

Tobacco-Related Cancers in New York State, 2016-2020

Association Between Tobacco Use and Cancer

- 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, and 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.
- Secondhand smoke, also called involuntary smoking or environmental tobacco smoke, is a cause of lung cancer in nonsmokers,^{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 in the US.^{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

Cancer Incidence and Mortality^{*,†}, NYS 2016-2020

- Approximately 46,000 cases of tobacco-related cancers were diagnosed each year in New York State (NYS), representing 40% of the 115,000 cancer cases diagnosed annually.
- Almost 19,000 individuals died from a tobacco-related cancer each year, accounting for 56% of the 34,000 cancer deaths in NYS.
- The largest contributor to both new cancer diagnoses and cancer deaths was lung cancer, with age-adjusted annual incidence and mortality rates of 55.4 and 29.5 per 100,000 persons, respectively.

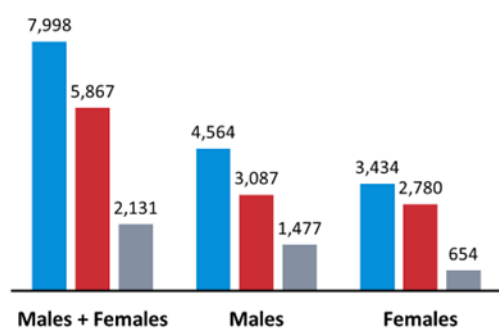
Cancer Site/Type	Incidence		Mortality	
	Cases ¹	Rate	Deaths ²	Rate
All Tobacco-Related Cancers	45,942	186.6	18,880	75.2
Oral Cavity and Pharynx	2,773	11.3	541	2.1
Esophagus	1,080	4.3	829	3.3
Stomach	2,009	8.3	787	3.2
Colon and Rectum	8,793	36.6	2,889	11.6
Liver	1,750	6.8	976	3.8
Pancreas	3,603	14.4	2,717	10.8
Larynx	706	2.8	198	0.8
Lung and Bronchus	13,959	55.4	7,448	29.5
Cervix Uteri (females only)	809	7.4	233	1.9
Kidney and Renal Pelvis	4,044	16.8	656	2.6
Urinary Bladder	5,362	21.4	958	3.8
Acute Myeloid Leukemia (AML)	1,053	4.5	648	2.7
All Cancers	114,869	474.4	33,635	134.5

¹ Average number of new cases per year; ² Average deaths per year

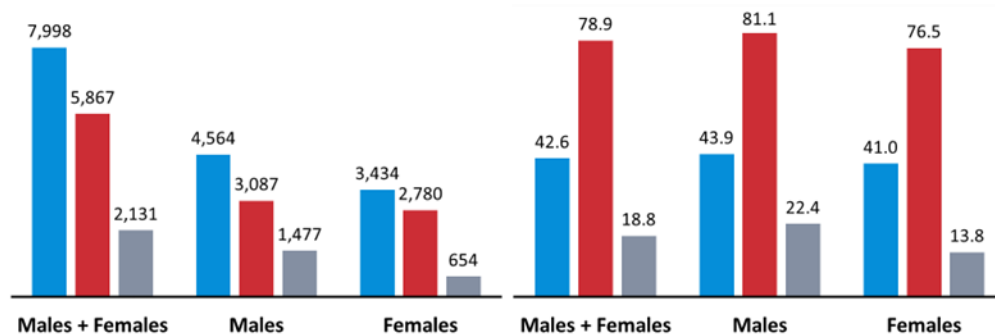
Smoking Attributable Mortality^{*,†}, NYS 2016-2020

- Smoking accounted for a greater number and a higher proportion of deaths in males than in females.
- In NYS, 43% of all deaths from these 12 cancers combined, or about 8,000 deaths a year, could be attributed to smoking, and not other causes.
- Smoking accounted for 79% of deaths from lung cancer and 19% of deaths from the other 11 tobacco-related cancers.

(A) Average annual cancer deaths attributable to smoking



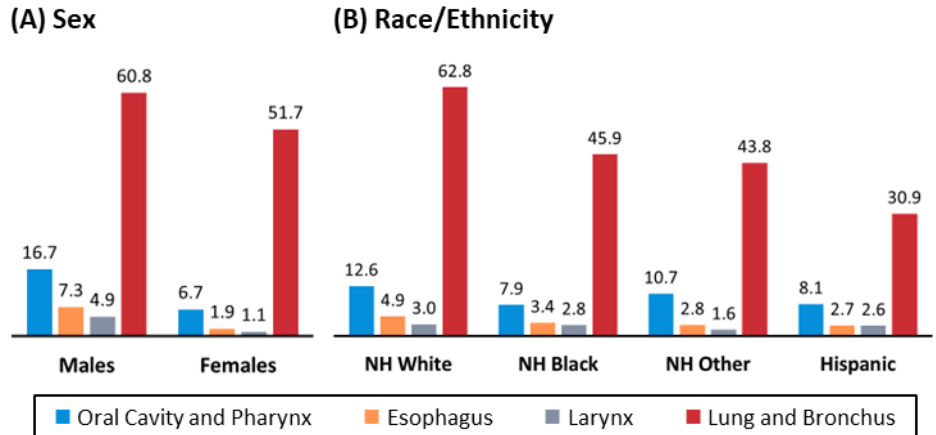
(B) Proportion of cancer deaths attributable to smoking (%)



■ All Tobacco-Related Cancers ■ Lung and Bronchus ■ Other 11 Cancers

Incidence Rates*[†] of Four Cancers Most Closely Related to Tobacco by Demographics, NYS 2016-2020

- Each of the four cancers was diagnosed more often in people who identified as males than in females.
- Rates were greatest among non-Hispanic (NH) white persons for all cancers except laryngeal cancer.
- NH white, NH black, and Hispanic persons had similar rates of laryngeal cancer, while the incidence rates were lower among persons in the category of NH other race groups combined[‡].

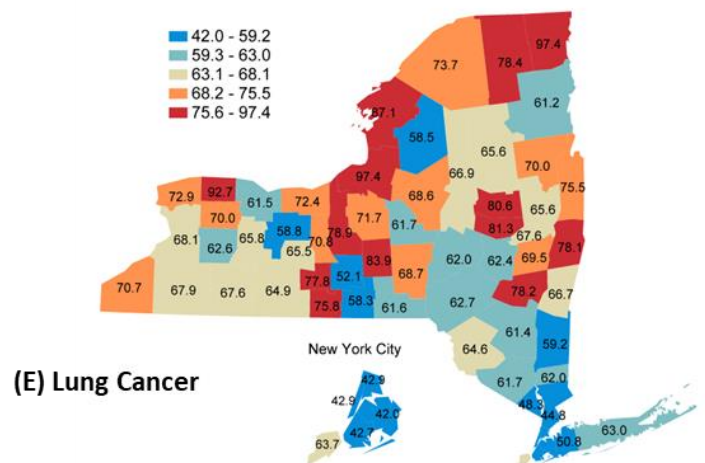
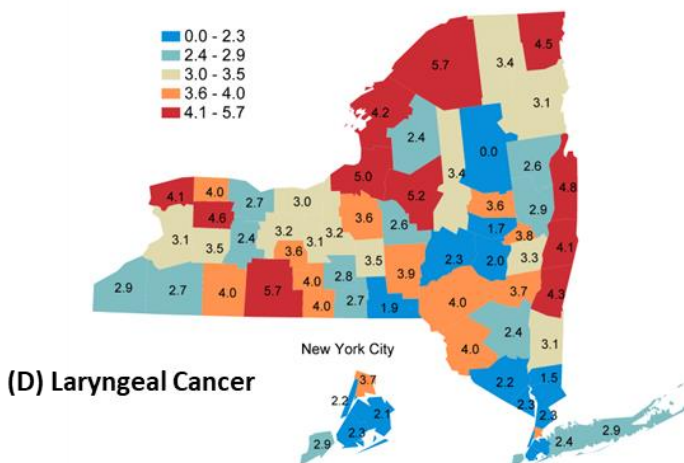
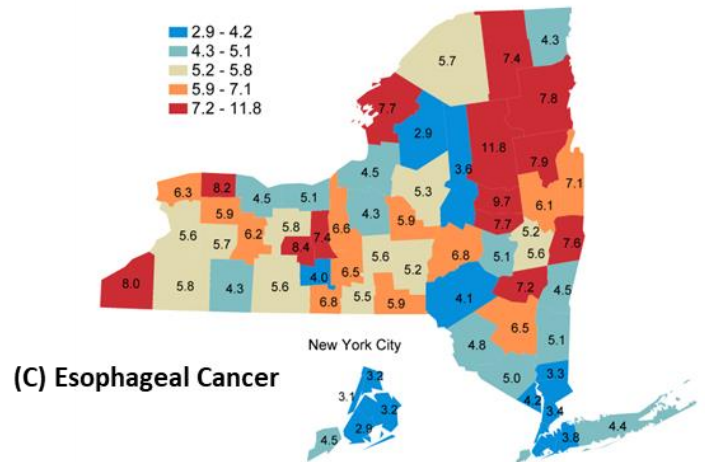
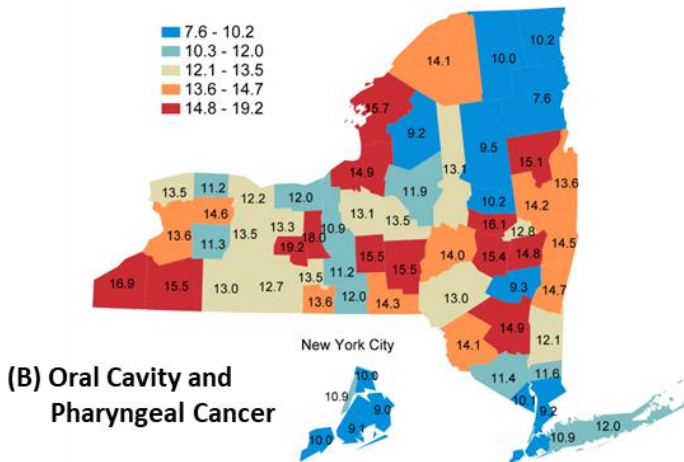


Incidence Rates*[†] of Four Cancers Most Closely Related to Tobacco by Geography, NYS 2016-2020

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

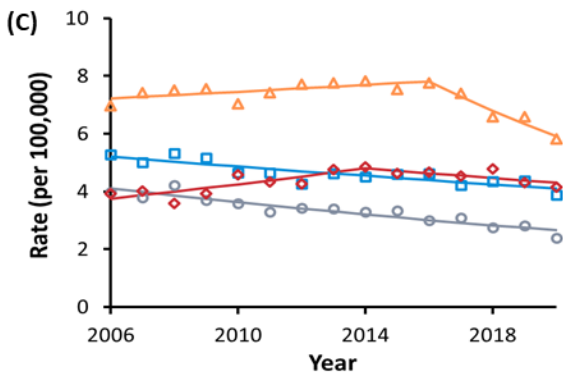
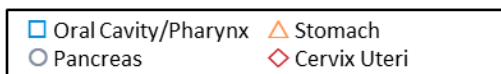
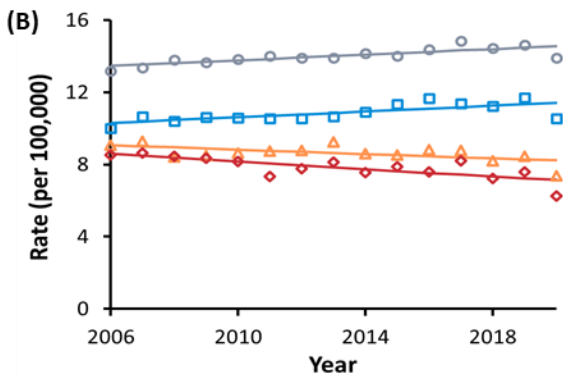
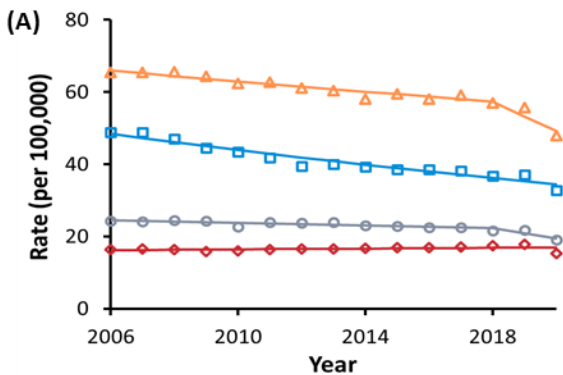
(A) Rate by Region

Cancer Site	NYC	ROS
Oral Cavity and Pharynx	9.6	12.4
Esophagus	3.2	5.0
Larynx	2.5	3.0
Lung and Bronchus	43.9	62.8



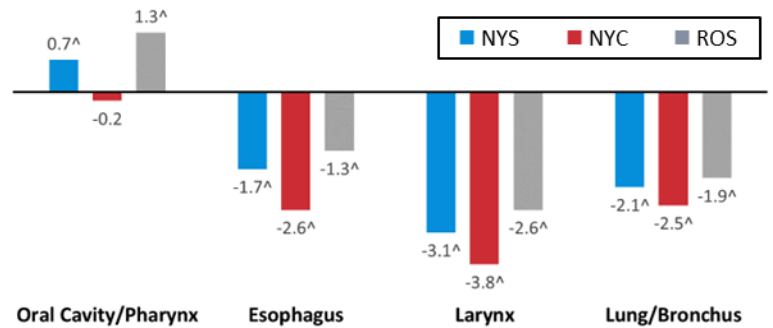
Trend in Cancer Incidence Rates^{*,†,§}, NYS 2006-2020

- Rates for cancers of the esophagus, stomach, colon and rectum, larynx, lung, cervix uteri, and urinary bladder have decreased from 2006 through 2020.
- After years of marked increase, incidence of liver cancer and acute myeloid leukemia declined in recent years, though the decrease was statistically significant only for liver cancer.
- Cancers of the oral cavity and pancreas showed an upward trend.



Average Annual Percent Change (AAPC) in Incidence Rates by Region^{*,†,§}, NYS 2006-2020

- Among the four cancers most closely related to tobacco, incidence rates of esophageal, laryngeal, and lung cancer have declined steeply in both NYC and the ROS.
- The upward trend in oral cancer incidence observed in NYS was entirely due to a significant average annual increase of 1.3% among individuals residing in the ROS.



[^] Indicates that the AAPC is significantly different from zero at $\alpha=0.05$ level.

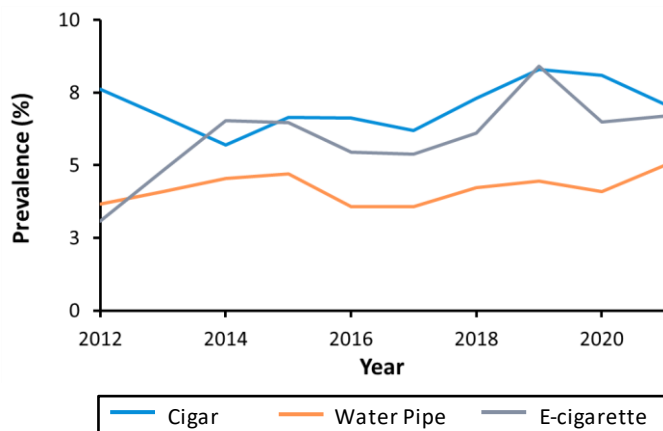
Prevalence of Adult Current Cigarette Smoking[#] by Demographics¹, NYS 2021

- The cigarette smoking rate among adults in 2021 was 12.0%.
- Males were more likely to be current smokers.
- Smoking rates were highest in people with lower education and income levels, and among people reporting frequent mental distress.

Demographics	Percent
Total NYS	12.0
Sex	
Male	14.2
Female	10.1
Race/Ethnicity	
NH white	12.9
NH black	11.4
NH other race groups combined	9.7
Hispanic	11.2
Age	
18-24	6.2
25+	13.0
Educational Attainment	
Less than H.S.	19.2
H.S or G.E.D	16.3
Some Post H.S	12.9
College graduate	5.7
Annual Household Income	
Less than \$25,000	20.4
\$25,000-34,999	16.0
\$35,000-49,999	14.5
\$50,000-74,999	12.8
\$75,000+	7.7
Frequent Mental Distress	
Yes	19.6
No	10.7

Trend in Prevalence of Other Forms of Tobacco Use Among Adults^{¶¶}, NYS 2012-2021

- Cigars are the most frequently used tobacco product after cigarettes among adults in NYS. In 2021, 7.2% of adults in NYS reported current use of cigars, cigarillos, and/or little cigars. This proportion has not changed significantly in recent years.
- A much smaller, but relatively stable proportion of adult New Yorkers used water pipe/hookah between 2012 and 2021.
- In 2021, 6.7% of adults in NYS reported that they were current e-cigarette users.



Conclusion

In New York as elsewhere, tobacco-related cancers exact a heavy toll. Progress has been made in lowering smoking rates in NYS over the past decades, and this progress is reflected in the decline or leveling off in most of the cancers related to smoking. The NYS 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. But much more needs to be done. Environmental approaches are being undertaken with the aim of reducing nonsmokers' exposure to secondhand smoke, maintaining the high cost of tobacco, and further denormalizing tobacco use behavior. A network of contractors is working with health care systems and mental health organizations to improve the reach and delivery of evidence-based tobacco dependence treatment to all New Yorkers who smoke or use other tobacco products. Contractors are focusing on systems serving populations most impacted by commercial tobacco, including people with low income, low educational attainment, or those who report frequent mental distress or serious mental illness. Information contained in this report can help to continue the process.

Footnotes

- * New York State Cancer Registry. Data provisional, November 2022. <https://www.health.ny.gov/statistics/cancer/registry/>
- † Rates are per 100,000 persons, age-adjusted to the 2000 U.S. standard population.
- ‡ The category of "NH other race groups combined" refers to Asian, Pacific Islander, and American Indian/Alaskan Native persons. Due to low case counts, they were included in an aggregated race/ethnicity category.
- § Trend analysis was conducted using the Joinpoint Regression Program, Version 4.9.1.0 April 2022; Statistical Research and Application Branch, National Cancer Institute. <https://surveillance.cancer.gov/joinpoint>
- ¶ The New York State Risk Factor Surveillance System (BRFSS). <http://www.health.ny.gov/statistics/brfss/>
- # 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.
- ** The New York State Expanded Risk Factor Surveillance System (EBRFSS). <http://www.health.ny.gov/statistics/brfss/expanded/>
- †† The National Health Interview Study (NHIS). http://www.cdc.gov/nchs/nhis/about_nhis.htm
- ## The New York Youth Tobacco Survey (YTS). <https://health.data.ny.gov/Health/Youth-Tobacco-Survey-Beginning-2000/pbq7-ddg9>
- §§ The National Youth Tobacco Survey (NYTS). https://www.cdc.gov/tobacco/data_statistics/surveys/nyts/index.htm
- ¶¶ The New York Adult Tobacco Survey (ATS). <https://health.data.ny.gov/Health/Adult-Tobacco-Survey-Beginning-2003/ckfz-a669/>

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11. New York State Department of Health Tobacco Control Program. Electronic Cigarette Use by Youth Increased 160% Between 2014 and 2018. StatShot Vol. 11, No. 5, Oct 2018. Available at: https://www.health.ny.gov/prevention/tobacco_control/reports/statshots/volume12/n1_electronic_sig_use_increase.pdf. Accessed on April 1, 2023.
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