

Background

The Catchment Area of the Holden Comprehensive Cancer Center is the state of Iowa.

The cancer incidence rate in Iowa has been rising since 2013, and **Iowa now has the second highest cancer incidence in the U.S.**

The **purpose** of this research was to determine which cancer sites were the top drivers of Iowa's high and increasing cancer rate, as well as which counties were experiencing high rates and excess cases. We hoped that these analyses would inform cancer center activities and priorities.

Methods

Data from CDC Wonder were used to compare differences in the annual rate of change for Iowa to the U.S. average (2013-2019), and determine which cancers were driving Iowa's high rates.

Using data from the Iowa Cancer Registry (2000-2021), we calculated sex-, age-, and stage-specific linear trends using Joinpoint to determine among whom rates of these cancers were increasing.

To evaluate where age-adjusted incidence rates were increasing, we implemented a Bayesian disease mapping model at the county level. Using these models, we examined change in county-level age-adjusted rates over time and by county population size, and proportional excess cancer cases by county.

Questions?

We welcome your questions, comments, and collaborations! Email sarah-nash@uiowa.edu

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Results

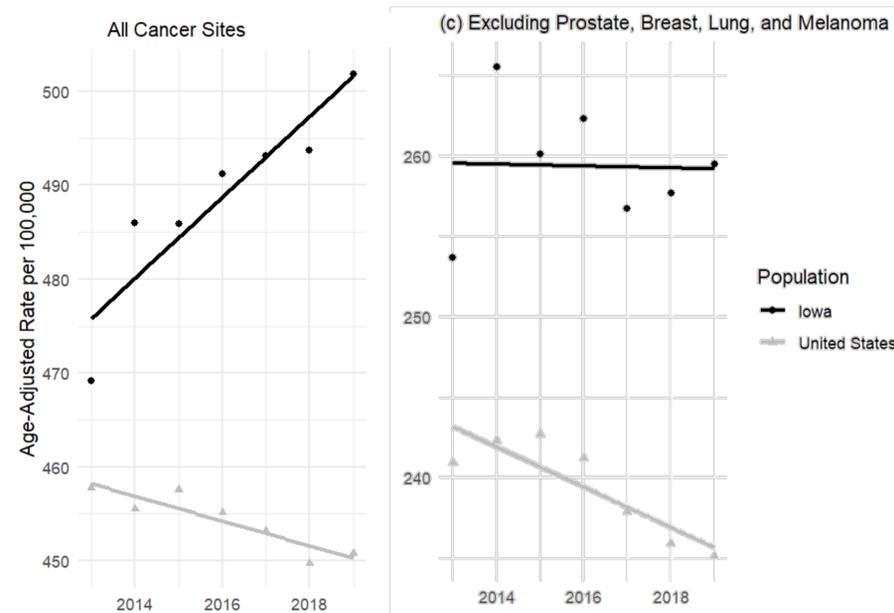
When comparing to the U.S., **four cancer types were primarily driving Iowa's excess cancer rates: female breast, prostate, lung, and melanoma.**

Trends (2000-2021) differed by age, stage, and sex (data not shown). **Specifically, women in Iowa have a higher burden of lung cancer at older ages, melanoma at younger ages, and colorectal cancer at younger ages.**

Spatial patterns differed among the four cancers: breast cancer rates were highest in population centers, prostate cancer rates were highest in the northwest, melanoma across the northern third of the state, while lung cancer was highest in the southern 3 tiers of counties.

Several counties showed both higher excess cases, as well as higher age-adjusted rates and rate differences over time.

This figure compares Iowa's all sites cancer incidence trends with the trends with prostate, breast (female), lung, and melanoma removed, to the trends in the U.S. With these four cancers removed, the Iowa trend is much closer to the U.S. trend



Conclusions

Female breast, prostate, and lung cancers, and melanoma, are primarily driving Iowa's high and rising cancer rates.

We observed differences by age, sex, and location of residence.

These results will inform cancer prevention and control efforts in Iowa, and Holden Comprehensive Cancer Center's priorities. For example – the four cancers highlighted here are being explored by a panel of external experts who are helping the cancer center understand what's causing their high burden among Iowans.

These figures show county-level age-adjusted incidence rates (2014-2019), indicating which counties have the highest rates of our cancers of interest

