The Burden of Pancreatic Cancer in Rhode Island

Prepared by the Rhode Island Cancer Registry (RICR), October 2020

OVERVIEW: Pancreatic Cancer in Rhode Island

Pancreatic cancer occurs rarely, accounting for 2 to 3% of all newly diagnosed cancer cases in Rhode Island.[1] However, the poor treatment outcomes and survival rates associated with pancreatic cancer make it the fifth leading cause of Rhode Island cancer deaths, accounting for 7 to 8% of the state's cancer mortality.[2] Pancreatic cancer is more prevalent in males than females. Incidence of pancreatic cancer among males has been rising in the years between 1995 to 2017, while incidence among females has remained unchanged *(Figure 1.1 & 1.2)*.

Figure 1.1 Trend of Pancreatic Cancer Incidence and Mortality among Rhode Island Males, RICR 1995-2017

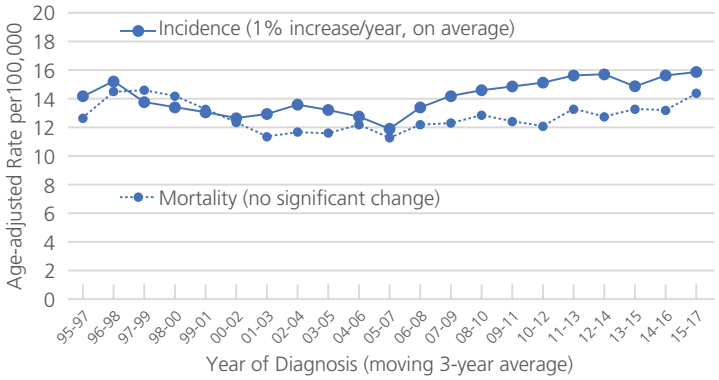
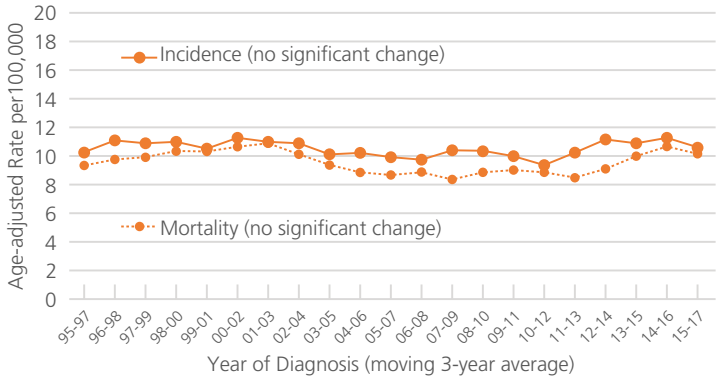


Figure 1.2 Trend of Pancreatic Cancer Incidence and Mortality among Rhode Island Females, RICR 1995-2017



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

Racial and Ethnic Differences in Rhode Island's Pancreatic Cancer Incidence and Mortality

In Rhode Island, most newly diagnosed pancreatic cancer cases and associated deaths are found among non-Hispanic whites, who represent the largest racial and ethnic group in the state. The burden of pancreatic cancer has increased since 1995 among minorities, particularly Hispanics, proportionate to population changes ***(Tables 1.1 and 1.2)***. Hispanics are currently Rhode Island's largest, fastest growing minority group (16% according to the 2010 U.S. Census), and rates of aging among Hispanics are predicted to progress more rapidly than those of any other racial or ethnic subgroup.[3]

Table 1.1 Pancreatic Cancer Incidence (Newly Diagnosed Cases) by Race and Ethnicity, RICR 1995-2016[1]

Years	Non-Hispanic White	Non-Hispanic Black	Hispanic	Total*
1995-2005	1,420 (94%)	43 (3%)	32 (2%)	1,508
2006-2016	1,580 (90%)	74 (4%)	77 (4%)	1,754

Table 1.2 Pancreatic Cancer Mortality (Reported Attributed Deaths) by Race and Ethnicity, RICR 1995-2016[2]

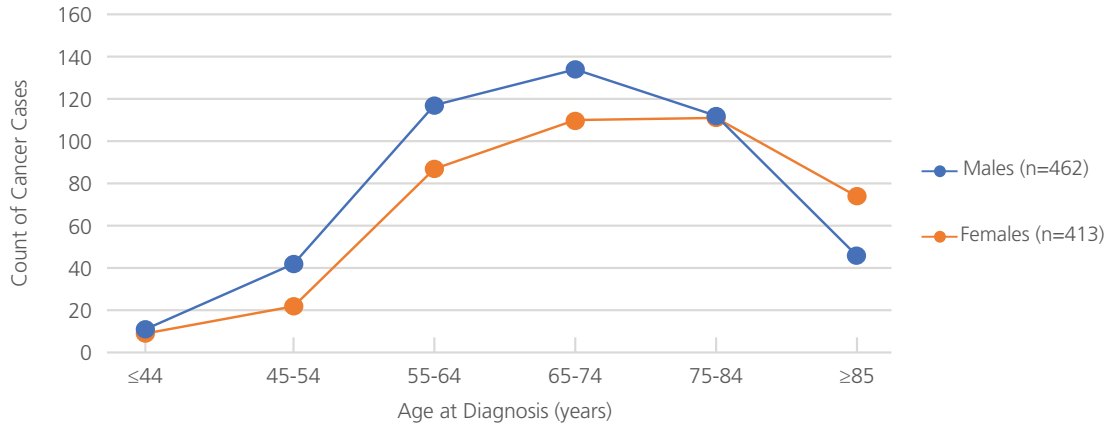
Years	Non-Hispanic White	Non-Hispanic Black	Hispanic	Total*
1995-2005	1,370 (95%)	44 (3%)	12 (1%)	1,437
2006-2016	1,435 (93%)	49 (3%)	38 (2%)	1,545

* Numbers and percentages may not add to total number and 100% in each category, due to missing or unknown records.

Age at Diagnosis of Pancreatic Cancer

Between 2013 and 2017, more than 90% of pancreatic cancers were diagnosed in adults ages 55 years and older ***(Figure 2)***. The average age at diagnosis for males in Rhode Island was 69, and for females was 72.

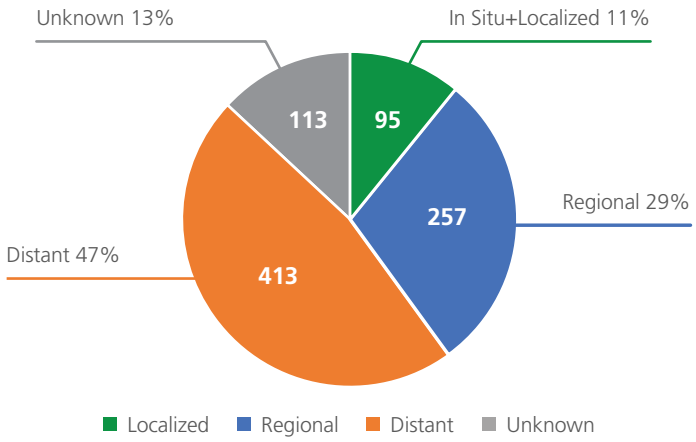
Figure 2. Age at Diagnosis among Males and Females, RICR 2013-2017 (n=878)



Stage at Diagnosis of Pancreatic Cancer

The earlier the stage at which pancreatic cancer is detected and treated, the better chance a person has of surviving after being diagnosed. However, most pancreatic cancers produce few or no symptoms until later stages, after they have spread. Most cases have spread regionally or metastasized by time of diagnosis. Between 2013 and 2017 in Rhode Island, only 11% of pancreatic tumors were localized (diagnosed at earlier stages), potentially amenable with surgical and other treatment options; 29% of cases were diagnosed at the stages of regional spread; and 47% had metastasized by time of diagnosis ***(Figure 3)***. The SEER (Surveillance, Epidemiology, and End Result) tumor registry tracked and analyzed patients' survival years; the relative five-year survival rate of pancreatic cancer is only 10%.[4]

Figure 3. Staging at Cancer Diagnosis, RICR 2013-2017 (n=878)

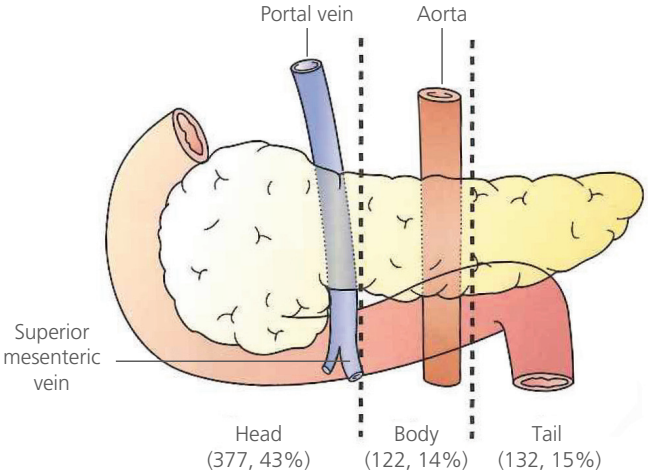


In the in situ and localized stage, the cancer is confined to a primary site. In the regional stage, the cancer has spread to regional lymph nodes, and in the distant stage it has metastasized.

Anatomic Sites at Pancreatic Cancer Diagnosis

Cancer of the pancreas most commonly develops in the pancreatic head, body and tail ***(Figure 4)***. Clinical signs, symptoms, and disease management may differ by cancer site. Tumors tend to be diagnosed at later stages when found in the body and tail of the pancreas and may be associated with shorter average survival rates than are pancreatic head tumors.[5-6]

Figure 4. Pancreatic Cancer Diagnosis by Site*, RICR 2013-2017 (n=878)



Wittekind C., Asamura H, Sobin LH (eds.) TNM Atlas. Illustrated Guide to the TNM Classification of Malignant Tumors. Sixth Edition. John Wiley & Sons Ltd; 2014.

*The rest of 248 (28%) of cancer developments in overlapping and unspecified parts of the pancreas are not displayed

Family History Associated with Pancreatic Cancer and Testing

Despite the high mortality rate of pancreatic cancer, there is no recommended screening protocol for early detection of the cancer that can be curable among average risk individuals. Researchers have learned more in recent years about genetic (familial) risks and treatment of pancreatic cancer. Family history of disease tools are often helpful in establishing risk of inheritability. Higher risk individuals (those with substantive family histories of this disease, including first-degree relatives) may be assessed for genetic predisposition and screened at recommended intervals.[7]

References

[1] Rhode Island Cancer Data (extracted July 2020). Rhode Island Cancer Registry.

[2] Rhode Island Vital Records & CDC National Center for Health Statistics (extracted and analyzed using SEER*Stat software v8.4.7, July 2020).

[3] US Census Bureau Quick Facts: Rhode Island. Population Estimates, July 2019. https://www.census.gov/quickfacts/RI

[4] NIH Surveillance, Epidemiology, and End Results (SEER) Program. Cancer Stat Facts, 2010-2016. https://seer.cancer.gov/statfacts/html/pancreas.html

[5] Badarna M, Percik R, Aharon-Hananel G, et al. Anatomic site as prognostic marker of pancreatic neuroendocrine tumors: a cohort study. Eur J Endocrinology 2019; 181:325-330.

[6] Raju RS, Coburn N, Liu N, et al. A population-based study of the epidemiology of pancreatic cancer: a brief report. Curr Onc 2015; 22(6):e478–e484.

[7] American Cancer Society. Pancreatic Cancer. Early Detection, Diagnosis, and Staging. https://www.cancer.org/cancer/pancreatic-cancer/detection-diagnosis-staging/detection.html

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