Tobacco-Related Cancers in New York State

2018 — 2022

Department of Health

Introduction

- Tobacco control and cancer are crucial public health issues in New York State, and tobacco use is a major risk factor for many cancers.
  - ✓ Epidemiologic studies have established causative links between tobacco use and cancers of the lung, larynx, oral cavity, esophagus, urinary bladder, pancreas, kidney, cervix, stomach, colon and rectum, liver, and acute myeloid leukemia.[1-3] Among these 12 cancers, cancers of the lung, larynx, oral cavity, and esophagus are most closely related to tobacco use.
  - ✓ Secondhand smoke, also called involuntary smoking or environmental tobacco smoke, is a cause of lung cancer in people who do not smoke,[2,4] and there is mounting evidence of links with other cancers.[5]
  - ✓ Tobacco use is a leading preventable cause of overall mortality and cancer mortality.[6,7]
  - ✓ Smoking not only causes cancer but also increases the risk of dying from cancer and other diseases among cancer patients and survivors.[2]
- This report uses data collected by the New York State Cancer Registry and provides the public with an overview of the latest five-year (2018-2022) average rates of incidence and mortality, including disparities in incidence by demographics and geography, of tobacco-related cancers and the trends of incidence from 2008 to 2022. **Please Note:** The data for tobacco-related cancers are based only on cancer site/type[8] and do not estimate the proportion of cancers caused by tobacco.

Results

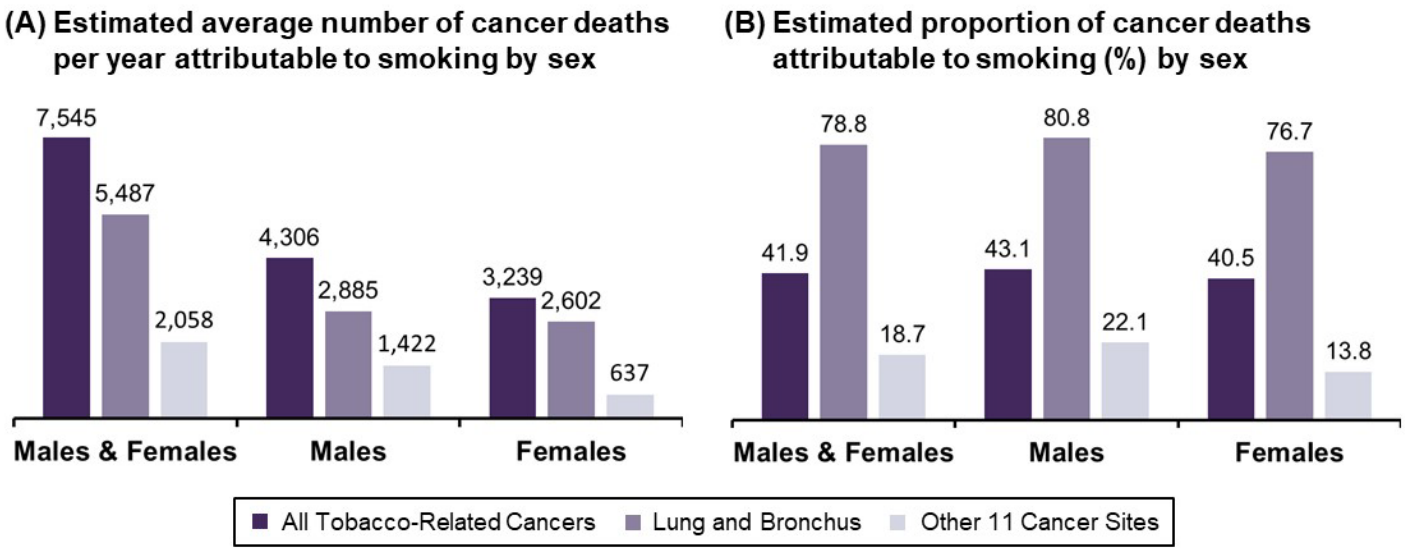
Table 1. Incidence and Mortality of Tobacco-Related Cancers, New York State 2018-2022*

Cancer Site/Type	Incidence		Mortality	
	Cases[a]	Rate[b]	Deaths[c]	Rate[b]
All Tobacco-Related Cancers	45,854	179.0	18,090	69.7
Oral Cavity and Pharynx	2,845	11.1	554	2.1
Esophagus	1,094	4.1	800	3.0
Stomach	2,103	8.4	758	3.0
Colon and Rectum	8,828	35.8	2,769	10.9
Liver	1,619	6.1	906	3.4
Pancreas	3,740	14.4	2,752	10.5
Larynx	688	2.6	193	0.7
Lung and Bronchus	13,830	52.4	6,971	26.5
Cervix Uteri (females only)	775	6.9	212	1.7
Kidney and Renal Pelvis	4,094	16.4	640	2.5
Urinary Bladder	5,342	20.5	905	3.5
Acute Myeloid Leukemia (AML)	896	3.7	630	2.5
All Cancers	117,656	466.8	32,608	126.6

[a] Average number of new cases per year; [b] per 100,000 persons; [c] Average deaths per year.

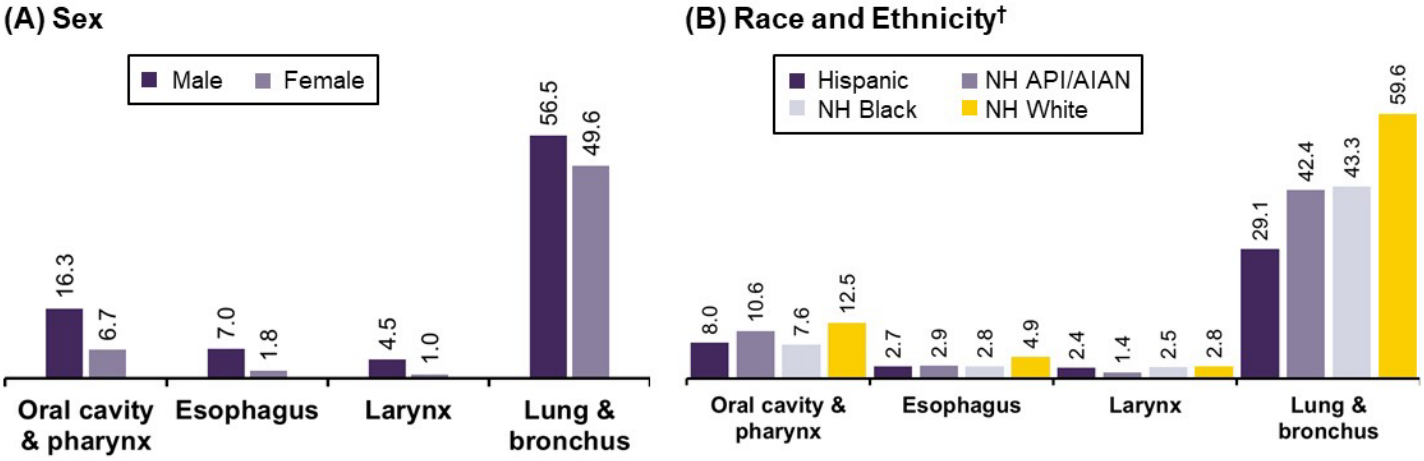
- Approximately 45,900 cases of tobacco-related cancers were diagnosed each year in New York State, representing 39% of the nearly 117,700 cancer cases diagnosed annually.
- Over 18,000 individuals died from a tobacco-related cancer each year, accounting for 56% of the 32,600 cancer deaths in the State.
- The largest contributor to both new cancer diagnoses and cancer deaths was lung cancer, with annual incidence and mortality rates of 52.4 and 26.5 per 100,000 persons, respectively.

Figure 1. Estimated Smoking Attributable Mortality, New York State 2018-2022*,9



- Smoking accounts for a greater number and a higher proportion of cancer deaths in males than in females.
- In New York State, 42% of all cancer deaths (i.e., over 7,500 deaths a year) could be attributed to smoking and not other causes.
- Smoking may account for an estimated 79% of deaths from lung cancer and 19% of deaths from the other 11 tobacco-related cancers listed in Table 1.

Figure 2. Incidence Rates (per 100,000 persons) of Four Common Tobacco-Related Cancers by Demographics, New York State 2018-2022*



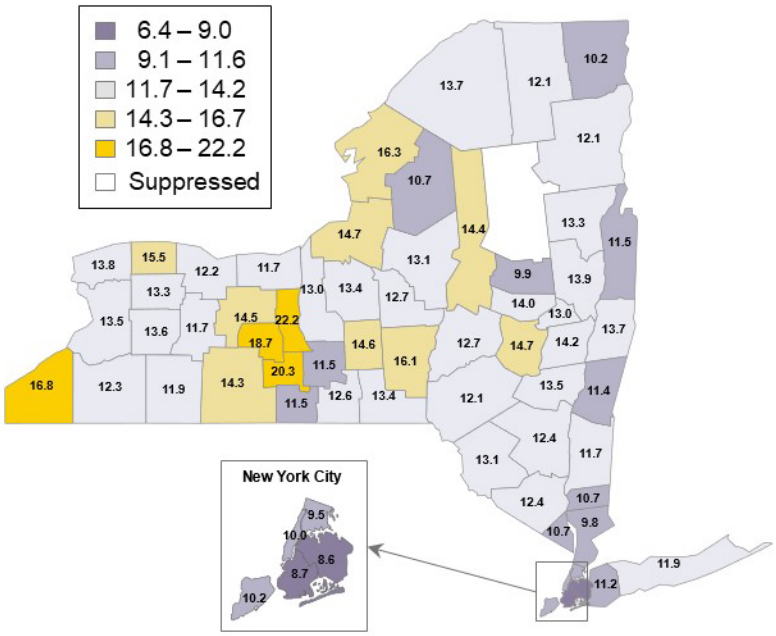
- Cancers of the oral cavity & pharynx, esophagus, larynx, lung & bronchus were diagnosed more often in males than in females.
- Incidence rates were highest among non-Hispanic (NH) White persons for all four cancer sites, though the incidence of laryngeal cancer was not statistically different from that in non-Hispanic Black persons.

Figure 3. Incidence Rates (per 100,000 persons) of Four Common Tobacco-Related Cancers by Geography, New York State 2018-2022*,‡

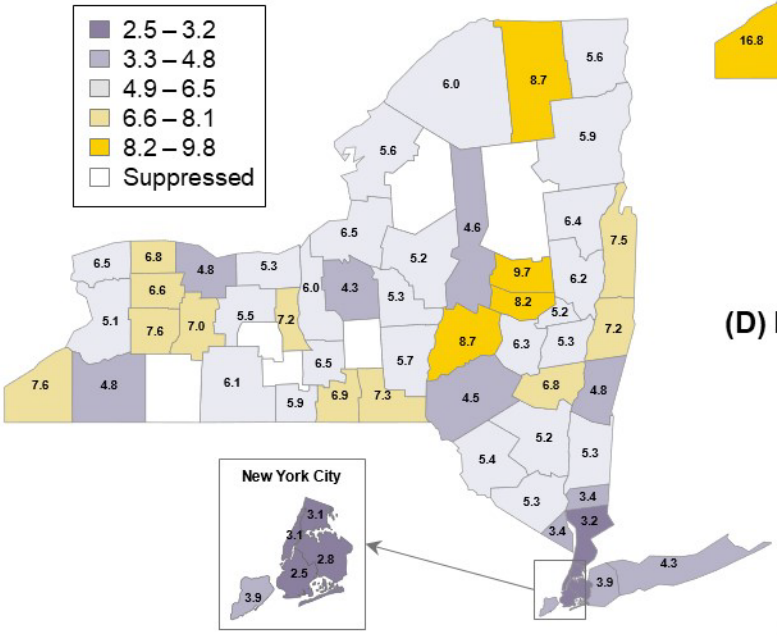
(A) Rate by Region

Cancer Site	NYC	ROS
Oral Cavity and Pharynx	9.2	12.4
Esophagus	2.9	5.0
Larynx	2.5	2.9
Lung and Bronchus	41.0	59.9

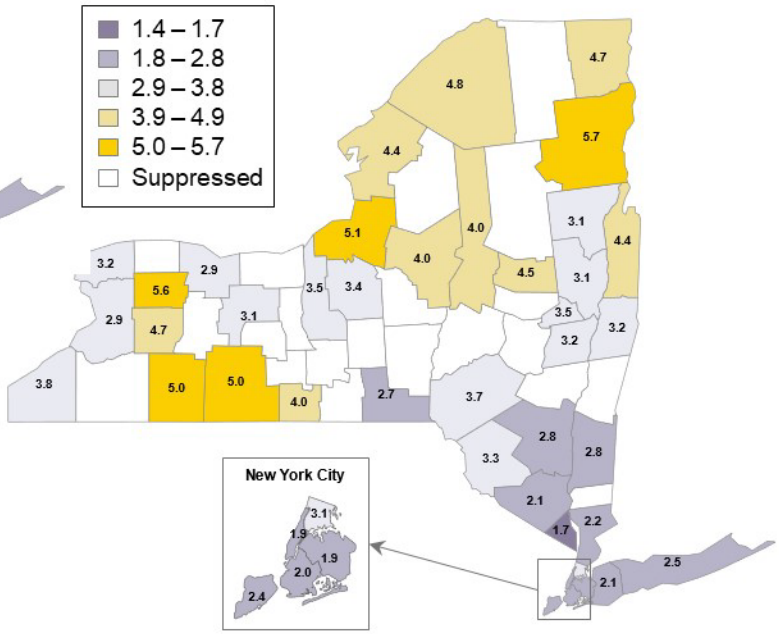
(B) Oral Cavity and Pharyngeal Cancer



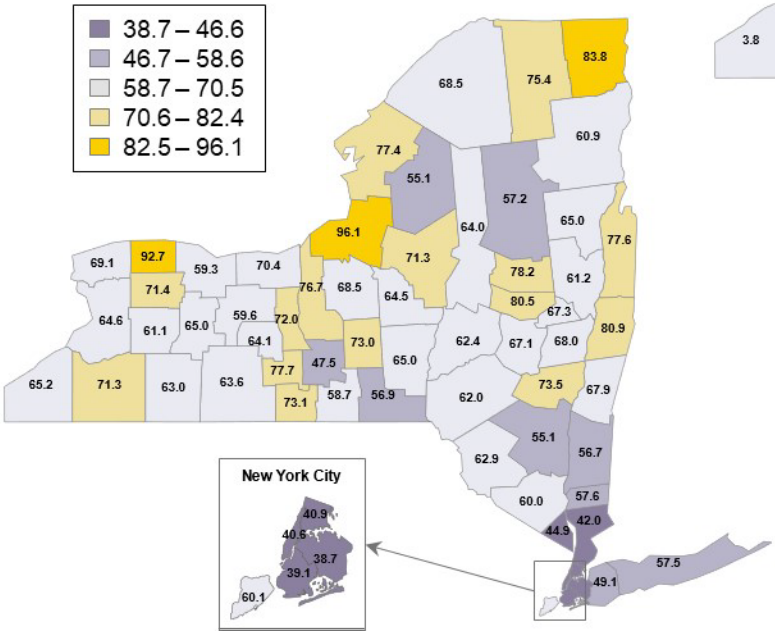
(C) Esophageal Cancer



(D) Laryngeal Cancer

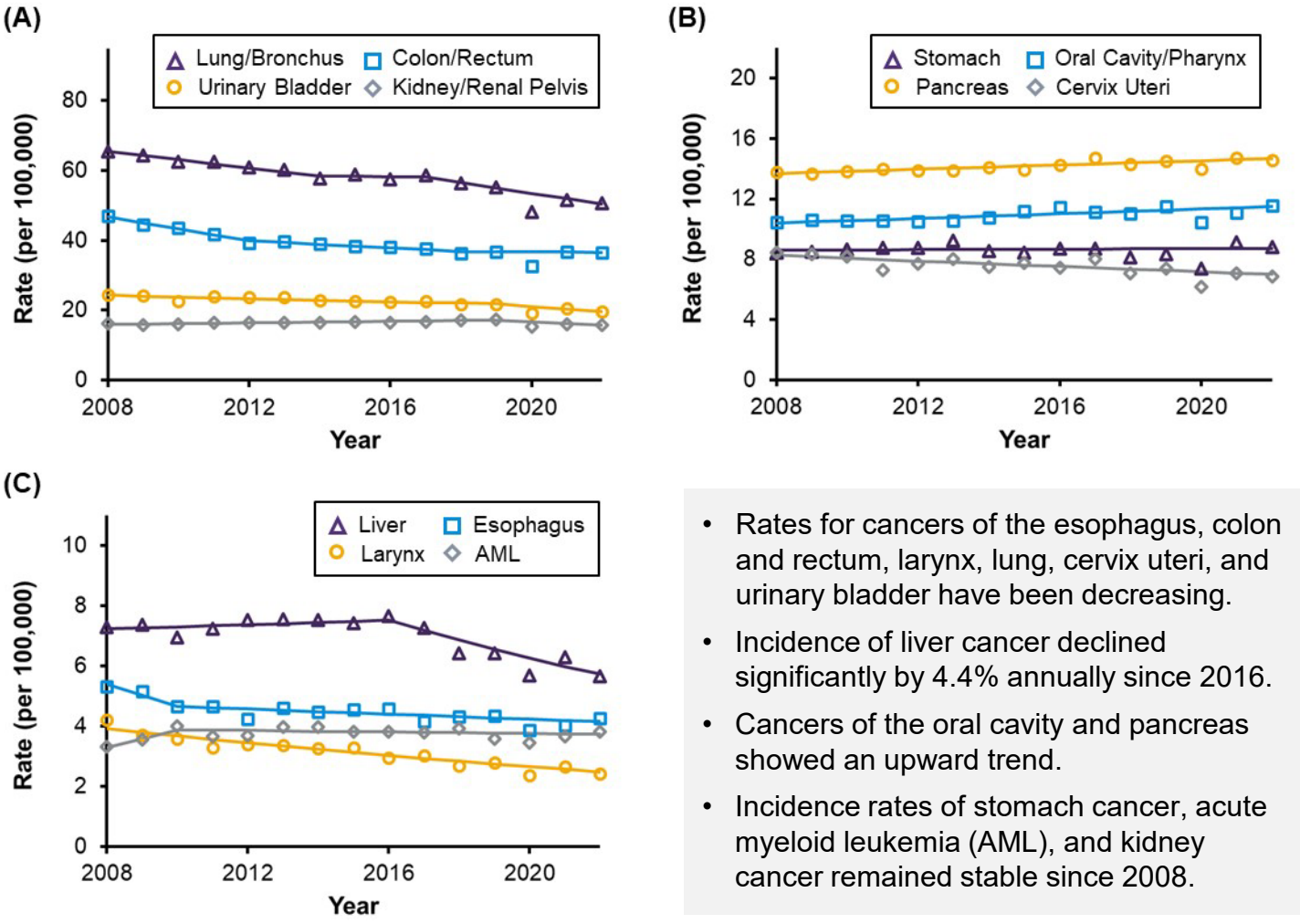


(E) Lung Cancer



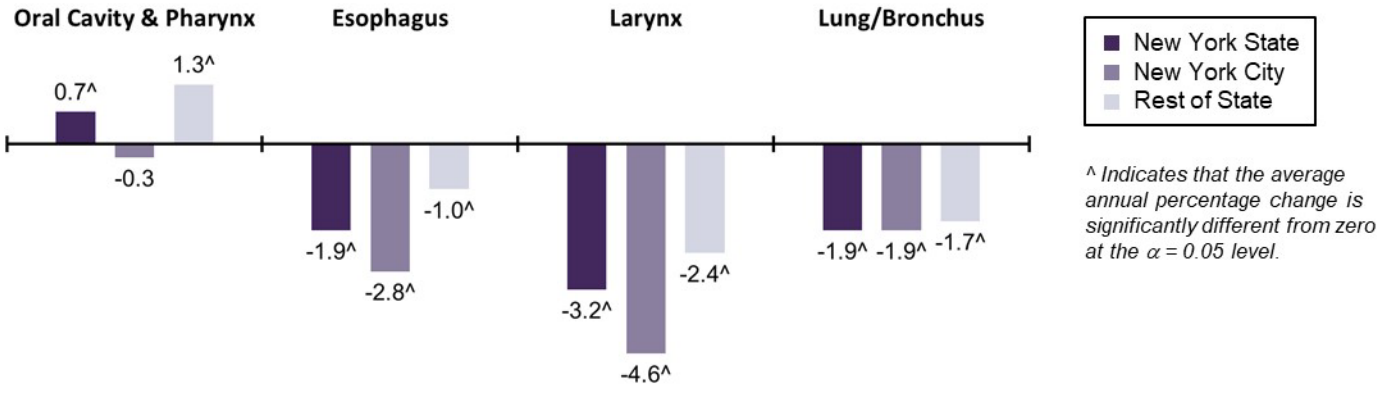
- Rates were generally lowest in the five boroughs of New York City (NYC) and in nearby counties.
- The only exception to this pattern is laryngeal cancer. The rate in New York City as a whole was lower than that in the rest of the state (ROS), but Bronx had a relatively high incidence.

Figure 4. Trends in Incidence Rates of Tobacco-related Cancers, New York State 2008-2022*,§



- Rates for cancers of the esophagus, colon and rectum, larynx, lung, cervix uteri, and urinary bladder have been decreasing.
- Incidence of liver cancer declined significantly by 4.4% annually since 2016.
- Cancers of the oral cavity and pancreas showed an upward trend.
- Incidence rates of stomach cancer, acute myeloid leukemia (AML), and kidney cancer remained stable since 2008.

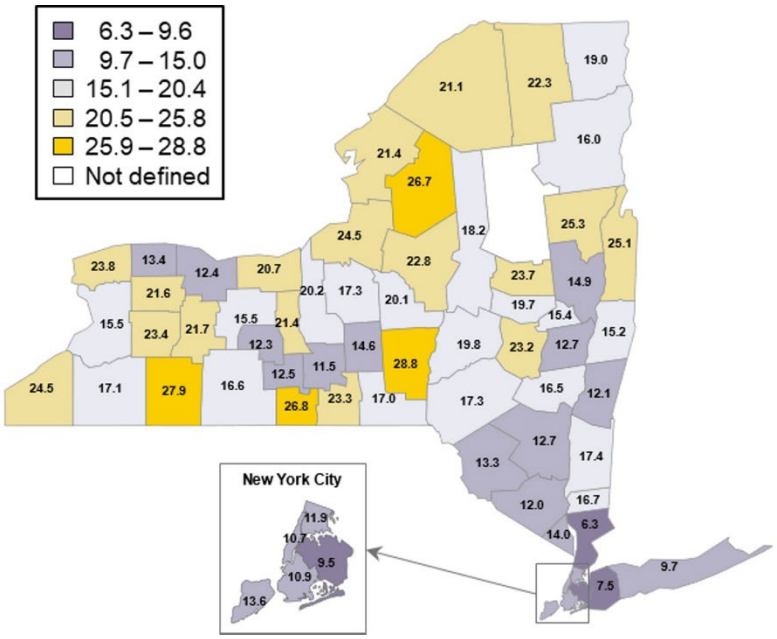
Figure 5. Average Annual Percent Change in Incidence Rates of Four Common Tobacco-Related Cancers by Region, New York State 2008-2022*,§



^ Indicates that the average annual percentage change is significantly different from zero at the $\alpha = 0.05$ level.

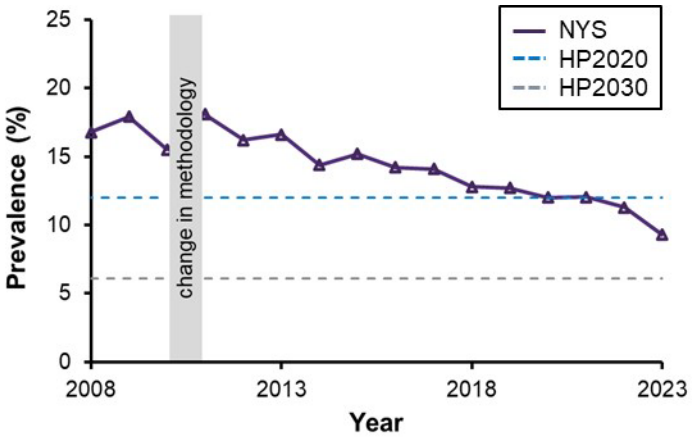
- Incidence rates of esophageal, laryngeal, and lung cancer have declined significantly in both New York City and the rest of the State.
- The significant increase in oral cancer incidence in New York State overall was due to a significant average increase of 1.3% per year among individuals residing in the rest of the state.

Figure 6. Prevalence of Adult Current Cigarette Smoking by County, New York State Behavioral Risk Factor Surveillance System 2021[‡,¶,#]



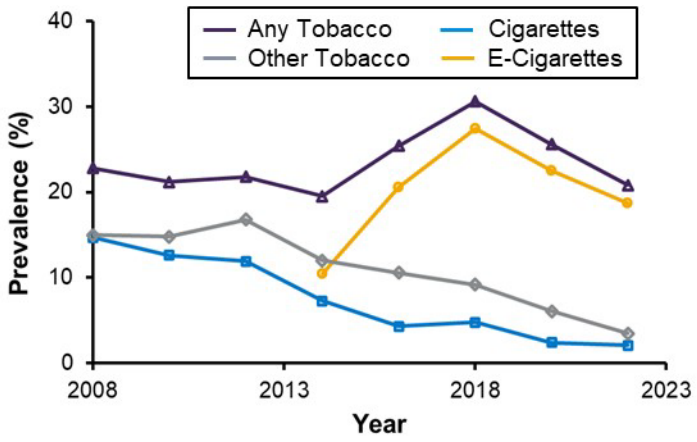
- Current smoking rates were not uniformly distributed across the State. The prevalence of adult smoking was generally lower in New York City and its neighboring counties.
- Patterns of current smoking may not correspond exactly with patterns of cancer incidence rates because risk of a tobacco-related cancer depends on the pattern of tobacco use over a person's lifetime as well as other risk factors associated with some cancers.

Figure 7. Trend in Prevalence of Adult Current Cigarette Smoking, New York State 2008-2023[#,**]



- Smoking rates have been declining over time in New York State (NYS), reaching 9.3% in 2023.
- New York has met the Healthy People 2020 (HP2020) goal of 12.0% for the percentage of adults aged 18 years and over who currently smoke cigarettes.[10]
- A further decline is needed to meet the Healthy People 2030 (HP2030) target of 6.1%.[11]

Figure 8. Trend in Prevalence of Tobacco Use Among New York State High School Students, 2008-2022[12]



- Cigarette smoking among high school youth has shown a sustained decline, reaching a new low of 2.1% in 2022.
- E-cigarettes are still the most used tobacco product among youth, even though use declined from a peak of 27.4% in 2018 to 18.7% in 2022.
- Any tobacco product use decreased to 20.8% in 2022 – one in five high school students currently use tobacco products.

Conclusion

In New York as elsewhere, tobacco-related cancers exact a heavy toll. Progress has been made in lowering smoking rates in New York State over the past decades, and this is reflected in the decline or leveling off in most of the cancers related to smoking. The New York State Tobacco Control Program focuses its efforts on keeping youth from starting and supporting tobacco users to quit. In 2022, the program reported a decline in youth tobacco use across all product types and the lowest youth cigarette smoking rate on record.[11] Ongoing efforts are needed to address industry influences and protect youth in a rapidly evolving tobacco market. Current efforts focus on reducing exposure to secondhand smoke, advancing comprehensive strategies in retail settings that discourage tobacco use, and continuing to shift social norms around tobacco use. A network of grantees is partnering with health care and mental health systems to expand access to evidence-based tobacco dependence treatment for all New Yorkers who use tobacco. These efforts prioritize systems serving populations most impacted by commercial tobacco, including people with low income, limited educational attainment, or those who report frequent mental distress or serious mental illness. Information contained in this report demonstrates the need to address tobacco-related cancers, the success of the New York State Tobacco Control Program's interventions, and the importance of continuing the Program's work.

Endnotes

- New York State Cancer Registry. Rates are per 100,000 persons, age-adjusted to the 2000 U.S. standard population. Rates are suppressed and thus not displayed for counties that reported fewer than 16 cases. Data provisional, November 2024. www.health.ny.gov/statistics/cancer/registry

† Non-Hispanic API/AIAN refers to Asian, Pacific Islander, American Indian or Alaska Native persons of non-Hispanic origin. Due to low case counts, these persons were included in an aggregated race and ethnicity category.

‡ Counties are classified into 5 categories based on the mean and standard deviation (SD): (1) min ≤ rate < mean – 1.5 SD (dark purple); (2) mean – 1.5 SD ≤ rate < mean – 0.5 SD (light purple); (3) mean – 0.5 SD ≤ rate < mean + 0.5 SD (gray); (4) mean + 0.5 SD ≤ rate < mean + 1.5 SD (yellow); and (5) mean + 1.5 SD ≤ rate ≤ max (gold).

§ Trend analysis was conducted using the Joinpoint Regression Program, Version 5.4.0.0 April 2025; Statistical Research and Applications Branch, National Cancer Institute. surveillance.cancer.gov/joinpoint. The 2020 incidence rate is displayed but not used in the estimation of the trend line. seer.cancer.gov/data/covid-impact

¶ New York State Behavioral Risk Factor Surveillance System (BRFSS) Health Indicators by County and Region. health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/about_data. Prevalence is age-adjusted to the 2000 U.S. standard population and not defined for cells with less than two observations.

Current smoking among adults is defined as people who smoked at least 100 cigarettes in their lifetime and now smoke every day or some days.

** New York State Behavioral Risk Factor Surveillance System (BRFSS). www.health.ny.gov/statistics/brfss/.

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