important areas with potential for significant gains in prevention, early detection and treatment
- ❑ Intensify the fight against smoking; vaping and other tobacco products use especially among children and young people
- ❑ Enhance cancer screening and early detection efforts
  - ❑ Focus on breast cancer, lung, skin, cervical, colorectal in highly populated/underserved areas and also in rural/frontier Nevada

# Next Steps – Continue

- ❑ In close partnerships with the community, develop statewide strategies, policies, priorities, goals, and work plans to enhance cancer prevention, screening and early detection, diagnosis, treatment and follow-up
- ❑ Monitor temporal and spatial cancer trends in Nevada and nationally
- ❑ Develop specific performance indicators and benchmarks (e.g., target rates of cancer screening, using national Healthy People 2030 Target Rates
- ❑ Monitor disease trends among minorities (by location , income, education, and occupation...)
- ❑ Monitor rates of cancer among the uninsured; underinsured and underserved communities
- ❑ Identify and monitor risk factors among vulnerable groups
- ❑ Eliminate health disparities
- ❑ Improve the quality of life for all cancer patients and their families
- ❑ Regularly Evaluate progress toward reaching goals

# Acknowledgements

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*Thank*

*You*



# Questions



