

November 18, 2024

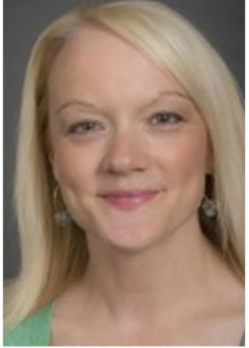


Cancer in Palo Alto County

Mary Charlton, PhD

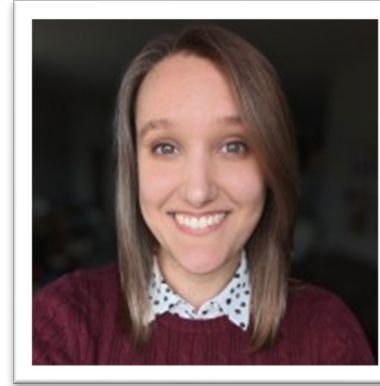
Amanda Kahl, MPH

Who we are



Mary Charlton, PhD

Dr. Charlton is a Professor in the Department of Epidemiology at the University of Iowa College of Public Health and Director of the Iowa Cancer Registry. She is also the President of the Iowa Cancer Consortium and Co-Leader of the Cancer Epidemiology and Population Science Program at the Holden Comprehensive Cancer Center. Her research focuses on differences in access and quality of cancer care between rural and urban populations related to the prevention, detection and treatment of cancer.



Amanda Kahl, MPH

Amanda Kahl is a data analyst at the Iowa Cancer Registry. She has conducted studies of associations between viral infections and cancer, rural-urban differences in treatment and quality of cancer care, and data quality and completeness of cancer registry data.

**If you have questions, please email
ICR-99countiesproject@uiowa.edu**



Outline

- What is the Iowa Cancer Registry?
- Definitions of key terms in the presentation
- Cancer in Palo Alto County
- Cancer Screening & Prevention
- Modifiable Health Behaviors
- Resources

***“Statistics are people
with the tears wiped away”***

Dr. Irving Selikoff

Iowa Cancer Registry

- Cancer is a reportable disease in Iowa as codified in the Iowa Administrative Code
- An original member of the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) Program with data back to 1973
- Use data to examine rates and disseminate information to hospitals and communities
- Cancer Registry data lags 2 years

Iowa Administrative Code (IAC)

[Public Health 641, Chapter 1, Section 139A]

1.3(1) Pursuant to Public Law 92-218 and Public Law 102-515, each occurrence of a reportable cancer that is diagnosed or treated in an Iowa resident or occurs in a nonresident who is diagnosed or treated in an Iowa facility shall be reported to the Iowa Cancer Registry

Information in the Iowa Cancer Registry

Information we collect

- New cancer cases
- Stage at diagnosis
- Treatment
- Survival
- Cancer deaths
- Demographics (sex at birth, race/ethnicity, age at diagnosis, marital status at diagnosis, insurance at diagnosis)

Information we do not collect

- Occupation
- Environmental exposures
- Health behaviors (smoking, drinking)
- Height and weight
- Family history

Definitions of Key Terms

Incidence & Mortality Rates

Incidence:

Number of new cases of a disease occurring during a specified time period in a population

Example: 2021

$$\frac{2,549 \text{ new lung cancers in Iowa}}{3,197,689 \text{ people living in Iowa}} = 0.000797 \text{ or } 79.7 / 100,000 \text{ people}$$

Mortality:

Number of deaths from a disease that occur during a specified time period in a population

Example: 2021

$$\frac{1,455 \text{ lung cancer deaths in Iowa}}{3,197,689 \text{ people living in Iowa}} = 0.000455 \text{ or } 45.5 / 100,000 \text{ people}$$

Cancer and age

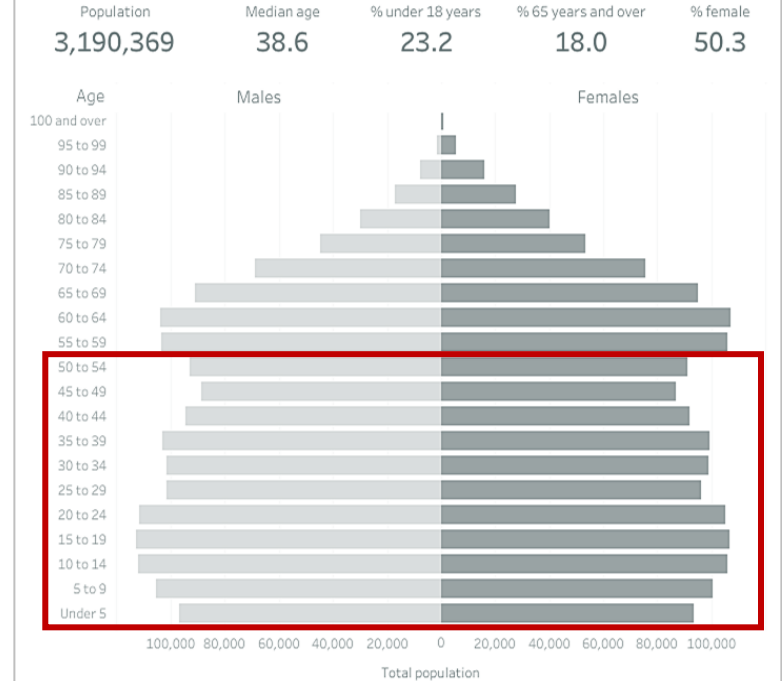
- Age is one of the biggest risk factors for cancer
- Populations with a larger proportion/number of older people will have higher numbers of cancers, and higher cancer rates

Age-Adjusted Rates

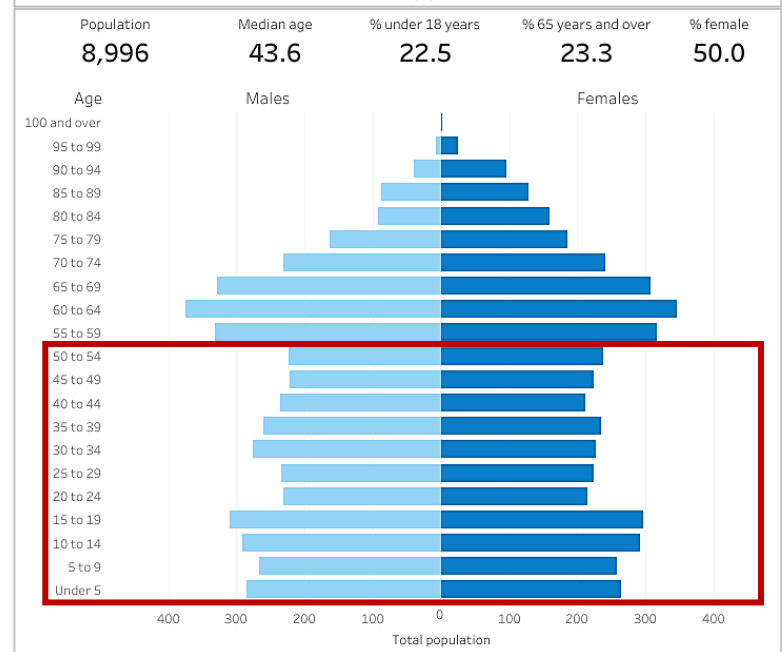
Addresses the question:

- If the age distribution of the populations were the same, would there be any differences in incidence or mortality?
- Allows us to compare rates between populations

Iowa
2020
population



Palo Alto County
2020
population



Small Numbers

- Small numbers can have a huge impact on the reliability and stability of statistics
- An unstable rate is one that would vary from one year to the next due to chance alone
- The Iowa Cancer Registry has strict policies about protecting health information and does not release...
 - Number of cancers <6
 - Rates calculated on case counts <16

Cancer Takes Time to Develop

- Most cancers develop slowly in people
- They usually appear between 5 to 40 years after exposure to a something that causes cancer
 - For example, lung cancer may not occur until 30 years after a person starts smoking
- This long time between exposure and cancer developing is one of the reasons it is difficult to determine what causes cancer in humans

Cancer is Multifactorial

Caused by multiple risk factors working together to alter the way cells function

No one cause for cancer; it is the **complex interplay of different genetic, behavioral, environmental, and structural factors**

To reduce risk of cancer, it is important to **reduce exposure to modifiable risk factors**

Advancing age

Alcohol

Cancer-Causing Substances

Chronic Inflammation

Diet

Hormones

Immunosuppression

Infectious Agents

Genetics

Obesity

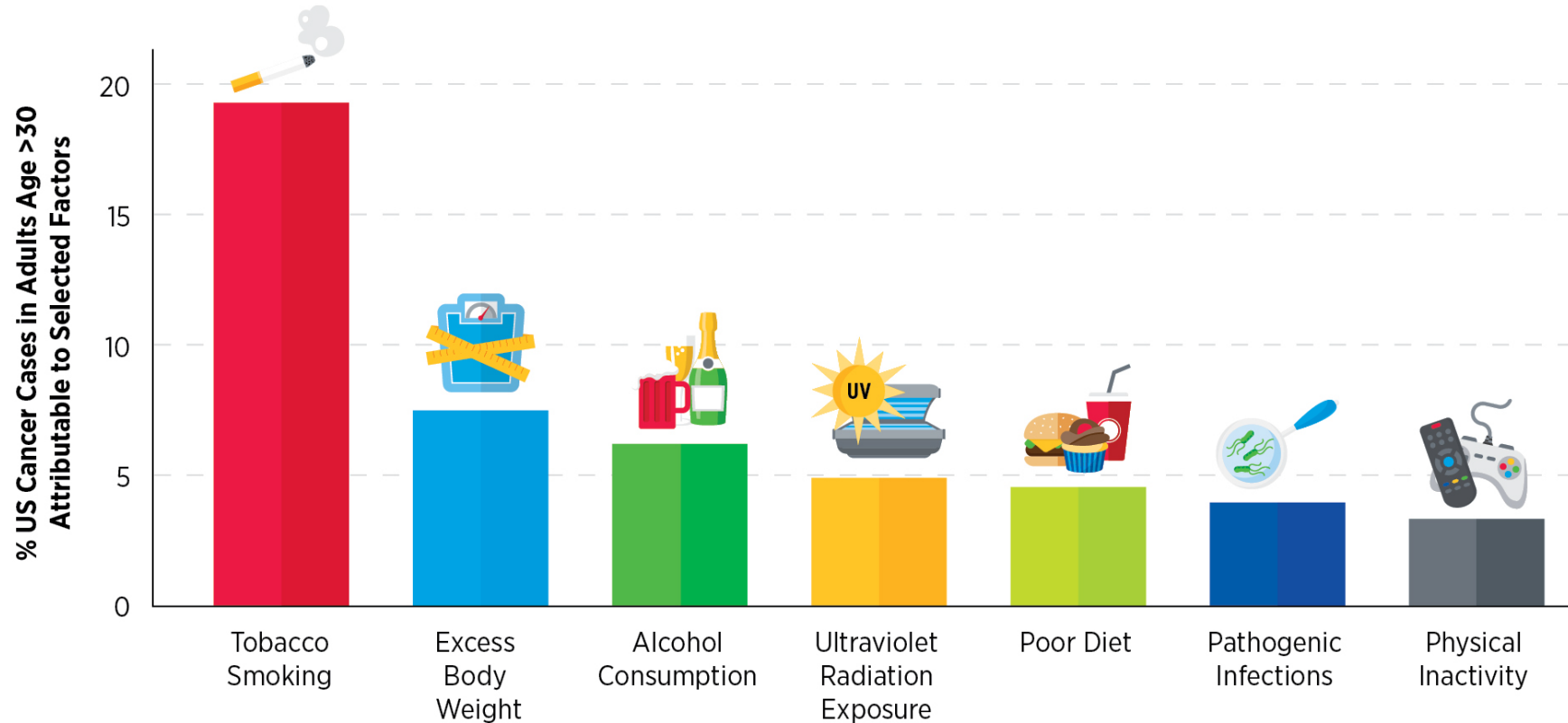
Radiation

Sunlight

Tobacco

FIGURE 7

Modifiable Cancer Risks

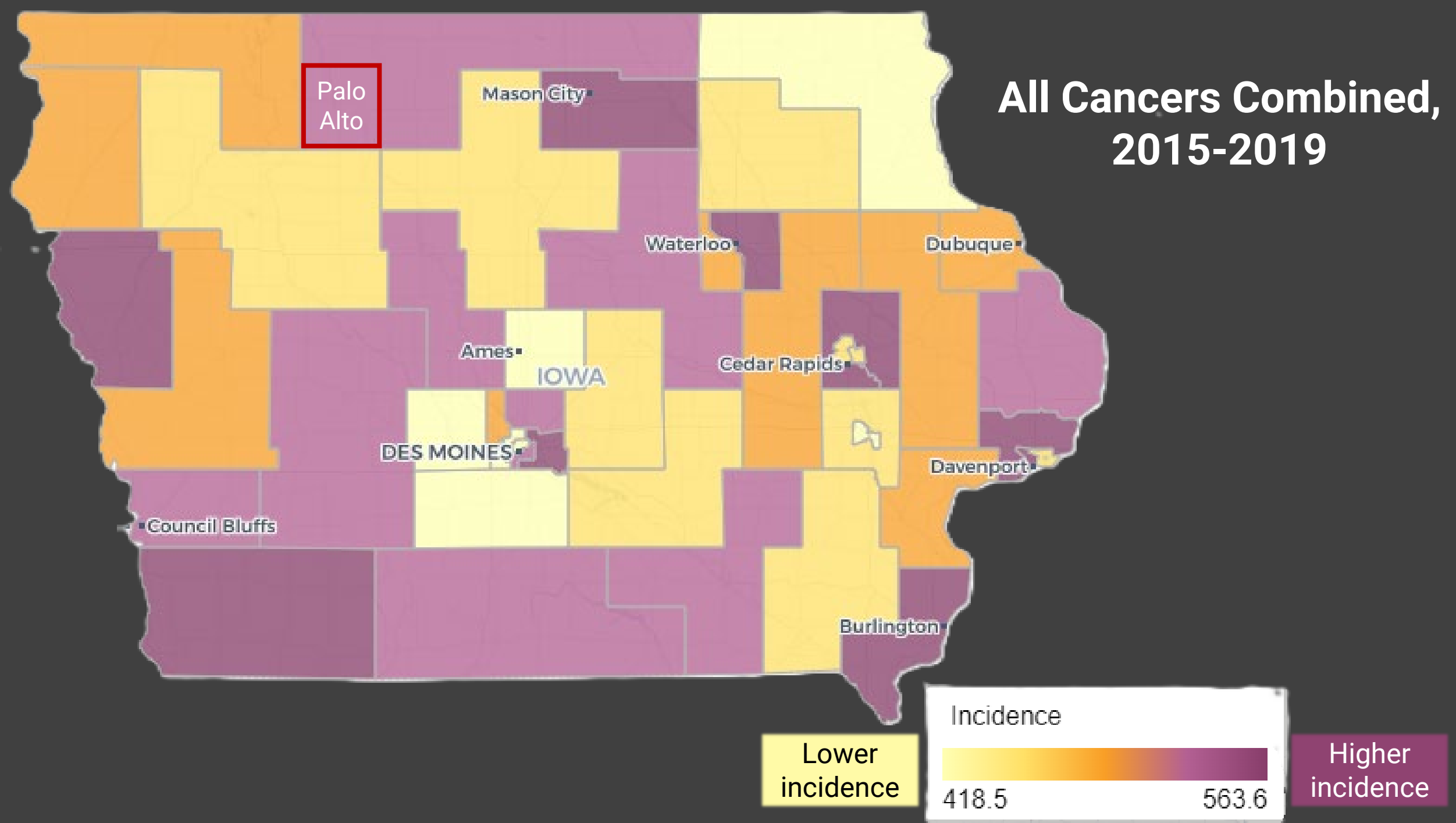


Research has identified numerous factors that increase an individual's risk for developing cancer. The prevalence of many of these risk factors are higher among minoritized and medically underserved populations. By modifying behavior, individuals can assist in the elimination or reduction of many of these risks and thereby reduce their risk of developing or dying from cancer. Developing and implementing equitable interventions such as public health campaigns and policy initiatives can help further reduce the burden of cancers related to modifiable cancer risk factors.

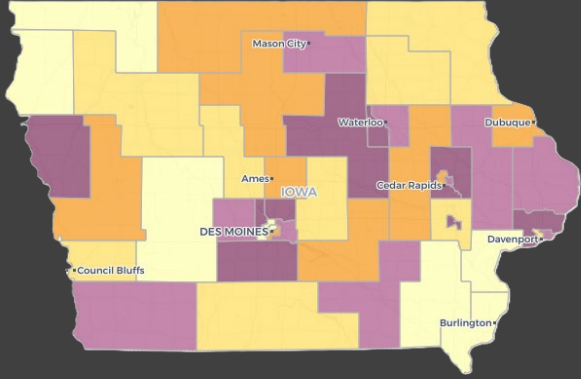
Cancer & the Environment

- Many Iowans understandably have questions about potential links between environmental exposures and cancer
- This is an important area of continued research, and Iowans are right to ask questions and want to take precautions
- The Iowa Cancer Registry does not collect any data on environmental risk factors, but we do share our data with researchers to support studies of environmental risk factors and cancer
- Today we will focus on modifiable risk factors with the most evidence showing they can be addressed at the state, community, and individual levels

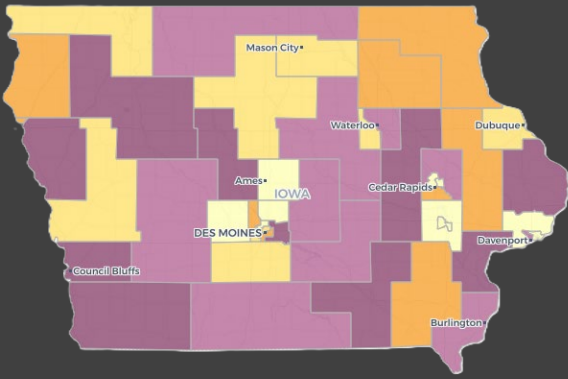
All Cancers Combined, 2015-2019



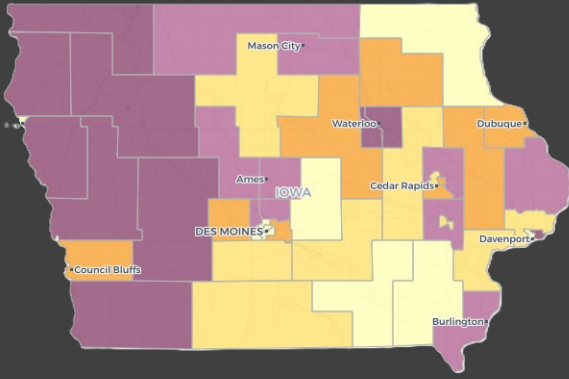
Breast/Chest



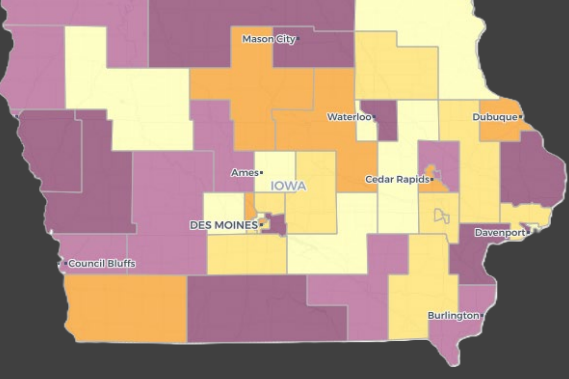
Colon & rectum



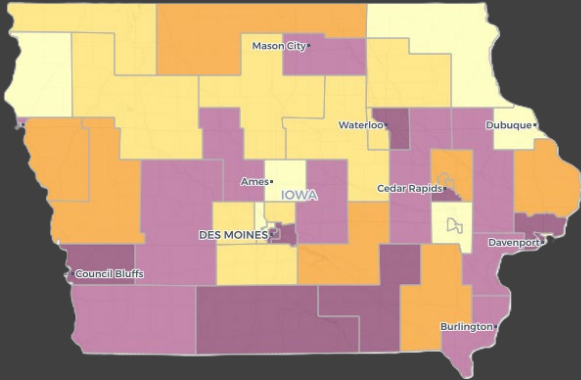
Prostate



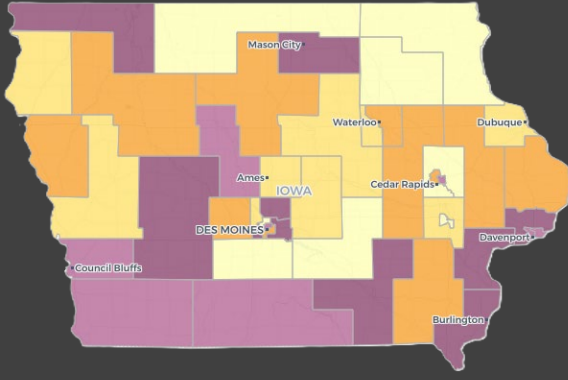
Kidney



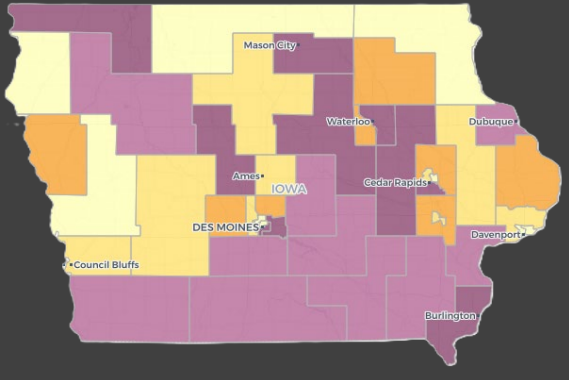
Lung



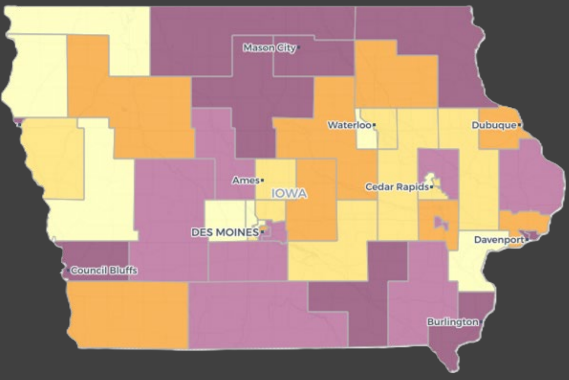
Pancreas



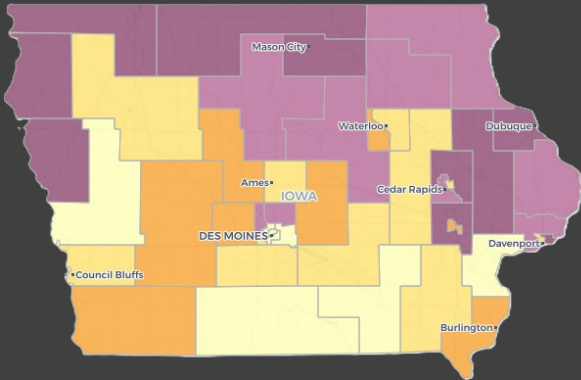
Bladder



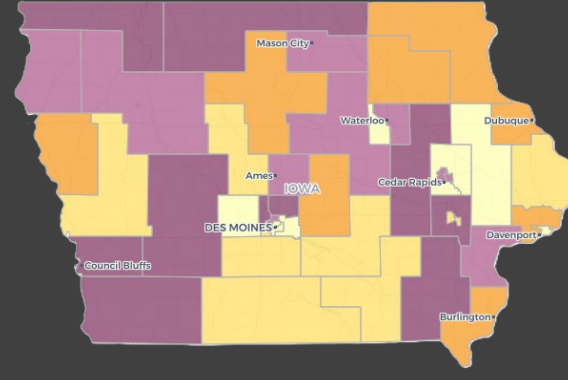
Oral Cavity & Pharynx



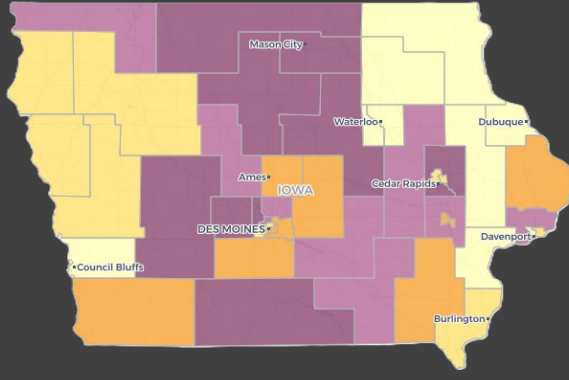
Melanoma



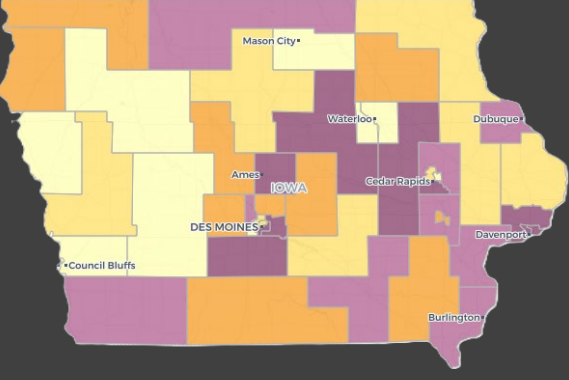
Non-Hodgkin Lymphoma



Leukemia



Uterine



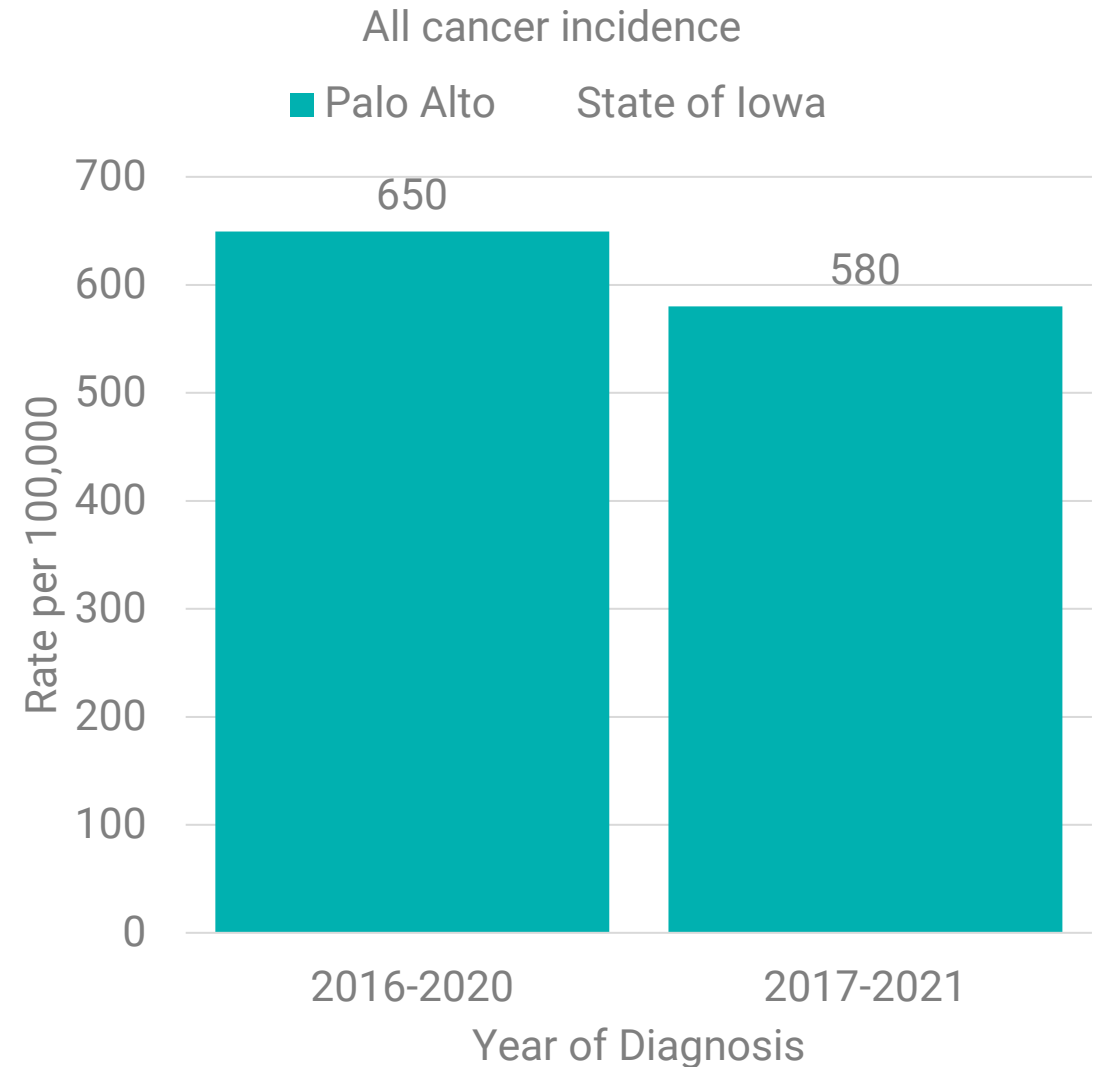
Cancer in Palo Alto

Palo Alto Made the News

Palo Alto County **was** ranked **2nd** for 2016-2020 all cancer incidence out of all counties in the US

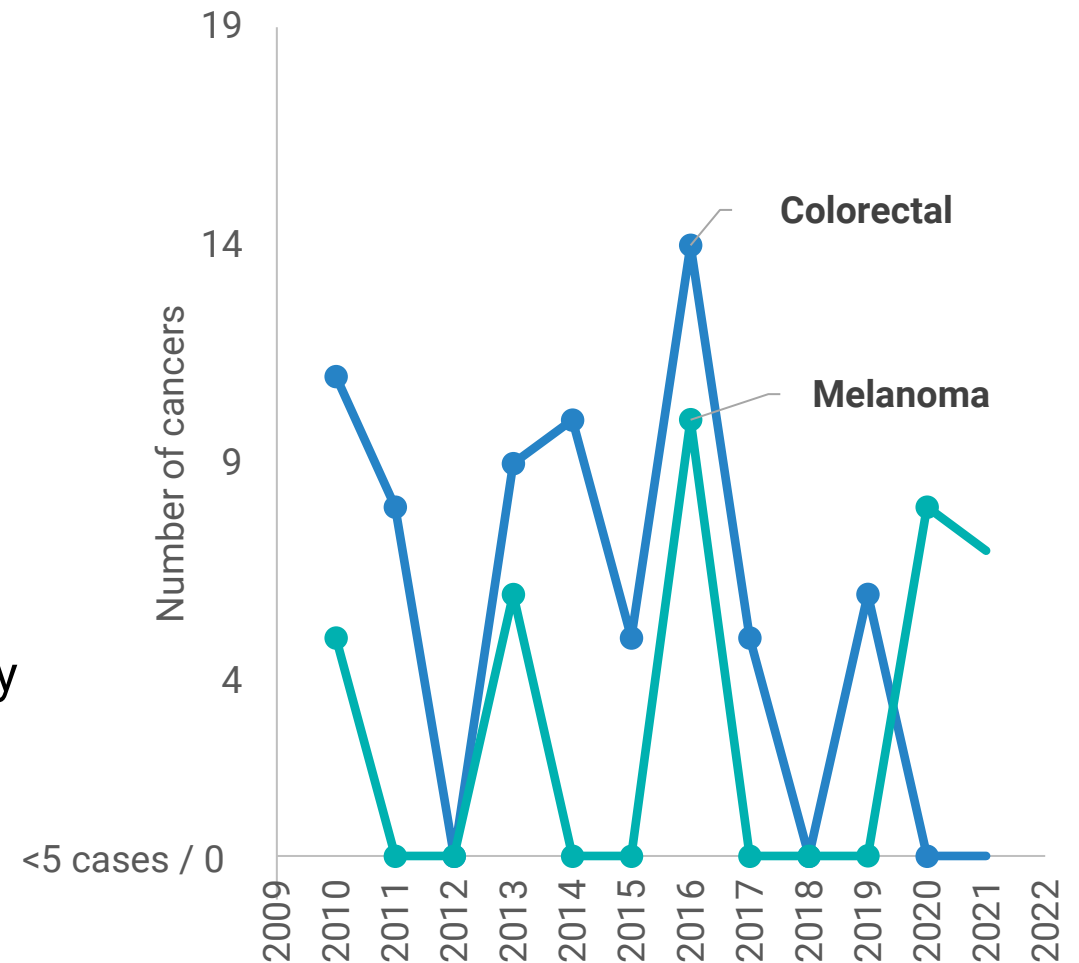
For 2017-2021, the cancer incidence in Palo Alto decreased

Now Palo Alto ranks 33rd in all cancer incidence out of all counties in the US

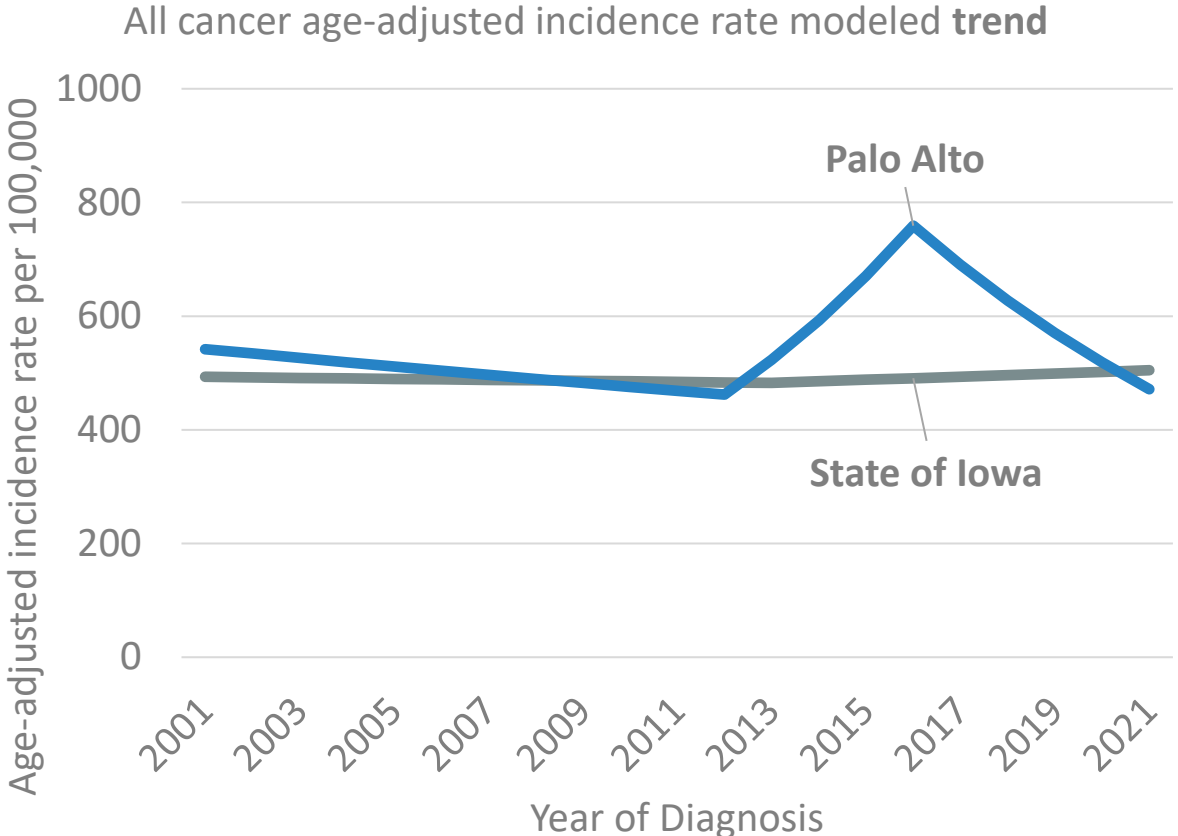
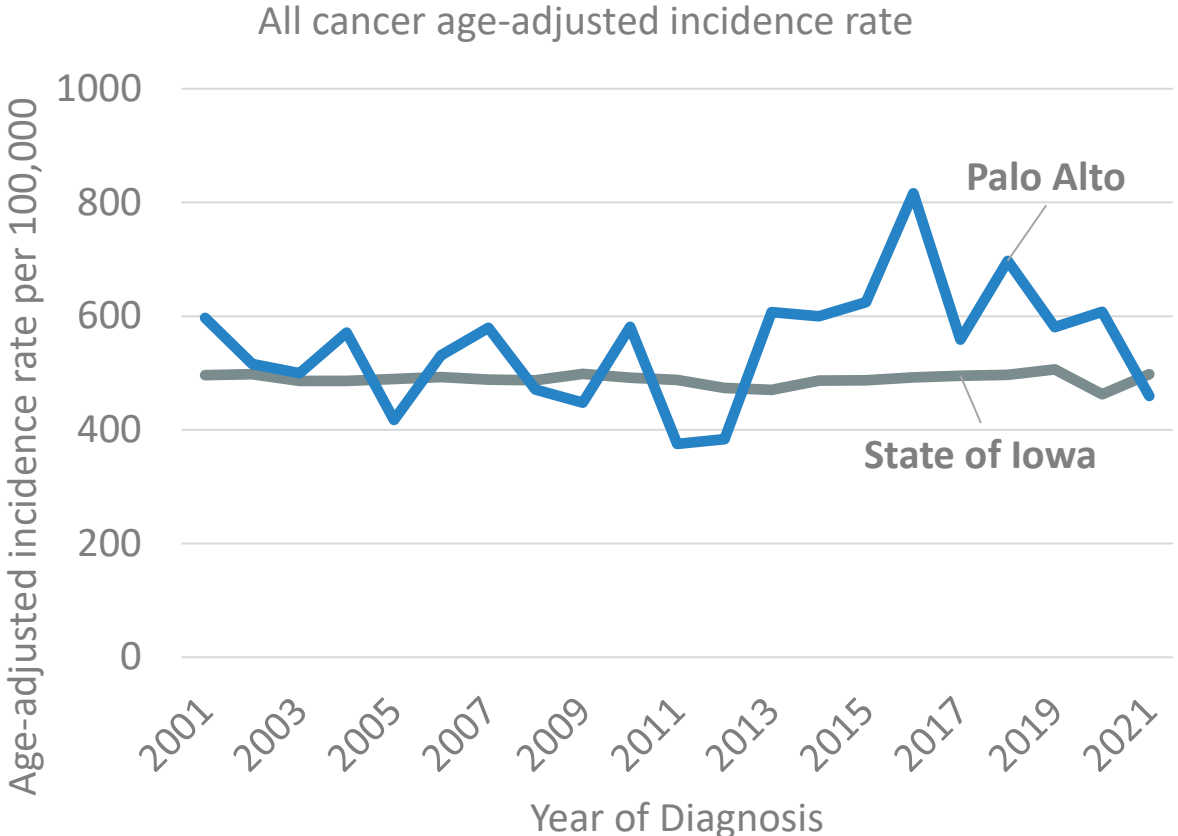


Why was Palo Alto ranked 2nd in the country?

- The rank of #2 was based on diagnosis years 2016-2020
- In 2016 there was a higher number of cancers, while a slight decrease in the county population
- Colorectal cancer and melanoma were two cancer sites that had more cases than usual in 2016
- Given the very small numbers of cases in Palo Alto County, 2016 was likely a statistical anomaly
- The number of other common cancer types like prostate, lung and breast bounce up and down in any given year, so it is likely by chance that colorectal cancer and melanoma had a high number of cases in the same year

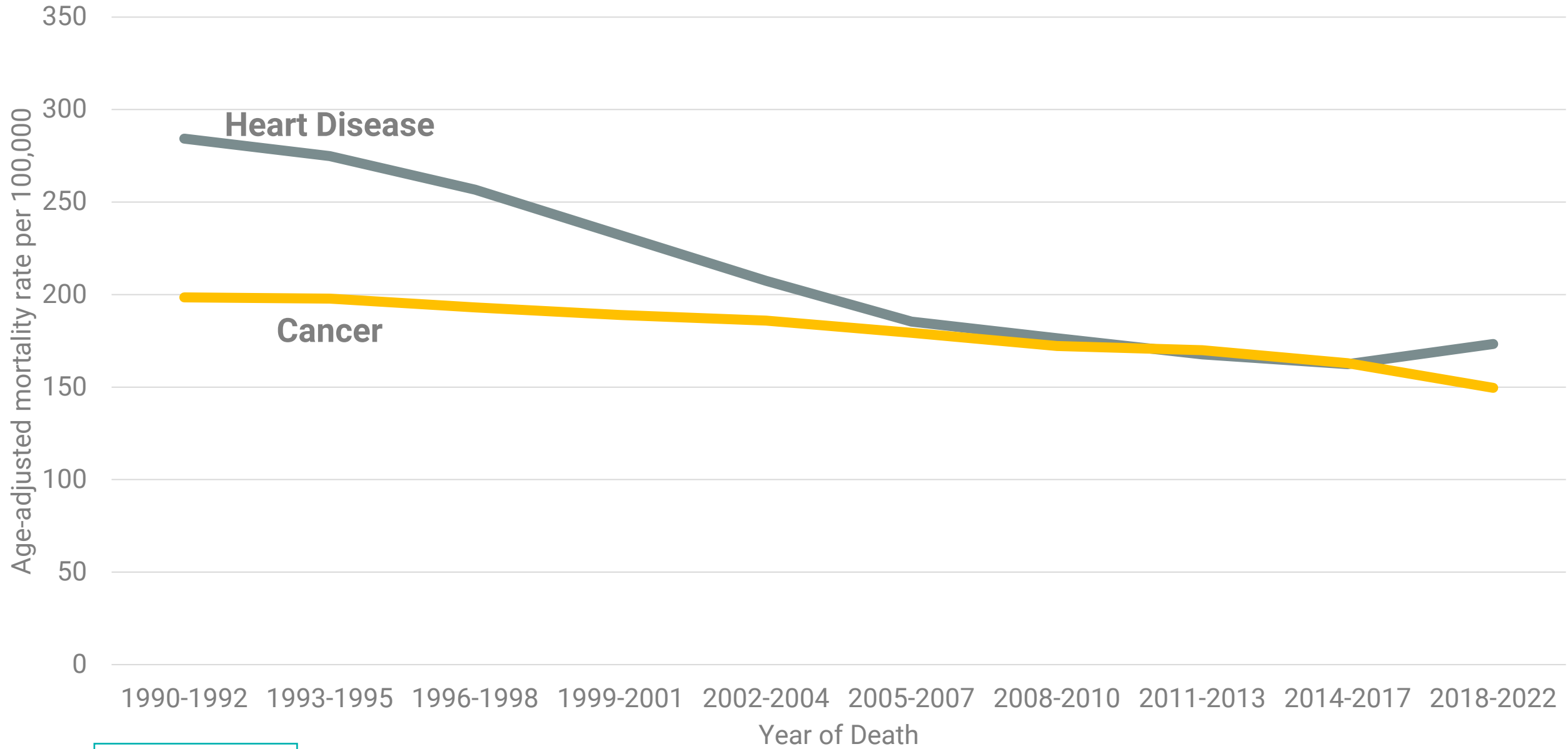


Incidence jumps around, but decreases after 2016

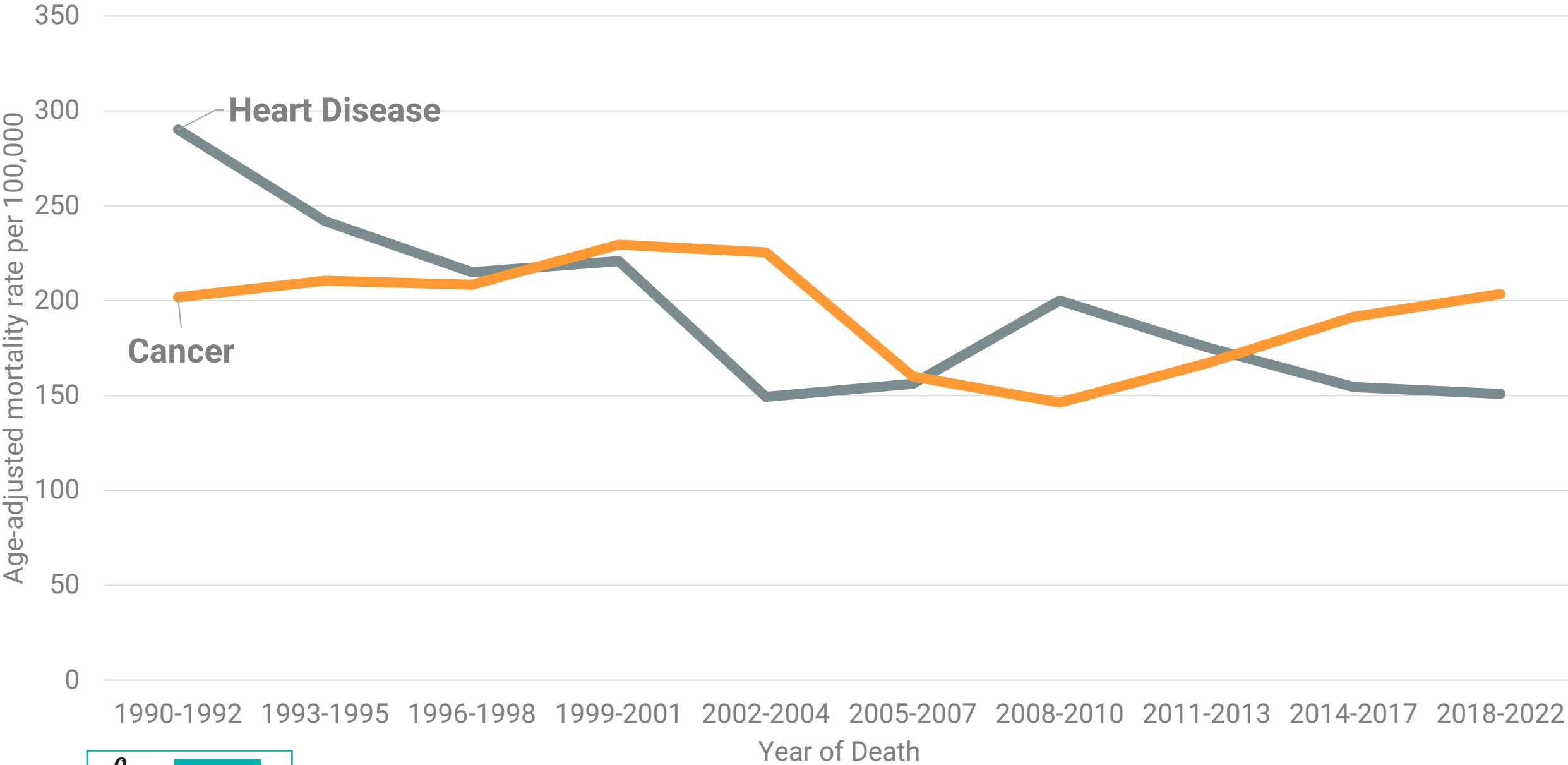


**Cancer is still a critically
important health concern in
Palo Alto County**

Leading Cause of Death in Iowa



Leading Cause of Death in Palo Alto County



**Compared to other
Iowa counties,
Palo Alto ranks
high in incidence for
several cancers for
2017-2021**

#1 All Cancer Incidence

#1 Lung Incidence

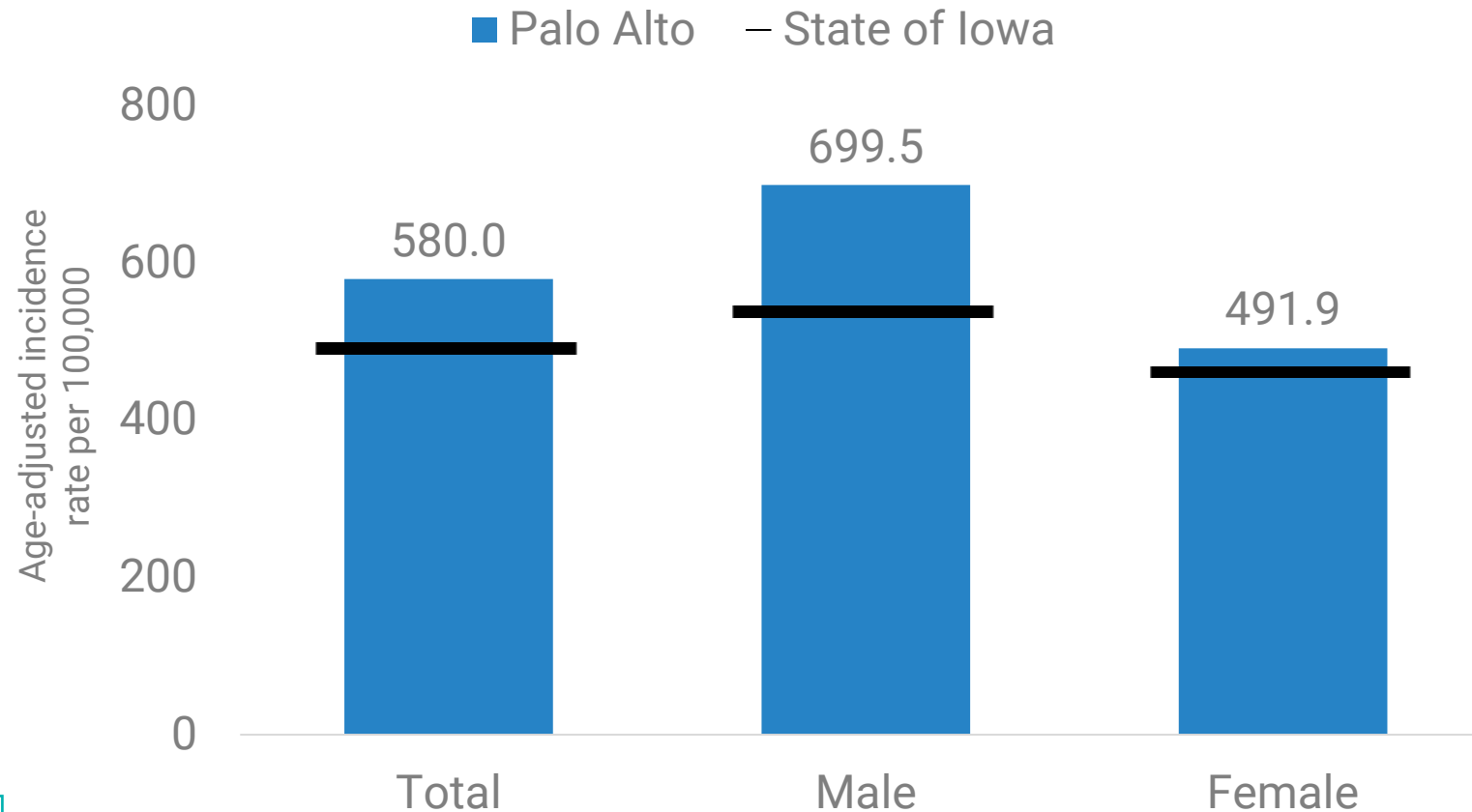
#2 Prostate Incidence

#2 Bladder Incidence

#9 Leukemia Incidence

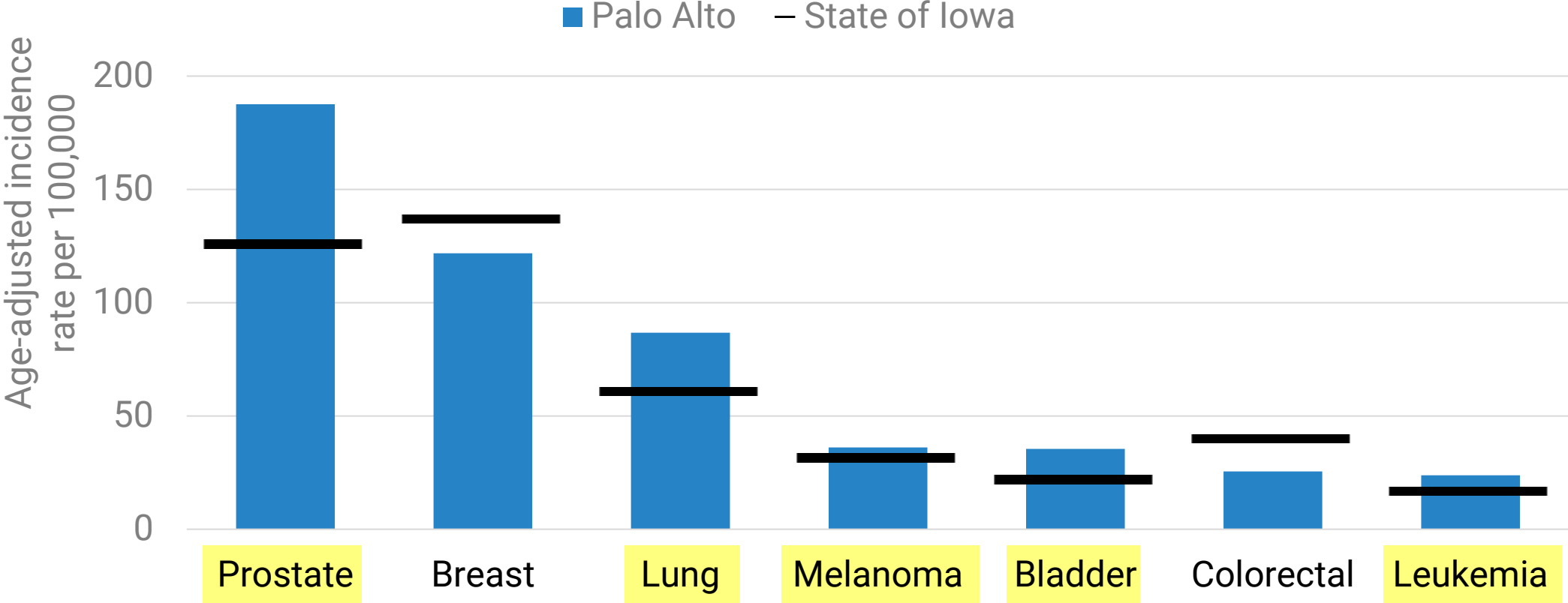
Palo Alto County has higher cancer incidence than the State of Iowa for both males and females

All cancer incidence rate in Palo Alto County, 2017-2021



Higher incidence in several cancer sites

Incidence rate by cancer site, 2017-2021



Higher Mortality in several cancers

Compared to other Iowa Counties Palo Alto Ranks...

#4 All Cancer Mortality

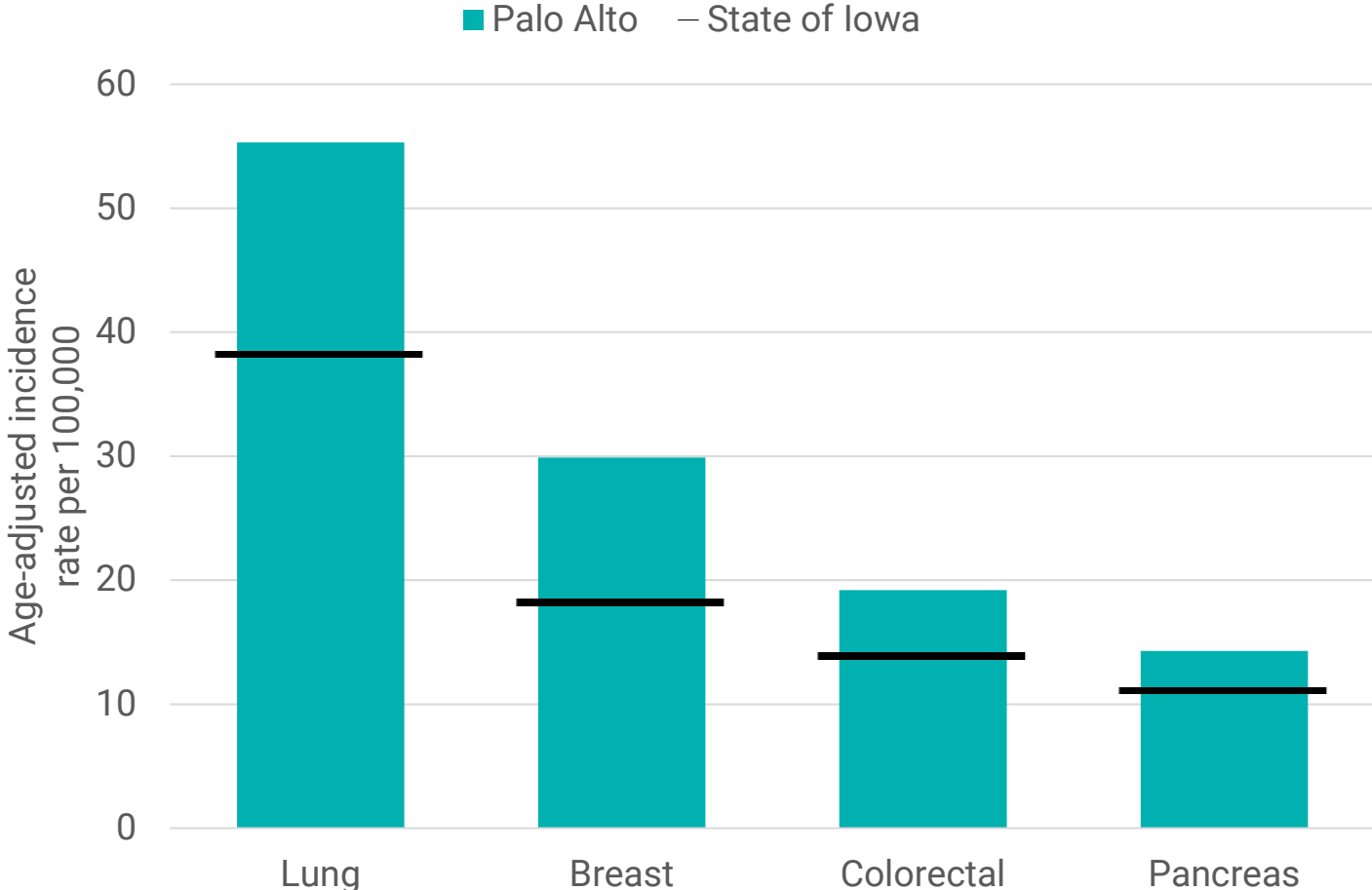
#2 Lung Mortality

#2 Breast Mortality

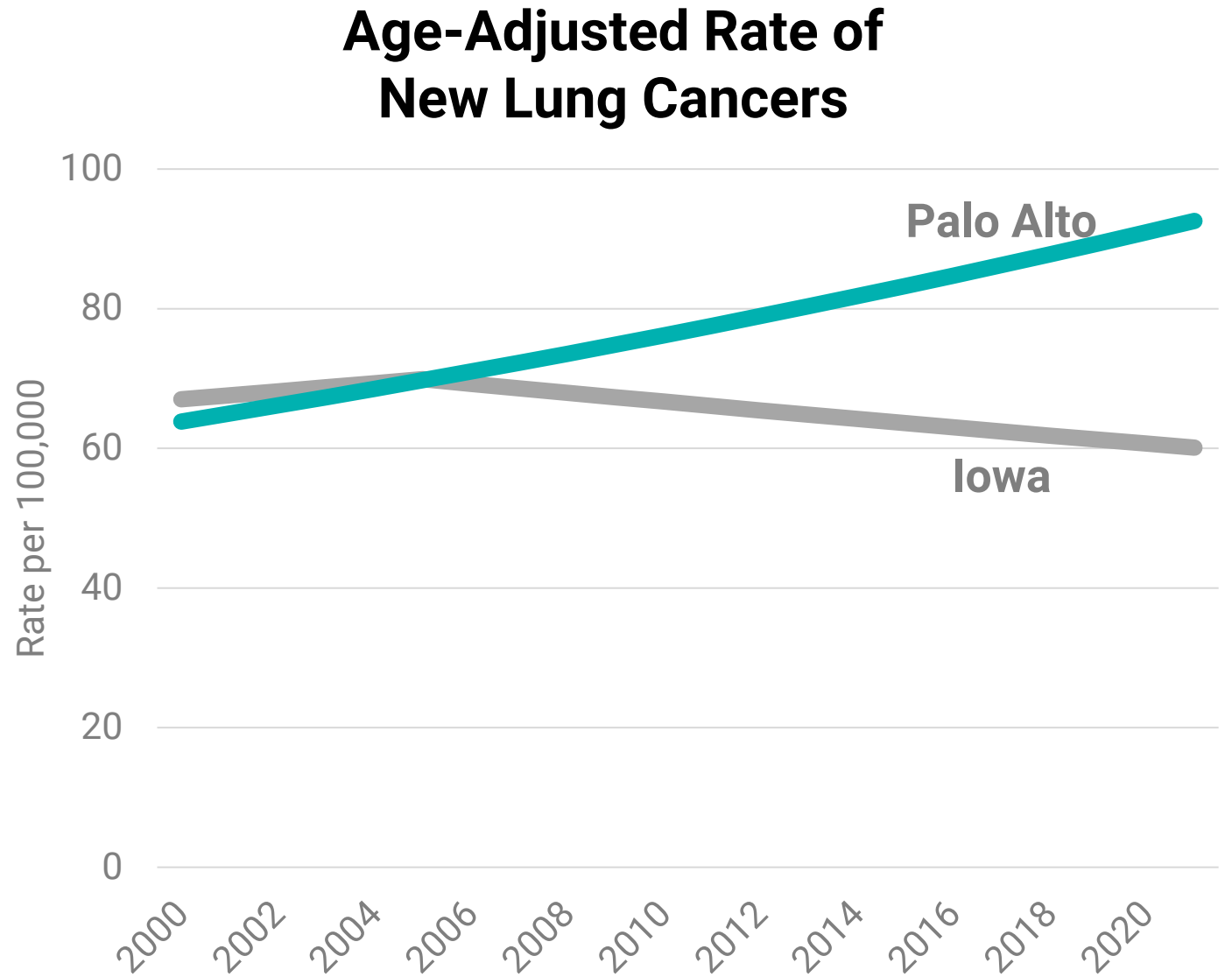
#12 Colorectal Mortality

#12 Pancreatic Mortality

Mortality rate by cancer site, 2018-2022



Lung Cancer



Lung Cancer Risk Factors

Leading Causes

1. **Smoking** is the leading cause of lung cancer
2. **Radon** is the #1 cause of lung cancer among non-smokers
 - Second leading cause of lung cancer
3. **Secondhand smoke** is the 3rd leading cause of lung cancer

For smokers, the risk of lung cancer is significant due to the synergistic effects of radon and smoking

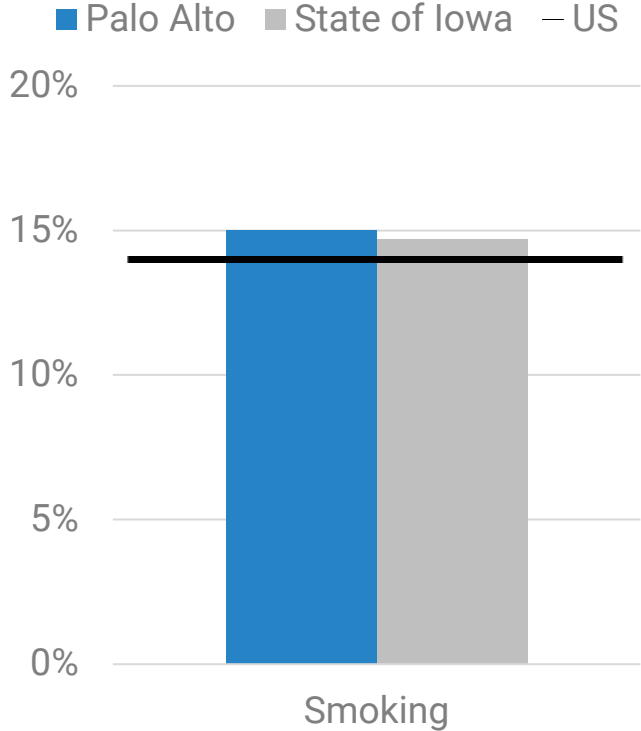
If 1,000 people were exposed to 4 pCi/L of radon:

7 in 1,000 never smokers could be diagnosed with lung cancer

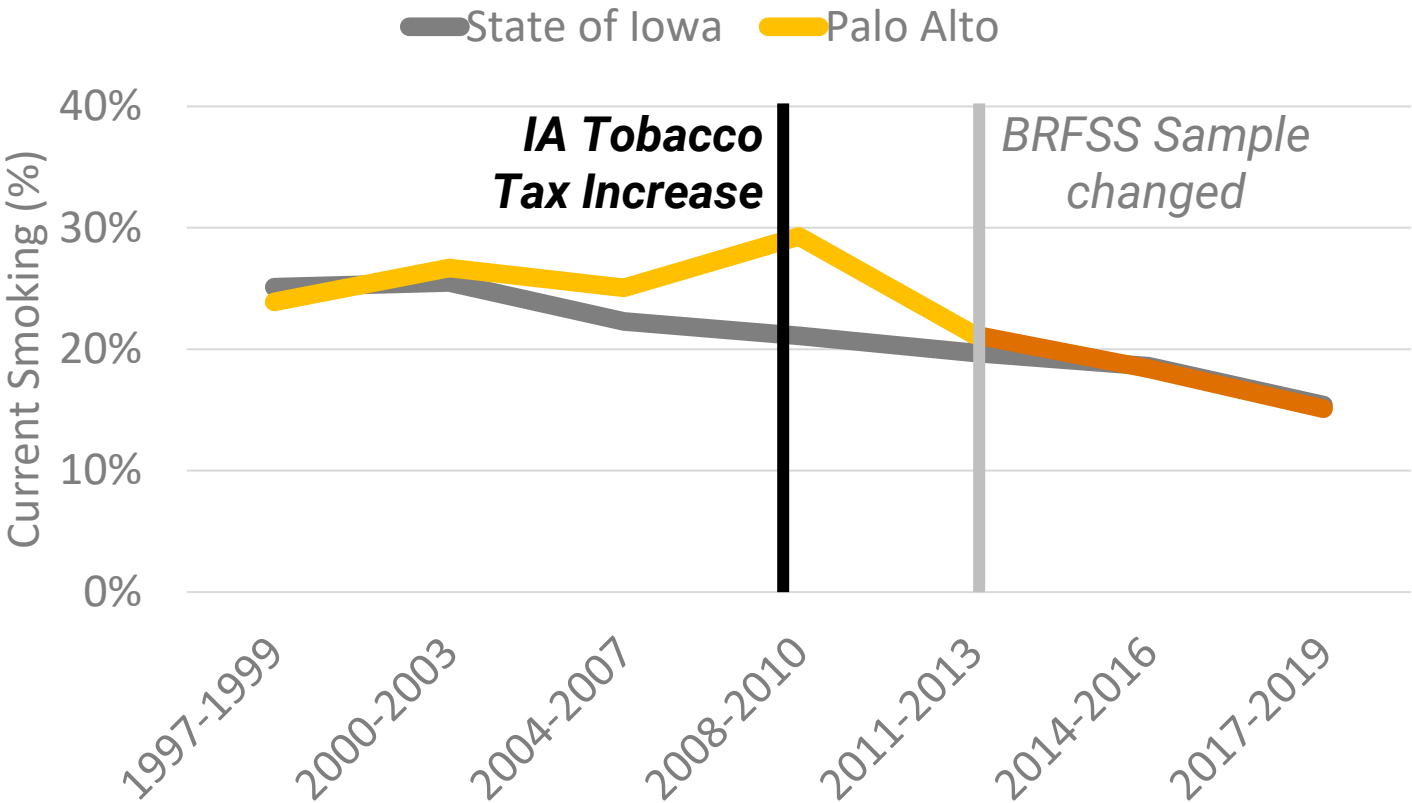
62 in 1,000 smokers could be diagnosed with lung cancer

Current Smoking Rates

Current Smoking, 2022

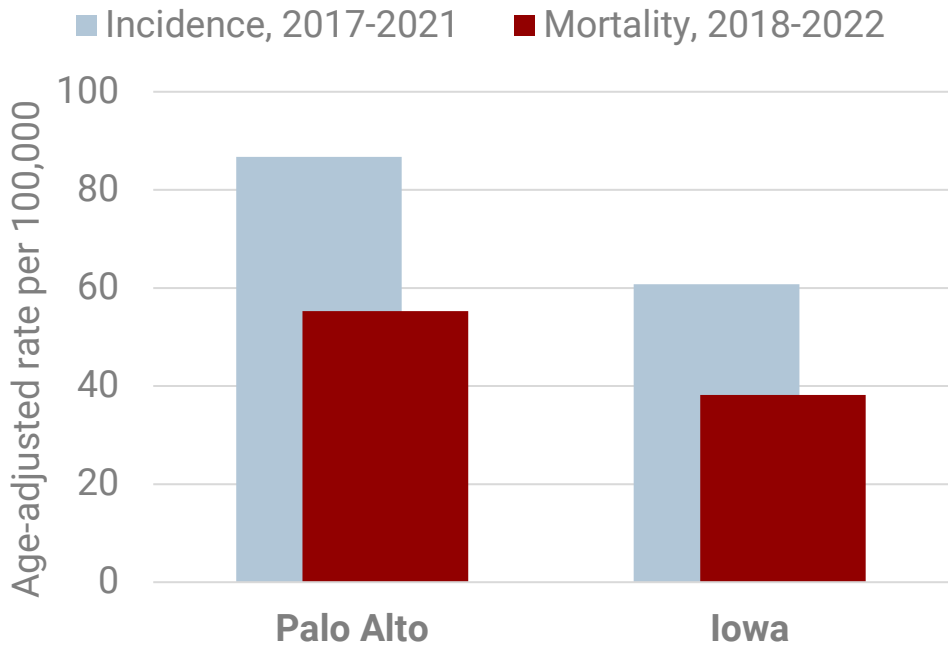


Current Smoking over time

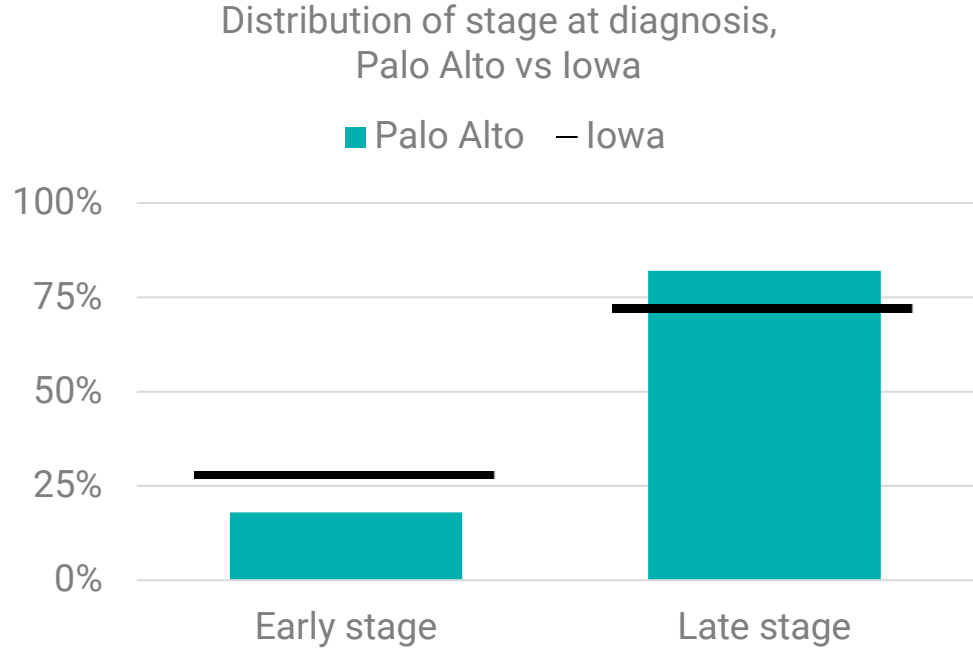


Lung Cancer

Any time lung cancer incidence is high, mortality will be high because lung cancer is so deadly, especially at later stages

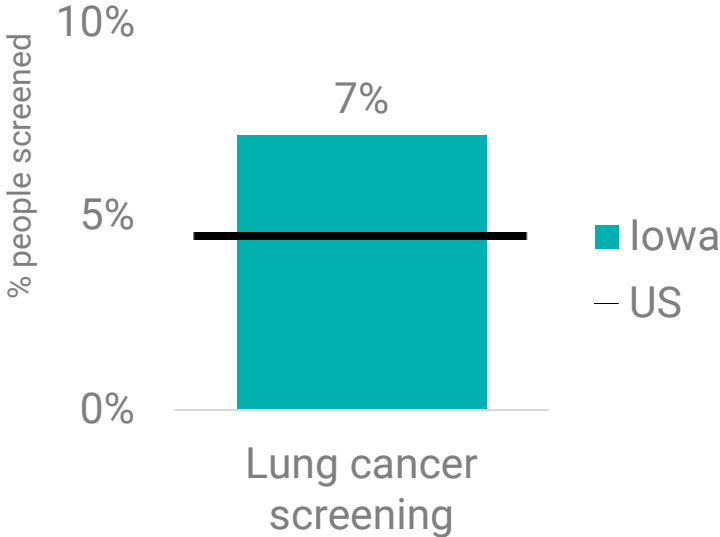


Over 80% of lung cancer cases in Palo Alto are diagnosed at late stage



Lung Cancer Screening

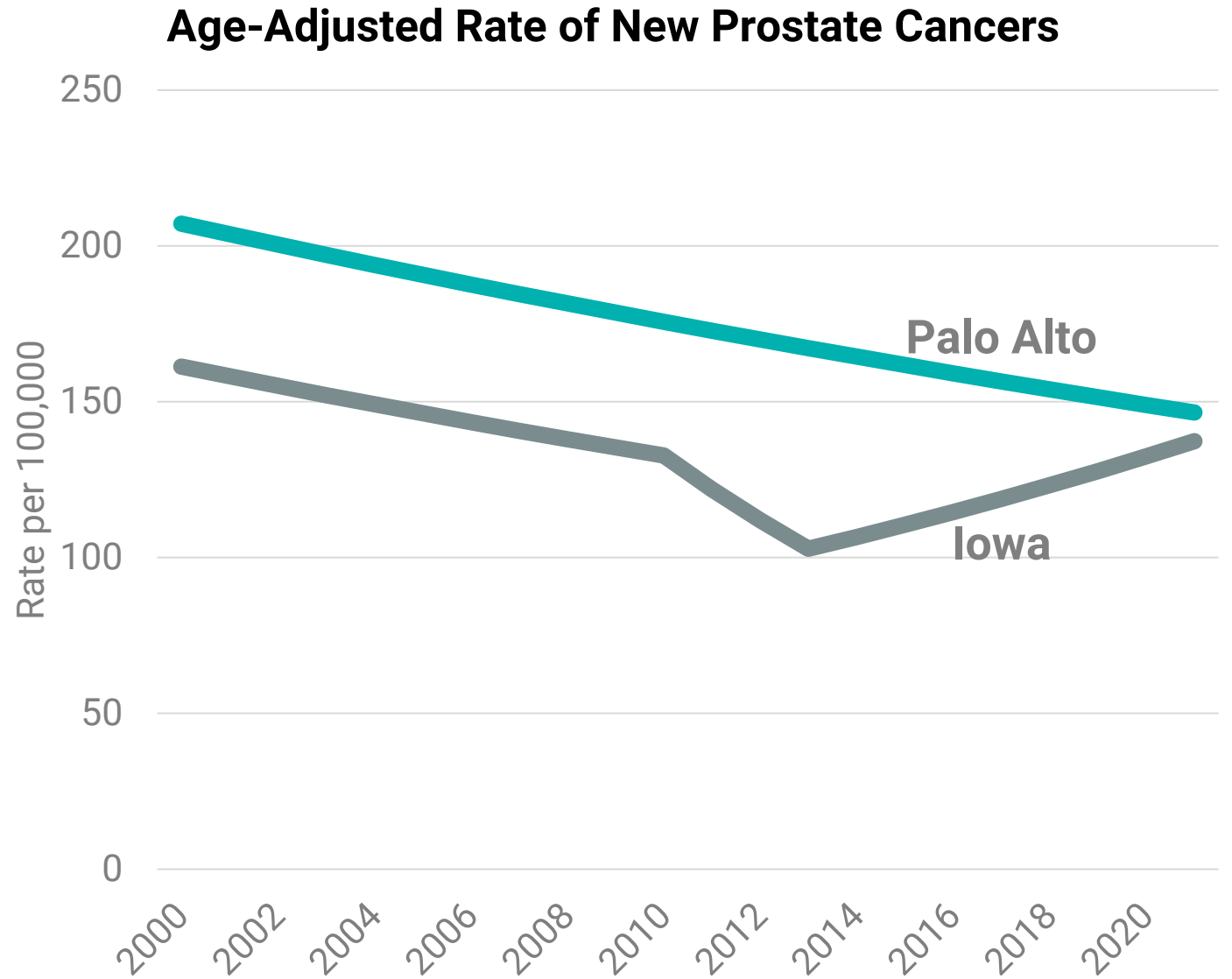
- For screening to be most effective in reducing the overall lung cancer mortality rate, more of the high-risk population should be screened
- Currently screening rates are very low among those at high risk
 - Lack of access or low awareness and knowledge among patients and providers
 - Rates vary tremendously between states
 - More can be done to increase screening rates



	2020 Guidelines	2021 Guidelines
Age	55-80 years	50-80 years
Smoking History	30 or more pack years (this means 1 pack a day for 30 years, 2 packs a day for 15 years, etc.)	20 or more pack years (this means 1 pack a day for 20 years, 2 packs a day for 10 years, etc.)
Smoking Status	Current smoker or quit within the last 15 years	



Prostate Cancer



Prostate Cancer Risk Factors

Possible risk factors: (some you can change)

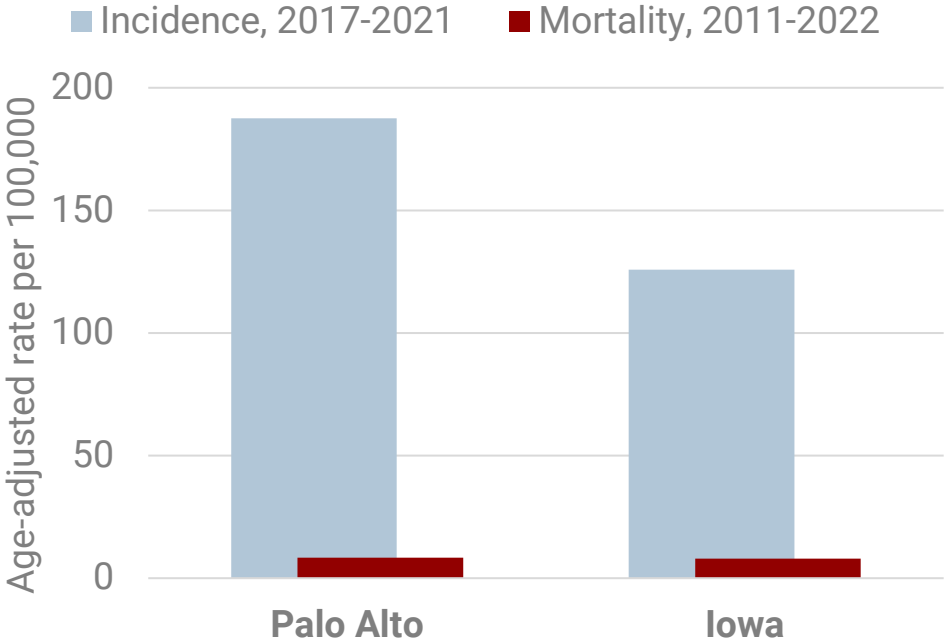
- Smoking
- Drinking alcohol
- Diet (increased calcium intake increases risk)
- Prostatitis
- Vasectomy
- Chemical exposures (e.g., Agent Orange, firefighter exposures)

You cannot change:

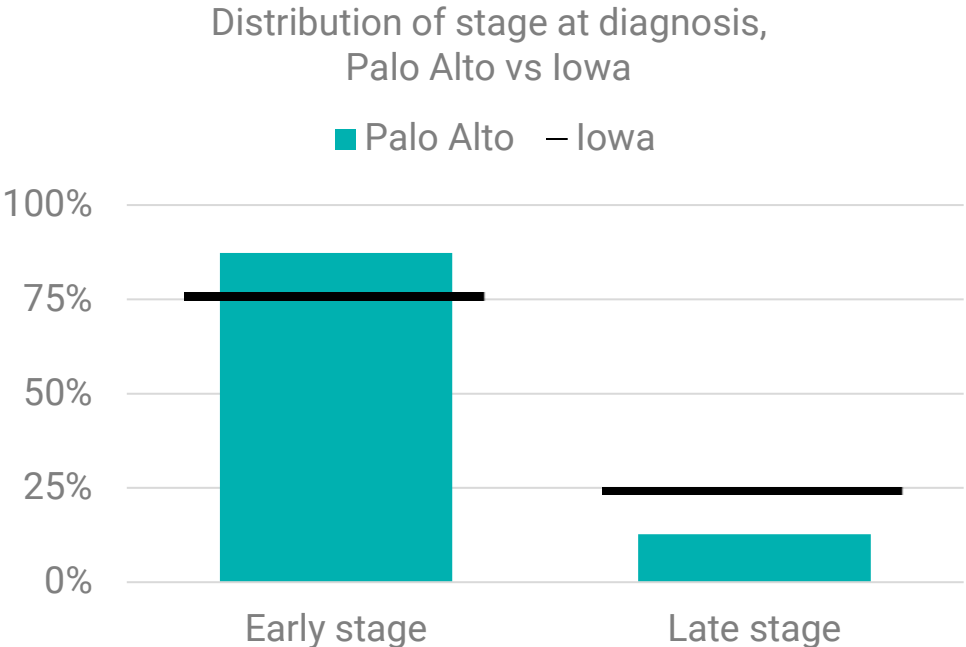
- Age
- Race/ethnicity
- Genetic mutations
- Family history

Prostate Cancer

Palo Alto has a higher incidence of prostate cancer than the state of Iowa



About 87% of prostate cancers are diagnosed at early stage



Prostate cancer screening

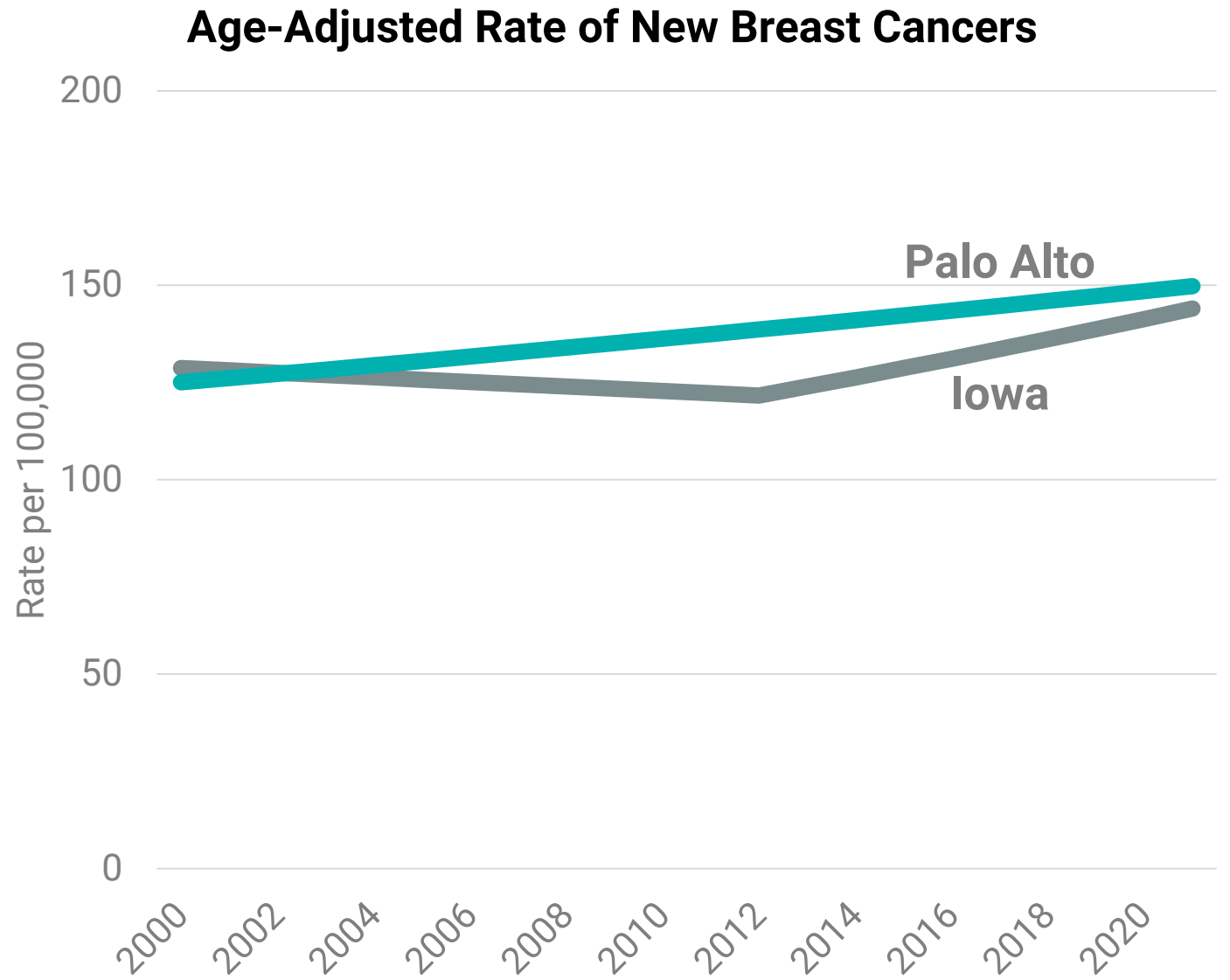
Prostate-specific antigen (PSA) blood test

The chance of having prostate cancer goes up as the PSA level goes up, but there is no set cutoff point that can tell for sure if a person does or does not have prostate cancer

If you have a prostate and are 55-69 years old, discuss with your doctor if a PSA test is right for you

- You and your doctor will discuss the benefits and harms of PSA testing while taking into account your family history, race/ethnicity, and other health conditions you may have

Breast Cancer



Breast Cancer Risk Factors

You can change:

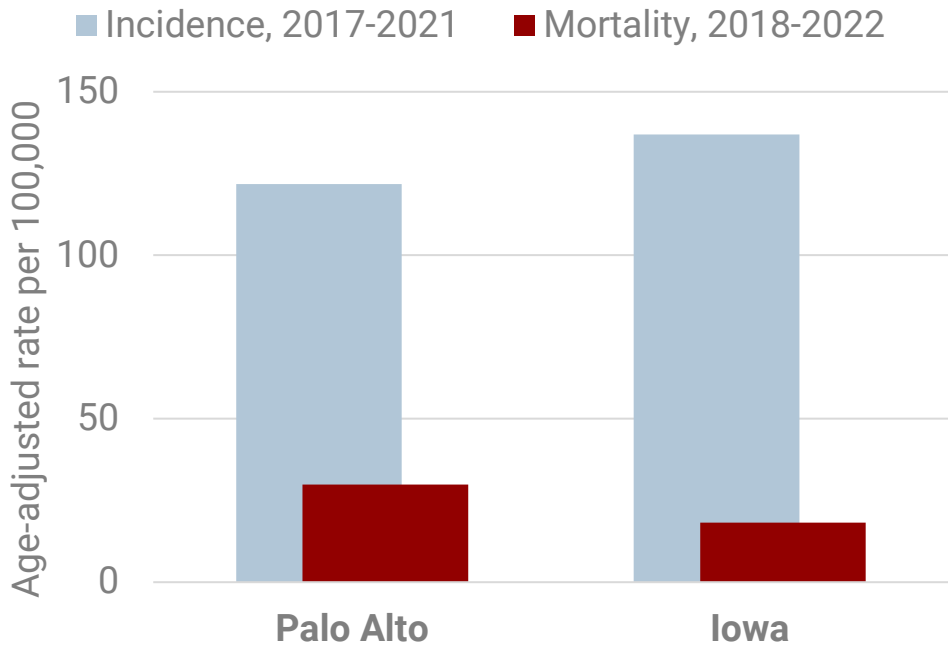
- Physical inactivity
- Drinking alcohol
- Overweight/obesity
- Taking hormones

You cannot change:

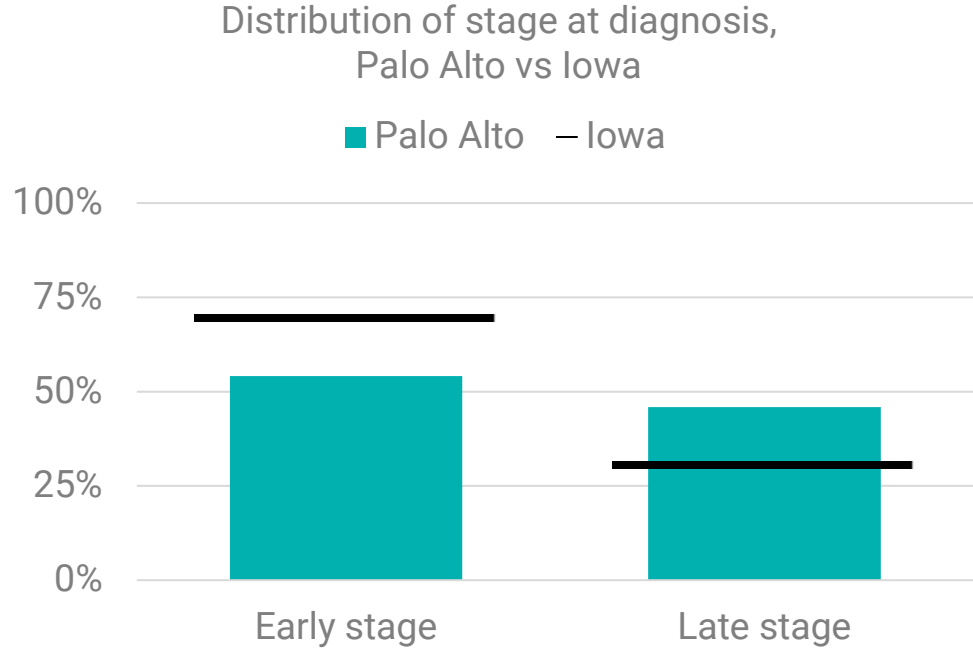
- Age
- Genetic mutations
- Reproductive history
- Dense breasts
- Family history
- First pregnancy after age 30
- Previous radiation treatment

Breast Cancer

While incidence is lower in Palo Alto than the state of Iowa, mortality is higher

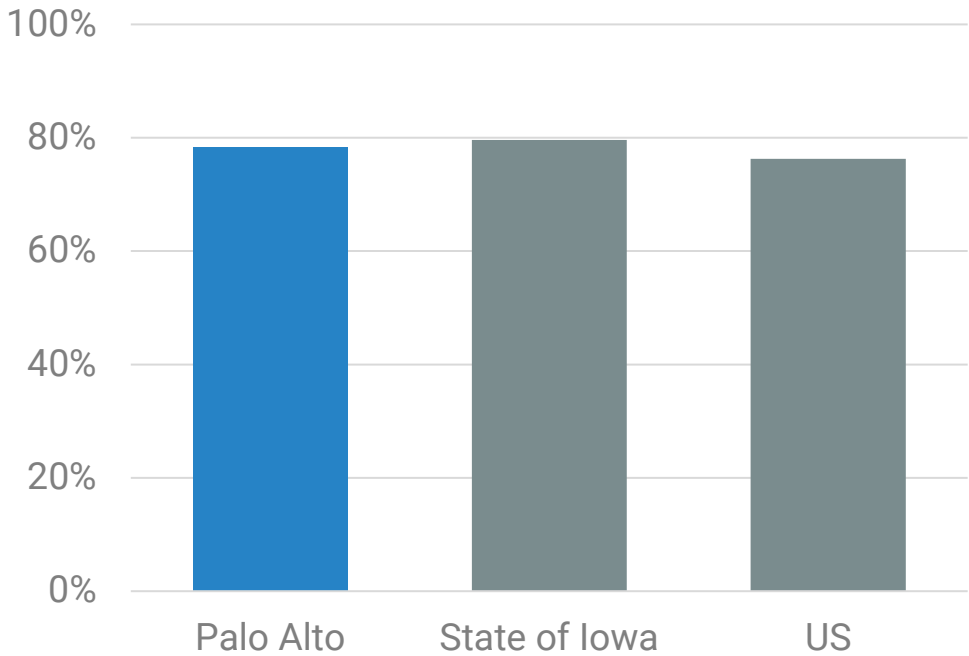


46% of breast cancer cases in Palo Alto are diagnosed at late stage, which is 15% higher than the state of Iowa



Breast Cancer Screening

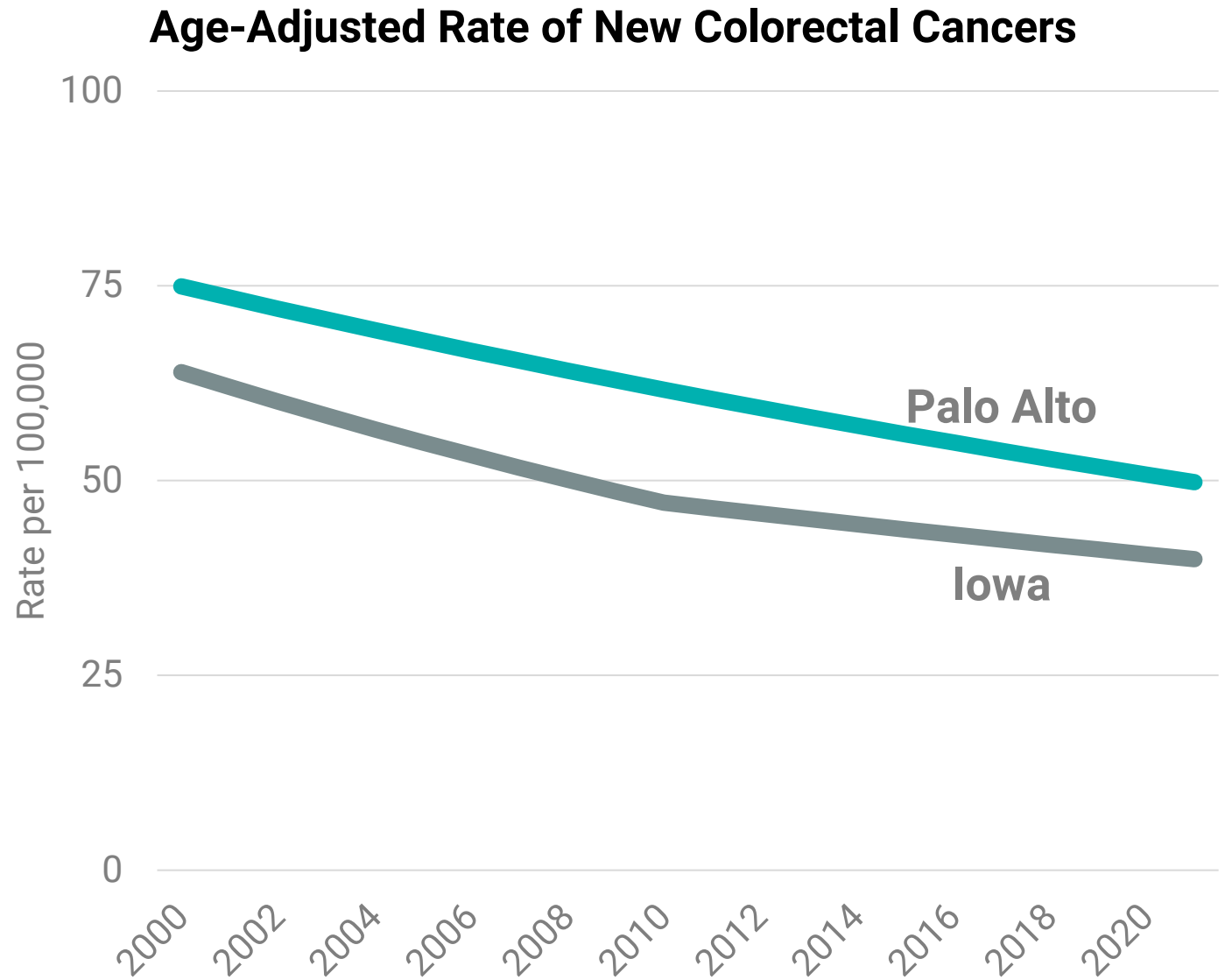
Prevalence of mammography use among women aged 50–74 years in previous 2 years, 2022



Mammogram

- For those ages 40 to 74 years with breast tissue
 - Screening mammogram every 2 years

Colorectal Cancer



Colorectal Cancer Risk Factors

You can change

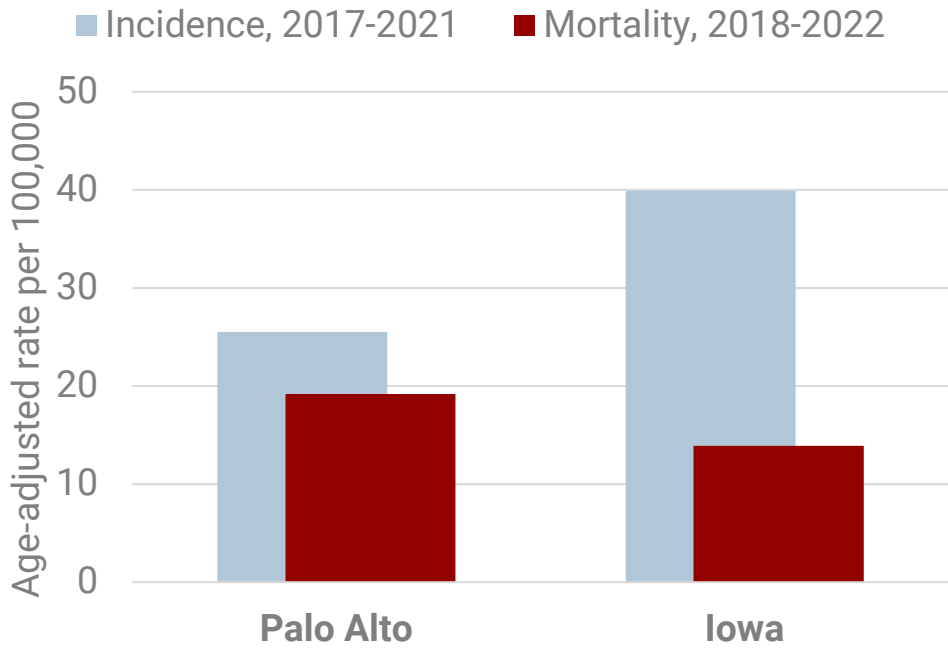
- Physical inactivity
- Drinking alcohol
- Tobacco use
- Overweight/obesity
- Diet (high in red meat or processed meat)

You cannot change

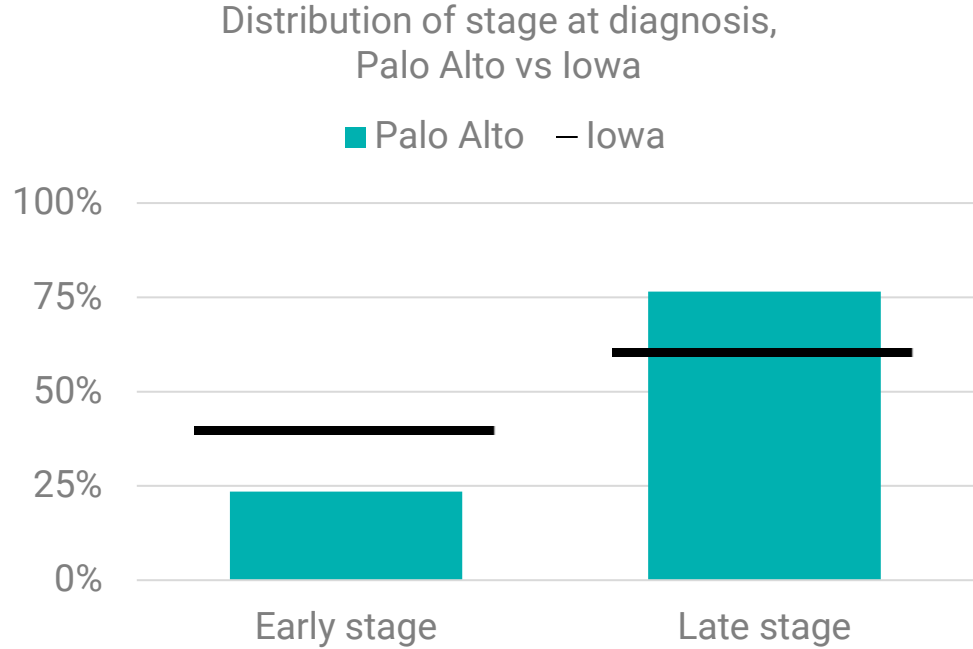
- Age
- Race/ethnicity
- Sex
- Genetic mutations
- Family history
- Personal history
- History of Crohn's disease or ulcerative colitis

Colorectal Cancer

Mortality rate is higher in Palo Alto than the state of Iowa rate



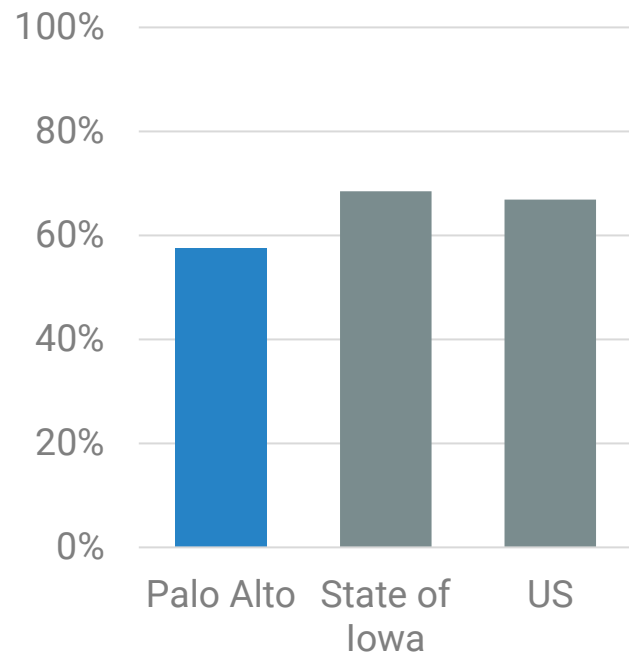
77% of colorectal cancer cases in Palo Alto are diagnosed at late stage



Colorectal Cancer Screening

For all adults ages 45-75, one of the following:

Prevalence of colorectal cancer screening among adults aged 45-75 years, 2022



Direct visualization (of colon & rectum by provider)

- Colonoscopy screening every 10 years
- Flexible sigmoidoscopy every 5 years
- Flexible sigmoidoscopy every 10 years + annual FIT
- Computed tomography colonography every 5 years

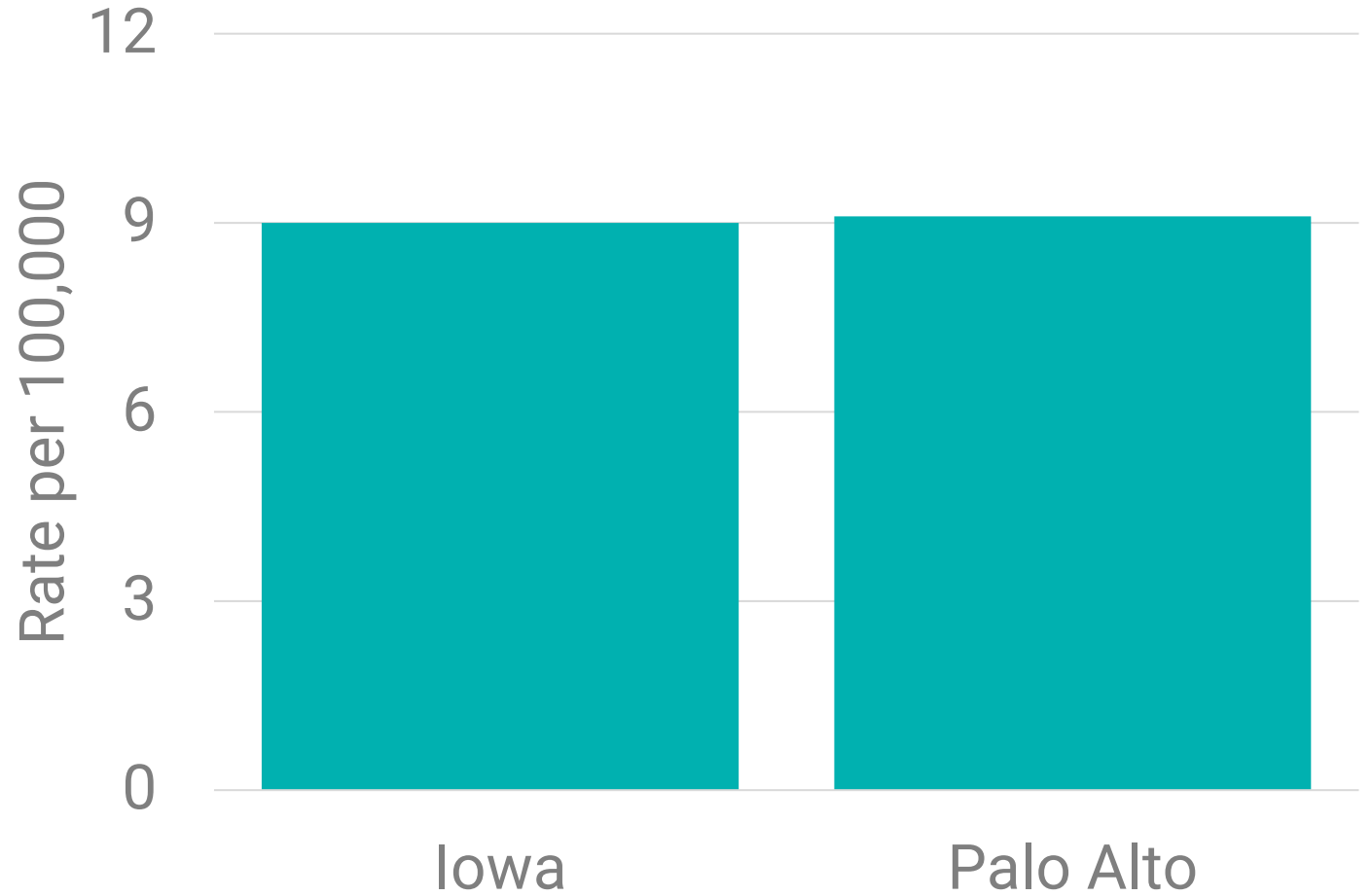
At-Home Test Stool-Based

- Every year
 - Fecal immunochemical test (FIT)
 - high sensitivity guaiac fecal occult blood test (HSgFOBT)
- Every 1-3 years
 - Stool DNA-FIT (Cologuard)

If a test is positive, then follow-up testing is needed

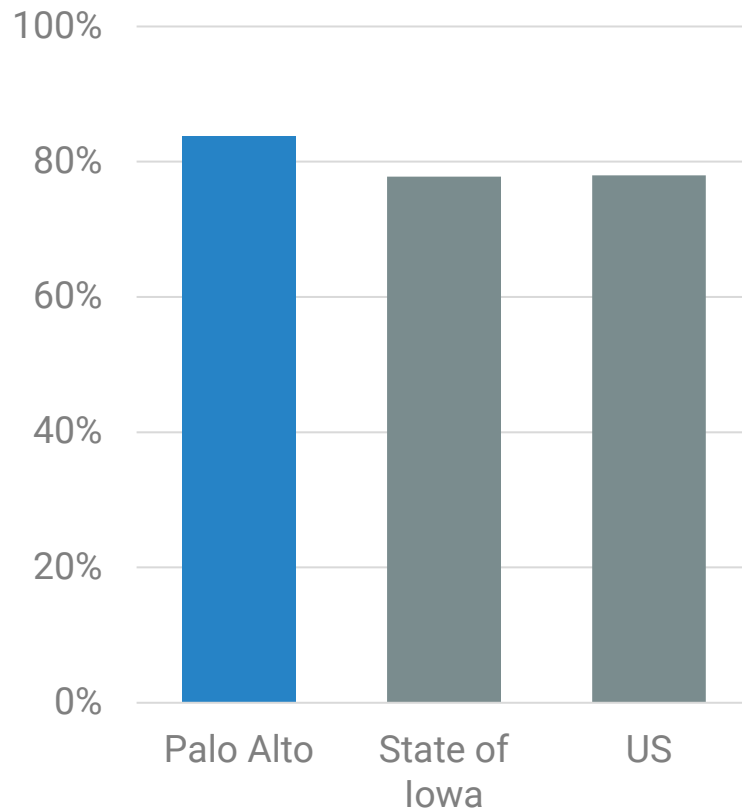
Cervical Cancer

Age-Adjusted Rate of New Cervical Cancers, 1975-2021



Cervical Cancer Screening

Prevalence of cervical cancer screening among adult women aged 21–65 years, 2020



For those ages 21-29 years with a cervix

- Pap Test every 3 years

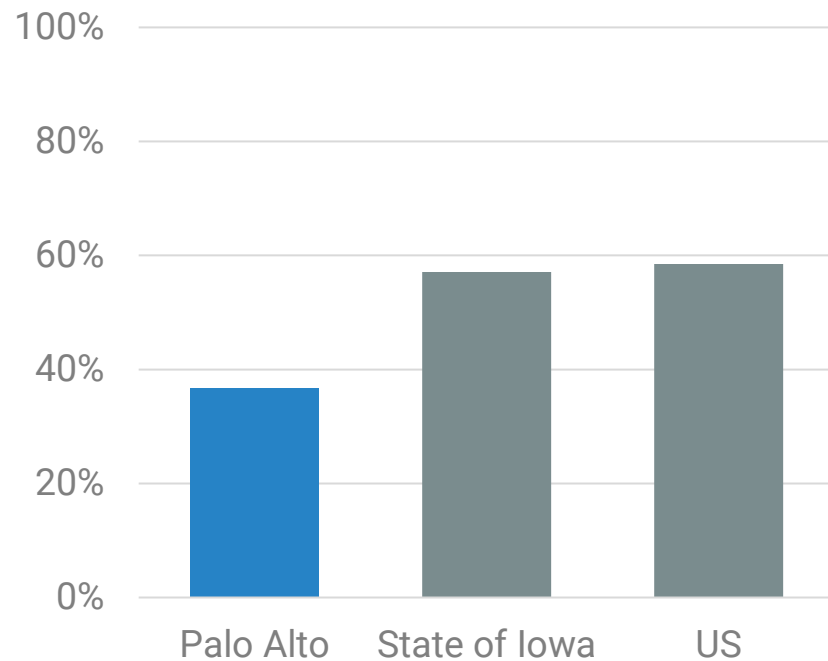
For those ages 30-65 years with a cervix

One of the following

- Pap Test every 3 years
- High-risk HPV (hrHPV) testing alone every 5 years
- HrHPV testing in combination with a Pap Test (co-testing) every 5 years

Cervical Cancer Prevention HPV Vaccination

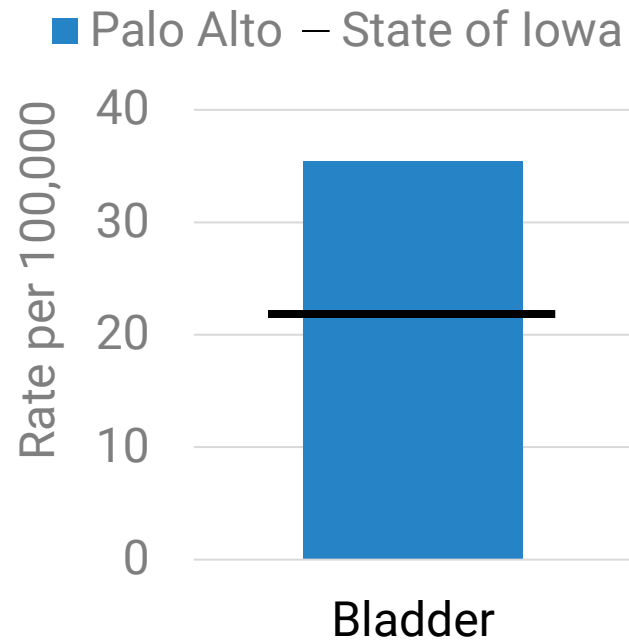
Prevalence of adolescents aged 13-15 years had received 2 or 3 doses of HPV vaccine, 2022



- This is the easiest way to prevent cervical cancer, as well as other HPV-related cancers (oropharyngeal, anal/rectal, penile, vulvar, vaginal)
- **Nearly all cases** of cervical cancer are **caused by HPV infection**
- HPV vaccination provides **safe, effective, and lasting protection** against HPV infections
- HPV vaccine works best when given before any exposure to HPV
- HPV vaccine is recommended for routine vaccination at age 11 or 12 years (can be started at age 9)
- Studies show the vaccine **produces a stronger immune response at these ages** compared to older ages

Bladder Cancer

Age-Adjusted Rate of New Bladder Cancer Cases, 2017-2021



Risk factors you can change

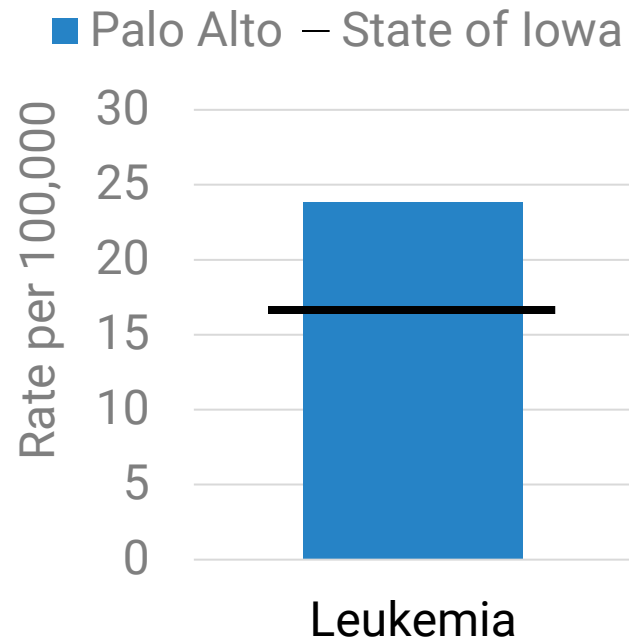
- Smoking
- Chemical exposures
- Drinking water from a well that has high levels of arsenic

Risk factors you cannot change

- Age
- Sex
- Race/ethnicity
- Chronic bladder irritation and infections
- Personal History
- Genetics
- Family History

Leukemia

Age-Adjusted Rate of New Leukemia Cases, 2017-2021



The 2 most common leukemia types in Palo Alto County

Chronic Lymphocytic Leukemia (CLL)

Risk Factors

- Age
- Exposure to certain chemicals (Radon, agent orange)
- Family history
- Sex
- Race/ethnicity

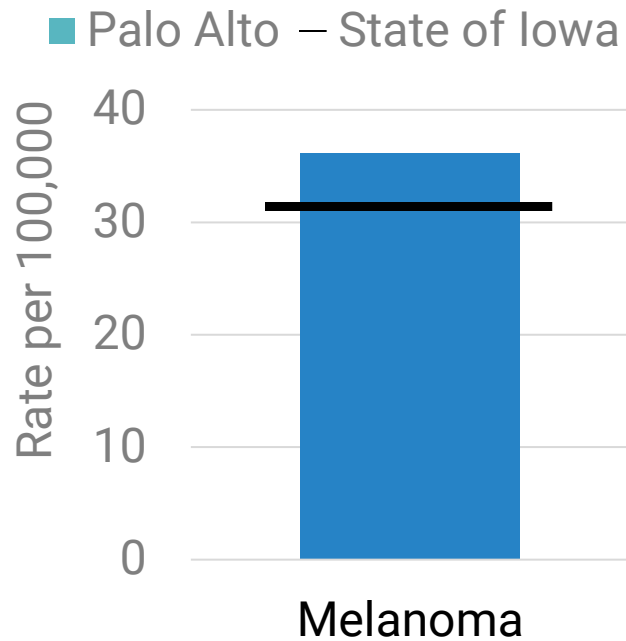
Acute Myeloid Leukemia (AML)

Risk factors

- Smoking
- Age
- Chemical exposure
- Exposure to high-dose radiation
- History of blood disorders
- Genetics
- Family History

Melanoma

Age-Adjusted Rate of New Melanoma Cases, 2017-2021



Risk Factors

- Unprotected and/or excessive sun exposure
- Use of indoor tanning beds
- Many moles
- Fair skin
- Genetics
- History of skin cancer
- Weakened immune system

How can I prevent skin cancer?



Avoid being in the sun from 10am-2pm



Wear long sleeve shirts and hats when outdoors



Wear broad spectrum sunscreen with at least SPF 30, and **don't forget to reapply!**

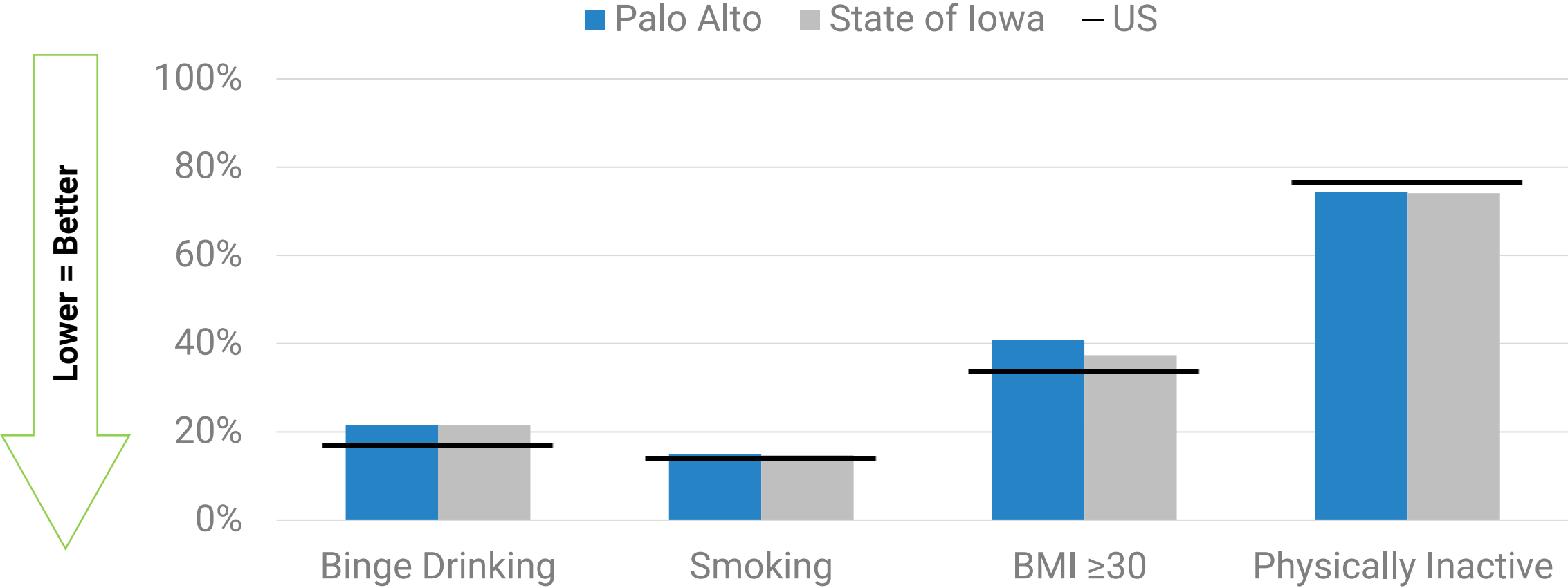


Sit in the shade when possible



Do not use indoor tanning beds

Other Modifiable Health Behaviors



2022 model-based county-level estimates

PLACES. Centers for Disease Control and Prevention. Accessed 11/01/2024. <https://www.cdc.gov/places>

Resources to help understand and address cancer in Iowa communities

Iowa Cancer Registry - Next Steps to Monitoring Data in Palo Alto County



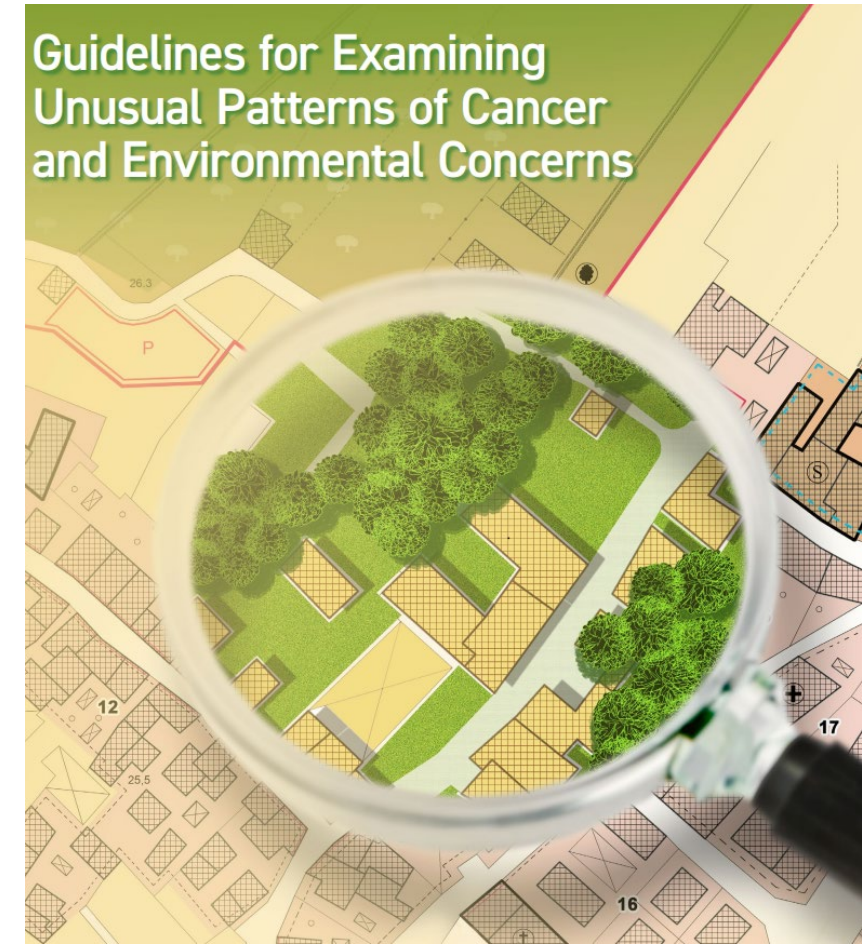
We will continue to monitor trends in Palo Alto County as new data is released each spring



We are working on implementing new procedures to routinely monitor cancer statistics in small areas

What to do if you suspect a specific cancer cluster in your community

- If you are concerned about cancer excess in your area, please email us at ICR-CancerConcerns@uiowa.edu
- For your request we will ask you about
 - **Area of concern** (neighborhood, census tract, town, county)
 - **Cancer types** that have been diagnosed in the area
 - **Time frame** that this has been going on
 - **Exposure(s) of concern**
- If possible, the Registry will conduct an analysis comparing the expected number of cancers in the area to what has been observed
 - A written report of the results will be sent to you and a meeting to discuss the results will be offered



Iowa Cancer Consortium



The Iowa Cancer Consortium is a non-profit cancer coalition.

- Formed in 2001, serves the state of Iowa.
- Currently, has 696 members (representing more than 64 organizations). Includes Iowans from all professional backgrounds and experiences.

We would love for you to join us!

All are welcome!

Host virtual workgroup meetings

Workgroups include

- *Cancer Screening & Early Detection*
- *Health Equity*
- *HPV (w/ Iowa Immunizes coalition)*
- *Policy*
- *Radon*
- *Research & Clinical Trials*
- *Rural Cancer*
- *Quality of Life*
- *Cancer & the Environment Task Force*





Iowa Cancer Consortium

We provide ...

- Connections and partnership
- Latest news and cancer updates via email
- Training and educational opportunities
- Grant opportunities and technical assistance
- Free cancer educational materials for distribution
- Blueprint for cancer control, the Iowa Cancer Plan

Includes chapters and goals focused on health equity, cancer prevention and risk reduction, early detection and screening, diagnosis and cancer-directed therapy, survivorship and end-of-life care.



Join us!

- Sign-up for our newsletter:
www.canceriowa.org
- Become an official member!

*Membership fee = \$20/year. *Scholarships available.*

Contact:

Rachel Schramm, Program Manager

Iowa Cancer Consortium

schramm@canceriowa.org

www.canceriowa.org



Mission: To advance cancer prevention and control through advocacy, equity, and collaboration.
Vision: An Iowa where cancer is not a burden.

What can you do to address cancer in your community?



Iowa Cancer Plan

2023 - 2027

Prevention and Risk Reduction

Identify and eliminate cancer health disparities

Reduce barriers to care, promote evidence-based practices, and encourage participation in clinical trials and other forms of research

Promote the benefits of screening tests to ensure early diagnosis

Ensure resources to optimize quality of life for cancer survivors and their families

Iowa Rural Health Association



Mission:

To strengthen health systems for rural residents and communities through leadership, education, advocacy, public awareness and networking.

Vision:

Optimal health for all Iowans, with a focus on rural populations.

Programming/Activities:

Webinars

Annual conference

Rural Iowa representation at state, regional, and national levels

Center for Health Effects of Environmental Contamination (CHEEC)

The University of Iowa Center for Health Effects of Environmental Contamination (CHEEC) supports and conducts research to identify, measure and study adverse health outcomes related to exposure to environmental toxins. CHEEC was established through the 1987 Iowa Groundwater Protection Act and has focused its efforts to date mainly on drinking water contaminants.



David Cwiertny
Director of CHEEC

CHEEC

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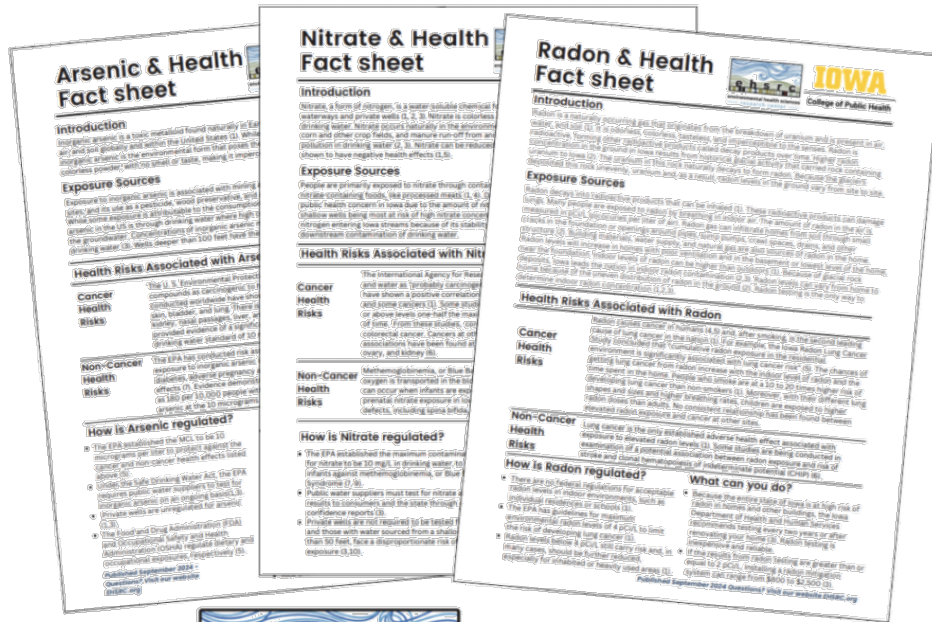
Environmental Exposures and Health Risks Fact Sheets

NEW Environmental Exposures & Health Risks Fact Sheets

Environmental Health Fact Sheets

- [Arsenic](#)
- [Nitrate](#)
- [Radon](#)

Are there other fact sheets you would like to see? Let us know!



IOWA
PUBLIC HEALTH

Agricultural Health Study



The Agricultural Health Study (AHS) has been working for more than 30 years to understand factors that impact the health of farmers and their families.

- Includes over 50,000 pesticide applicators from Iowa
- Linked with Iowa Cancer Registry data to study risk of developing cancer among pesticide applicators

Visit the Ag Health website to read their annual study updates related to pesticides and other agricultural exposures and cancer.

Iowa Private Well Grants Program

Iowa Health & Human Services

Grants are available to local county health departments to provide financial assistance to their residents for private water well services. Grants provide reimbursement for the following activities:

- Water tests to ensure that private well water is safe to drink
- Well closure to ensure that abandoned wells do not create groundwater to become contaminated
- Well reconstruction or repair to bring the well up to current standards

Resources for Well Owners

Contact your local environmental public health office to see if your county participates in the PWG Program.

- [Iowa DNR Private Well Testing Information](#)
- [Iowa DNR Well Plugging Information](#)

Palo Alto County
Environmental Health Specialist

Ben Huntley

Office Phone: 712-852-3058

email: bhuntley@emmetcounty.iowa.gov

<https://paloaltocounty.iowa.gov/environmental-health/>

Radon, Iowa Health & Human Services

Iowa HHS contracts with the American Lung Association to maintain the [Health Air - Radon in Iowa](#) website, and staff Iowa's Radon Hotline.

There are two types of test kits available:

Short-Term Radon Test Kits (3-7 days in length)

- Testing for radon for the first time.
- You have done a short-term measurement before that reported elevated levels and you need to conduct a second verification test.
- A mitigation system was recently installed in your home and you need to do a follow-up test to confirm your radon levels are low.
- Your home already has a mitigation system and you want to verify your radon levels are low and confirm the mitigation system is working properly.
- Place test kit in lowest live-able area in home.
- Suggestions: one kit per foundation type; Test every 2 years even if you have a mitigation system; Test after major renovations

Long-Term Radon Test Kits (3-12 months in length)

- You have done a short-term measurement before that reported low or elevated levels and you would like to conduct a second test for verification.
- You would like to know your what your radon level is as an average over a longer period.
- Place test kit in lowest live-able area in home.

Main Takeaways

Cancer is a critically **important health issue** facing the residents of Palo Alto County – you have high rates of new cancer cases and cancer deaths

There are proven ways to **prevent cancer and detect it early**

Iowa is fortunate to have a very strong Cancer Plan and resources and organizations to help implement evidence-based strategies

Policy changes at the local and state levels can have a huge impact!

Please **communicate** your concerns and needs for cancer control resources **with your state representatives and local policy makers**

And let us know how we can help!



Thank you!

→ <https://shri.public-health.uiowa.edu/>

Email questions here: ICR-99countiesproject@uiowa.edu