



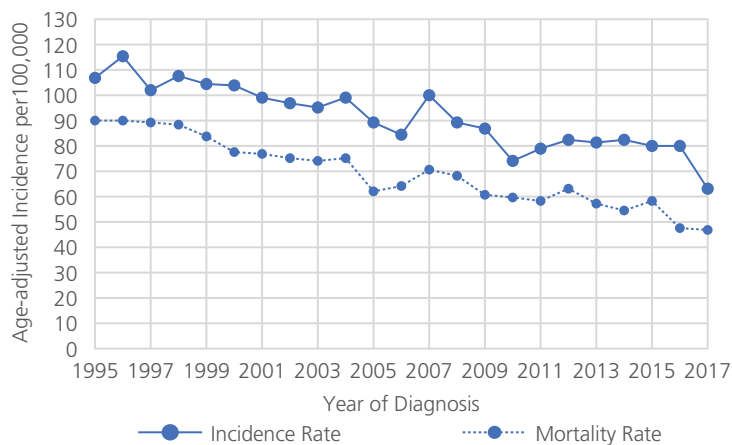
# The Burden of Lung Cancer in Rhode Island

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

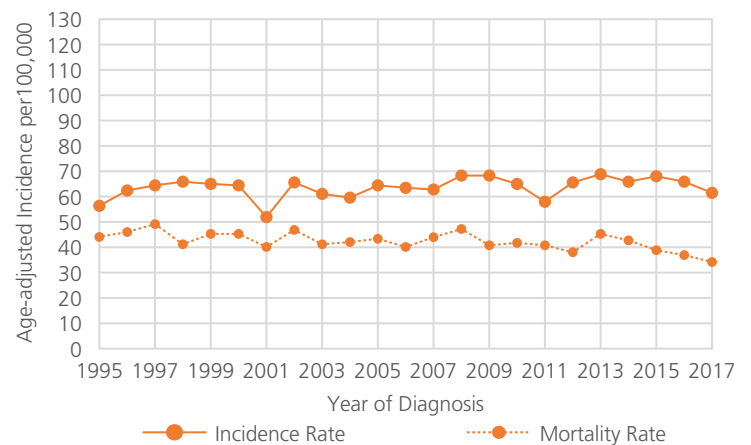
## OVERVIEW: Lung Cancer in Rhode Island

Cancers of the lung and bronchus (lung cancer) are the second most commonly diagnosed malignancies among Rhode Island men and women, accounting for 15% of all cancers reported to the Rhode Island Cancer Registry.<sup>1</sup> A third of cancer-related deaths in Rhode Island are attributed to lung and bronchus cancers.<sup>2</sup> Cancer incidence and mortality rates among males have consistently declined since 1995 (*Figure 1.1*). Meanwhile, the rates among females have remained unchanged during the same time period (*Figure 1.2*).

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



**Figure 1.2** Trend of Lung 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)

## Racial and Ethnic Differences in Lung Cancer Incidence and Mortality

In Rhode Island, most lung cancer cases and deaths occur among non-Hispanic white individuals (*Tables 1 & 2*). Significant conclusions cannot be drawn regarding changes in incidence and mortality rates of lung cancers among the state's racial minorities, due to their small population numbers and low case counts. Among those with Hispanic heritage, cancer cases and deaths increased between the two periods studied (1996-2006 and 2007-2017). Hispanics are currently Rhode Island's largest, fastest growing minority group (16%: 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.<sup>3</sup> Cancer surveillance, prevention, and control efforts may help to prevent and mitigate cancer burdens among Hispanics.

**Table 1.** Lung Cancer Cases in both Males and Females by Race/Ethnicity, RICR 1996-2017

Years	Non-Hispanic White	Non-Hispanic Black	Hispanic	Total*
1996-2006	9,327 (95%)	254 (3%)	194 (2%)	9,839
2007-2017	9,406 (92%)	331 (3%)	315 (3%)	10,174

**Table 2. Lung Cancer Deaths in both Males and Females by Race/Ethnicity, RICR 1996-2017**

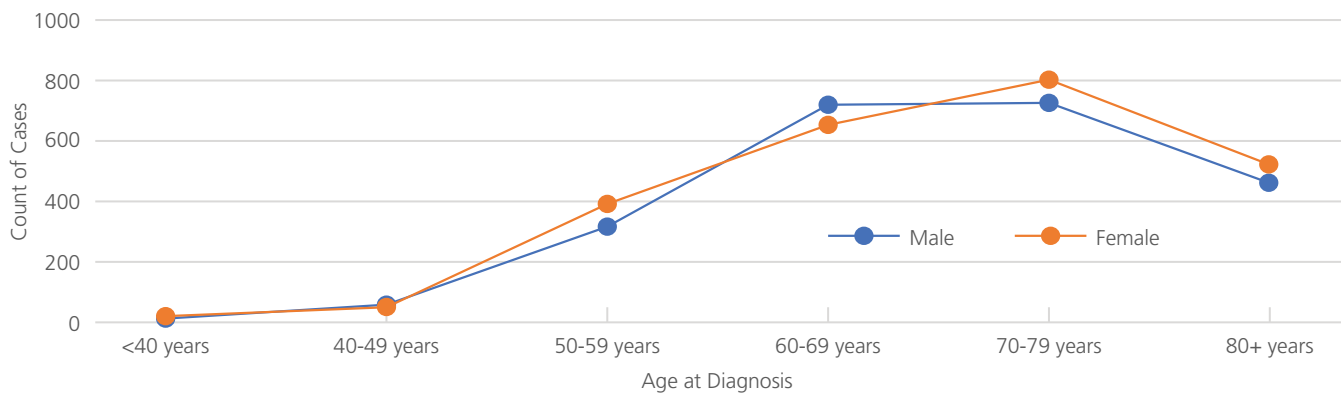
Years	Non-Hispanic White	Non-Hispanic Black	Hispanic	Total*
1996-2006	7,032 (95%)	208 (3%)	60 (1%)	7,385
2007-2017	6,496 (95%)	177 (3%)	108 (2%)	6,871

\*All cell values do not add up to total, due to missing or unknown information on race and ethnicity.

## Patient Age, Subtype, and Staging of Lung Cancer Diagnosis

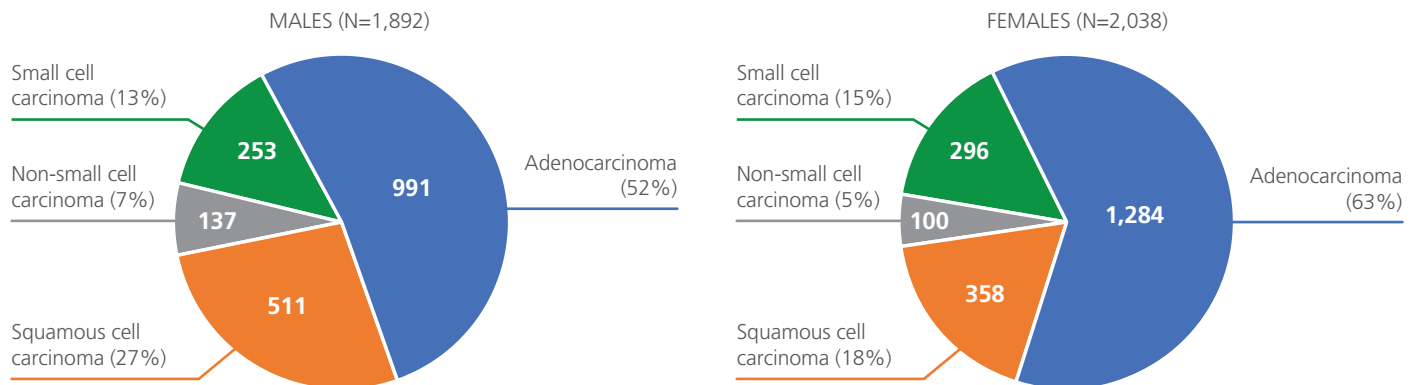
Over 80% of lung and bronchus cancers are diagnosed among individuals ages 60 and older, with an average age of 70 at diagnosis, in cases reported among Rhode Island men and women (Figure 2). The patient's age doesn't solely predict their outcome. However, survival among elderly patients, particularly aged 80 years and older, is significantly lower compared with younger patients, considering limited treatment options and less promising treatment outcomes.<sup>4</sup>

**Figure 2. Age at Lung Cancer Diagnosis, RICR 2013-2017**



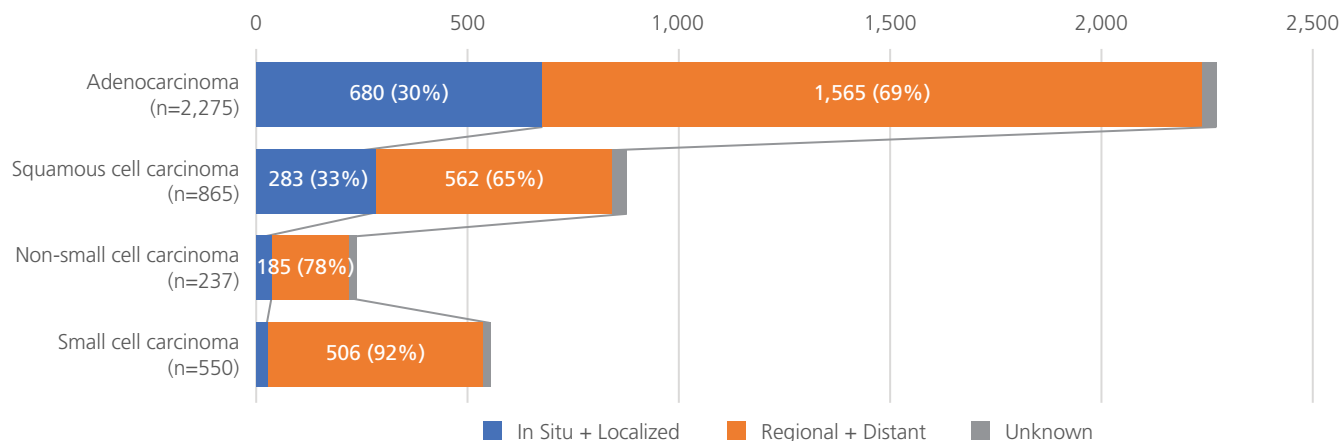
There are many distinct sub-types of lung cancer by micro-biologic cell features. Adenocarcinoma is common both among males and females (Figure 3). A rise in adenocarcinoma incidence has been observed in recent years, particularly among females, and was described in a previous report.<sup>5</sup> According to the SEER database tracking the five-year relative survival rates associated with lung cancer in the United States (2009-2015), adenocarcinoma, and other non-small cell lung cancers (NSCLC) had better five-year survival rates than did small cell lung cancers (SCLC) (24% and 6%, respectively).<sup>6</sup>

**Figure 3. Lung and Bronchus Cancer Diagnosis by Histologic Subtype, RICR 2013-2017**



Despite advancements in treatment, prognoses of lung and bronchus cancers are relatively poor, with overall five-year survival rates of approximately 20%.<sup>6,7</sup> Regardless of subtype, lung cancer when diagnosed at advanced stages typically predicts poor treatment outcomes and lower survival rates. It is concerning that so many cancers of the lung are diagnosed at advanced stages (Figure 4). The United States Preventive Services Task Force has proposed lowering its lung cancer screening eligibility threshold for current and former smokers, decreasing both the baseline age (currently age 55) and pack-year history criteria (currently 30 pack years, or the equivalent of smoking one pack of cigarettes per day for 30 years).<sup>8</sup> It is anticipated that these changes will improve eligibility for and access to routine periodic screening for current and former smokers. This strategy is predicted to identify more lung and bronchus cancers at earlier stages.

**Figure 4. Staging at Diagnosis by Histologic Subtype among Males and Females, RICR 2013-2017**



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.

## References

- <sup>1</sup> Rhode Island Cancer Data (extracted July 2020). Rhode Island Cancer Registry.
- <sup>2</sup> Rhode Island Vital Records & CDC National Center for Health Statistics (extracted and analyzed using SEER\*Stat software v8.4.7, July 2020).
- <sup>3</sup> US Census Bureau Quick Facts: Rhode Island. Population Estimates, July 2019. <https://www.census.gov/quickfacts/RI>
- <sup>4</sup> Cassidy RJ, Zhang X, Switchenko JM, et al. Health care disparities among octogenarians and nonagenarians with stage III lung cancer. *Cancer*. 2018;124(4):775-784.
- <sup>5</sup> Oh J, Smith CK. Rhode Island Lung Cancer Incidence and Stage at Diagnosis, by Histologic Subtype, 2004-2015. 2018;101(5):50-53. <http://www.rimed.org/rimedicaljournal/2018/06/2018-06-50-health-oh.pdf>
- <sup>6</sup> American Cancer Society. Lung Cancer Survival Rates, 2009-2015. <https://www.cancer.org/cancer/lung-cancer/detection-diagnosis-staging/survival-rates.html>
- <sup>7</sup> NIH Surveillance, Epidemiology, and End Results (SEER) Program. Cancer Stat Facts: Lung and Bronchus Cancer, 2010-2016. <https://seer.cancer.gov/statfacts/html/lungb.html>
- <sup>8</sup> U.S. Preventive Services Task Force (USPSTF). Screening for lung cancer: USPSTF Draft Recommendation Statement. Lung Cancer: Screening. July 07, 2020. <https://uspreventiveservicestaskforce.org/uspstf/draft-recommendation/lung-cancer-screening-2020>



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