HAWAIʻI

Cancer at a Glance

2012-2016

UNIVERSITY OF HAWAI'I
CANCER CENTER

UNIVERSITY OF HAWAI'I
Hawai'i Tumor Registry

University of Hawai'i Cancer Center

The University of Hawai'i Cancer Center is one of 71 National Cancer Institute (NCI)-designated Cancer Centers in the United States and the only center in Hawai'i and the Pacific. The UH Cancer Center's mission is to reduce the burden of cancer through research, education, patient care and community outreach with an emphasis on the unique ethnic, cultural, and environmental characteristics of Hawai'i and the Pacific. The UH Cancer Center is a research organization affiliated with the University of Hawai'i at Mānoa with facilities located in downtown Honolulu. Our new world-class facility was completed in early 2013. The UH Cancer Center directly employs 300 faculty and staff, with another 200 affiliate members through the UH-led Hawai'i Cancer Consortium.

Hawai'i Tumor Registry

The Hawai'i Tumor Registry (HTR) was established in 1960 by the Hawai'i Medical Association, the Hawai'i State Department of Health, and the Hawai'i Pacific Division of the American Cancer Society. The HTR has been operated by the University of Hawai'i Cancer Center since 1973 when it became a funded registry of the National Cancer Institute Surveillance, Epidemiology and End Results (SEER) Program. As one of the eighteen NCI/SEER regions nationwide, the HTR provides complete and confidential cancer reporting for the entire state and serves as a resource for cancer research and cancer control activities in Hawai'i and the US. Its data is used for local, national, and international research efforts.

Table of Contents

Overview of Cancer in the State of Hawai'i, 2012-2016 ---------- Page 1-4

Table 1. Top Cancers in Hawai'i, Newly Diagnosed Cases and Deaths, 2012-2016

Table 2. Average Annual Incidence, Hawai'i, 2012-2016

Table 3. Average Annual Mortality (Deaths), Hawai'i, 2012-2016

Cancer Survivorship ---------- Page 5

Figure 1. Cancer Survivors

Cancer Across the Hawaiian Islands (Counties) ---------- Page 6-7

Table 4. Average Annual Number of Cancer Cases and Deaths, by County, Hawai'i, 2012-2016

Figure 2. Overall Cancer Incidence and Mortality by County, Hawai'i, 2012-2016

Figure 3. Melanoma of the Skin Incidence and Mortality by County, Hawai'i, 2012-2016

Trends in Cancer Incidence and Mortality in Hawai'i ---------- Page 8-11

Figure 4. Cancer Incidence, Average Annual Number of Cases and Age-Adjusted Rates, Hawai'i, 1984-2016

Figure 5. Cancer Mortality, Average Annual Number of Cases and Age-Adjusted Rates, Hawai'i, 1984-2016

Figure 6. Average Annual Percent Change in Cancer Incidence Rates, Males, Hawai'i, 2007-2016

Figure 7. Average Annual Percent Change in Cancer Incidence Rates, Females, Hawai'i, 2007-2016

Figure 8. Average Annual Percent Change in Cancer Mortality Rates, Males, Hawai'i, 2007-2016

Figure 9. Average Annual Percent Change in Cancer Mortality Rates, Females, Hawai'i, 2007-2016

Comparison of Cancer in Hawai'i and the United States ---------- Page 12-14

Table 5. Cancers with Higher Incidence in Hawai'i Compared to the U.S., 2012-2016

Table 6. Cancers with Lower Incidence in Hawai'i Compared to the U.S., 2012-2016

Table 7. Cancers with Higher Mortality in Hawai'i Compared to the U.S., 2012-2016

Table 8. Cancers with Lower Mortality in Hawai'i Compared to the U.S., 2012-2016

Childhood Cancer in Hawai'i ---------- **Page 15**

Figure 10. Age Distribution of Childhood Cancers, Hawai'i, 2012-2016 5-year Total

Figure 11. Cancers in Individuals Ages 19 & Under, Hawai'i, 2012-2016 5-year Total

Breast Cancer in Hawai'i ---------- **Page 16-18**

Figure 12. Breast Cancer Incidence and Mortality, 1987-2016

Figure 13. Breast Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016

Figure 14. Breast Cancer Incidence and Mortality, by Race/Ethnicity, Hawai'i, 2012-2016

Figure 15. Breast Cancer Stage Distribution, Hawai'i, 2012-2016

Prostate Cancer in Hawai'i ---------- **Page 19-21**

Figure 16. Prostate Cancer Incidence and Mortality, Hawai'i, 1987-2016

Figure 17. Prostate Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016

Figure 18. Prostate Cancer Incidence and Mortality, by Race/Ethnicity, Hawai'i, 2012-2016

Figure 19. Prostate Cancer Stage Distribution, Hawai'i, 2012-2016

Lung & Bronchus Cancer in Hawai'i ---------- **Page 22-24**

Figure 20. Lung & Bronchus Cancer Incidence and Mortality, 1987-2016

Figure 21. Lung & Bronchus Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016

Figure 22. Lung & Bronchus Cancer Incidence and Mortality, Hawai'i, 2012-2016

Figure 23. Lung & Bronchus Cancer Stage Distribution, Hawai'i, 2012-2016

Colon & Rectum Cancer in Hawai'i ---------- **Page 25-27**

Figure 24. Colon & Rectum Cancer Incidence and Mortality, 1987-2016

Figure 25. Colon & Rectum Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016

Figure 26. Colon & Rectum Cancer Incidence and Mortality, Hawai'i, 2012-2016

Figure 27. Colon & Rectum Cancer Stage Distribution, Hawai'i, 2012-2016

Figure 28. Overall Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 29. Bladder Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 30. Brain & Nervous System Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 31. Cervix Cancer Incidence and Mortality, By Race/Ethnicity, Hawai'i, 2012-2016

Figure 32. Esophagus Cancer Incidence and Mortality, Male, By Race/Ethnicity, Hawai'i, 2012-2016

Figure 33. Kidney & Renal Pelvis Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 34. Larynx Cancer Incidence, Male, By Race/Ethnicity, Hawai'i, 2012-2012

Figure 35. Leukemia Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 36. Liver & Intrahepatic Bile Duct Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 37. Melanoma of the Skin Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 38. Myeloma Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 39. Non-Hodgkins Lymphoma Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 40. Oral Cavity & Pharynx Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 41. Ovary Cancer Incidence and Mortality, By Race/Ethnicity, Hawai'i, 2012-2016

Figure 42. Pancreas Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 43. Stomach Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 44. Testis Cancer Incidence, By Race/Ethnicity, Hawai'i, 2012-2016

Figure 45. Thyroid Cancer Incidence, By Sex and Race/Ethnicity, Hawai'i, 2012-2016

Figure 46. Uterus/Endometrium Cancer Incidence and Mortality, By Race/Ethnicity, Hawai'i, 2012-2016

Table 9. Top Cancers in Other Racial/Ethnic Groups, Males and Females Combined, Hawai'i, 2012-2016

Data Sources and Methods

Incidence: SEER 9 Registry Research Data, National Cancer Institute, DCCPS, Surveillance Research Program, released April 2019, based on the November 2018 submission

Mortality: Department of Health, State of Hawaii

Population: Detailed race/ethnicity population data prepared by UH Cancer Center using data sources from the U.S. Census and the Hawai'i State Department of Health

Rates, survival, and prevalence: Surveillance Research Program, National Cancer Institute SEER*Stat software (www.seer.cancer.gov/seerstat) version 8.3.6

Trends (AAPC: Average Annual Percent Change): Joinpoint Regression Program, Version 4.6.0.0 - April 2018; Statistical Methodology and Applications Branch, Surveillance Research Program, National Cancer Institute

Selected photos provided courtesy of Romeo Collado and Ryan Choy.

Overview of Cancer in Hawai‘i, 2012-2016

- Each year, an average of 7,011 Hawai‘i residents are diagnosed with invasive cancer.
- During the period 2012-2016, the statewide average annual incidence rate for all cancers combined was 426.0 per 100,000 in males and 399.9 per 100,000 in females.
- Cancer is the 2nd leading cause of death (after cardiovascular disease) in Hawai‘i .
- On average, 2,347 Hawai‘i residents die of cancer each year.
- During the period 2012-2016, the average annual mortality (death) rate for all cancers combined was 157.5 per 100,000 in males and 110.0 per 100,000 in females.
- The mean age of cancer diagnosis is 66 years for males and 64 years for females.
- The most common cancer in men is prostate cancer, which accounts for 21% of cases, followed by cancers of the lung & bronchus (13%), colon & rectum (11%), melanoma of the skin (7%), and bladder (6%).
- Breast cancer is the most common cancer among women, comprising 34% of cases, followed by cancers of the lung & bronchus (10%), colon & rectum (9%), uterus/endometrium (8%), and thyroid (5%).
- The leading cause of cancer death in men is lung & bronchus cancer, which accounts for 24% of cancer deaths, followed by cancers of the colon & rectum (10%), prostate (8%), pancreas (8%), and liver & intrahepatic bile duct (8%).
- Lung & bronchus cancer is also the top cause of cancer death in women (22%) followed by cancers of the breast (14%), colon & rectum (9%), pancreas (9%), and liver & intrahepatic bile duct (5%).

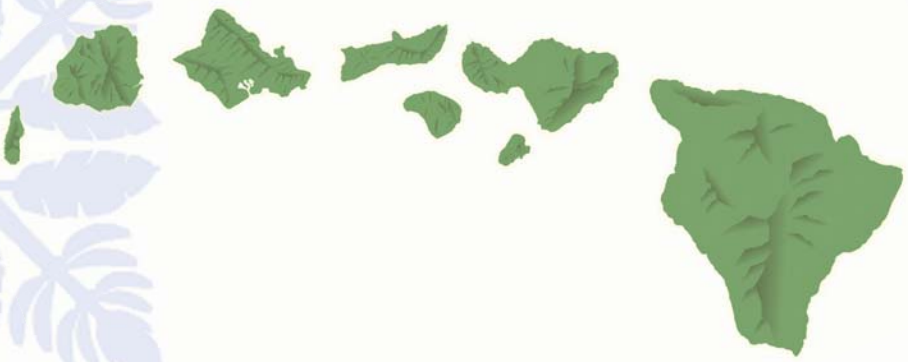


Table 1. Top Cancers in Hawai'i, Newly Diagnosed Cases and Deaths, 2012-2016

Incidence Average Number & Percent of Cases Per Year				Mortality Average Number & Percent of Deaths Per Year			
Male		Female		Male		Female	
No. Cases	Percent	No. Cases	Percent	No. Deaths	Percent	No. Deaths	Percent
Prostate		Breast		Lung & Bronchus		Lung & Bronchus	
726	20.9%	1,190	33.7%	311	24.4%	230	21.5%
Lung & Bronchus		Lung & Bronchus		Colon & Rectum		Breast	
464	13.3%	351	9.9%	124	9.8%	148	13.8%
Colon & Rectum		Colon & Rectum		Prostate		Colon & Rectum	
393	11.3%	324	9.2%	107	8.4%	100	9.3%
Melanoma of the Skin		Uterus/Endometrium		Liver & Intrahepatic Bile Duct; Pancreas		Pancreas	
227	6.5%	265	7.5%	99	7.8%	97	9.0%
Bladder		Thyroid		Non-Hodgkin Lymphoma		Liver & Intrahepatic Bile Duct	
191	5.5%	166	4.7%	48	3.8%	50	4.7%
Non-Hodgkin Lymphoma		Melanoma of the Skin		Stomach		Ovary	
162	4.7%	136	3.8%	44	3.5%	44	4.1%
Oral Cavity & Pharynx		Non-Hodgkin Lymphoma		Leukemia		Uterus/Endometrium	
155	4.5%	122	3.5%	43	3.4%	39	3.6%
Kidney & Renal Pelvis		Pancreas		Bladder		Non-Hodgkin Lymphoma	
152	4.4%	118	3.3%	40	3.1%	37	3.4%
Liver & Intrahepatic Bile Duct		Ovary		Esophagus		Stomach	
144	4.1%	82	2.3%	36	2.8%	36	3.3%
Pancreas		Kidney & Renal Pelvis		Oral Cavity & Pharynx; Kidney & Renal Pelvis		Leukemia	
125	3.6%	74	2.1%	33	2.6%	32	3.0%
All Sites		All Sites		All Sites		All Sites	
3,480	100.0%	3,531	100.0%	1,274	100.0%	1,073	100.0%

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Cancer cases include invasive cases except for bladder cancer, which includes both invasive and in situ cases.
Annual average numbers are rounded and may not add up to the rounded total.

Table 2. Average Annual Incidence, Hawai'i, 2012-2016

	All		Male		Female	
Cancer Sites	**Cases/Year**	**Rate**	**Cases/Year**	**Rate**	**Cases/Year**	**Rate**
All Sites	7,011	407.7	3,480	426.0	3,531	399.9
Anus, Anal Canal & Anorectum	22	1.2	-	-	-	-
Bladder	247	13.8	191	23.9	56	5.6
Bones & Joints	11	0.8	-	-	-	-
Brain & Other Nervous System	67	4.1	37	4.8	30	3.5
Breast	-	-	-	-	1,190	137.5
Cervix	-	-	-	-	52	7.3
Colon & Rectum	717	41.6	393	48.1	324	35.5
Uterus/Endometrium	-	-	-	-	265	30.8
Esophagus	60	3.4	49	5.9	11	1.2
Eye & Orbit	12	0.7	-	-	-	-
Gallbladder	18	1.1	-	-	-	-
Hodgkin Lymphoma	23	1.6	-	-	-	-
Kidney & Renal Pelvis	226	13.4	152	19.0	74	8.4
Larynx	38	2.1	-	-	-	-
Leukemia	176	10.7	104	13.4	72	8.4
Liver & Intrahepatic Bile Duct	206	11.3	144	16.9	62	6.2
Lung & Bronchus	815	45.7	464	57.2	351	36.4
Melanoma of the Skin	363	21.4	227	28.1	136	15.9
Myeloma	95	5.4	53	6.5	42	4.5
Non-Hodgkin Lymphoma	284	16.6	162	20.2	122	13.5
Nose, Nasal Cavity & Middle Ear	13	0.7	-	-	-	-
Oral Cavity & Pharynx	228	13.2	155	18.8	73	8.2
Ovary			-	-	82	10.0
Pancreas	243	13.4	125	15.1	118	12.0
Prostate	-	-	726	84.9	-	-
Small Intestine	32	1.9	17	2.1	15	1.6
Soft Tissue	54	3.3	31	4.0	23	2.7
Stomach	155	8.7	90	11.2	65	6.7
Testis	-	-	41	5.9	-	-
Thyroid	225	15.1	59	7.8	166	22.6
Vulva	-	-	-	-	17	1.7

Table 3. Average Annual Mortality (Deaths), Hawai'i, 2012-2016

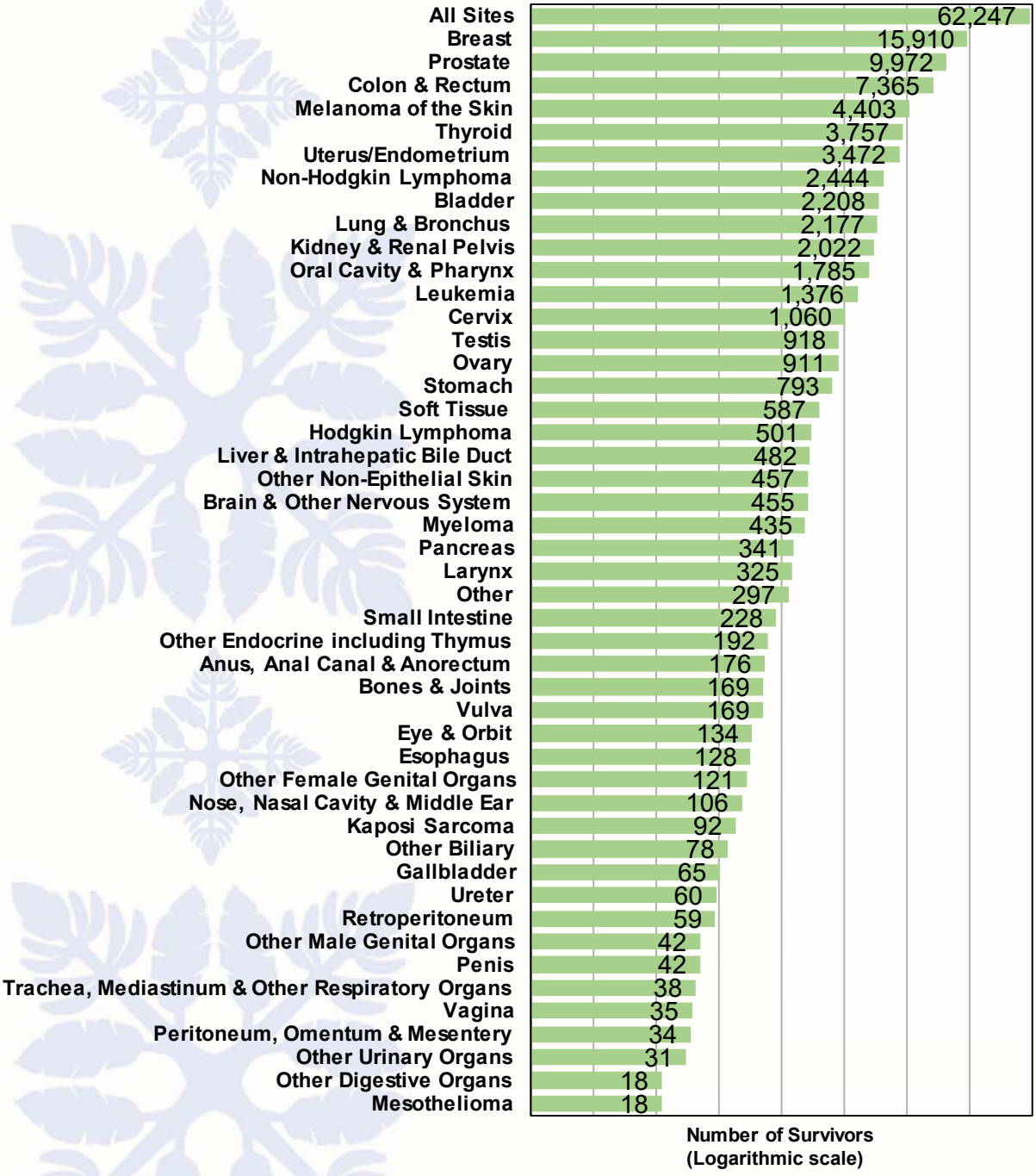
	All		Male		Female	
Cancer Sites	**Deaths/Year**	**Rate**	**Deaths/Year**	**Rate**	**Deaths/Year**	**Rate**
All Sites	2,347	130.4	1,274	157.5	1,073	110.0
Bladder	55	2.9	40	5.0	15	1.3
Brain & Other Nervous System	47	2.7	27	3.2	20	2.2
Breast	-	-	-	-	148	15.8
Cervix	-	-	-	-	15	1.8
Colon & Rectum	224	12.6	124	15.3	100	10.3
Uterus/Endometrium	-	-	-	-	39	4.2
Esophagus	48	2.6	36	4.3	12	1.2
Kidney & Renal Pelvis	50	2.6	33	3.9	17	1.7
Larynx	13	0.7	-	-	-	-
Leukemia	75	4.3	43	5.6	32	3.3
Liver & Intrahepatic Bile Duct	149	8.2	99	11.9	50	5.0
Lung & Bronchus	541	30.2	311	38.5	230	23.5
Melanoma of the Skin	29	1.6	-	-	-	-
Myeloma	45	2.5	26	3.3	19	1.9
Non-Hodgkin Lymphoma	85	4.6	48	6.1	37	3.4
Oral Cavity & Pharynx	49	2.7	33	4.1	16	1.6
Non-Melanoma Skin	14	0.7	-	-	-	-
Ovary	-	-	-	-	44	4.6
Pancreas	196	10.7	99	12.0	97	9.6
Prostate	-	-	107	13.5	-	-
Soft Tissue	21	1.2	11	1.4	10	1.1
Stomach	80	4.3	44	5.5	36	3.5
Thyroid	11	0.6	-	-	-	-

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Cancer cases include invasive cancers except for bladder cancer, which includes both invasive and in situ cases.
Rates are 5-year average annual per 100,000 population and age-adjusted to the 2000 U.S. Standard Population.
Counts and rates for cancers with fewer than 10 cases per 5-year period are not provided. With the exception of breast cancers, only total (male plus female) counts shown when sex-specific counts are fewer than 10.
Annual average numbers are rounded and may not add up to the rounded total.

Cancer Survivorship

In 2016, there were 62,247 Hawai'i residents (27,097 males, 35,150 females) living with cancer including those newly diagnosed and those diagnosed in the past. Cases with cancer of the breast (15,910 cases), prostate (9,972 cases), and colon & rectum (7,365 cases) comprised the largest proportion of cancer survivors in the state.

Figure 1. Cancer Survivors, Hawai'i



Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center; Hawai'i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention

Individuals with two or more cancer sites, were counted once in "All Sites".

The number of cancer survivors are based on individuals diagnosed with the cancer in 1975-2015 and alive as of January 1st, 2016.

Cancer Across the Islands (Counties)

- Annually, Honolulu County, including all of O'ahu, accounts for the majority of newly diagnosed cancer cases (70%, or 4,891), followed by Hawai'i County (14%, or 977 cases), Maui County (including Maui, Moloka'i & Lāna'i) (11%, or 797 cases), and Kaua'i County (5%, or 343 cases).

- Each year, residents of Honolulu County account for the most cancer deaths (68%, or 1,593), followed by Hawai'i County (16%, or 366 deaths), Maui County (11%, or 266 deaths), and Kaua'i County (5%, or 123 deaths).

- Overall cancer incidence rates were highest in Honolulu County (419 per 100,000), followed by Maui County (402 per 100,000); incidence rates in Hawai'i County (374 per 100,000) and Kaua'i County (369 per 100,000) were statistically comparable.

- Overall cancer mortality rates were higher in Hawai'i County (138 per 100,000) compared to Honolulu County (128 per 100,000); mortality in Maui County (134 per 100,000) and Kaua'i County (129 per 100,000) were statistically comparable to both Honolulu and Hawai'i Counties.

- Melanoma of the skin incidence was highest in Maui County followed by Hawai'i County, both of which exceeded statewide rates. Melanoma mortality in Hawai'i County was higher than that of Honolulu County.

- Colon & rectum cancer incidence was lower in Hawai'i County compared to statewide rates and rates in Honolulu and Maui Counties.

- Breast cancer incidence was higher in Honolulu County compared to Kaua'i County.

- Lung & bronchus cancer incidence among males was higher in Honolulu County compared to Hawai'i and Maui Counties.

- Prostate cancer incidence was highest in Honolulu and Kaua'i Counties.

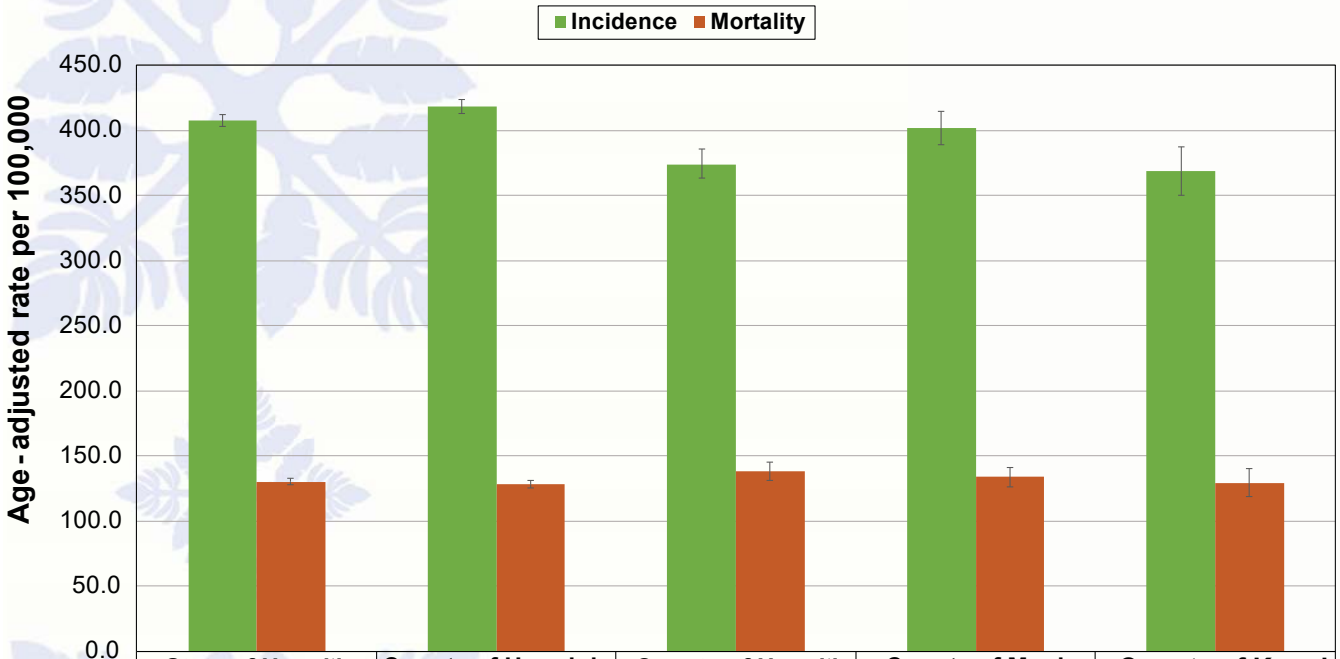
- Thyroid cancer incidence was highest in Honolulu and Maui Counties.

Table 4. Average Annual Number of Cancer Cases and Deaths, by County, Hawai'i, 2012-2016

County	All Sites		Breast (Female)		Prostate		Colon & Rectum		Lung & Bronchus	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Honolulu	4,891	1,593	836	98	545	72	509	152	573	380
Hawai'i	977	366	166	23	74	16	89	33	116	78
Maui	797	266	132	20	61	12	84	27	89	57
Kauai	343	123	56	<10	46	<10	34	13	37	26

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Cancer cases and deaths include invasive cancers except for bladder cancer, which includes both invasive and in situ tumors.
Excludes 9 cases with unknown county of residence.
Annual average numbers are rounded and may not add up to the rounded total.
Maui County includes Maui, Molokai, and Lanai.

Figure 2. Overall Cancer Incidence and Mortality by County, Hawai'i, 2012-2016



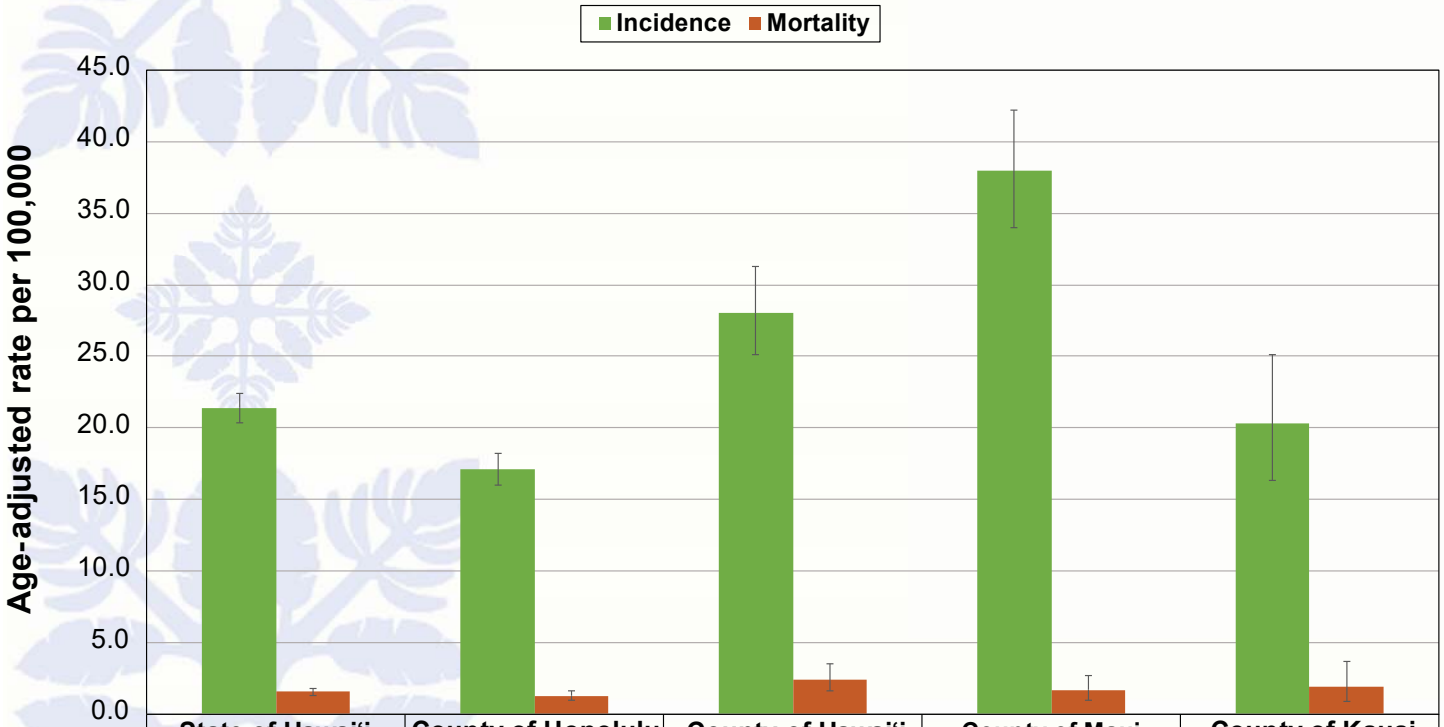
	State of Hawai'i	County of Honolulu	County of Hawai'i	County of Maui	County of Kauai
Incidence	407.7	418.5	374.1	401.5	368.6
Mortality	130.4	128.2	138.2	133.8	129.1

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center; Hawai'i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention

Cancer cases and deaths include invasive cancers except for bladder cancer, which includes both invasive and in situ tumors.

Rates are 5-year average annual per 100,000 population and age-adjusted to the 2000 U.S. Standard Population.

Figure 3. Melanoma of the Skin Incidence and Mortality by County, Hawai'i, 2012-2016



	State of Hawai'i	County of Honolulu	County of Hawai'i	County of Maui	County of Kauai
Incidence	21.4	17.1	28.0	38.0	20.3
Mortality	1.6	1.3	2.4	1.7	1.9

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center; Hawai'i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention

Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Trends in Cancer Incidence and Mortality in Hawai'i

- Over the past three decades (1984 to 2016), overall cancer incidence rates remained relatively stable in males while slightly increasing (0.3% per year) in females. Overall cancer mortality rates steadily decreased in both sexes (1.1% per year for males and 0.9% per year for females).

- Over the past decade (2007 to 2016), overall cancer incidence was stable among men and showed a slight increase among females (0.3% per year).

- Over the past decade (2007 to 2016), overall cancer mortality significantly declined in males (1.7% per year) and in females (0.9% per year).

- From 2007 to 2016, significant changes in incidence were observed for certain cancers:

  - Cancers of the thyroid, kidney & renal pelvis, testis, melanoma of the skin, liver & intrahepatic bile duct, oral cavity & pharynx, and pancreas increased among males.

  - Cancers of the stomach, larynx, colon & rectum, and lung & bronchus decreased among males.

  - Multiple myeloma and cancers of breast, uterus/endometrium, and liver & intrahepatic bile duct increased among females.

  - Cancers of the stomach, lung & bronchus, colon & rectum, cervix, and ovary decreased among females.

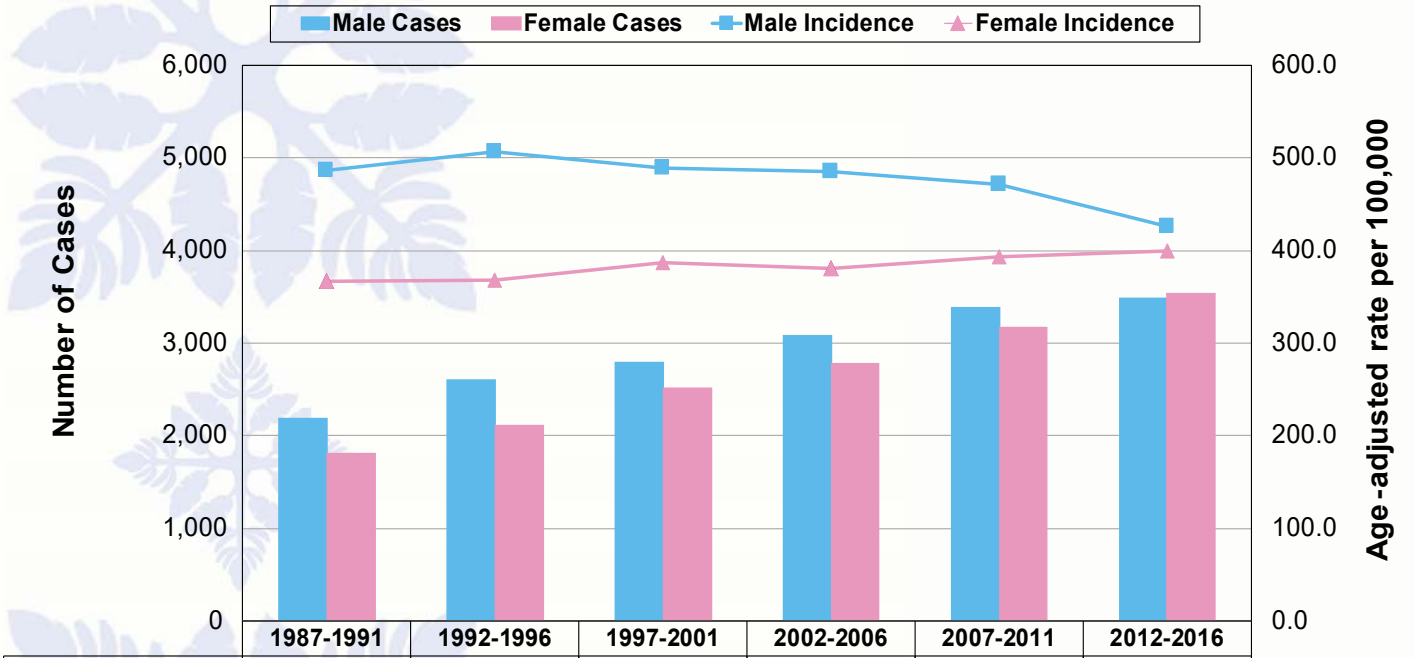
- From 2007 to 2016, significant changes in mortality were observed for certain cancers:

  - Mortality increased for liver & intrahepatic bile duct cancer among males. In women, mortality did not increase for any cancer site.

  - Mortality for cancers of the stomach, prostate, lung & bronchus, non-Hodgkin lymphoma, colon & rectum, and leukemia decreased among males.

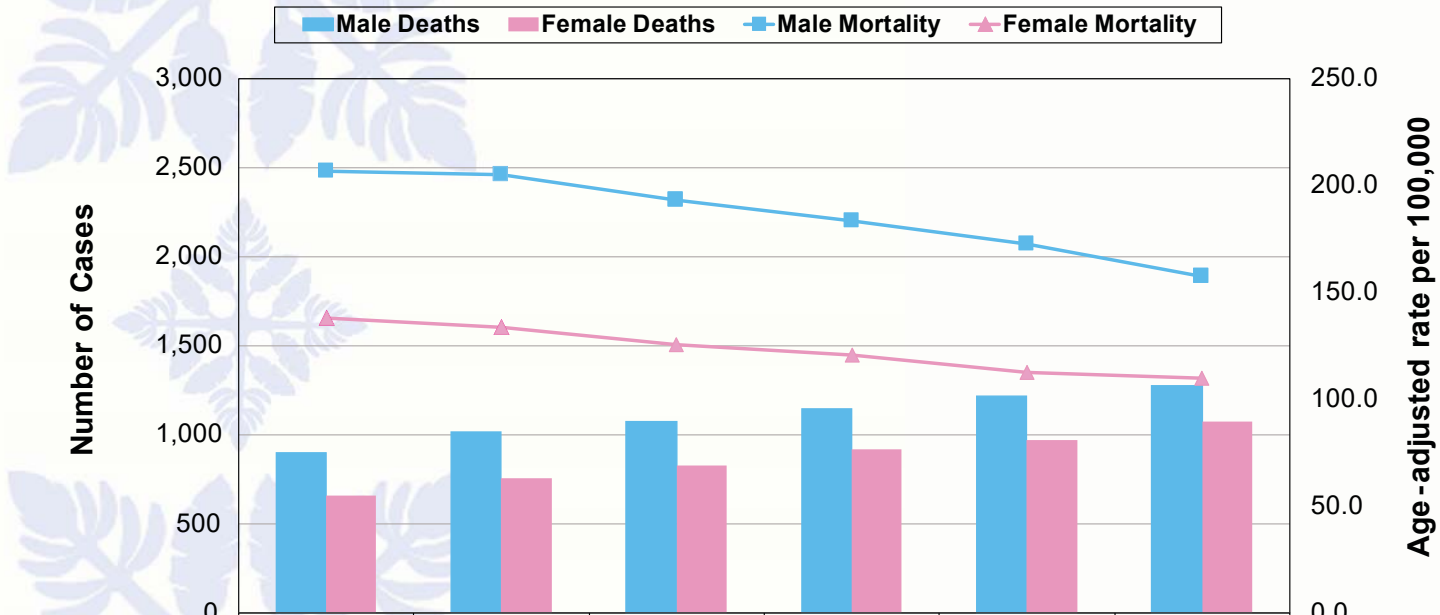
  - Mortality for cancers of the stomach, ovary, colon & rectum, and breast, as well as non-Hodgkin lymphoma decreased among females.

Figure 4. Cancer Incidence, Average Annual Number of Cases and Age-Adjusted Rates, Hawai'i, 1984-2016



	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
Male Cases	2,191	2,608	2,790	3,084	3,386	3,480
Female Cases	1,806	2,105	2,511	2,774	3,172	3,531
Male Incidence	486.9	506.3	489.3	484.8	470.7	426.0
Female Incidence	367.2	367.8	387.0	380.6	393.3	399.9

Figure 5. Cancer Mortality, Average Annual Number of Cases and Age-Adjusted Rates, Hawai'i, 1984-2016



	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
Male Deaths	898	1,017	1,077	1,145	1,217	1,274
Female Deaths	660	755	831	918	973	1,073
Male Mortality	206.9	205.2	193.3	183.5	172.4	157.5
Female Mortality	138.0	133.9	125.7	120.5	112.6	110.0

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center; Hawai'i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention

Cancer cases include invasive cancers except for bladder cancer, which includes both invasive and in situ tumors.

Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Annual average numbers are rounded and may not add up to the rounded total.

Figure 6. Average Annual Percent Change in Cancer Incidence Rates, Males, Hawai'i, 2007-2016

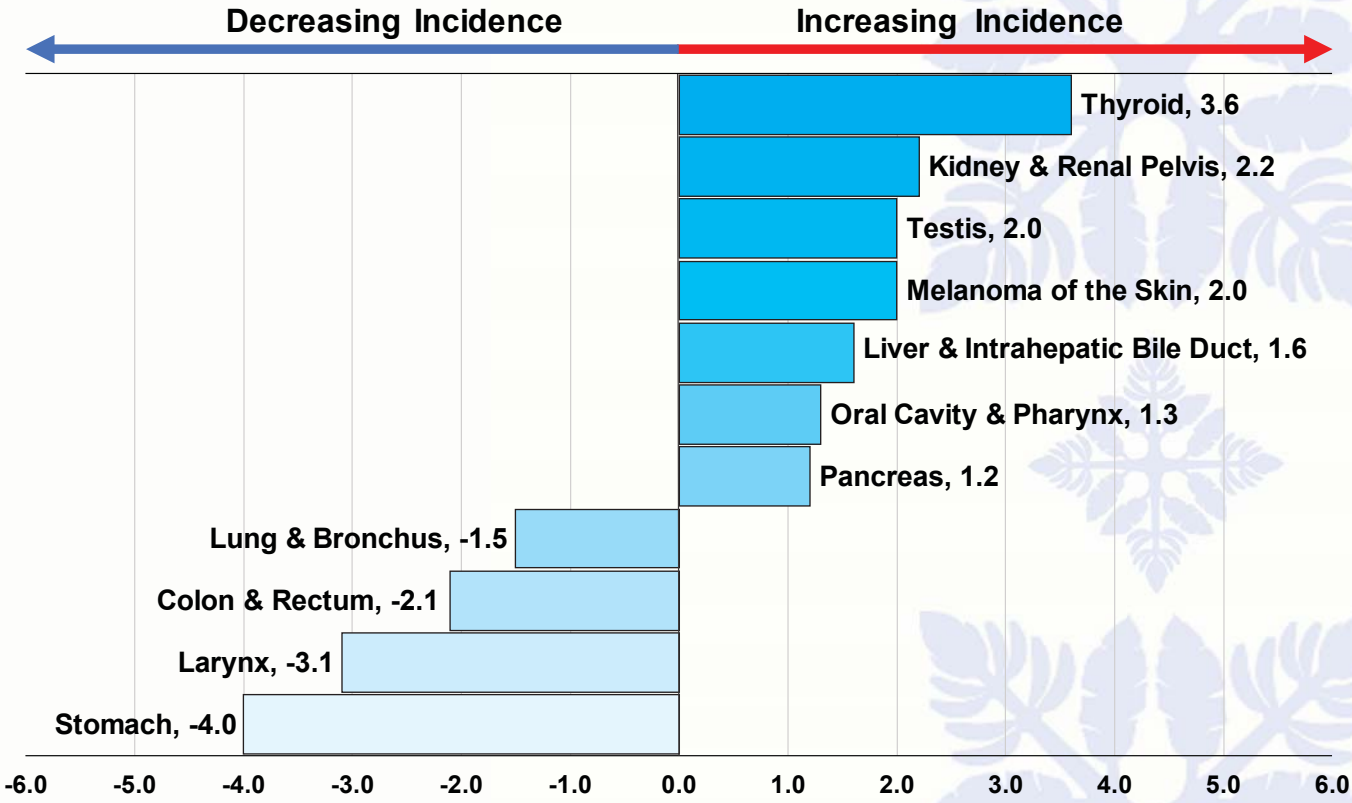
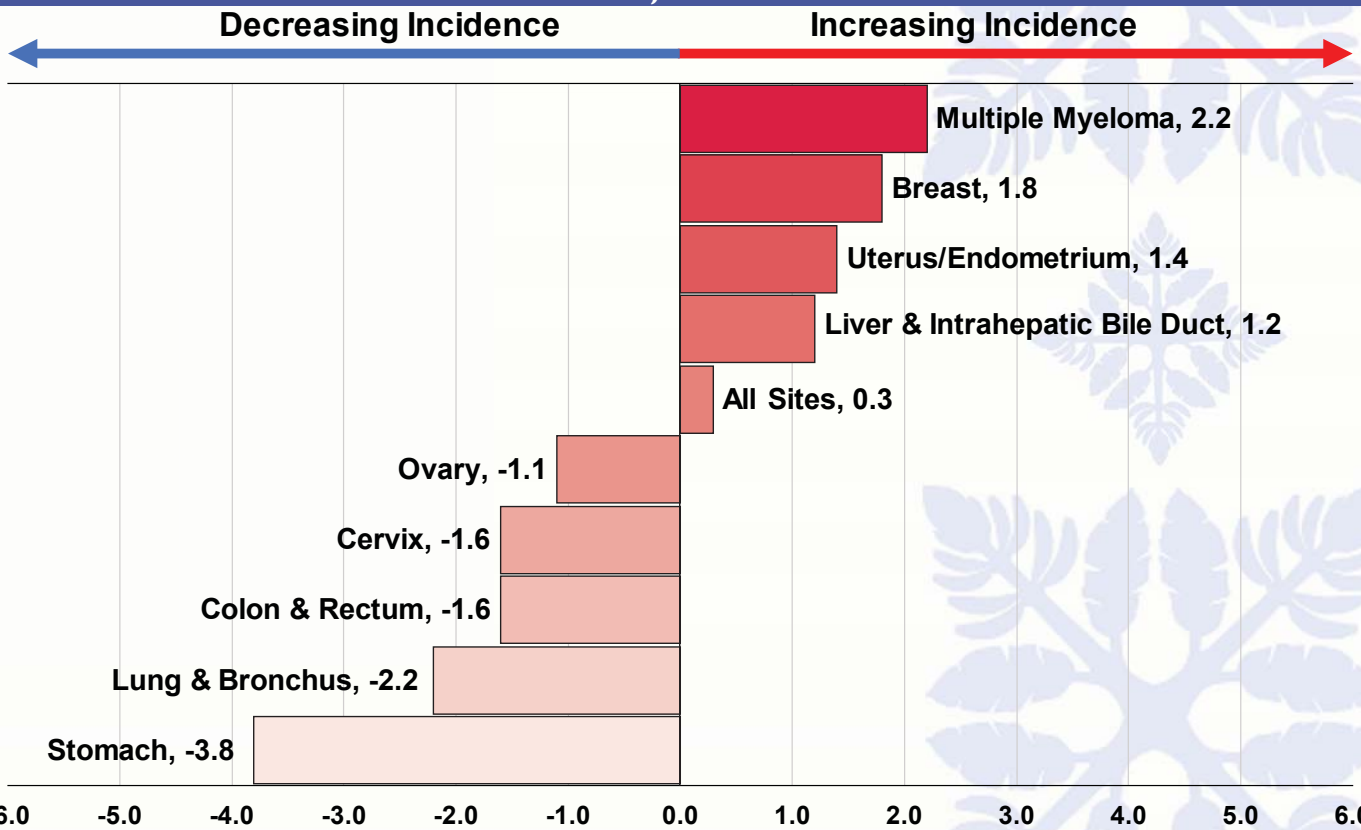


Figure 7. Average Annual Percent Change in Cancer Incidence Rates, Females, Hawai'i, 2007-2016



Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Rates are per 100,000 population and age-adjusted to the 2000 U.S. Standard Population.
Based on annual rates for 1999-2016. Cancers listed are those with significant ($p<0.05$) changes in age-adjusted incidence rates during the ten-year time period.

Figure 8. Average Annual Percent Change in Cancer Mortality Rates, Males, Hawai'i, 2007-2016

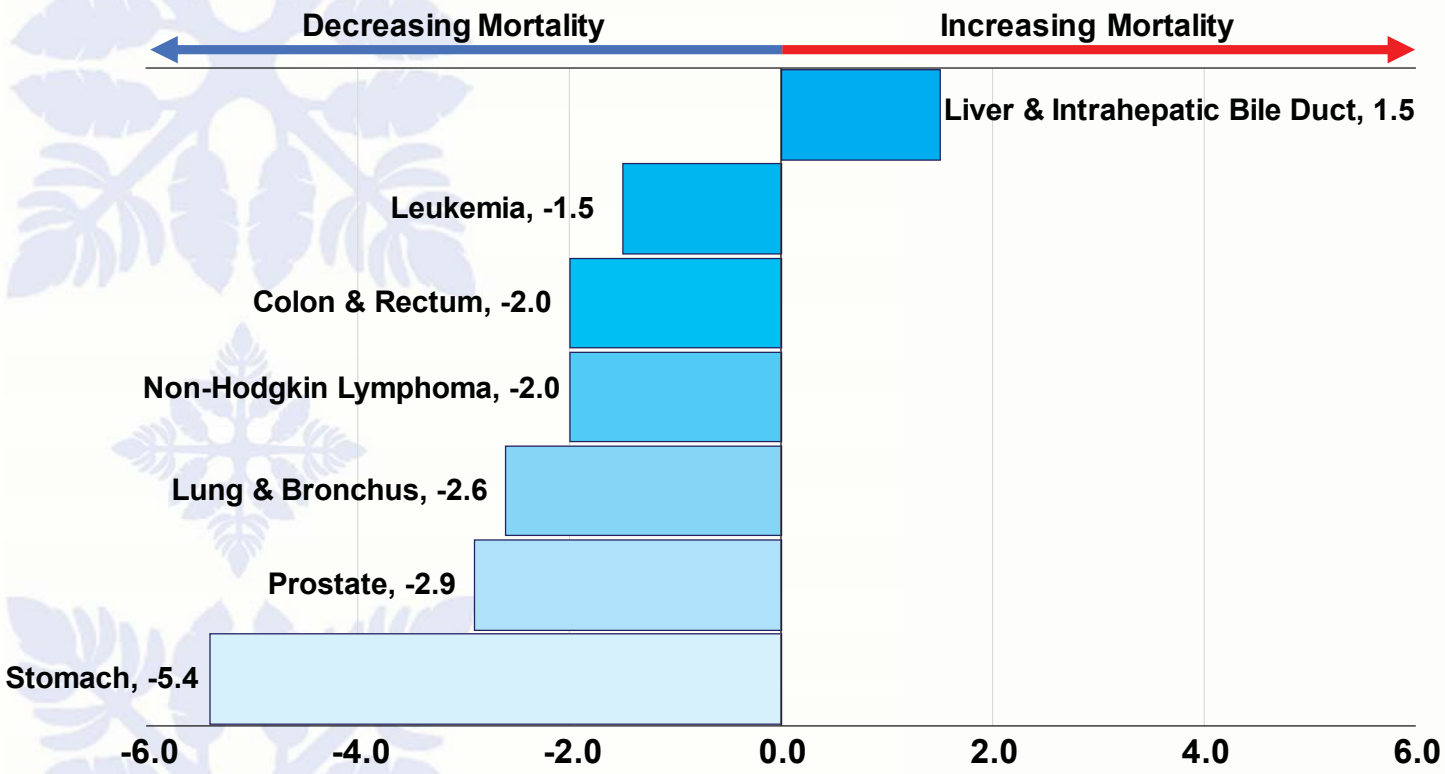
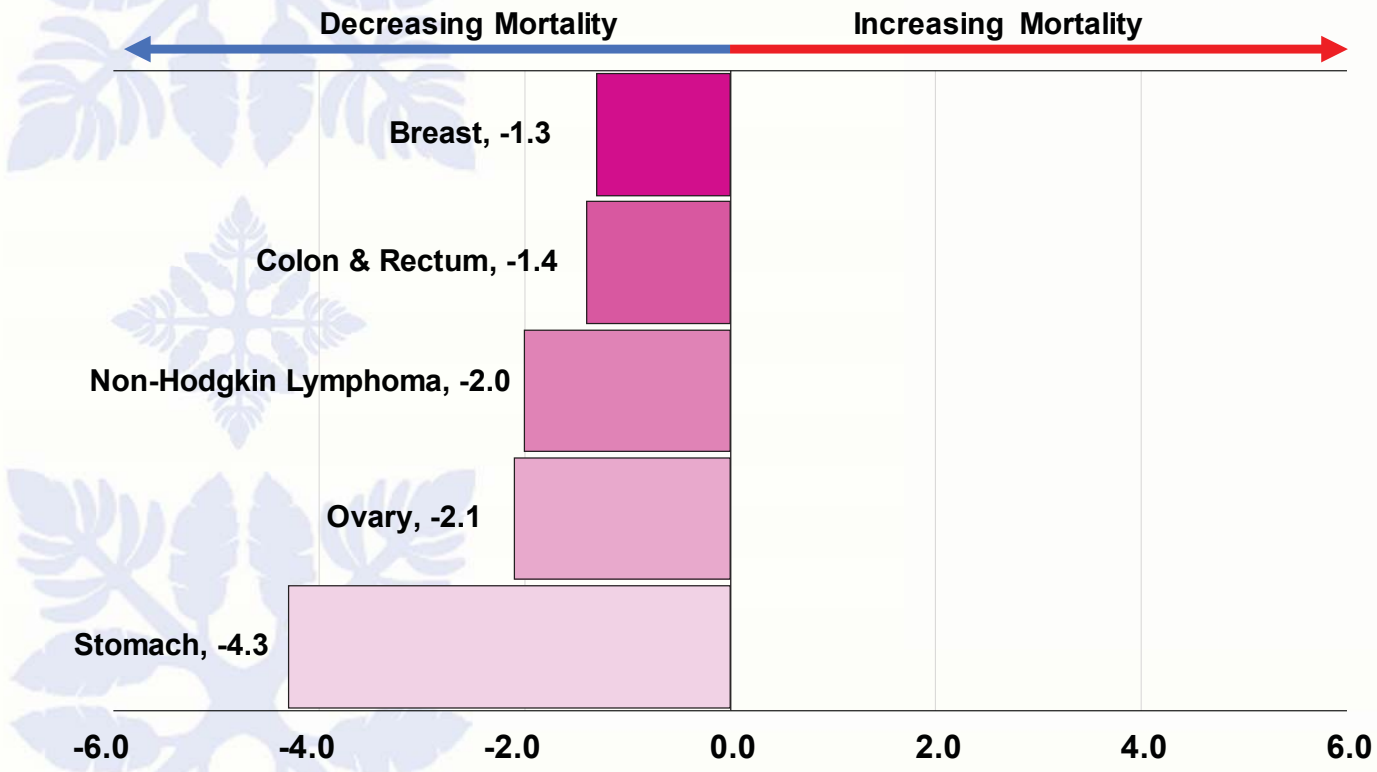


Figure 9. Average Annual Percent Change in Cancer Mortality Rates, Females, Hawai'i, 2007-2016



Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center; Hawai'i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention.
Rates are per 100,000 population and age-adjusted to the 2000 U.S. Standard Population.
Based on annual rates for 1999-2016. Cancers listed are those with significant ($p<0.05$) changes in age-adjusted incidence rates during the ten-year time period.

Comparison of Cancer in Hawai‘i and the United States

- In 2012-2016, Hawai‘i incidence rates were significantly higher than the U.S. overall for the following cancers: colon & rectum in males; breast, uterine/endometrium, and oral cavity & pharynx in females; and liver & intrahepatic bile duct and stomach in both sexes.

- In 2012-2016, Hawai‘i incidence rates were significantly lower than the U.S. overall for the following cancers: prostate cancer in males; ovarian cancer in females; and all cancers combined and larynx, esophagus, brain & other nervous system, bladder, lung & bronchus, kidney & renal pelvis, Hodgkin lymphoma, multiple myeloma, leukemia, and non-Hodgkin lymphoma in both sexes.

- In 2012-2016, mortality rates were significantly higher in Hawai‘i compared to the U.S. overall for cancers of the liver & intrahepatic bile duct and stomach in both males and females.

- In 2012-2016, cancer mortality rates in Hawai‘i were significantly lower than the U.S. overall for all cancer sites combined and for cancers of the kidney & renal pelvis, brain & nervous system, bladder, lung & bronchus, melanoma of the skin, non-Hodgkin lymphoma, and leukemia in both males and females; esophagus and prostate in males; and cancers of breast, ovary, and colon & rectum in females.

Table 5. Cancers with Higher Incidence in Hawai‘i Compared to the U.S., 2012-2016

Site	Hawai‘i Incidence Rate	U.S. Incidence Rate
Males		
Colon & Rectum	48.1	44.4
Liver & Intrahepatic Bile Duct	16.9	12.7
Stomach	11.2	8.9
Females		
Breast	137.5	125.2
Liver & Intrahepatic Bile Duct	6.2	4.4
Oral Cavity & Pharynx	8.2	6.4
Stomach	6.7	4.6
Uterus/Endometrium	30.8	26.6

Sources: Hawai‘i Tumor Registry, University of Hawai‘i Cancer Center; Hawai‘i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention
Cancer cases and deaths include invasive cancers except for bladder cancer, which includes both invasive and in situ tumors.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Cancers with rates significantly ($p<0.05$) different in Hawai‘i compared to the U.S. overall are shown.

Table 6. Cancers with Lower Incidence in Hawai'i Compared to the U.S., 2012-2016

Site	Hawai'i Incidence Rate	U.S. Incidence Rate
Males		
All Cancer Sites Combined	426.0	488.8
Bladder	23.9	35.0
Brain & Other Nervous System	4.8	7.6
Esophagus	5.9	7.9
Hodgkin Lymphoma	1.9	3.0
Kidney & Renal Pelvis	19.0	22.5
Larynx	3.8	5.7
Leukemia	13.4	18.1
Lung & Bronchus	57.2	69.1
Myeloma	6.5	8.4
Non-Hodgkin Lymphoma	20.2	23.2
Prostate	84.9	104.1
Females		
All Cancer Sites Combined	399.9	420.9
Bladder	5.6	8.7
Brain & Other Nervous System	3.5	5.5
Esophagus	1.2	1.8
Kidney & Renal Pelvis	8.4	11.5
Leukemia	8.4	11.0
Lung & Bronchus	36.4	51.7
Myeloma	4.5	5.5
Non-Hodgkin Lymphoma	13.5	16.0
Ovary	10.0	11.1

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center; Hawai'i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention
Cancer cases and deaths include invasive cancers except for bladder cancer, which includes both invasive and in situ tumors.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Cancers with rates significantly ($p<0.05$) different in Hawai'i compared to the U.S. overall are shown.

Table 7. Cancers with Higher Mortality in Hawai'i Compared to the U.S., 2012-2016

Site	Hawai'i Mortality Rate	U.S. Mortality Rate
Males		
Liver & Intrahepatic Bile Duct	11.9	9.6
Stomach	5.5	4.2
Females		
Liver & Intrahepatic Bile Duct	5.0	3.9
Stomach	3.5	2.3

Table 8. Cancers with Lower Mortality in Hawai'i Compared to the U.S., 2012-2016

Site	Hawai'i Mortality Rate	U.S. Mortality Rate
Males		
All Cancer Sites Combined	157.5	193.1
Bladder	5.0	7.6
Brain & Other Nervous System	3.2	5.4
Esophagus	4.3	7.1
Kidney & Renal Pelvis	3.9	5.5
Leukemia	5.6	8.8
Lung & Bronchus	38.5	51.6
Myeloma	3.3	4.2
Non-Hodgkin Lymphoma	6.1	7.3
Prostate	13.5	19.2
Females		
All Cancer Sites Combined	110.0	137.7
Bladder	1.3	2.1
Brain & Other Nervous System	2.2	3.6
Breast	15.8	20.6
Colon & Rectum	10.3	11.9
Kidney & Renal Pelvis	1.7	2.3
Leukemia	3.3	4.9
Lung & Bronchus	23.5	34.4
Myeloma	1.9	2.7
Non-Hodgkin Lymphoma	3.4	4.4
Ovary	4.6	7.0

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center; Hawai'i State Department of Health; National Center for Health Statistics; Center for Disease Control and Prevention

Cancer cases and deaths include invasive cancers except for bladder cancer, which includes both invasive and in situ tumors. .

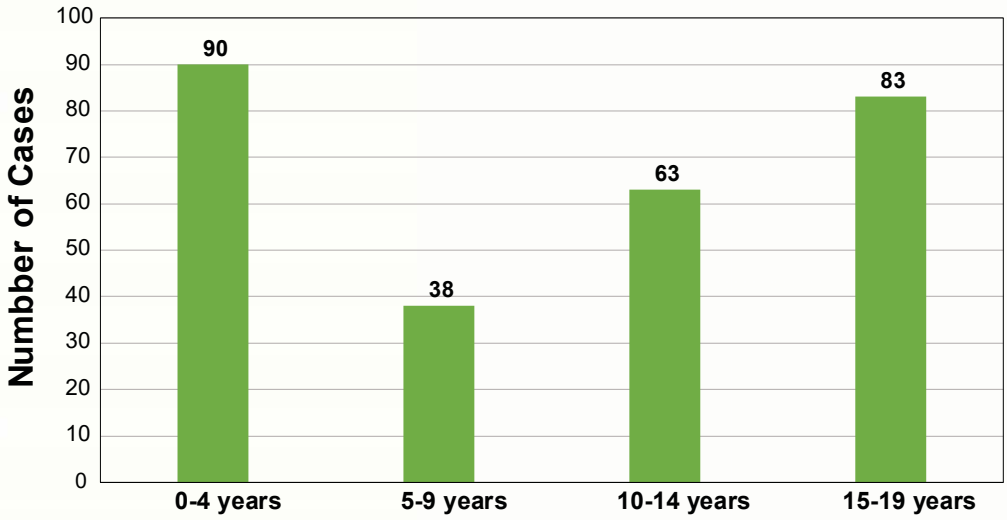
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Cancers with rates significantly ($p<0.05$) different in Hawai'i compared to the U.S. overall are shown.

Childhood Cancer in Hawai‘i

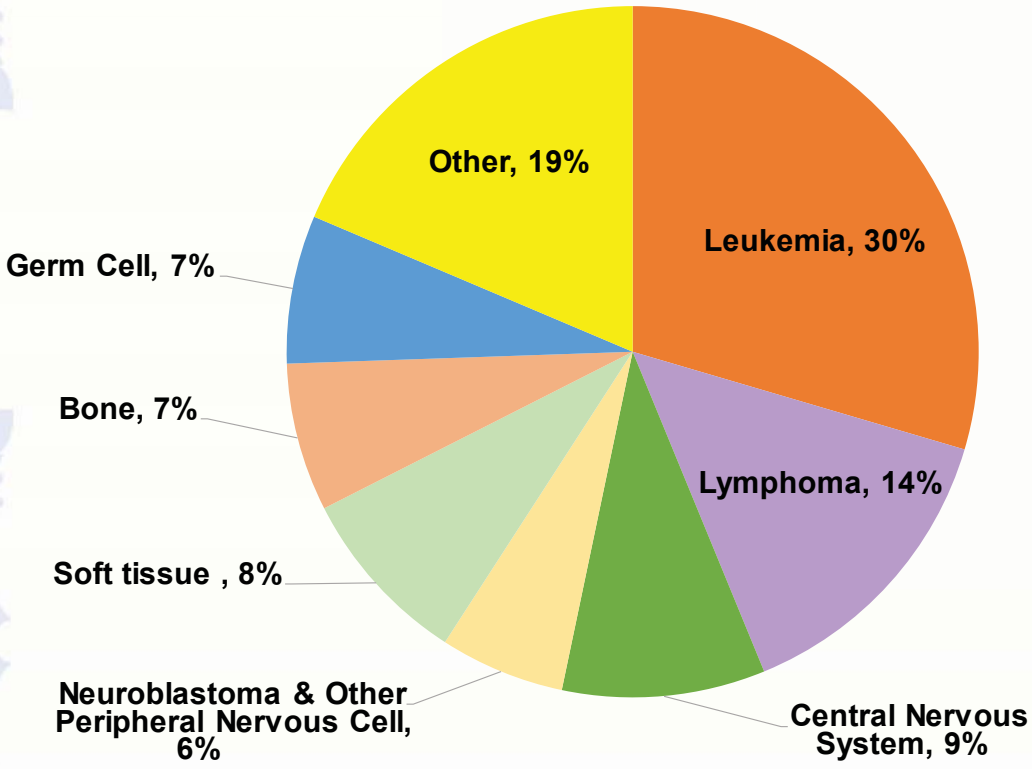
- Childhood cancer is rare with less than one percent of all cancers occurring in individuals ages 19 years and under.
- Approximately 55 children (ages 19 and under) are diagnosed with cancer each year in Hawai‘i.
- Cancer is the second leading cause of death in Hawai‘i among children ages 1 to 14 years.
- Leukemias were the most common cancers in children comprising 30% of all cases diagnosed in 2012-2016.

Figure 10. Age Distribution of Childhood Cancers, Hawai‘i, 2012-2016 5-year total



Sources: Hawai‘i Tumor Registry, University of Hawai‘i Cancer Center

Figure 11. Cancers in Individuals Ages 19 & Under, Hawai‘i, 2012-2016 5-year total

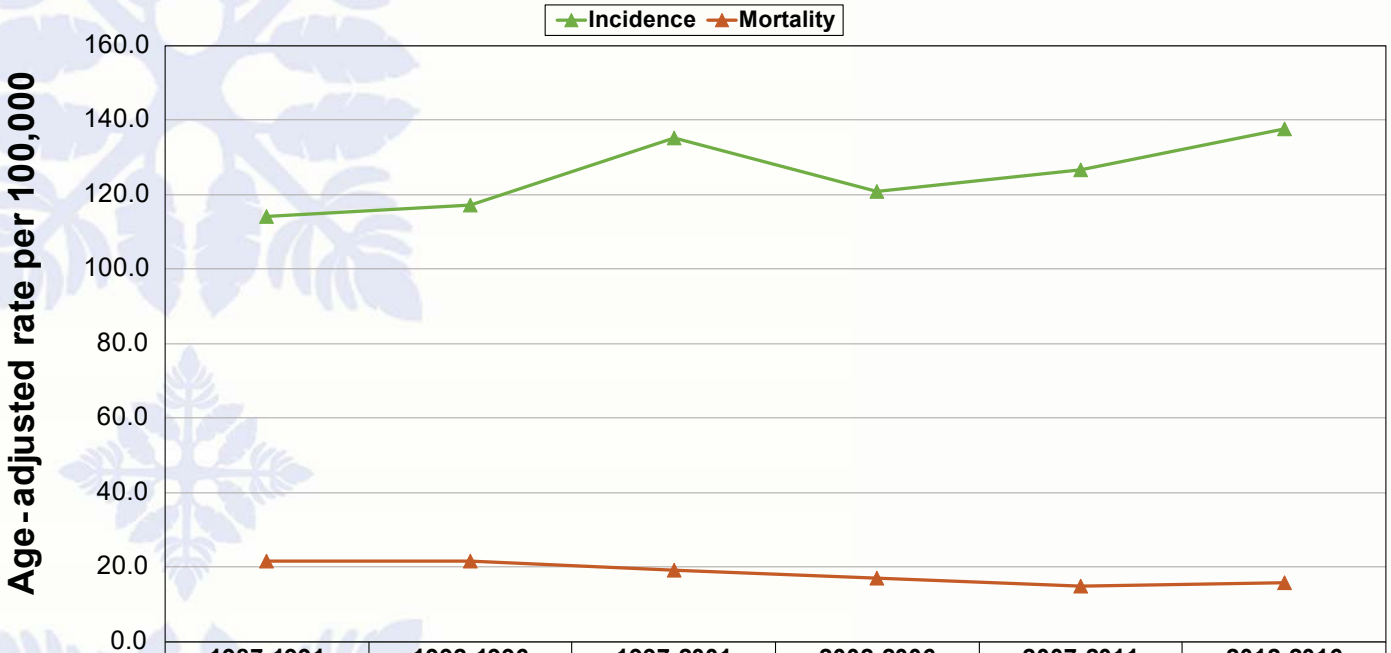


Sources: Hawai‘i Tumor Registry, University of Hawai‘i Cancer Center

Breast Cancer in Hawai‘i

- Breast cancer is the most common cancer diagnosed in women in Hawai‘i.
- Annually, an average of 1,190 women are diagnosed with invasive breast cancer in Hawai‘i while another 294 are diagnosed with in situ breast cancer, or very early stage tumors that have not invaded surrounding tissues.
- An average of 148 women die of breast cancer each year in Hawai‘i.
- Seventy-one percent of breast cancers are diagnosed in women of age 55 and older.
- Invasive breast cancer incidence rates in Hawai‘i increased nearly 2% per year over the past 10 years.
- Invasive breast cancer mortality rates declined approximately 1% per year over the past decade.
- Invasive breast cancer incidence in Hawai‘i (137.5 per 100,000) was higher than the U.S. overall (125.2 per 100,000) in 2012-2016.
- Hawai‘i has among the lowest rates of breast cancer mortality in the country (15.8 per 100,000). This compares to 20.6 per 100,000 for the U.S. overall in 2012-2016.
- Breast cancer incidence was higher among Native Hawaiian, White, and Japanese women compared to Filipino, Chinese, and women of other race/ethnic groups.
- Breast cancer mortality was highest in Native Hawaiian followed by White women.
- Most breast cancers (74%) are diagnosed at early stages (in situ or localized); 24% are diagnosed at advanced stages.
- The proportion of breast cancers diagnosed at advanced stages ranged from 17% for Japanese women to 29% for women of other race/ethnic groups.

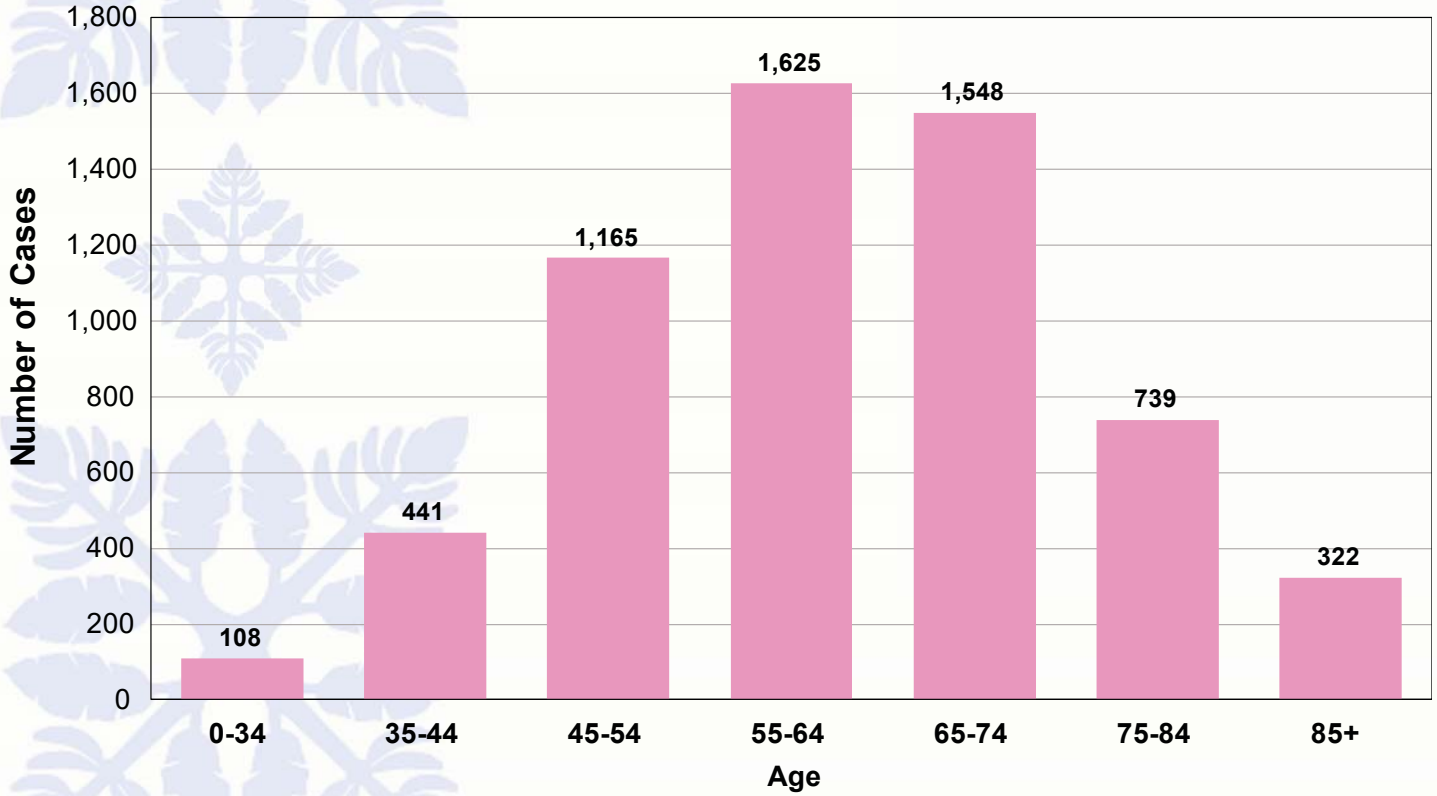
Figure 12. Breast Cancer Incidence and Mortality, 1987-2016



	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
Incidence	114.1	117.0	135.1	120.8	126.6	137.5
Mortality	21.6	21.4	19.2	17.1	14.8	15.8

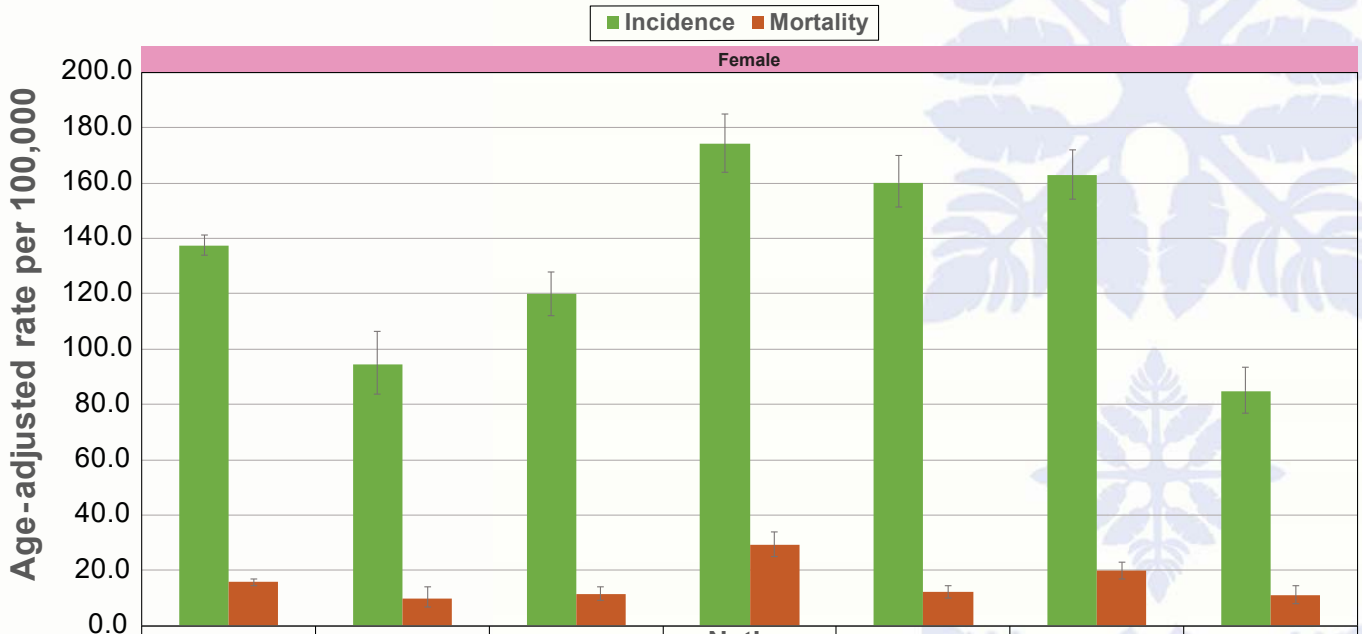
Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 13. Breast Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016



Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.

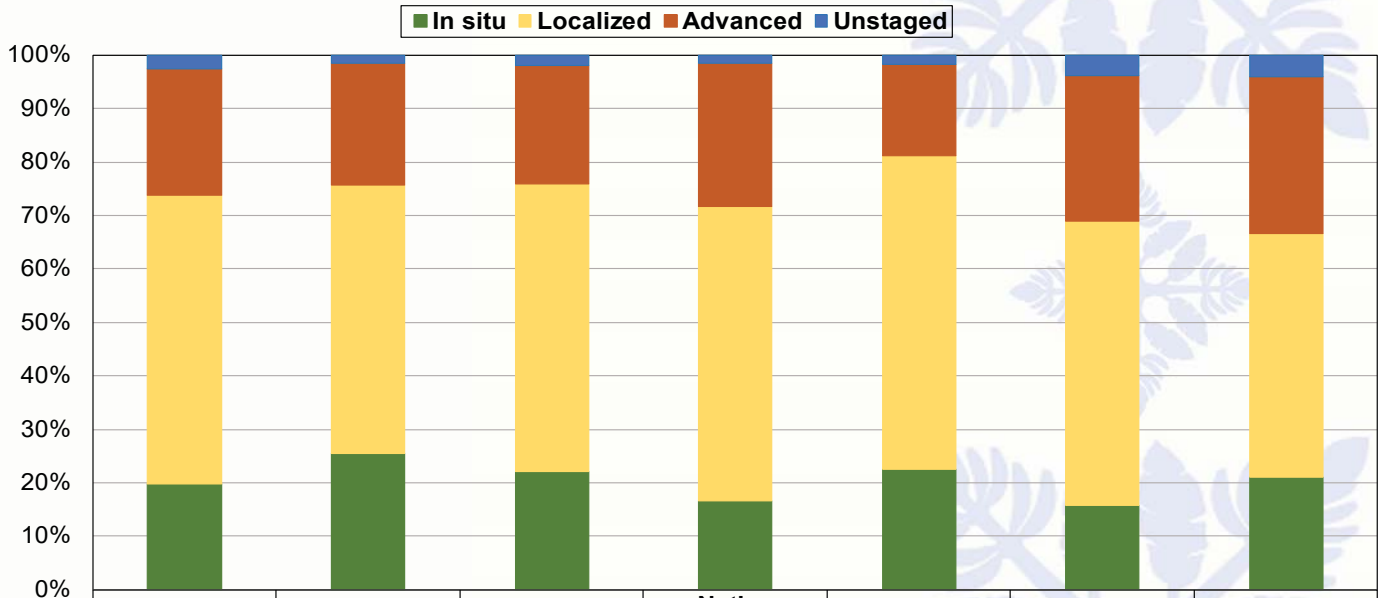
Figure 14. Breast Cancer Incidence and Mortality, by Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	137.5	94.5	119.8	174.1	160.2	162.7	84.8
Mortality	15.8	9.9	11.3	29.2	12.2	19.9	11.0

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 15. Breast Cancer Stage Distribution, Hawai'i, 2012-2016



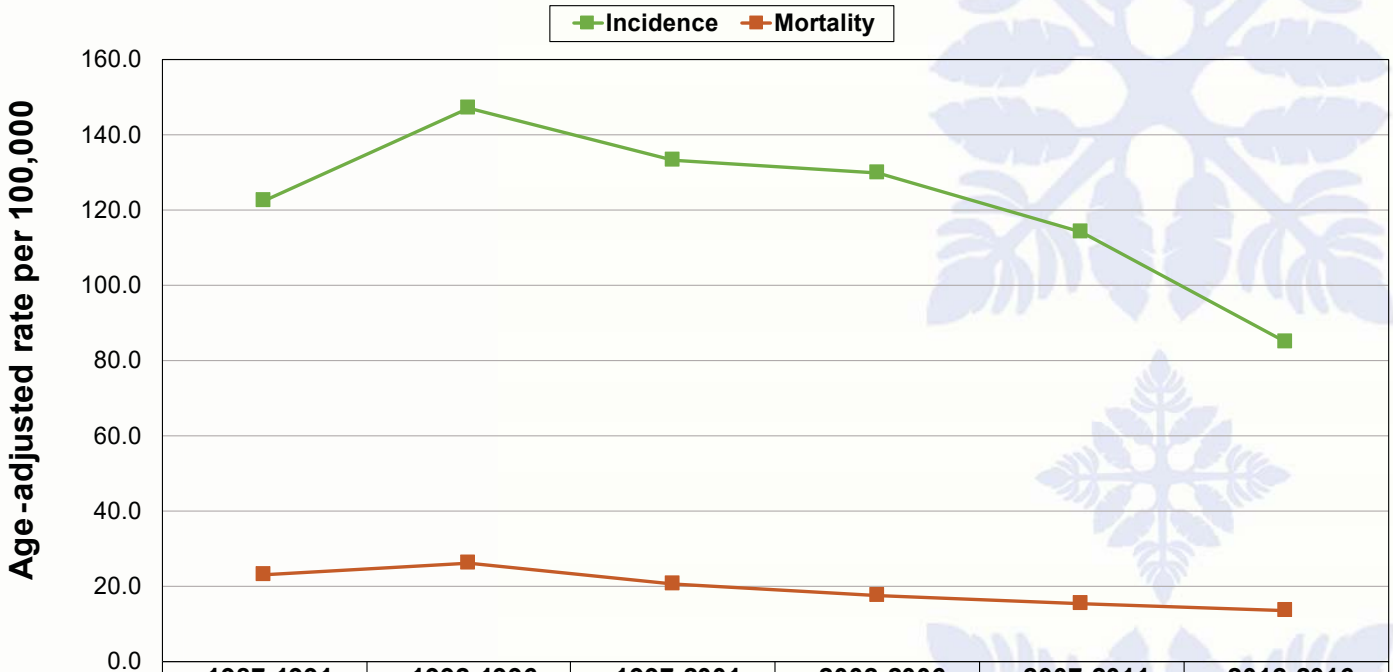
	All Races	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Unstaged	2.6%	1.4%	1.9%	1.6%	1.6%	3.8%	4.0%
Advanced	23.5%	22.9%	22.2%	26.8%	17.3%	27.3%	29.4%
Localized	54.1%	50.1%	53.8%	55.0%	58.5%	53.2%	45.5%
In situ	19.8%	25.5%	22.2%	16.7%	22.6%	15.7%	21.0%

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Total percentages may be slightly less or more than 100 due to rounding.

Prostate Cancer in Hawai‘i

- Prostate cancer is the most common cancer diagnosed in men in Hawai‘i.
- Annually, an average of 726 men are diagnosed with invasive prostate cancer in Hawai‘i.
- An average of 107 men die of prostate cancer in Hawai‘i each year.
- Ninety-four percent of prostate cancers are diagnosed at age 55 years and older.
- Prostate cancer incidence and mortality rates in Hawai‘i declined over the past few decades. Over the past 10 years, prostate cancer mortality rates fell nearly 3% per year.
- Hawai‘i has among the lowest incidence of prostate cancer in the U.S. (84.9 per 100,000) compared to the U.S. overall (104.1 per 100,000) in 2012-2016.
- Hawai‘i has the lowest rates of prostate cancer mortality in the country (13.5 per 100,000). This compares to 19.2 per 100,000 for the U.S. overall in 2012-2016.
- Prostate cancer incidence was higher in Filipinos and Whites compared to Native Hawaiian and Chinese; mortality was higher in Native Hawaiians, Filipinos, and Whites compared to Japanese and Chinese.
- In 2012-2016, 58% of prostate cancer cases were diagnosed at early stages and 26% at late stages; 16% of tumors were unstaged.
- Filipinos had the highest proportions of late stage prostate cancers (33%).

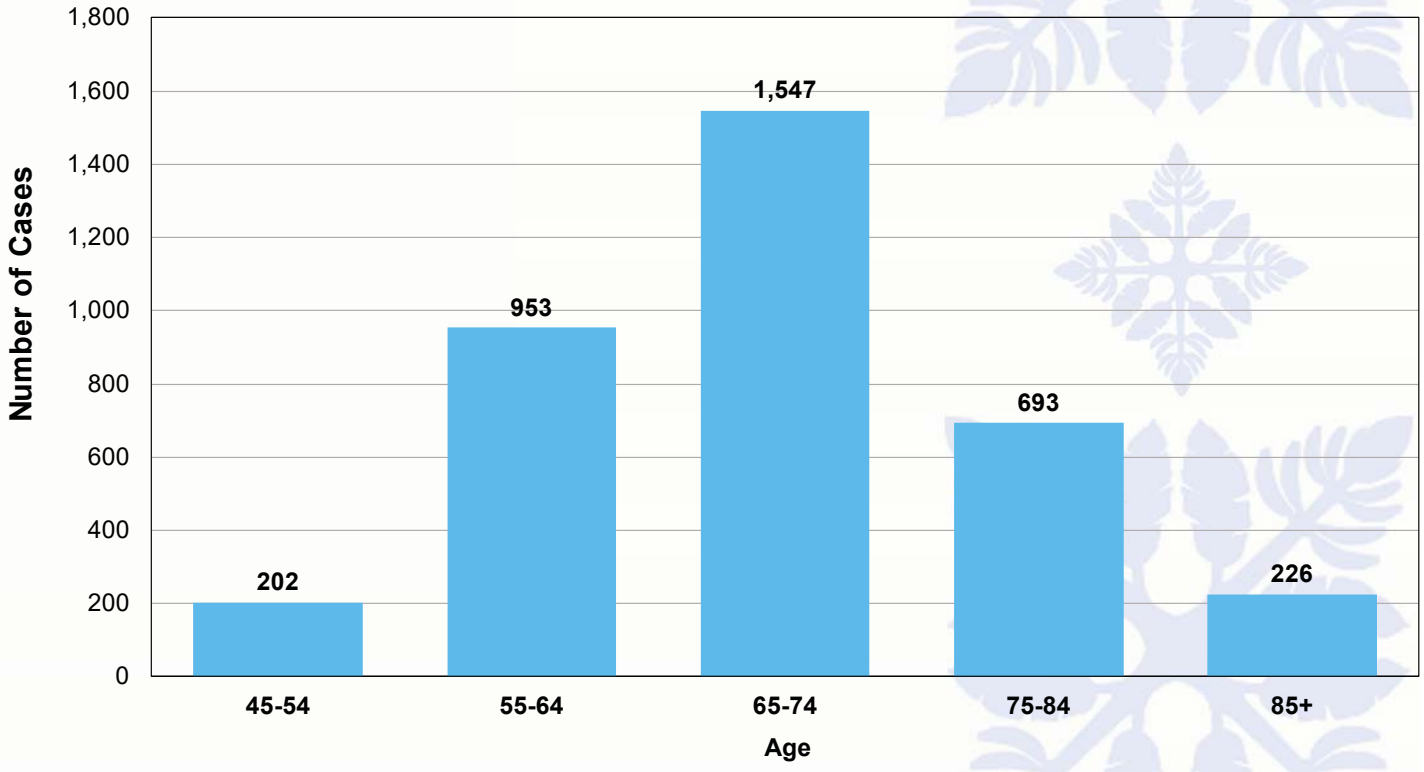
Figure 16. Prostate Cancer Incidence and Mortality, Hawai'i, 1987-2016



	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
Incidence	122.5	147.2	133.2	129.8	114.4	84.9
Mortality	23.2	26.1	20.8	17.6	15.4	13.5

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 17. Prostate Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016



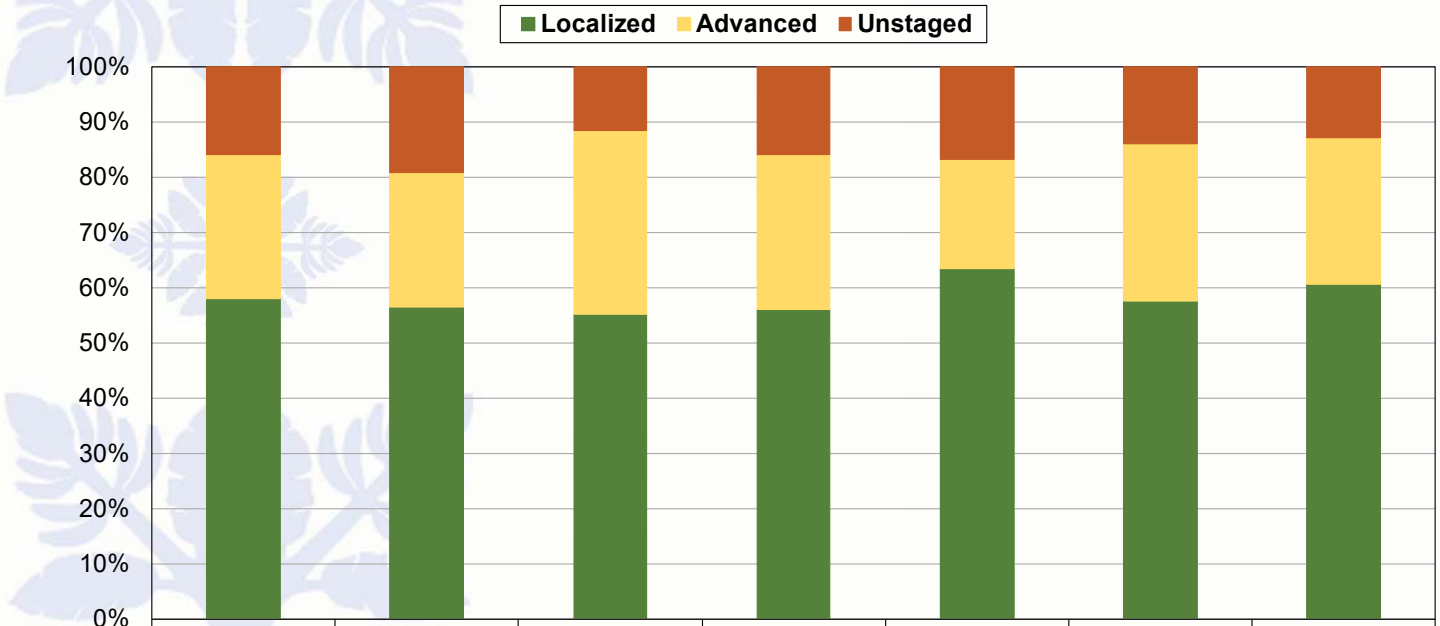
Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.

Figure 18. Prostate Cancer Incidence and Mortality, by Race/Ethnicity, Hawai'i, 2012-2016

	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	84.9	71.4	90.7	71.6	80.2	90.7	80.8
Mortality	13.5	5.0	15.1	23.1	9.1	18.7	9.4

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 19. Prostate Cancer Stage Distribution, Hawai'i, 2012-2016



	All Races	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Unstaged	15.8%	19.0%	11.4%	15.8%	16.7%	13.9%	12.8%
Advanced	26.2%	24.4%	33.3%	28.1%	19.8%	28.3%	26.5%
Localized	58.0%	56.6%	55.3%	56.1%	63.4%	57.8%	60.7%

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Total percentages may be slightly less or more than 100 due to rounding.

Lung & Bronchus Cancer in Hawai‘i

- Cancers of the lung & bronchus are the 2nd most commonly diagnosed malignancy in men and women with an average of 815 new cases (464 males, 351 females) each year in Hawai‘i.

- Lung & bronchus cancer is the leading cause of cancer mortality in both sexes with an average of 541 deaths (311 males, 230 females) statewide each year.

- Eighty-five percent of lung & bronchus cancers are diagnosed at age 55 years and older.

- Among men, lung & bronchus cancer incidence and mortality steadily declined over the past 30 years. The rate of new cancers declined 1.5% per year and mortality rates fell 2.6% per year over the past decade.

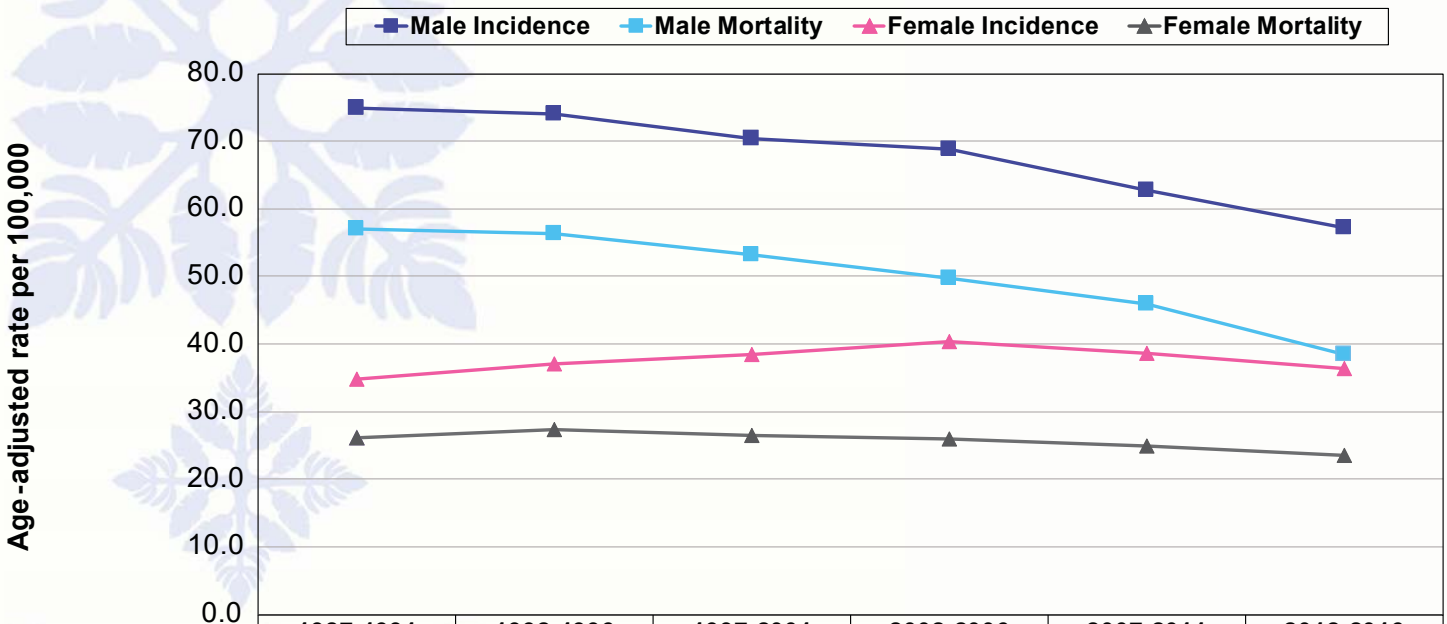
- Among women, lung & bronchus cancer incidence declined 2.2% per year over the past decade while mortality remained relatively stable.

- Hawai‘i has among the lowest lung & bronchus cancer incidence and mortality in the U.S. In 2012-2016, incidence was 57.2 per 100,000 (males) and 36.4 per 100,000 (females) in Hawai‘i, compared to 69.1 per 100,000 (males) and 51.7 per 100,000 (females) in the U.S. overall. Mortality was 38.5 per 100,000 (males) and 23.5 per 100,000 (females) in Hawai‘i, compared to 51.6 per 100,000 (males) and 34.4 per 100,000 (females) in the U.S. overall.

- Lung & bronchus cancer incidence among males was highest among Native Hawaiian and Filipinos. Among females, lung & bronchus cancer incidence and mortality was highest among Native Hawaiians.

- In 2012-2016, 17% of lung & bronchus cancers were diagnosed at early stages and 74% at late stages. Stage distribution was similar across race/ethnic groups.

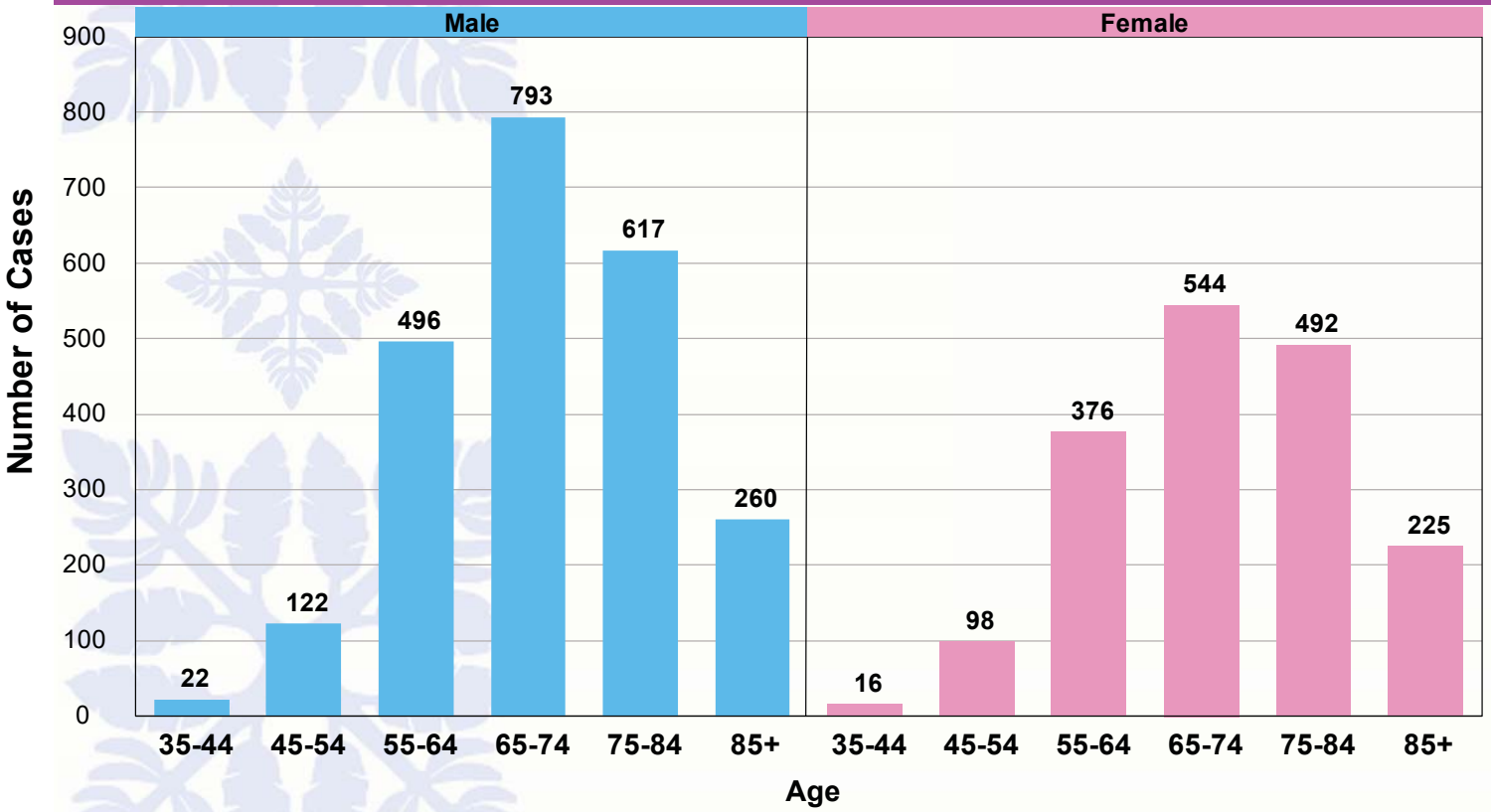
Figure 20. Lung & Bronchus Cancer Incidence and Mortality, 1987-2016



	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
Male Incidence	74.9	74.1	70.3	68.8	62.7	57.2
Male Mortality	57.0	56.4	53.2	49.7	45.9	38.5
Female Incidence	34.8	37.1	38.5	40.4	38.6	36.4
Female Mortality	26.2	27.3	26.5	26.0	24.9	23.5

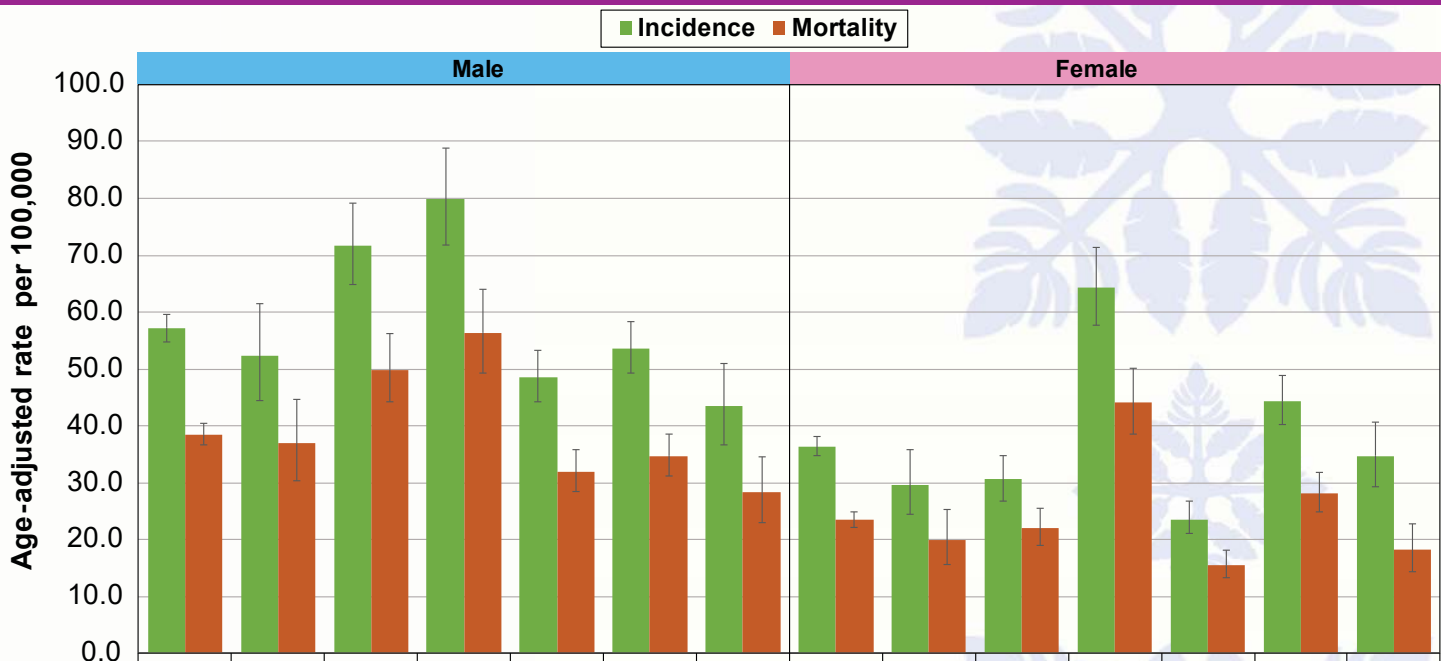
Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 21. Lung & Bronchus Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016



Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.

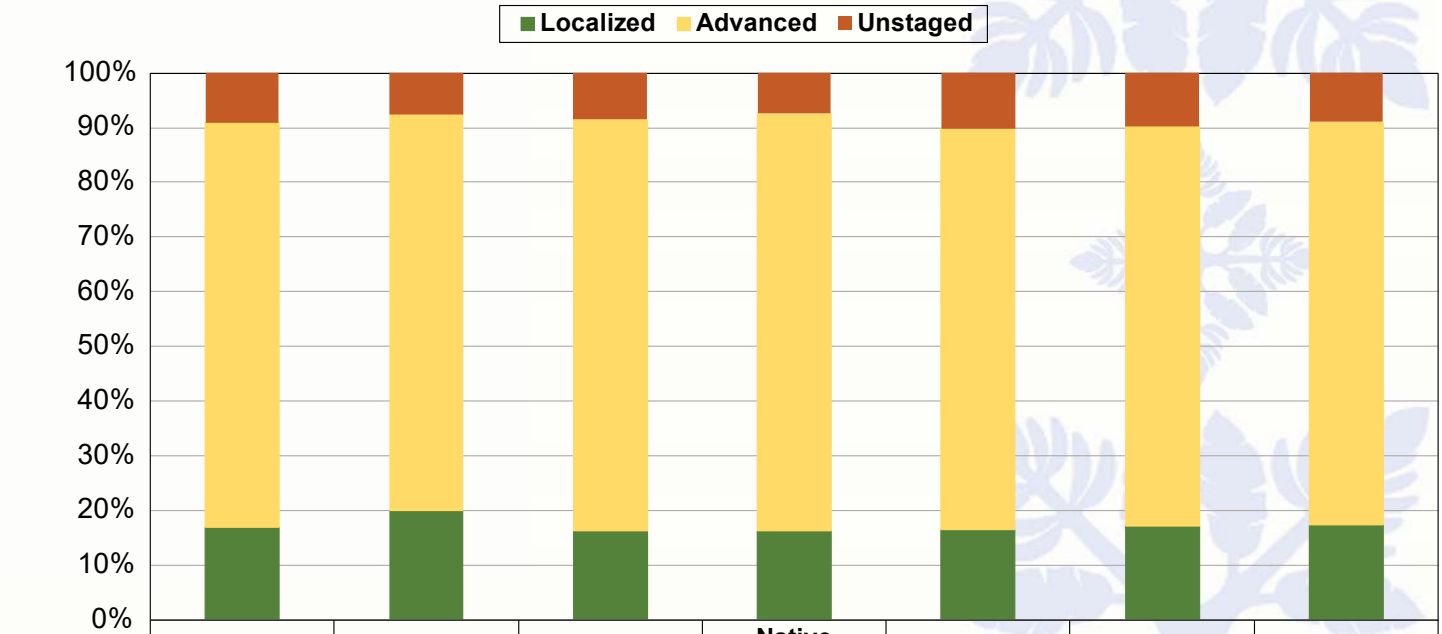
Figure 22. Lung & Bronchus Cancer Incidence and Mortality, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	57.2	52.4	71.7	79.9	48.5	53.6	43.4	36.4	29.6	30.6	64.4	23.6	44.3	34.7
Mortality	38.5	36.9	49.9	56.4	31.9	34.7	28.3	23.5	19.9	22.0	44.1	15.5	28.1	18.2

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 23. Lung & Bronchus Cancer Stage Distribution, Hawai'i, 2012-2016



	All Races	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Unstaged	9.0%	7.6%	8.6%	7.4%	10.2%	9.7%	9.0%
Advanced	74.1%	72.5%	75.0%	76.3%	73.4%	73.2%	73.7%
Localized	16.9%	19.9%	16.4%	16.3%	16.4%	17.1%	17.3%

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Total percentages may be slightly less or more than 100 due to rounding.

Colon & Rectum Cancer in Hawai‘i

- Cancers of the colon & rectum are the 3rd most frequently diagnosed cancer in Hawai‘i with an average of 717 new cases (393 males, 324 females) diagnosed each year.

- With an average of 224 deaths (124 males, 100 females) from colon & rectum cancer in Hawai‘i each year, it is the 2nd leading cause of cancer death in men and 3rd among women.

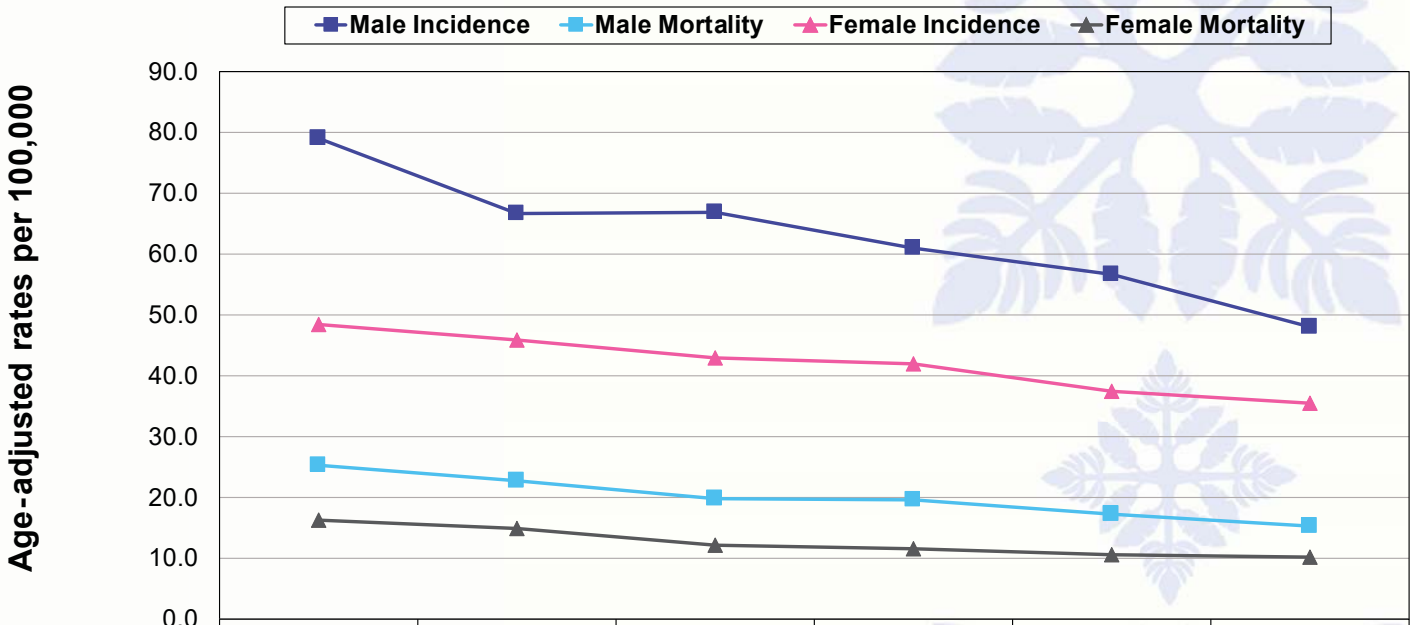
- Eighty-three percent of colon & rectum cancers are diagnosed at age 55 years and older.

- Colon & rectum cancer incidence and mortality have steadily declined in males and females statewide over the past 30 years. Over the past decade, the rate of new cancers declined an average of 2.1% per year in males and 1.6% per year in females; mortality rates fell 2.0% per year in males and 1.4% per year in females.

- In 2012-2016, colon & rectum cancer incidence was higher in Hawai‘i males (48.1 per 100,000) compared to 44.4 per 100,000 in the U.S. overall. Among females, mortality was lower in Hawai‘i (10.3 per 100,000) compared to 11.9 per 100,000 in the U.S. overall.

- In 2012-2016, 41% of colon & rectum cancers were diagnosed at early stages and 51% at advanced stages. Stage distribution was similar across race/ethnic groups.

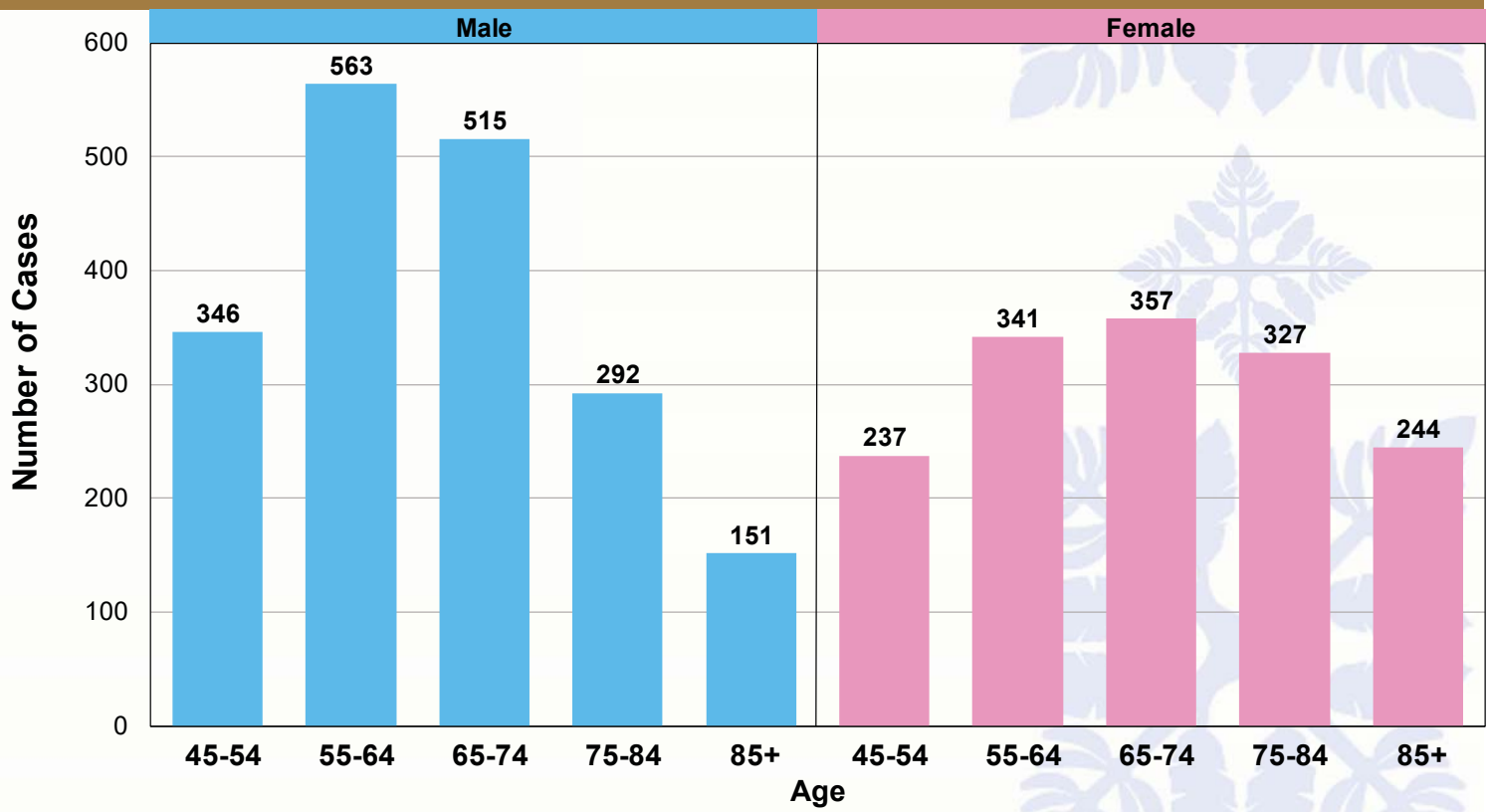
Figure 24. Colon & Rectum Cancer Incidence and Mortality, 1987-2016



	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
Male Incidence	79.0	66.8	67.0	61.1	56.7	48.1
Male Mortality	25.3	22.9	19.9	19.7	17.3	15.3
Female Incidence	48.4	46.0	43.0	42.1	37.5	35.5
Female Mortality	16.4	15.0	12.3	11.7	10.6	10.3

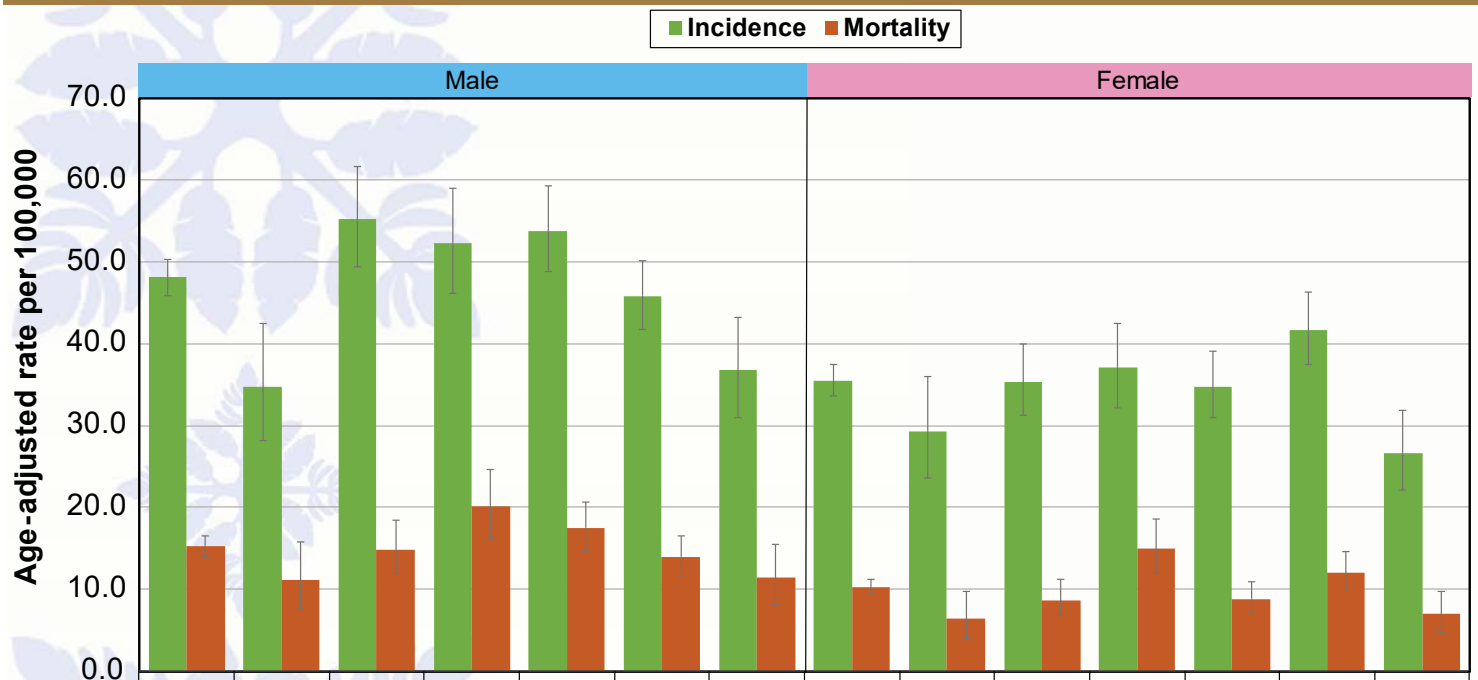
Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 25. Colon & Rectum Cancer Cases by Age at Diagnosis, Hawai'i, 2012-2016



Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.

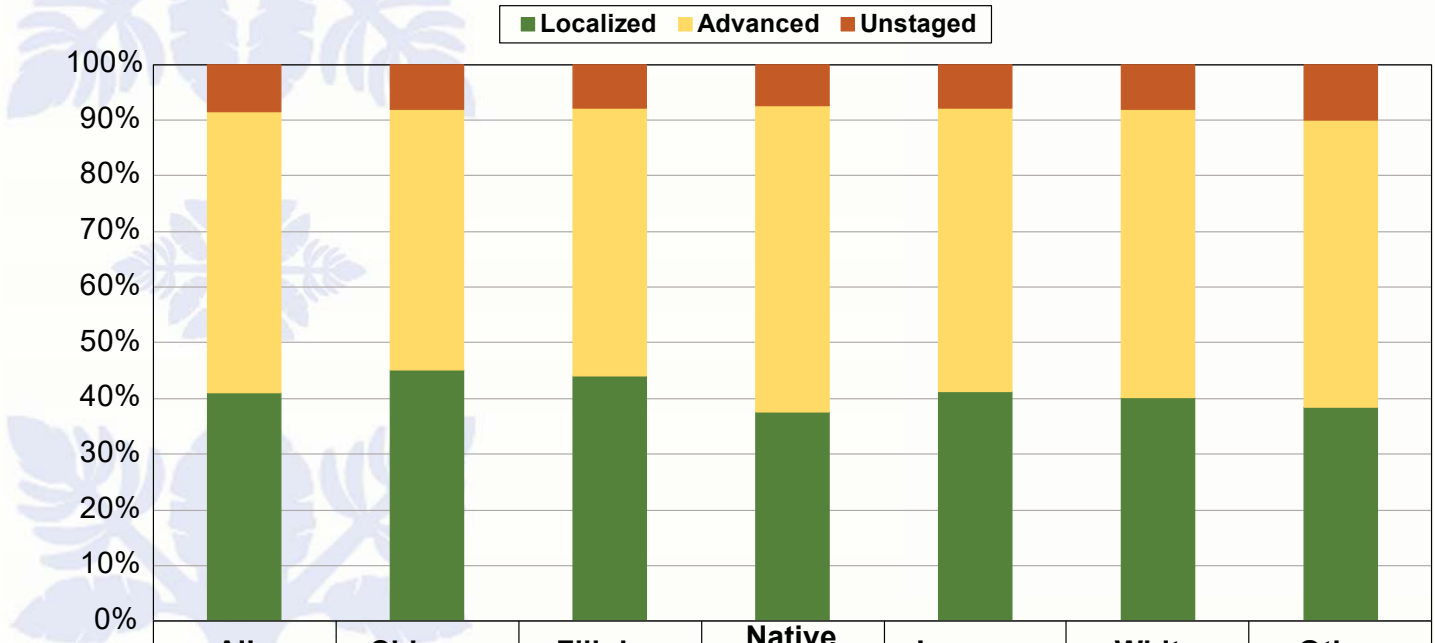
Figure 26. Colon & Rectum Cancer Incidence and Mortality, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	48.1	34.7	55.2	52.3	53.7	45.8	36.8	35.5	29.3	35.3	37.1	34.8	41.6	26.7
Mortality	15.3	11.1	14.9	20.2	17.5	14.0	11.5	10.3	6.4	8.7	15.0	8.8	12.0	7.0

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 27. Colon & Rectum Cancer Stage Distribution, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Unstaged	8.5%	8.0%	7.8%	7.4%	8.0%	8.0%	10.1%
Advanced	50.5%	46.9%	48.1%	55.0%	50.7%	51.9%	51.5%
Localized	41.0%	45.1%	44.1%	37.6%	41.4%	40.1%	38.4%

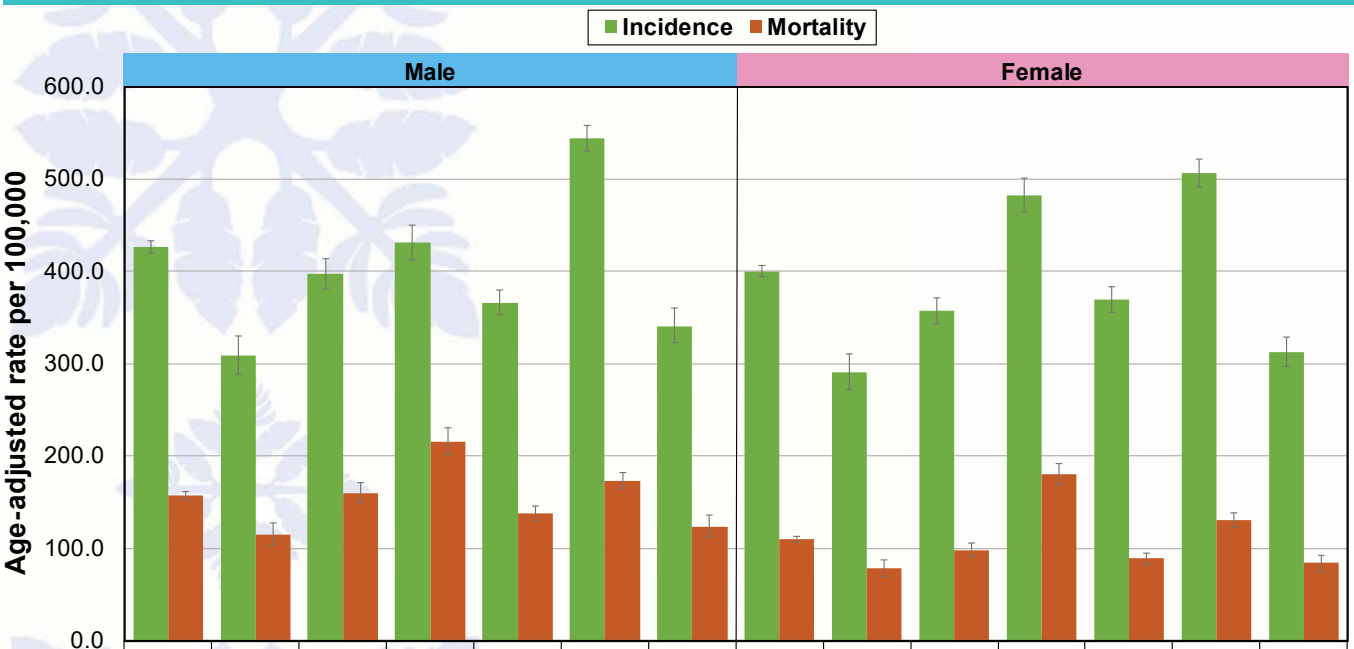
Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Total percentages may be slightly less or more than 100 due to rounding.

Cancer in Hawai‘i’s Racial & Ethnic Populations

In 2012-2016, incidence and mortality varied substantially across Hawai‘i’s five major racial/ethnic groups (Chinese, Filipinos, Japanese, Native Hawaiian, Whites) and other groups combined (referred to as “Other”).

- Among males, overall cancer incidence was highest in Whites and overall cancer mortality was highest in Native Hawaiians.
- Among females, overall cancer incidence was highest in Whites and Native Hawaiians; overall cancer mortality was highest in Native Hawaiians.
- Bladder cancer incidence was highest in White males.
- Brain & other nervous system cancer mortality was highest in White males.
- Breast cancer incidence was highest in Native Hawaiian, White, and Japanese women. Breast cancer mortality was highest in Native Hawaiians followed by Whites.
- Liver & intrahepatic bile duct cancer incidence and mortality were highest in Native Hawaiian males and males of other race/ethnic groups.
- Lung & bronchus cancer incidence was highest in Native Hawaiian and Filipino males. Among women, lung & bronchus cancer incidence and mortality were highest in Native Hawaiians.
- Melanoma of the skin incidence and mortality were highest in White males and females.
- Multiple myeloma mortality was highest in Native Hawaiian females.
- Oral cavity & pharynx cancer incidence was highest in White males.
- Ovarian cancer incidence was highest in Whites and other race/ethnic groups.
- Thyroid cancer incidence was highest in Filipino females.
- Uterine/endometrial cancer incidence was higher in Native Hawaiian and other race/ethnic groups.
- Certain cancers are uniquely prominent among Hawai‘i’s smaller racial/ethnic groups (American Indian, Black, Korean, Micronesian, Samoan, and Vietnamese). For example, top cancers include lung & bronchus cancer in American Indians, prostate cancer in Blacks, stomach cancer in Koreans, oral cavity & pharynx cancer for Micronesians, uterus/endometrium cancer in Samoans, and liver & intrahepatic bile duct cancer in Vietnamese.

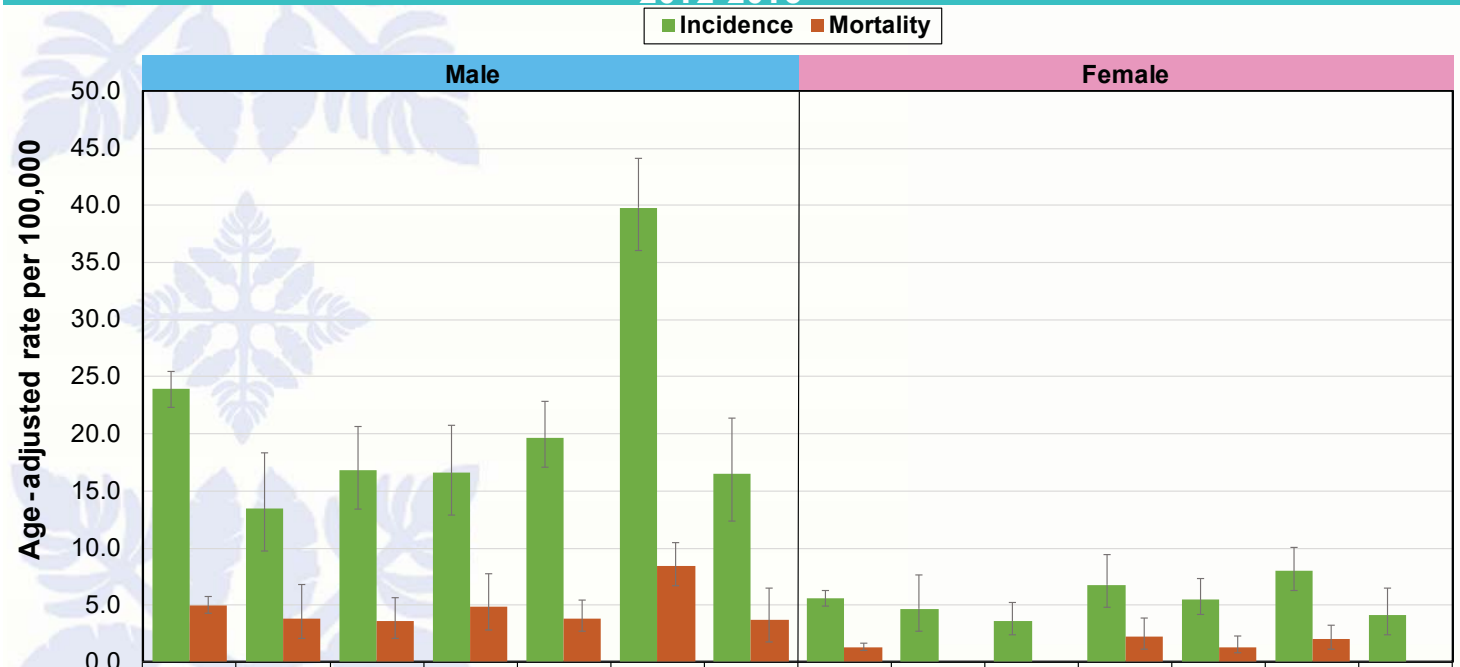
Figure 28. Overall Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	426.0	309.2	397.1	430.9	366.0	544.0	340.9	399.9	290.5	357.2	482.3	369.5	506.5	312.6
Mortality	157.5	115.2	160.3	216.0	137.7	173.5	123.7	110.0	78.0	98.4	180.3	88.8	130.4	84.0

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

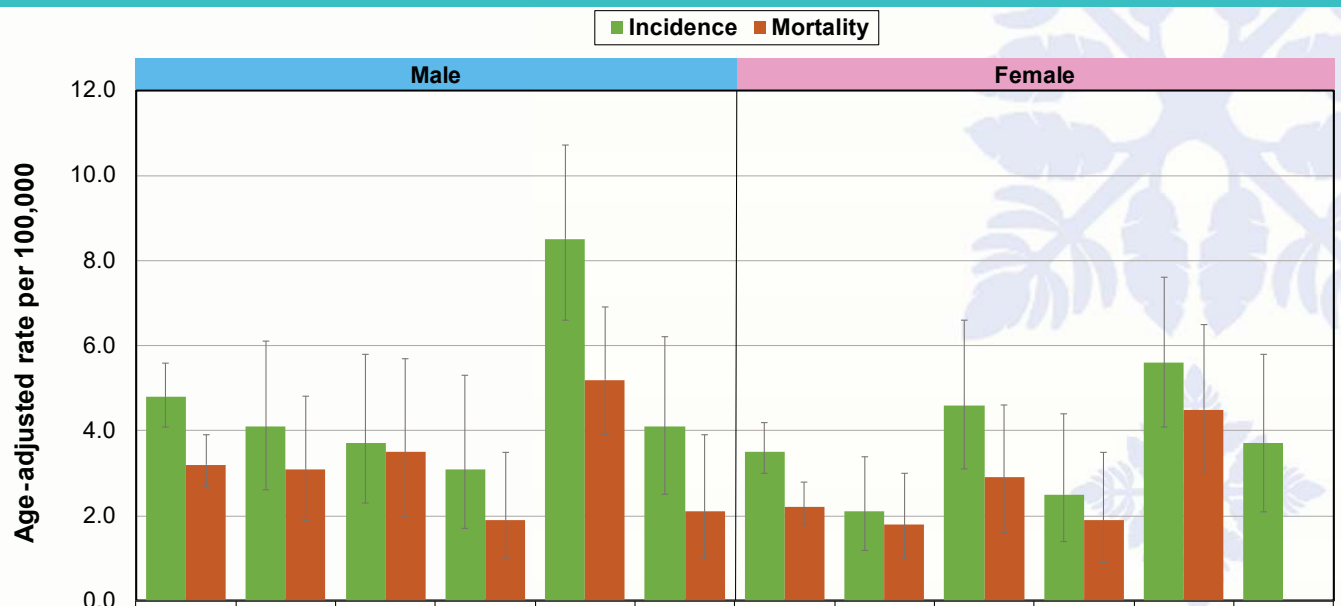
Figure 29. Bladder Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	23.9	13.5	16.8	16.6	19.7	39.8	16.5	5.6	4.7	3.6	6.8	5.5	8.0	4.1
Mortality	5.0	3.8	3.6	4.9	3.8	8.4	3.7	1.3	*	*	2.2	1.3	2.0	*

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

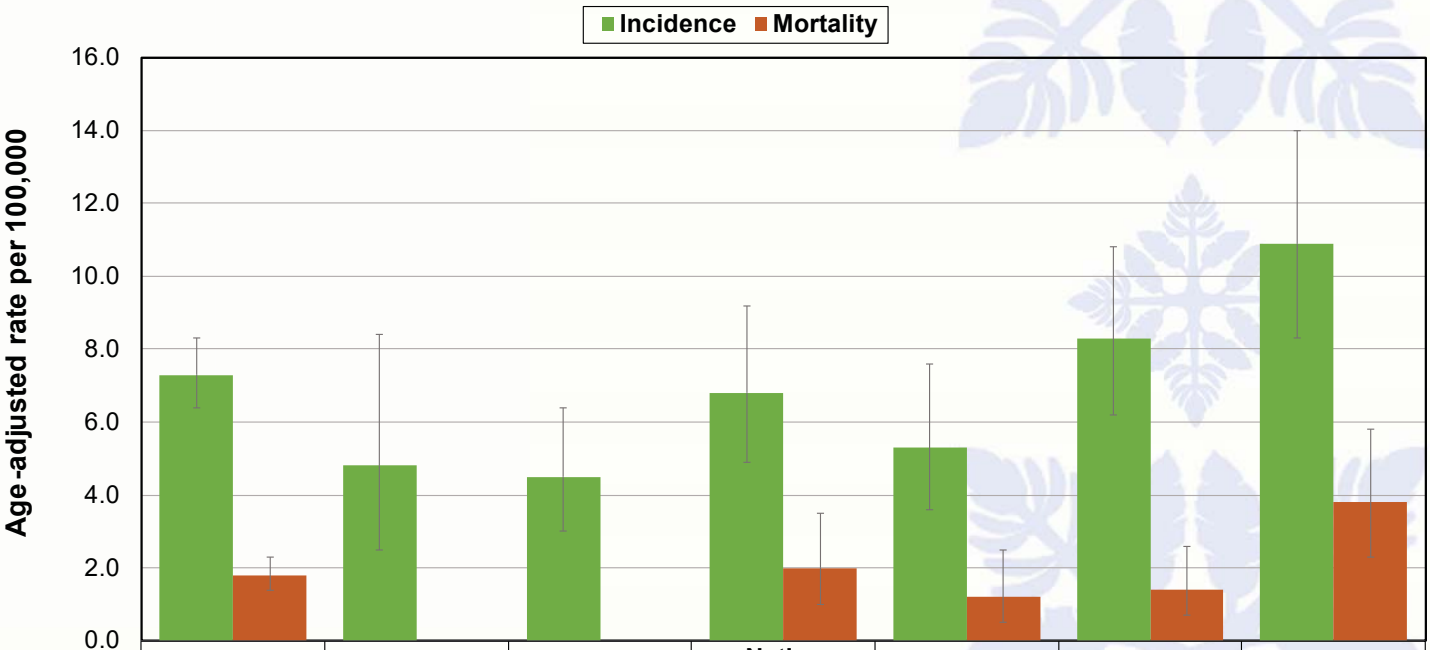
Figure 30. Brain & Nervous System Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Filipino	Native Hawaiian	Japanese	White	Other	All	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	4.8	4.1	3.7	3.1	8.5	4.1	3.5	2.1	4.6	2.5	5.6	3.7
Mortality	3.2	3.1	3.5	1.9	5.2	2.1	2.2	1.8	2.9	1.9	4.5	*

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

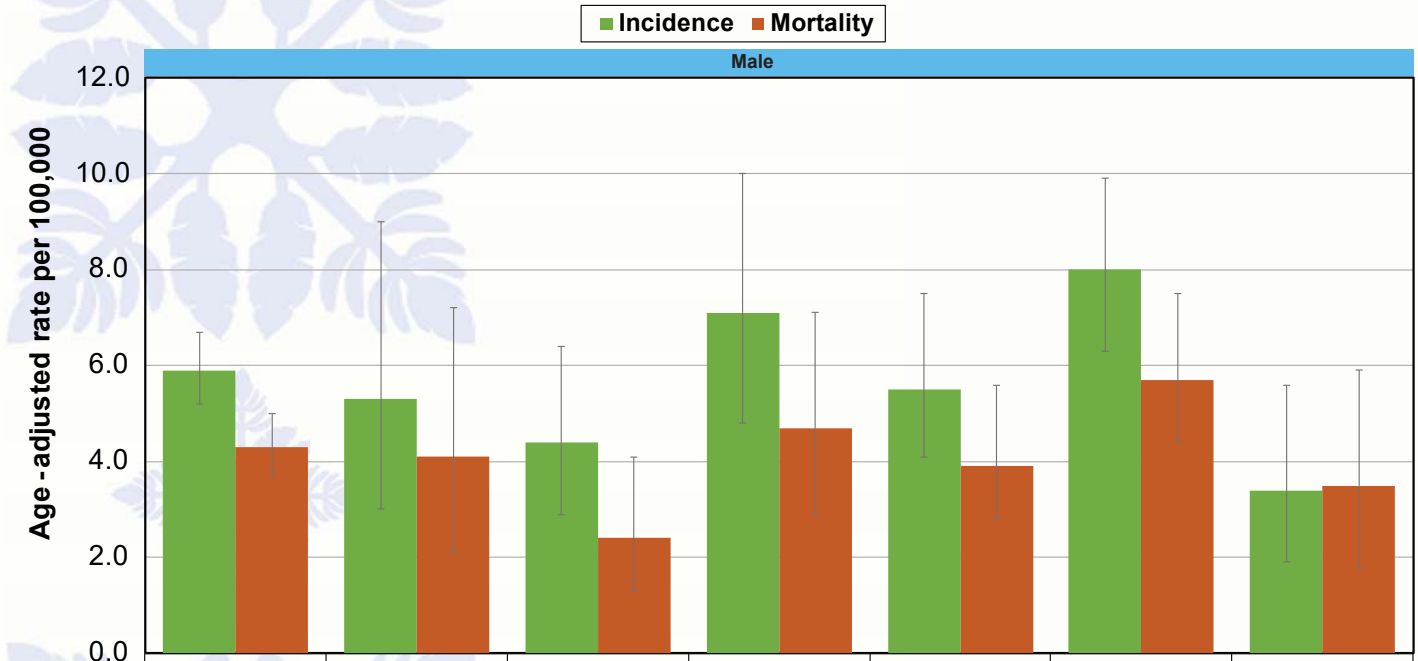
Figure 31. Cervix Cancer Incidence and Mortality, By Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	7.3	4.8	4.5	6.8	5.3	8.3	10.9
Mortality	1.8	*	*	2.0	1.2	1.4	3.8

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

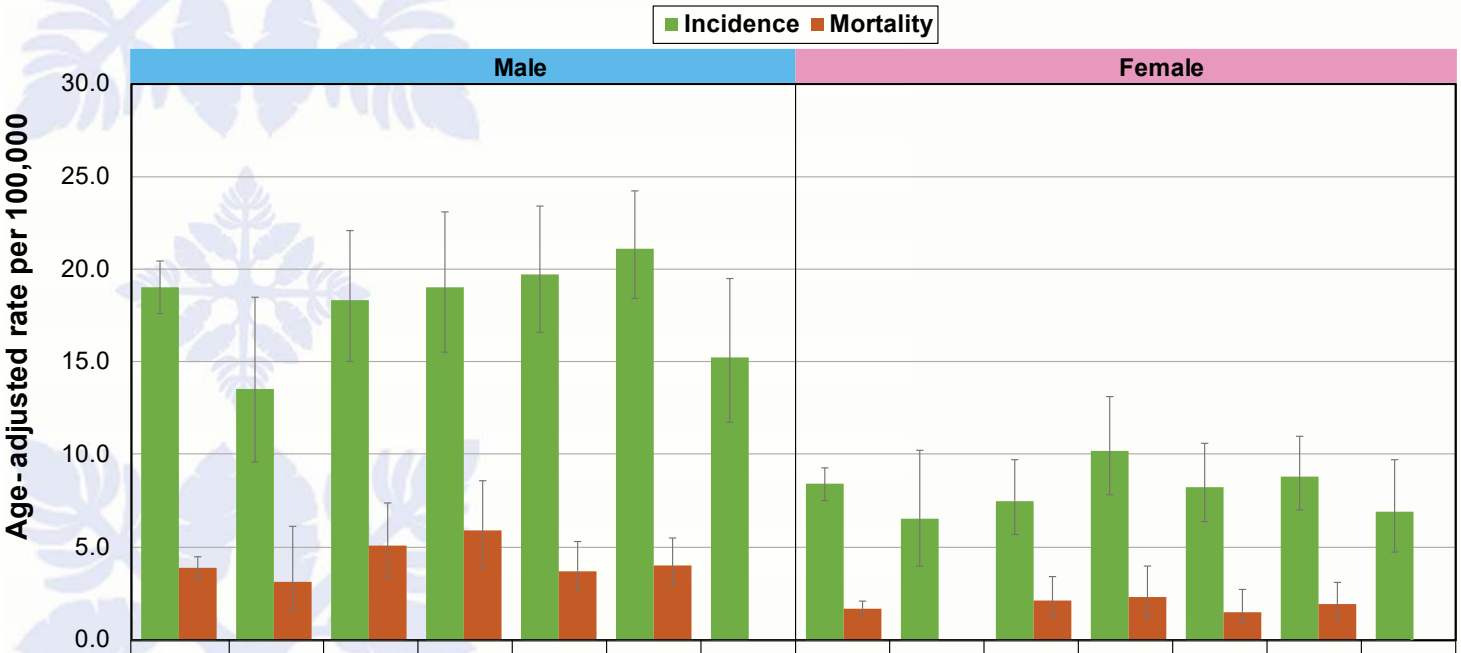
Figure 32. Esophagus Cancer Incidence and Mortality, Male, By Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	5.9	5.3	4.4	7.1	5.5	8.0	3.4
Mortality	4.3	4.1	2.4	4.7	3.9	5.7	3.5

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided for females as there are fewer than 10 cases and/or deaths for most race/ethnic groups.

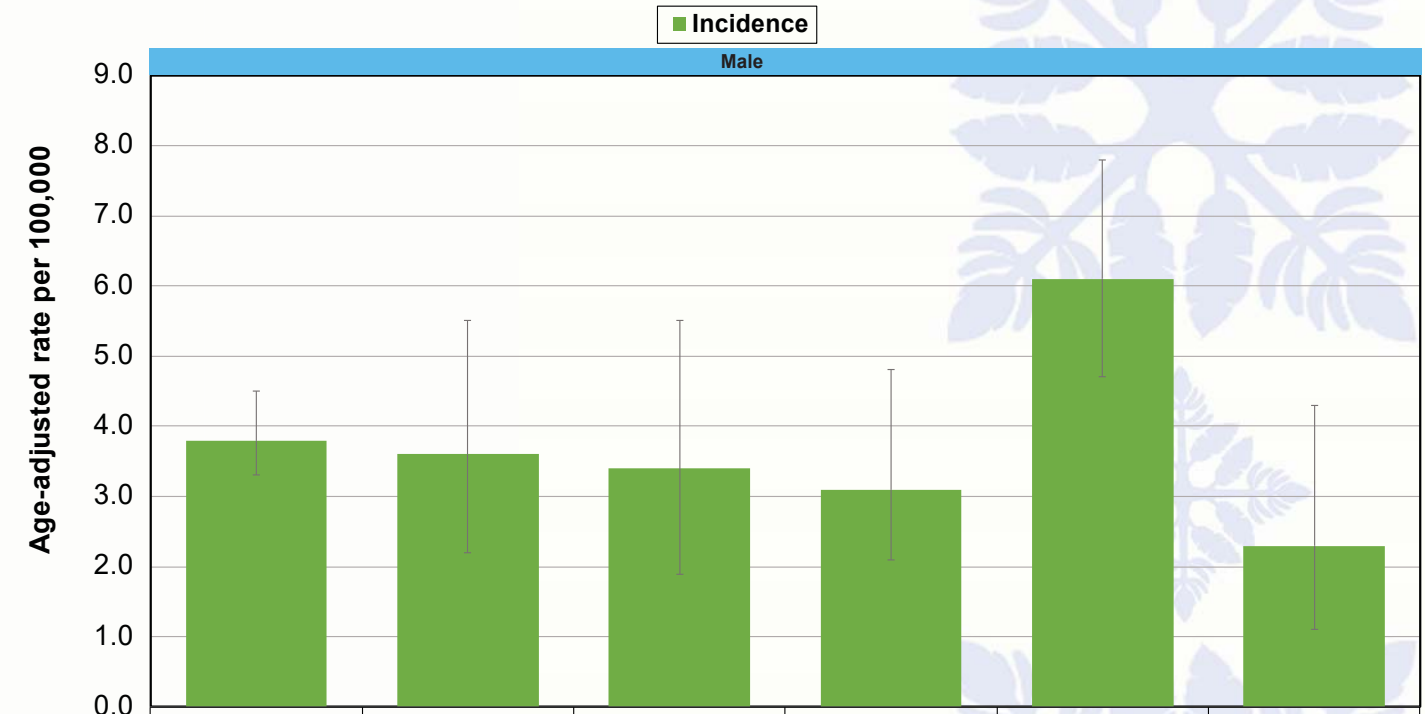
Figure 33. Kidney & Renal Pelvis Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	Male							Female						
	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	19.0	13.5	18.3	19.0	19.7	21.1	15.2	8.4	6.5	7.5	10.2	8.2	8.8	6.9
Mortality	3.9	3.1	5.1	5.9	3.7	4.0	*	1.7	*	2.1	2.3	1.5	1.9	*

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

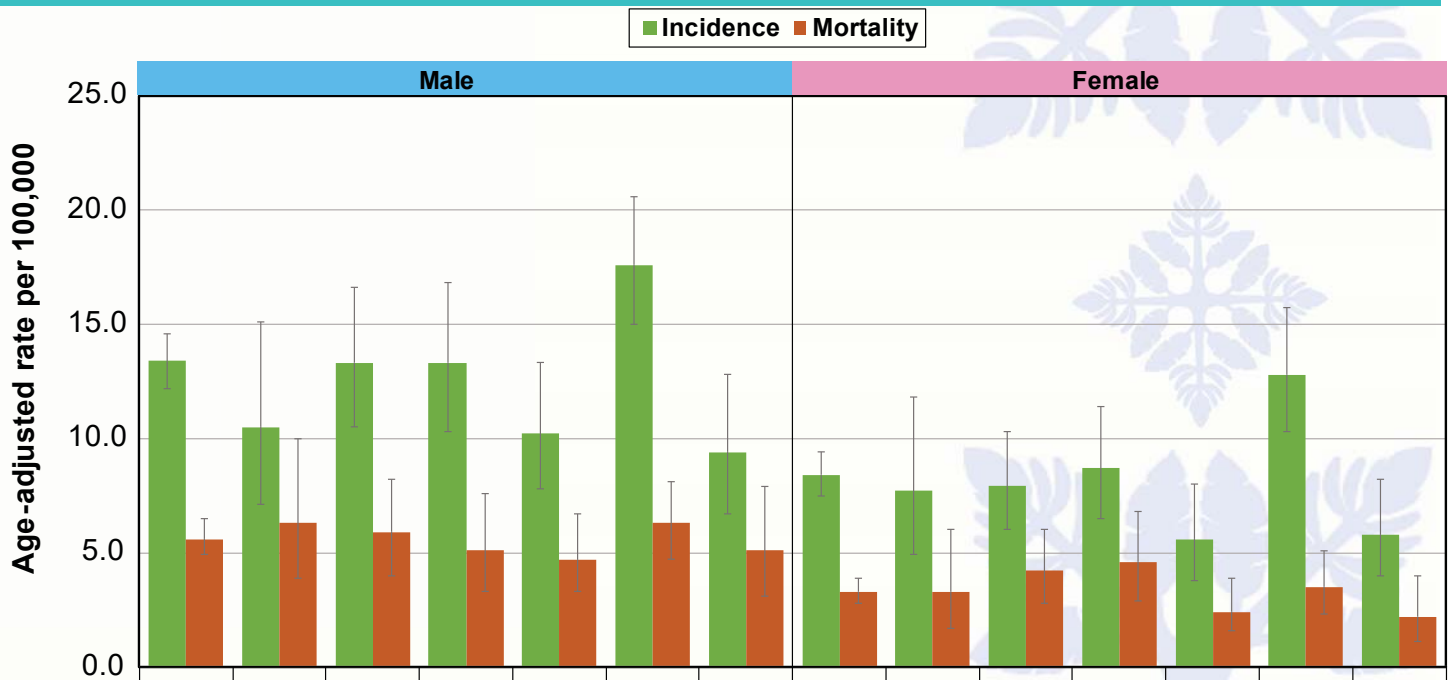
Figure 34. Larynx Cancer Incidence, Male, By Race/Ethnicity, Hawai'i, 2012-2012



	All	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	3.8	3.6	3.4	3.1	6.1	2.3

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

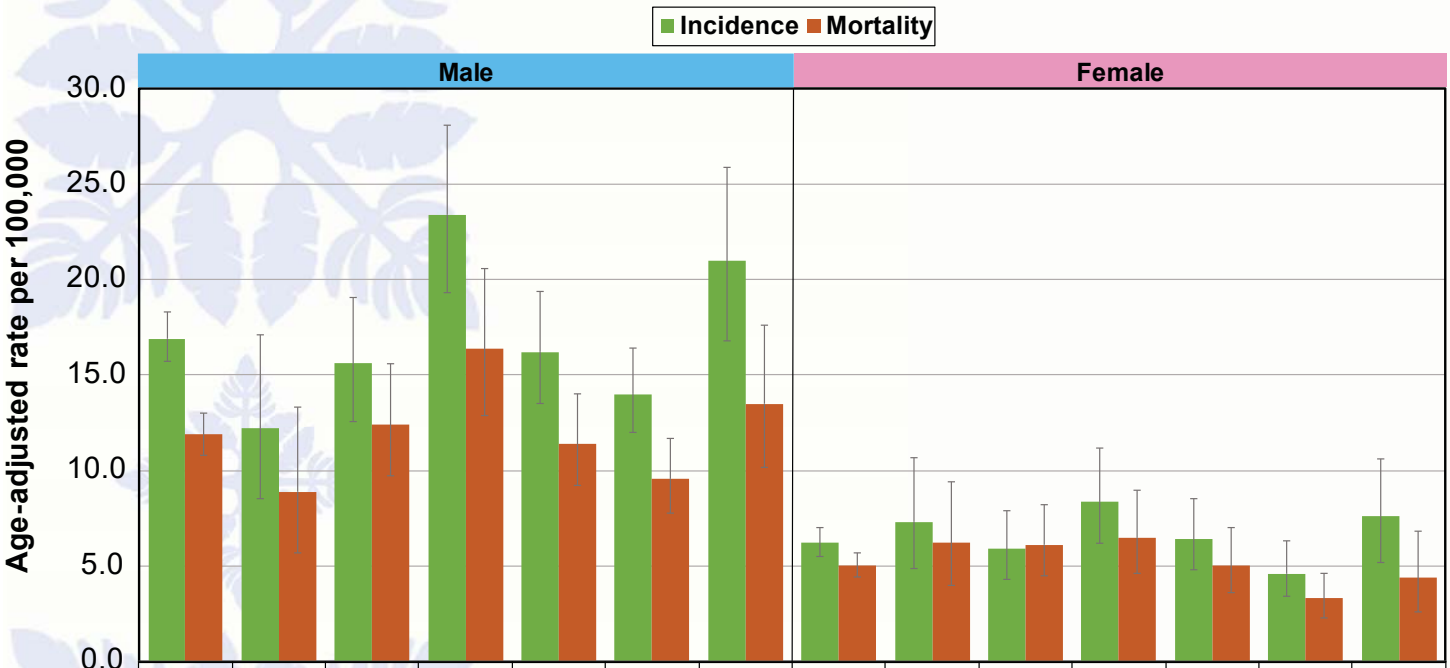
Figure 35. Leukemia Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	13.4	10.5	13.3	13.3	10.2	17.6	9.4	8.4	7.7	7.9	8.7	5.6	12.8	5.8
Mortality	5.6	6.3	5.9	5.1	4.7	6.3	5.1	3.3	3.3	4.2	4.6	2.4	3.5	2.2

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

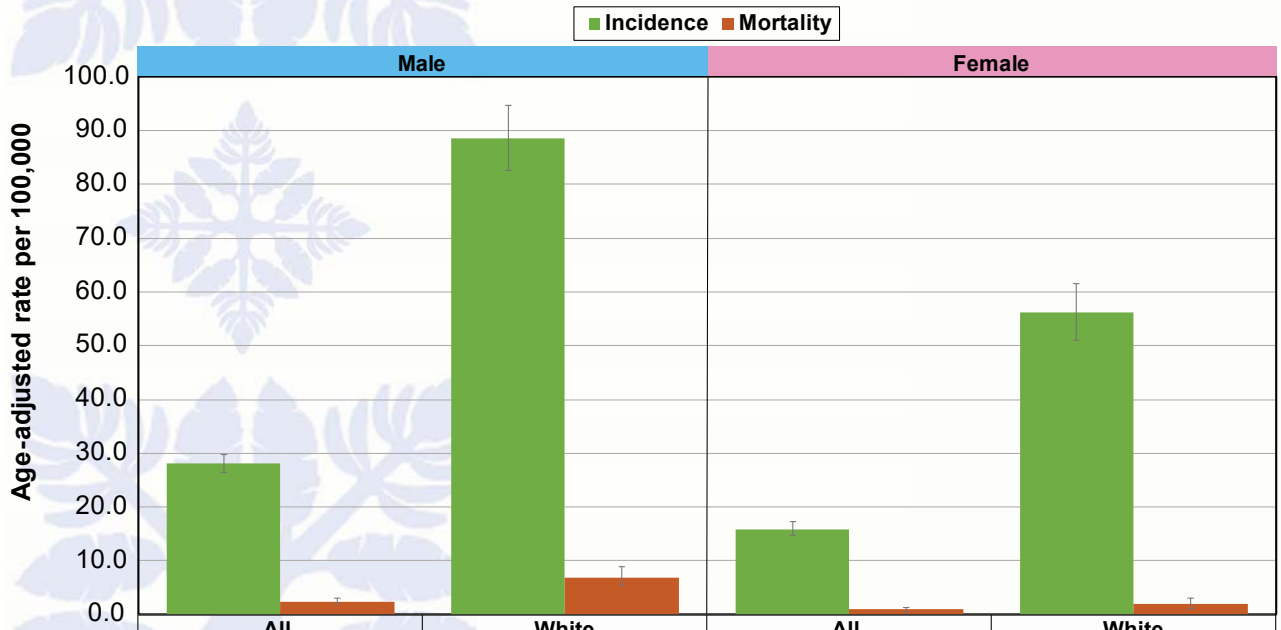
Figure 36. Liver & Intrahepatic Bile Duct Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	16.9	12.2	15.6	23.4	16.2	14.0	21.0	6.2	7.3	5.9	8.4	6.4	4.6	7.6
Mortality	11.9	8.9	12.4	16.4	11.4	9.6	13.5	5.0	6.2	6.1	6.5	5.0	3.3	4.4

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

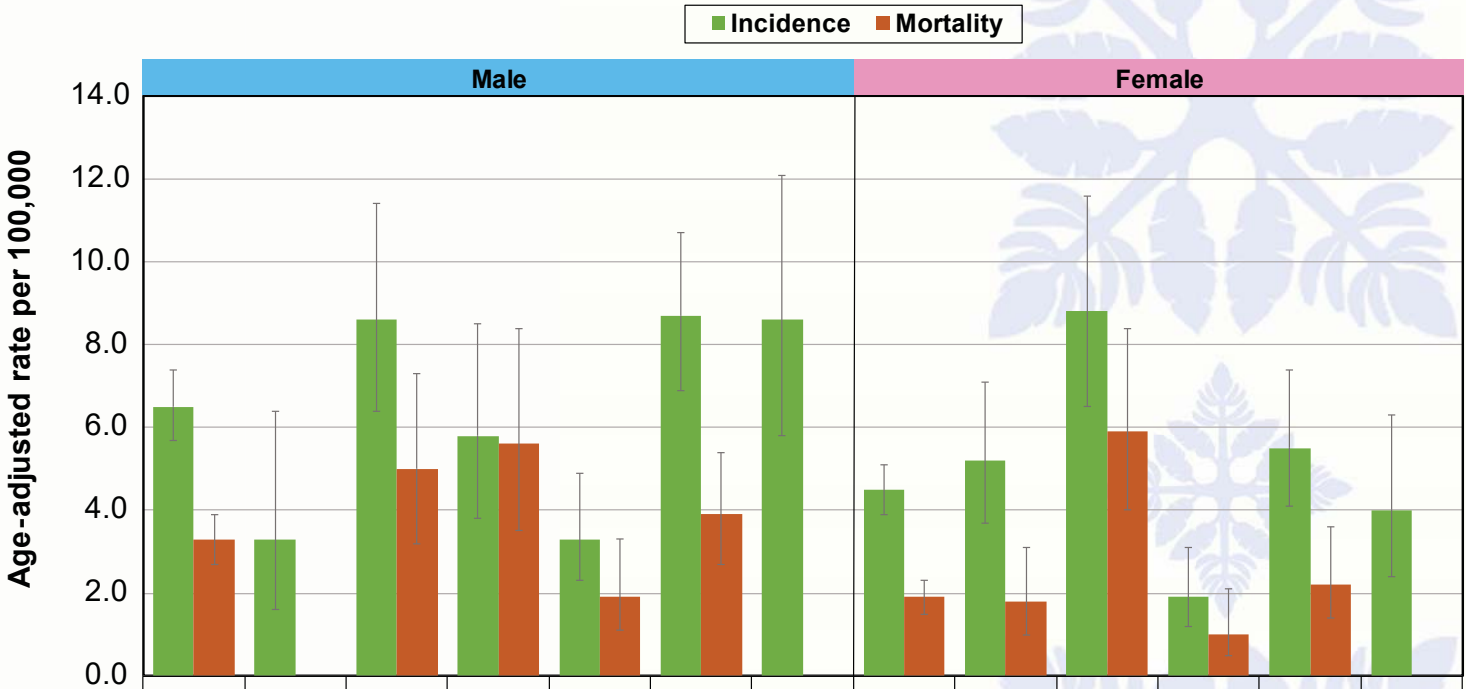
Figure 37. Melanoma of the Skin Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	White	All	White
Incidence	28.1	88.5	15.9	56.1
Mortality	2.4	6.9	0.9	1.9

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided for race/ethnic groups other than Whites as casses and/or deaths are fewer than 20.

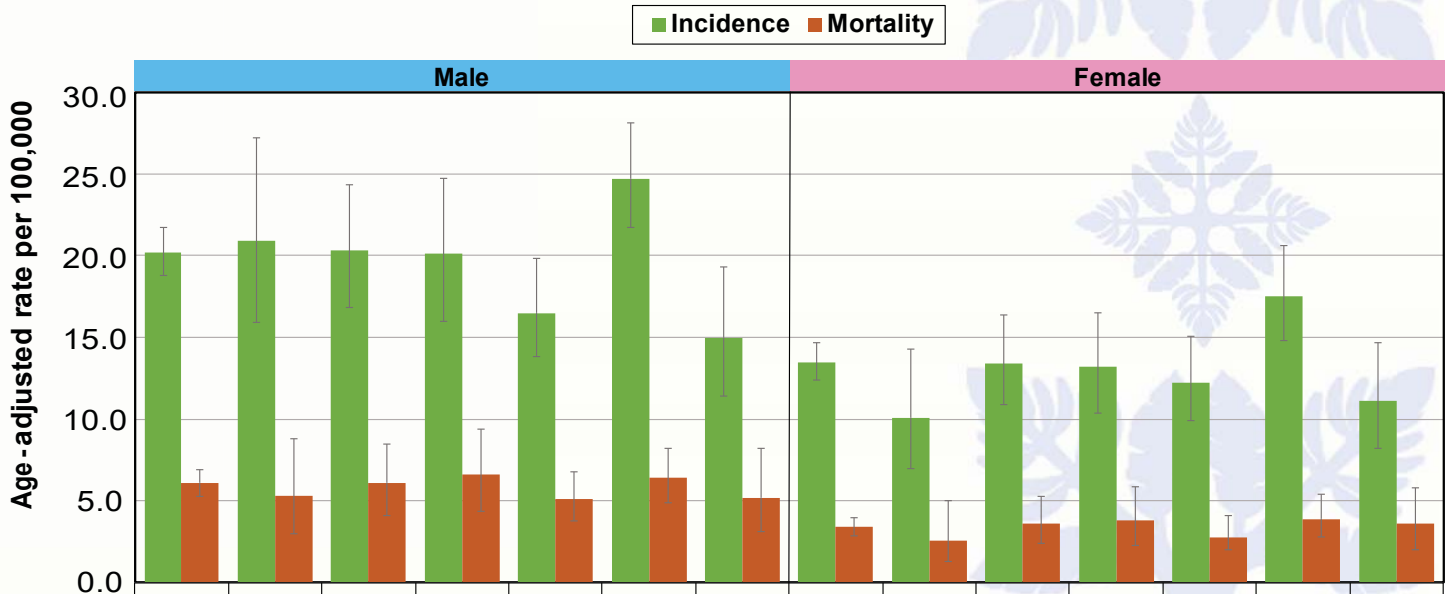
Figure 38. Myeloma Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	6.5	3.3	8.6	5.8	3.3	8.7	8.6	4.5	5.2	8.8	1.9	5.5	4.0
Mortality	3.3	*	5.0	5.6	1.9	3.9	*	1.9	1.8	5.9	1.0	2.2	*

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

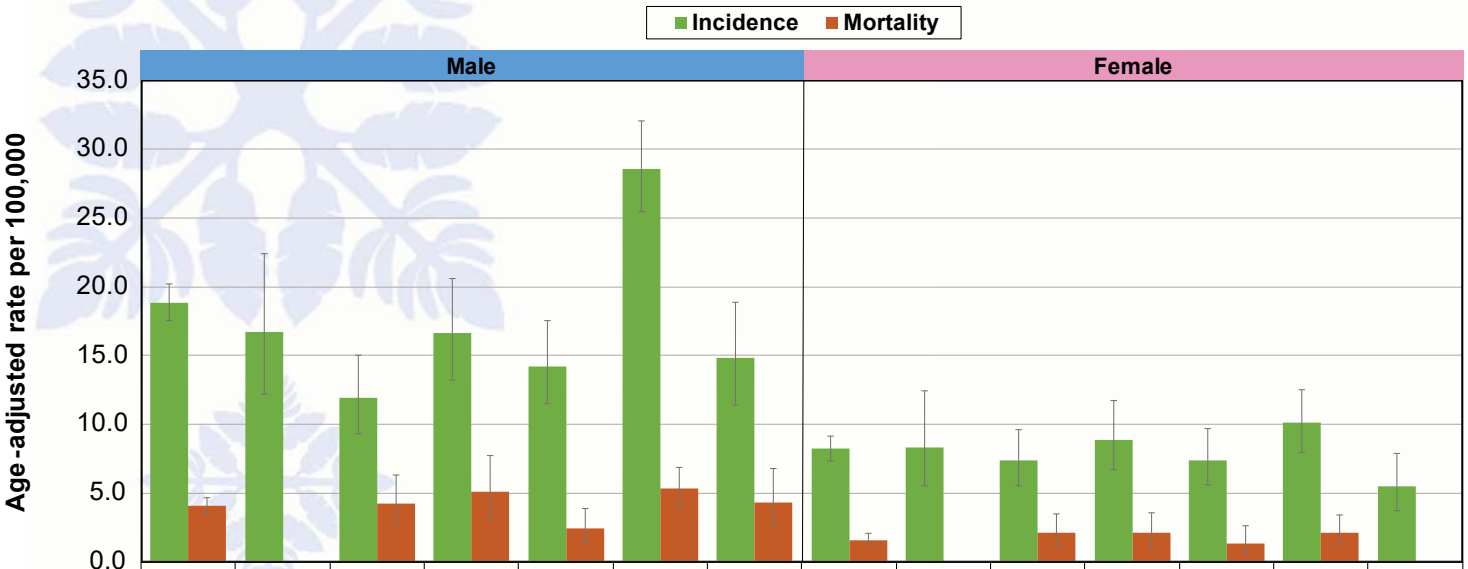
Figure 39. Non-Hodgkins Lymphoma Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	20.2	20.9	20.3	20.1	16.5	24.7	15.0	13.5	10.1	13.4	13.2	12.2	17.5	11.1
Mortality	6.1	5.3	6.1	6.6	5.1	6.4	5.2	3.4	2.6	3.6	3.8	2.8	3.9	3.6

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 40. Oral Cavity & Pharynx Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	Male							Female						
	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	18.8	16.7	11.9	16.6	14.2	28.6	14.8	8.2	8.3	7.4	8.9	7.4	10.1	5.5
Mortality	4.1	*	4.2	5.1	2.4	5.3	4.3	1.6	*	2.1	2.1	1.3	2.1	*

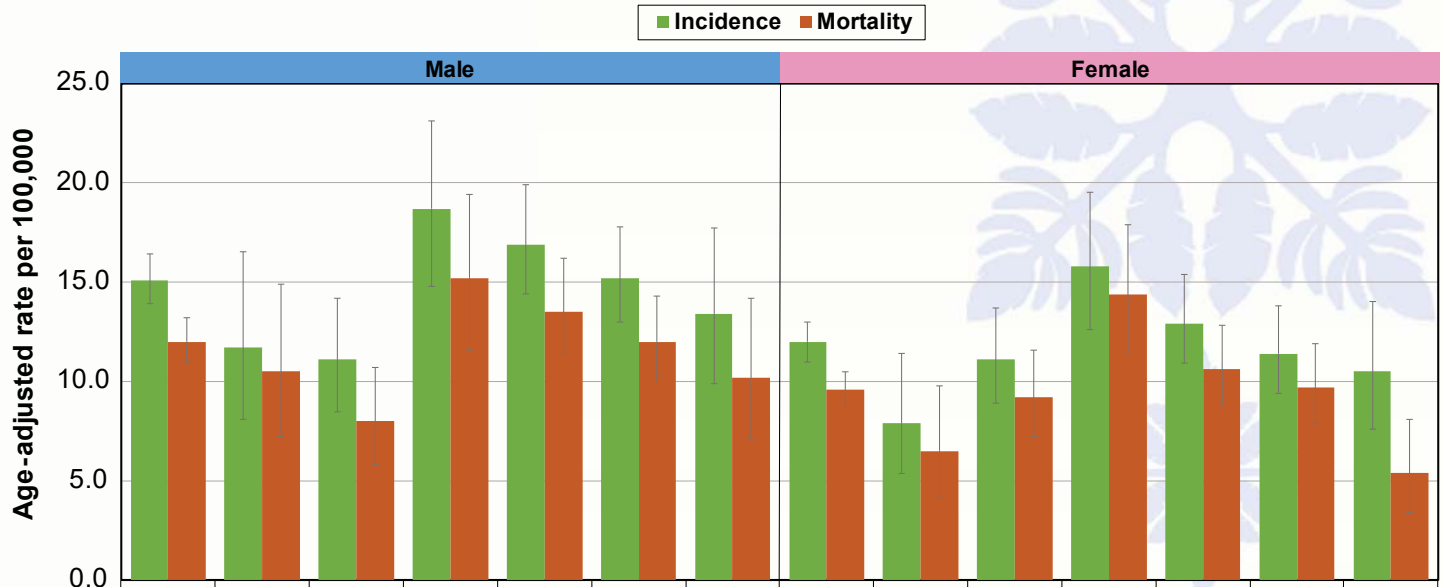
Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

Figure 41. Ovary Cancer Incidence and Mortality, By Race/Ethnicity, Hawai'i, 2012-2016

	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	10.0	7.3	9.2	8.4	7.1	15.7	10.8
Mortality	4.6	*	3.5	6.6	3.8	7.2	2.8

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

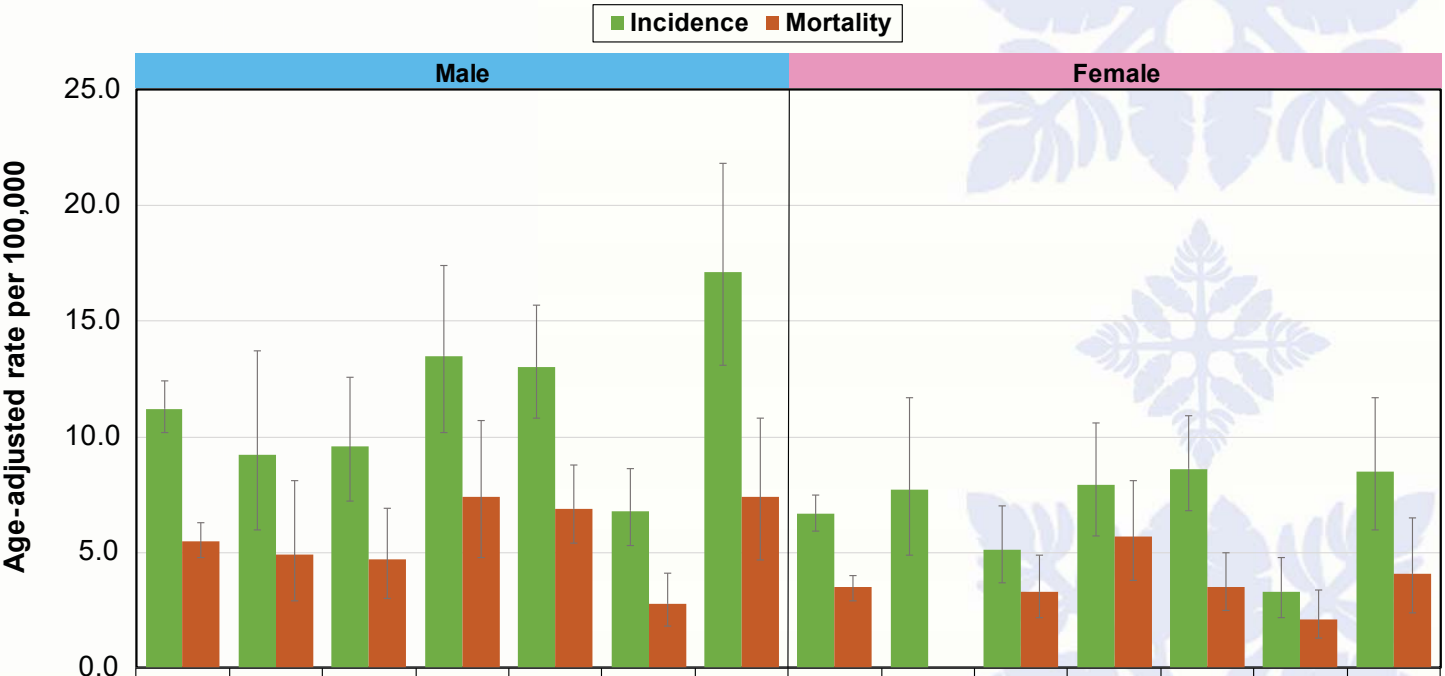
Figure 42. Pancreas Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	15.1	11.7	11.1	18.7	16.9	15.2	13.4	12.0	7.9	11.1	15.8	12.9	11.4	10.5
Mortality	12.0	10.5	8.0	15.2	13.5	12.0	10.2	9.6	6.5	9.2	14.4	10.6	9.7	5.4

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

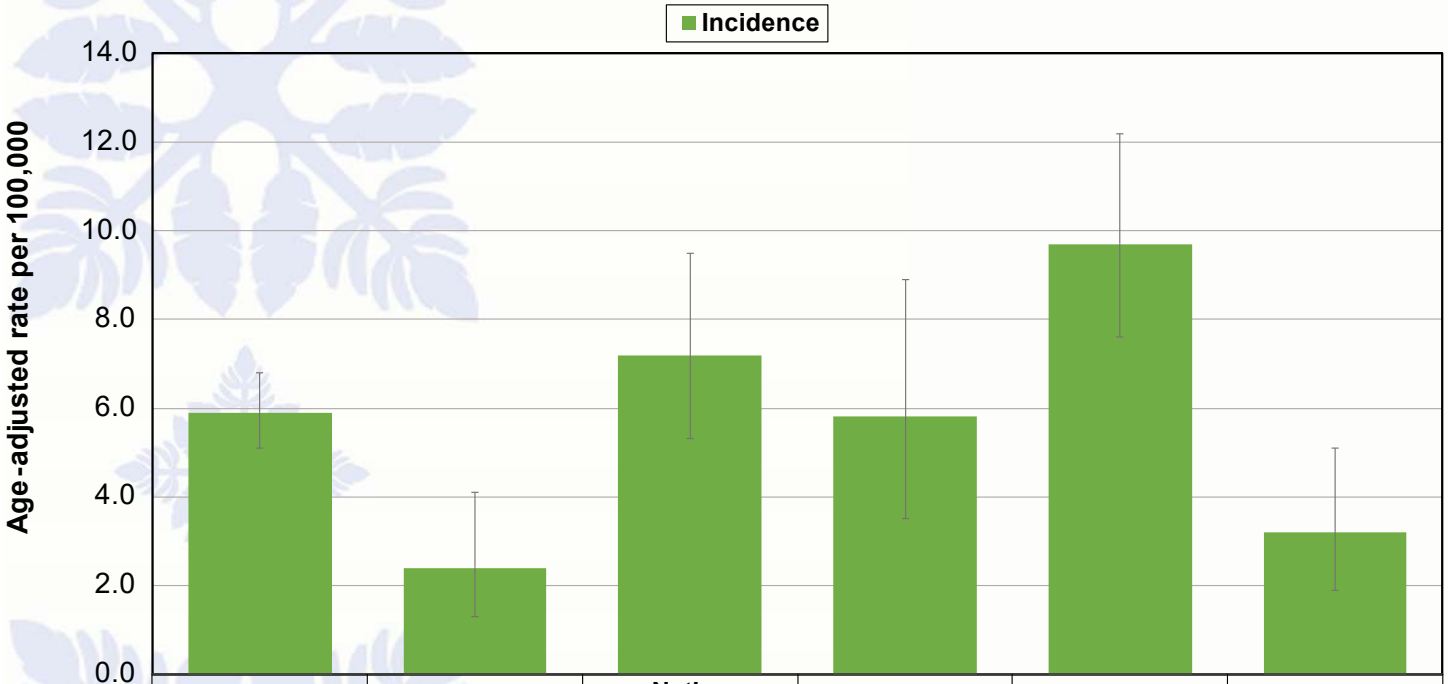
Figure 43. Stomach Cancer Incidence and Mortality, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	11.2	9.2	9.6	13.5	13.0	6.8	17.1	6.7	7.7	5.1	7.9	8.6	3.3	8.5
Mortality	5.5	4.9	4.7	7.4	6.9	2.8	7.4	3.5	*	3.3	5.7	3.5	2.1	4.1

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.
Rate estimates are not provided and are indicated with an asterisk (*) for groups with fewer than 10 cases and/or deaths.

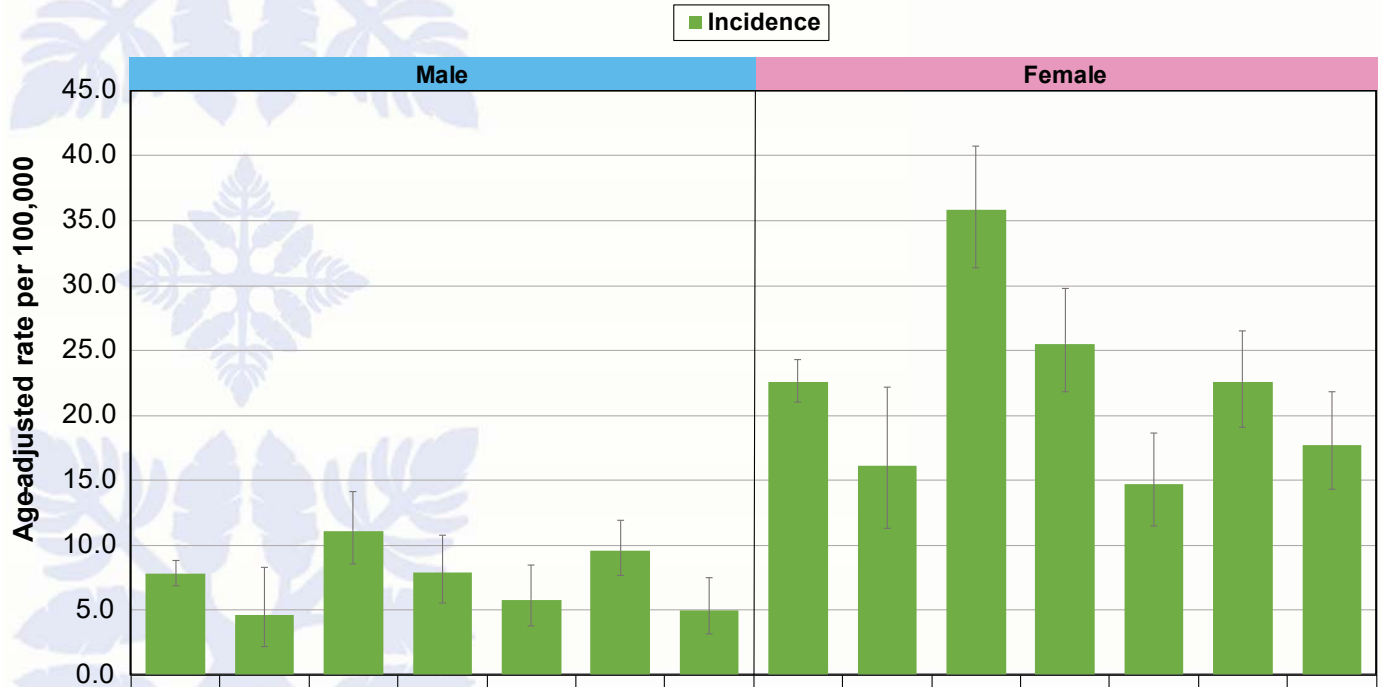
Figure 44. Testis Cancer Incidence, By Race/Ethnicity, Hawai'i, 2012-2016



	All	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	5.9	2.4	7.2	5.8	9.7	3.2

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

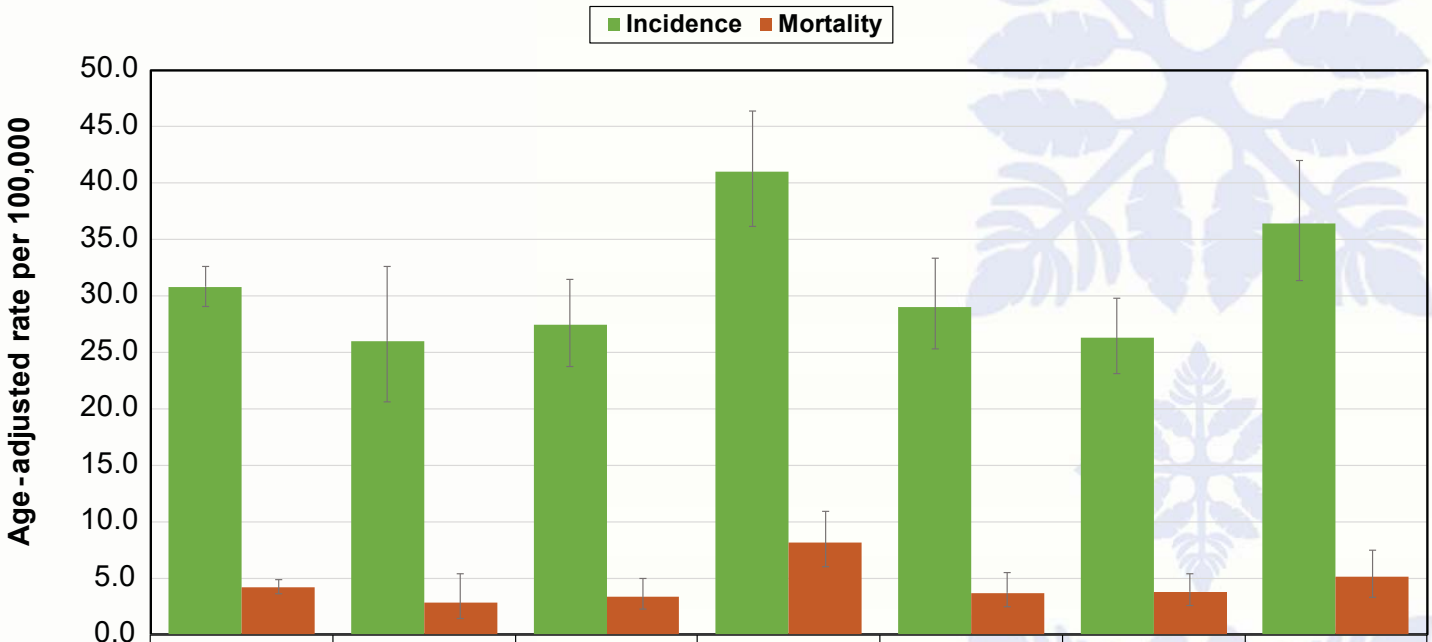
Figure 45. Thyroid Cancer Incidence, By Sex and Race/Ethnicity, Hawai'i, 2012-2016



	Male							Female						
	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	7.8	4.6	11.1	7.9	5.8	9.6	5.0	22.6	16.1	35.8	25.5	14.7	22.6	17.7

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Figure 46. Uterus/Endometrium Cancer Incidence and Mortality, By Race/Ethnicity, Hawai'i, 2012-2016



	All	Chinese	Filipino	Native Hawaiian	Japanese	White	Other
Incidence	30.8	26.0	27.4	41.0	29.0	26.3	36.4
Mortality	4.2	2.8	3.4	8.2	3.7	3.8	5.1

Sources: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
All cases are invasive.
Rates are over the 5-year period and are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Table 9. Top Cancers in Other Racial/Ethnic Groups, Males and Females Combined, Hawai'i, 2012-2016

American Indian	Black	Korean	Micronesian	Samoan	Vietnamese
Lung & Bronchus	Prostate	Breast (Female)	Breast (Female)	Breast (Female)	Liver & Intrahepatic Bile Duct
28 (16.8%)	121 (27.7%)	111 (16.3%)	54 (12.7%)	89 (15.6%)	30 (15.2%)
Breast (Female)	Breast (Female)	Lung & Bronchus	Lung & Bronchus	Uterus/Endometrium	Breast (Female)
22 (13.2%)	51 (11.7%)	97 (14.2%)	52 (12.3%)	76 (13.3%)	27 (13.7%)
Prostate	Colon & Rectum	Colon & Rectum	Uterus/Endometrium	Lung & Bronchus	Colon & Rectum
14 (8.4%)	36 (8.2%)	72 (10.6%)	41 (9.7%)	68 (11.9%)	26 (13.2%)
	Lung & Bronchus	Stomach	Oral Cavity & Pharynx	Colon & Rectum	Lung & Bronchus
	33 (7.6%)	49 (7.2%)	37 (8.7%)	56 (9.8%)	20 (10.2%)
All Sites	All Sites	All Sites	All Sites	All Sites	All Sites
167 (100.0%)	437 (100.0%)	681 (100.0%)	424 (100.0%)	570 (100.0%)	197 (100.0%)

Source: Hawai'i Tumor Registry, University of Hawai'i Cancer Center
Cancer cases include invasive cancers except for bladder cancer, which includes both invasive and in situ tumors.