

# Tobacco-Related Cancers in New York State, 2014-2018

## Association Between Tobacco Use and Cancer

- Epidemiologic studies have established 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.<sup>1-3</sup> 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,<sup>2,4</sup> and there is mounting evidence of links with other cancers.<sup>5</sup>
- Tobacco use is a leading preventable cause of overall mortality and cancer mortality in the US.<sup>6,7</sup>
- Smoking not only causes cancer but also increases the risk of dying from cancer and other diseases among cancer patients and survivors.<sup>2</sup>

## Cancer Incidence and Mortality<sup>\*,†</sup>, NYS 2014-2018

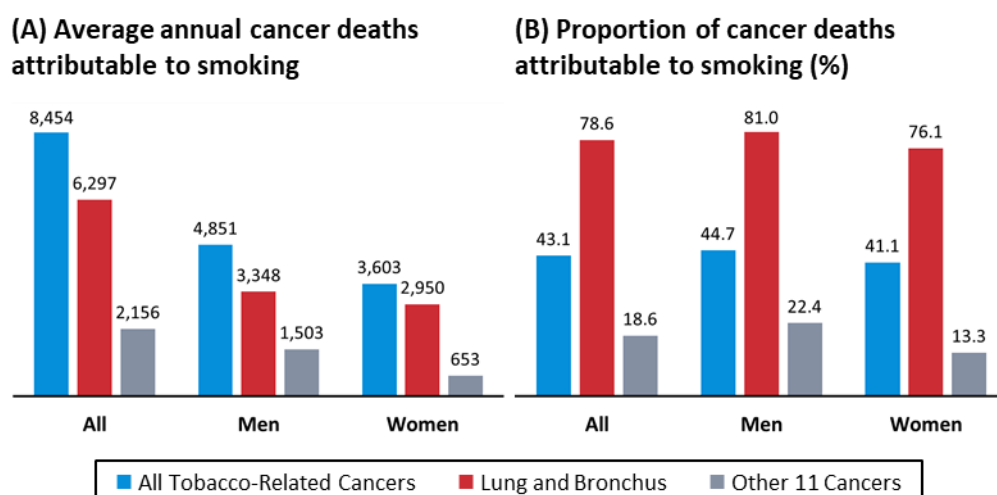
- Over 46,000 cases of tobacco-related cancers were diagnosed each year in New York State (NYS), representing 41% of the 114,000 cancer cases diagnosed annually.
- Almost 20,000 individuals died from a tobacco-related cancer each year, accounting for 57% of the 34,000 cancer deaths in NYS.
- The largest contributor to both new cancer diagnoses and cancer deaths was lung cancer, with age-adjusted annual incidence and mortality rates of 58.0 and 33.0 per 100,000 persons, respectively.

Cancer Site	Incidence		Mortality	
	Cases <sup>1</sup>	Rate	Deaths <sup>2</sup>	Rate
All Tobacco-Related Cancers	46,235	193.1	19,718	81.1
Oral Cavity and Pharynx	2,701	11.3	515	2.1
Esophagus	1,089	4.5	851	3.5
Stomach	2,022	8.6	815	3.4
Colon and Rectum	8,979	38.1	2,997	12.4
Liver	1,840	7.4	1,029	4.1
Pancreas	3,472	14.3	2,652	10.9
Larynx	754	3.1	221	0.9
Lung and Bronchus	14,081	58.0	8,016	33.0
Cervix Uteri (females only)	843	7.7	255	2.1
Kidney and Renal Pelvis	3,978	16.9	1,009	4.1
Urinary Bladder	5,405	22.4	691	2.8
Acute Myeloid Leukemia (AML)	1,071	4.7	667	2.8
All Cancers	114,167	483.1	34,446	142.1

<sup>1</sup> Average number of new cases per year; <sup>2</sup> Average deaths per year

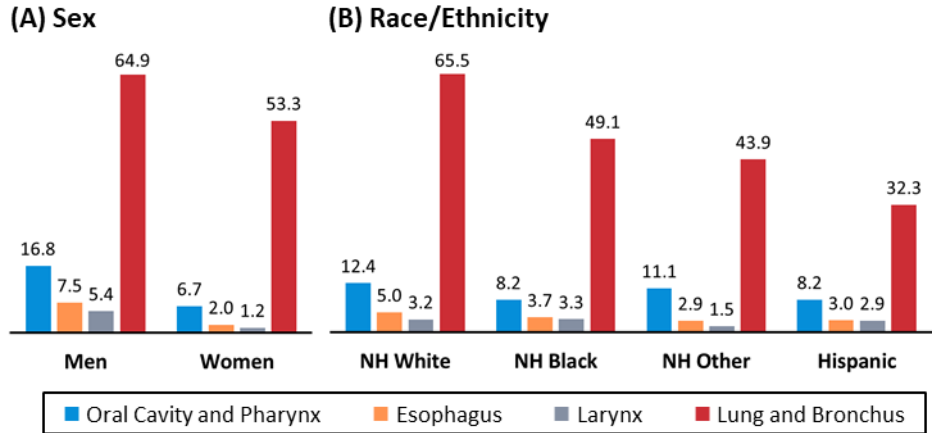
## Smoking Attributable Mortality<sup>\*,†</sup>, NYS 2014-2018

- Smoking accounted for a greater number and a higher proportion of deaths in men than in women.
- In NYS, 43% of all deaths from these 12 cancers combined, or about 8,500 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.



# Incidence Rates\*† of Four Cancers Most Closely Related to Tobacco by Demographics, NYS 2014-2018

- Each of the four cancers was diagnosed more often in males than in females.
- When males and females were combined, rates were greatest among non-Hispanic (NH) whites for all cancers except laryngeal cancer.
- NH whites, NH blacks, and Hispanics had similar rates of laryngeal cancer, while the rate was lowest among people in the category NH other.

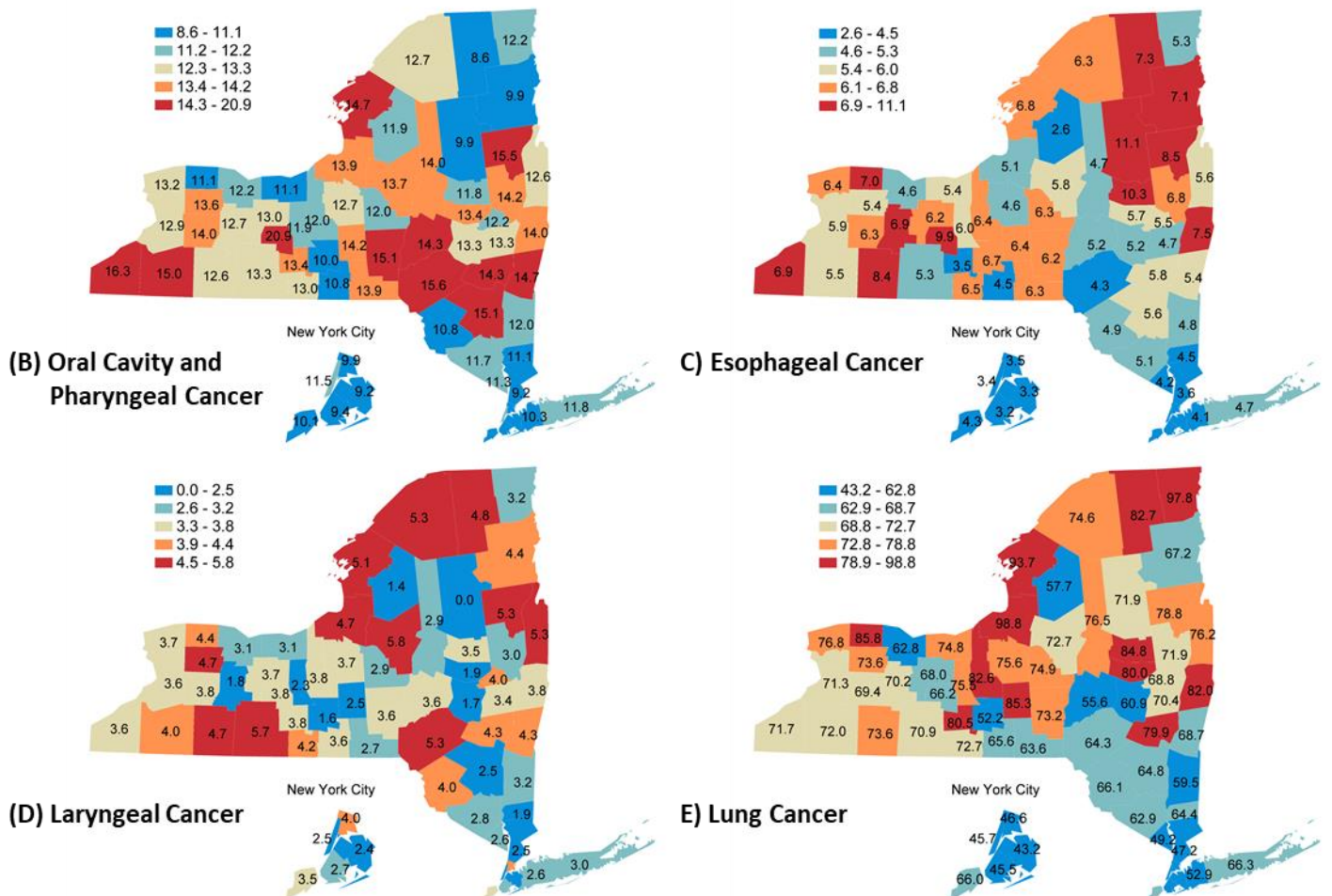


# Incidence Rates\*† of Four Cancers Most Closely Related to Tobacco by Geography, NYS 2014-2018

- 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. Its rate in NYC as a whole was lower than that in the ROS, but the boroughs of the Bronx and Richmond (Staten Island) had relatively high rates.

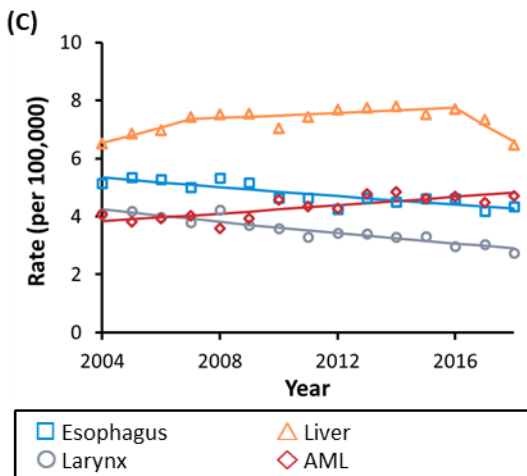
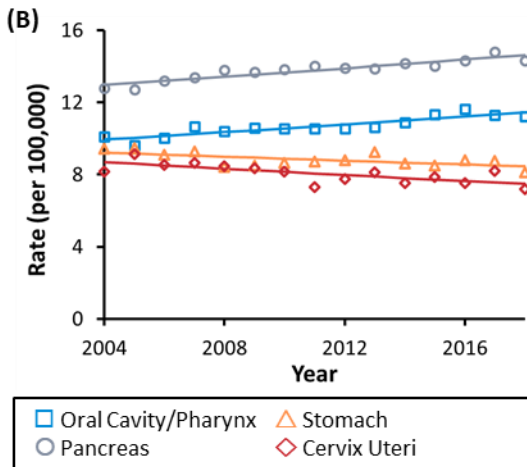
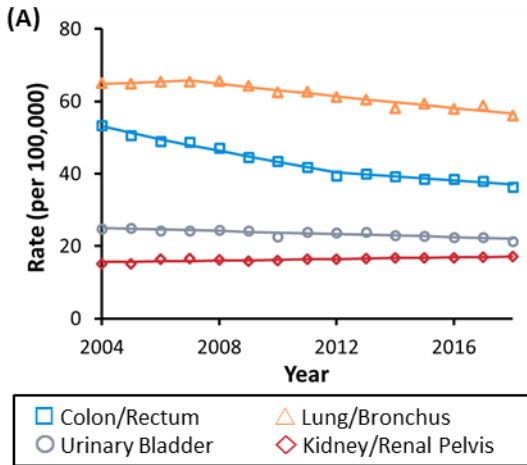
**(A) Rate by Region**

Cancer Site	NYC	ROS
Oral Cavity and Pharynx	9.9	12.1
Esophagus	3.4	5.1
Larynx	2.8	3.3
Lung and Bronchus	46.4	65.5



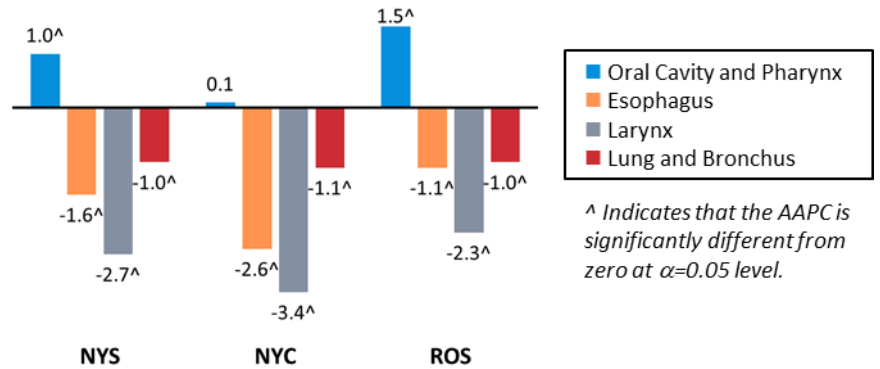
## Trend in Incidence Rates<sup>\*,†,§</sup>, NYS 2004-2018

- Cancers of the esophagus, stomach, colon and rectum, larynx, lung, cervix uteri, and urinary bladder showed a steady decrease from 2004 to 2018.
- Cancers of the oral cavity, pancreas, and kidney, and acute myeloid leukemia demonstrated an upward trend.



## Average Annual Percent Change (AAPC) in Incidence Rates by Region<sup>\*,†,§</sup>, NYS 2004-2018

- 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 1.5% among individuals residing in the ROS.



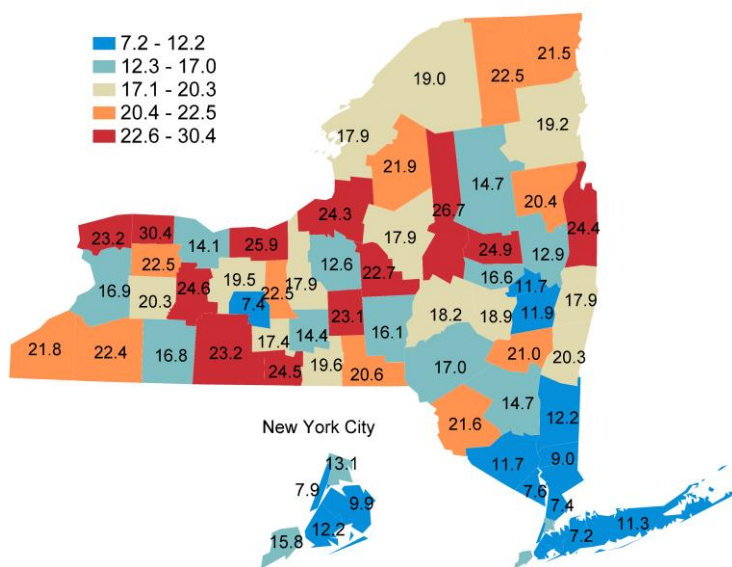
## Prevalence of Adult Current Cigarette Smoking by Demographics<sup>¶</sup>, NYS 2019

- 12.7% of NYS adults smoked at least 100 cigarettes in their lifetime and now smoke every day or some days.
- 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	12.7
Sex	
Male	14.2
Female	11.3
Race/Ethnicity	
NH white	13.7
NH black	12.1
NH other race or multiracial	11.6
Hispanic	10.6
Age	
18-24	7.6
25+	13.5
Educational Attainment	
Less than H.S.	15.7
H.S or G.E.D	18.1
Some Post H.S	14.2
College graduate	6.0
Annual Household Income	
Less than \$25,000	17.9
\$25,000-34,999	16.4
\$35,000-49,999	16.6
\$50,000-74,999	16.3
\$75,000+	8.2
Frequent Mental Distress	
Yes	24.7
No	11.1

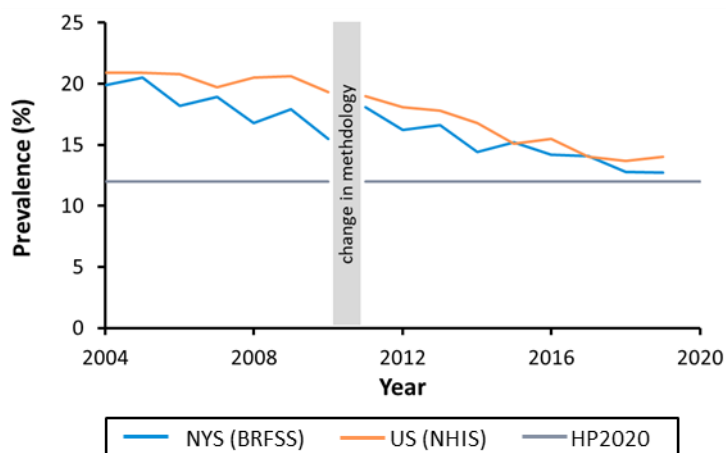
## Prevalence of Adult Current Cigarette Smoking by County<sup>#,8</sup>, NYS 2018

- Current smoking rates were not uniformly distributed across NYS. The prevalence of adult smoking was generally lower in NYC 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 reflects tobacco use patterns over a person's lifetime.



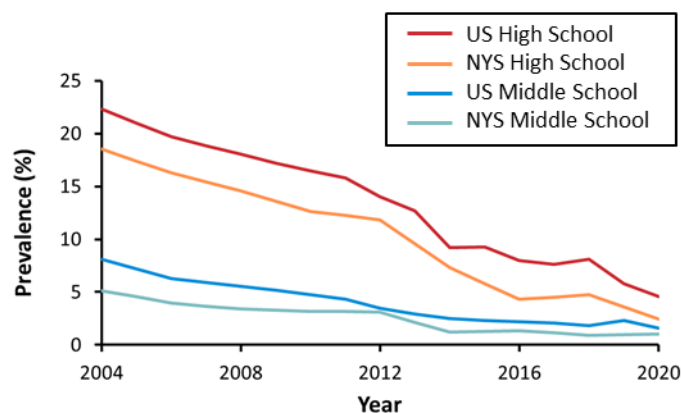
## Trend in Prevalence of Adult Current Cigarette Smoking<sup>1,\*\*, NYS and U.S. 2000-2019</sup>

- Smoking rates have been declining over time both in NYS and nationally.
- NYS is approaching the Healthy People 2020 (HP2020)<sup>9</sup> goal of 12%.



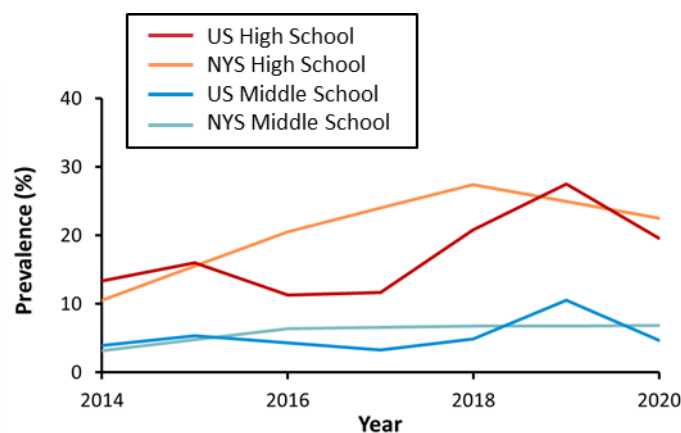
## Prevalence of Youth Current Cigarette Smoking<sup>††,§§</sup>, NYS and U.S. 2004-2020

- Youth cigarette smoking rates in NYS have been lower than nationally.
- In 2020, only 2.4% of NYS high school students smoked on at least one day in the past 30 days, a reduction of 16.1 percentage points since 2004.
- The rate among NYS middle school students declined from 5.1% in 2004 to 1.0% in 2020.



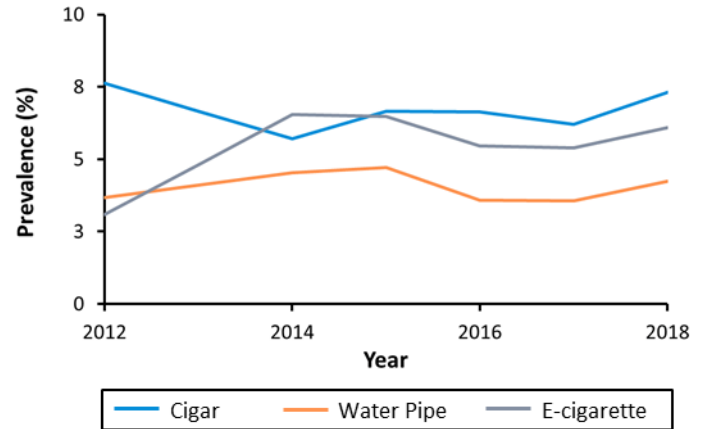
## Prevalence of Youth Current Electronic Cigarette Smoking<sup>††,§§</sup>, NYS and U.S. 2014-2020

- In 2020, 22.5% and 6.8% of NYS high school and middle school students reported use of e-cigarettes in the past 30 days, respectively.
- E-cigarettes have become the most common tobacco products used among youth in NYS<sup>10</sup> and nationwide<sup>11</sup>.



## Trend in Prevalence of Other Forms of Tobacco Use Among Adults, NYS<sup>¶¶</sup> 2012-2018

- Cigars are the most frequently used tobacco product after cigarettes among adults in NYS. In 2018, 7.3% 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 2018.
- In 2018, 6.1% of adults in NYS reported that they were using electronic cigarettes “now”.



## 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 leveling off and decline in some of the cancers most closely related to smoking. In recent years, the NYS Tobacco Control Program has been focusing its efforts on keeping youth from starting and supporting smokers to quit. In 2020 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 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 2020. <https://www.health.ny.gov/statistics/cancer/registry/>
- † Rates are per 100,000 persons, age-adjusted to the 2000 U.S. standard population.
- § Trend analysis was conducted using the Joinpoint Regression Program, Version 4.9.0.0, March 2021; 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/>
- # 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](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>; [https://www.cdc.gov/tobacco/data\\_statistics/surveys/yts/index.htm](https://www.cdc.gov/tobacco/data_statistics/surveys/yts/index.htm)
- §§ The National Youth Tobacco Survey (NYTS). [http://www.cdc.gov/tobacco/data\\_statistics/surveys/nyts/index.htm](http://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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