

KITSAP PUBLIC HEALTH DISTRICT - DATA REPORT

Cancer Deaths and Incidence: Washington State, Kitsap County and Kitsap County Regions

Updated by: Kari Hunter, Epidemiologist

November 3, 2016

Introduction

Cancer is complex, can have many possible causes, and is increasingly common. For the U.S. population, 1 in 2 males and 1 in 3 females is at risk of developing cancer in their lifetime. The lifetime risk for dying from cancer is 1 in 4 for males, 1 in 5 for females. Risk factors for cancer include genetic factors, lifestyle factors (tobacco use, diet, physical activity), certain infections, and environmental exposures to different chemicals and radiation.*

Two important factors to consider: first, the time between exposure or other cause(s) and cancer diagnosis can be quite long and second, access to health care services influences cancer screening frequency, detection, and treatment.

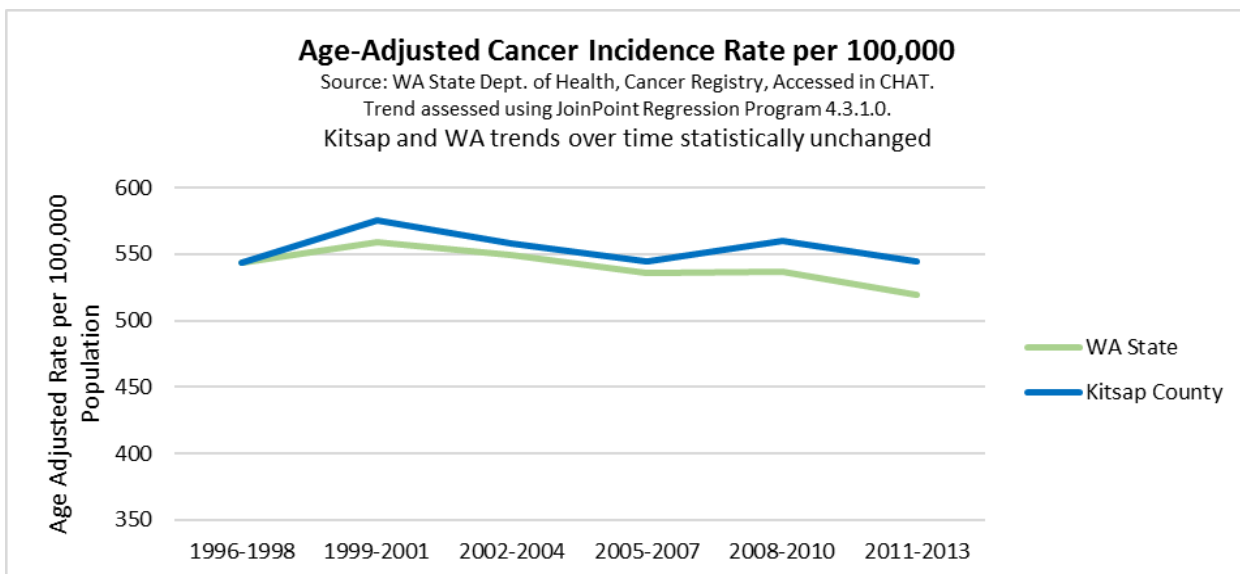
* <http://www.cancer.org/cancer/cancerbasics/lifetime-probability-of-developing-or-dying-from-cancer>

Methods: Rates presented are age-adjusted. Age-adjustment is a method to compare rates in places with different age structures and to compare rates for a specific place over time. Trends over time were assessed using JoinPoint Regression Program 4.3.1.0 - April 2016; county and state rate comparisons were based on the standard normal test in CHAT; sub-county rate comparisons were based on non-overlapping 95% confidence intervals.

Part 1. Cancer Incidence (new cases)

Cancer incidence data come from the Washington State Cancer Registry, a repository of all reported cancer cases per WAC 246-102. There are significant delays in accessibility of the data; we expect to have 2014 cancer incidence data in mid-March 2017.

The rate of new cancer diagnoses in WA State, Kitsap County and in regions within Kitsap County have been statistically unchanged over time. The Kitsap rate was statistically higher than WA in 2008-10 and 2011-13. While rates by sub-county region vary, compared to the Kitsap average, they are not statistically different.



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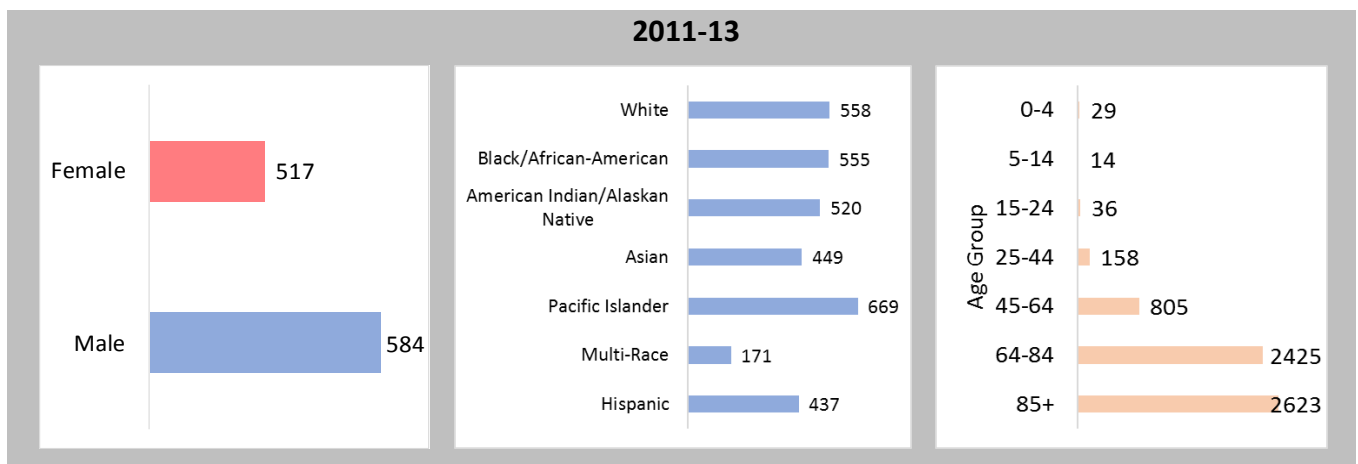
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KITSAP CANCER INCIDENCE RATES PER 100,000 BY SUBGROUP

	1996-98	2011-13	TREND	Compared to Kitsap
BAINBRIDGE ISLAND	515	541	--	same
BREMERTON	556	519	--	same
CENTRAL KITSAP	562	551	--	same
NORTH KITSAP	488	562	--	same
SOUTH KITSAP	558	545	--	same



AVERAGE NUMBER OF NEW CASES ANNUALLY IN KITSAP COUNTY FROM 2011 TO 2013:

Cancer types are listed below in order of the number of people diagnosed on average each year in Kitsap County from 2011 to 2013. The top five cancer types affecting the most people are breast, male genital (specifically prostate), digestive system, skin and lung cancers.

Diagnosis Group	Ave # per year
Breast	268
Male Genital System	257
Digestive System	249
Prostate	243
Skin (excl. Basal and Squamous)	192
Respiratory System	192
Lung and Bronchus	181
Melanoma	178
Urinary System	124
Female Genital System	98
Colon exc. Rectum	78
Lymphoma	70
Urinary Bladder	69
Non-Hodgkin Lymphoma	62

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Diagnosis Group	Ave # per year
Kidney and Renal Pelvis	52
Corpus Uteri	48
Pancreas	44
Oral Cavity and Pharynx	41
Leukemia	41
Endocrine System	39
Thyroid	38
Rectum & Rectosigmoid	30
Liver and Bile ducts	27
Stomach	24
Myeloma	22
Lymphocytic Leukemia	21
Ovary	21
Brain and other nervous system	21
Myeloid and Monocytic Leukemia	17
Esophagus	15
Vulva	13
Anus Anal Canal & Anorectum	12
Testis	12
Tongue	10
Mesothelioma	9
Larynx	9
Cervix Uteri	9
Tonsil	9
Hodgkin Lymphoma	8
Gum & Other Mouth	7
Other Biliary	6
Soft Tissue including Heart	5
Eye & Orbit	5
Lip	5
All other and unspecified	44

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INCIDENCE RATES FOR SELECT CANCERS

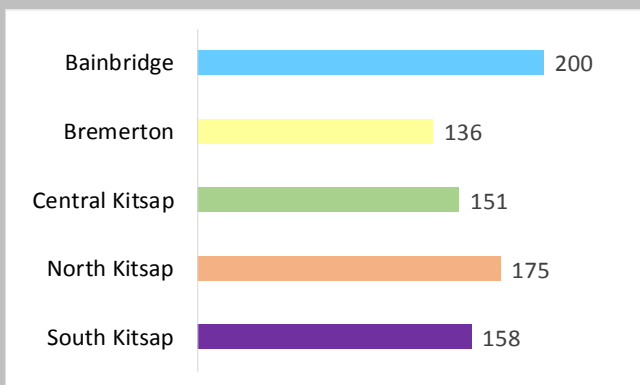
Data Source: Cancer Registry, WA State Dept. of Health, accessed in CHAT. Trend years: 1993-95 to 2011-13. Age-adjusted rates per 100,000 population.

Risk Factors Source: <http://www.cancer.org/cancer/index>

FEMALE BREAST CANCER INCIDENCE (PER 100,000 WOMEN):

	1993-95	2011-13	TREND
WA STATE	165	172	--
KITSAP COUNTY	177	162	--
KITSAP COMPARED TO WA	same	same	

KITSAP BY SUBGROUP: 2011-13



- n<5 for age groups 0-4, 5-14 and 15-24
- 50 per 100,000 women age 25-44
- 320 per 100,000 women age 45-64
- 613 per 100,000 women age 65-84
- 521 per 100,000 women age 85+

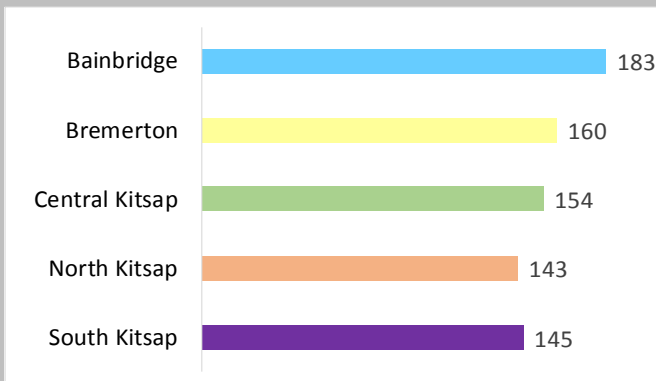
*All sub-county regions statistically the same as Kitsap

Risk factors for developing breast cancer include certain inherited genes, early menstruation, late menopause, exposure to radiation or diethylstilbestrol (DES), drinking alcohol, being overweight or obese, physical inactivity, having children later or not at all, use of certain birth control methods, hormone therapy and not breastfeeding.

MALE PROSTATE CANCER INCIDENCE (PER 100,000 MEN):

	1993-95	2011-13	TREND
WA STATE	176	118	
KITSAP COUNTY	175	152	--
KITSAP COMPARED TO WA	same	worse	

KITSAP BY SUBGROUP: 2011-13



- n<5 for age groups 0-4, 5-14, 15-24 and 24-44
- 237 per 100,000 men age 45-64
- 842 per 100,000 men age 65-84
- 410 per 100,000 men age 85+

*All sub-county regions statistically the same as Kitsap

Risk factors for prostate cancer include race and ethnicity, geography, family history and genetics.

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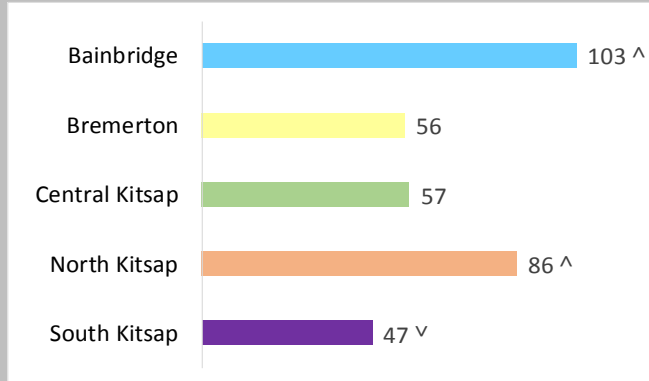
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SKIN CANCER INCIDENCE (PER 100,000 PEOPLE):

	1993-95	2011-13	TREND
WA STATE	29	54	
KITSAP COUNTY	35	63	
KITSAP COMPARED TO WA	worse	worse	

KITSAP BY SUBGROUP: 2011-13



^ Statistically higher; v Statistically lower than Kitsap

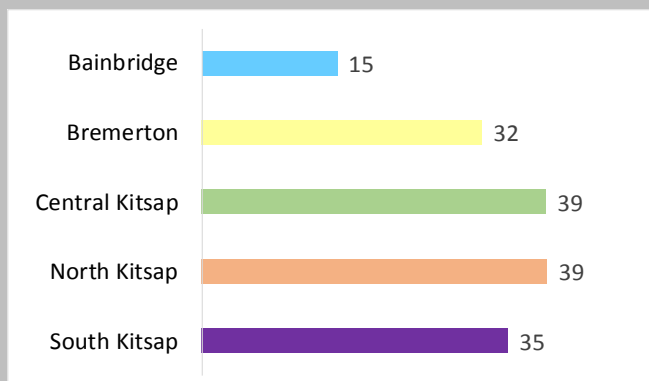
- 56 per 100,000 females
- 73 per 100,000 males
- n<5 for age groups 0-4 and 5-14
- 7 per 100,000 people age 15-24
- 30 per 100,000 people age 25-44
- 95 per 100,000 people age 45-64
- 257 per 100,000 people age 65-84
- 235 per 100,000 people age 85+

Most skin cancers are caused by too much exposure to ultraviolet rays (sun exposure). Additional risk factors for skin cancer include family history, freckles, fair skin, light-colored eyes and hair, living at high altitudes or in tropical areas, outdoor activity and weakened immune system.

COLORECTAL CANCER INCIDENCE (PER 100,000 PEOPLE):

	1993-95	2011-13	TREND
WA STATE	56	37	
KITSAP COUNTY	58	35	
KITSAP COMPARED TO WA	same	same	

KITSAP BY SUBGROUP: 2011-13



*All sub-county regions statistically the same as Kitsap

- 33 per 100,000 females
- 38 per 100,000 males
- n<5 for age groups 0-4, 5-14 and 15-24
- 8 per 100,000 people age 25-44
- 49 per 100,000 people age 45-64
- 162 per 100,000 people age 65-84
- 228 per 100,000 people age 85+

Risk factors for colorectal cancer include being overweight or obese, physical inactivity, diet, smoking, heavy alcohol use, history of inflammatory bowel disease, family history, race and ethnicity and type 2 diabetes.

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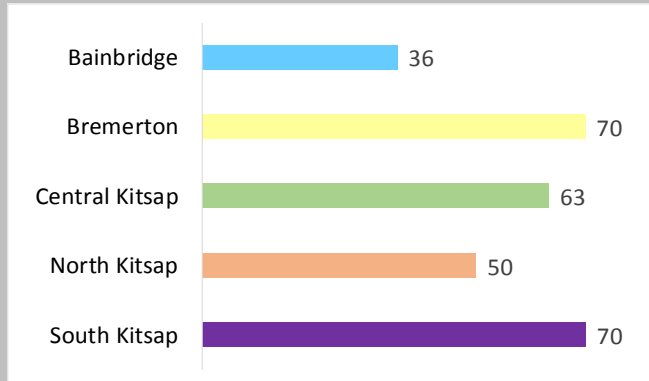
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LUNG CANCER INCIDENCE (PER 100,000 PEOPLE):

	1993-95	2011-13	TREND
WA STATE	73	59	
KITSAP COUNTY	78	59	
KITSAP COMPARED TO WA	same	same	

KITSAP BY SUBGROUP: 2011-13



- 60 per 100,000 females
- 60 per 100,000 males
- n<5 for age groups 0-4, 5-14, 15-24 and 24-44
- 55 per 100,000 people age 45-64
- 366 per 100,000 people age 65-84
- 382 per 100,000 people age 85+

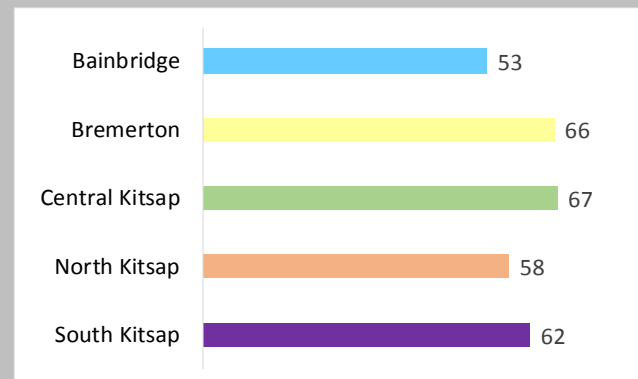
*All sub-county regions statistically the same as Kitsap

Smoking tobacco and secondhand smoke are by far the leading risk factors for lung cancer. Other risk factors include exposure to radon, asbestos or other environmental carcinogens, air pollution, family history, radiation exposure and certain dietary supplements.

FEMALE GENITAL CANCER INCIDENCE (PER 100,000 WOMEN):

	1993-95	2011-13	TREND
WA STATE	63	56	
KITSAP COUNTY	61	62	--
KITSAP COMPARED TO WA	same	same	

KITSAP BY SUBGROUP: 2011-13



- n<5 for age groups 0-4, 5-14 and 15-24
- 34 per 100,000 women age 25-44
- 121 per 100,000 women age 45-64
- 204 per 100,000 women age 65-84
- 123 per 100,000 women age 85+

*All sub-county regions statistically the same as Kitsap

Risk factors for female genital cancer vary by location and can include hormone factors, obesity, diet, physical inactivity, having diabetes, family history and having other types of cancer.

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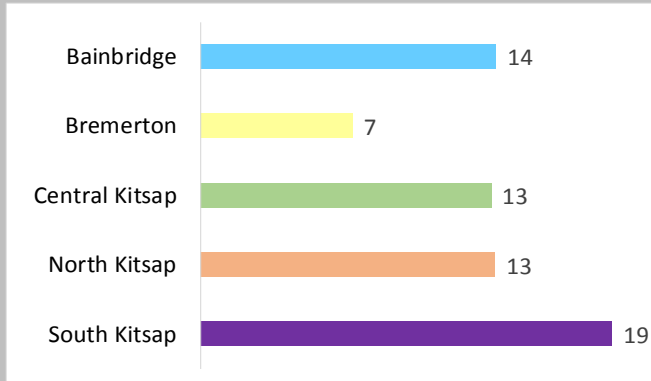
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THYROID CANCER INCIDENCE (PER 100,000 PEOPLE):

	1993-95	2011-13	TREND
WA STATE	6	14	
KITSAP COUNTY	8	14	
KITSAP COMPARED TO WA	same	same	

KITSAP BY SUBGROUP: 2011-13



- 22 per 100,000 females
- 7 per 100,000 males
- n<5 for age groups 0-4, 5-14 and 15-24
- 23 per 100,000 people age 25-44
- 20 per 100,000 people age 45-64
- 18 per 100,000 people age 65-84
- 20 per 100,000 people age 85+

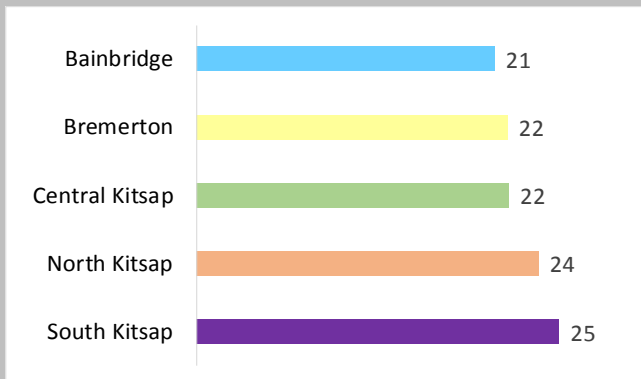
*All sub-county regions statistically the same as Kitsap

Risk factors include gender, hereditary conditions, family history, diet low in iodine and radiation exposure.

LYMPHOMA CANCER INCIDENCE (PER 100,000 PEOPLE):

	1993-95	2011-13	TREND
WA STATE	23	23	--
KITSAP COUNTY	23	23	--
KITSAP COMPARED TO WA	same	same	

KITSAP BY SUBGROUP: 2011-13



- 20 per 100,000 females
- 27 per 100,000 males
- n<5 for age groups 0-4 and 5-14
- 7 per 100,000 people age 15-24
- 6 per 100,000 people age 24-44
- 30 per 100,000 people age 45-64
- 97 per 100,000 people age 65-84
- 148 per 100,000 people age 85+

*All sub-county regions statistically the same as Kitsap

Risk factors vary by type of lymphoma and can include age, gender, weight, race/ethnicity, exposure to certain chemicals or radiation, immune system deficiencies, autoimmune diseases and certain infections (such as HIV or *Helicobacter pylori*) that affect the immune system and lymphocytes.

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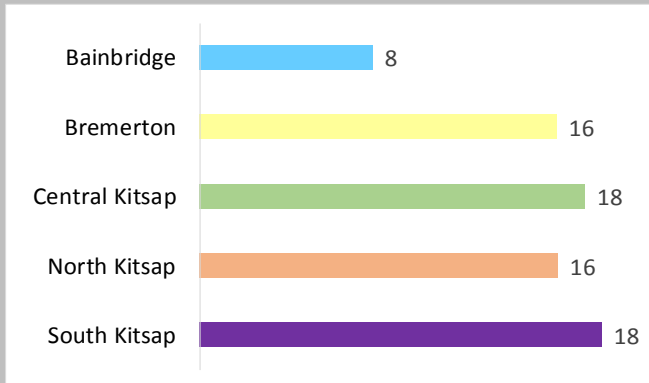
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KIDNEY CANCER INCIDENCE (PER 100,000 PEOPLE):

	1993-95	2011-13	TREND
WA STATE	11	16	
KITSAP COUNTY	10	16	
KITSAP COMPARED TO WA	same	same	

KITSAP BY SUBGROUP: 2011-13



- 10 per 100,000 females
- 24 per 100,000 males
- n<5 for age groups 0-4, 5-14 and 15-24
- 6 per 100,000 people age 24-44
- 28 per 100,000 people age 45-64
- 68 per 100,000 people age 65-84
- 40 per 100,000 people age 85+

*All sub-county regions statistically the same as Kitsap

Risk factors for kidney cancer include smoking, obesity, genetic factors, family history, high blood pressure, certain syndromes and conditions, diuretic medications, gender and race.

Part 2. Cancer Deaths

Cancer is the second leading cause of death among WA State and Kitsap County residents. In 2015, it accounted for nearly one-in-four deaths (23%). Cancer is the leading cause of premature death (death before age 65). Most cancer deaths have cancer listed as the primary cause but to better assess the burden of cancer in our population, we also review the number of deaths with cancer listed as a contributing cause. This analysis including cancer as a contributing cause for deaths occurring in 2015 brings the proportion of cancer deaths to one-in-four (26% in WA and 25% in Kitsap County).

	WA State		Kitsap County	
	number	% of total	number	% of total
Primary cause	12658	23%	497	23%
Contributing cause	14098	26%	542	25%
Total deaths	54475		2146	

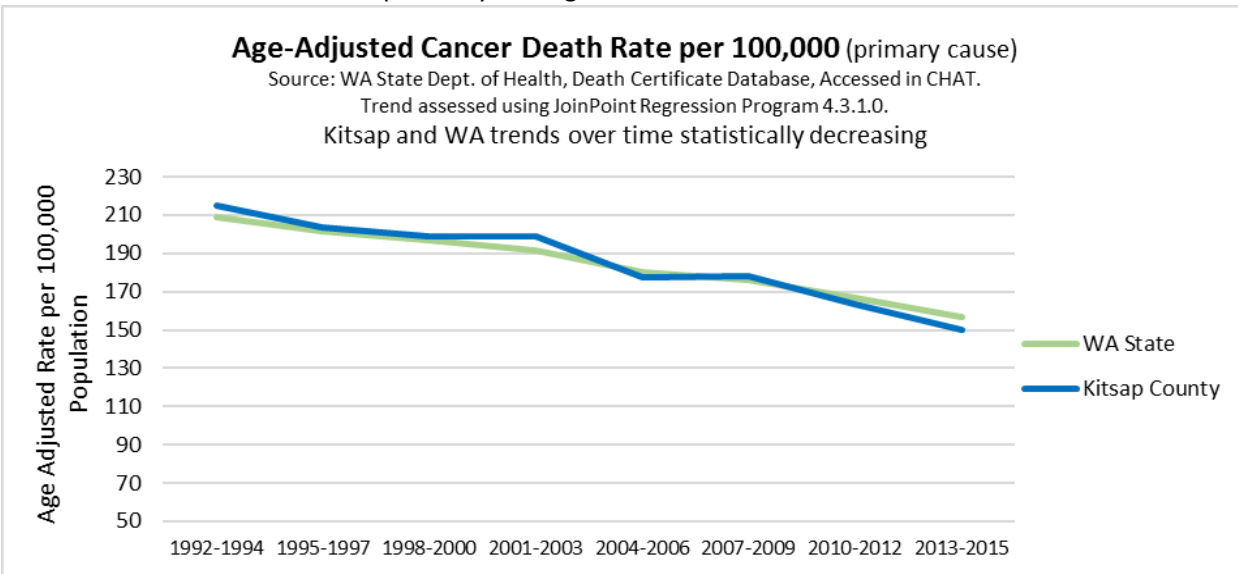
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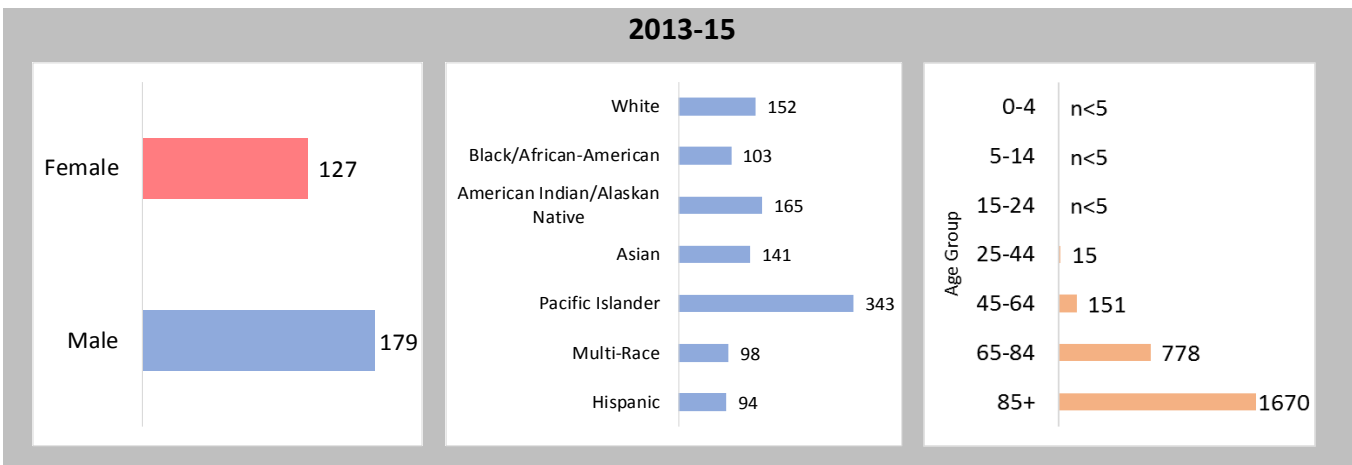
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The rate of cancer deaths (primary cause only) in WA State, Kitsap County and in regions within Kitsap County have been statistically decreasing over time. The Kitsap rate is statistically the same as WA and while rates by sub-county region vary, they were statistically the same as the Kitsap County average from 1992-94 through 2010-12. In 2013-15, Bainbridge rates were statistically lower than Kitsap County. All other sub-county regions remained the same as the Kitsap County average.



KITSAP CANCER DEATH RATES PER 100,000 BY SUBGROUP

	1992-94	2013-15	TREND	Compared to Kitsap
BAINBRIDGE ISLAND	197	106		lower
BREMERTON	212	170		same
CENTRAL KITSAP	210	145		same
NORTH KITSAP	204	143		same
SOUTH KITSAP	245	173		same



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AVERAGE NUMBER OF DEATHS ANNUALLY IN KITSAP COUNTY FROM 2013 TO 2015:

Cancer types are listed below in order of the number of deaths on average each year in Kitsap County from 2013 to 2015 (primary cause only). The top five cancer types resulting in the deaths of the most people are lung (and related), lymphoid (lymphoma, myeloma and leukemia), pancreatic, breast, and colorectal cancers.

Cause of Death	Ave # per year
Respiratory System	132
Lung and Bronchus	127
Digestive System	122
Pancreas	35
Breast	34
Male Genital System	30
Prostate	29
Urinary System	28
Liver and Bile ducts	24
Leukemia	23
Female Genital System	23
Colon exc. Rectum	23
Esophagus	16
Urinary Bladder	16
Lymphoma	16
Non-Hodgkin Lymphoma	15
Myeloid and Monocytic Leukemia	15
Skin (excl. Basal and Squamous)	13
Brain and other nervous system	12
Ovary	11
Kidney and Renal pelvis	11
Oral Cavity and Pharynx	11
Myeloma	10
Melanoma	9
Mesothelioma	9
Stomach	7
Lymphocytic Leukemia	6
Uterus	6
Soft Tissue including Heart	5
All other and unspecified malignant cancers	30