Rhode Island Cancer Reports

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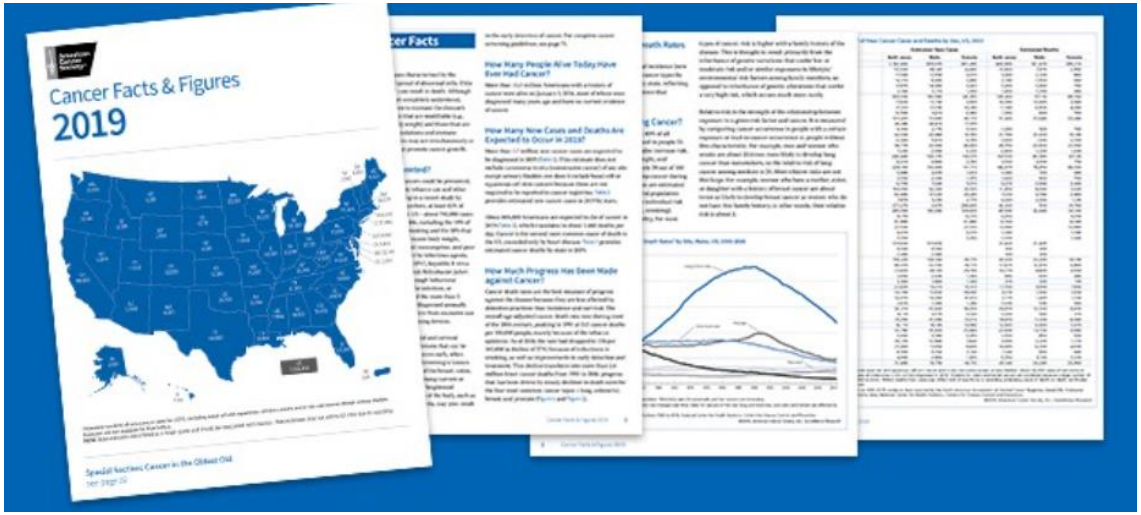
Partnership to Reduce Cancer in Rhode Island
Quarterly Meeting
December 12, 2019

Topics

- RICR data collection – quick overview
- Rhode Island cancer burden, changes & trends
  - ✓ Incidence
  - ✓ Mortality
  - ✓ Survival

Cancer Facts, US 2019

- 1,762,450 new cancer cases
- 606,880 die of cancer = 1,663 deaths/day
- 2nd most common cause of death
- As of Jan 2016, more than 15.5 million with a history of cancer alive (prevalence = ~5%).



Cancer Facts & Figures 2019 is an educational companion for Cancer Statistics 2019, a scientific paper published in the American Cancer Society journal, *CA: A Cancer Journal for Clinicians.*

Cancer Facts, RI 2017

- 6,200+ new cancer cases reported (RICR)
- 2,154 died of cancer*
- 2nd most common cause of death
- As of 2017, 63,800 residents with a history of cancer (prevalence = 5-6%)

* Cancer Mortality by State. National Center for Health Statistics
https://www.cdc.gov/nchs/pressroom/sosmap/cancer_mortality/cancer.htm

"Reportable" cancers: US/RI Central Cancer Registries

- Newly diagnosed *invasive* cancers in all anatomic sites
- Urinary bladder: *in-situ* & invasive
- Basal cell & squamous cell carcinomas of the skin – not collected
- Brain & CNS: *benign, borderline* & invasive
- Primary cancers only
- Recurrent or metastatic cancers – not collected
- Rhode Island residents of all ages, regardless of treatment location
- Diagnosis years: 1995 to current
- Possible under-reporting of cancers diagnosed/treated in outpatient settings (e.g., dermatology, hematology, urology)

Reporting sources in RICR

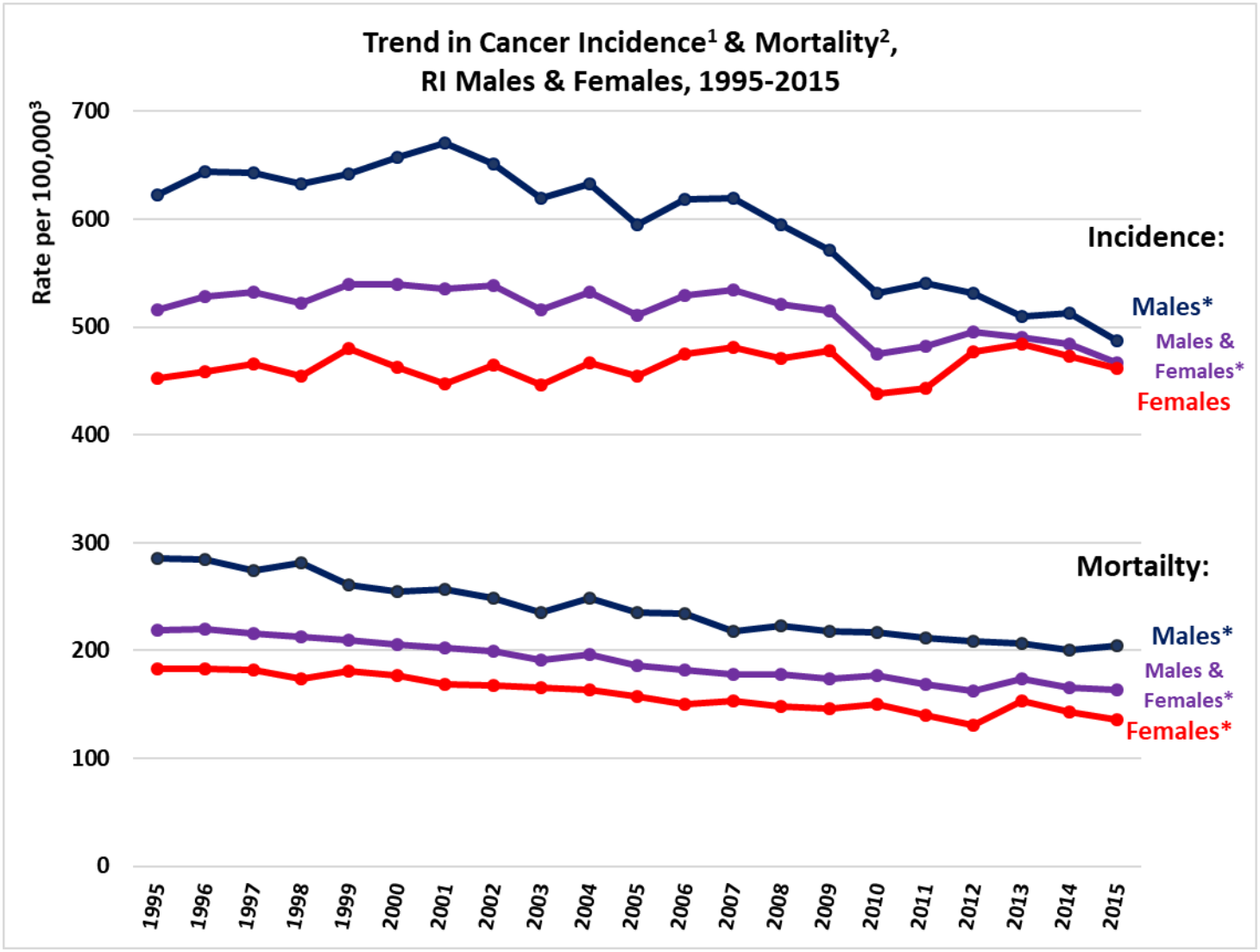
(As of Jan 2019)

- Hospitals (n=11) – 76%
- Free-standing radiology & cancer treatment centers – 10%
- Out of state – 8%
- Path labs – 4%
- Death certificate - 1%

From November 2019, Providence VAMC cancer data started to be included in RICR

RICR Cancer Reporting

- RIDOH Cancer Data page: http://www.health.ri.gov/data/cancer/

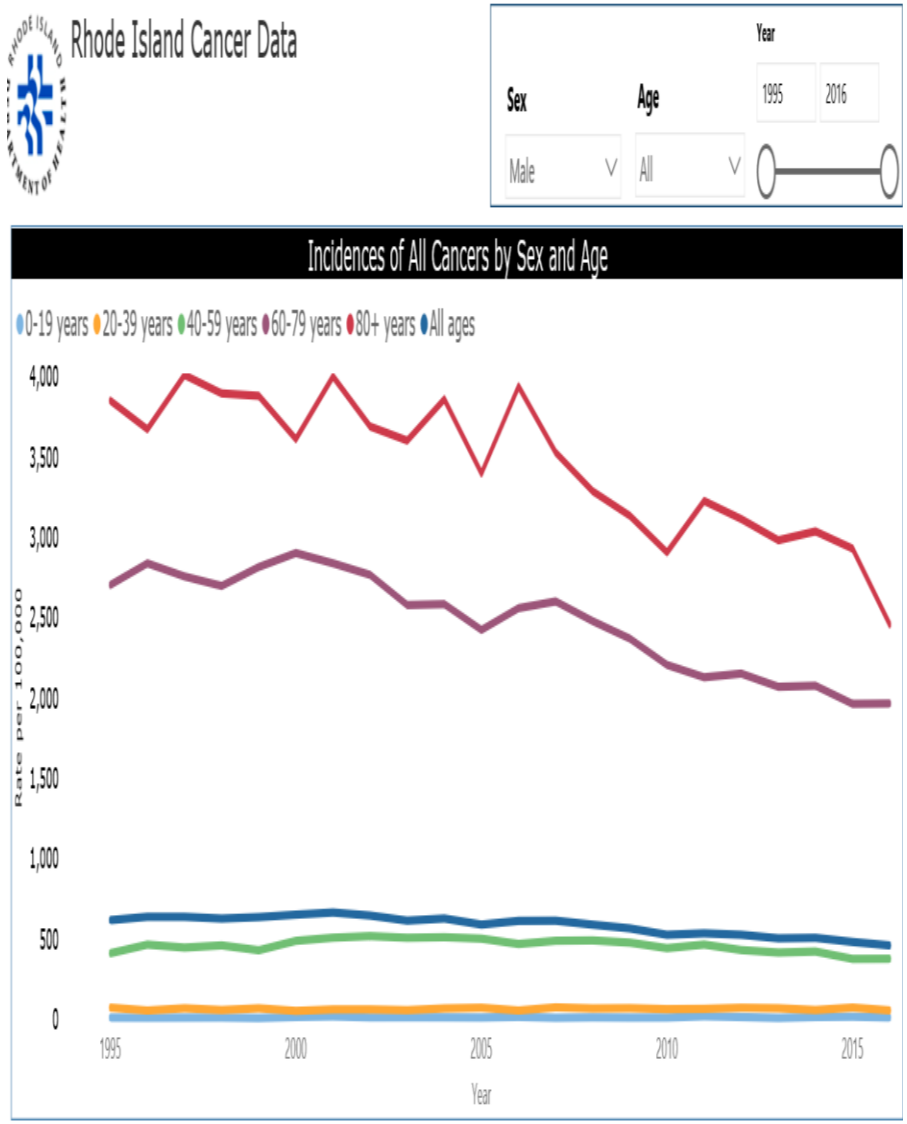


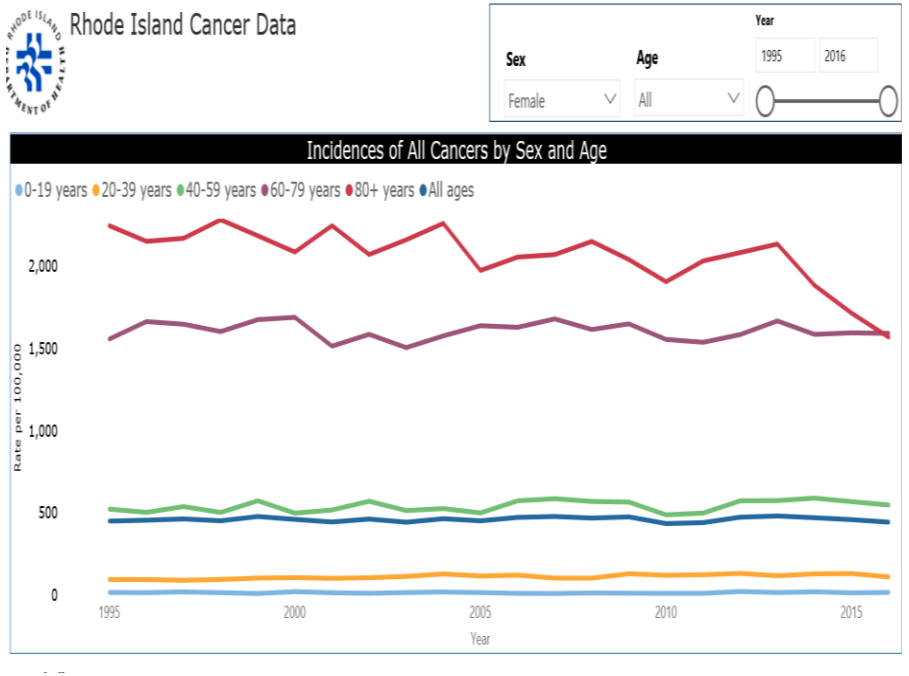
[1] New diagnoses of malignant cancers in all anatomic sites and in-situ urinary bladder (source: Rhode Island Cancer Registry analyzed using SEER*Stat v8.3.4)

[2] Deaths with underlying cause of deaths associated with all malignant cancers (Source: Rhode Island Vital Records & CDC NCHS analyzed using SEER*Stat v8.3.4)

[3] Age-adjusted to US 2000 standardized population

*** Statistically significant decline over the 21 year period, 1995-2015**





Key Findings:

- There were an average of 6,100 new cancer cases annually (an age-adjusted rate of 510 per 100,000) during 1995-2016.

- Since 1995, the incidence of newly diagnosed cancers continued to decline.

- Aging is the most significant risk factor for cancer; the majority of cancers are among individuals older than 60 years.

Source: RIDOH Cancer Data page http://www.health.ri.gov/data/cancer/

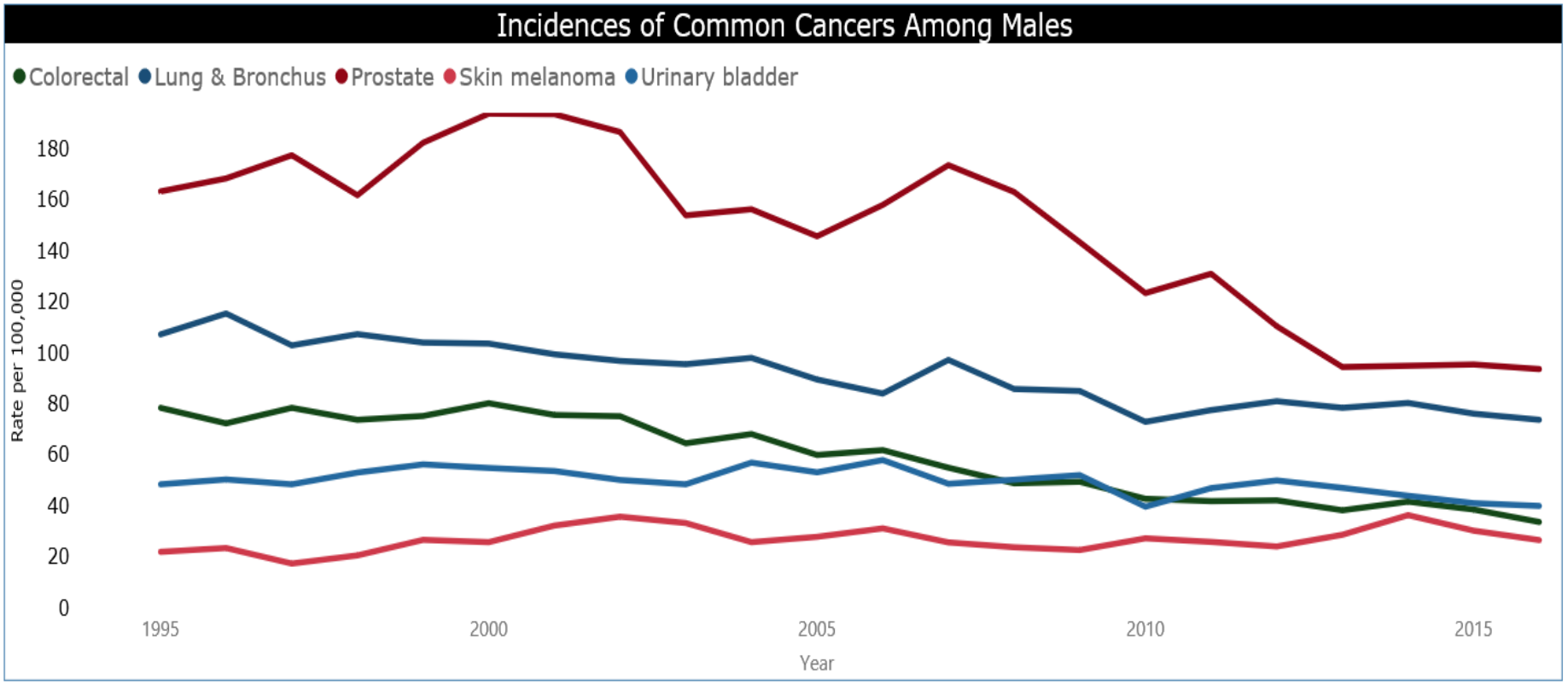
Rhode Island Cancer Data

Cancer Site

All

Year

1995 2016



Key Findings:

- The five "common" types of cancer among males consist of approximately 2/3 of all diagnoses.

- Incidence rates for prostate, lung & bronchus, and colorectal cancers have decreased over the past twenty years. Rates of skin melanoma have been on the rise; urinary bladder cancer incidence has not shown a significant change.

Source: *Rhode Island Cancer Registry, summarized using SEER*Stat v8.3.5.*

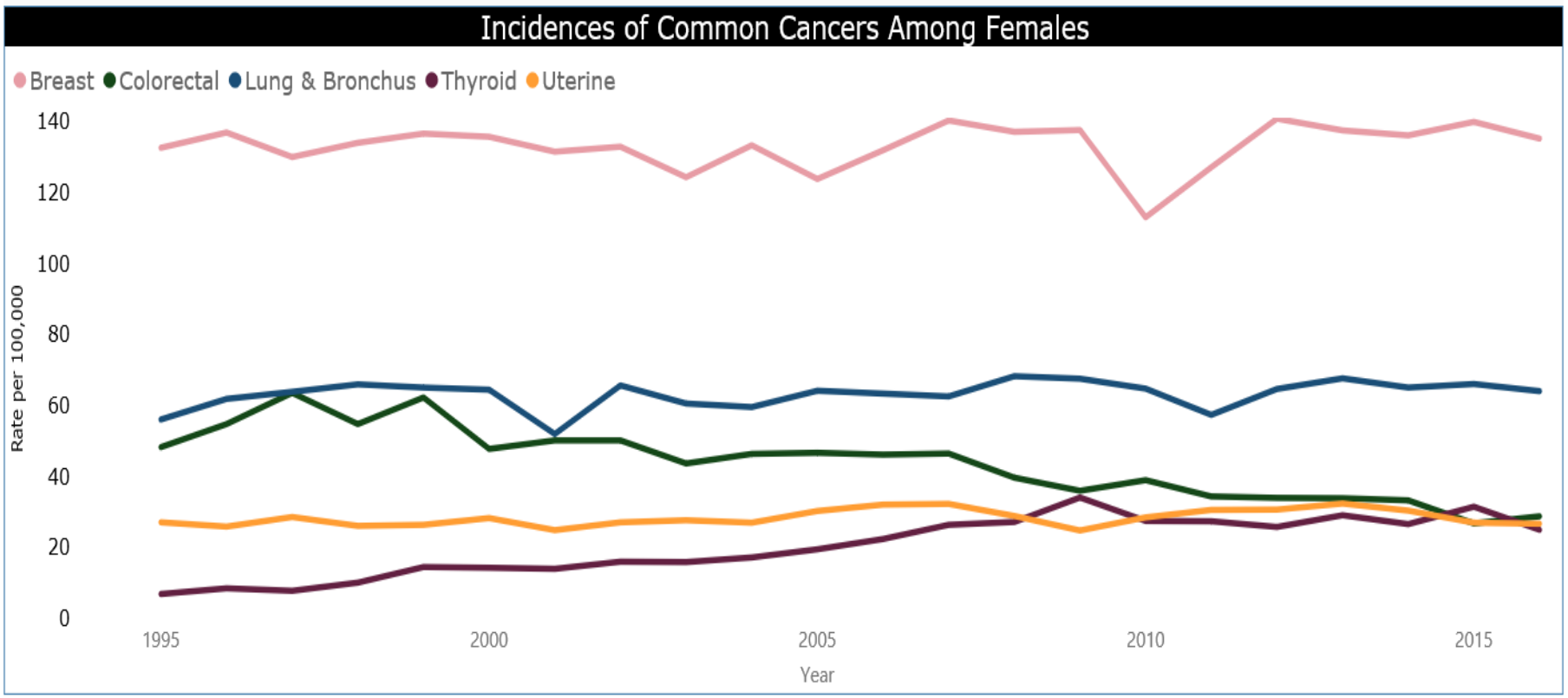
Note: *Rates are per 100,000 and age-adjusted to the 2000 US Standard Population (19 age groups - Census P25-1130) standard.*

Source: RIDOH Cancer Data page http://www.health.ri.gov/data/cancer/

Rhode Island Cancer Data

Cancer Site: All

Year: 1995 – 2016



Key Findings:

- The five "common" types of cancer among females consist of approximately 2/3 of all cancer diagnoses.

- The incidence rate of colorectal cancer has decreased between 1995 and 2016. The rates of thyroid and lung & bronchus cancer have increased. Rates of breast and uterine cancer has stayed relatively unchanged.

Source: *Rhode Island Cancer Registry, summarized using SEER*Stat v8.3.5.*

Note: *Rates are per 100,000 and age-adjusted to the 2000 US Standard Population (19 age groups - Census P25-1130) standard.*

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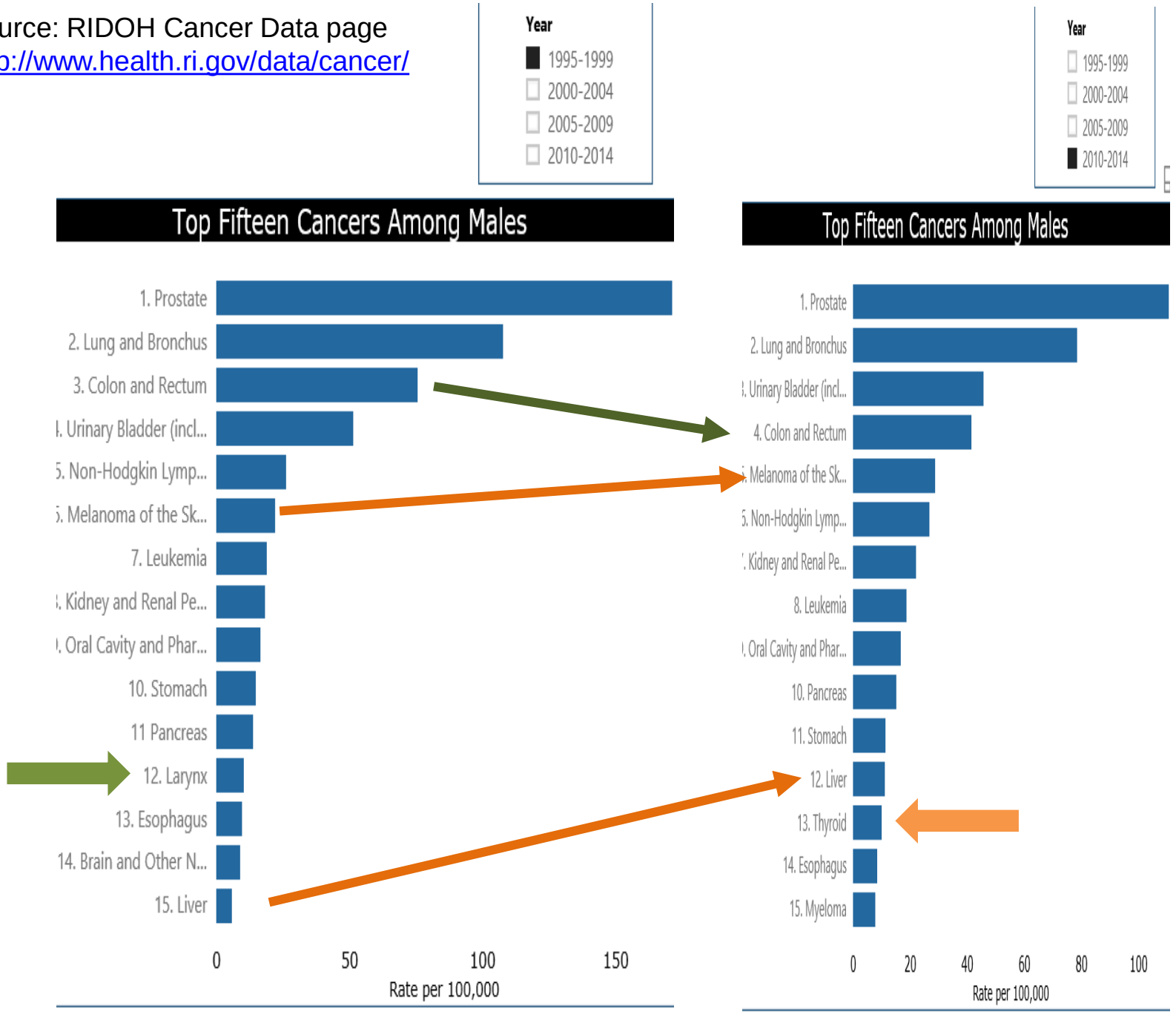

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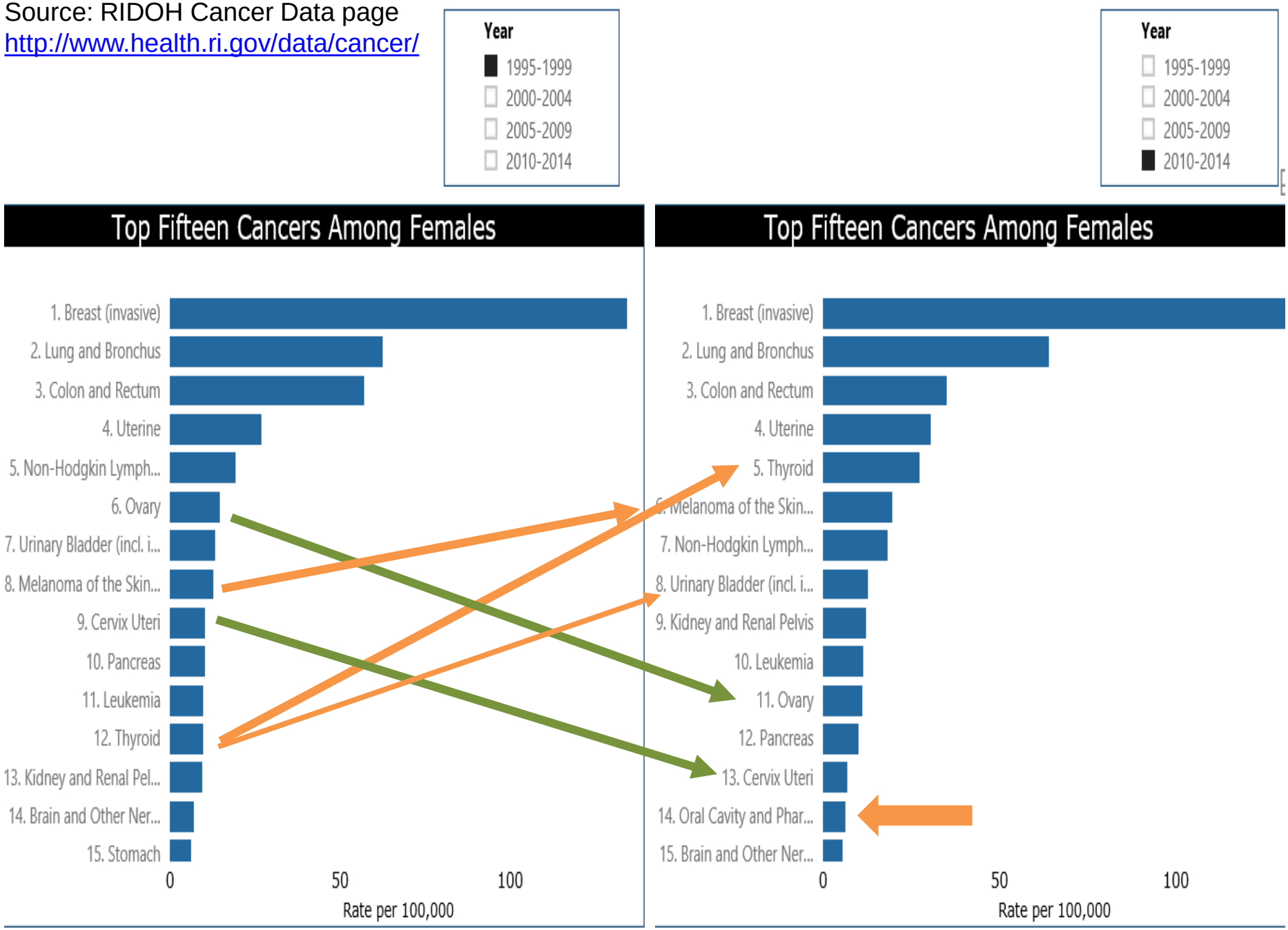

Rhode Island Cancer Data

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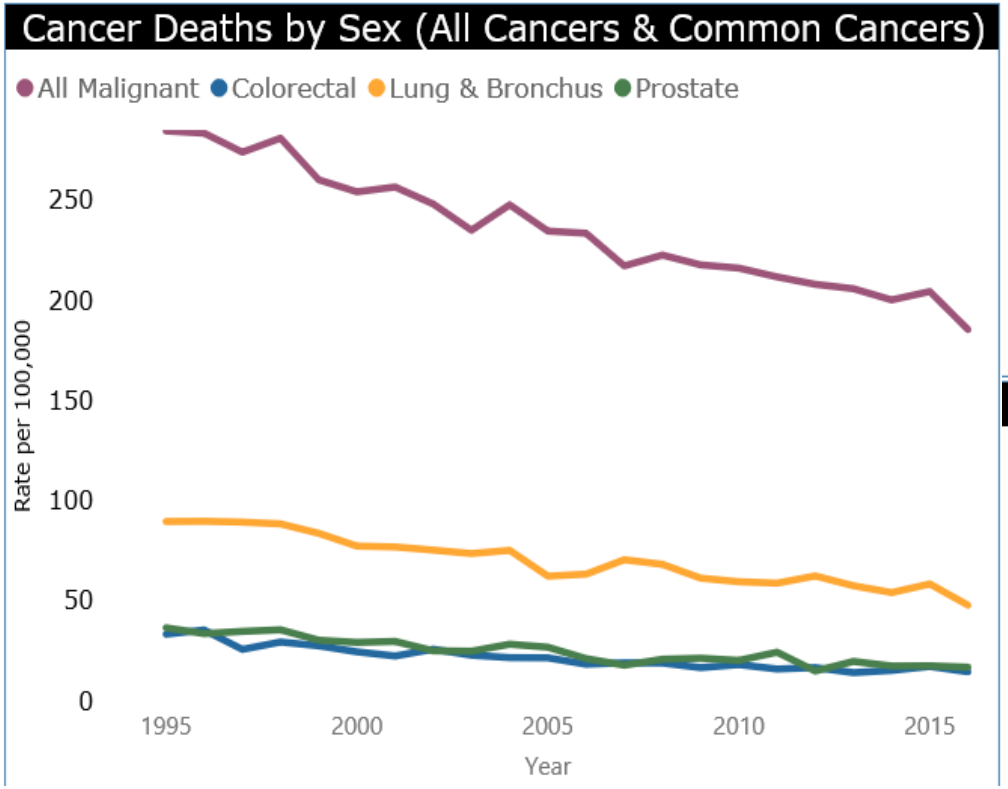
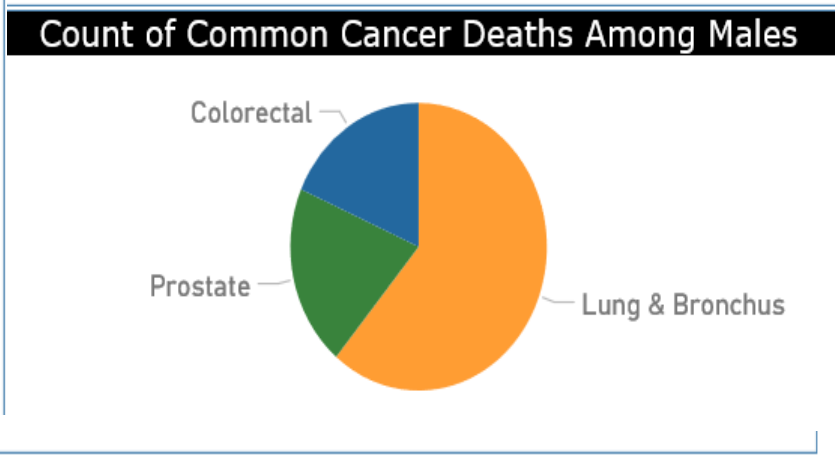


1995-2016 combined



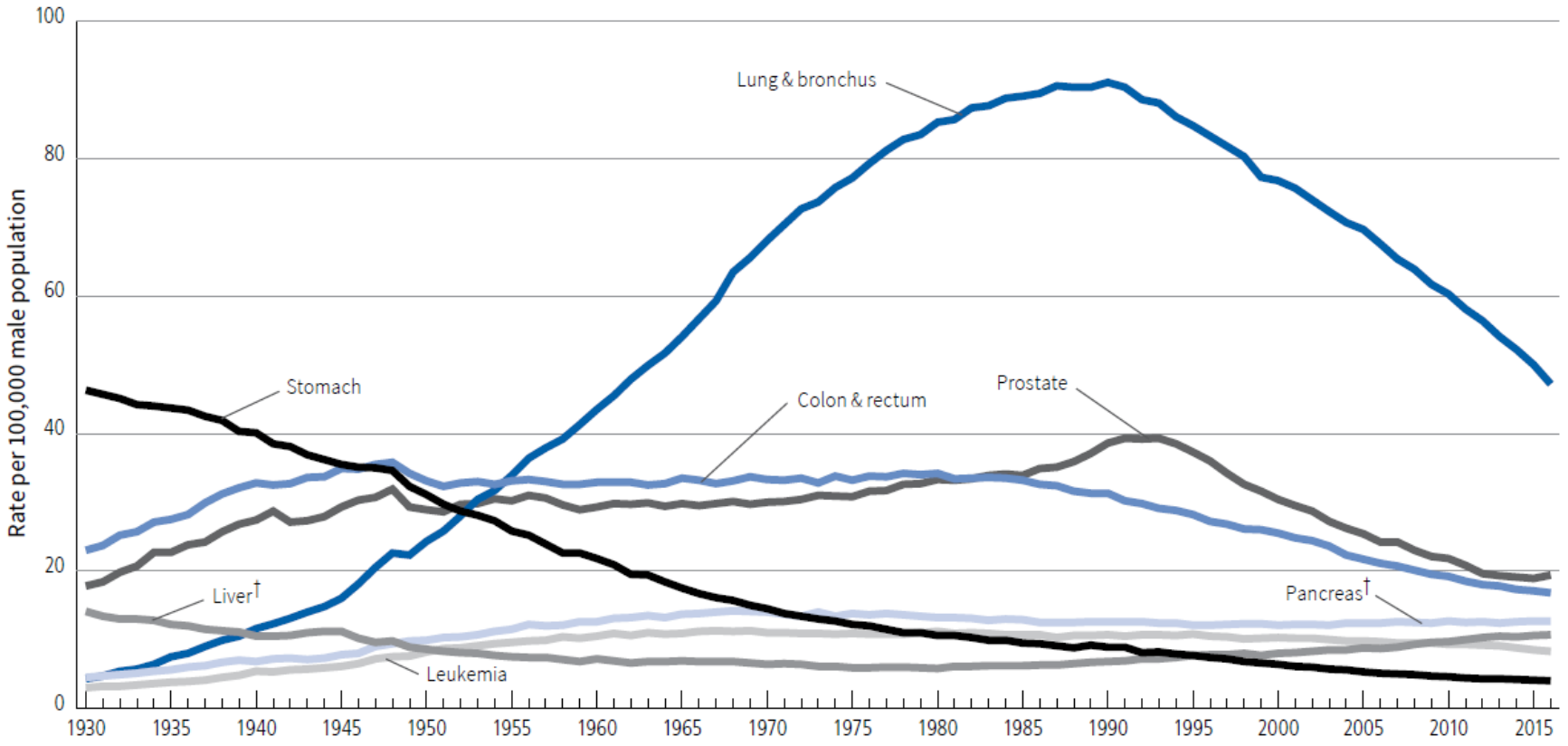
Key Findings:

- Cancer is the second leading cause of death in Rhode Island. Between 1995 and 2015, the number of cancer deaths was 2,330 each year on average, or age-adjusted annual rate of 190 per 100,000 Rhode Islanders. For 1995 to 2015, the mortality rates for all invasive cancer have decreased by 25%. For some common cancers (breast, prostate, and colorectal), death rates were almost halved over the past 21 years. Lung/bronchus cancer is the first cause of all cancer deaths in the US and Rhode Island. Death from lung and bronchus cancer accounts for 30% of all cancer-associated deaths among Rhode Islanders.

Source: *Rhode Island Vital Records & CDC NCHS, summarized using SEER*Stat v8.3.5.*

Note: *"All" types of cancer includes deaths with underlying cause of death associated with all invasive malignant cancers. "Common" cancer deaths among men and women consist of 1/2 of all cancer deaths. Rates are per 100,000 and age-adjusted to the 2000 US Standard Population (19 age groups - Census P25-1130).*

Figure 1. Trends in Age-adjusted Cancer Death Rates* by Site, Males, US, 1930-2016



*Per 100,000, age adjusted to the 2000 US standard population. †Mortality rates for pancreatic and liver cancers are increasing.

Note: Due to changes in ICD coding, numerator information has changed over time. Rates for cancers of the liver, lung and bronchus, and colon and rectum are affected by these coding changes.

Source: US Mortality Volumes 1930 to 1959, US Mortality Data 1960 to 2016, National Center for Health Statistics, Centers for Disease Control and Prevention.

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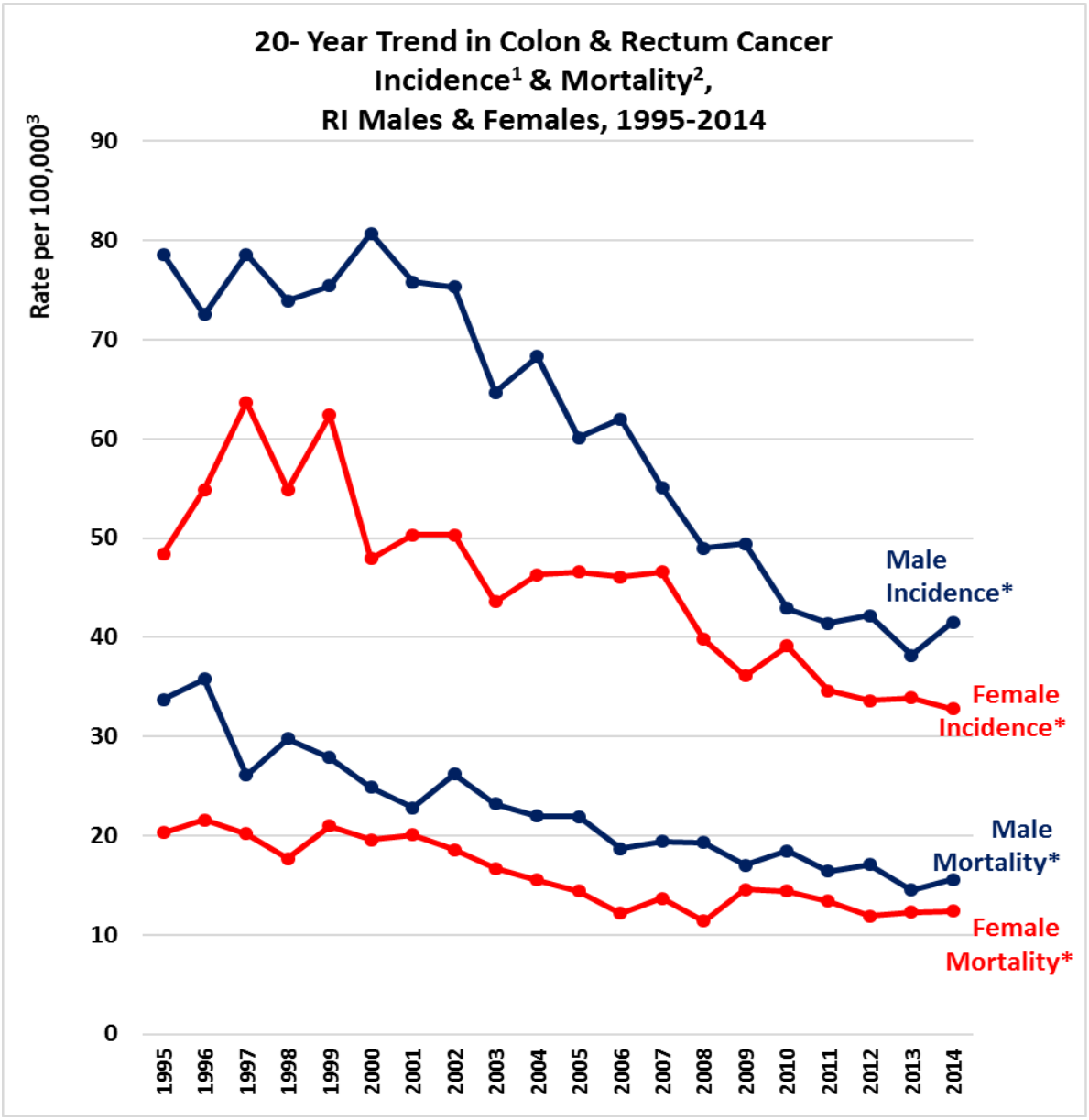
Incidence & Survival by cancer type – RI White Males (source: RICR)

	Incidence
Prostate	93
Lung & Bronchus	58
Urinary bladder	39
Colon & rectum	33
Melanoma of the skin	20
Kidney & renal pelvis	18
Non-Hodgkin lymphoma	18
Leukemia	16
Pancreas	15
Oral cavity & pharynx	15
Stomach	10
Liver	8
Brain & CNS	7
Esophagus	6
Multiple myeloma	6

	Incidence / Mortality
Oral cavity & pharynx	7.2
Melanoma of the skin	6.0
Prostate	5.5
Urinary bladder	4.5
Kidney & renal pelvis	3.5
Stomach	2.6
Non-Hodgkin lymphoma	2.5
Colon & rectum	2.0
Multiple myeloma	2.0
Leukemia	1.6
Brain & CNS	1.2
Liver	1.1
Lung & Bronchus	1.1
Pancreas	1.0
Esophagus	0.8

Incidence rate per 100,000, 2017: Age-adjusted to US 2000 standardized population (source: Rhode Island Cancer Registry analyzed using SEER*Stat v8.3.4)
Mortality rate per 100,000, 2015-16 (Source: Rhode Island Vital Records & CDC NCHS analyzed using SEER*Stat v8.3.4)



[1] New diagnoses of malignant cancers in all anatomic sites and in-situ urinary bladder (source: Rhode Island Cancer Registry analyzed using SEER*Stat v8.3.4)

[2] Deaths with underlying cause of deaths associated with all malignant cancers (Source: Rhode Island Vital Records & CDC NCHS analyzed using SEER*Stat v8.3.4)

[3] Age-adjusted to US 2000 standardized population

*** Statistically significant decline over the 21 year period, 1995-2014**

HealthFacts RI

Insurance Type

All

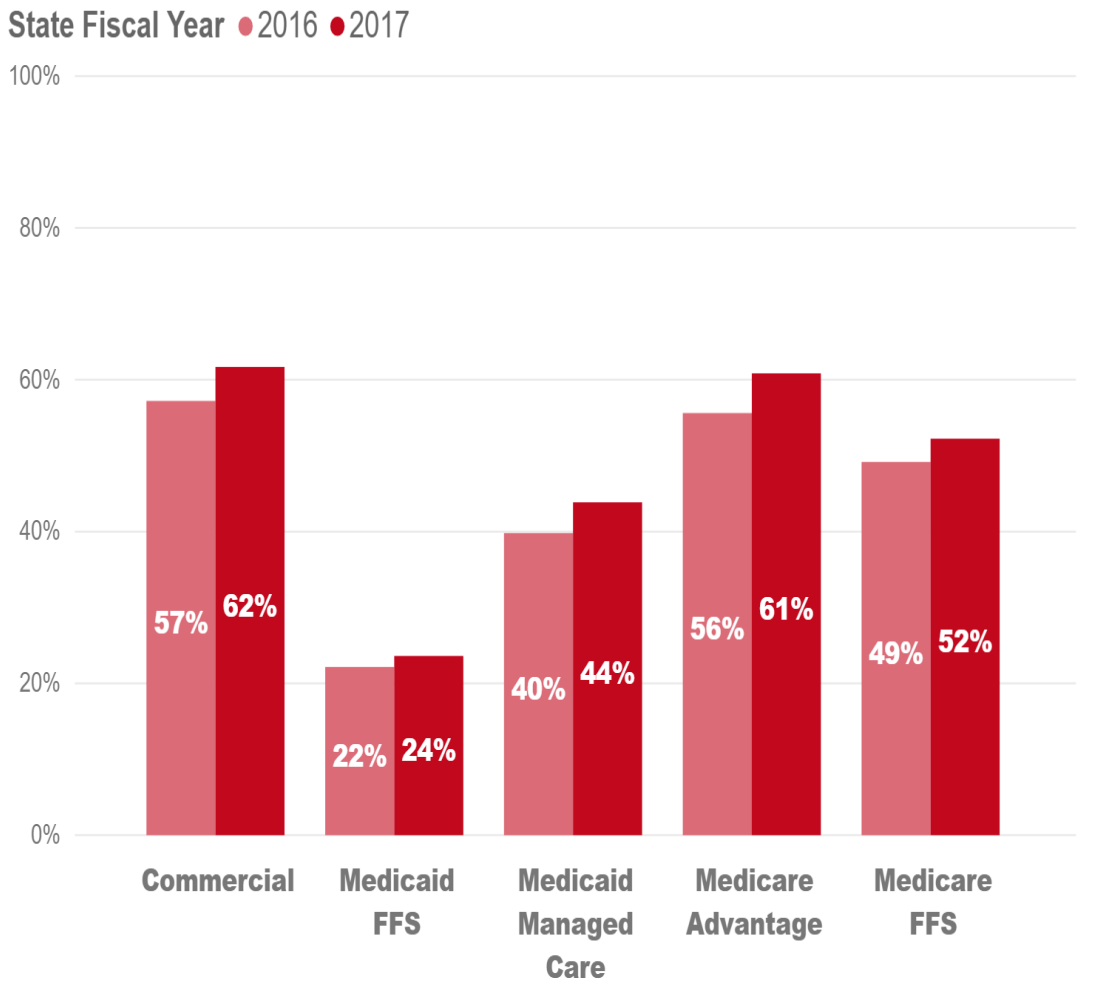
Gender Code

All

Age Groups

All

Colon Cancer Screening, RI Major Insurance Providers with > 1,500 Screening Eligible Members

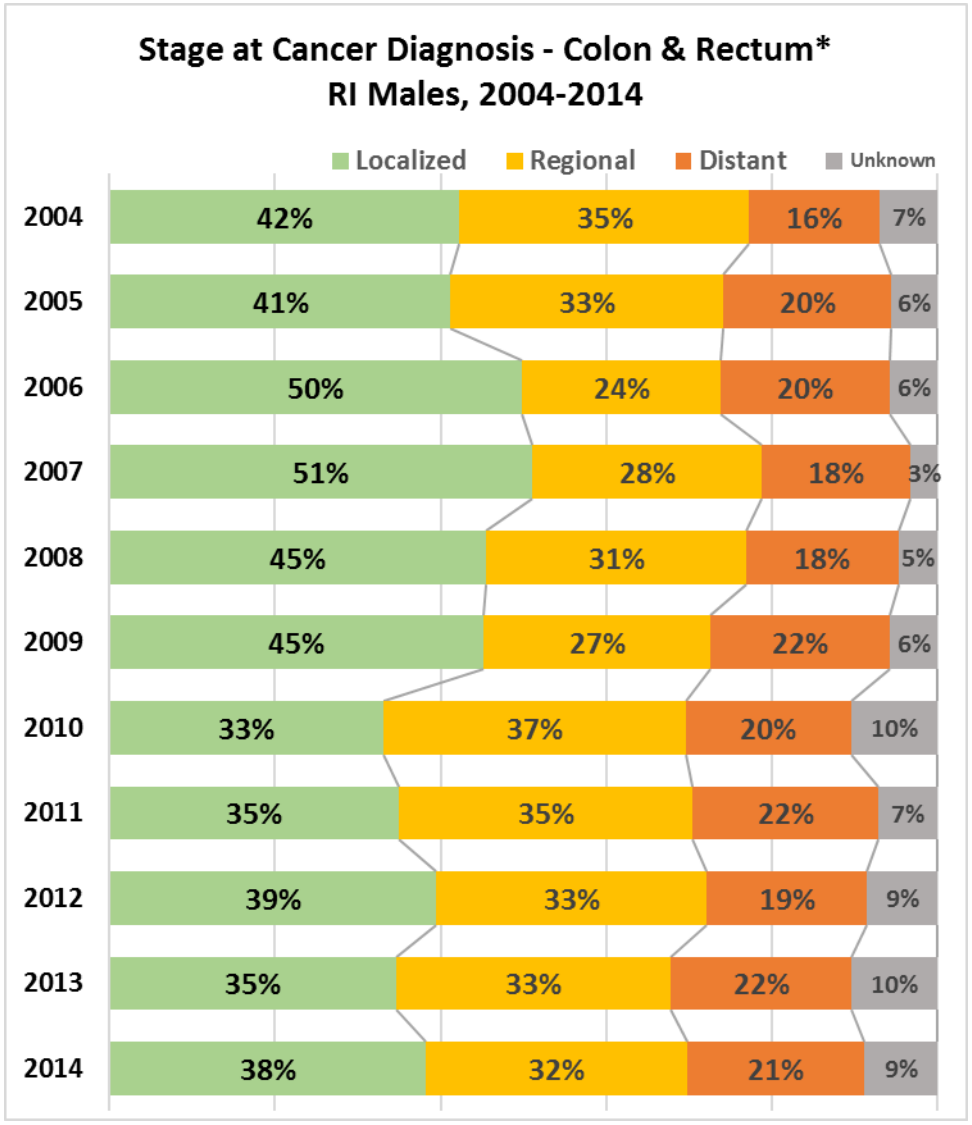


2016
State Fiscal Year
209,087
Colon Cancer # Eligible for Screening
109,685
Colon Cancer # Screened
52.5 %
Colon Cancer % Screened

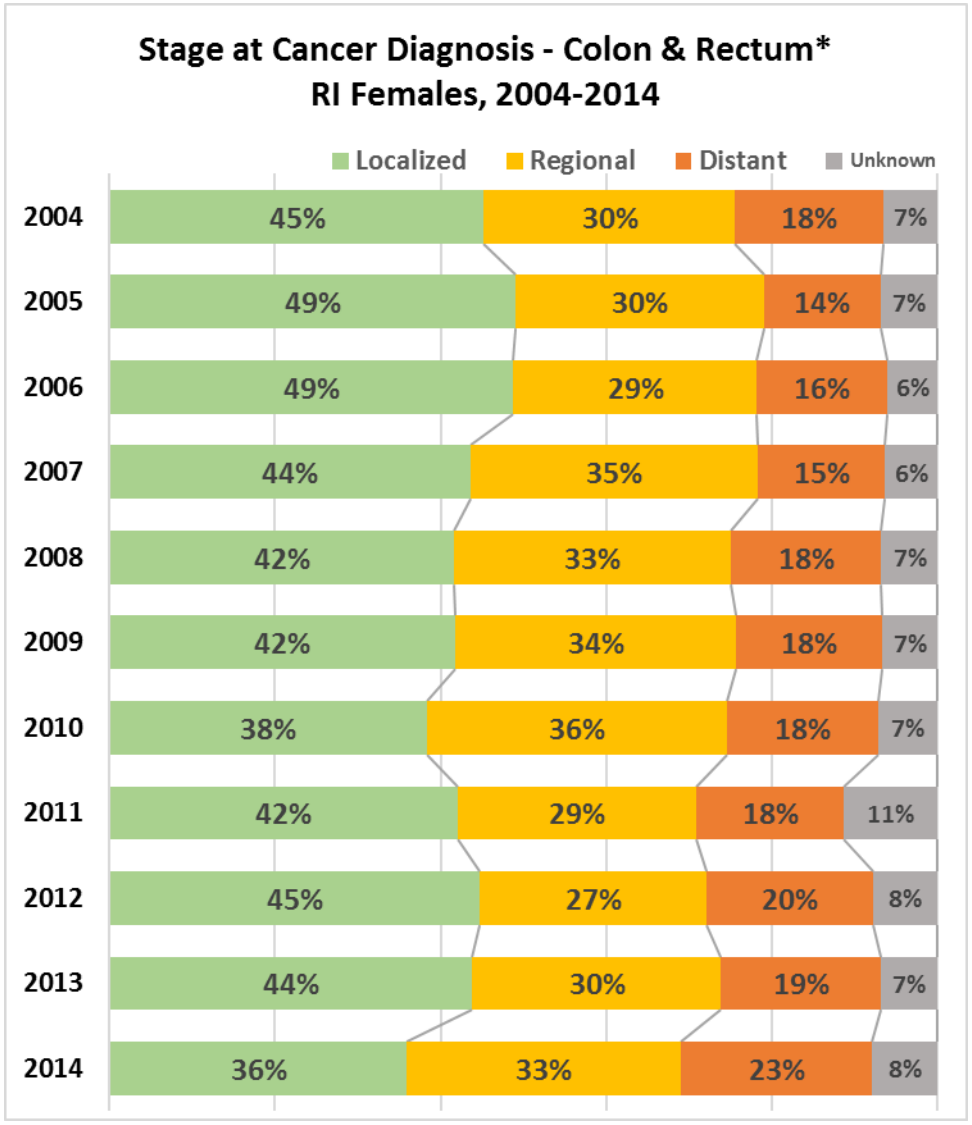
2017
State Fiscal Year
215,050
Colon Cancer # Eligible for Screening
121,045
Colon Cancer # Screened
56.3 %
Colon Cancer % Screened

Assesses adults 50-75 who had appropriate screening for colorectal cancer with any of the following tests: annual fecal occult blood test, flexible sigmoidoscopy every 5 years, colonoscopy every 10 years, computed CT colonography every 5 years, stool DNA test every 3 years.
Click on the left bar to filter the report by insurance type, gender, age group and health status. For more information about how this report works, please visit the Report Navigation page.

Back to Report List



* New diagnoses of malignant cancers in colon and rectum
(source: Rhode Island Cancer Registry analyzed using SEER*Stat v8.3.4)



* New diagnoses of malignant cancers in colon and rectum
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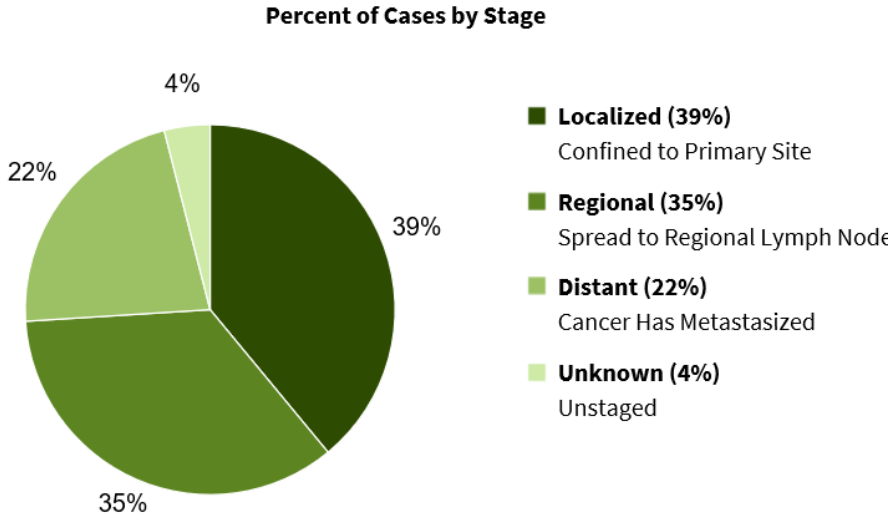
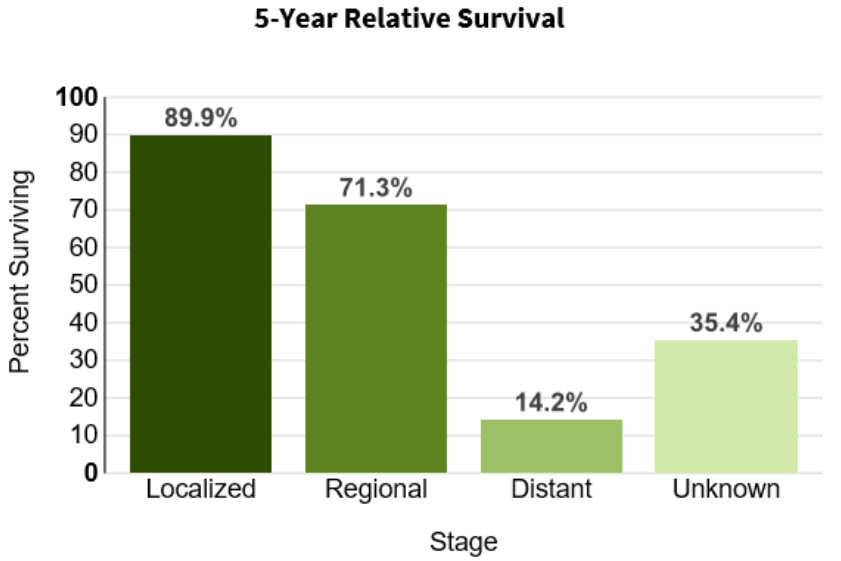
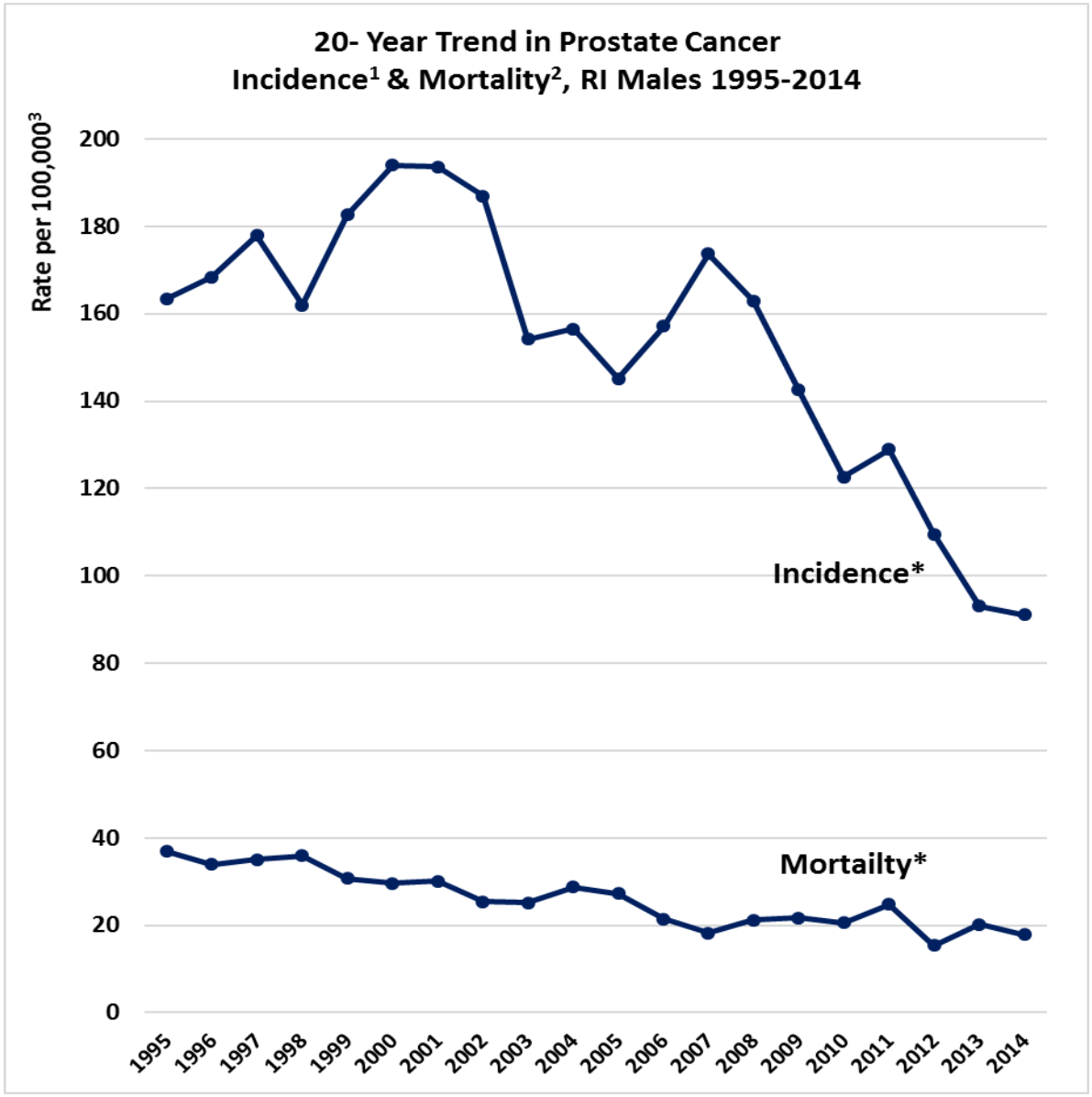
Survival by stage – Colon & rectum, US

f Cases & 5-Year Relative Survival by Stage at Diagnosis: Colorectal Cancer





SEER 18 2009-2015, All Races, Both Sexes by SEER Summary Stage 2000
(https://seer.cancer.gov/statfacts/html/melan.html)



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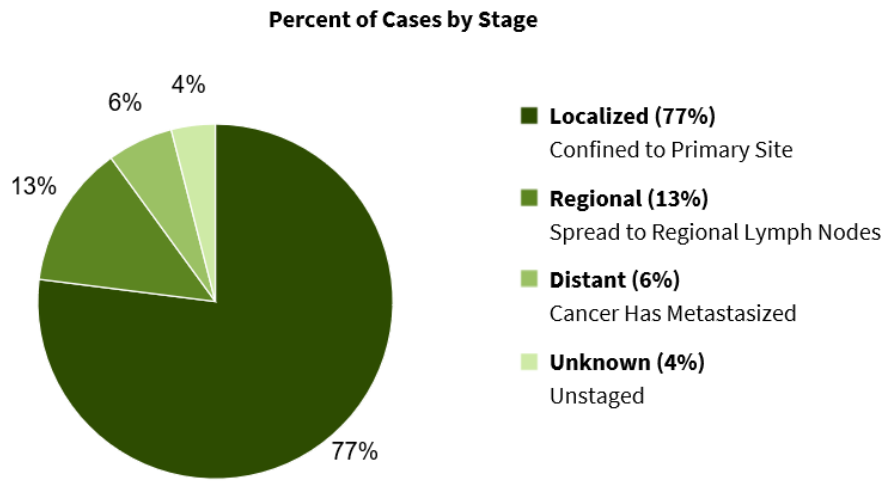
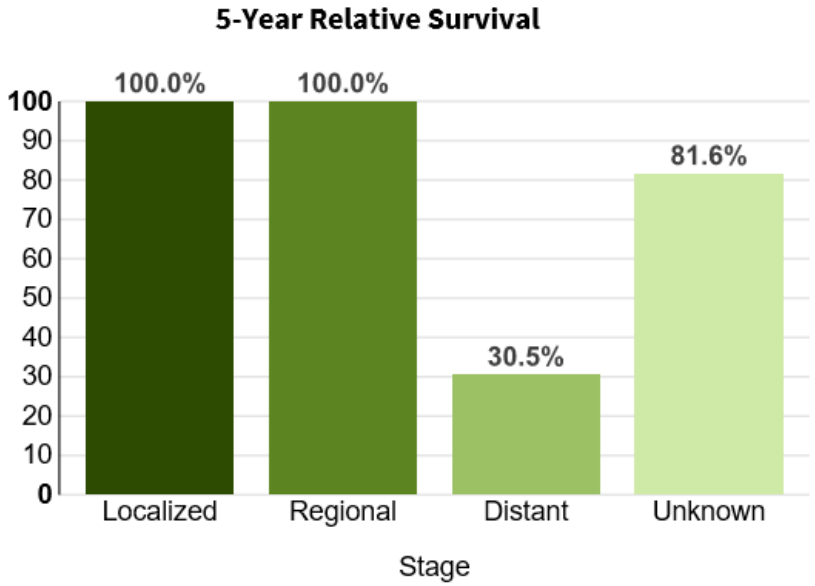
*** Statistically significant decline over the 21 year period, 1995-2014**

Survival by stage – Prostate, US

Cases & 5-Year Relative Survival by Stage at Diagnosis: Prostate Cancer





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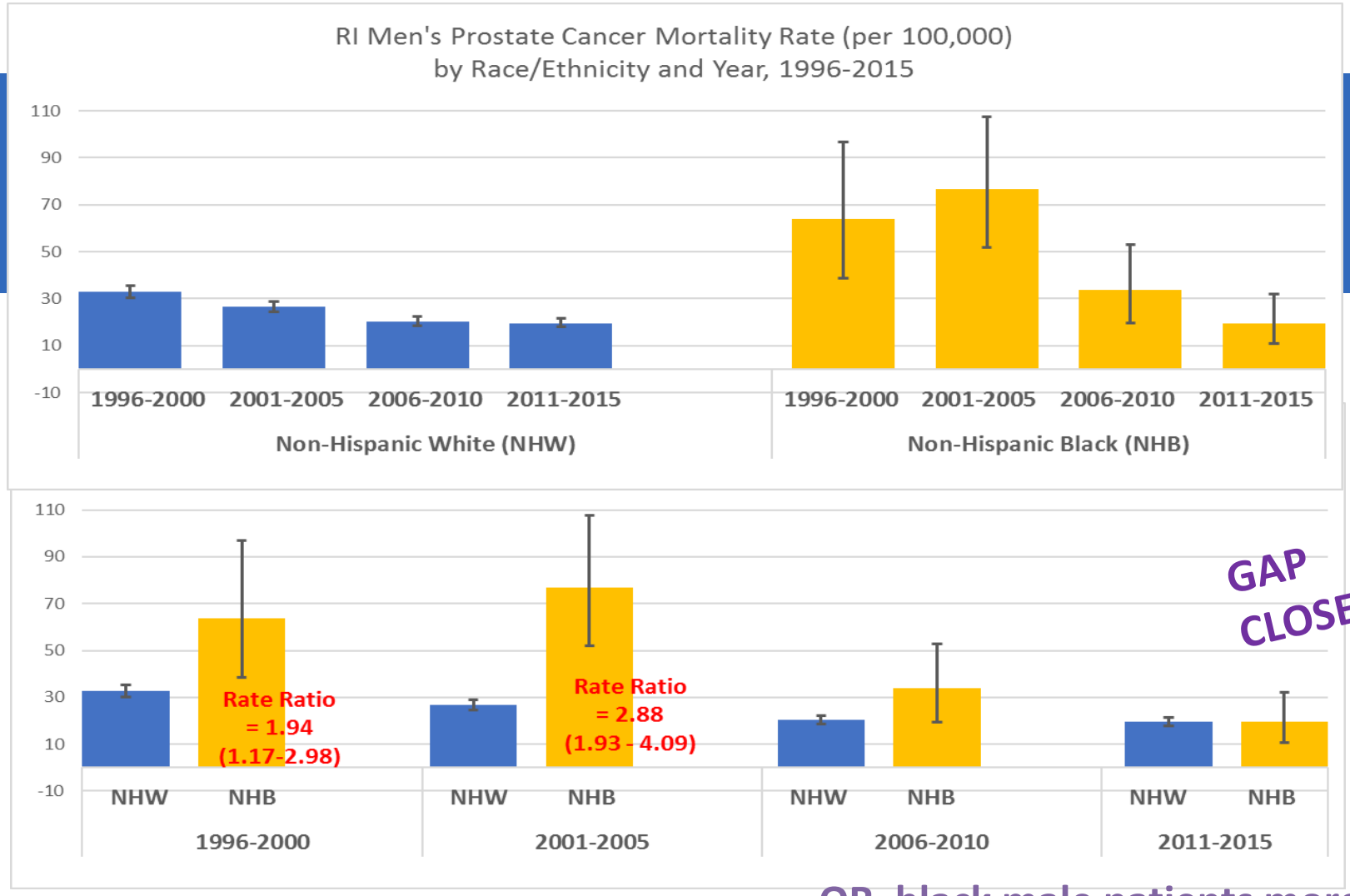


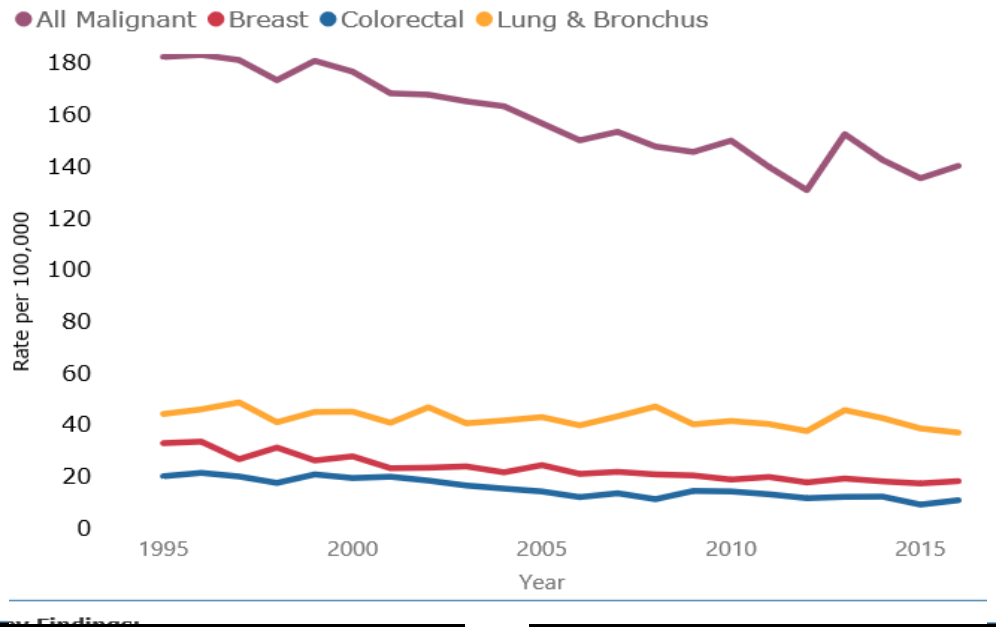
GAP CLOSED! ?

OR, black male patients more likely died from heart disease, stroke or other chronic disease?

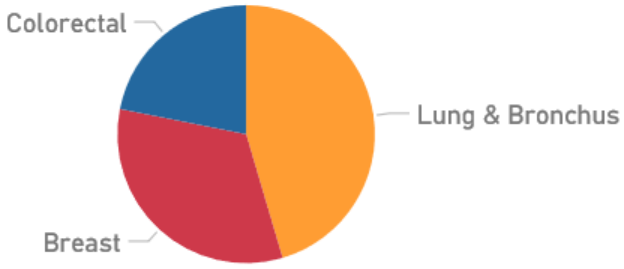
Rhode Island Cancer Data

Source: RIDOH Cancer Data page
http://www.health.ri.gov/data/cancer/

Cancer Deaths by Sex (All Cancers & Common Cancers)

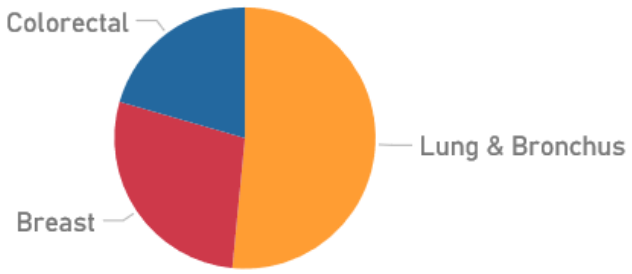


Count of Common Cancer Deaths Among Females



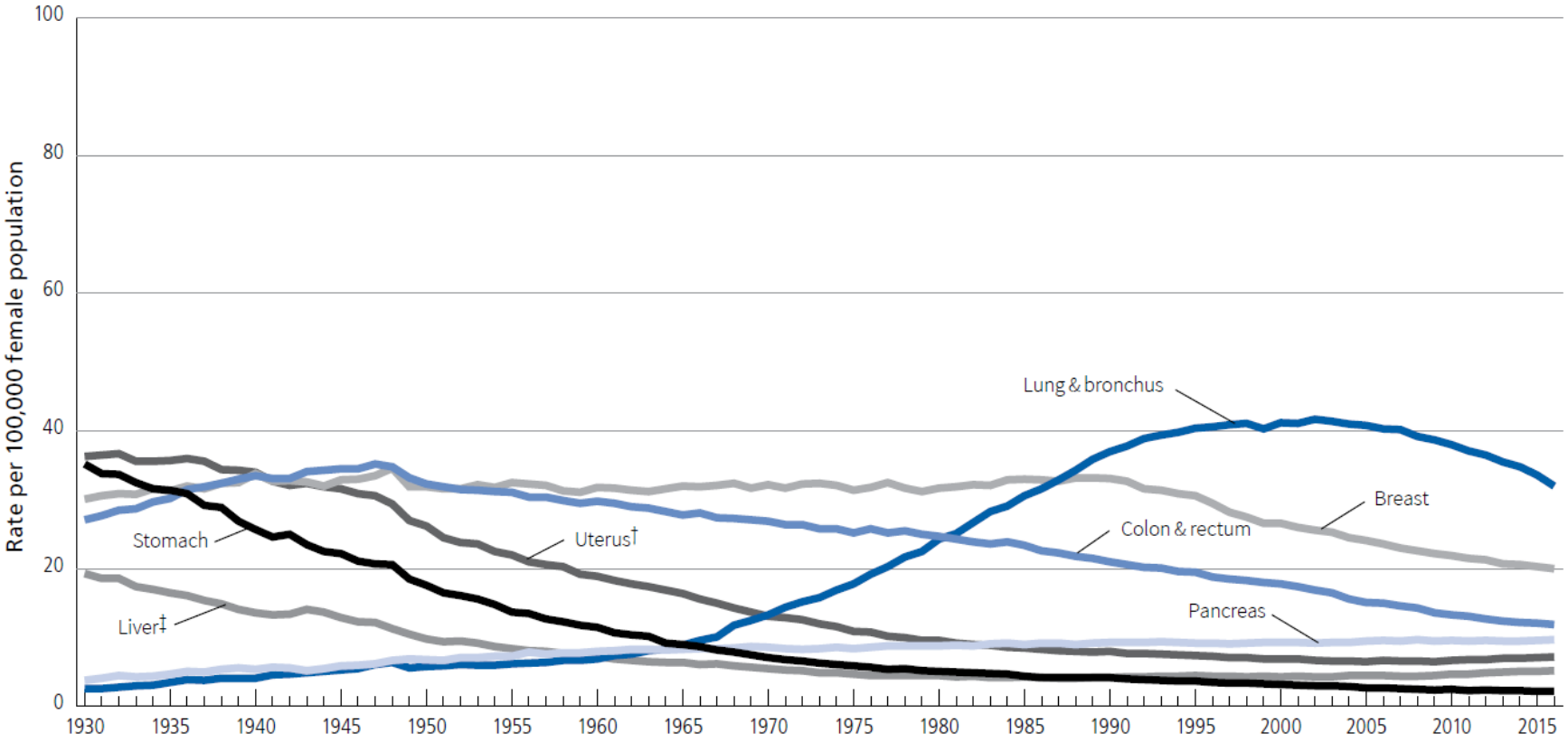
1995

Count of Common Cancer Deaths Among Females



2016

Figure 2. Trends in Age-adjusted Cancer Death Rates* by Site, Females, US, 1930-2016



*Per 100,000, age adjusted to the 2000 US standard population. Rates exclude deaths in Puerto Rico and other US territories. †Uterus refers to uterine cervix and uterine corpus combined. ‡The mortality rate for liver cancer is increasing.

Note: Due to changes in ICD coding, numerator information has changed over time. Rates for cancers of the liver, lung and bronchus, colon and rectum, and uterus are affected by these coding changes.

Source: US Mortality Volumes 1930 to 1959, US Mortality Data 1960 to 2016, National Center for Health Statistics, Centers for Disease Control and Prevention.

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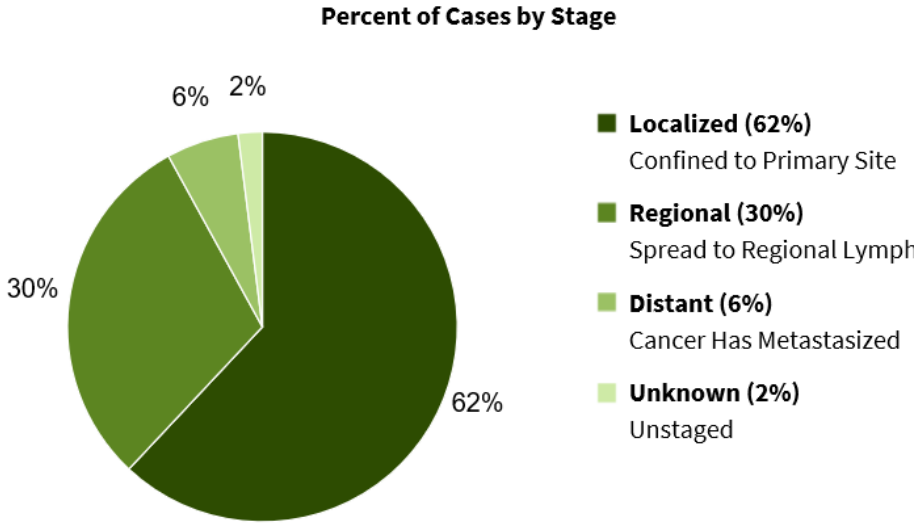
Incidence & Survival by cancer type – RI White Females (source: RICR)

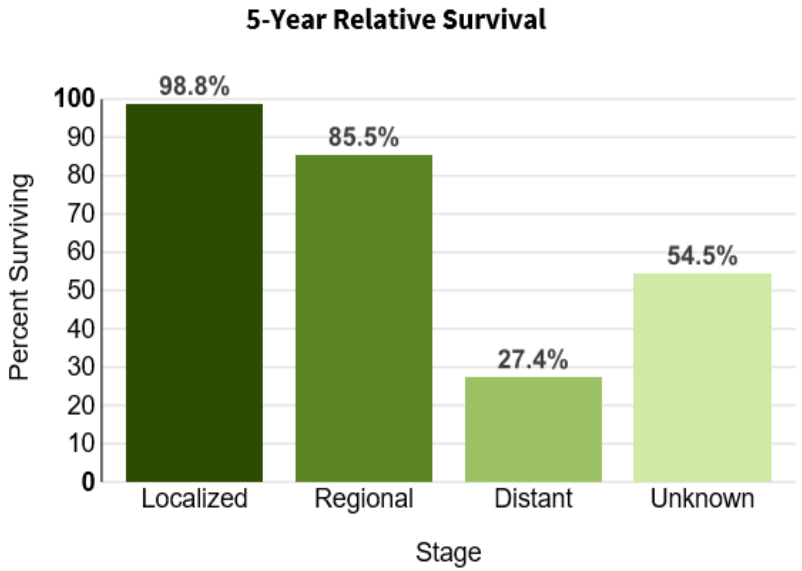
	Incidence			Incidence / Mortality
Breast	135		Hodgkin's disease	12.7
Lung & Bronchus	59		Melanoma of the skin	12.0
Colon & rectum	25		Oral cavity & pharynx	9.0
Corpus & Uterus, NOS	16		Breast	7.4
Melanoma of the skin	14		Urinary bladder	5.2
Urinary bladder	12		Kidney & renal pelvis	4.6
Non-Hodgkin lymphoma	11		Corpus & Uterus, NOS	3.4
Kidney & renal pelvis	9		Non-Hodgkin lymphoma	2.9
Leukemia	9		Colon & rectum	2.4
Oral cavity & pharynx	8		Leukemia	1.8
Pancreas	8		Liver	1.8
Brain & CNS	6		Cervix	1.7
Ovary	5		Stomach	1.5
Cervix	4		Lung & Bronchus	1.5
Stomach	4		Brain & CNS	1.5
Liver	3		Esophagus	1.3
Hodgkin's disease	3		Multiple myeloma	1.3
Multiple myeloma	3		Ovary	0.9
Esophagus	2		Pancreas	0.7

Incidence rate, 2017: Age-adjusted to US 2000 standardized population (source: Rhode Island Cancer Registry analyzed using SEER*Stat v8.3.4)
Mortality rate, 2015-16 (Source: Rhode Island Vital Records & CDC NCHS analyzed using SEER*Stat v8.3.4)

Survival by stage – Breast, US

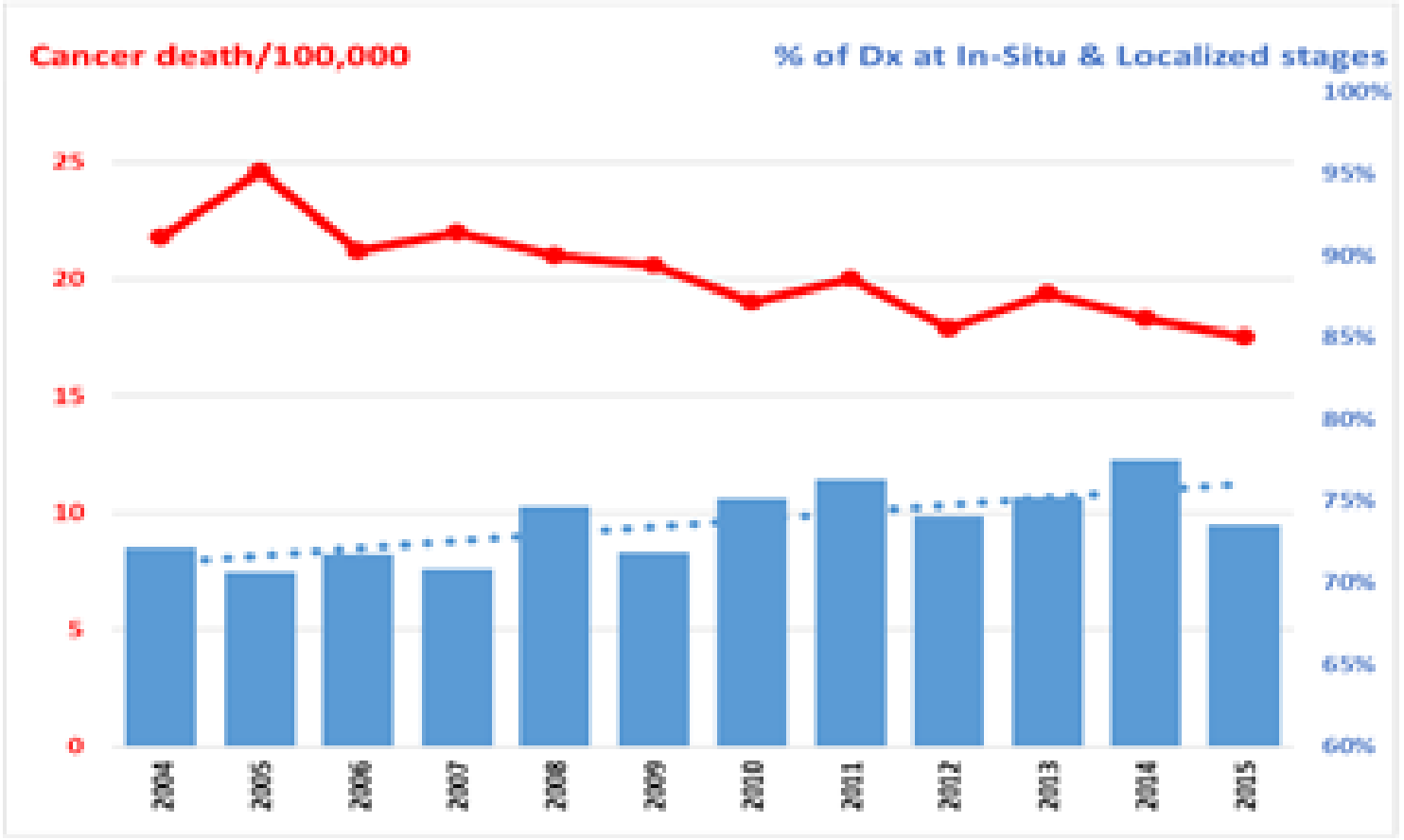
Cases & 5-Year Relative Survival by Stage at Diagnosis: Female Breast Cancer





SEER 18 2009-2015, All Races, Both Sexes by SEER Summary Stage 2000 (https://seer.cancer.gov/statfacts/html/melan.html)

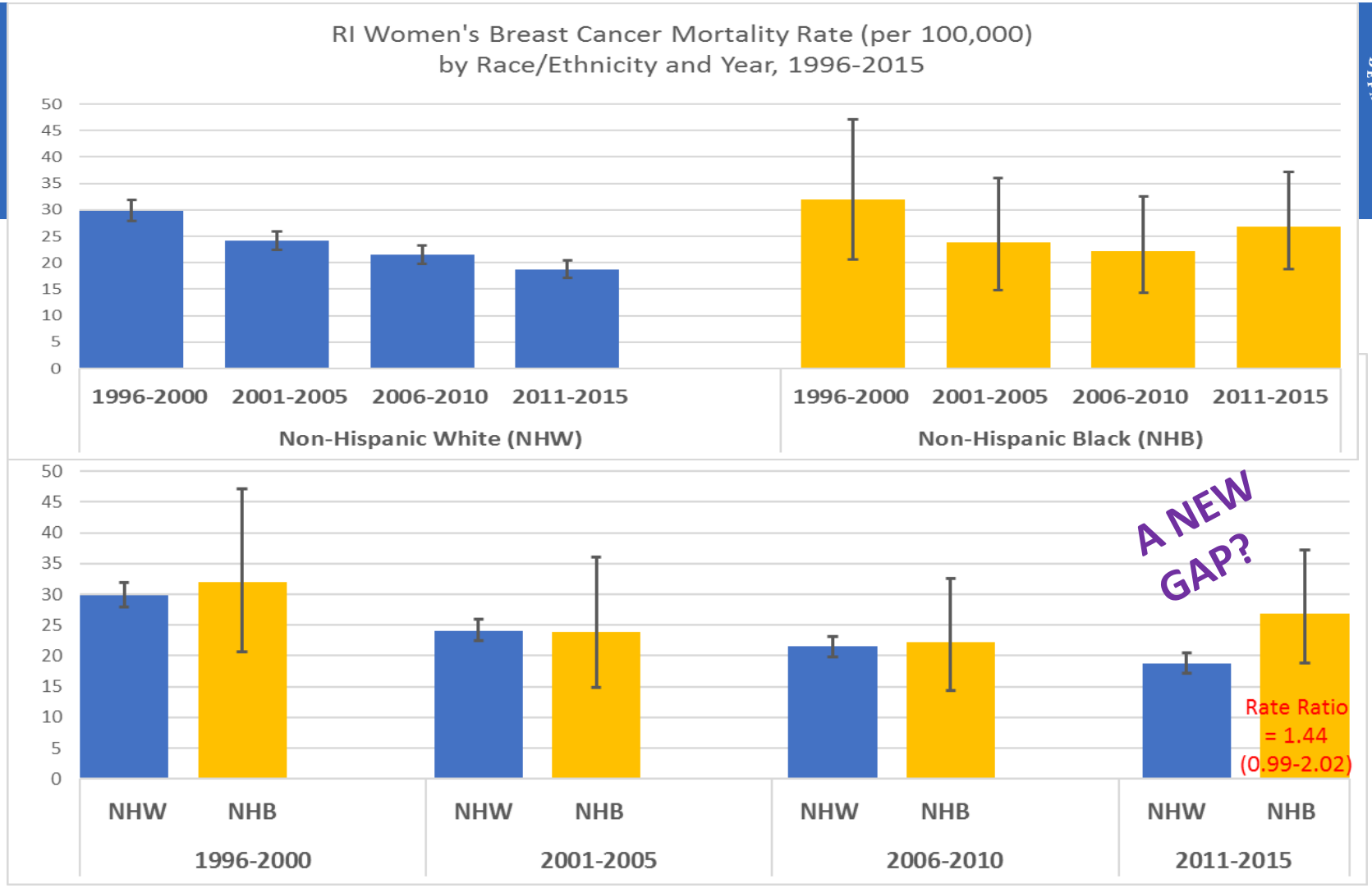
Figure 1. Rhode Island Female Breast Cancer Mortality Rate* and Percentage of Malignant Breast Cancer Diagnosed at In-Situ and Localized Stages, RICR 2004-2015



* Deaths with underlying cause of deaths associated with malignant breast cancers.

Rates are age-adjusted to US 2000 standardized population

Data sources: Rhode Island Vital Records & CDC NCHS, analyzed using SEER*Stat v8.3.5


RI Women's Breast Cancer Mortality Rate (per 100,000)
by Race/Ethnicity and Year, 1996-2015
50
45
40
35
30
25
20
15
10
5
0
1996-2000
2001-2005
2006-2010
2011-2015
Non-Hispanic White (NHW)
1996-2000
2001-2005
2006-2010
2011-2015
Non-Hispanic Black (NHB)
A NEW GAP?
Rate Ratio = 1.44 (0.99-2.02)
NHW
NHB
1996-2000
2001-2005
2006-2010
2011-2015

Breast Cancer Disparity in Rhode Island

- Black RI women tend to be diagnosed at later stages when prognosis is poorer.

Table 4. Rhode Island Women's Breast Cancers' Stages at Diagnosis* by Age and Race, 2004-2016
Rhode Island Cancer Registry

All Group (years)	Stage at Diagnosis	All RI Women		White Women		Black Women	
		#	%	#	%	#	%
All ages	In-situ & Localized	10,733	74%	10,167	74%	355	66%
	Regional & Distant	3,561	24%	3,304	24%	175	33%
	Total†	14,547		13,709		538	

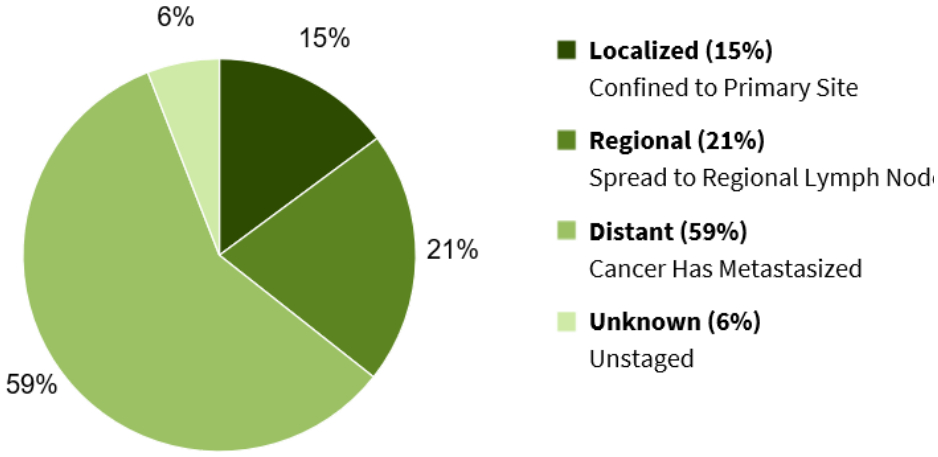
- Black RI women of all age groups are more likely have triple negative breast cancer diagnosed than White women, which *may* attribute to Black-White mortality gap.

All Group (years)	Type	All RI Women		White Women		Black Women	
		#	%	#	%	#	%
All ages	Triple Negative	570	7%	522	7%	36	11%
	All Breast Cancer Total	7,942		7,434		317	

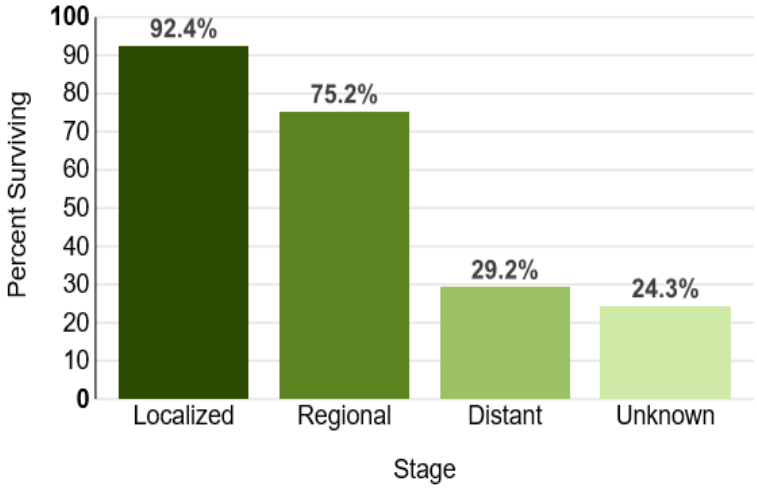
Survival by stage – Ovary, US

ses & 5-Year Relative Survival by Stage at Diagnosis: Ovarian Cancer

Percent of Cases by Stage



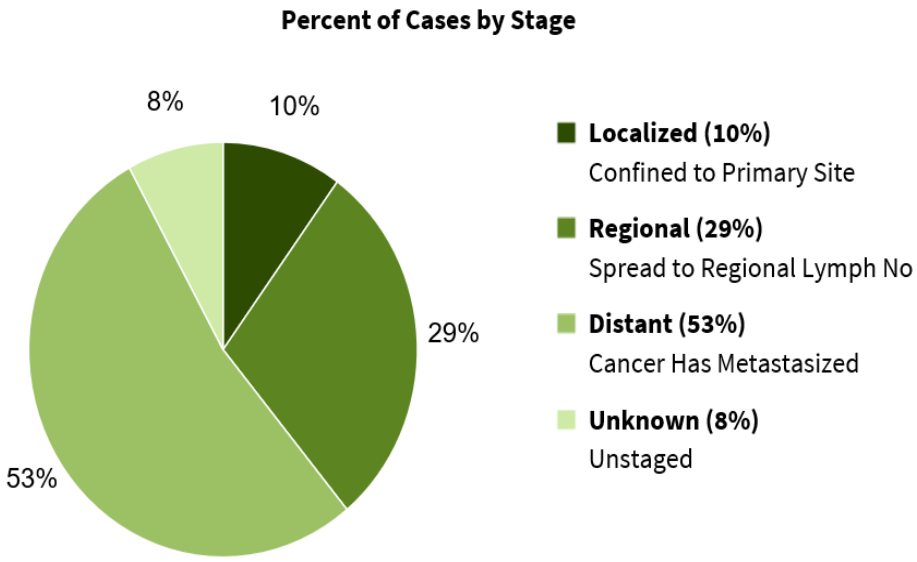
5-Year Relative Survival

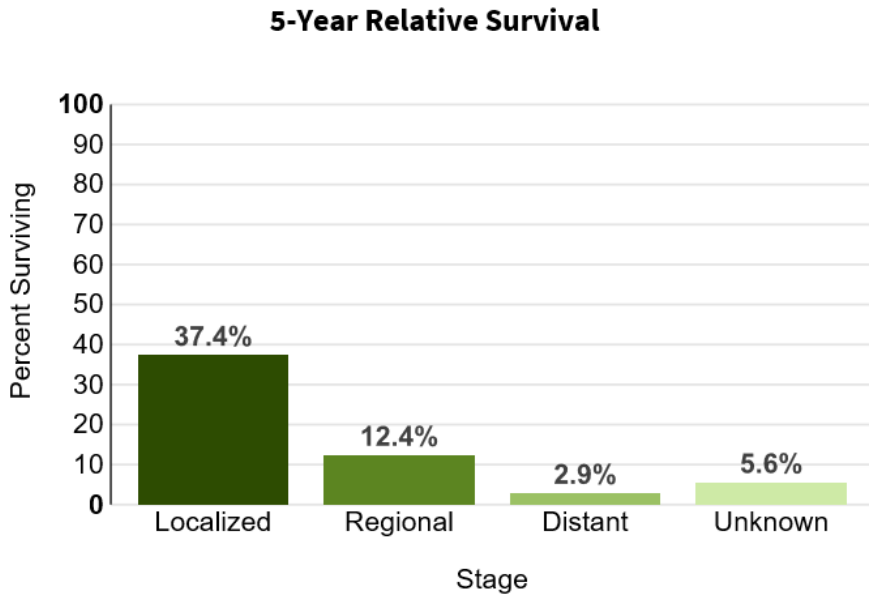


SEER 18 2009-2015, All Races, Both Sexes by SEER Summary Stage 2000
(https://seer.cancer.gov/statfacts/html/melan.**html**)

Survival by stage – Pancreas, US

ases & 5-Year Relative Survival by Stage at Diagnosis: Pancreatic Cancer

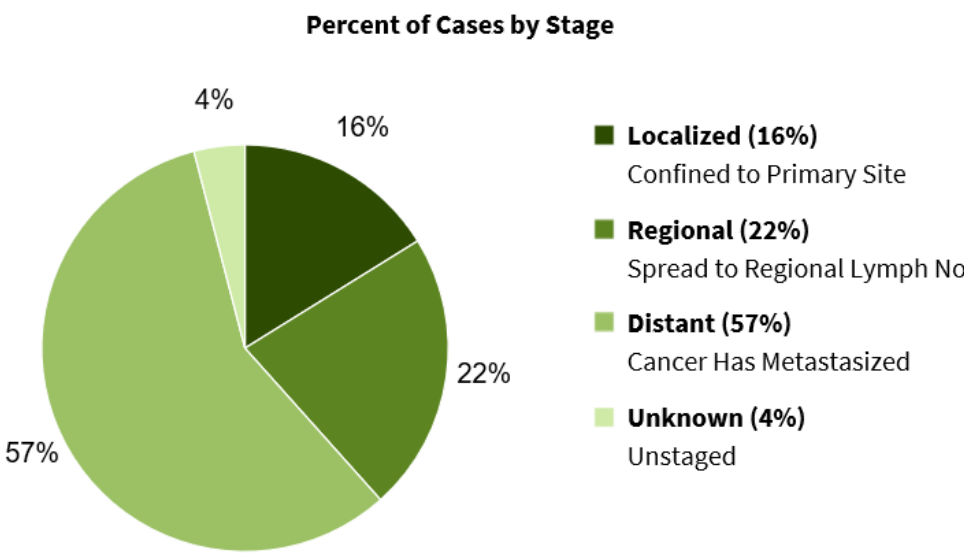


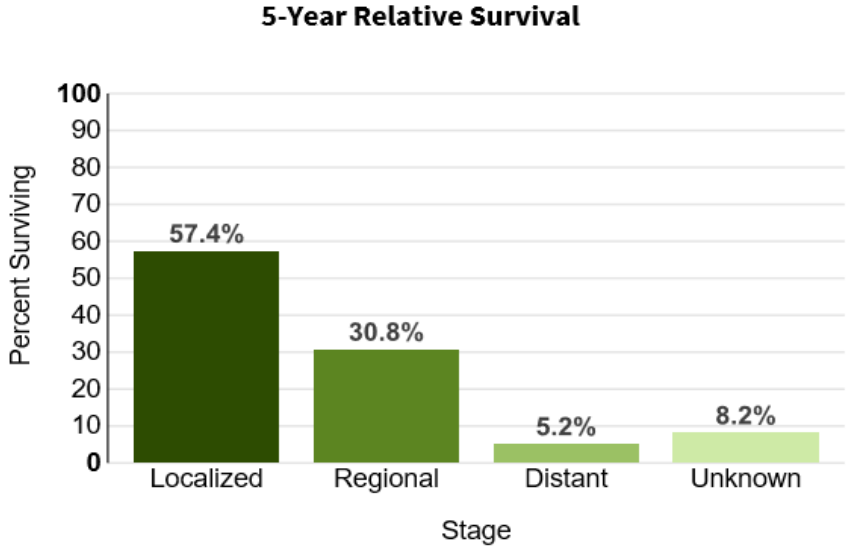


SEER 18 2009-2015, All Races, Both Sexes by SEER Summary Stage 2000 (https://seer.cancer.gov/statfacts/html/melan.**html**)

Survival by stage – Lung & bronchus, US

Cases & 5-Year Relative Survival by Stage at Diagnosis: Lung and Bronchus C





SEER 18 2009-2015, All Races, Both Sexes by SEER Summary Stage 2000
(https://seer.cancer.gov/statfacts/html/melan.**html**)

Rhode Island Lung Cancer Incidence and Stage at Diagnosis, by Histologic Subtype, 2004–2015

JUNHIE OH, BDS, MPH; C. KELLY SMITH, MSW

Malignant lung cancer leads all causes of cancer-related deaths in both the U.S. and Rhode Island.[1,2] Lung cancer deaths in the U.S. and Rhode Island have steadily decreased during the last two decades, thanks in part to reduced tobacco use; however, lung tumors still account for 25% and 30% of all cancer-related mortality in the U.S and Rhode

rates per 100,000 residents, using the 2000 US standard population (http://www.seer.cancer.gov/seerstat/index.html). For the trend analyses during the studied period, annual percentage change (APC) of incidence was computed and the statistical significance was evaluated (p value <0.05).

Figure 1a. Lung Cancer Incidence and Mortality among Rhode Island Males, 2004–2015

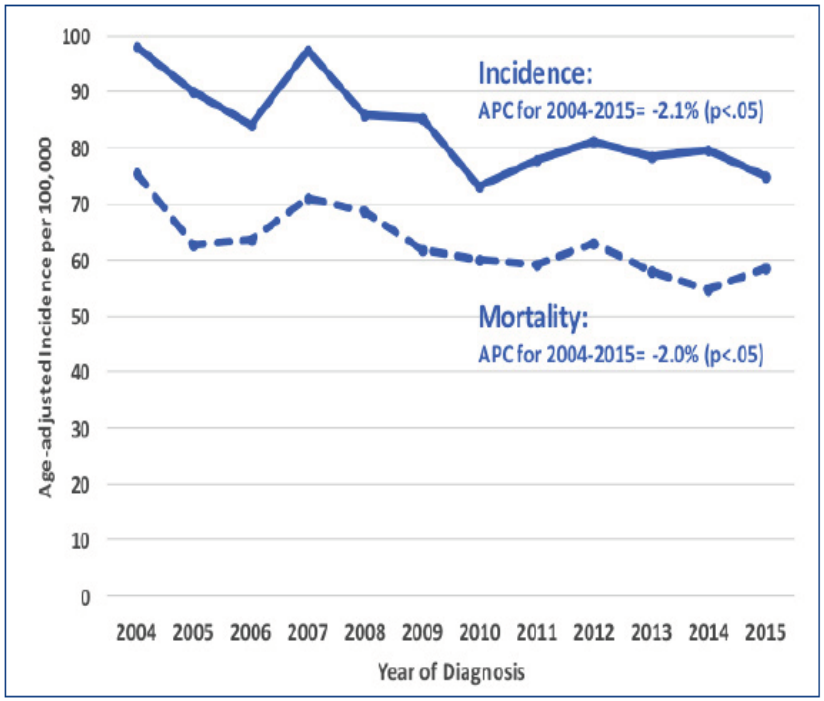
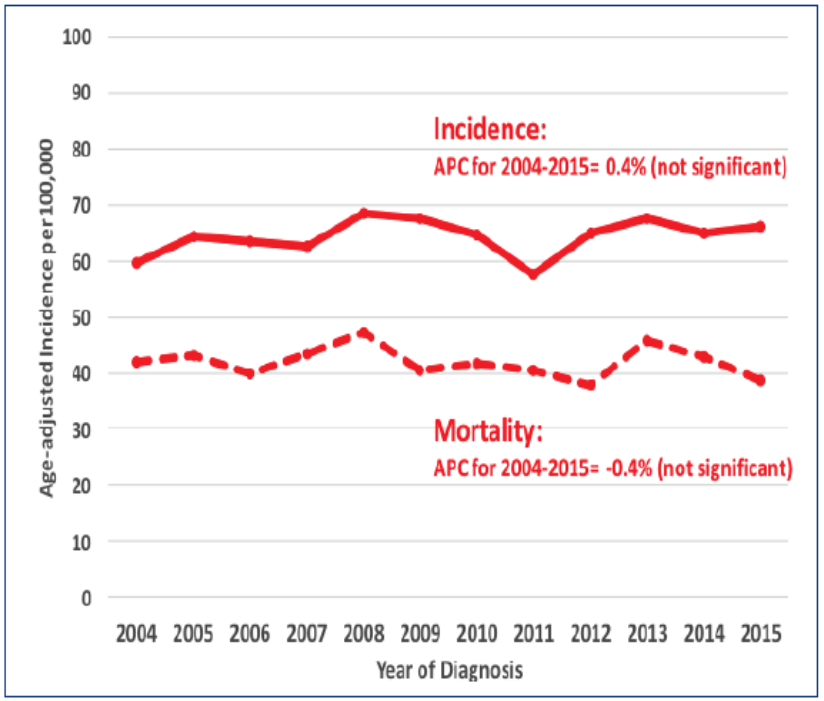


Figure 1b. Lung Cancer Incidence and Mortality among Rhode Island Females, 2004–2015



APC: Annual percentage change on average during 2004–2015

Rhode Island Lung Cancer Incidence and Stage at Diagnosis, by Histologic Subtype, 2004–2015

JUNHIE OH, BDS, MPH; C. KELLY SMITH, MSW

Figure 2a. Lung Cancer Incidences by Major Subtype among Rhode Island Males, 2004-2015

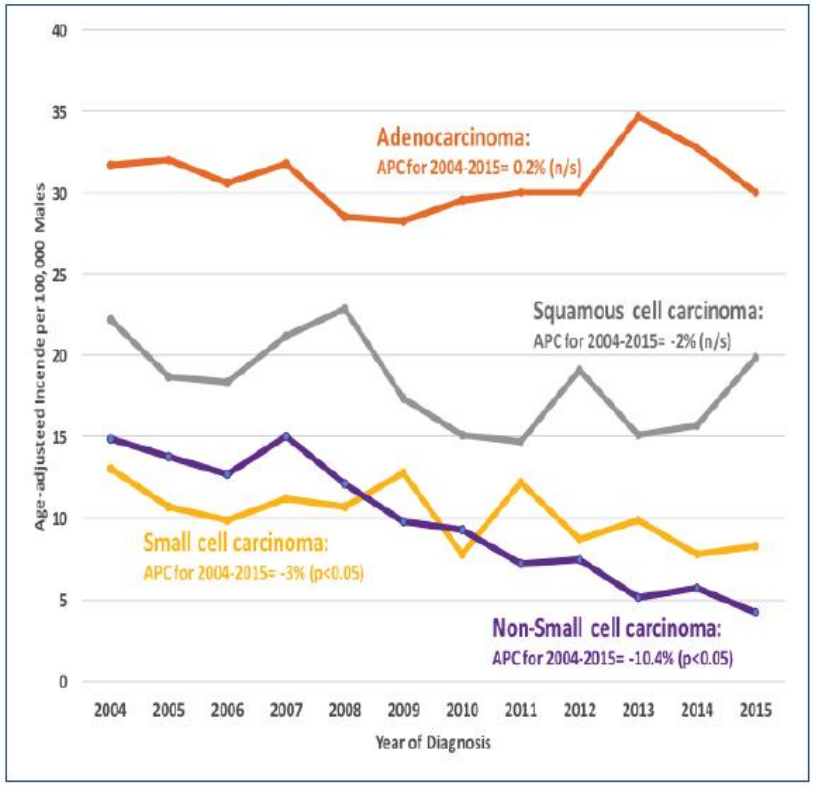
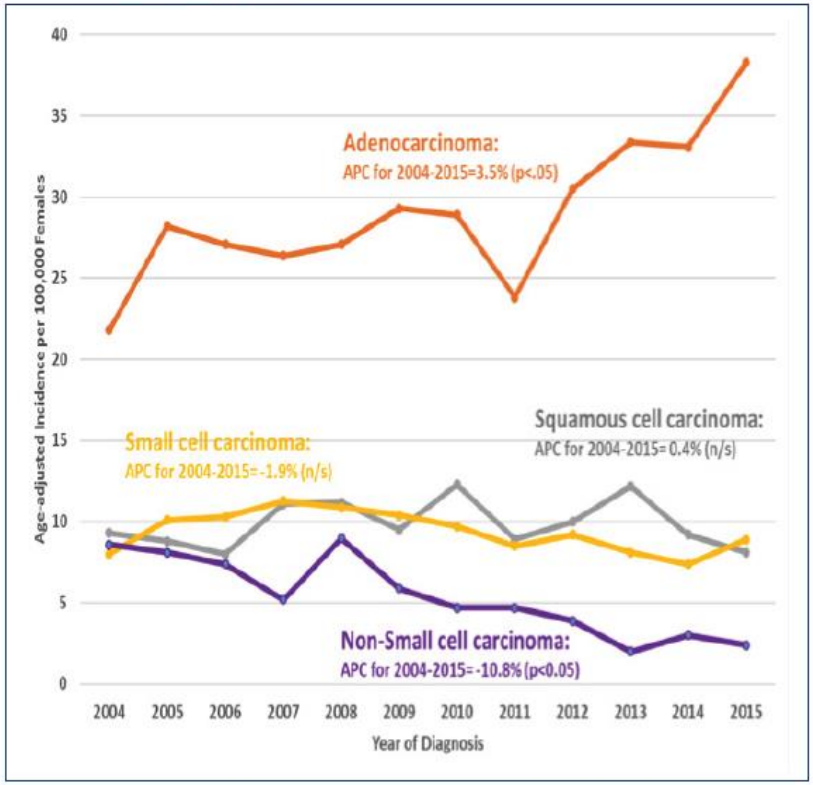


Figure 2b. Lung Cancer Incidences by Major Subtype among Rhode Island Females, 2004-2015



Rhode Island Lung Cancer Incidence and Stage at Diagnosis, by Histologic Subtype, 2004–2015

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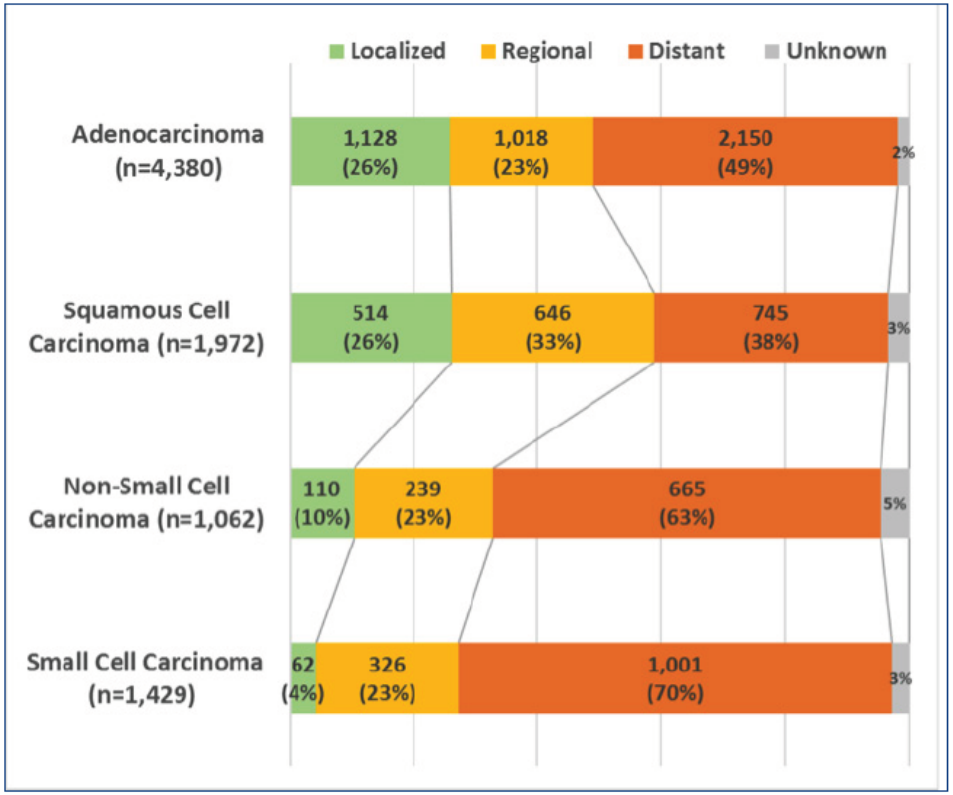
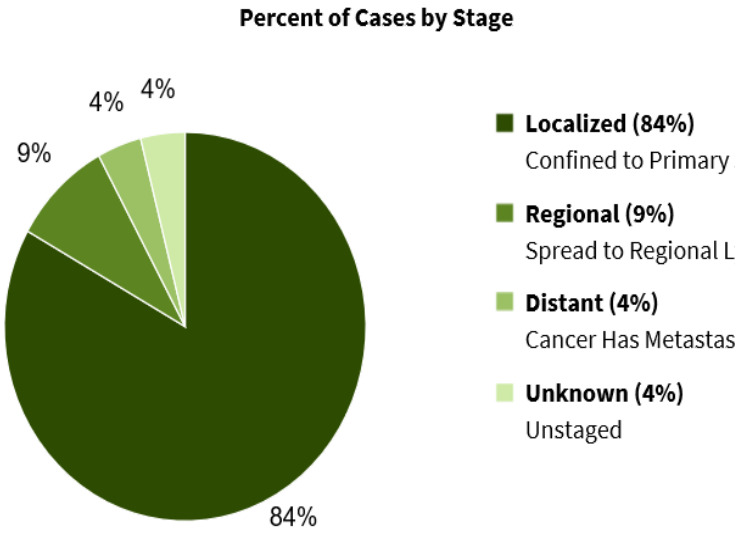
Figure 3. Number and Percent of Newly Diagnosed Lung Cancer by Major Subtype and Stage at Diagnosis*, Rhode Island Males and Females, 2004–2015

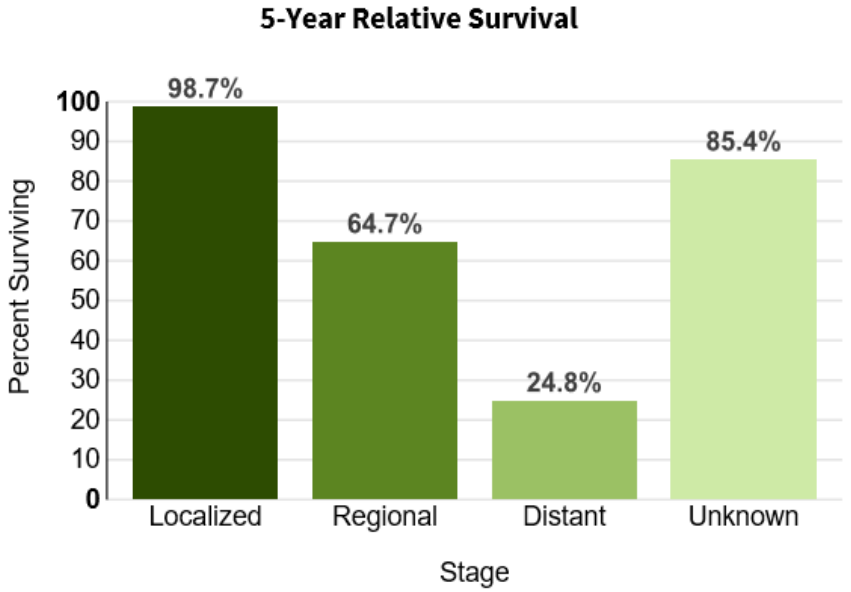


* A "localized" cancer is confined to the organ of origin without extension beyond the primary organ. "Regional" cancer has spread to adjacent organs or structures, or to regional lymph nodes. If the cancer has spread to parts of the body remote from the primary tumor, it is classified as "distant" stage.

Survival by stage – Melanoma, US

rcent of Cases & 5-Year Relative Survival by Stage at Diagnosis: Melanoma of the Skin

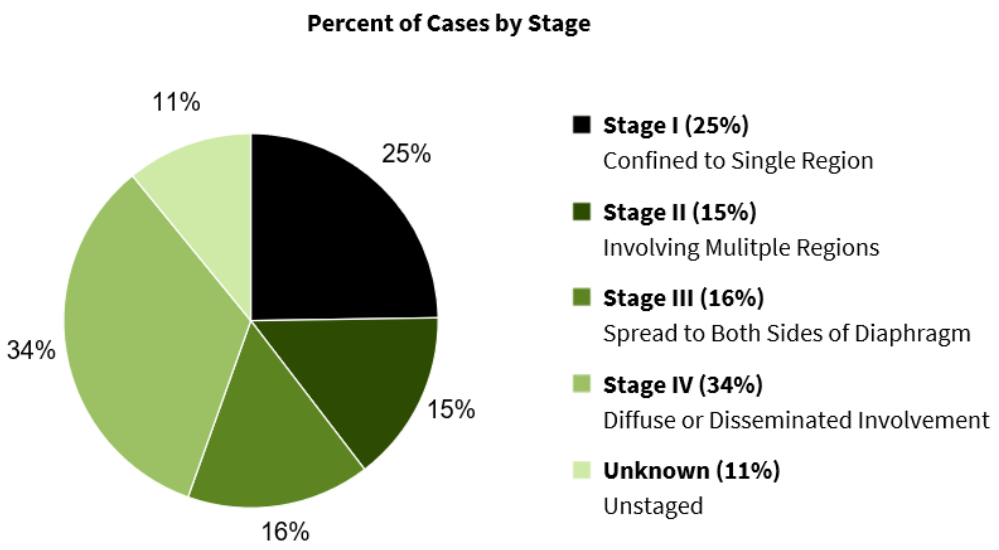


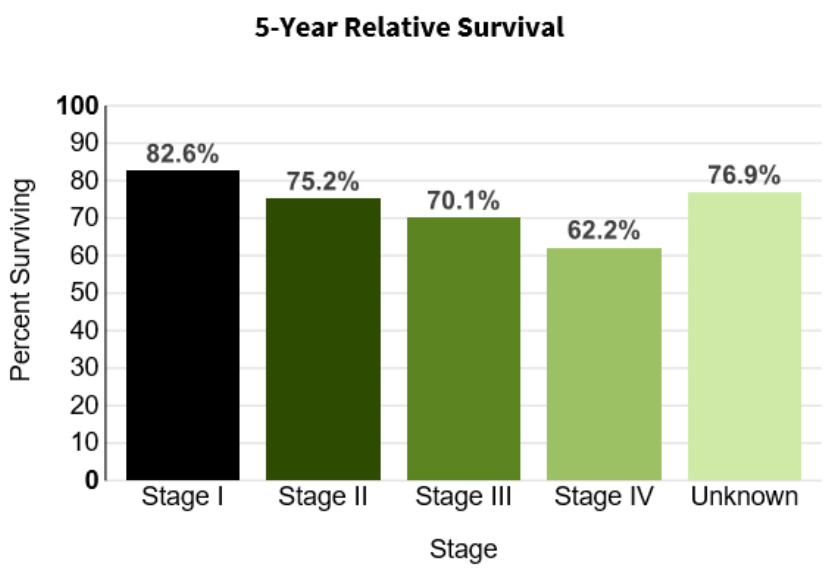


SEER 18 2009-2015, All Races, Both Sexes by SEER Summary Stage 2000 (https://seer.cancer.gov/statfacts/html/melan.html)

Survival by stage – NHL, US

Cases & 5-Year Relative Survival by Stage at Diagnosis: Non-Hodgkin Lymphom





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