Centro Comprensivo de Cáncer
Universidad de Puerto Rico

Registro Central de Cáncer de Puerto Rico

• 2018-2022 •

CANCER IN PUERTO RICO

Incidence, Mortality, and Survival

Cancer in Puerto Rico 2018-2022

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In memory of Dr. Guillermo Tortolero-Luna, whose legacy continues to inspire us.

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CONTENT

INTRODUCTION

The Puerto Rico Central Cancer Registry (PRCCR) is an agency of the Department of Health, established in March 1950 and is responsible for collecting, analyzing, and publishing information on all cancer cases diagnosed and/or treated in Puerto Rico. In July 2008, the administration of the PRCCR was transferred to the Comprehensive Cancer Center of the University of Puerto Rico through a memorandum of understanding. The notification of cancer cases by public and private medical institutions is compulsory according to Law No. 113 of 2010, which replaced Law No. 28 adopted on March 20, 1951. This new law strengthens the authority of the Registry and formalizes electronic reporting of cancer cases in Puerto Rico. Copy of Law No. 113 is found in this link: http://www.lexjuris.com/lexlex/Leyes2010/lexl2010113.htm.

In October 1997, the PRCCR initiated its participation in the National Program of Cancer Registries (NPCR), coordinated by the Centers for Disease Control and Prevention of the United States Department of Health and Human Services (CDC). Thus, a plan to update the Registry data collection in electronic format began. Over the years, the PRCCR improved its data collection of cancer cases through electronic reporting, achieving a completeness of more than 95% of all cases annually since 2010. This achievement allowed the PRCCR to collaborate with researchers and serve as a valuable data source, resulting in important scientific publications at both local and international levels. In 2014, the PRCCR launched its website: https://rcpr.org/. The aggregated statistical data from the PRCCR is open to the public and available upon request and/or by accessing https://rcpr.org/Datos-de-Cáncer.

This report presents relevant information on the incidence, mortality, prevalence, and survival of cancer in Puerto Rico. For the most of this report, the period covered is 2018-2022. Trend data spans from 2000–2022 for both incidence (excluding 2020) and mortality, while survival data includes cases from 2013 to 2017 with a five-year follow-up period ending in 2022. This report contains four sections: 1) childhood cancer, 2) cancer in the adolescents and young adults (AYAs) group, 3) HPV-associated cancers, and 4) the most common cancers in Puerto Rico.

DATA COMPLETENESS

The National Program of Cancer Registries (NPCR) of the CDC periodically evaluates case ascertainment completeness for the PRCCR to obtain a more accurate estimate of the true occurrence of cancer in the Puerto Rican population. In the most recent evaluation, the PRCCR maintained data completeness for 2022 cases, with an estimated collection of more than 95% of the expected cancer cases in Puerto Rico. This is a significant achievement, certifying the quality of the PRCCR data and supporting the continued inclusion of Puerto Rico's cancer data in the CDC's "US Cancer Statistics" report.

MORTALITY

Cancer-related digital death files were obtained from the Puerto Rico Demographic Registry of the Puerto Rico Department of Health.[1] Death certificate master files from 2000-2022 were used for this report. The cause of death was coded using the International Classification of Diseases, Tenth Edition, ICD-10.[2] This report includes the deaths of Puerto Rico residents only. Cases with unknown age (<0.1%) were excluded from both the age-specific and age-adjusted analyses. Deaths with unknown municipality (patient residence at the time of death) for the 2018-2022 period were excluded from the calculations of municipality-specific rates (<0.1%). Information on cancer mortality presented in this report is the sole responsibility of the authors and was not reviewed nor endorsed by the Puerto Rico Demographic Registry prior to this publication.

RELATIVE SURVIVAL

In addition to monitoring incidence and mortality, survival analysis is another procedure to assess the epidemiological surveillance of cancer. Relative survival is defined as the relationship between the observed survival from all causes in a group of people with cancer and the expected survival from all causes in a similar group of people who do not have cancer. For the calculation of relative survival, only survival from the first tumor (if a person had more than one) was considered. Cases with an unknown diagnosis confirmation method, cases with unknown age at the time of diagnosis, cases identified only by death certificate or autopsy, and cases older than 99 years were excluded. The cases that were taken into consideration were those diagnosed between 2013 and 2017, and these had a follow-up period of 5 years (until 2022) (Annex I).

SELECTION OF CASES & POPULATION FILE

For this report, all cancer cases with known age at diagnosis were considered. Statistics were generated for malignant cancers only, except for urinary bladder cancer cases, which include both malignant and *in situ* tumors. The population used to calculate both the incidence and mortality rates corresponds to the 2023 Vintage population from the United States Census Bureau.

IMPACT OF YEAR 2017 & COVID-19

On September 20, 2017, the severe impact of Hurricane Maria on Puerto Rico resulted in a significant decrease of cancer diagnoses and treatment in the archipelago. For **2017,** the incident count was approximately 1,800 cases fewer than the previous year. After a thorough evaluation, the number of cases and population counts used to estimate **incidence** rates were restricted to the **first 6 months of the year** (January to June). Data from July to December 2017 were excluded due to delays in cancer diagnosis and population displacement that occurred after Hurricane Maria.

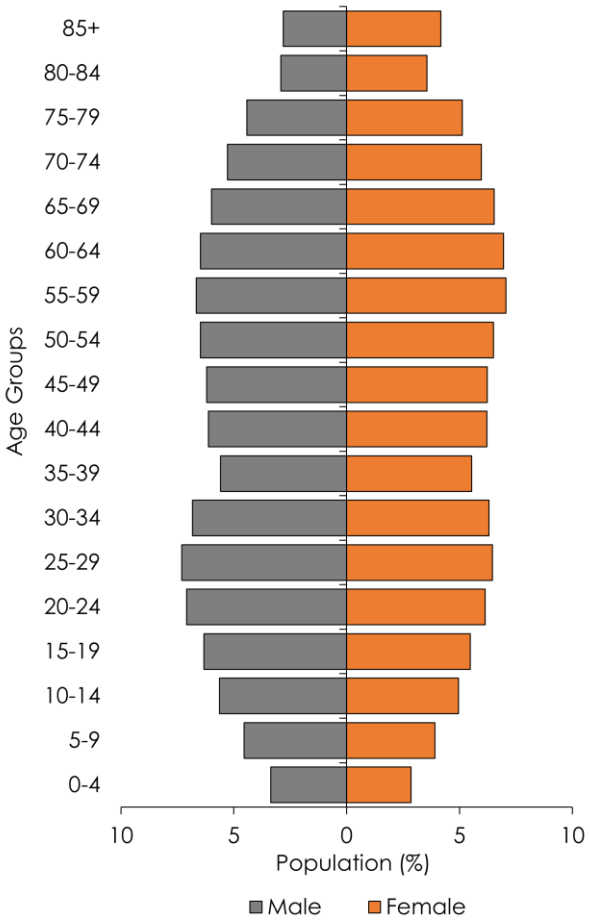
Similarly, this report includes 2020 incident cases (the first year of the COVID-19 pandemic) in most statistics. However, due to the impact of COVID-19 on health services and cancer diagnoses, incidence rates for most cancer sites declined in 2020. As a result, 2020 incidence data were excluded from the lifetime risk of developing cancer and the average annual percent change (AAPC) calculations.

PUERTO RICO POPULATION - 2022

Official population estimates were provided by the US Census Bureau. In the 2020 census, the total population in Puerto Rico was 3,285,874 inhabitants, representing an 11.8% decrease from the 3,725,789 inhabitants reported in the 2010 census. Figure 1 shows the estimated population for 2022 by age and sex, along with the population pyramid for the same year based on Vintage 2023 population estimates. In 2022, the male-to-female ratio was 89.6 males per 100 females.[3] The PRCCR collects racial and ethnic data consistent with the U.S. population data. Although ethnicity is well documented by the PRCCR, the Registry uses the North American Association of Central Cancer Registries (NAACCR) Hispanic Identification Algorithm (NHIA) to enhance the identification of Hispanic/Latino persons with cancer. In 2020, 98.9% of the population identified themselves as Hispanic/Latino. More information at: Puerto Rico 2020 Census State Profile.

Figure 1. Estimated Population by Age and Sex: Puerto Rico, 2022

Age	Male	Female	Total
0 - 4	51,135	48,424	99,559
5 - 9	69,088	66,609	135,697
10 -14	85,747	84,338	170,085
15 - 19	96,352	92,989	189,341
20 - 24	107,884	104,343	212,227
25 - 29	111,204	109,799	221,003
30 - 34	104,068	107,232	211,300
35 - 39	84,984	94,225	179,209
40 - 44	93,161	105,545	198,706
45 - 49	94,327	105,866	200,193
50 - 54	98,665	110,671	209,336
55 - 59	101,502	119,874	221,376
60 - 64	98,731	118,177	216,908
65 - 69	91,077	111,165	202,242
70 - 74	80,316	101,427	181,743
75 - 79	67,231	87,116	154,347
80 - 84	44,425	60,511	104,936
85+	42,667	70,914	113,581
Total	**1,522,564**	**1,699,225**	**3,221,789**



CANCER IN PUERTO RICO 2022: OVERVIEW

CANCER INCIDENCE - 2022

In Puerto Rico, 16,512 new cancer cases were reported in 2022. Among these new cases, 8,627 (52.2%) were men and 7,885 (47.8%) were women. Prostate cancer was the most commonly diagnosed cancer in men (40.4%), while breast cancer was the most commonly diagnosed in women (30.8%). Colorectal cancer was the second most diagnosed cancer in men and women, accounting for 11.1% and 10.8%, respectively. Uterine cancer was the third most diagnosed in women (10.7%). Lung and bronchus cancer was among the most commonly diagnosed cancers in men (4.8%) and women (4.2%). Thyroid cancer showed a marked increase in Puerto Rico since the early 2000s, particularly in women, followed by a decline since 2015. Thyroid cancer is currently the fourth most common malignancy in women and the twelve most common in men.

CANCER MORTALITY - 2022

In 2022, a total of 5,392 people died from cancer in Puerto Rico. Among these deaths, 2,928 (54.3%) were men and 2,464 (45.7%) were women. Prostate cancer was the leading cause of cancer death among men (16.7%), and breast cancer was the leading cause of cancer death among women (16.2%). Colorectal cancer was the second leading cause of cancer death in both men (12.4%) and women (12.5%). Lung and bronchus cancer was the third leading cause of cancer death in men (12.1%) and women (9.5%).

LIFETIME RISK 2018-2022

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately 39.7% of persons will be diagnosed with some type of cancer during their lifetime.

25-YEARS PREVALENCE

The limited-duration prevalence was calculated using SEER*Stat software, which estimates the proportion of individuals diagnosed with cancer in the last X years (e.g., X = 5, 10, or 25 years) who are alive on a certain date.

In Puerto Rico, approximately **144,531** individuals who had been diagnosed with cancer within the past 25 years were alive as of January 1, 2022. This means that **4.46%** of the Puerto Rican population was living with some type of cancer as of January 1, 2022.

CANCER INCIDENCE AND MORTALITY 2018-2022

2018-2022 DATA

During the 2018-2022 period, 80,473 persons were diagnosed with invasive cancer in Puerto Rico: 42,143 (52.4%) men and 38,330 (47.6%) women. On average, 8,429 men and 7,666 women were diagnosed with cancer each year in Puerto Rico. Annex II shows the number of cases for the most frequent primary cancer sites by sex and the age-adjusted rates, using three standard populations: Puerto Rico 2000, United States 2000 (Census P25-1130), and the World (Segi 1960). The median age at cancer diagnosis across all cancers during this period was 67 years. Approximately, 0.7% of the cancer cases were diagnosed in people under 20 years of age, 2.4% between 20 and 34 years, 9.0% between 35 and 49 years, 28.6% between 50 and 64 years, 43.6% between 65 and 79 years, and 15.7% in people over 79 years old.

The ten most frequent cancers diagnosed by sex during this period are presented in Figure 2. Among men, the most diagnosed cancer was prostate cancer (38.9%), which showed an average annual increase in incidence of 0.9% ($p<0.05$) from 2000 to 2022. This was followed by cancer of the colon and rectum (11.1%), which remained stable (AAPC = -0.3%; $p>0.05$), followed by lung and bronchus cancer (5.2%), which had an average annual decrease in incidence of 1.7% ($p<0.05$) over the same period. Among women, breast cancer was the most diagnosed cancer (31.4%), having an average annual increase of 1.5% ($p<0.05$) from 2000 to 2022. This was followed by cancer of the colon and rectum (10.4%), which had an average annual decreased of 0.5% ($p<0.05$), and cancer of the uterus (10.0%), which had an average annual increase of 4.0%

(p<0.05) over the same period.

In terms of mortality, during the 2018-2022 period, a total of 26,105 cancer deaths were registered in Puerto Rico: 14,300 (54.8%) were men and 11,805 (45.2%) were women. Annex III presents the number of deaths from cancer for the most frequent cancer sites by sex for 2018-2022 and the age-adjusted rate, using three standard populations: Puerto Rico 2000, United States 2000 (Census P25-1130), and the World (Segi 1960). The average annual number of cancer deaths for this period was 2,860 in men and 2,361 in women. The median age at death was 74 years. Approximately, 0.2% of all cancer deaths occurred in people younger than 20 years, 0.7%, between 20 and 34 years, 4.5% between 35 and 49 years, 19.1% between 50 and 64 years, 42.3% between 65 and 79 years, and 33.2% in people over 79 years old.

The ten most common causes of cancer death by sex are presented in Figure 3. Among men, the most common cause of cancer death was prostate cancer, accounting for 16.2% of total male cancer deaths, with an average annual decrease of 3.4% (p<0.05) from 2000 to 2022. This was followed by cancer of the colon and rectum (12.7%) and lung and bronchus cancer (11.5%), which had an average annual decrease of 1.4% (p<0.05) and 2.2% (p<0.05), respectively, over the same period. Among women, breast cancer was the most common cause of cancer death, accounting for 17.7% of female cancer deaths, with an average annual decrease of 1.3% (p<0.05) from 2000 to 2022. This was followed by cancer of the colon and rectum (12.2%) and lung and bronchus cancer (9.3%), both of which had an average annual decrease of 1.6% (p<0.05) over the same period.

Figure 2. Top Ten Cancer Sites (Incidence) by Sex: Puerto Rico, 2018-2022

♂ Male (N = 42,143)	%	AAPC[2000-2022^]	♀ Female (N = 38,330)	%	AAPC[2000-2022^]
Prostate	38.9	↑ 0.9*	Breast	31.4	↑ 1.5*
Colon and Rectum	11.1	-0.3	Colon and Rectum	10.4	↓-0.5*
Lung and Bronchus	5.2	↓-1.7*	Uterus	10.0	↑ 4.0*
Urinary Bladder	4.5	-0.1	Thyroid	8.1	↑ 6.5*
Non-Hodgkin Lymphoma	3.9	↑ 1.1*	Lung and Bronchus	4.1	0.1
Liver and Bile Duct	3.4	0.8	Non-Hodgkin Lymphoma	3.8	↑ 1.5*
Oral Cavity and Pharynx	3.4	↓-1.9*	Cervix Uteri	2.8	0.1
Kidney and Renal Pelvis	3.1	↑ 3.6*	Pancreas	2.6	↑ 2.6*
Leukemia	2.8	↑ 1.4*	Leukemia	2.4	↑ 1.7*
Pancreas	2.6	↑ 1.7*	Ovary	2.3	↑ 0.8*
Other Sites	21.1		Other Sites	22.1	

Note. Statistics were generated for malignant tumors only; includes urinary bladder cancer *in situ*.
Data Source: Puerto Rico Central Cancer Registry Incidence Case File (December 6, 2024).
Incidence cases file population of 2017 are restricted to the first 6 months of the year (January to June).
Cases from July to December were excluded due to the population change after hurricanes Irma and María.
^Due to the impact of COVID-19, the 2020 incidence data is excluded from average annual percent changes (AAPC).
*AAPC is statistically different from zero ($p<0.05$).

Figure 3. Top Ten Cancer Sites (Mortality) by Sex: Puerto Rico, 2018-2022

♂ Male (N = 14,300)	%	AAPC[2000-2022]	♀ Female (N = 11,805)	%	AAPC[2000-2022]
Prostate	16.2	↓-3.4*	Breast	17.7	↓-1.3*
Colon and Rectum	12.7	↓-1.4*	Colon and Rectum	12.2	↓-1.6*
Lung and Bronchus	11.6	↓-2.2*	Lung and Bronchus	9.3	↓-1.6*
Liver and Bile Duct	8.2	0.0	Pancreas	6.9	0.7
Pancreas	6.4	0.6	Uterus	5.9	0.7
Leukemia	3.8	↓-1.2*	Liver and Bile Duct	5.0	↓-1.3*
Stomach	3.4	↓-5.0*	Ovary	4.3	-0.4
Non-Hodgkin Lymphoma	3.3	↓-1.3*	Leukemia	3.8	↓-1.2*
Oral Cavity and Pharynx	3.1	↓-2.9*	Stomach	3.1	↓-4.2*
Urinary Bladder	2.8	0.1	Non-Hodgkin Lymphoma	3.0	↓-2.2*
Other Sites	28.5		Other Sites	28.8	

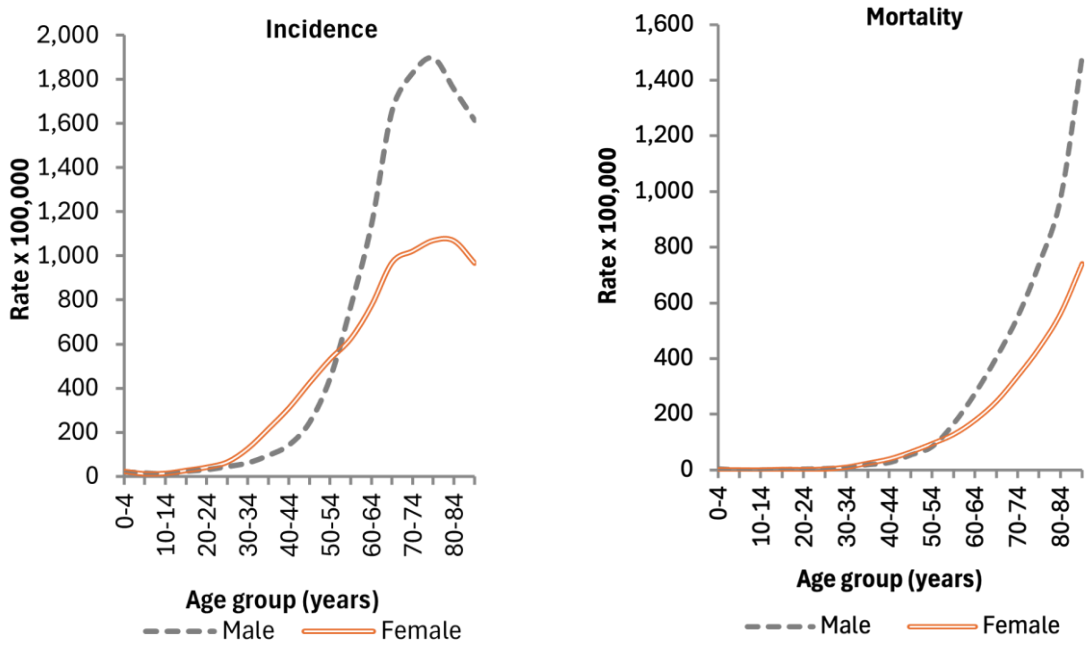
Data Source: Mortality Case File, provided by the Demographic Registry of Puerto Rico (December 6, 2024). *AAPC is statistically different from zero ($p<0.05$).

AGE AND SEX-SPECIFIC INCIDENCE RATES 2018-2022

During the 2018-2022 period, the median age at diagnosis across all cancer types in men and women was 69 years and 66 years, respectively. The risk of developing cancer in men began to rise significantly at the end of the fourth decade of life, whereas in women, a slow and gradual increase began starting at age 25. In the 70 to 74 age group, the risk of developing cancer was nearly twice as high in men compared to women (RR=1.8, $p<0.05$).

In terms of mortality, during the 2018-2022 period, the median age at death across all types of cancer was 74 years in both men and women. Additionally, the risk of dying from cancer was similar for both sexes up to 50-54 years of age (less than 100 per 100,000 population). From the 55-59 age group onward, the mortality rate in men began to increase considerably in relation to the rate in women. Men 85+ years old had twice the risk of dying from cancer than women of the same age-group (RR=2.0, $p<0.05$). Figure 4 shows the age and sex-specific incidence and mortality rates for this period.

Figure 4. Age-Specific Incidence and Mortality Rates for All Cancers by Sex: Puerto Rico, 2018-2022



THE MOST FREQUENT CANCERS BY SEX AND AGE, 2018-2022

The incidence of invasive cancer varied with age, sex, and the type of tumor. Figures 5 and 6 show the percentage distribution of the most frequent cancers (diagnosed in men and women, respectively) during the 2018-2022 period by age-groups in the adult population (>19 years).

Figure 5. The Most Frequently Diagnosed Cancer by Age in Men: Puerto Rico, 2018-2022

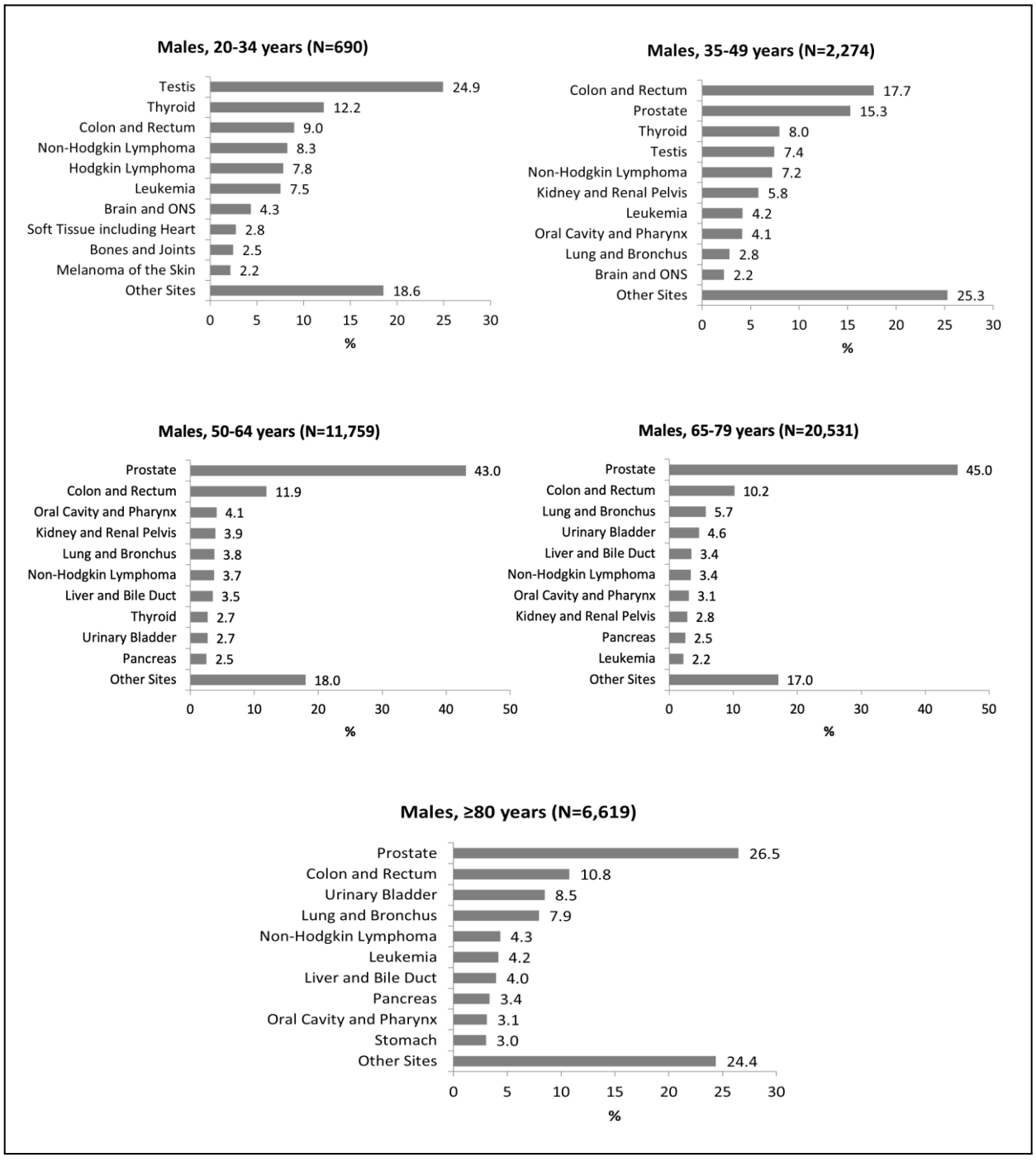
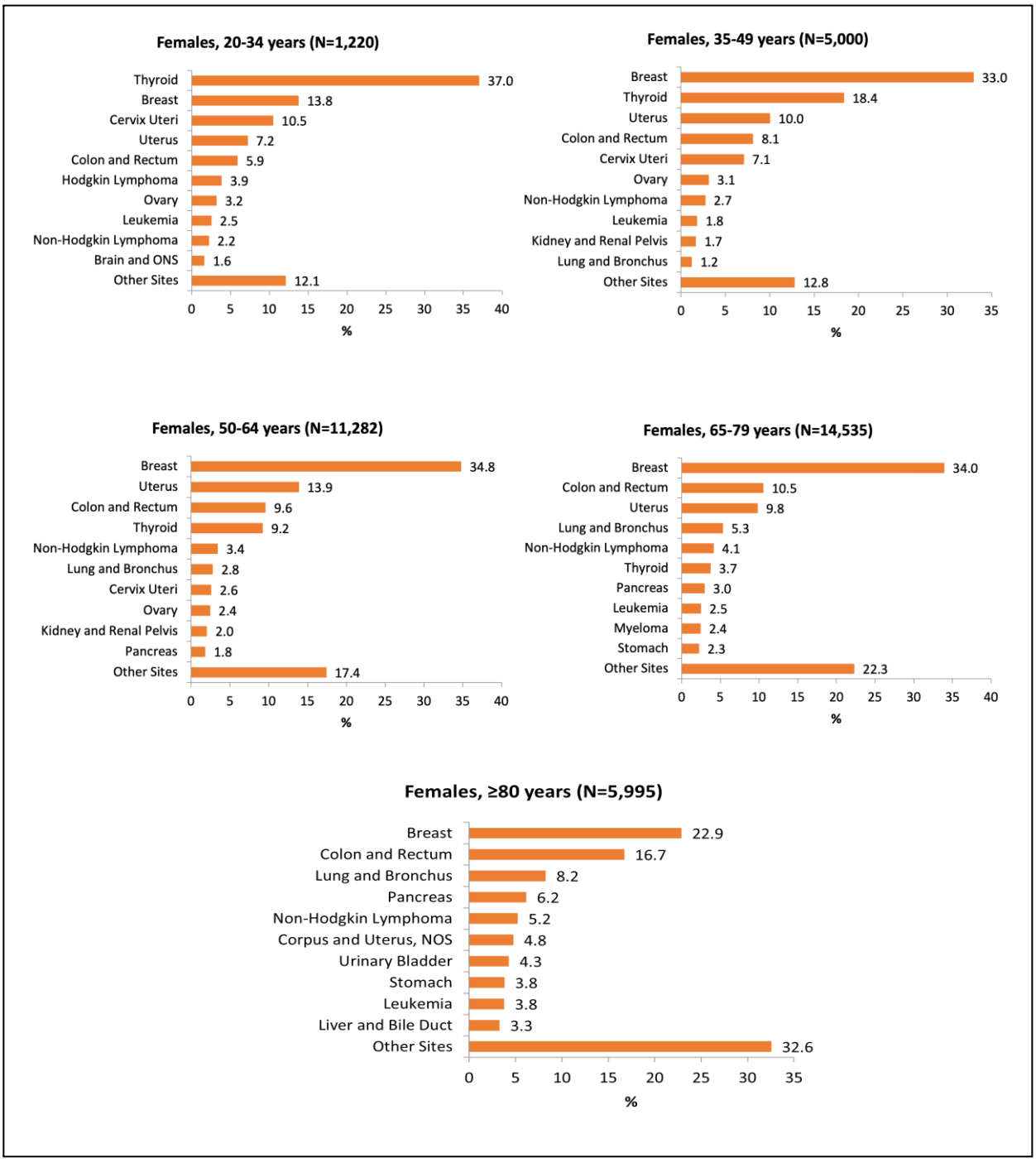


Figure 6. The Most Frequently Diagnosed Cancer by Age in Women: Puerto Rico, 2018-2022



Figures 7 and 8 show the percentage distribution of the most common cancer-related causes of death by age groups during the 2018-2022 period for men and women, respectively.

Figure 7. Leading Cancer-Related Deaths by Age in Men: Puerto Rico, 2018-2022

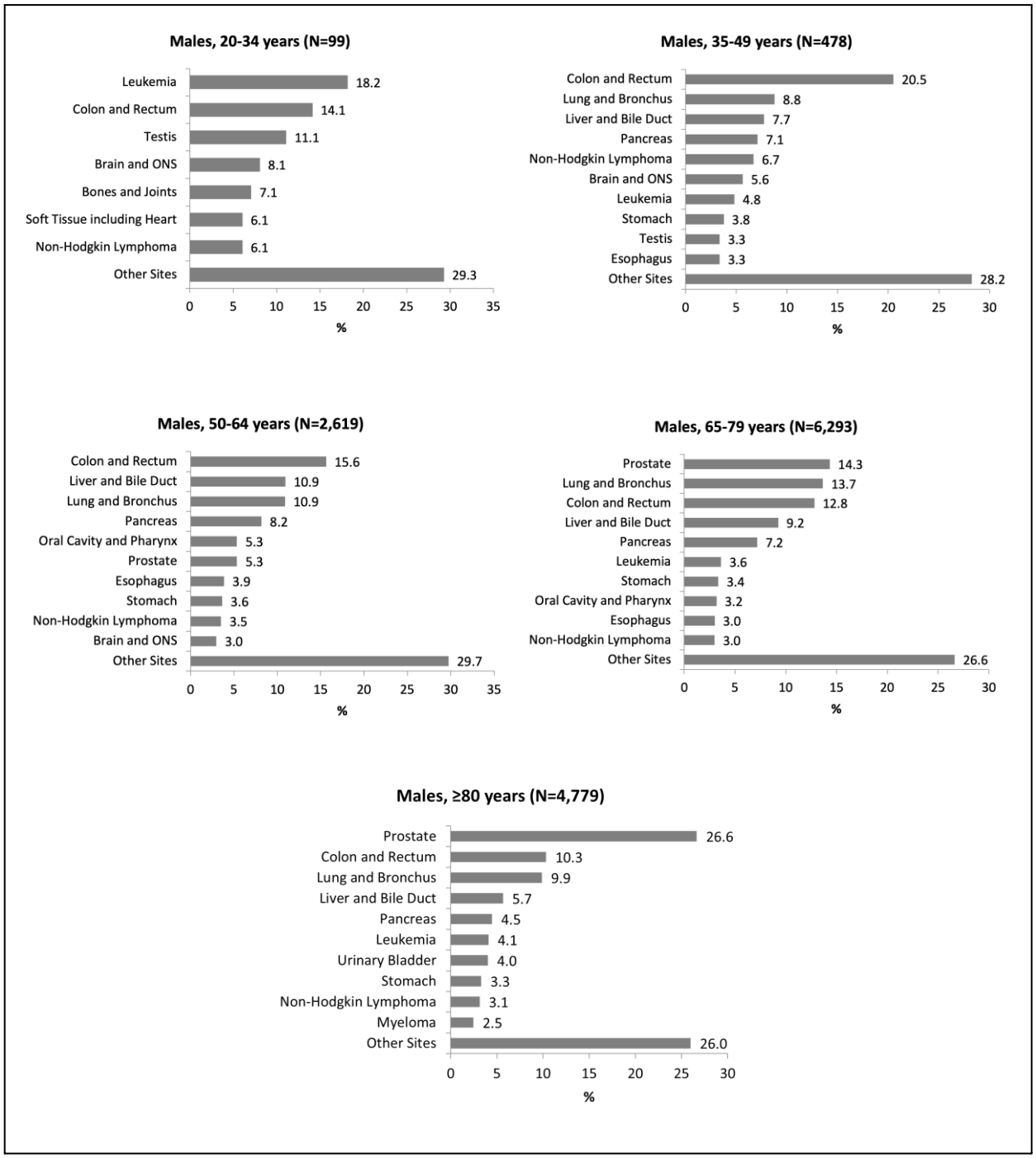
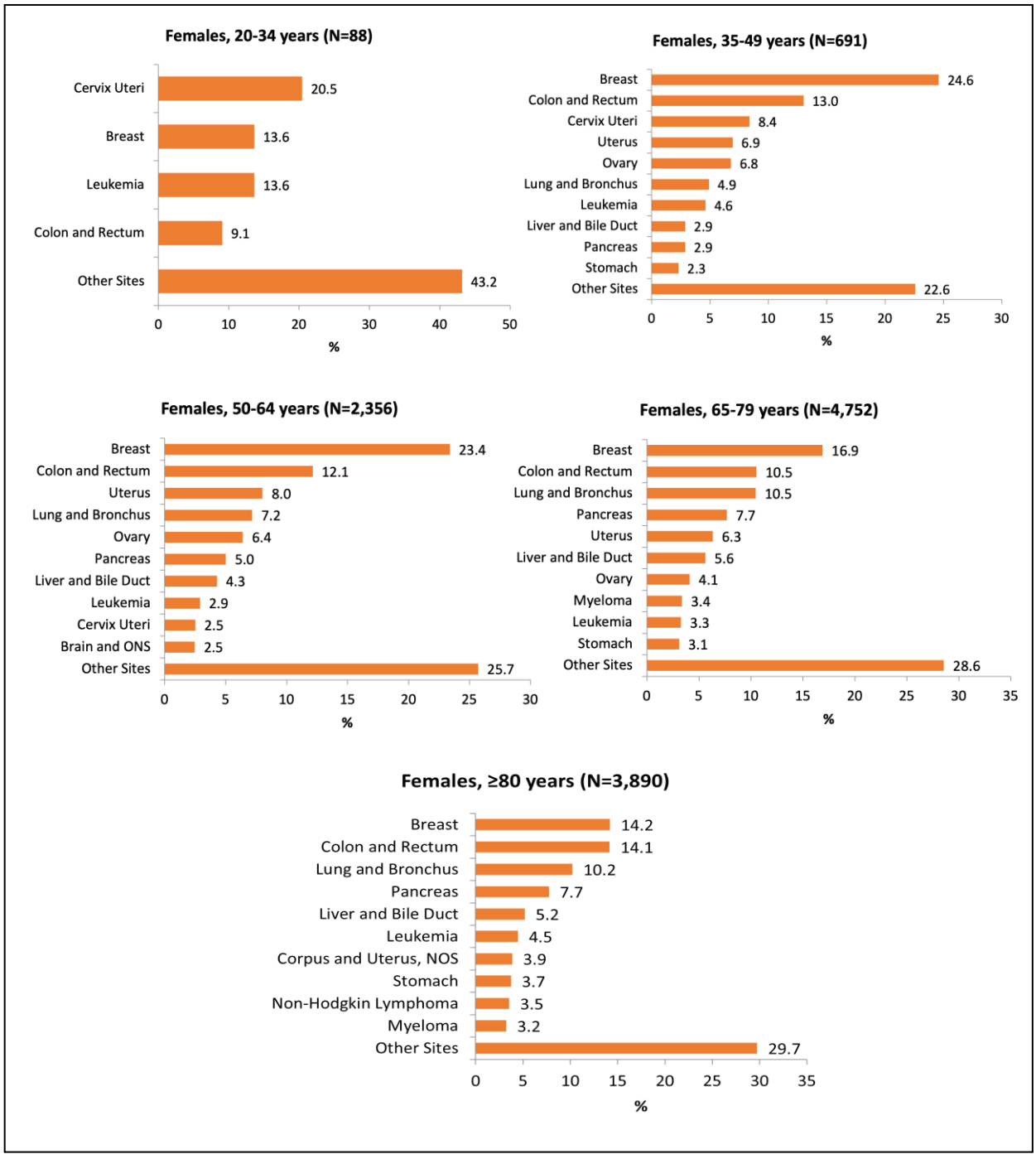


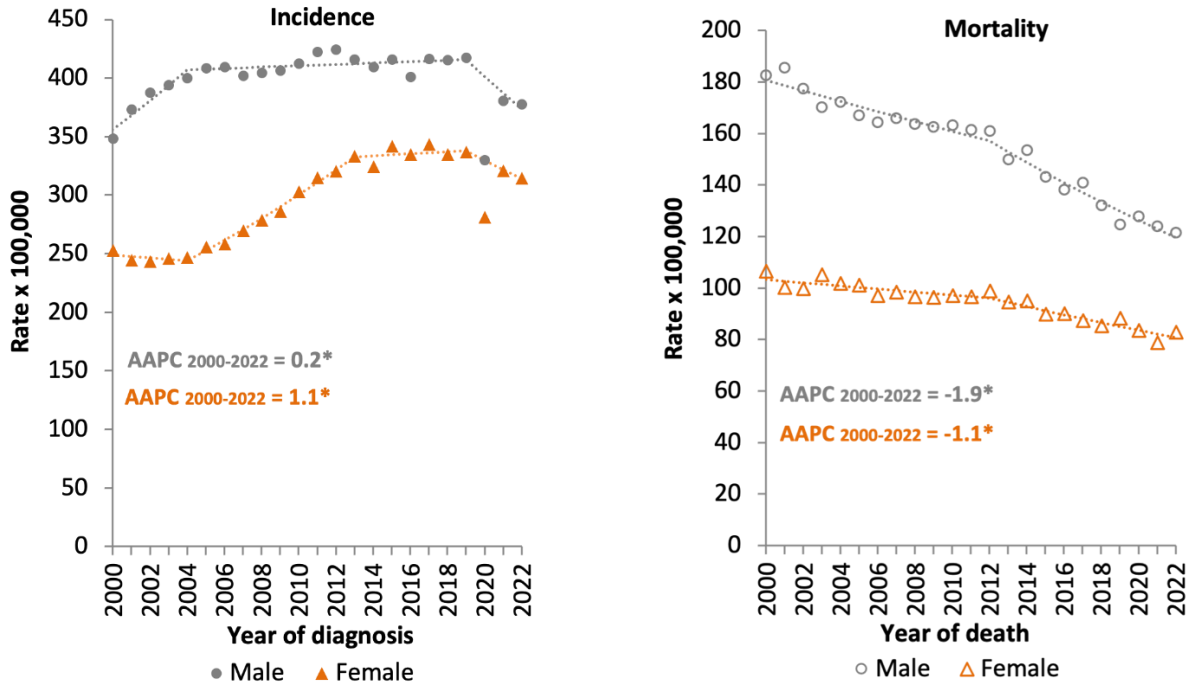
Figure 8. Leading Cancer-Related Deaths by Age in Women: Puerto Rico, 2018-2022



CANCER INCIDENCE AND MORTALITY TRENDS 2000-2022

Figure 9 shows the trends in cancer incidence and mortality rates by sex in Puerto Rico, excluding 2020 from the incidence AAPC calculations. Rates were age-adjusted to the standard US 2000 population. For men in the 2000-2022 period, the incidence increased from 348.3 to 377.6 per 100,000. For women in the same period, the incidence increased from 252.9 to 314.5 per 100,000. Between 2000 and 2022, the incidence rate of cancer in men and women had an average annual increase of 0.2% and 1.1% per year, respectively. For both sexes, the increase over time was statistically significant ($p<0.05$). From 2000 to 2022, cancer mortality rates declined from 182.4 to 121.4 per 100,000 among men and from 106.4 to 82.7 per 100,000 among women. During this period, the annual reduction in cancer death rates was 1.9% for men and 1.1% for women. These decreasing trends were statistically significant ($p<0.05$).

Figure 9. Age-Adjusted (2000 US Standard Population) Incidence and Mortality Rates – All Cancer Sites by Sex: Puerto Rico, 2000-2022



GEOGRAPHIC DISTRIBUTION - 2018-2022

Figure 10 shows the distribution of the average annual cancer incidence rates of all types by municipality. The classification of municipalities by rate is in quartiles (four proportionally equal groups). In the 2018-2022 period, mainly, the municipalities in the south and central regions of Puerto Rico showed the highest cancer incidence rates.

Figure 11 shows the distribution of annual average cancer mortality rates for all cancer sites by municipality. During the 2018-2022 period, the lowest cancer mortality rates were observed in municipalities located in the southeast regions of the main island.

Figure 10. Age-Adjusted Incidence Rates (2000 PR Standard Population) – All Cancer Sites by Municipality: Puerto Rico, 2018-202

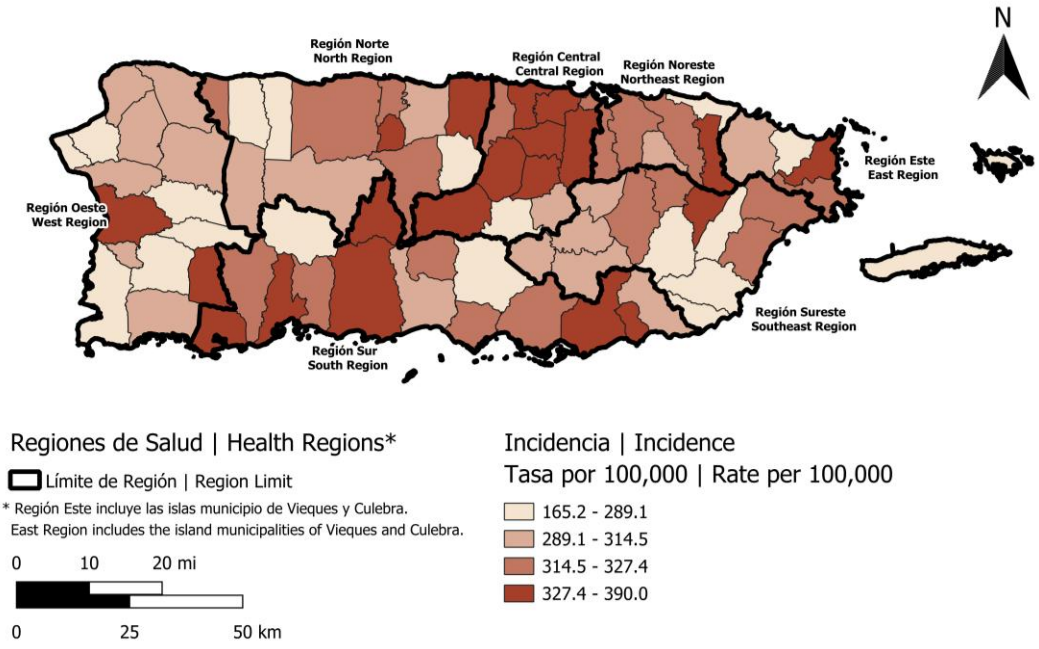
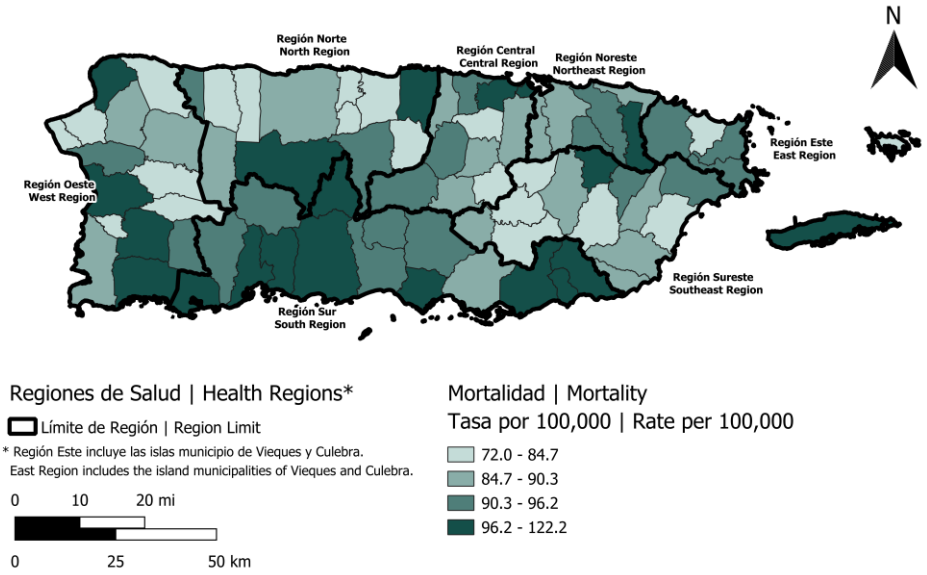


Figure 11. Age-Adjusted Mortality Rates (2000 PR Standard Population) – All Cancer Sites by Municipality: Puerto Rico, 2018-2022



CHILDHOOD CANCER

KEY POINTS

During the **2018-2022 period** in Puerto Rico**, childhood cancer (ages 0 to 14)**:

- Was less common than in AYAs and adults (15 years or more), accounting for **0.4%** of all cancers.
- A total of **325** children were diagnosed and **35** died from cancer.
- **Leukemias** (31.4%), **lymphomas** (15.7%), and **central nervous system neoplasms** (13.2%) were the top three most diagnosed cancers in children.

Childhood Cancer Detection

Childhood cancer (ages 0 to 14) is rare, and there are currently no recommended early detection tests to identify cancer in children, unless they have a genetic predisposition. Recent reports suggest that at least 10% of pediatric cancer patients harbor a germline mutation in a cancer predisposition gene.[4] Detection of childhood cancer typically begins with a physician evaluating signs and symptoms and performing a physical examination of the child. If cancer is suspected, the physician may order further diagnostic tests, including blood and urine tests, X-rays, CT scans, MRI, biopsies, among others.[5]

Risk Factors

Childhood cancer differs from adult cancer in terms of diagnosis, risk factors, anatomical site, treatment, and prognosis. The etiology of childhood cancer remains largely unknown. Only a small proportion of cases can be attributed to specific factors, such as chromosomal abnormalities/genetic (e.g., Down syndrome), and exposure to ionizing radiation. Environmental exposures have long been suspected of increasing the risk of developing certain childhood cancers. **For more information about childhood cancer, go HERE.**

Figure 12. The Most Frequently Diagnosed Cancer Among Children by Sex: Puerto Rico, 2018-2022

♂ Boys (N = 158)	%	♀ Girls (N = 167)	%
Leukemias	29.1	Leukemias	33.5
Lymphomas	19.0	CNS Neoplasms	13.8
CNS Neoplasms	17.7	Carcinomas	12.6
Neuroblastomas	5.7	Lymphomas	7.8
Carcinomas	5.7	Soft Tissue Sarcomas	5.4
Other sites	22.8	Other sites	26.2

CNS = Central nervous system

Figure 13. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Childhood Cancer by Sex: Puerto Rico, 2000-2022

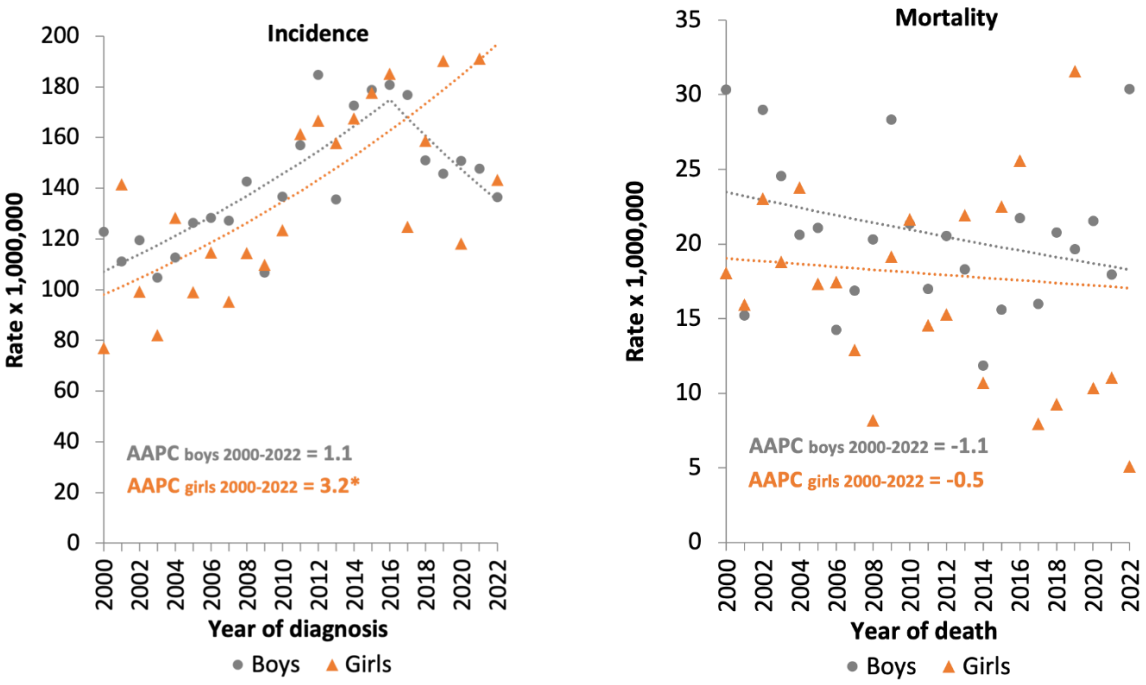
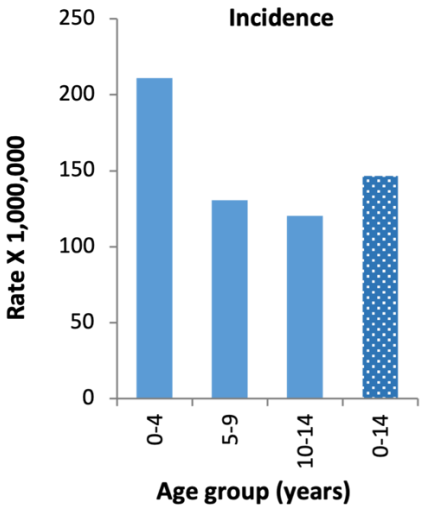
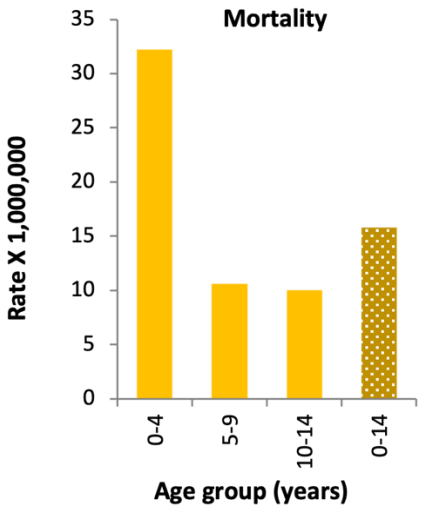


Figure 14. Age-Specific Incidence and Mortality Rates – Childhood Cancer: Puerto Rico, 2018-2022





Figures Summary. During the 2018-2022 period, leukemia was the most common cancer diagnosed among boys and girls (Figure 12). Between 2000 and 2022, the incidence rates of childhood cancer increased on average by **1.1%** ($p>0.05$) per year in boys and by **3.2%** ($p<0.05$) per year in girls (Figure 13).

Notwithstanding, during the 2000-2022 period, the mortality rates in boys and girls decreased on average by **1.1%** ($p>0.05$) and **0.5%** ($p>0.05$) per year, respectively (Figure 13). Children between 0 and 4 years of age have higher incidence and mortality rates (Figure 14). Annex IV shows the number of cases for selected primary childhood cancer sites by sex and the age-adjusted rates using three standard populations: Puerto Rico 2000, United States 2000 (Census P25-1130), and the World (Segi 1960). **For statistical information of childhood cancer in the United States of America, go HERE.**

CANCER IN ADOLESCENTS AND YOUNG ADULTS

KEY POINTS

During the **2018-2022** period in Puerto Rico**, cancer among adolescents and young adults (AYAs) (15-39 years):**

- Accounted for **4.5%** of all reported cancers and **1.6%** of all deaths.
- **Most common** cancer type was **thyroid cancer**, with an age-adjusted incidence rate of **18.8** per 100,000 AYAs**.**
- **Female breast cancer** was the **deadliest** cancer, with a mortality age-adjusted rate of 1**.5** per 100,000 female AYAs**.**

The National Cancer Institute (NCI) defines adolescents and young adults (AYAs) with cancer as individuals aged 15 to 39 years at cancer diagnosis. Studies have documented cancer among AYAs can be unique in both biology and genetics.[6]

Risk Factors

Risk factors depend on the type of cancer. Some genetic syndromes are associated with the risk of developing certain types of cancer. For example, Lynch syndrome is associated with colorectal, endometrial, and ovarian cancer. Other risk factors include obesity, diet (high consumption of fats and processed meats), and lack of exercise.[7] Exposure to estrogen and progesterone may increase the risk of testicular cancer.[8] Exposure to infectious agents, such as human papilloma virus, Epstein-Barr virus, HIV, and herpesvirus 8, are risk factors for AYA cancer.[9] **For more information about AYA cancer, go HERE.**

Figure 15. The Most Frequently Diagnosed Cancer Among Adolescents and Young Adults by Sex: Puerto Rico, 2018-2022

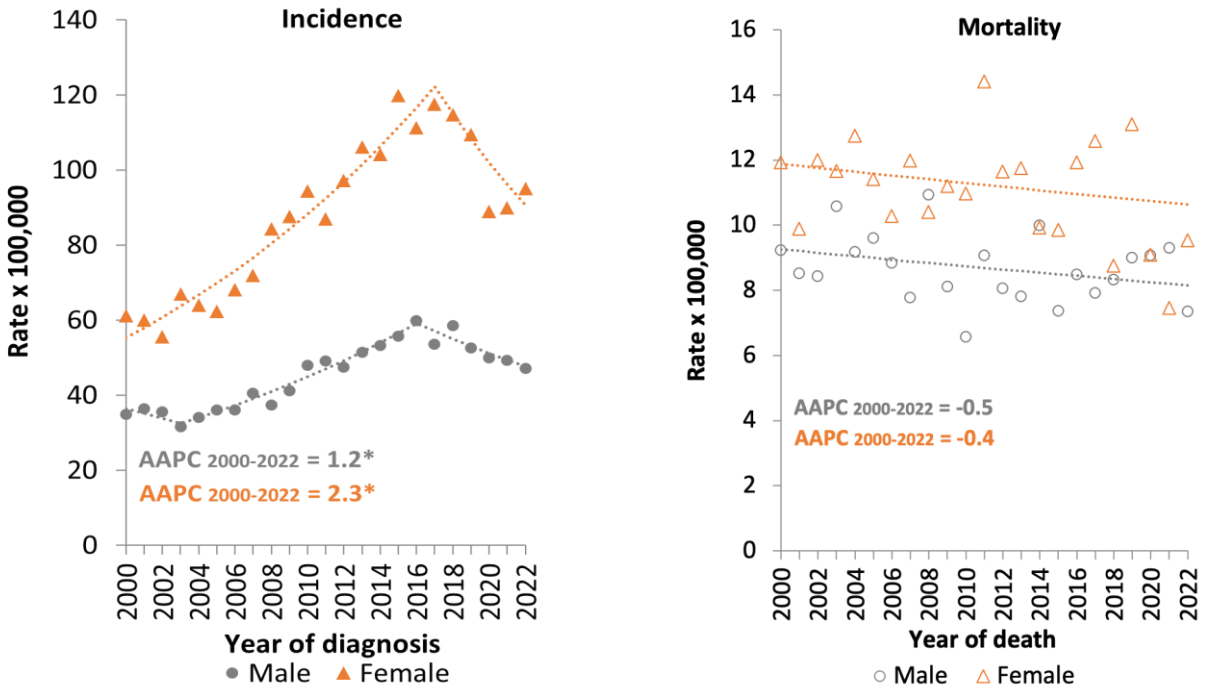
♂ Male (N = 1,218)	%	♀ Female (N = 2,416)	%
Testis	22.2	Thyroid	32.0
Thyroid	11.5	Breast	17.4
Colon and Rectum	9.7	Cervix Uteri	10.1
Non-Hodgkin Lymphoma	8.1	Uterus	8.3
Leukemias	7.6	Colon and Rectum	6.2
Other sites	40.9	Other sites	26.0

Figure 16. Leading Cancer-Related Deaths Among Adolescents and Young Adults by Sex: Puerto Rico, 2018-2022

♂ Male (N = 196)	%	♀ Female (N = 272)	%
Leukemias	16.3	Breast	15.5
Colon and Rectum	15.3	Cervix uteri	13.3
Testis	8.7	Leukemias	11.9
Brain and ONS	6.6	Colon and rectum	11.9
Non-Hodgkin Lymphoma	6.1	Ovary	6.6
Other sites	47.0	Other sites	40.8

ONS = Other Nervous System

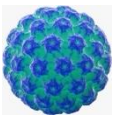
Figure 17. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Adolescents and Young Adults' Cancer by Sex: Puerto Rico, 2000-2022



Figures Summary. During the 2018-2022 period, testicular and thyroid cancer were the most frequently diagnosed cancer among male and female AYAs, respectively (Figure 15). However, leukemias and breast cancer were the leading causes of death among male and female AYAs, respectively (Figure 16). Between 2000 and 2022, the cancer incidence rates for male and female AYAs increased on average by **1.2%** ($p<0.05$) and **2.3%** ($p<0.05$) each year, respectively. For both men and women, a change in trend direction has been observed over the last 5 years.

Notwithstanding, between 2000 and 2022, mortality rates remained stable for both male and female AYAs (Figure 17). Annex V shows the number of cases for selected primary AYA cancer sites by sex for the 2018-2022 period and the age-adjusted rates using three standard populations: Puerto Rico 2000, United States 2000 (Census P25-1130), and the World (Segi 1960). **For statistical information of AYA cancer in the United States of America, go HERE.**

HPV-ASSOCIATED CANCERS



KEY POINTS

During the **2018-2022** in Puerto Rico**, HPV-associated cancers accounted for**:

- **2.2%** and **4.0%** of all cancers in men and women, respectively.

On average,

- **183** men and **310** women were diagnosed annually with a HPV-associated cancer.

The risk of developing HPV-associated cancers was **0.55** times lower in men than in women (95% CI: 0.50, 0.60).

Human Papilloma Virus Infection

Human papillomavirus (HPV) is a group of viruses primarily transmitted through sexual contact. More than 40 types can infect the genitals, mouth, and throat. Certain high-risk HPV types are associated with the development of cancer in both men and women.

Risk factors

It's currently not possible to predict who will develop cancer from an HPV infection. However, some factors may increase the risk. In people with weakened immune systems, such as those living with HIV/AIDS, it may be more difficult to eliminate the HPV infection. Additional risk factors include unprotected sexual activity, having multiple sexual partners, smoking or other tobacco use, and prolonged use of oral contraceptives. For this reason, the HPV vaccine is recommended for children ages 11 to 12, before exposure, to provide the best protection.[10]

HPV-Associated Cancers

Research suggests that at least 4.5% of all cancers are HPV-associated.[11] Persistent HPV infections can lead to cervical, anal, vulvar, vaginal, penile, and oropharyngeal cancers. Vaccination, regular screening, and safe sex practices can prevent HPV-associated cancers.[10]

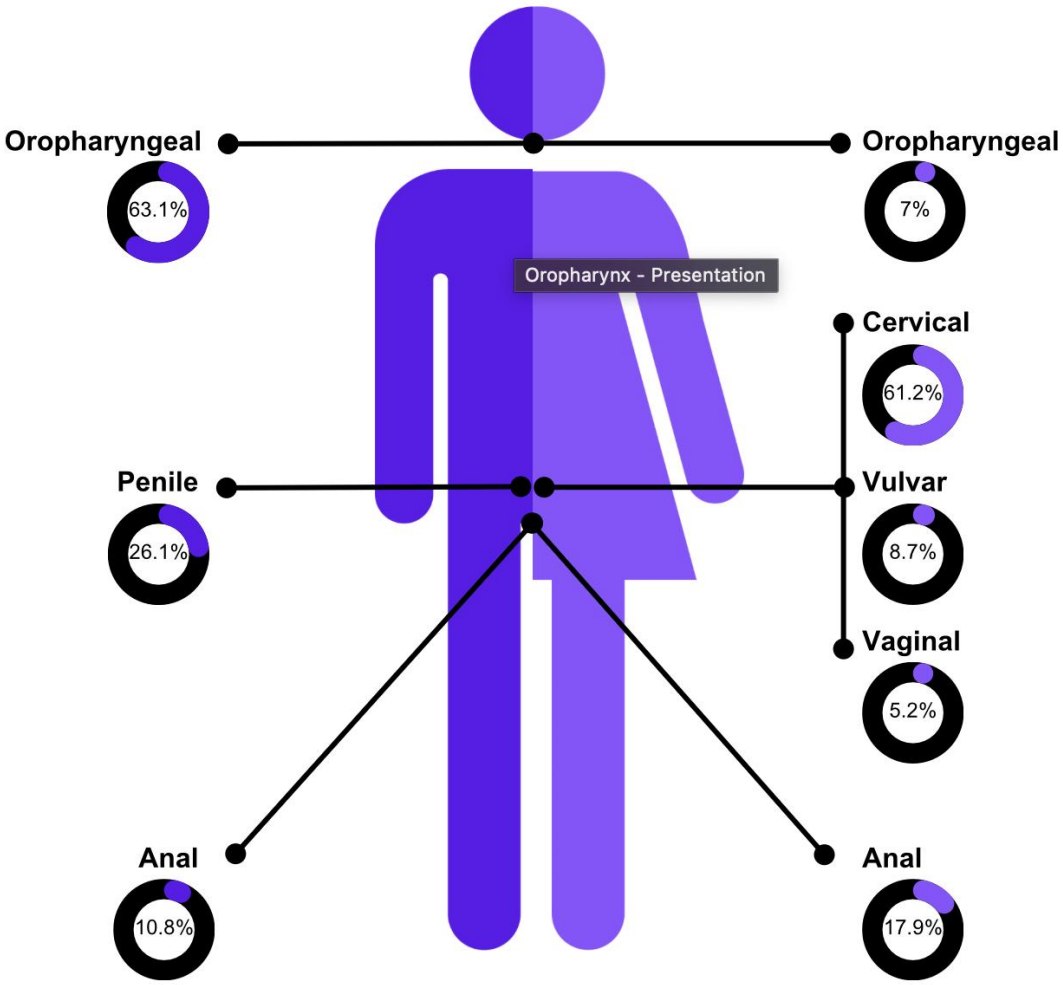
For more information about HPV, go HERE.

Figure 18. Incidence of HPV-associated cancers by sex: Puerto Rico, 2018-2022

Sex →	♂ Male		♀ Female	
HPV-associated site^ ↓	Rate	Count	Rate	Count
Oropharyngeal squamous cell carcinoma	5.3	578	0.9	109
Anal and rectal squamous cell carcinoma	0.9	99	2.1	278
Vulvar squamous cell carcinoma	~	~	0.9	135
Vaginal squamous cell carcinoma	~	~	0.7	80
Cervical carcinoma	~	~	10.6	948
Penile squamous cell carcinoma	2.2	239	~	~
Overall	8.4	916	15.2	1,550

^ The CDC definition for HPV-associated cancers was used.
~ Not applicable (sex-specific)

Figure 19. Distribution of HPV-associated cancers by sex: Puerto Rico, 2018-2022



CANCER IN THE GENERAL POPULATION

ORAL CAVITY AND PHARYNX CANCER

KEY POINTS

During the **2018-2022** period in Puerto Rico, **oral cavity and pharynx** cancer accounted for:

- **3.4%** of all cancers in men and **1.6%** of all cancers in women.
- **3.1% and 1.3%** of all cancer deaths in men and women, respectively.

On average,

- **285** men and **121** women were diagnosed annually.
- **89** men and **30** women died each year.

Risk of developing this cancer was **2.8** times higher in men than women (95% CI: 2.5, 3.1).

The risk of dying from oral cavity and pharynx cancer was **3.8** times higher in men than women (95% CI: 3.1, 4.6).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.0%** of men and women will be diagnosed with oral cavity and pharynx cancer during their lifetime.

The 5-year relative survival rate for oral cavity and pharynx cancer diagnosed between 2013 and 2017 was **52.9%**, which means that **52.9%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **2,652** individuals who had been diagnosed with oral cavity and pharynx cancer within the past 25 years were alive as of January 1, 2022.

Oral Cavity and Pharynx Cancer Detection

There is no routine screening test for early detection of oral cavity and pharynx cancer. However, many precancerous lesions can be found during routine oral exams by a dentist. It is recommended that you look at your mouth in a mirror every month to check for any changes, such as white patches, sores, or lumps.[12] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Risk factors for this cancer include tobacco and alcohol use, infection with the human papillomavirus (HPV), being male, age (>55 years), excess body weight, exposure to sunlight, mutations in certain genes, and family history of head and neck cancer.[12] **For more information about oral cavity and pharynx cancer, go HERE.**

Figure 20. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Oral Cavity and Pharynx Cancer by Sex: Puerto Rico, 2000-2022

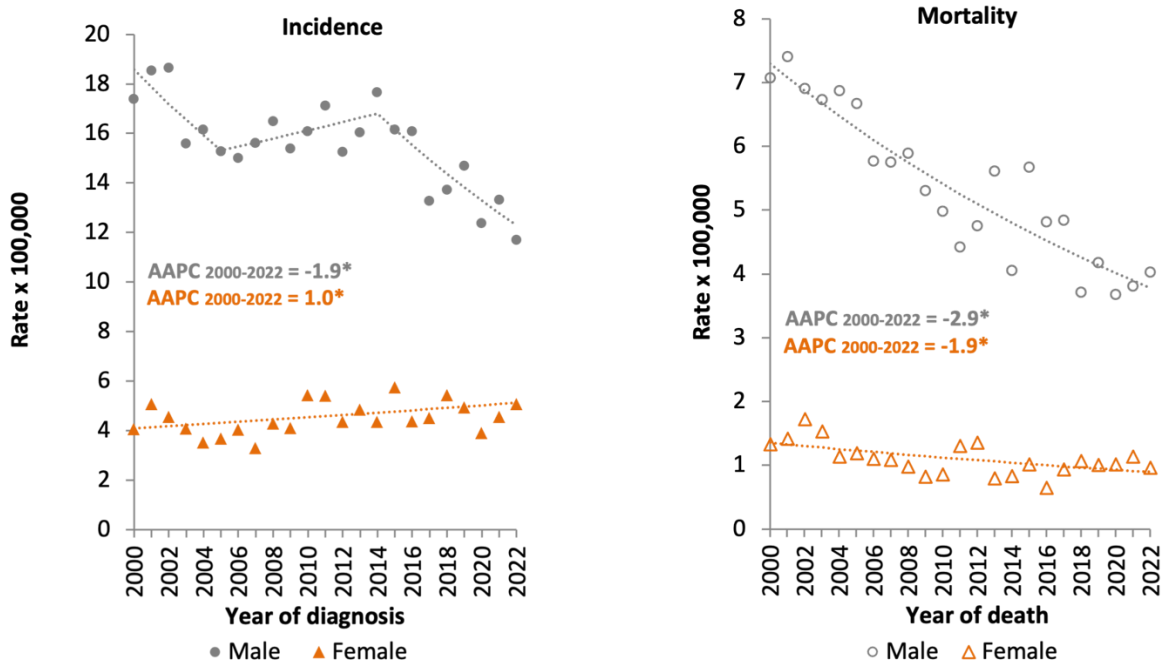


Figure 21. Age-Specific Incidence and Mortality Rates – Oral Cavity and Pharynx Cancer by Sex: Puerto Rico, 2018-2022

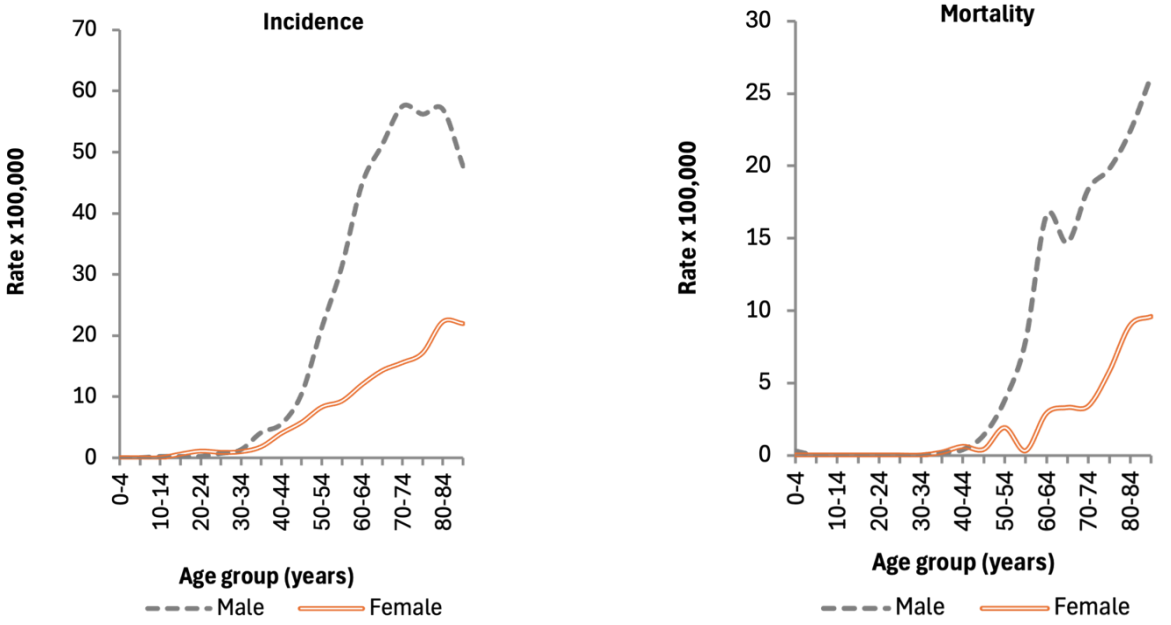


Figure 22. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Oral Cavity and Pharynx Cancer by Municipality: Puerto Rico, 2018-2022

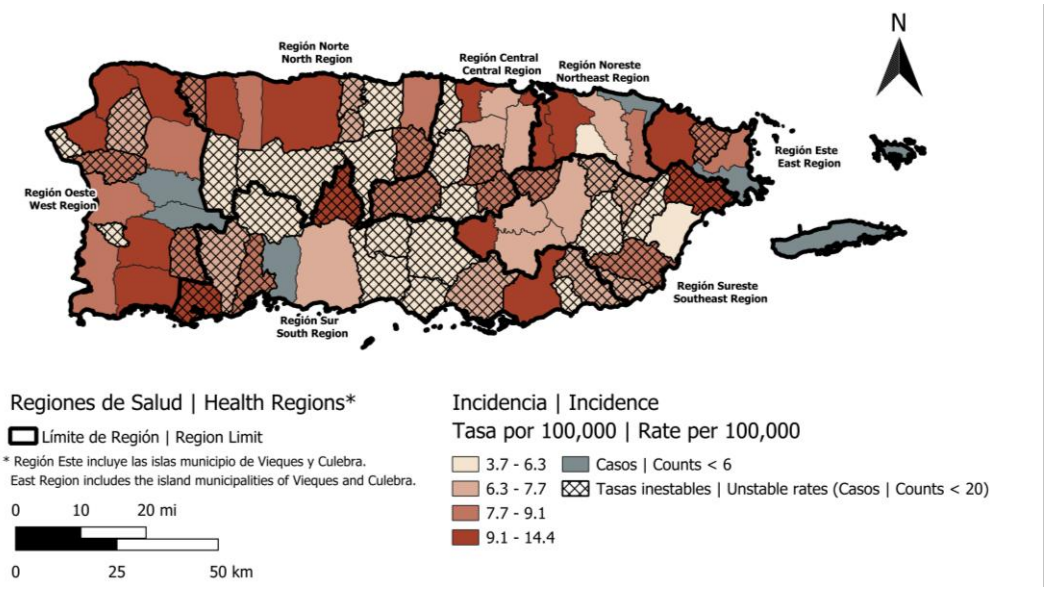
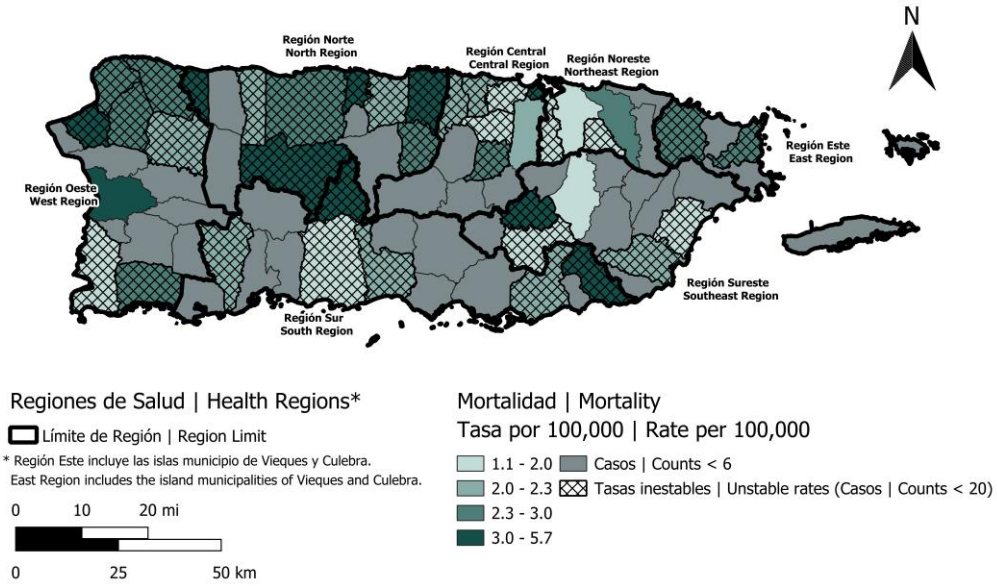


Figure 23. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Oral Cavity and Pharynx Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for oral cavity and pharynx cancer decreased on average by **1.9%** ($p<0.05$) per year in men, while it increased on average by **1.0%** ($p<0.05$) per year in women. However, for the 2000-2022 period, mortality rates decreased on average by **2.9%** ($p<0.05$) and **1.9%** ($p<0.05$) per year in men and women, respectively (Figure 20). The median age at diagnosis for oral cavity and pharynx cancer was **67** years in men and in women. The median age at death was **70** years in men and **74** years in women (Figure 21). **For statistical information of oral cavity and pharynx cancer in the United States of America, go HERE.**

STOMACH CANCER

KEY POINTS

During the **2018-2022** period in Puerto Rico, **stomach** cancer accounted for:

- **2.0%** of all cancers in men and **2.0%** of all cancers in women.
- **3.4%** of all cancer deaths in men and **3.1%** of all cancer deaths in women.

On average,

- **168** men and **150** women were diagnosed annually.
- **97** men and **73** women died each year.

The risk of developing stomach cancer was **1.4** times higher in men than women (95% CI: 1.3, 1.6).

The risk of dying from stomach cancer was **1.7** times higher in men than women (95% CI: 1.5, 2.0).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **0.9%** of men and women will be diagnosed with stomach cancer during their lifetime.

The 5-year relative survival rate for stomach cancer diagnosed between 2013 and 2017 was **32.4%**, which means that **32.4%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **1,445** individuals who had been diagnosed with stomach cancer within the past 25 years were alive as of January 1, 2022.

Stomach Cancer Detection

There is no routine screening test for early detection of stomach cancer. Signs and symptoms can include poor appetite, weight loss, abdominal pain, heartburn or indigestion, swelling or fluid build-up in the abdomen, and feeling full after eating a small meal. You should see a doctor if you have any of these signs and symptoms.[13] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

The principal factor associated with increased risk of developing stomach cancer is an infection with *Helicobacter pylori*. Other factors include being male, age (>60 years), diets high in salt-preserved foods or lacking in fruits and vegetables, smoking, pernicious anemia, familial adenomatous polyposis, and family history of stomach cancer.[13] **For more information about stomach cancer, go HERE.**

Figure 24. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Stomach Cancer by Sex: Puerto Rico, 2000-2022

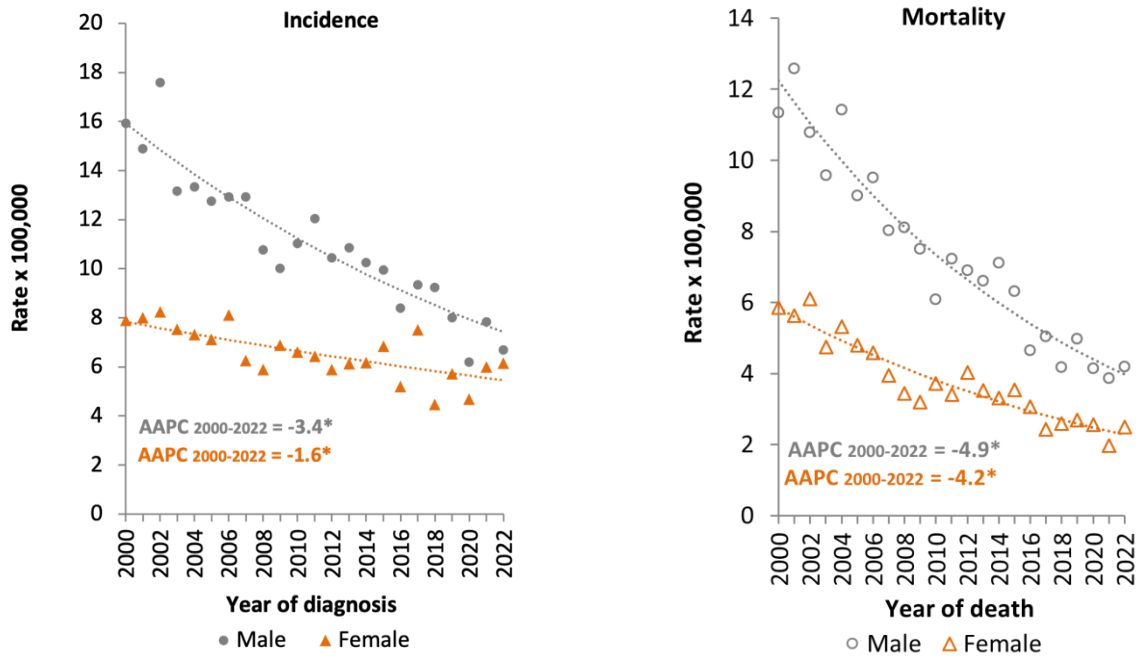


Figure 25. Age-Specific Incidence and Mortality Rates – Stomach Cancer by Sex: Puerto Rico, 2018-2022

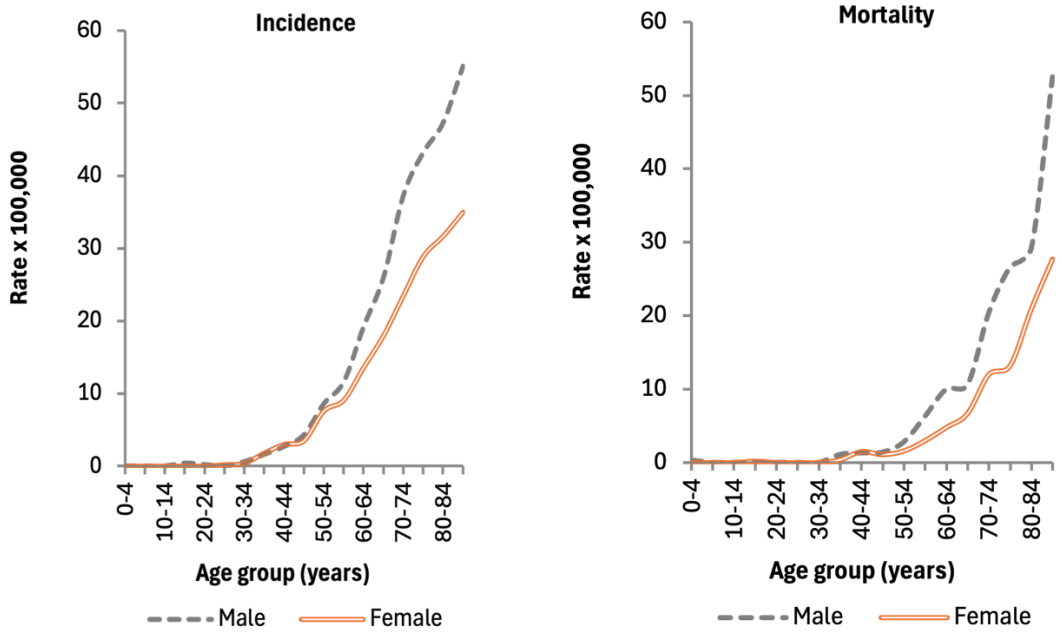


Figure 26 Age-Adjusted Incidence Rates (2000 PR Standard Population) – Stomach Cancer by Municipality: Puerto Rico, 2018-2022

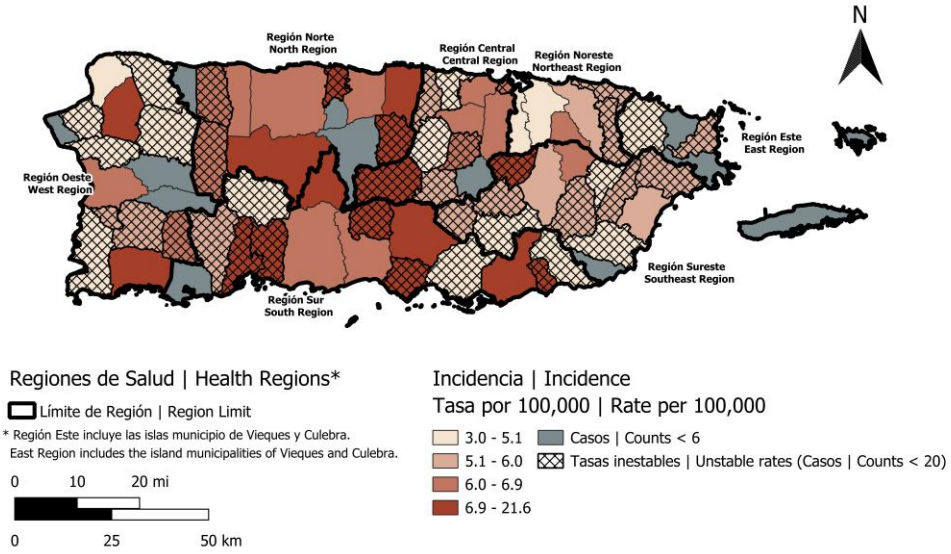
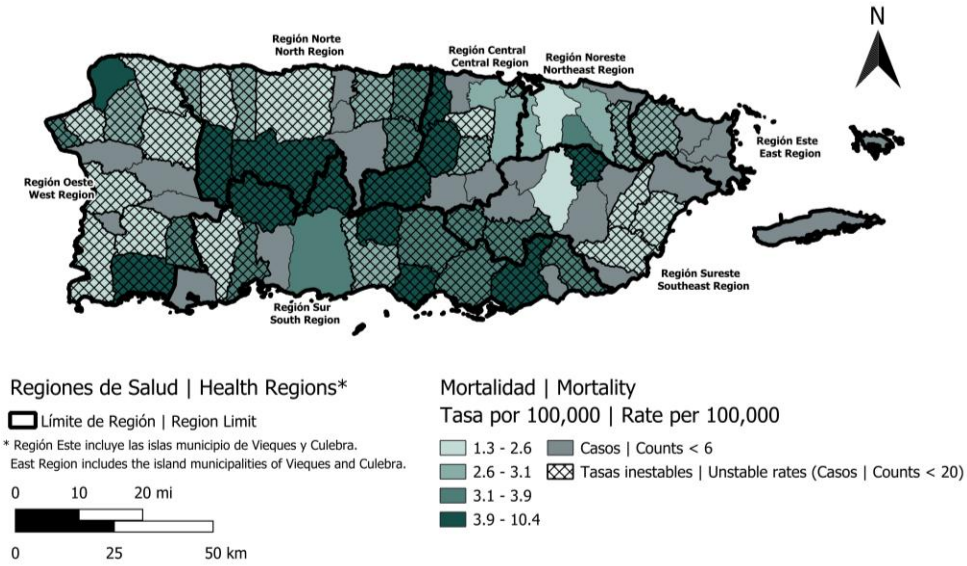


Figure 27. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Stomach Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for stomach cancer decreased on average by **3.4%** (p<0.05) and **1.6**% (p<0.05) per year in men and women, respectively. Similarly, for the 2000-2022 period, mortality rates decreased on average by **4.9%** (p<0.05) and **4.2%** (p<0.05) per year in men and women, respectively (Figure 24). The median age at diagnosis for stomach cancer was **72** years in both men and women. The median age at death was **74** years in men and **76** years in women (Figure 25). **For statistical information of stomach cancer in the United States of America, go HERE.**

COLORECTAL CANCER

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **colorectal** cancer accounted for:

- **11.1%** of all cancers in men and **10.4%** of all cancers in women.
- **12.7%** of all cancer deaths in men and **12.2%** of all cancer deaths in women.

On average,

- **936** men and **794** women were diagnosed annually.
- **364** men and **287** women died each year.

The risk of developing colorectal cancer was **1.4** times higher in men than women (95% CI: 1.36, 1.49).

The risk of dying from colorectal cancer was **1.6** times higher in men than women (95% CI: 1.5, 1.7).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately 4.4% of men and women will be diagnosed with colorectal cancer during their lifetime.

The 5-year relative survival rate for colorectal cancer diagnosed between 2013 and 2017 was **63.5%**, which means that **63.5%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **14,502** individuals who had been diagnosed with colon and rectum cancer within the past 25 years were alive as of January 1, 2022.

Early Detection of Colorectal Cancer

Screening tests for the early detection of colon and rectal cancer include stool tests, such as the fecal immunochemical test (FIT), guaiac-based fecal occult blood test (gFOBT), and the stool DNA test. Colonoscopy or CT colonography (a test that uses computerized tomography) is also used to observe the structure of the colon and rectum and detect abnormalities.[14] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Factors associated with an increased risk of developing colorectal cancer include personal or family history of polyps, ulcerative colitis, Crohn's disease, a diet high in fat and calories but low in fruits and vegetables, cigarette smoking, and physical inactivity.[14] **For more information about colorectal cancer, go HERE.**

Figure 28. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Colorectal Cancer by Sex: Puerto Rico, 2000-2022

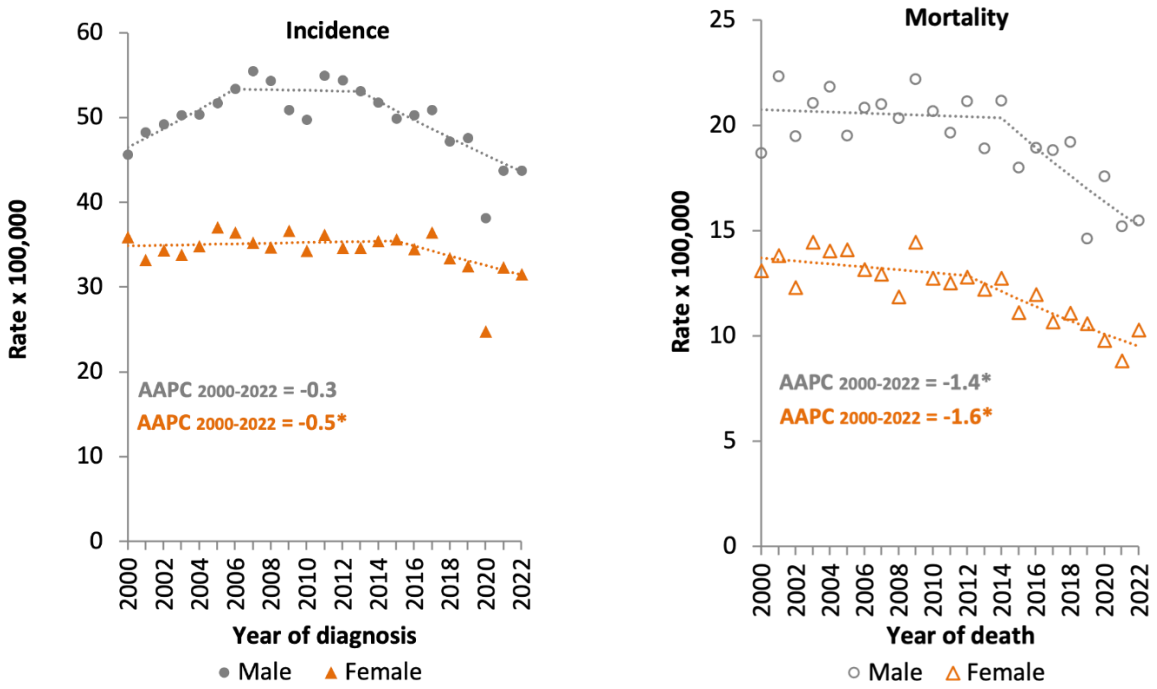


Figure 29. Age-Specific Incidence and Mortality Rates – Colorectal Cancer by Sex: Puerto Rico, 2018-2022

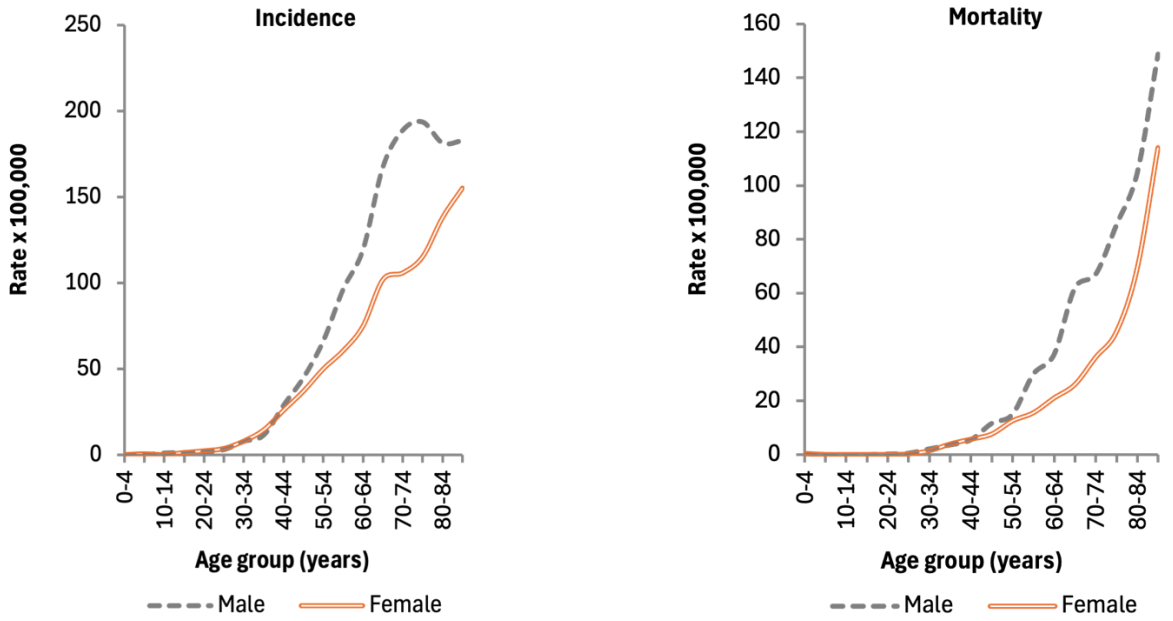


Figure 30. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Colorectal Cancer by Municipality: Puerto Rico, 2018-2022

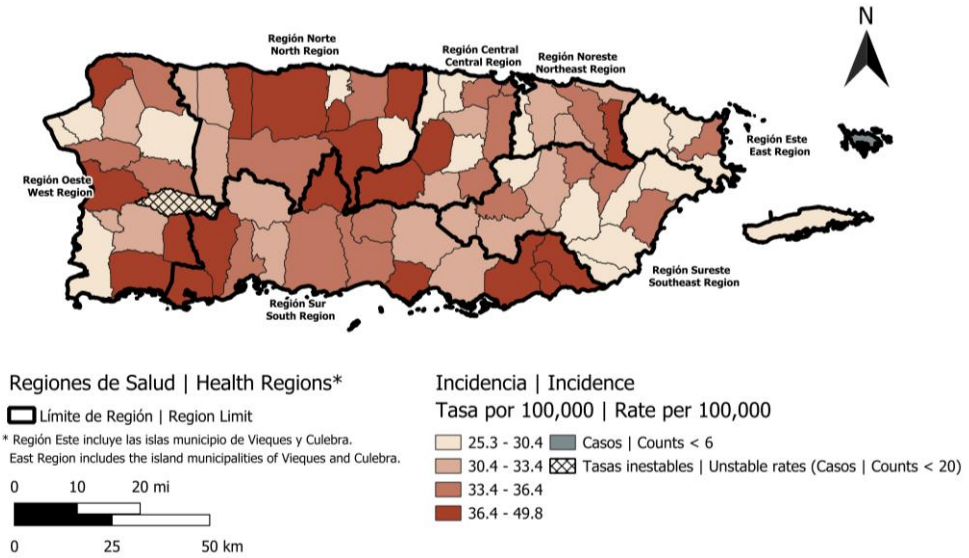
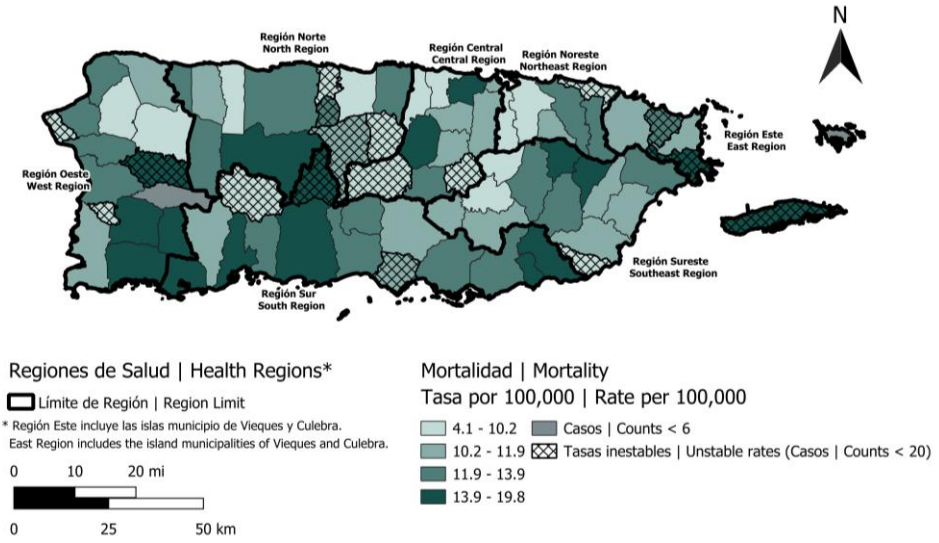


Figure 31. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Colorectal Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for colorectal cancer decreased annually by **0.3%** ($p>0.05$) in men and **0.5%** ($p<0.05$) in women. For the 2000-2022 period, mortality rates decreased on average by **1.4%** and **1.6%** ($p<0.05$) per year in men and women, respectively (Figure 28). The median age at diagnosis for colorectal cancer was **68** years in both men and women. The median age at death in men was **72** years and **75** years in women (Figure 29). **For statistical information of colorectal cancer in the United States of America, go HERE.**

LIVER AND INTRAHEPATIC BILE DUCT CANCER

KEY POINTS

During the **2018-2022** period **in** Puerto Rico, **liver and intrahepatic bile duct** cancer accounted for:

- **3.4%** of all cancers in men and **1.5%** of all cancers in women.
- **8.2%** of all cancer deaths in men and **5.0%** of all cancer deaths in women.

On average,

- **287** men and **118** women were diagnosed annually.
- **236** men and **118** women died each year.

The risk of developing liver and intrahepatic bile duct cancer was **3.1** times higher in men than women (95% CI: 2.8, 3.4).

The risk of dying from liver and intrahepatic bile duct cancer was **2.6** times higher in men than women (95% CI: 2.3, 2.9).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.0%** of men and women will be diagnosed with liver and intrahepatic bile duct cancer during their lifetime.

The 5-year relative survival rate for liver and intrahepatic bile duct cancer diagnosed between 2013 and 2017 was **16.5%**, which means that **16.5%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **719** individuals who had been diagnosed with liver and intrahepatic bile duct cancer within the past 25 years were alive as of January 1, 2022.

Liver and Intrahepatic Bile Duct Cancer Detection

There are no routine screening tests for early detection of liver and intrahepatic bile duct cancer. However, for people at higher risk, experts recommend screening for liver cancer with an alpha-fetoprotein (AFP) blood tests and abdominal ultrasound every 6 months.[15] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Risk factors associated with liver and intrahepatic bile duct cancer include infection with hepatitis B virus (HBV) or hepatitis C virus (HCV), high alcohol consumption, aflatoxin (a harmful substance produced by certain molds), iron storage diseases, cirrhosis, obesity, and diabetes.[15] **For more information about liver and intrahepatic bile duct cancer, go HERE.**

Figure 32. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Liver and Intrahepatic Bile Duct Cancer by Sex: Puerto Rico, 2000-2022

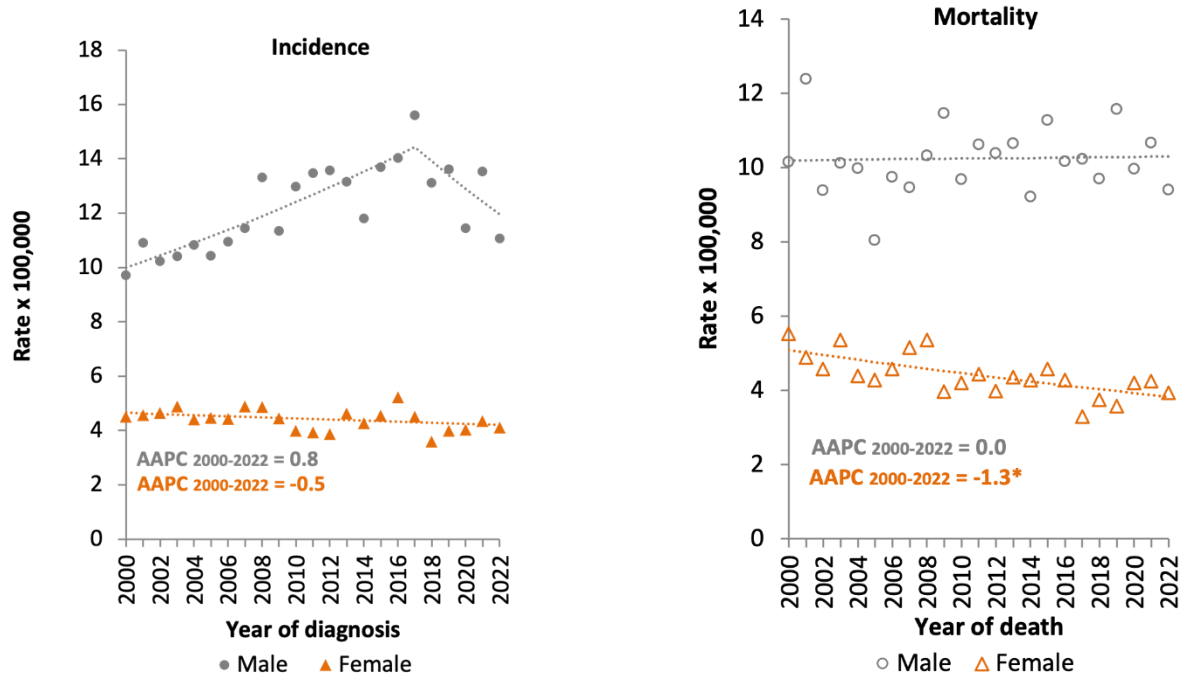


Figure 33. Age-Specific Incidence and Mortality Rates – Liver and Intrahepatic Bile Duct Cancer by Sex: Puerto Rico, 2018-2022

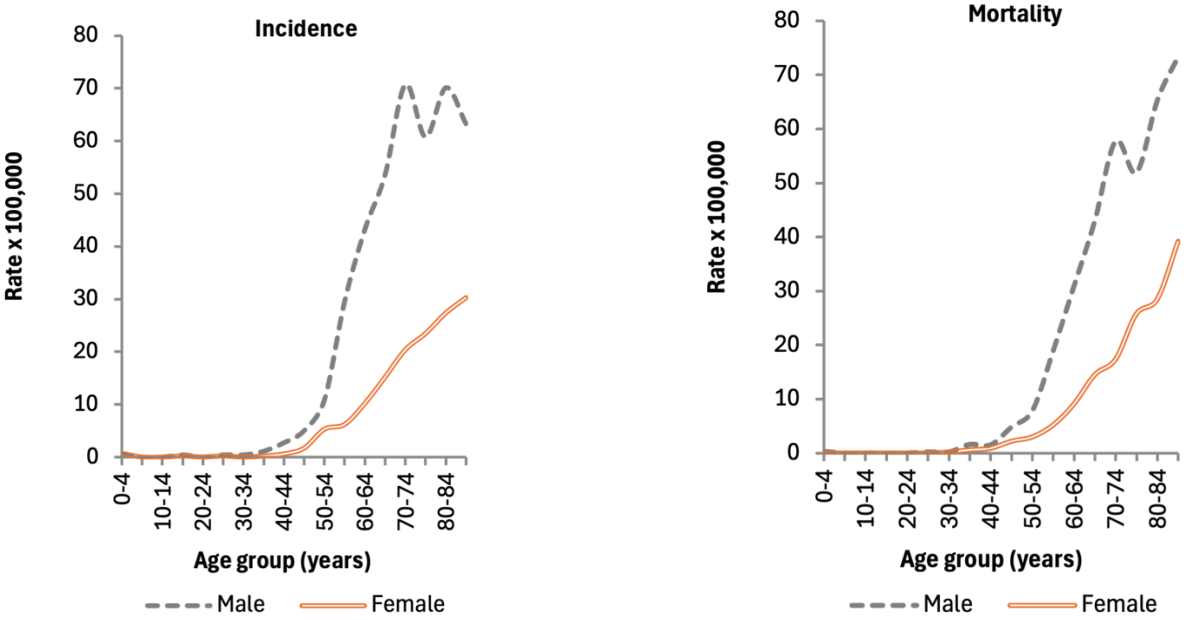


Figure 34. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Liver and Intrahepatic Bile Duct Cancer by Municipality: Puerto Rico, 2018-2022

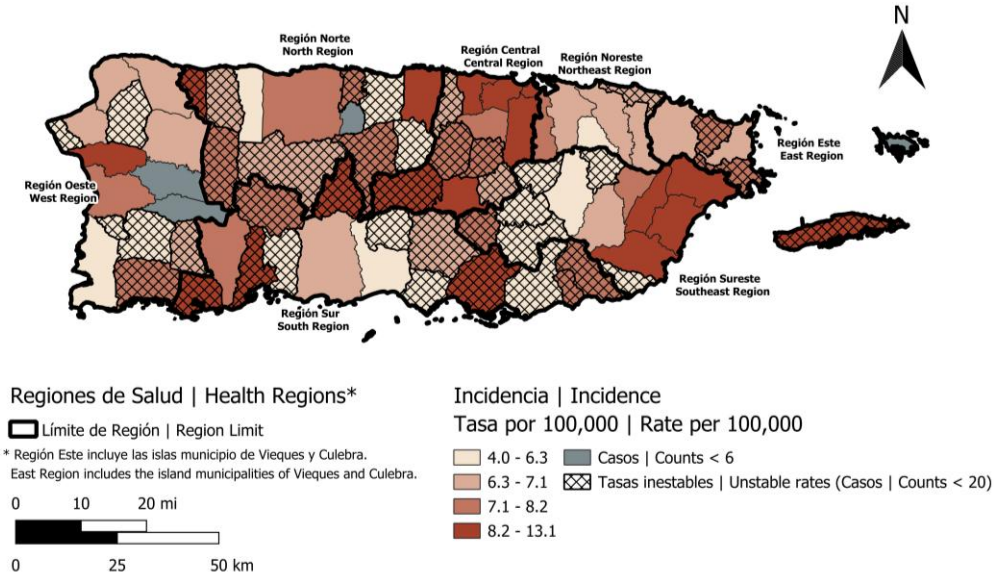
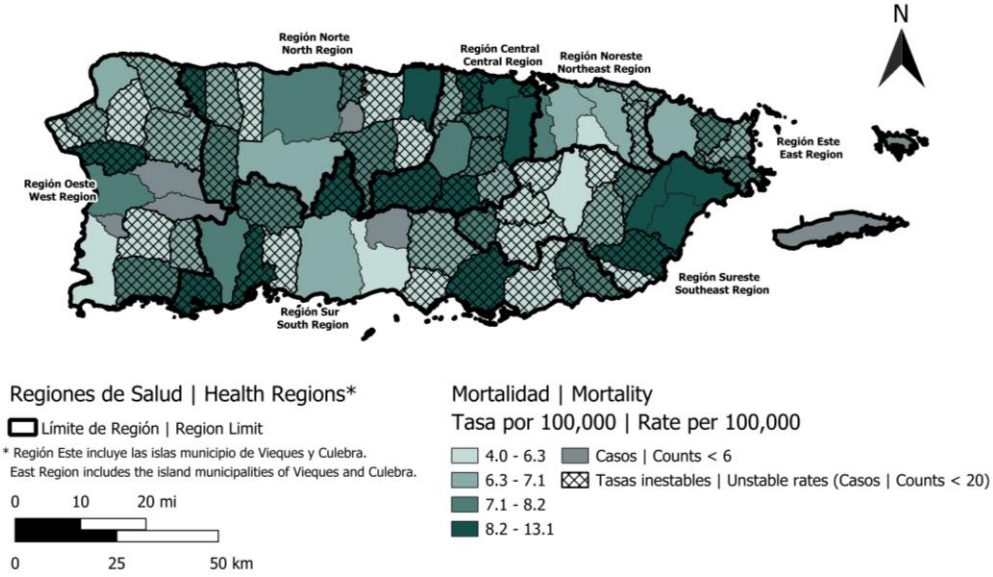


Figure 35. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Liver and Intrahepatic Bile Duct Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for liver and intrahepatic bile duct cancer remained stable in men and women. However, during the 2000-2022 period, mortality rates remained stable in men but decreased by an average of **1.3%** ($p<0.05$) per year in women (Figure 32). The median age at diagnosis for liver and intrahepatic bile duct cancer was **70** years in men and **73** years in women. The median age at death was **71** years and **75** years in men and women, respectively (Figure 33). **For statistical information of liver and intrahepatic bile duct cancer in the United States of America, go HERE.**

PANCREATIC CANCER

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **pancreatic** cancer accounted for:

- **2.6%** of all cancers in men and **2.6%** of all cancers in women.
- **6.4%** of all cancer deaths in men and 6.9% of all cancer deaths in women.

On average,

- **215** men and **203** women were diagnosed annually.
- **184** men and 162 women died each year.

The risk of developing pancreatic cancer was **1.3** times higher in men than women (95% CI: 1.2, 1.5).

The risk of dying from pancreatic cancer was **1.5** times higher in men than women (95% CI: 1.4, 1.7).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.1%** of men and women will be diagnosed with pancreatic cancer during their lifetime.

The 5-year relative survival rate for pancreatic cancer diagnosed between 2013 and 2017 was **12.7%**, which means that **12.7%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **560** individuals who had been diagnosed with pancreatic cancer within the past 25 years were alive as of January 1, 2022.

Early Detection of Pancreatic Cancer

The detection of pancreatic cancer remains challenging because no symptoms appear in its early stage. Usually, this cancer can only be detected once it has grown in size or spread to other organs. Currently, routine screening tests for this cancer are not recommended for individuals at average risk, as there is no evidence that such screening reduces the risk of death.[16] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Risk factors for pancreatic cancer include tobacco use, being overweight, diabetes, and chronic pancreatitis. Additional factors associated with increased risk include advanced age, being male, or having hereditary genetic syndromes can increase the risk of developing this disease.[16] **For more information about pancreatic cancer, go HERE.**

Figure 36. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Pancreatic Cancer by Sex: Puerto Rico, 2000-2022

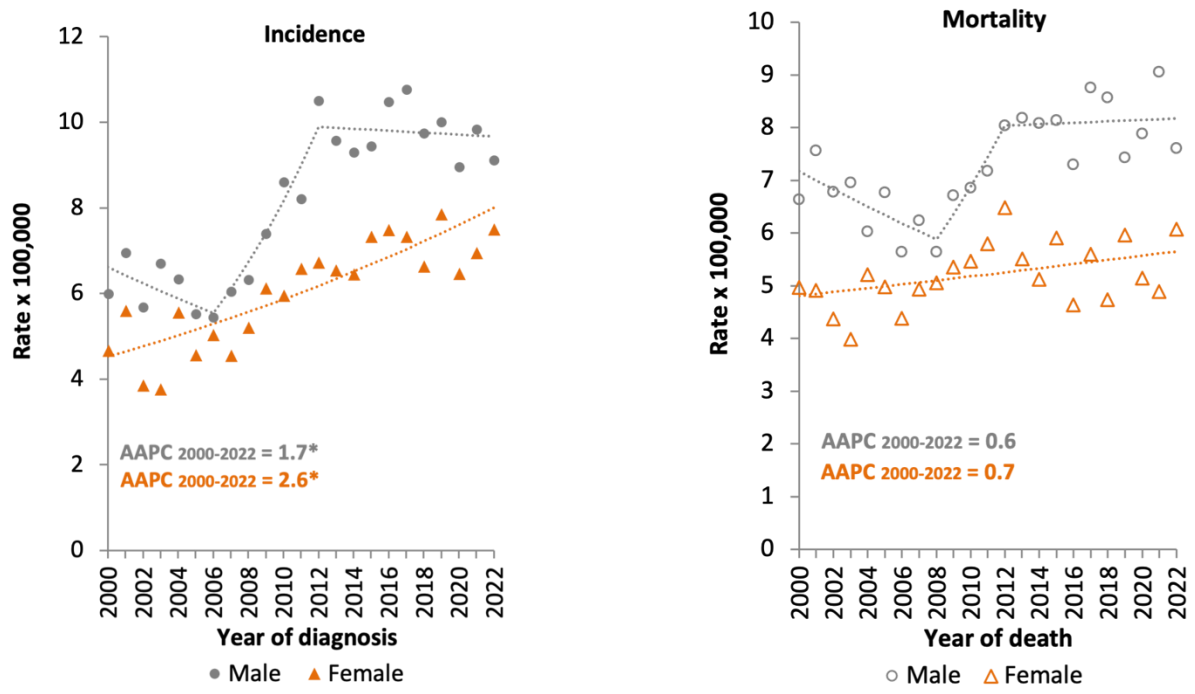


Figure 37. Age-Specific Incidence and Mortality Rates – Pancreatic Cancer by Sex: Puerto Rico, 2018-2022

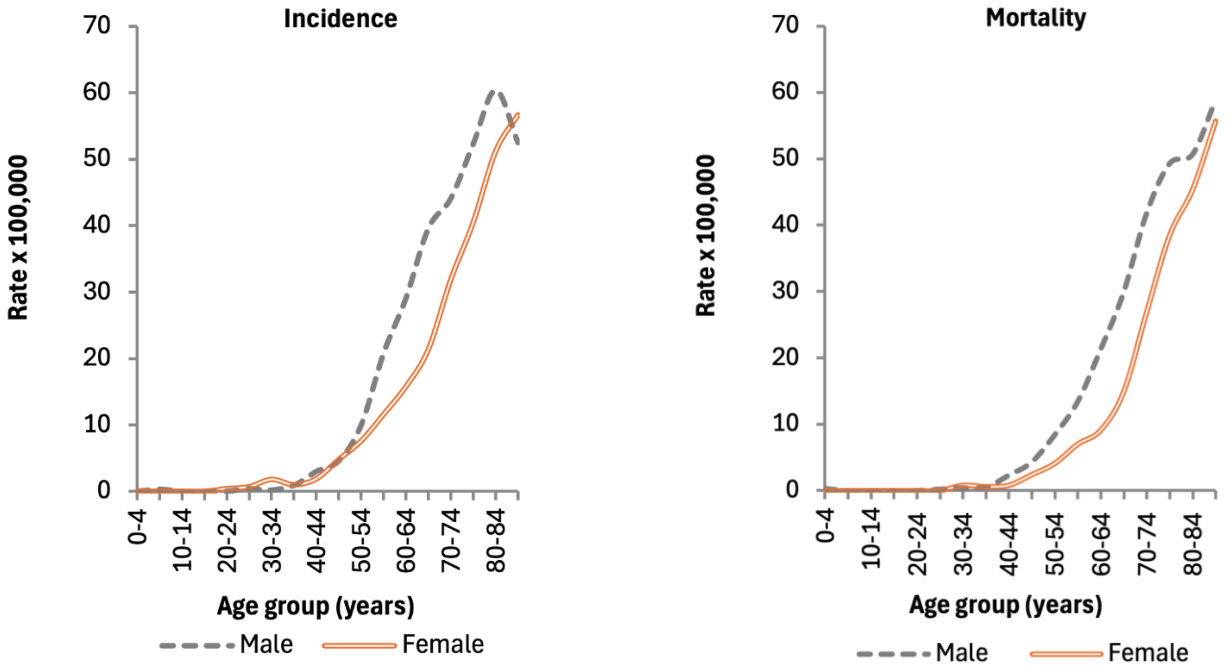


Figure 38. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Pancreatic Cancer by Municipality: Puerto Rico, 2018-2022

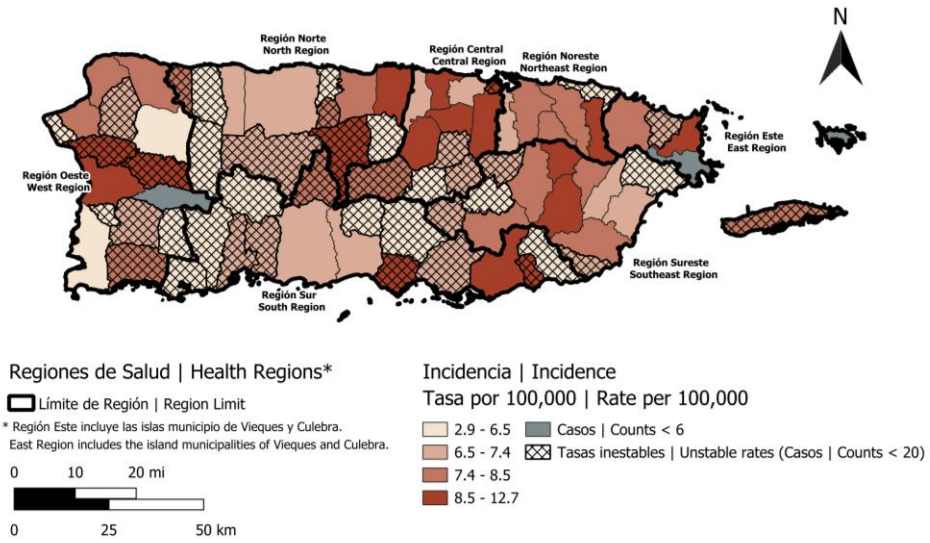
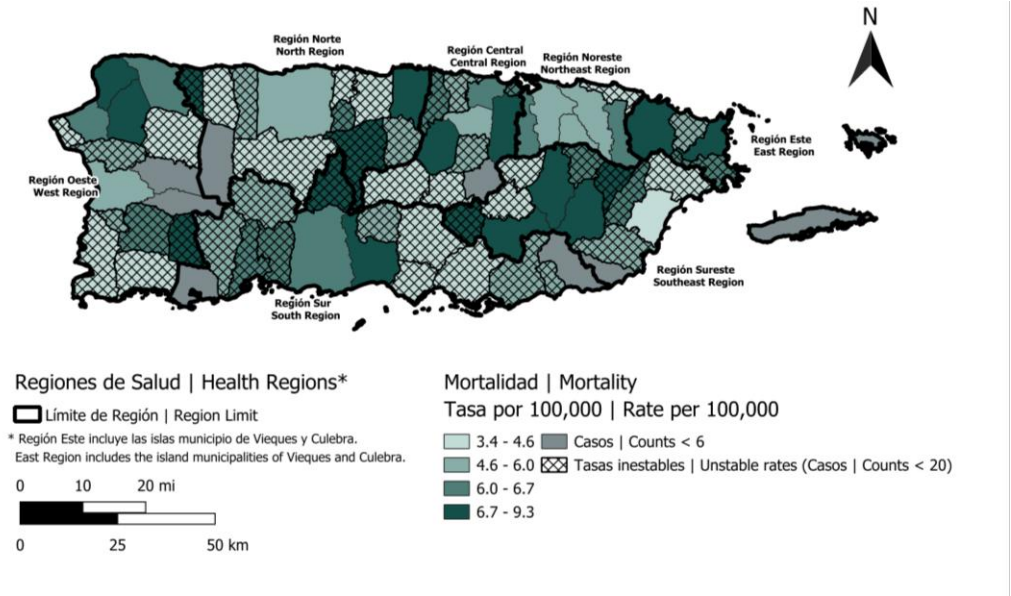


Figure 39. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Pancreatic Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for pancreatic cancer increased annually on average by **1.7%** ($p<0.05$) in men and **2.6%** ($p<0.05$) in women. For the 2000-2022 period, mortality rates remained stable in both men and women (Figure 36). The median age at diagnosis for pancreatic cancer in men and women was **70** years and **74** years, respectively. The median age at death in men was **72** years and **76** years in women (Figure 37). **For statistical information of pancreatic cancer in the United States of America, go HERE.**

LUNG AND BRONCHUS CANCER

KEY POINTS

During the **2018-2022** period in Puerto Rico, **lung and bronchus** cancer accounted for:

- **5.2%** of all cancers in men and **4.1%** of all cancers in women.
- **11.6%** of all cancer deaths in men and **9.3%** of all cancer deaths in women.

On average,

- **442** men and **317** women were diagnosed annually.
- **332** men and **220** women died each year.

The risk of developing lung and bronchus cancer was **1.8** times higher in men than women (95% CI: 1.6, 1.9).

The risk of dying from lung and bronchus cancer was **2.0** times higher in men than women (95% CI: 1.8, 2.1).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **2.0%** of men and women will be diagnosed with lung and bronchus cancer during their lifetime.

The 5-year relative survival rate for lung and bronchus cancer diagnosed between 2013 and 2017 was **21.3%**, which means that **21.3%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **1,850** individuals who had been diagnosed with lung and bronchus cancer within the past 25 years were alive as of January 1, 2022.

Lung and Bronchus Cancer Detection

The American Cancer Society recommends yearly lung cancer screening with low-dose CT scan (LDCT) for people aged 50 to 80 years old who smoke or have a history of smoking and do not have any symptoms.[17] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Tobacco consumption is the leading cause of lung and bronchus cancer. Other risk factors for lung and bronchus cancer include smoking cigars and pipes, environmental smoke exposure (passive smoking), exposure to radon, asbestos and air pollution, other lung diseases (such as tuberculosis), and family history of lung cancer.[17] **For more information about lung and bronchus cancer, go HERE.**

Figure 40. Age-Adjusted (2000 Us Std. Pop.) Incidence and Mortality Rates – Lung and Bronchus Cancer by Sex: Puerto Rico, 2000-2022

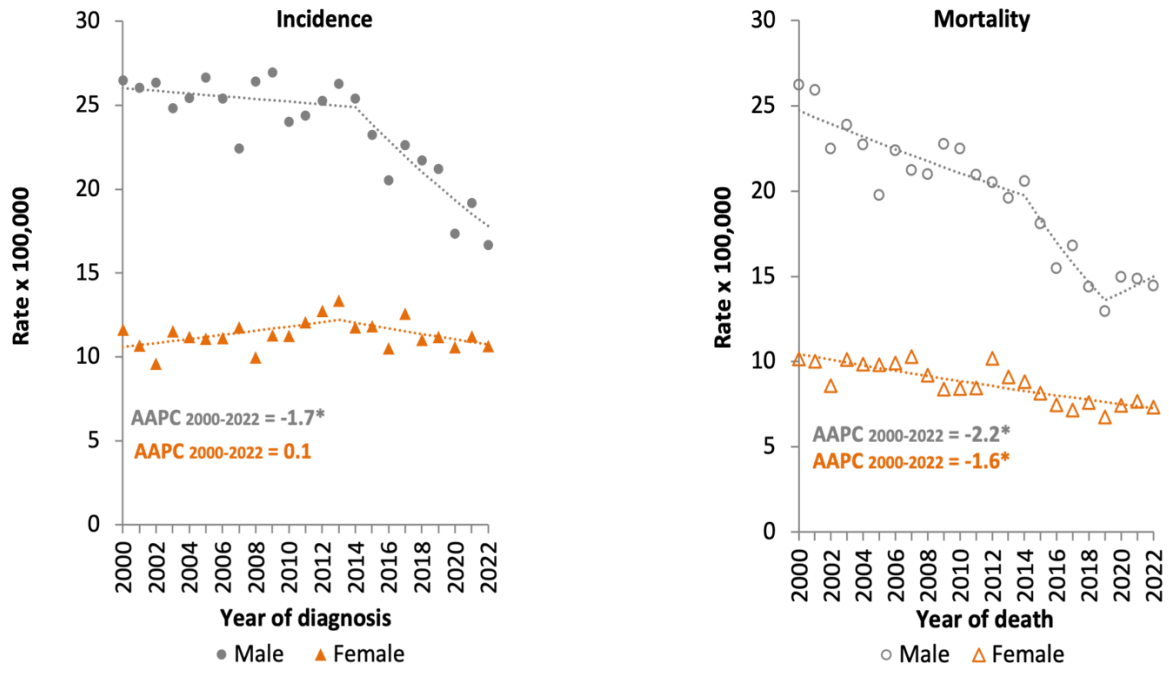


Figure 41. Age-Specific Incidence and Mortality Rates – Lung and Bronchus Cancer by Sex: Puerto Rico, 2018-2022

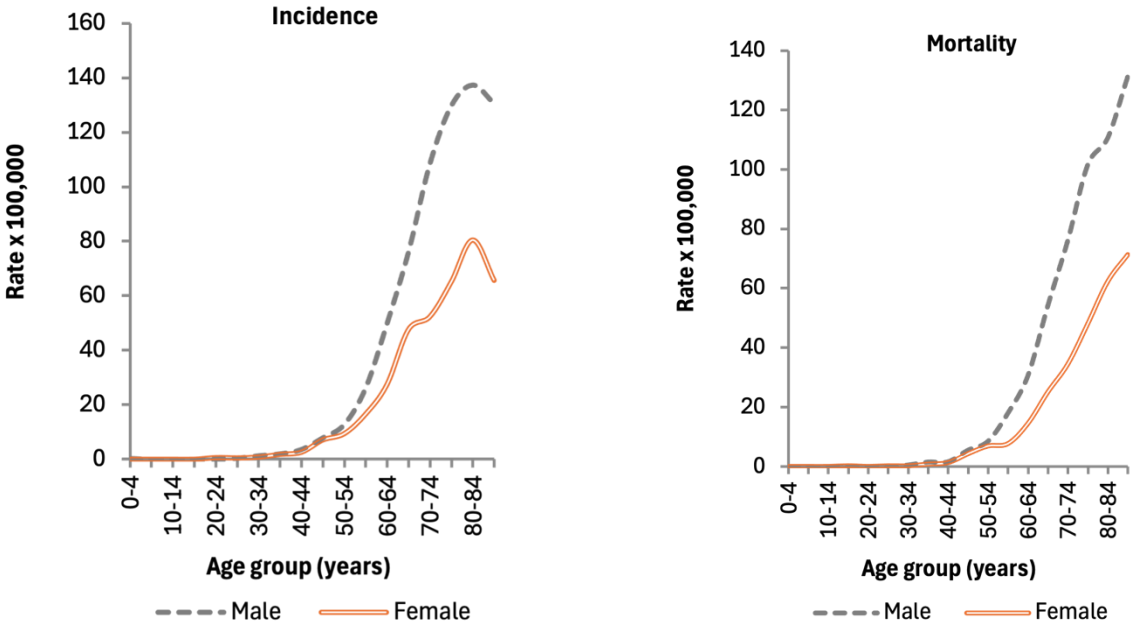


Figure 42. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Lung and Bronchus Cancer by Municipality: Puerto Rico, 2018-2022

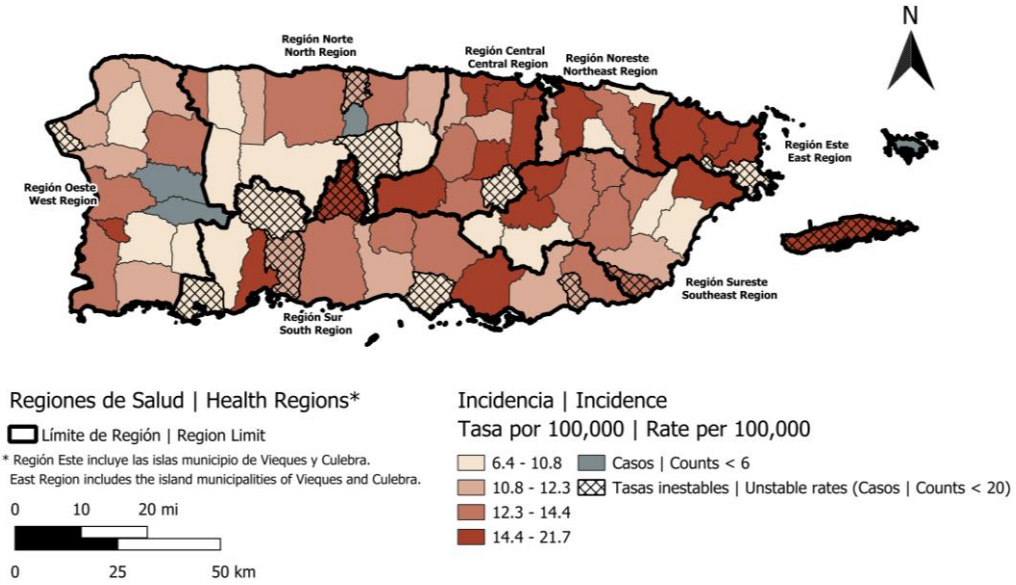
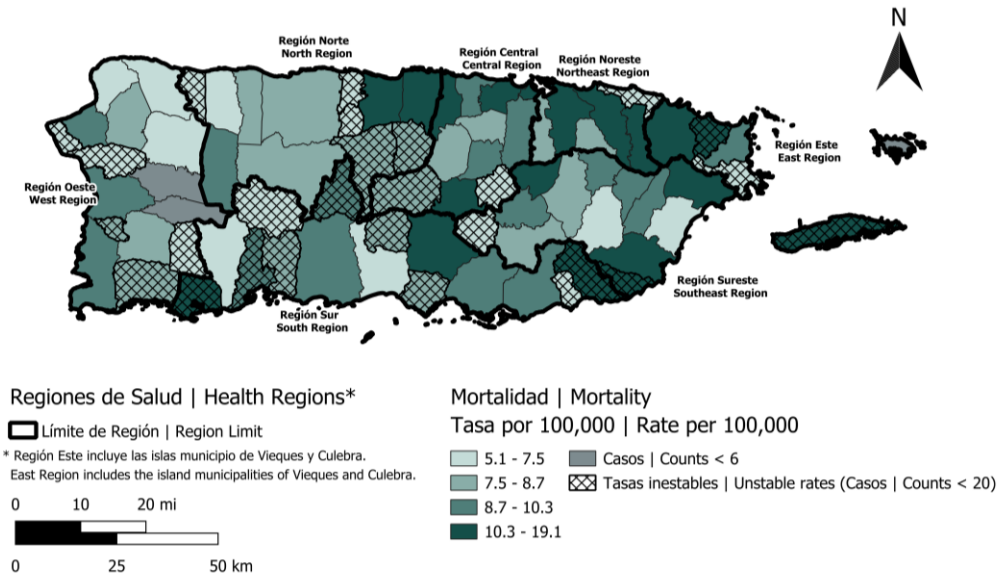


Figure 43. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Lung and Bronchus Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for lung and bronchus cancer decreased on average by **1.7%** ($p<0.05$) per year in men, while remaining stable for women. For the 2000-2022 period, mortality rates decreased on average by **2.2%** ($p<0.05$) and **1.6%** ($p<0.05$) per year in men and women, respectively (Figure 40). The median age at diagnosis for lung and bronchus cancer in men and women was **73** and **72** years, respectively. The median age at death in men was **74** years and **76** years in women (Figure 41). **For statistical information of lung and bronchus cancer in the United States of America, go HERE.**

FEMALE BREAST CANCER

KEY POINTS

During the **2018-2022** period in Puerto Rico, **female breast** cancer accounted for:

- **31.4%** of all cancers in women and **17.7%** of all cancer deaths in women.

On average,

- **2,410** women were diagnosed annually.
- **418** women died each year.

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **11.4%** of women will be diagnosed with breast cancer during their lifetime.

The 5-year relative survival rate for breast cancer diagnosed between 2013 and 2017 was **86.1%**, which means that **86.1%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **26,810** women who had been diagnosed with breast cancer within the past 25 years were alive as of January 1, 2022.

Early Detection of Female Breast Cancer

Mammography is the best method for early detection of breast cancer. Women with an average risk aged 45 to 54 should have a mammogram every year, while women aged 55 and older should have one every two years. In general, women at high risk aged 30 and older should undergo an MRI and a mammogram every year.[18] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Breast cancer is a disease mainly influenced by lifestyle-related risk factors. It is estimated that approximately 5%-10% of all breast cancer cases are attributable to genetic factors. Other risk factors may be related to harmful effects from exposure to hormones.[18] **For more information about female breast cancer, go HERE.**

Figure 44. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Female Breast Cancer: Puerto Rico, 2000-2022

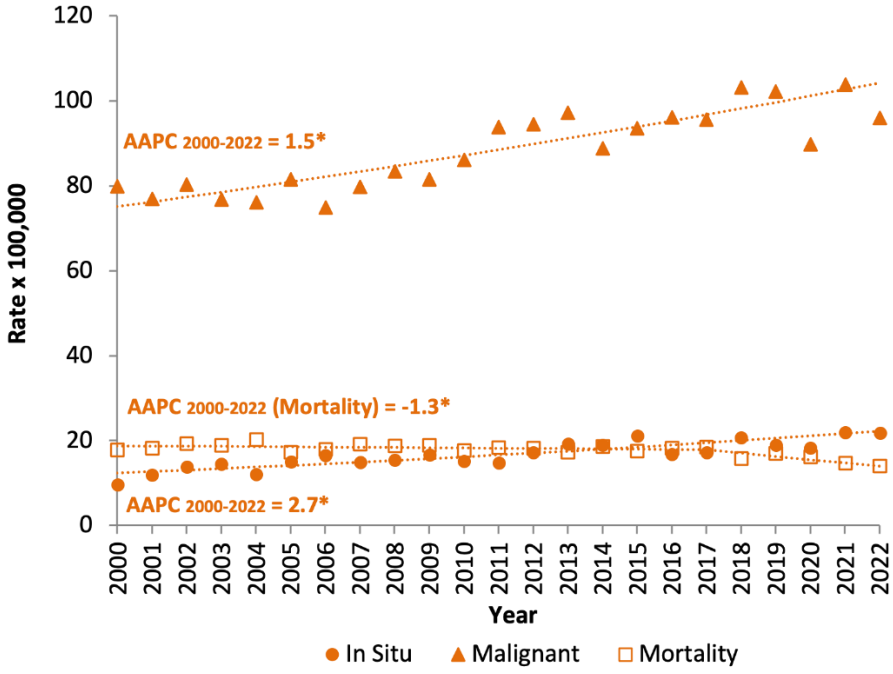


Figure 45. Age-Specific Incidence and Mortality Rates – Female Breast Cancer: Puerto Rico, 2018-2022

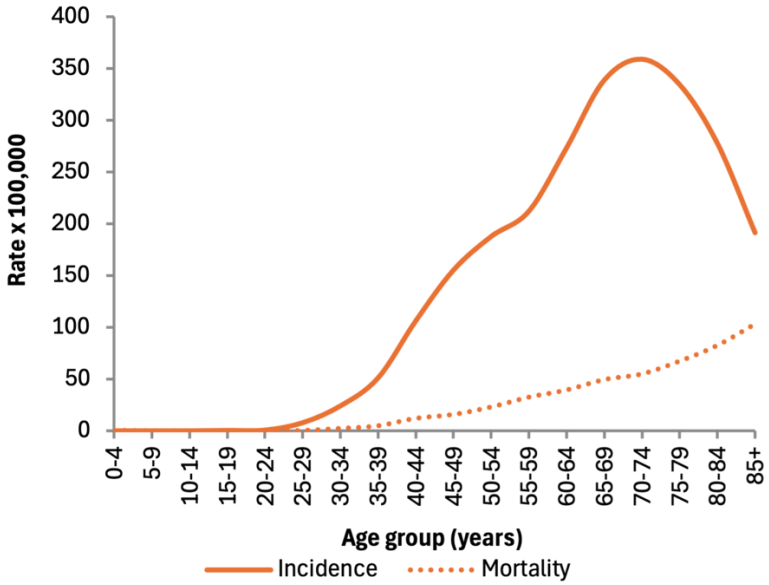


Figure 46. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Female Breast Cancer by Municipality: Puerto Rico, 2018-2022

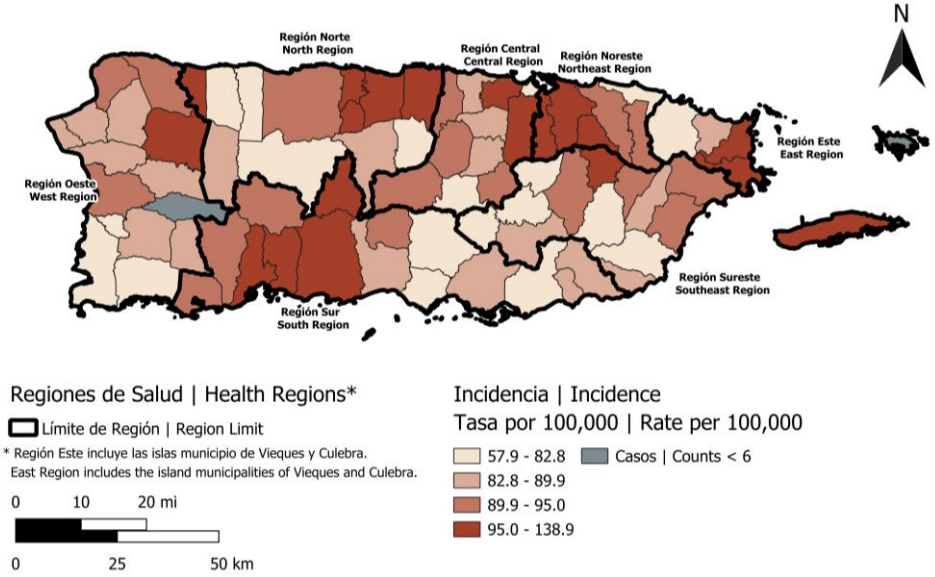
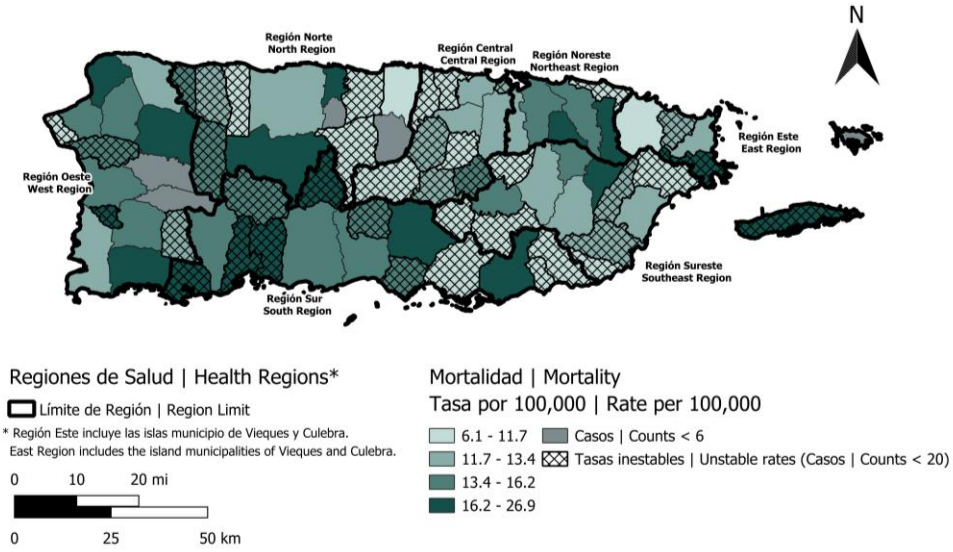


Figure 47. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Female Breast Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for invasive breast cancer among women increased on average by **1.5%** (p<0.05) per year, while those *in situ* breast cancer increased on average by **2.7%** (p<0.05) per year. However, for the 2000-2022 period, mortality rates breast cancer among women decreased on average by **1.3%** (p<0.05) per year (Figure 44). The median age at diagnosis was **65** years for invasive breast cancer and **64** years for *in situ* breast cancer. The median age at death was **70** years (Figure 45). **For statistical information of female breast cancer in the United States of America, go HERE.**

CERVICAL CANCER

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **cervical** cancer accounted for:

- **2.6%** of all cancers in women and **2.0%** of all cancer deaths in women.

On average,

- **202** women were diagnosed annually.
- **47** women died each year.

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.0%** of women will be diagnosed with cervical cancer during their lifetime.

The 5-year relative survival rate for cervical cancer diagnosed between 2013 and 2017 was **66.6%**, meaning that **66.6%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **2,709** women who had been diagnosed with cervix uteri cancer within the past 25 years were alive as of January 1, 2022.

Early Detection of Cervical Cancer

The Papanicolaou (Pap) test and the human papillomavirus (HPV) test are screening tests available for the early detection of cervical cancer. Women with a cervix should undergo either one or both of these tests at regular screening intervals, in accordance with national guidelines. Adherence to these guidelines is essential for early detection and diagnosis.[19] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Infection of the cervix with HPV is the main risk factor for cervical cancer. Other risk factors for developing cervical cancer are sexual history, such as sexual activity at a young age, having many sexual partners, or having a high-risk partner (e.g., partner with HPV infection). Additional factors include the prolonged use of oral contraceptives, family history of cervix uteri cancer, history of cigarette smoking, low socioeconomic status, and a diet deficient in fruits and vegetables.[19] **For more information about cervix uteri cancer, go HERE.**

Figure 48. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Cervix Uteri Cancer: Puerto Rico, 2000-2022

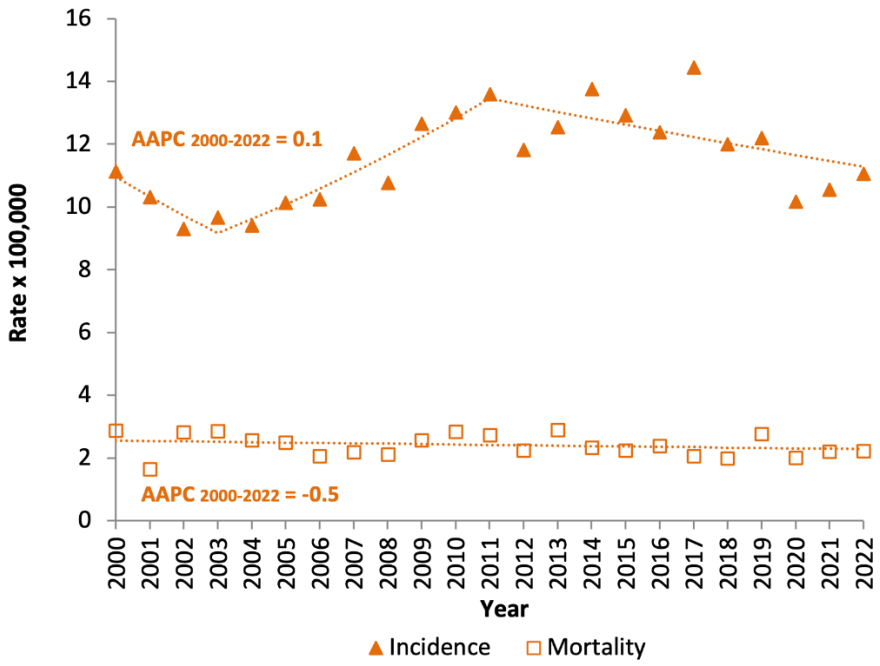


Figure 49. Age-Specific Incidence and Mortality Rates – Cervix Uteri Cancer: Puerto Rico, 2018-2022

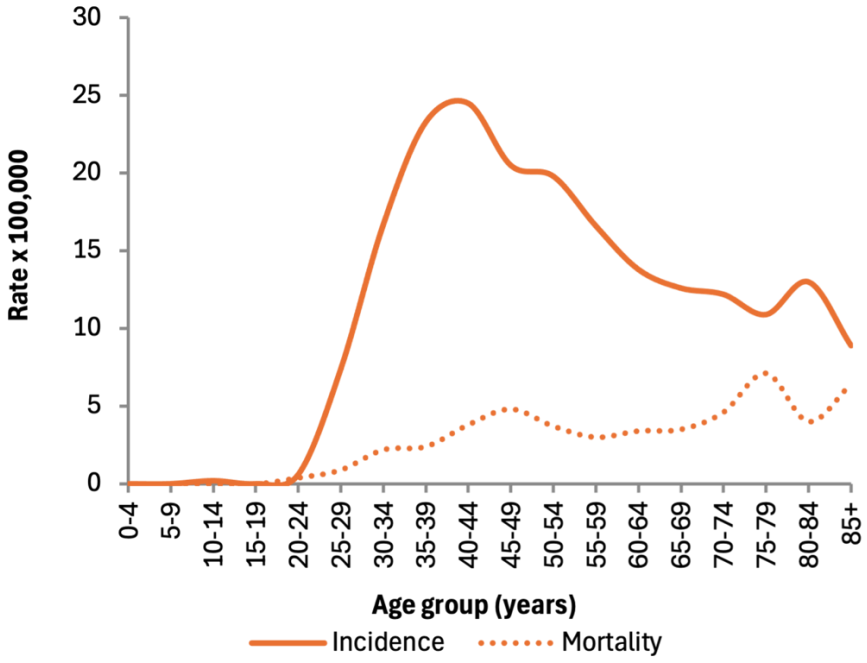
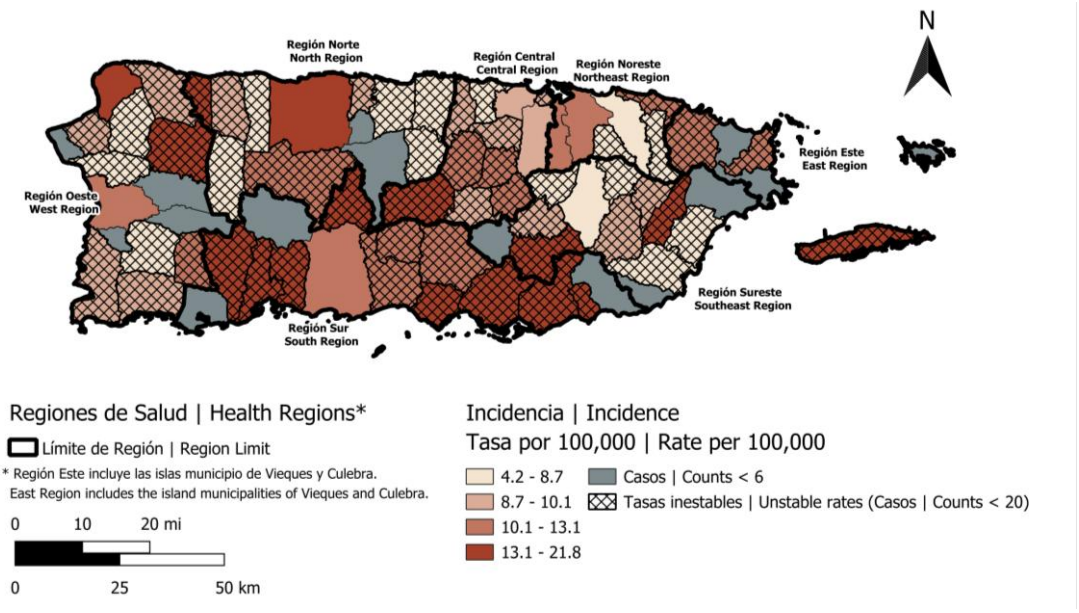


Figure 50. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Cervix Uteri Cancer by Municipality: Puerto Rico, 2018-2022



Note: Mortality rates by municipality could not be calculated due to the small number of cases in most of the municipalities.

Figures Summary. Between 2000 and 2022, the incidence rates for cervix uteri cancer and the mortality rates (2000-2022 period) remained stable (Figure 48). The median age at diagnosis for cervix uteri cancer was **51** years. The median age at death was **60** years (Figure 49). **For statistical information of cervix uteri cancer in the United States of America, go HERE.**

UTERINE CANCER

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **uterine** cancer accounted for:

- **10.0%** of all cancers in women and **5.9%** all cancer deaths in women.

On average,

- **766** women were diagnosed annually.
- **139** women died each year.

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **3.5%** of women will be diagnosed with uterine cancer during their lifetime.

The 5-year relative survival rate for uterine cancer diagnosed between 2013 and 2017 was **81.3%**, meaning that **81.3%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **7,372** women who had been diagnosed with uterine cancer within the past 25 years were alive as of January 1, 2022.

Detection of Uterine Cancer

For the early detection of uterine (endometrial) cancer, individuals should consult a doctor if they experience any associated signs or symptoms. Symptoms may include abnormal vaginal bleeding or worsening discharge, bleeding between periods, or after menopause.[20] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Factors associated with an increased risk of uterine cancer include age, endometrial hyperplasia, hormone replacement therapy, obesity and related conditions, tamoxifen use, and family history of colorectal cancer. Other factors are related to the duration of estrogen exposure and the total number of menstrual cycles in their lifetime.[20] **For more information about uterine cancer, go HERE.**

Figure 51. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Uterine Cancer: Puerto Rico, 2000-2022

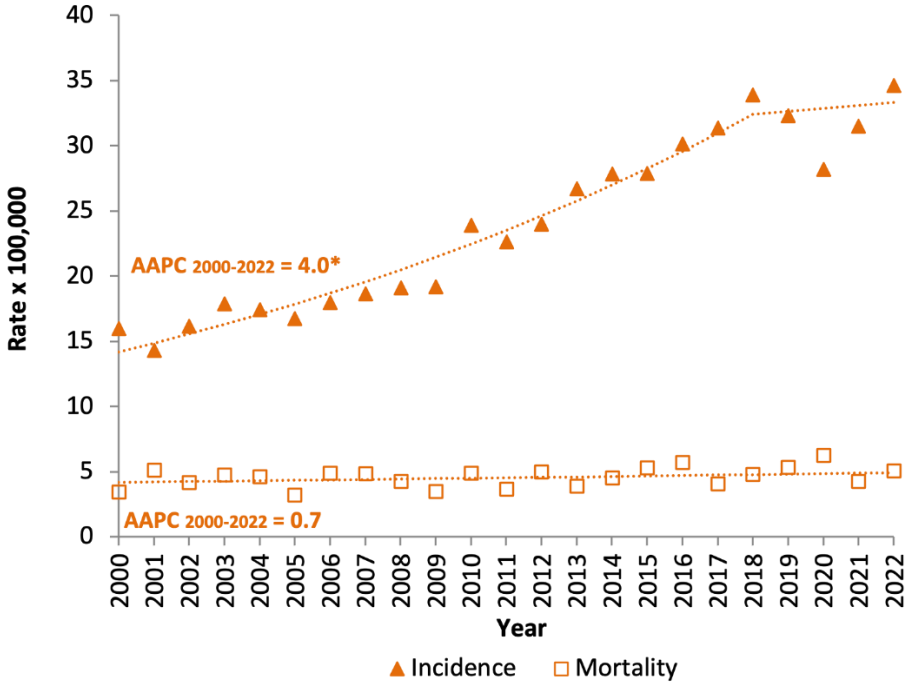


Figure 52. Age-Specific Incidence and Mortality Rates – Uterine Cancer: Puerto Rico, 2018-202

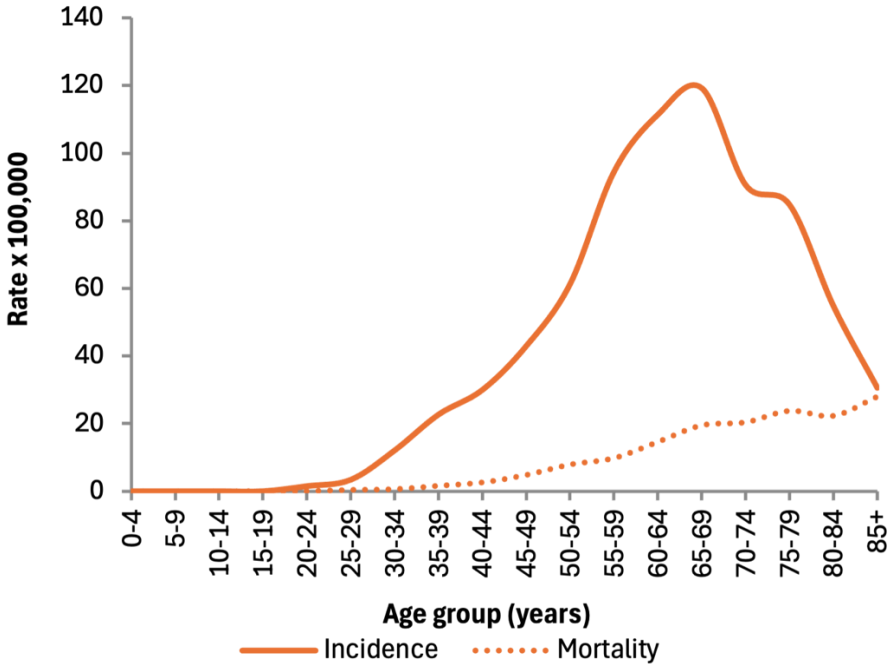


Figure 53. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Uterine Cancer by Municipality: Puerto Rico, 2018-2022

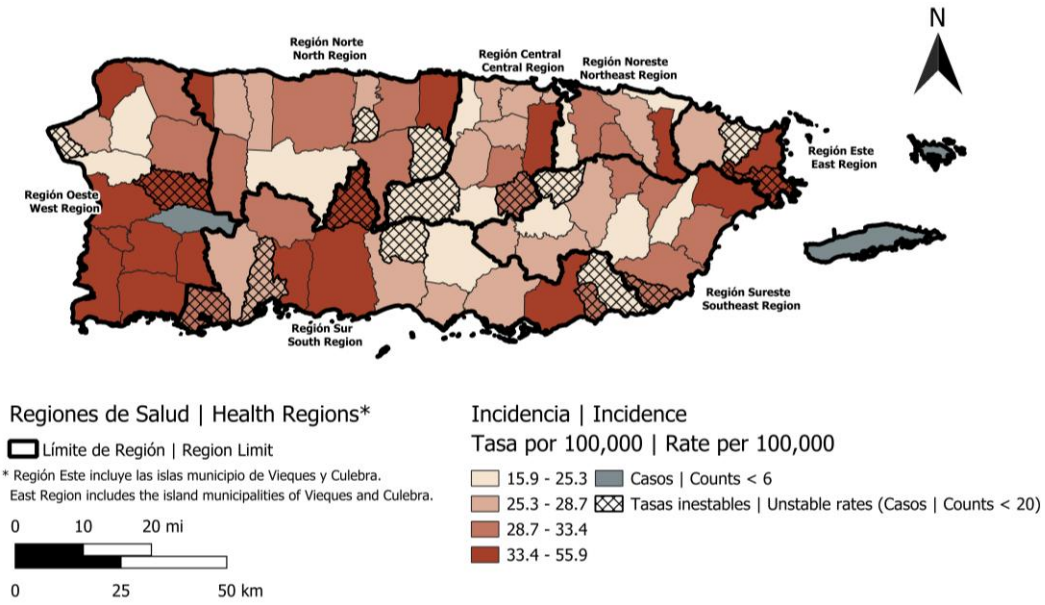
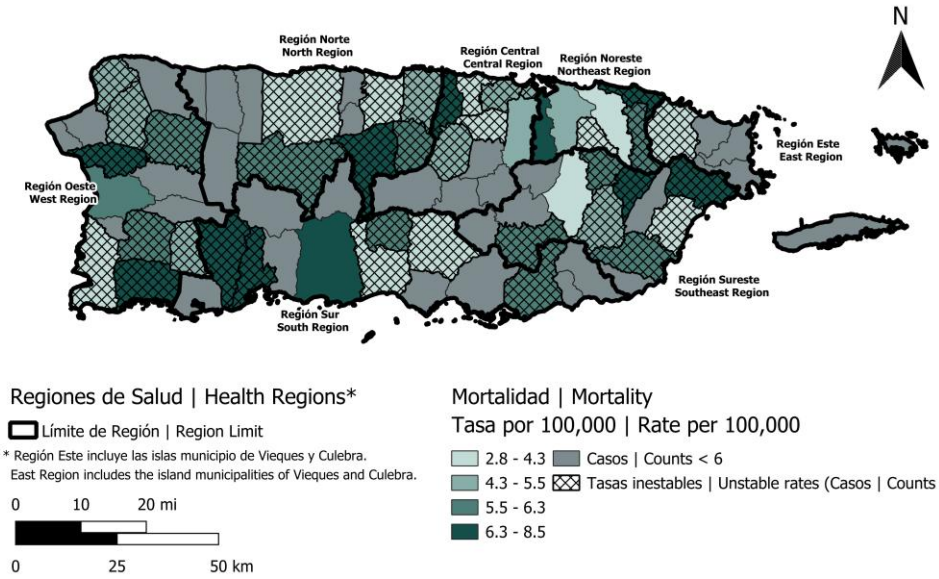


Figure 54. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Uterine Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for corpus and uterus cancer increased on average by **4.0%** ($p<0.05$) per year. For the 2000-2022 period, the mortality rates for uterine cancer remained stable (Figure 51). The median age at diagnosis for uterine cancer was **63** years, while the median age at death was **69** years (Figure 52). **For statistical information of uterine cancer in the United States of America, go HERE.**

OVARIAN CANCER

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **ovarian** cancer accounted for:

- **2.3%** of all cancers in women
- **4.3%** of all cancer deaths in women.

On average,

- **176** women were diagnosed annually.
- 101 women died each year.

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **0.9%** of women will be diagnosed with ovarian cancer during their lifetime.

The 5-year relative survival rate for ovarian cancer diagnosed between 2013 and 2017 was **47.5%**, which means that **47.5%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **1,269** women who had been diagnosed with ovarian cancer within the past 25 years were alive as of January 1, 2022.

Early Detection of Ovarian Cancer

According to the American Cancer Society, approximately 94% of women diagnosed with early-stage ovarian cancer live more than 5 years after diagnosis. One of the methods used to detect ovarian cancer is routine health check-ups. Additionally, transvaginal ultrasound (TVUS) and the CA-125 blood test are commonly used tests for early detection.[21] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Important risk factors for ovarian cancer include smoking, aging, being overweight, and a family history of ovarian, breast, or colorectal cancer. Additionally, women who have never had a full-term pregnancy or had their first pregnancy after age 35 are at higher risk of developing this cancer.[21] **For more information about ovarian cancer, go HERE.**

Figure 55. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Ovarian Cancer: Puerto Rico, 2000-2022

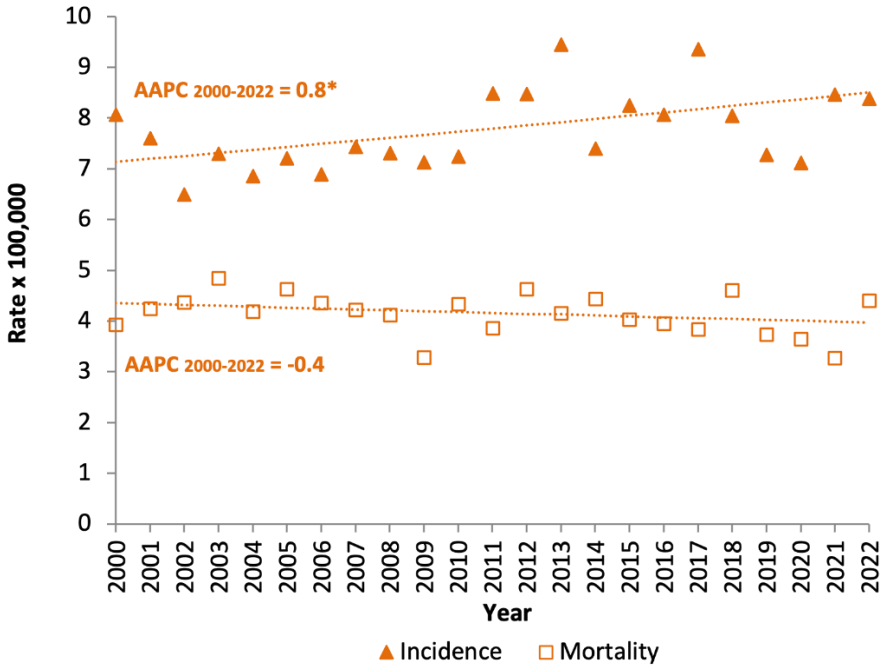


Figure 56. Age-Specific Incidence and Mortality Rates – Ovarian Cancer: Puerto Rico, 2018-2022

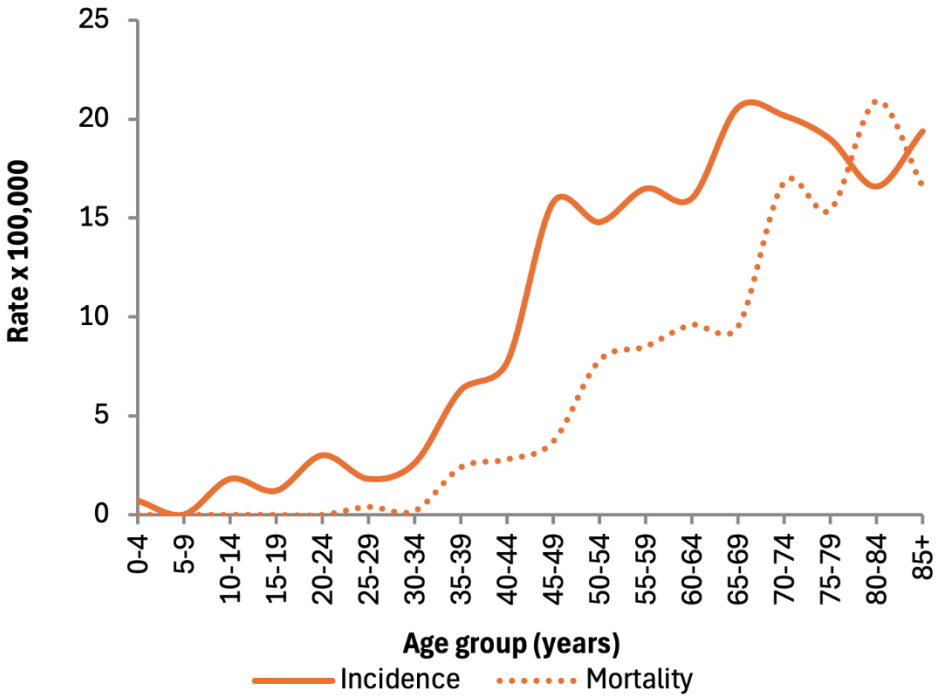


Figure 57. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Ovarian Cancer by Municipality: Puerto Rico, 2018-2022

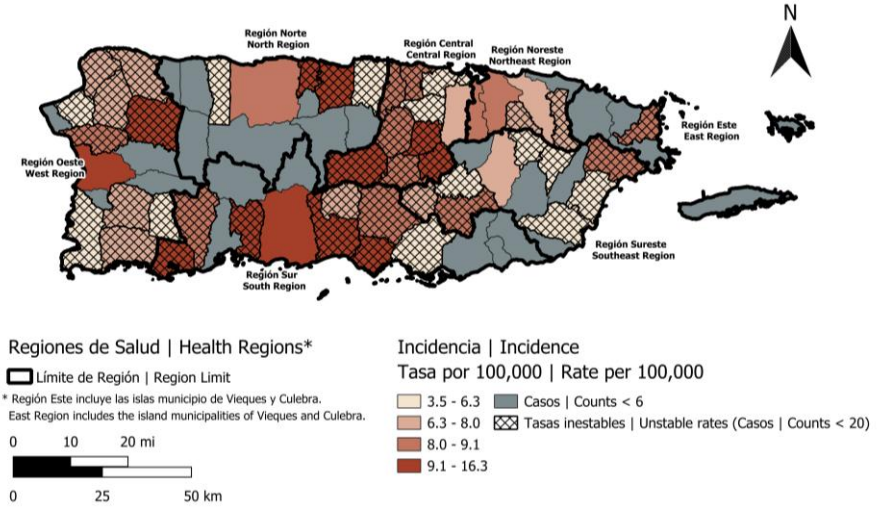
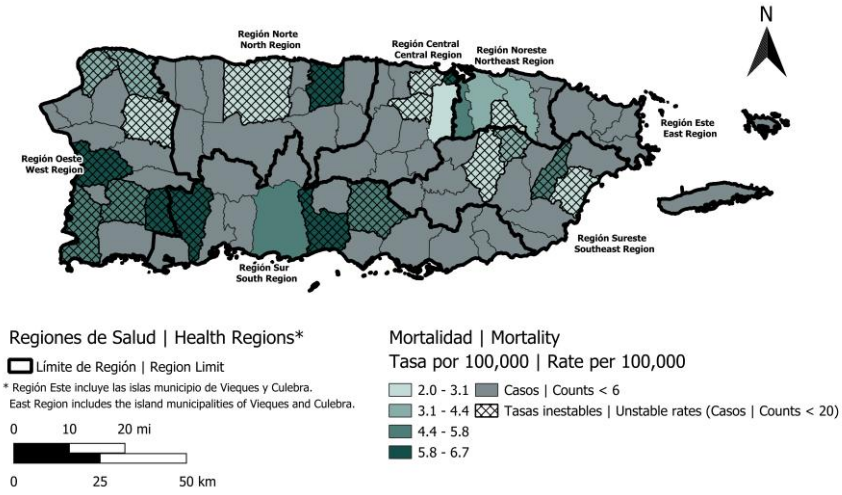


Figure 58. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Ovarian Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for ovarian cancer in women increased on average by **0.8%** ($p<0.05$) per year. However, mortality rates for the period 2000-2022 remained stable (Figure 55). The median age at diagnosis for ovarian cancer was **62** years and the median age at death was **70** years (Figure 56). **For statistical information of ovarian cancer in the United States of America, go HERE.**

PROSTATE CANCER

KEY POINTS

During the **2018-2022** period in Puerto Rico, **prostate** cancer accounted for:

- **38.9%** of all cancers in men
- **16.2%** of all cancer deaths in men.

On average,

- **3,282** men were diagnosed annually.
- **464** men died each year.

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **15.4%** of men will be diagnosed with prostate cancer during their lifetime.

The 5-year relative survival rate for prostate cancer diagnosed between 2013 and 2017 was **99.1%**, which means that **99.1%** of men who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **40,314** men who had been diagnosed with prostate cancer within the past 25 years were alive as of January 1, 2022.

Early Detection of Prostate Cancer

Prostate cancer can be detected in its early stages using two tests: prostate-specific antigen (PSA) blood test and the digital rectal exam (DRE).[22] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Factors associated with increased risk of developing this cancer include age (>50 years), race/ethnicity (African American men and Caribbean men of African ancestry), having a family history of prostate cancer, and history of high-grade intraepithelial neoplasia (PIN).[22] **For more information about prostate cancer, go HERE.**

Figure 59. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Prostate Cancer: Puerto Rico, 2000-2022

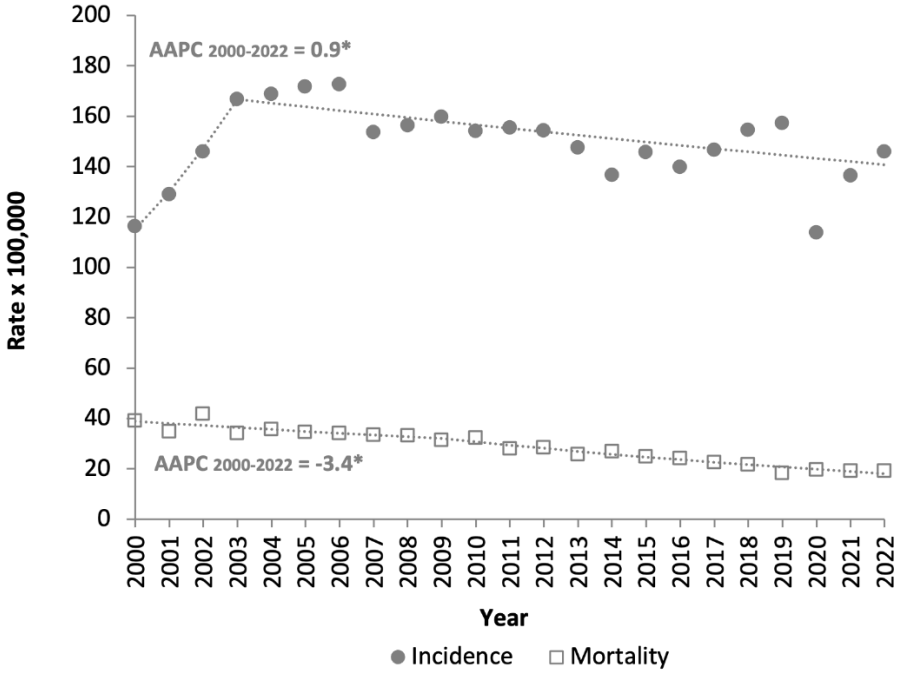


Figure 60. Age-Specific Incidence and Mortality Rates – Prostate Cancer: Puerto Rico, 2018-2022

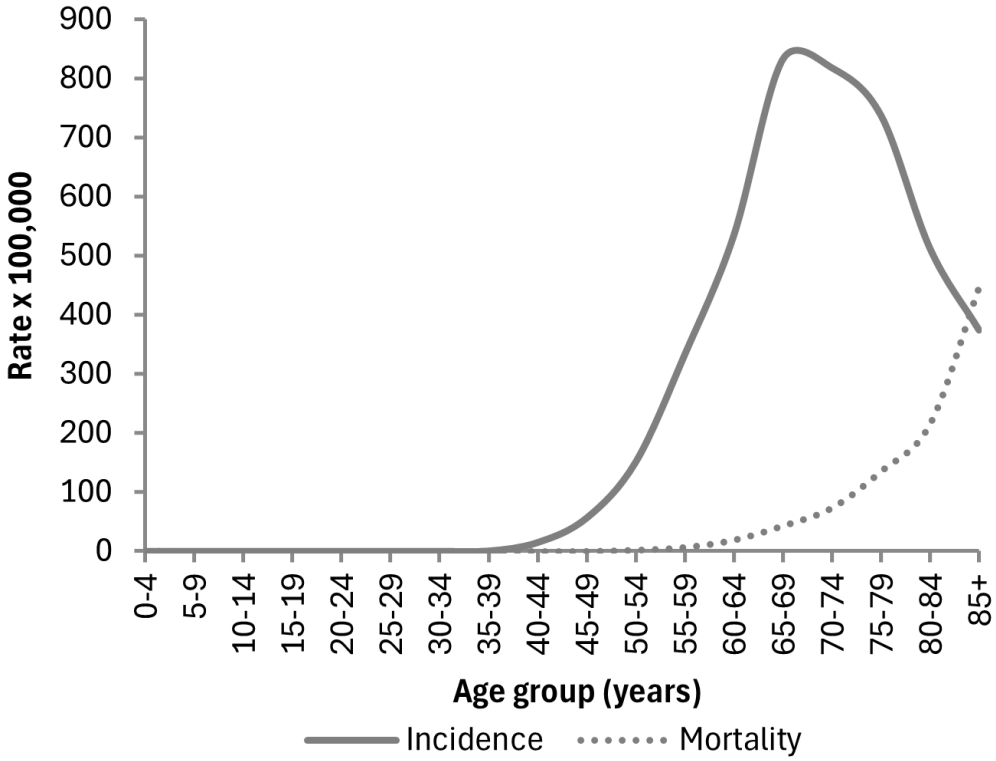


Figure 61. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Prostate Cancer by Municipality: Puerto Rico, 2018-2022

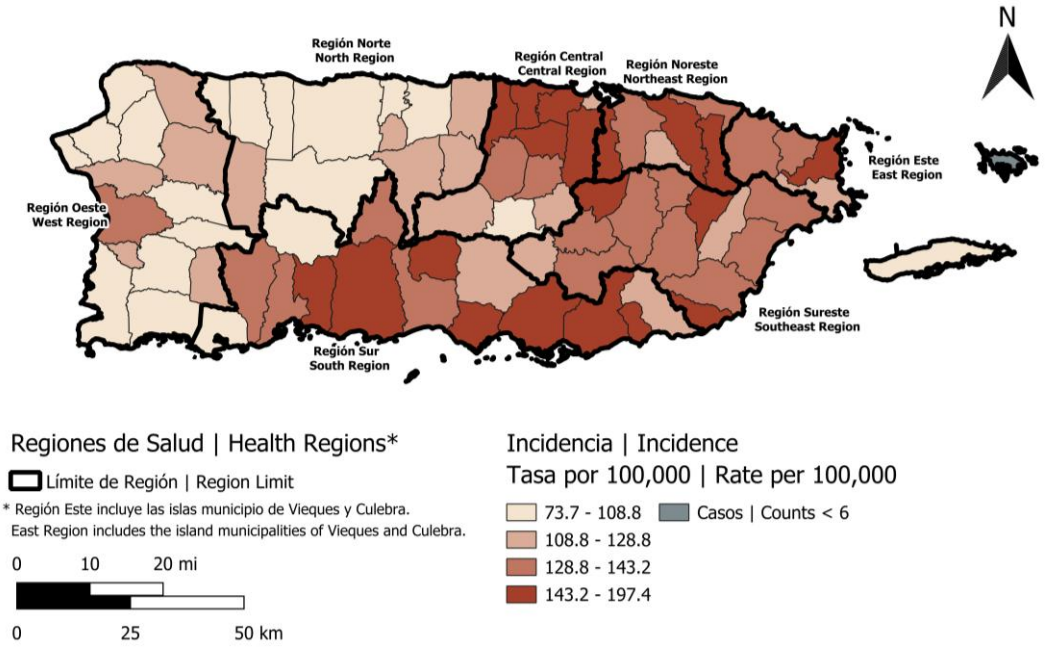
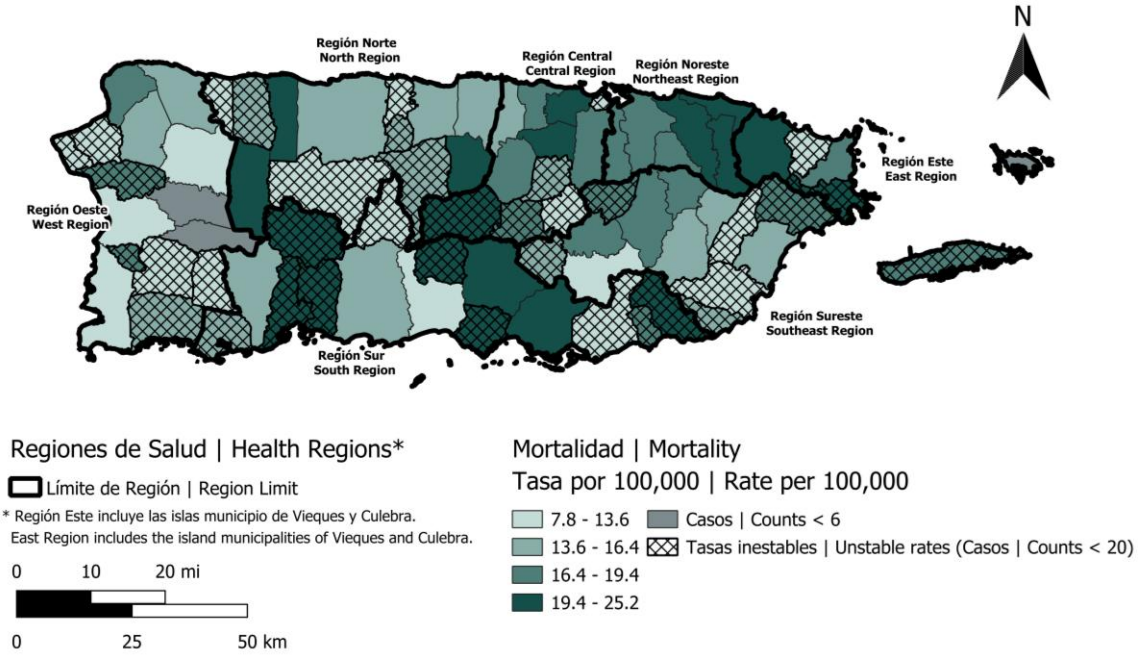


Figure 62. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Prostate Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for prostate cancer increased on average by **0.9%** ($p<0.05$) per year. However, for the 2000-2022 period, mortality rates decreased on average by **3.4%** ($p<0.05$) per year (Figure 59). The median age at diagnosis for prostate cancer was **68** years. The median age at death was **81** years (Figure 60). **For statistical information of prostate cancer in the United States of America, go HERE.**

URINARY BLADDER CANCER

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **urinary bladder** cancer accounted for:

- **4.5%** of all cancers in men and **1.7%** of all cancers in women.
- **2.8%** of all cancer deaths in men and **1.7%** of all cancer deaths in women.

On average,

- **377** men and **130** women were diagnosed annually.
- **80** men and **40** women died each year.

The risk of developing urinary bladder cancer was **3.8** times higher in men than women (95% CI: 3.4, 4.2).

The risk of dying from urinary bladder cancer was **2.8** times higher in men than women (95% CI: 2.3, 3.3).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.4%** of men and women will be diagnosed with urinary bladder cancer during their lifetime.

The 5-year relative survival rate for urinary bladder cancer diagnosed between 2013 and 2017 was **71.3%**, which means that **71.3%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **3,518** individuals who had been diagnosed with urinary bladder cancer within the past 25 years were alive as of January 1, 2022.

Urinary Bladder Cancer Detection

According to the American Cancer Society, some doctors recommend testing for urinary bladder cancer, but only in people with a very high risk of developing this cancer. The screening test for bladder cancer is a urine test which detects blood in the urine. In addition, there are urine tests that detect tumor markers that may be indicative of bladder cancer.[23] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

The most important risk factor for bladder cancer is cigarette smoking. Studies have found that some chemicals, some cancer treatments, and personal or family history can increase the likelihood of developing bladder cancer.[23] **For more information about urinary bladder cancer, go HERE.**

Figure 63. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Urinary Bladder Cancer by Sex: Puerto Rico, 2000-2022

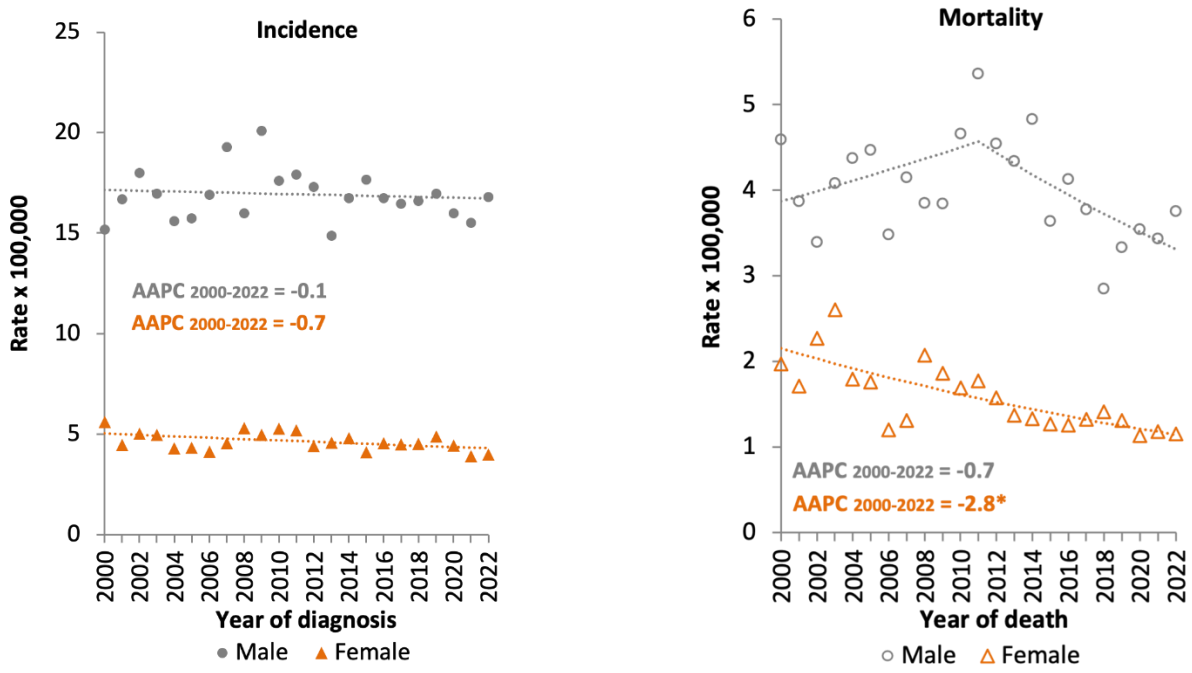


Figure 64. Age-Specific Incidence and Mortality Rates – Urinary Bladder Cancer by Sex: Puerto Rico, 2018-2022

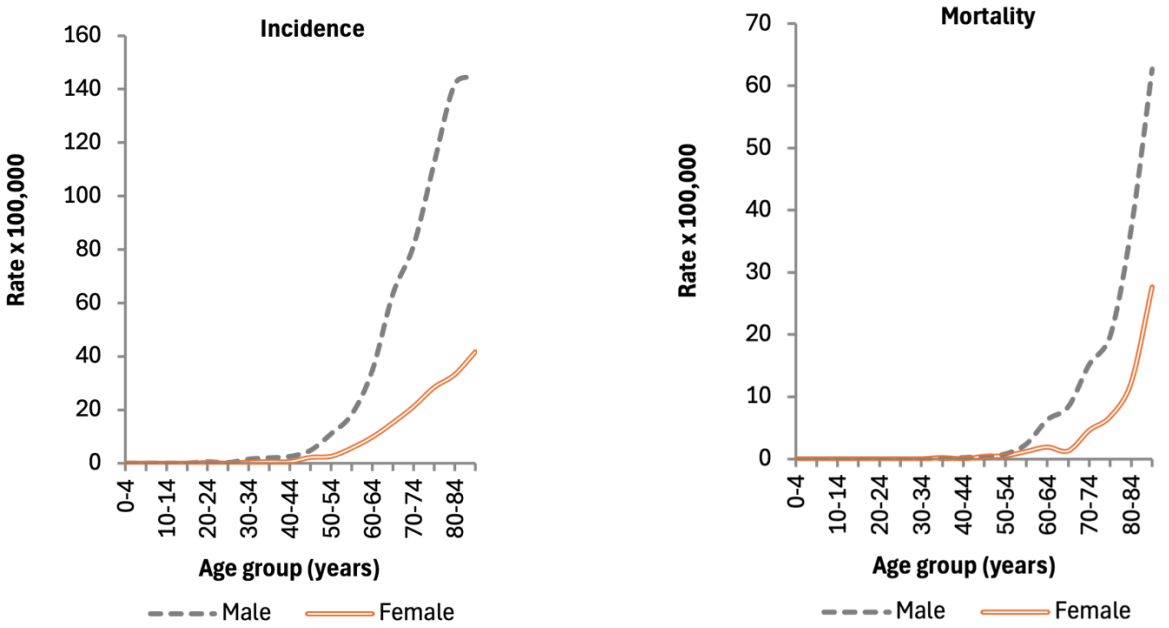


Figure 65. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Urinary Bladder Cancer by Municipality: Puerto Rico, 2018-2022

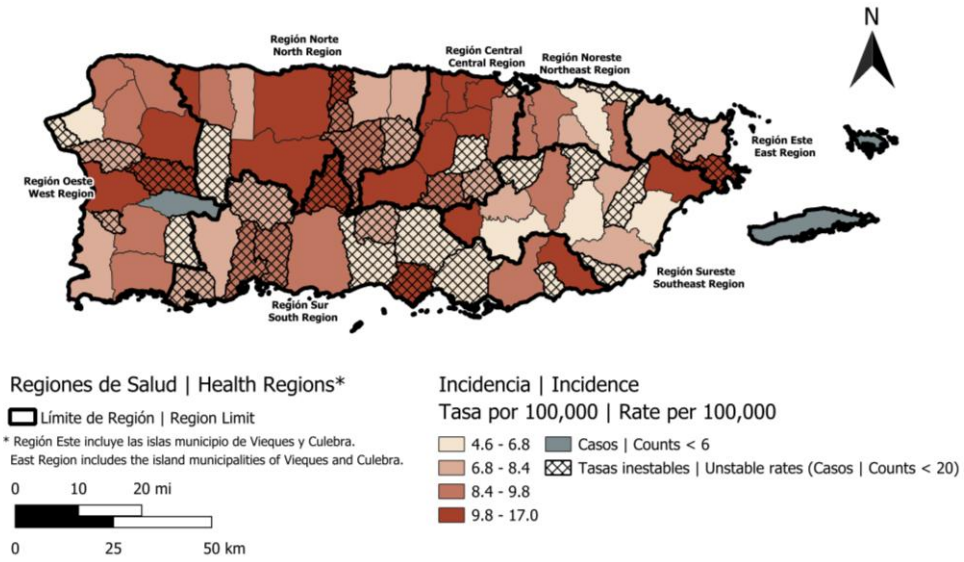
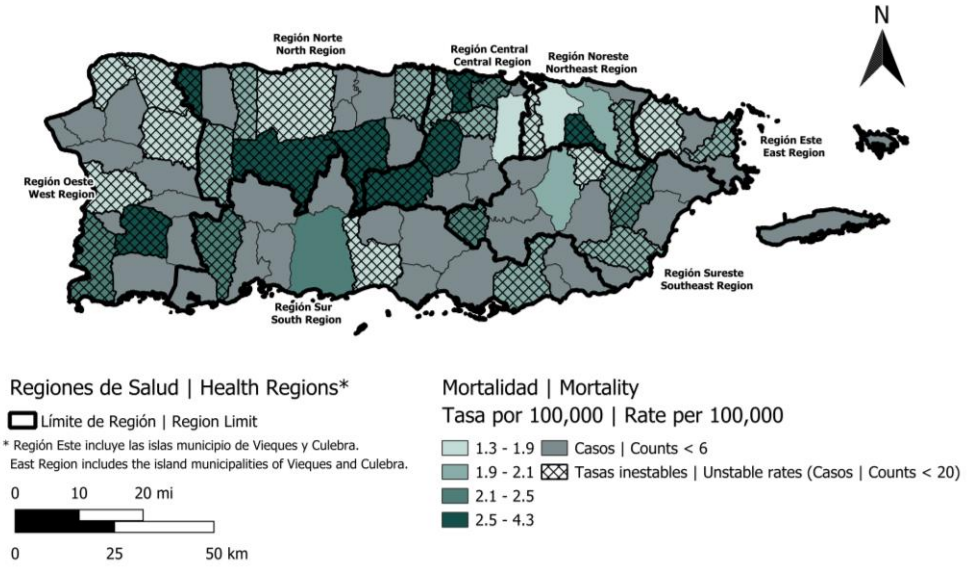


Figure 66. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Urinary Bladder Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates for urinary bladder cancer remained stable in both men and women. Similarly, mortality rates for the 2000-2022 period remained stable in men but decreased on average by **2.8%** ($p<0.05$) per year in women (Figure 63). The median age at diagnosis for urinary bladder cancer was **74** years in men and **75** years in women. The median age at death was **79** years and **82** years in men and women, respectively (Figure 64). **For statistical information of urinary bladder cancer in the United States of America, go HERE.**

KIDNEY AND RENAL PELVIS CANCER

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **kidney and renal pelvis** cancer accounted for:

- **3.2%** of all cancers in men and **1.8%** of all cancers in women.
- **2.1%** of all cancer deaths in men and **1.3%** of all cancer deaths in women.

On average,

- **273** men and **141** women were diagnosed annually.
- **59** men and **32** women died each year.

The risk of developing kidney and renal pelvis cancer was **2.3** times higher in men than women (95% CI: 2.1, 2.5).

The risk of dying from kidney and renal pelvis cancer was **2.4** times higher in men than women (95% CI: 2.0, 3.0).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately 1.0% of men and women will be diagnosed with kidney and renal pelvis cancer during their lifetime.

The 5-year relative survival rate for kidney and renal pelvis cancer diagnosed between 2013 and 2017 was **80.7%**, which means that **80.7%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **3,385** individuals who had been diagnosed with kidney and renal pelvis cancer within the past 25 years were alive as of January 1, 2022.

Kidney Cancer Detection

Kidney cancer is often discovered incidentally during imaging tests (MRI or CT scan) performed for other reasons. This cancer usually has no symptoms at the time of detection. A routine urine test may find small trace amounts of blood in the urine of people with early-stage kidney cancer. However, the bleeding may be caused by other reasons, such as bladder or urinary tract infection.[24] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Risk factors that make a person more likely to develop kidney cancer are smoking, obesity, high blood pressure, family history of kidney cancer, certain occupational exposures (such as trichloroethylene), being male, advanced kidney disease, and hereditary risk factors.[24] **For more information about kidney and renal pelvis cancer, go HERE.**

Figure 67. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Kidney and Renal Pelvis Cancer by Sex: Puerto Rico, 2000-2022

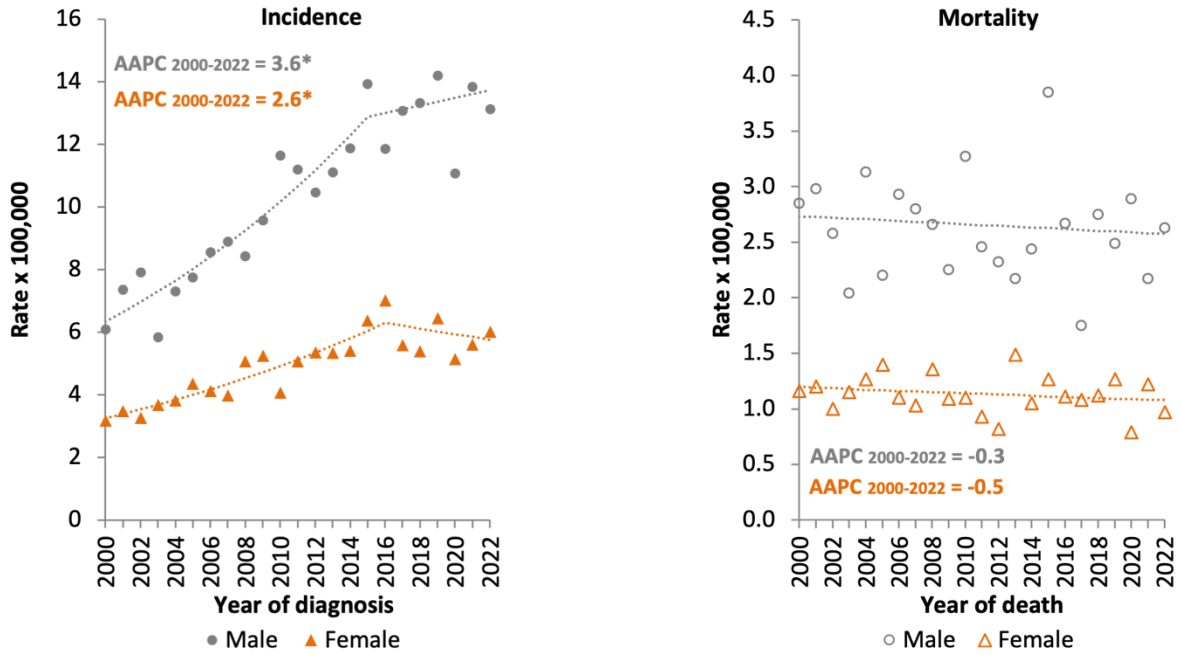


Figure 68. Age-Specific Incidence and Mortality Rates – Kidney and Renal Pelvis Cancer by Sex: Puerto Rico, 2018-2022

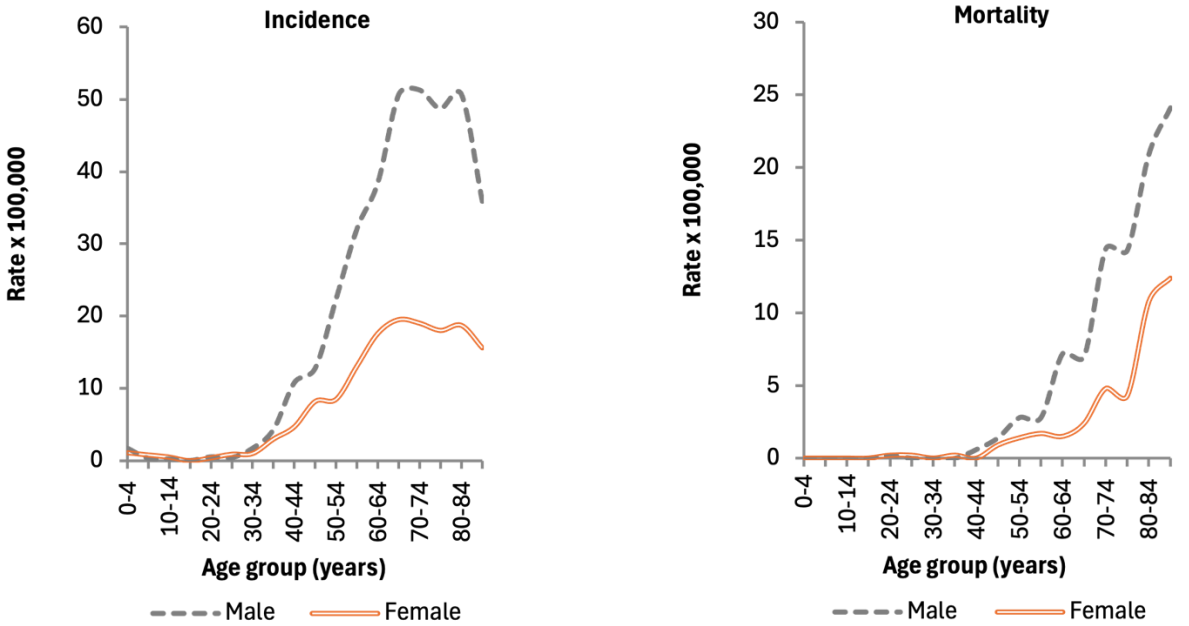


Figure 69. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Kidney and Renal Pelvis Cancer by Municipality: Puerto Rico, 2018-2022

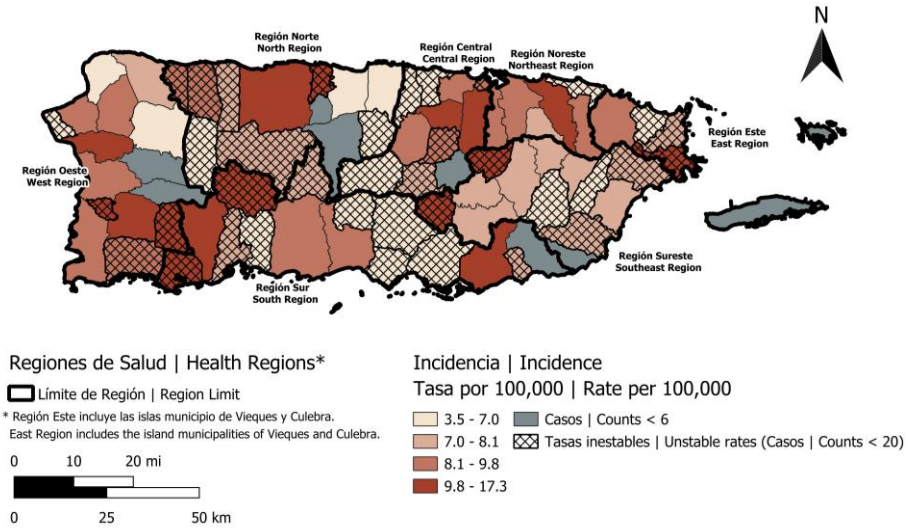
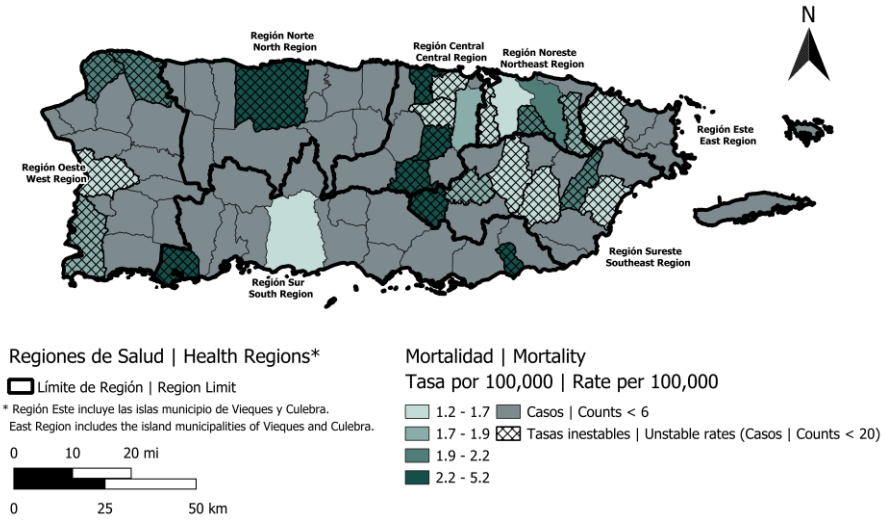


Figure 70. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Kidney and Renal Pelvis Cancer by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, the incidence rates among men and women for kidney and renal pelvis cancer increased on average by **3.6%** ($p<0.05$) and by **2.6%** ($p<0.05$) per year respectively. However, for the 2000-2022 period, mortality rates remained stable (Figure 67). The median age at diagnosis for kidney and renal pelvis cancer was **66** years in men and **65** years in women. The median age at death was **74** years and **78** years in men and women, respectively (Figure 68). **For statistical information of this cancer in the United States of America, go HERE.**

THYROID CANCER

KEY POINTS

During the **2018-2022** period in Puerto Rico, **thyroid** cancer accounted for:

- **2.0%** of all cancers in men and **8.1%** of all cancers in women.
- **0.3%** of all cancer deaths in men and **0.5%** of all cancer deaths in women.

On average,

- **167** men and **619** women were diagnosed annually.
- **8** men and **12** women died each year.

The risk of developing thyroid cancer was **0.28** times lower in men than women (95% CI: 0.26, 0.30).

The risk of dying from thyroid cancer was **the same** in men and women.

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.8%** of men and women will be diagnosed with thyroid cancer during their lifetime.

The 5-year relative survival rate for thyroid cancer diagnosed between 2013 and 2017 was **100%**, which means that **all** patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **13,181** individuals who had been diagnosed with thyroid cancer within the past 25 years were alive as of January 1, 2022.

Thyroid Cancer Detection

It is recommended to visit a doctor if you notice a mass or swelling in your neck. Most thyroid cancers are detected in early stages when patients seek medical evaluation after experiencing these symptoms.[25] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

Factors associated with an increased risk of thyroid cancer include radiation exposure, excess body weight, a family history of thyroid cancer, certain hereditary conditions (such as multiple endocrine neoplasia type 2 [MEN2]), and a history of familial adenomatous polyposis. Additionally, thyroid cancer is more common in women and in people between the ages of 30 and their 60's. Dietary iodine exposure is being investigated as a possible risk factor for thyroid cancer.[25] **For more information about thyroid cancer, go HERE.**

Figure 71. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Thyroid Cancer by Sex: Puerto Rico, 2000-2022

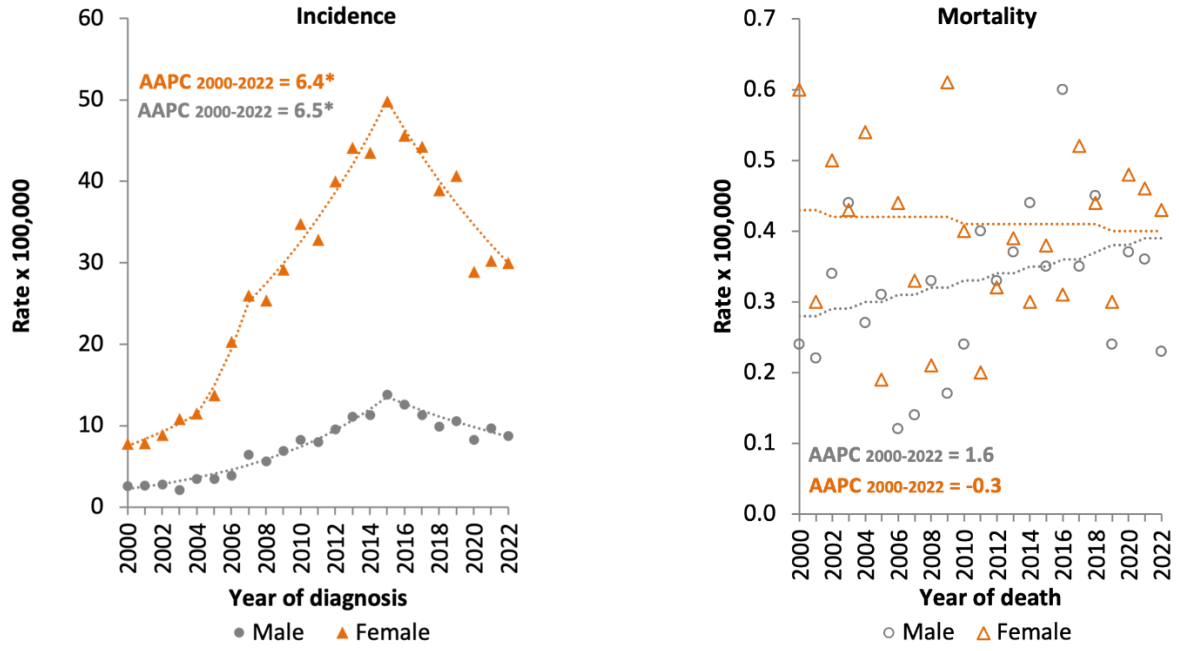


Figure 72. Age-Specific Incidence and Mortality Rates – Thyroid Cancer by Sex: Puerto Rico, 2018-2022

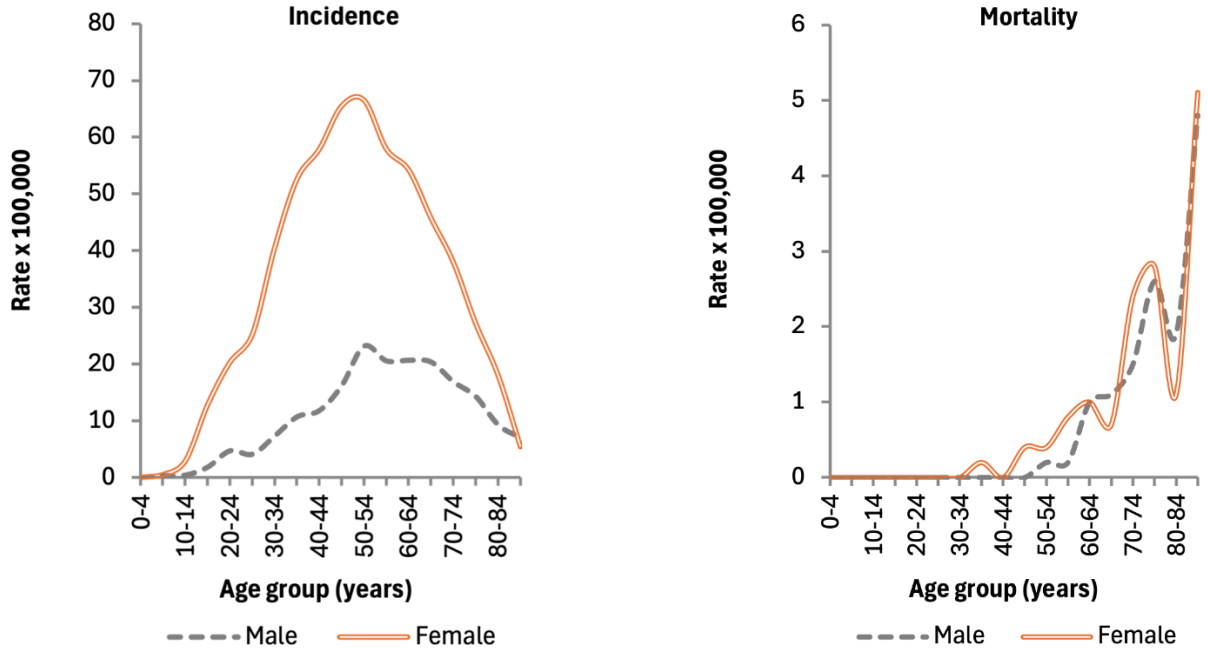
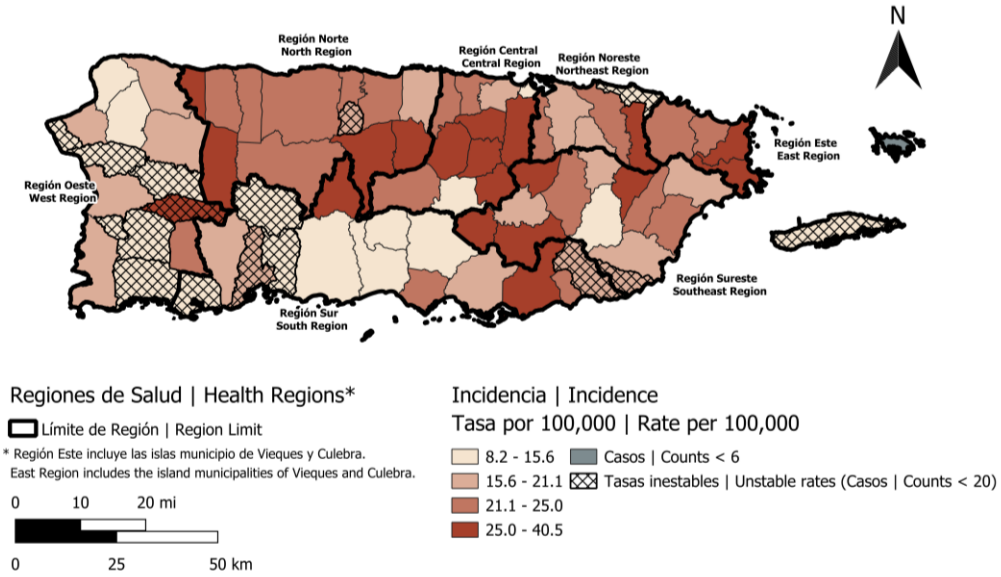


Figure 73. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Thyroid Cancer by Municipality: Puerto Rico, 2018-2022



Note: Mortality rates by municipality could not be calculated due to the small number of cases in most of the municipalities.

Figures Summary. Between 2000 and 2022, the incidence rates for thyroid cancer increased on average by **6.4%** ($p<0.05$) and **6.5%** ($p<0.05$) per year among men and women, respectively. For the 2000-2022 period, the mortality rates for thyroid cancer remained stable in men and women (Figure 71). The median age at diagnosis for thyroid cancer was **56** years in men and **51** years in women. The median age at death was **75** years and **74** years in men and women, respectively (Figure 72). **For statistical information of thyroid cancer in the United States of America, go HERE.**

NON-HODGKIN LYMPHOMA

KEY POINTS

During the **2018-2022** period **i**n Puerto Rico, **non-Hodgkin lymphoma** accounted for:

- **3.9%** of all cancers in men and 3.8% of all cancers in women.
- **3.3%** of all cancer deaths in men and **3.0%** of all cancer deaths in women.

On average,

- **330** men and **288** women were diagnosed annually.
- **94** men and **71** women died each year.

The risk of developing non-Hodgkin lymphoma was **1.4** times higher in men than women (95% CI: 1.3, 1.5).

The risk of dying from non-Hodgkin lymphoma was **1.8** times higher in men than women (95% CI: 1.5, 2.0).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.5%** of men and women will be diagnosed with non-Hodgkin lymphoma during their lifetime.

The 5-year relative survival rate for non-Hodgkin lymphoma diagnosed between 2013 and 2017 was **67.0%**, which means that **67.0%** of patients who have that cancer will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **5,116** individuals who had been diagnosed with non-Hodgkin lymphoma within the past 25 years were alive as of January 1, 2022.

Non-Hodgkin Lymphoma Detection

Early detection of non-Hodgkin lymphoma relies on awareness of its signs and symptoms. Among the most common symptoms is the enlargement of one or more lymph nodes, causing a lump in the neck, armpits, or groin. This lump is located under the skin and usually painless.[26] **For more information about the tests for detecting this cancer, go HERE.**

Risk Factors

There are several factors that increase one's risk of developing non-Hodgkin lymphoma, including age (most common in people in their 60's), being male, geographical location (more common in developed countries), exposure to certain industrial and agricultural chemicals, family history of non-Hodgkin lymphoma, and having a weakened immune system.[26] **For more information about non-Hodgkin lymphoma, go HERE.**

Figure 74. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Non-Hodgkin Lymphoma by Sex: Puerto Rico, 2000-2022

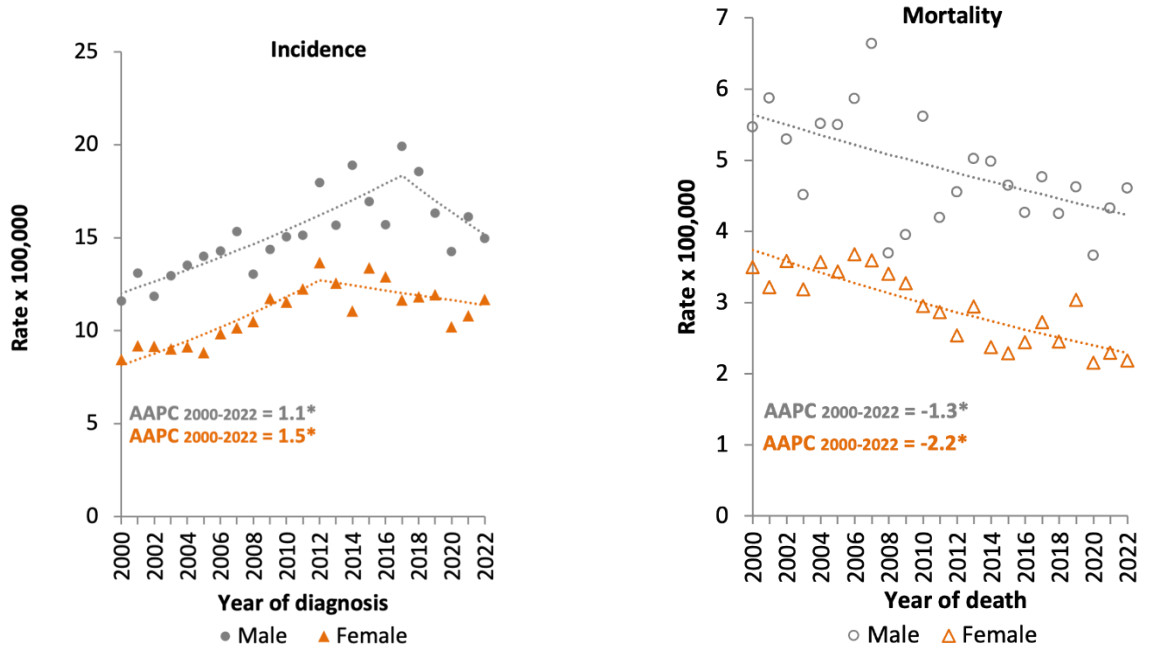


Figure 75. Age-Specific Incidence and Mortality Rates – Non-Hodgkin Lymphoma by Sex: Puerto Rico, 2018-2022

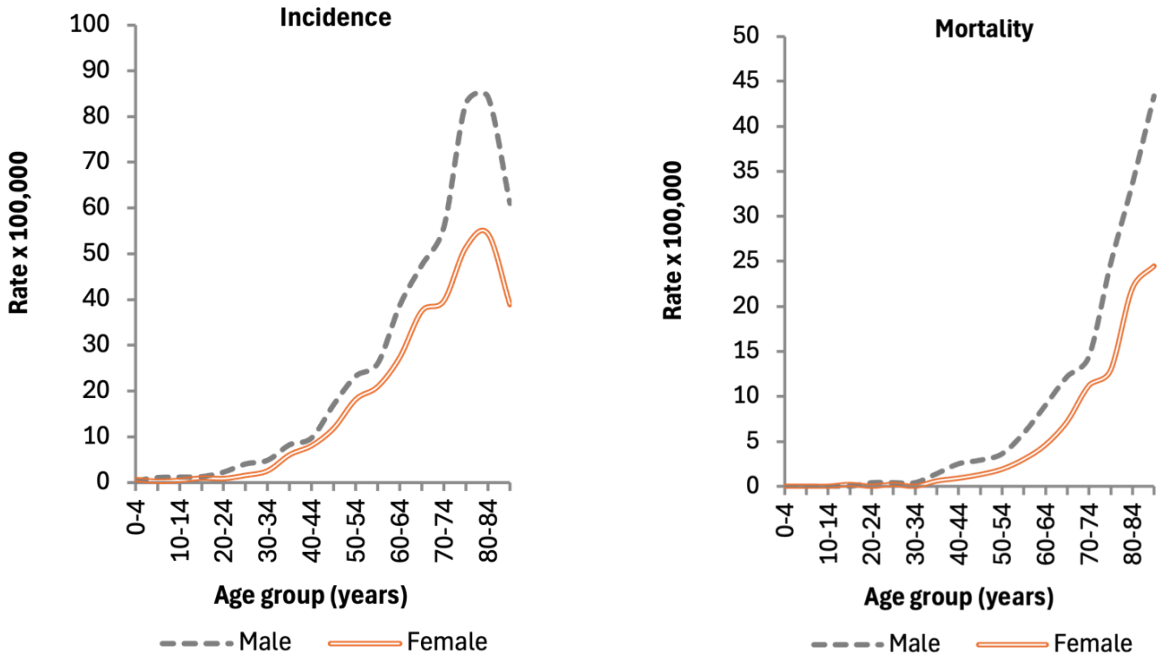


Figure 76. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Non-Hodgkin Lymphoma by Municipality: Puerto Rico, 2018-2022

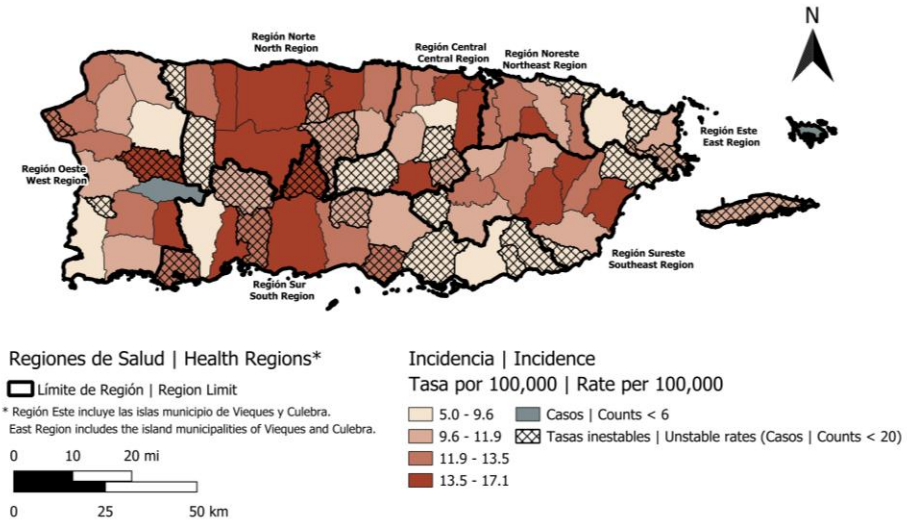
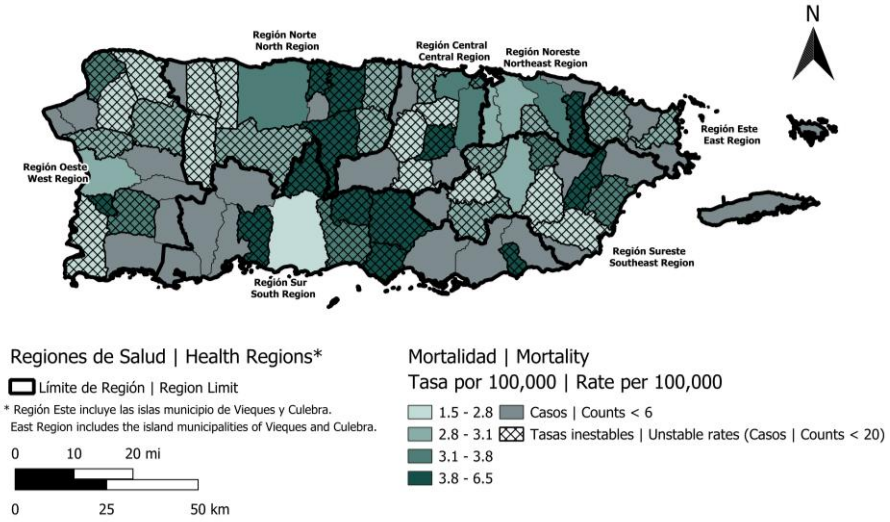


Figure 77. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Non-Hodgkin Lymphoma by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, incidence rates for non-Hodgkin lymphoma increased by **1.1%** ($p<0.05$) per year in men and **1.5%** ($p<0.05$) per year in women. However, for the 2000-2022 period, mortality rates decreased on average by **1.3%** ($p<0.05$) and **2.2%** ($p<0.05$) per year in men and in women, respectively (Figure 74). The median age at diagnosis for non-Hodgkin lymphoma in both men and women was **68** years. The median age at death was **74** years in men and **75** years in women (Figure 75). **For statistical information of non-Hodgkin lymphoma in the United States of America, go HERE.**

LEUKEMIA

KEY POINTS

During the **2018-2022** period in Puerto Rico, **leukemia** accounted for:

- **2.8%** of all cancers in men and **2.4%** of all cancers in women.
- **3.8%** of all cancer deaths in both men and women.

On average,

- **237** men and **187** women were diagnosed annually.
- **110** men and **89** women died each year.

The risk of developing leukemia was **1.5** times higher in men than women (95% CI: **1.3**, **1.6**).

The risk of dying from leukemia was **1.5** times higher in men than women (95% CI: **1.3**, **1.8**).

Based on data for the 2018-2022 period, excluding 2020 due to COVID, approximately **1.1%** of men and women will be diagnosed with leukemia during their lifetime.

The 5-year relative survival rate for leukemia diagnosed between 2013 and 2017 was **62.0%**, which means that **62.0%** of patients diagnosed with leukemia will be alive 5 years after being diagnosed.

In Puerto Rico, approximately **2,990** individuals who had been diagnosed with leukemia within the past 25 years were alive as of January 1, 2022.

Types of Leukemia and Detection

Leukemia is a type of cancer that starts in the blood-forming tissue, such as the bone marrow, and causes large numbers of abnormal blood cells to enter the bloodstream.[27] The four main types of leukemia are acute lymphocytic leukemia (ALL), chronic lymphocytic leukemia (CLL), acute myelogenous leukemia (AML), and chronic myelogenous leukemia (CML).

The early detection of leukemia involves consulting a physician about any signs or symptoms of leukemia. The symptoms can vary based on the type of leukemia diagnosis.[28] **For more information about the risk factors, signs, and symptoms of the different types of leukemia, go HERE.**

Figure 78. Age-Adjusted (2000 US Std. Pop.) Incidence and Mortality Rates – Leukemia by Sex: Puerto Rico, 2000-2022

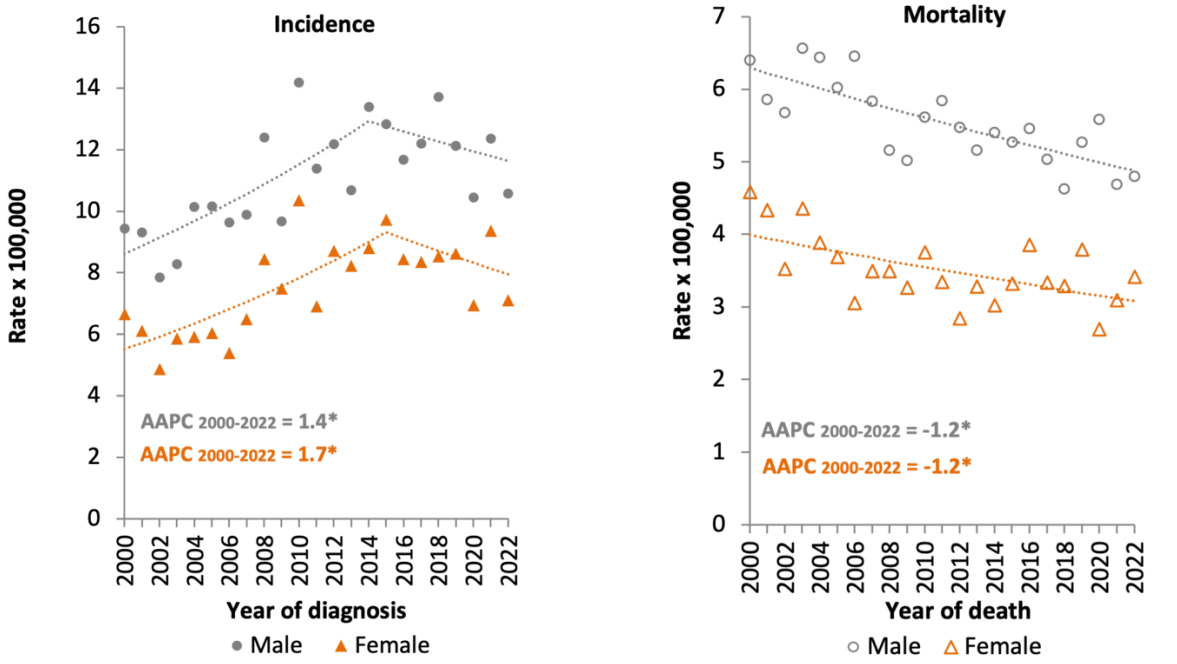


Figure 79. Age-Specific Incidence and Mortality Rates – Leukemia by Sex: Puerto Rico, 2018-2022

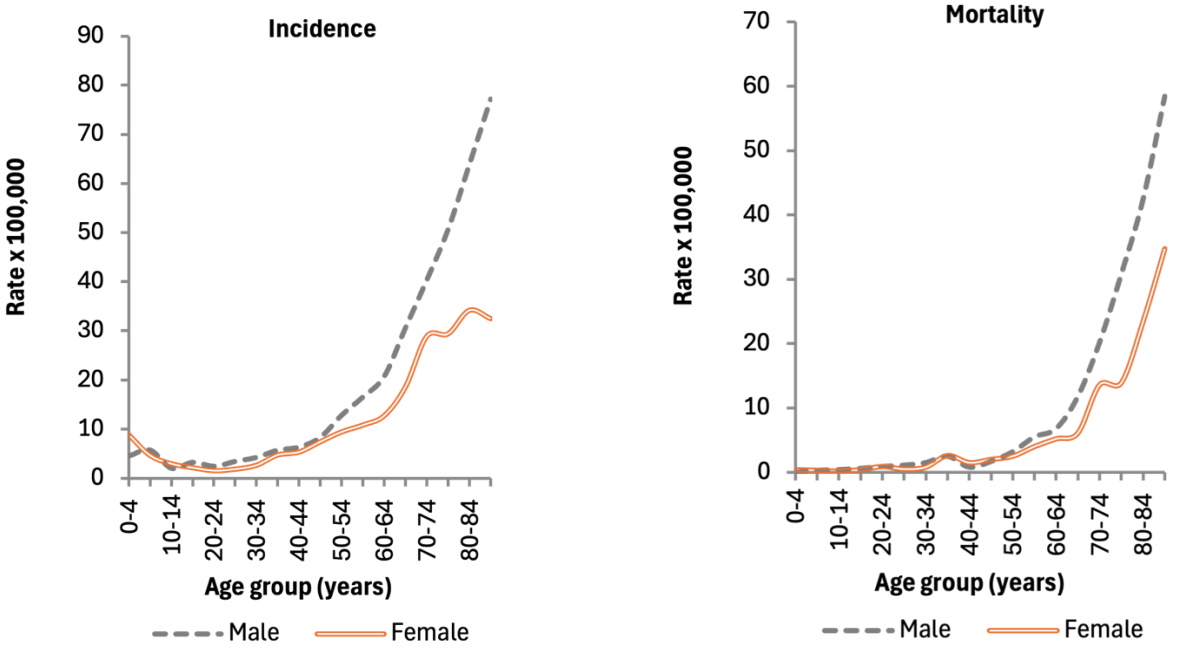


Figure 80. Age-Adjusted Incidence Rates (2000 PR Standard Population) – Leukemia by Municipality: Puerto Rico, 2018-2022

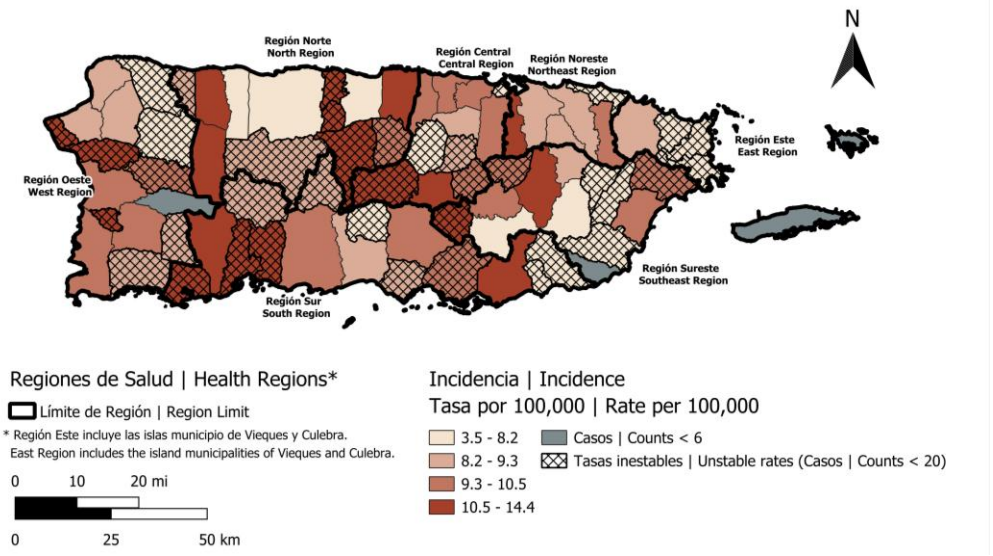
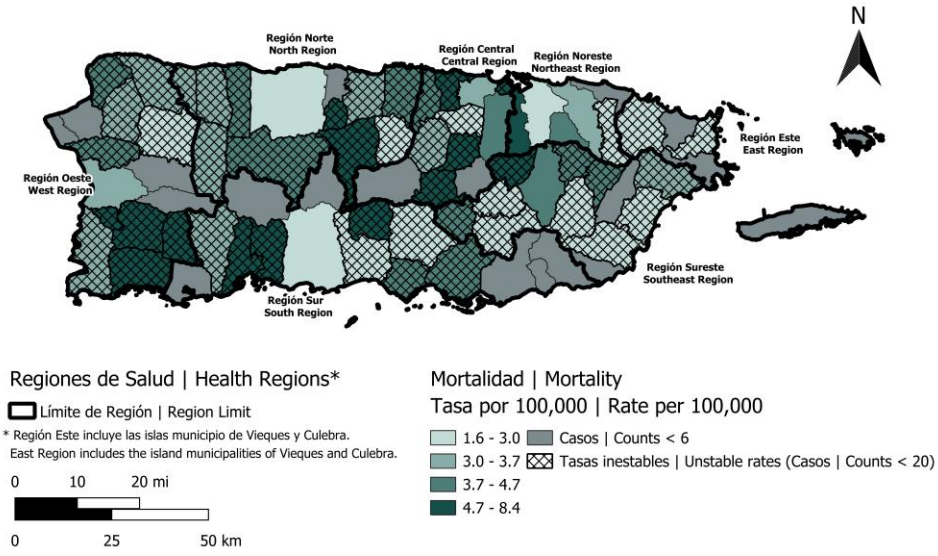


Figure 81. Age-Adjusted Mortality Rates (2000 PR Standard Population) – Leukemia by Municipality: Puerto Rico, 2018-2022



Figures Summary. Between 2000 and 2022, incidence rates for leukemia among men and women increased on average by **1.4%** ($p<0.05$) and by **1.7%** ($p<0.05$) per year, respectively. However, for the 2000-2022 period, mortality rates decreased on average by **1.2%** ($p<0.05$) per year in men and by **1.2%** ($p<0.05$) per year in women (Figure 78). The median age at diagnosis for leukemia was **70** years in men and **69** years in women. The median age at death in men and women was **76** years and **75** years, respectively (Figure 79). **For statistical information of leukemia in the United States of America, go HERE.**

ANNEXES

Annex I. 1-, 3-, and 5-Year Relative Survival Percentage for Specific Cancer Sites by Tumor Stage, Puerto Rico: 2013-2017 (Follow-Up To 2022)

Cancer Site	Total Cases	1-Year Survival (95% CI)	3-Year Survival (95% CI)	5-Year Survival (95% CI)
Oral Cavity and Pharynx	**1,694**	**76.2 (74.1-78.3)**	**57.0 (54.5-59.5)**	**52.9 (50.2-55.6)**
Localized	436	90.4 (87-93.1)	79.1 (74.4-83.2)	74.9 (69.8-79.6)
Regional	683	76.1 (72.6-79.3)	53.7 (49.7-57.7)	48.3 (44.1-52.4)
Distant	248	58.9 (52.4-64.9)	28.2 (22.6-34.2)	22.8 (17.5-28.6)
Unknown	327	70.7 (65.2-75.5)	56.3 (50.3-62)	56.4 (50-62.5)
Esophagus	**539**	**43.7 (39.4-47.9)**	**19.9 (16.5-23.6)**	**15.8 (12.6-19.3)**
Localized	141	52.7 (43.9-60.8)	30.3 (22.5-38.6)	26.3 (18.7-34.6)
Regional	114	56.6 (46.8-65.4)	25.4 (17.6-34.2)	17.9 (11.1-26.1)
Distant	133	29.2 (21.7-37.2)	6.4 (3.0-11.7)	4.1 (1.6-8.8)
Unknown	151	38.3 (30.4-46.2)	18.1 (12.2-25.1)	14.8 (9.3-21.6)
Stomach	**1,280**	**52.1 (49.2-54.9)**	**36.5 (33.7-39.3)**	**32.4 (29.7-35.3)**
Localized	388	70.8 (65.8-75.2)	61.5 (56-66.6)	57.2 (51.4-62.7)
Regional	352	57.1 (51.6-62.2)	26.3 (21.6-31.2)	18.7 (14.6-23.3)
Distant	305	20.5 (16.1-25.3)	7.7 (5.0-11.2)	5.1 (2.9-8.2)
Unknown	235	54.8 (48.1-61.2)	48 (41.1-54.7)	47.8 (40.7-54.8)
Colon and Rectum	**7,398**	**83.5 (82.5-84.4)**	**70.3 (69.1-71.4)**	**63.5 (62.2-64.8)**
Localized	3,040	94.9 (93.9-95.8)	90.3 (88.9-91.6)	87.1 (85.4-88.7)
Regional	2,606	86.2 (84.8-87.6)	70.7 (68.7-72.6)	60.7 (58.5-62.8)
Distant	1,179	50.4 (47.5-53.3)	21.1 (18.7-23.6)	11.5 (9.7-13.6)
Unknown	572	78.3 (74.5-81.6)	63.9 (59.5-68.1)	58.0 (53.3-62.5)
Liver and Intrahepatic Bile Duct	**935**	**41.9 (38.6-45.1)**	**23.1 (20.3-26)**	**16.5 (14.1-19.2)**
Localized	330	55.9 (50.2-61.2)	38.7 (33.2-44.3)	27.4 (22.3-32.7)
Regional	136	39.1 (30.8-47.4)	18.1 (11.9-25.3)	14.1 (8.6-21)
Distant	150	21.8 (15.5-28.9)	7.1 (3.6-12.2)	4.5 (1.9-9.0)
Unknown	319	38 (32.5-43.4)	16.6 (12.6-21.1)	12.1 (8.6-16.2)

Cancer Site	Total Cases	1-Year Survival (95% CI)	3-Year Survival (95% CI)	5-Year Survival (95% CI)
Pancreas	**1,168**	**33.1 (30.4-35.9)**	**16.8 (14.6-19.1)**	**12.7 (10.8-14.8)**
Localized	157	52.9 (44.6-60.5)	40.7 (32.6-48.7)	35.8 (27.9-43.9)
Regional	350	49.0 (43.6-54.3)	22.6 (18.3-27.3)	15.9 (12.1-20.2)
Distant	577	17.6 (14.5-20.8)	6.1 (4.3-8.3)	3.8 (2.4-5.7)
Unknown	84	36.6 (26.3-47)	21.4 (13.1-31)	18.1 (10.5-27.5)
Lung and Bronchus	**2,577**	**44.7 (42.7-46.6)**	**27.4 (25.6-29.2)**	**21.3 (19.6-23)**
Localized	540	73.5 (69.4-77.2)	60.4 (55.8-64.8)	50.2 (45.4-54.9)
Regional	486	54.3 (49.6-58.7)	30.2 (26-34.6)	22.7 (18.8-26.9)
Distant	1164	27.7 (25.1-30.4)	11.4 (9.6-13.3)	7.8 (6.3-9.5)
Unknown	387	43.4 (38.3-48.4)	26.3 (21.8-31)	19.7 (15.7-24.2)
Female Breast	**8,926**	**96.6 (96.2-97.1)**	**90.4 (89.7-91.1)**	**86.1 (85.2-87)**
Localized	5147	99.8 (99.4-100.1)	98.0 (97.3-98.6)	96.2 (95.3-97.1)
Regional	2705	96.7 (95.9-97.4)	86.7 (85.1-88.1)	79.0 (77.2-80.7)
Distant	465	70.1 (65.7-74.2)	42.4 (37.8-47.0)	31.6 (27.2-36.0)
Unknown	608	89.6 (86.7-92)	79.8 (76.0-83.2)	74.1 (69.8-77.9)
Cervix Uteri	**1,082**	**88 (85.8-89.8)**	**72.4 (69.5-75.1)**	**66.6 (63.6-69.5)**
Localized	448	96.1 (93.7-97.7)	87.5 (83.9-90.5)	82.7 (78.6-86.2)
Regional	320	88.1 (84.0-91.3)	63.5 (57.8-68.7)	55.8 (49.9-61.3)
Distant	89	50.9 (40.0-60.8)	21.7 (13.8-30.9)	18.5 (11.1-27.3)
Unknown	225	86.2 (80.8-90.2)	74.9 (68.4-80.4)	69.1 (62.2-75.1)
Uterus	**2,903**	**93.1 (92.1-94.0)**	**84.8 (83.3-86.2)**	**81.3 (79.6-82.9)**
Localized	1921	97.8 (96.9-98.5)	94.1 (92.7-95.3)	91.6 (89.9-93.1)
Regional	531	89.0 (85.9-91.6)	72.7 (68.4-76.5)	67.2 (62.7-71.4)
Distant	160	62.0 (53.9-69.2)	31.0 (23.9-38.4)	23.7 (17.3-30.8)
Unknown	291	86.4 (81.7-90.1)	75.0 (69.2-79.9)	70.7 (64.6-76.1)

Cancer Site	Total Cases	1-Year Survival (95% CI)	3-Year Survival (95% CI)	5-Year Survival (95% CI)
Ovary	**749**	**74.2 (70.9-77.3)**	**55.9 (52.1-59.5)**	**47.5 (43.7-51.2)**
Localized	170	96.0 (91.5-98.4)	90.3 (84.3-94.4)	83.2 (76.1-88.6)
Regional	170	81.6 (74.7-86.8)	68.2 (60.2-75.0)	60.5 (52.3-68.0)
Distant	367	63.1 (57.8-67.9)	35.5 (30.5-40.5)	25.0 (20.5-29.7)
Unknown	42	53.3 (37.1-67.3)	42.8 (27.3-57.9)	44.6 (28.4-60.3)
Prostate	**13,609**	**99.7 (99.4-99.9)**	**99.4 (98.9-99.9)**	**99.1 (98.5-99.8)**
Localized	9417	100	100	100
Regional	691	99.8 (98.4-100.0)	100	100
Distant	408	75.0 (70.3-79.2)	51.9 (46.5-57.2)	35.0 (29.8-40.3)
Unknown	3091	98.8 (98-99.5)	97.0 (95.7-98.1)	95.9 (94.3-97.5)
Urinary Bladder	**1,630**	**86.1 (84.2-87.9)**	**76.6 (74.1-79)**	**71.3 (68.5-74)**
In Situ	758	98.4 (96.7-99.7)	96.8 (94.1-99.1)	92.1 (88.5-95.3)
Localized	672	80.6 (77.1-83.6)	64.1 (59.9-68.1)	58.7 (54.2-63.1)
Regional	79	72.2 (60.3-81.4)	51.2 (38.6-63.0)	35.9 (24.2-48.5)
Distant	58	28.5 (17.4-40.7)	9.5 (3.5-19.3)	6.2 (1.6-15.5)
Unknown	63	66.9 (53.4-77.6)	58.9 (44.7-71.3)	57.7 (42.7-71.2)
Kidney and Renal Pelvis	**1,460**	**88.8 (86.9-90.4)**	**83.4 (81.1-85.5)**	**80.7 (78.1-83)**
Localized	1016	97.8 (96.4-98.8)	95.9 (93.9-97.6)	94.3 (91.9-96.4)
Regional	206	83.1 (77-87.9)	73.9 (66.7-80)	69.7 (62.1-76.5)
Distant	153	45.9 (37.8-53.7)	24.0 (17.4-31.2)	16.3 (10.7-22.9)
Unknown	85	71.2 (59.9-80)	63.1 (51.1-73.4)	59.9 (47.3-71.1)
Thyroid	**4,878**	**99.8 (99.5-100.0)**	**100**	**100**
Localized	3772	100	100	100
Regional	897	99.6 (98.7-100.0)	99.6 (98.2-100.0)	99.3 (97.7-100.0)
Distant	80	83.7 (73.3-90.6)	72.6 (60.9-81.7)	67.6 (55.3-77.6)
Unknown	128	98.6 (93.8-100.2)	97.3 (91.5-100.0)	97.6 (91.2-100.0)

Cancer Site	Total Cases	1-Year Survival (95% CI)	3-Year Survival (95% CI)	5-Year Survival (95% CI)
Hodgkin Lymphoma	**415**	**88.2 (84.6-91.1)**	**83.5 (79.3-87)**	**81.1 (76.7-84.9)**
Localized	154	89.7 (83.6-93.8)	87.1 (80.3-92.0)	85.3 (78.0-90.8)
Regional	88	88.1 (79.1-93.5)	85.5 (75.9-91.8)	85.0 (75.2-91.6)
Distant	93	86.7 (77.8-92.3)	80.2 (70.1-87.4)	75.7 (65.1-83.8)
Unknown	80	87.2 (77.4-93.1)	78.1 (66.9-86.2)	75.1 (63.5-83.8)
Non-Hodgkin Lymphoma	**2,540**	**77.4 (75.7-79.1)**	**70.5 (68.5-72.4)**	**67.0 (64.9-69.1)**
Localized	822	81.1 (78.1-83.7)	74.1 (70.7-77.3)	72 (68.3-75.4)
Regional	315	73.8 (68.4-78.5)	68.2 (62.3-73.5)	62.7 (56.4-68.5)
Distant	747	72.4 (68.9-75.5)	63.4 (59.6-67.1)	58.6 (54.5-62.5)
Unknown	656	80.4 (77.0-83.4)	75.1 (71.3-78.7)	72.4 (68.1-76.3)
Myeloma	**1,086**	**76.9 (74.1-79.4)**	**62.0 (58.8-65.0)**	**51.6 (48.3-54.9)**
Leukemia	**1,556**	**75.6 (73.3-77.8)**	**65.7 (63.1-68.2)**	**62.0 (59.2-64.7)**

Annex II. Incidence for Specific Cancer Sites by Sex: Puerto Rico, 2018-2022

Sex →	Overall					Male					Female				
Cancer Site† ↓	Count	Crude Rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:		
			PR	US	World			PR	US	World			PR	US	World
All Sites	80,473	498.2	319.1	344.4	247.1	42,143	550.6	355.5	383.3	266.4	38,330	451	293.3	317.3	233.9
Oral Cavity and Pharynx	2,034	12.6	7.9	8.5	6.0	1,427	18.6	12.2	13.1	9.3	607	7.1	4.4	4.8	3.4
Esophagus	711	4.4	2.5	2.8	1.8	572	7.5	4.6	5.0	3.4	139	1.6	0.8	1.0	0.6
Stomach	1,591	9.8	5.7	6.3	4.0	841	11.0	6.8	7.5	4.7	750	8.8	4.9	5.4	3.5
Colon and Rectum	8,651	53.6	33.7	36.7	25.6	4,682	61.2	40.5	43.9	30.6	3,969	46.7	28.2	30.8	21.4
Liver and Intrahepatic Bile Duct	2,026	12.5	7.2	7.8	5.2	1,435	18.7	11.6	12.5	8.5	591	7.0	3.7	4.0	2.6
Pancreas	2,092	13.0	7.4	8.2	5.2	1,077	14.1	8.7	9.5	6.2	1,015	11.9	6.4	7.1	4.4
Larynx	652	4.0	2.4	2.5	1.7	586	7.7	4.8	5.1	3.5	66	0.8	0.4	0.4	0.3
Lung and Bronchus	3,799	23.5	13.2	14.6	9.1	2,212	28.9	17.3	19.2	11.7	1,587	18.7	9.9	11.0	6.9
Skin Melanoma	747	4.6	3.1	3.3	2.4	441	5.8	3.9	4.3	2.8	306	3.6	2.4	2.6	2
Prostate	~	~	~	~	~	16,409	214.4	133.0	141.2	99.8	~	~	~	~	~
Testis	~	~	~	~	~	407	5.3	5.6	5.9	5.3	~	~	~	~	~
Breast	~	~	~	~	~	~	~	~	~	~	12,052	141.8	91.3	98.9	72.7
Cervix Uteri	~	~	~	~	~	~	~	~	~	~	1,012	11.9	10.2	11.2	8.8
Uterus	~	~	~	~	~	~	~	~	~	~	3,832	45.1	30.2	32.0	24.8
Ovary	~	~	~	~	~	~	~	~	~	~	882	10.4	7.3	7.9	6.1
Urinary Bladder	2,537	15.7	8.5	9.6	5.6	1,887	24.7	14.6	16.4	9.5	650	7.6	3.9	4.3	2.5
Kidney and Renal Pelvis	2,071	12.8	8.4	9.0	6.7	1,366	17.8	12.2	13.1	9.5	705	8.3	5.3	5.7	4.3
Brain and Other Nervous System	814	5.0	3.9	4.1	3.6	425	5.6	4.5	4.7	4.0	389	4.6	3.5	3.6	3.2
Thyroid	3,929	24.3	20.9	22.2	18.5	833	10.9	8.9	9.4	7.7	3,096	36.4	31.8	33.7	28.4
Hodgkin Lymphoma	405	2.5	2.3	2.4	2.2	232	3.0	2.8	2.9	2.6	173	2.0	1.9	1.9	1.7
Non-Hodgkin Lymphoma	3,088	19.1	12.3	13.4	9.4	1,650	21.6	14.6	16.0	11.1	1,438	16.9	10.4	11.3	7.9
Myeloma	1,534	9.5	5.6	6.2	4.0	796	10.4	6.5	7.2	4.6	738	8.7	4.9	5.4	3.5
Leukemia	2,119	13.1	9.1	9.7	7.5	1,184	15.5	10.9	11.8	8.6	935	11	7.6	8.1	6.6

* Rates per 100,000 population.

† Excludes basal and squamous cell carcinomas of the skin except when these occur on the skin of the genital organs, and *in situ* cancers except urinary bladder.

~ Not applicable.

PR = Puerto Rico; US = United States of America

Annex III. Mortality for Specific Cancer Sites by Sex: Puerto Rico, 2018-2022

Sex →	Overall					Male					Female				
Cancer Site ↓	Count	Crude rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:		
			PR	US	World			PR	US	World			PR	US	World
All Sites	26,105	161.6	90.5	101.3	61.1	14,300	186.8	111.8	125.7	73.2	11,805	138.9	74.8	83.5	51.9
Oral Cavity and Pharynx	595	3.7	2.1	2.3	1.5	446	5.8	3.6	3.9	2.6	149	1.8	0.9	1.0	0.6
Esophagus	479	3.0	1.7	1.8	1.2	399	5.2	3.2	3.5	2.2	80	0.9	0.5	0.5	0.3
Stomach	848	5.3	2.9	3.2	1.9	483	6.3	3.8	4.3	2.5	365	4.3	2.2	2.5	1.4
Colon and Rectum	3,256	20.2	11.5	12.9	8.0	1,821	23.8	14.8	16.4	10.2	1,435	16.9	9.0	10.1	6.1
Liver and Intrahepatic Bile Duct	1,770	11.0	6.1	6.8	4.3	1,179	15.4	9.4	10.3	6.6	591	7.0	3.5	4.0	2.3
Pancreas	1,727	10.7	5.9	6.6	4.0	918	12.0	7.3	8.1	5.1	809	9.5	4.7	5.4	3.0
Larynx	185	1.1	0.6	0.7	0.4	169	2.2	1.3	1.5	0.9	16	0.2	0.1	0.1	0.1
Lung and Bronchus	2,761	17.1	9.3	10.4	6.1	1,661	21.7	12.8	14.4	8.3	1,100	12.9	6.5	7.4	4.3
Skin Melanoma	126	0.8	0.4	0.5	0.3	82	1.1	0.7	0.8	0.4	44	0.5	0.3	0.3	0.2
Prostate	~	~	~	~	~	2,320	30.3	16.5	19.5	8.7	~	~	~	~	~
Testis	~	~	~	~	~	38	0.5	0.5	0.5	0.4	~	~	~	~	~
Breast	~	~	~	~	~	~	~	~	~	~	2,088	24.6	14.1	15.5	10.3
Cervix Uteri	~	~	~	~	~	~	~	~	~	~	236	2.8	2	2.2	1.7
Uterus	~	~	~	~	~	~	~	~	~	~	693	8.2	4.7	5.1	3.5
Ovary	~	~	~	~	~	~	~	~	~	~	507	6.0	3.6	3.9	2.7
Urinary Bladder	604	3.7	1.9	2.1	1.1	402	5.3	2.9	3.4	1.7	202	2.4	1.0	1.2	0.6
Kidney and Renal Pelvis	453	2.8	1.6	1.7	1.0	295	3.9	2.3	2.6	1.5	158	1.9	1.0	1.1	0.6
Brain and Other Nervous System	591	3.7	2.3	2.5	1.7	303	4.0	2.7	2.9	2.1	288	3.4	1.9	2.1	1.4
Thyroid	101	0.6	0.3	0.4	0.2	39	0.5	0.3	0.3	0.2	62	0.7	0.4	0.4	0.3
Hodgkin Lymphoma	71	0.4	0.3	0.3	0.2	48	0.6	0.4	0.5	0.3	23	0.3	0.1	0.2	0.1
Non-Hodgkin Lymphoma	825	5.1	2.9	3.2	1.9	468	6.1	3.8	4.3	2.6	357	4.2	2.1	2.4	1.4
Myeloma	666	4.1	2.2	2.5	1.4	334	4.4	2.6	2.9	1.6	332	3.9	1.9	2.2	1.2
Leukemia	995	6.2	3.6	4.0	2.4	548	7.2	4.4	5.0	2.9	447	5.3	2.9	3.3	2.0

* Rates per 100,000 population.
~ Not applicable.
PR = Puerto Rico; US = United States of America

Annex IV. Incidence of Childhood Cancer by Sex: Puerto Rico, 2018-2022

Sex →	Overall					Male					Female				
Cancer Site ↓	Count	Crude Rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:		
			PR	US	World			PR	US	World			PR	US	World
All Sites	325	146.8	153.5	153.2	159.0	158	140.4	146.8	146.5	151.8	167	153.4	160.6	160.3	166.5
Leukemia	102	46.1	49.0	48.8	51.2	46	40.9	42.5	42.3	43.5	56	51.4	55.8	55.6	59.2
Lymphomas	43	19.4	19.1	19.1	19.0	30	26.7	25.7	25.7	25	13	11.9	12.3	12.4	12.8
CNS Neoplasms	51	23	24.8	24.7	26.1	28	24.9	26.7	26.6	28.2	23	21.1	22.7	22.6	24
Neuroblastoma	16	7.2	8.9	8.9	10.3	9	8	9.7	9.6	11.1	7	6.4	8.2	8.1	9.6
Retinoblastoma	9	4.1	5.4	5.5	6.6	^	^	^	^	^	^	^	^	^	^
Renal tumors	14	6.3	7.1	7	7.7	6	5.3	6.5	6.4	7.4	8	7.3	7.7	7.7	8.0
Hepatic tumors	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Bone tumors	10	4.5	4.1	4.1	3.7	^	^	^	^	^	^	^	^	^	^
Soft tissue sarcomas	16	7.2	7.3	7.3	7.3	7	6.2	6.3	6.3	6.4	9	8.3	8.2	8.3	8.2
Germs cell neoplasm	17	7.7	7.6	7.6	7.6	8	7.1	7.5	7.4	7.7	9	8.3	7.7	7.7	7.4
Carcinomas	30	13.5	12.0	12	10.7	9	8	6.9	7	6.1	21	19.3	17.1	17.2	15.4
Other	13	5.9	5.9	6.0	6.0	^	^	^	^	^	^	^	^	^	^

*Rates are per 1,000,000 persons.
^ Counts and rates are not presented when less than six cases are reported in order to protect the confidentiality of the information.
Statistics were generated using the International Classification of Childhood Cancer (ICCC).
PR = Puerto Rico; US = United States of America
CNS = Central Nervous System

Annex V. Incidence of Cancer in AYAs by Sex: Puerto Rico, 2018-2022

Sex →	Overall					Male					Female				
Cancer Site ↓	Count	Crude Rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:			Count	Crude Rate*	Age-Adjusted Rates Standard Population:		
			PR	US	World			PR	US	World			PR	US	World
All sites	3,634	71.2	70.6	76.4	66.3	1,218	48.1	48.3	51.4	46.2	2,416	94.0	91.4	99.7	85.2
Leukemias	157	3.1	3.1	3.2	3.0	93	3.7	3.7	3.8	3.6	64	2.5	2.5	2.6	2.4
No-Hodgkin lymphoma	161	3.2	3.1	3.4	3.0	99	3.9	3.9	4.2	3.7	62	2.4	2.4	2.6	2.2
Hodgkin lymphoma	162	3.2	3.2	3.2	3.2	92	3.6	3.7	3.7	3.6	70	2.7	2.7	2.7	2.7
CNS and other intracranial and intraspinal neoplasias	84	1.6	1.6	1.7	1.6	48	1.9	1.9	2.0	1.9	36	1.4	1.4	1.4	1.4
Osseous & chondromatous neoplasms	37	0.7	0.7	0.7	0.8	25	1.0	1.0	1.0	1.0	12	0.5	0.5	0.5	0.5
Soft tissue sarcomas	117	2.3	2.3	2.4	2.2	66	2.6	2.6	2.7	2.5	51	2.0	2.0	2.1	1.9
Germ cell and trophoblastic neoplasms	306	6.0	5.9	6.1	5.8	279	11.0	10.9	11.4	10.6	27	1.1	1.1	1.0	1.1
Melanoma and skin carcinomas	62	1.2	1.2	1.3	1.1	28	1.1	1.1	1.2	1.0	34	1.3	1.3	1.4	1.2
Thyroid carcinoma	911	17.9	17.7	18.7	16.8	140	5.5	5.6	5.9	5.3	771	30.0	29.3	31.0	28.0
Other carcinoma of head and neck	65	1.3	1.3	1.4	1.2	37	1.5	1.5	1.7	1.4	28	1.1	1.1	1.1	1.1
Carcinoma of trachea, bronchus, and lung	33	0.6	0.6	0.7	0.6	14	0.6	0.6	0.6	0.5	19	0.7	0.7	0.8	0.7
Carcinoma of breast	~	~	~	~	~	^	^	^	^	^	403	15.7	15.1	17.3	13.5
Carcinoma of kidney	58	1.1	1.1	1.3	1.0	31	1.2	1.3	1.4	1.1	27	1.1	1.0	1.1	0.9
Carcinoma of cervix and uterus	~	~	~	~	~	~	~	~	~	~	426	16.6	15.9	17.9	14.4
Carcinoma of colon and rectum	271	5.3	5.3	5.8	4.9	116	4.6	4.6	5.1	4.3	155	6.0	5.8	6.5	5.4
Carcinoma of stomach	21	0.4	0.4	0.5	0.4	9	0.4	0.4	0.4	0.3	12	0.5	0.5	0.5	0.4
Carcinoma of liver and intrahepatic bile ducts	11	0.2	0.2	0.2	0.2	^	^	^	^	^	^	^	^	^	^
Carcinoma of pancreas	27	0.5	0.5	0.6	0.5	7	0.3	0.3	0.3	0.3	20	0.8	0.7	0.8	0.7

*Rates are per 100,000 persons.
^ Counts and rates are not presented when less than six cases are reported in order to protect the confidentiality of the information.
PR = Puerto Rico; US = United States of America
CNS = Central nervous system
~ Not applicable

SCIENTIFIC PUBLICATIONS

From 2007 to the present, the Puerto Rico Central Cancer Registry has participated in or provided data for the following publications and scientific articles:

Chavez MN, Ortiz-Ortiz K, Trejos R, Sanabria G, Quast T, Tyson DM. **Opioid prescription and usage disparities among Puerto Rican breast cancer survivors: findings from the Puerto Rico Central Cancer Registry-Health Insurance Linkage Database (PRCCR-HILD)**. Cancer Causes Control. 2025 Jul 4. [PubMed]

Castañeda-Avila MA, Latoni-Guillermety D, Sabatino M, Ortiz-Ortiz KJ, Lapane KL. **Challenges oncologists face when caring for Hispanics living in Puerto Rico with colorectal cancer and multiple chronic conditions**. BMC Cancer. 2025 May 20;25(1):898. [PubMed]

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