

The Burden of Cardiovascular Disease in North Carolina

US Heart Disease Death Rates and Ranking by State, 2014 - 2018

State	2014		2015		2016		2017		2018	
	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank
Maryland	167.8	22	169.3	21	164.3	22	164.5	21	161.9	24
Delaware	168.7	21	165.2	23	163.2	23	158.4	25	159.1	25
Kansas	157.4	27	158.5	28	159.2	26	157.9	26	158.9	26
Rhode Island	160.8	25	160.4	26	152.4	33	155.7	29	158.9	27
Idaho	152.8	33	156.4	30	160.0	25	162.4	23	157.9	28
Wisconsin	155.1	31	156.0	31	154.9	30	157.6	27	157.8	29
South Dakota	154.6	32	150.9	38	153.4	32	150.1	35	156.3	30
North Carolina	158.7	26	162.4	24	155.8	29	156.5	28	155.5	31
Wyoming	162.2	24	159.4	27	157.8	28	148.9	38	152.7	32
New Hampshire	147.9	38	149.0	40	151.1	34	149.7	36	151.0	33
Vermont	156.6	29	152.5	37	158.8	27	152.5	32	150.5	34
New Mexico	143.3	42	142.4	43	150.6	36	151.4	33	148.2	35
Virginia	156.1	30	154.2	34	150.7	35	154.5	31	147.9	36

Heart Disease: ICD-10 codes I00-I09, I11, I13, I20-I51.

Rates per 100,000 population, age-adjusted to the 2000 U.S. standard population.

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Accessed at <https://wonder.cdc.gov/ucd-icd10.html> on March 06, 2020.

US Stroke Death Rates and Ranking by State, 2014 - 2018

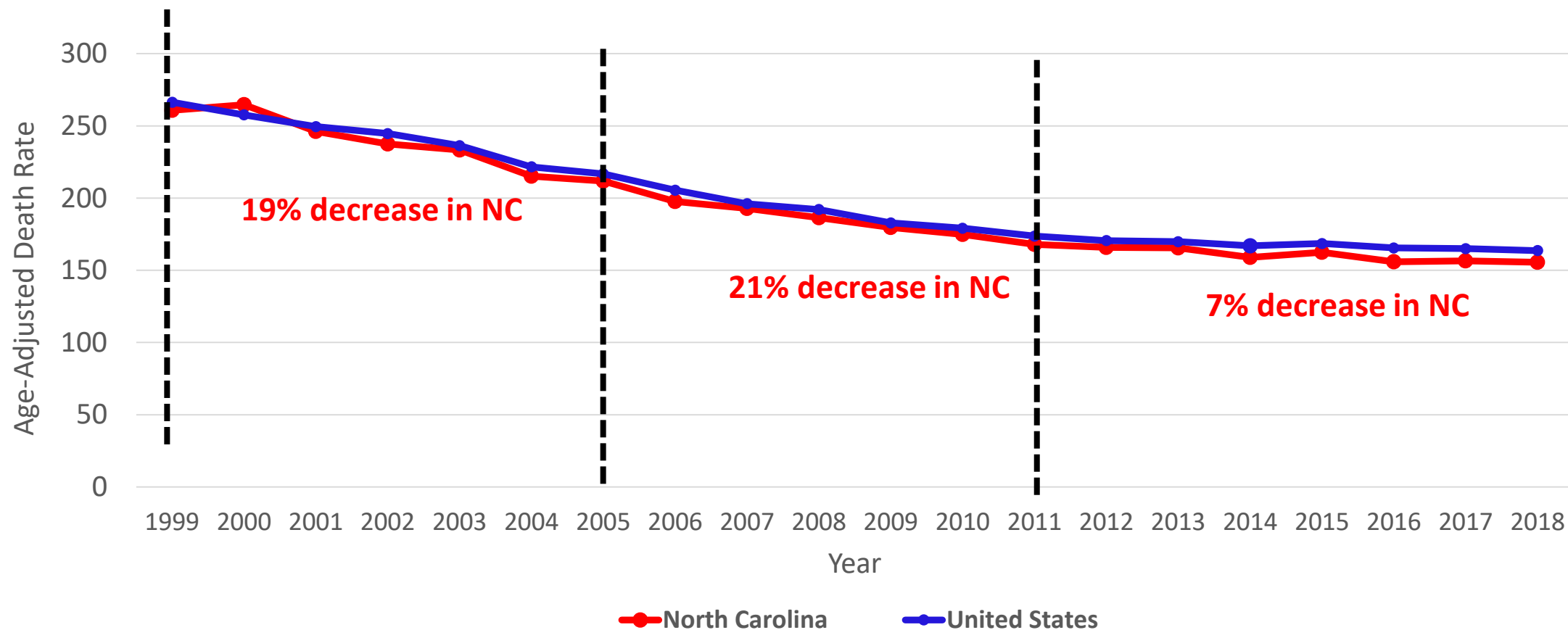
State	2014		2015		2016		2017		2018	
	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank	Age Adjusted Death Rate	US Rank
Delaware	38.8	17	39.4	15	41.6	12	46.2	4	46.4	4
South Carolina	44.2	7	46.7	4	45.5	6	44.9	6	45.5	5
Tennessee	45.8	3	46	6	46	4	45	5	43.6	6
Georgia	42.6	10	45.3	7	44.3	7	43.5	8	43.4	7
Ohio	40	15	40.7	14	40.6	13	42.8	11	42.6	8
Arkansas	45.4	5	46.8	3	45.6	5	43.8	7	41.5	9
Kentucky	39.4	18	40.8	12	40.4	14	39.4	18	41.5	10
North Carolina	43	8	44.7	8	43	8	43	10	41.3	11
Maryland	38	19	37.8	24	39.7	16	40.2	16	40.3	12
Texas	41.6	13	42.7	11	42	9	41.3	13	40.3	13
Oklahoma	43	9	43	10	41.8	10	43.3	9	40.1	14
Alaska	32.3	42	36.8	30	39	18	35.1	37	40.0	15
Michigan	37.9	20	37.6	25	39	19	39.3	19	40.0	16

Stroke: ICD-10 codes I60-I69.

Rates per 100,000 population, age-adjusted to the 2000 U.S. standard population.

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Accessed at <https://wonder.cdc.gov/ucd-icd10.html> on March 13, 2020.

Heart Disease Death Rates, NC vs. US, 1999 - 2018

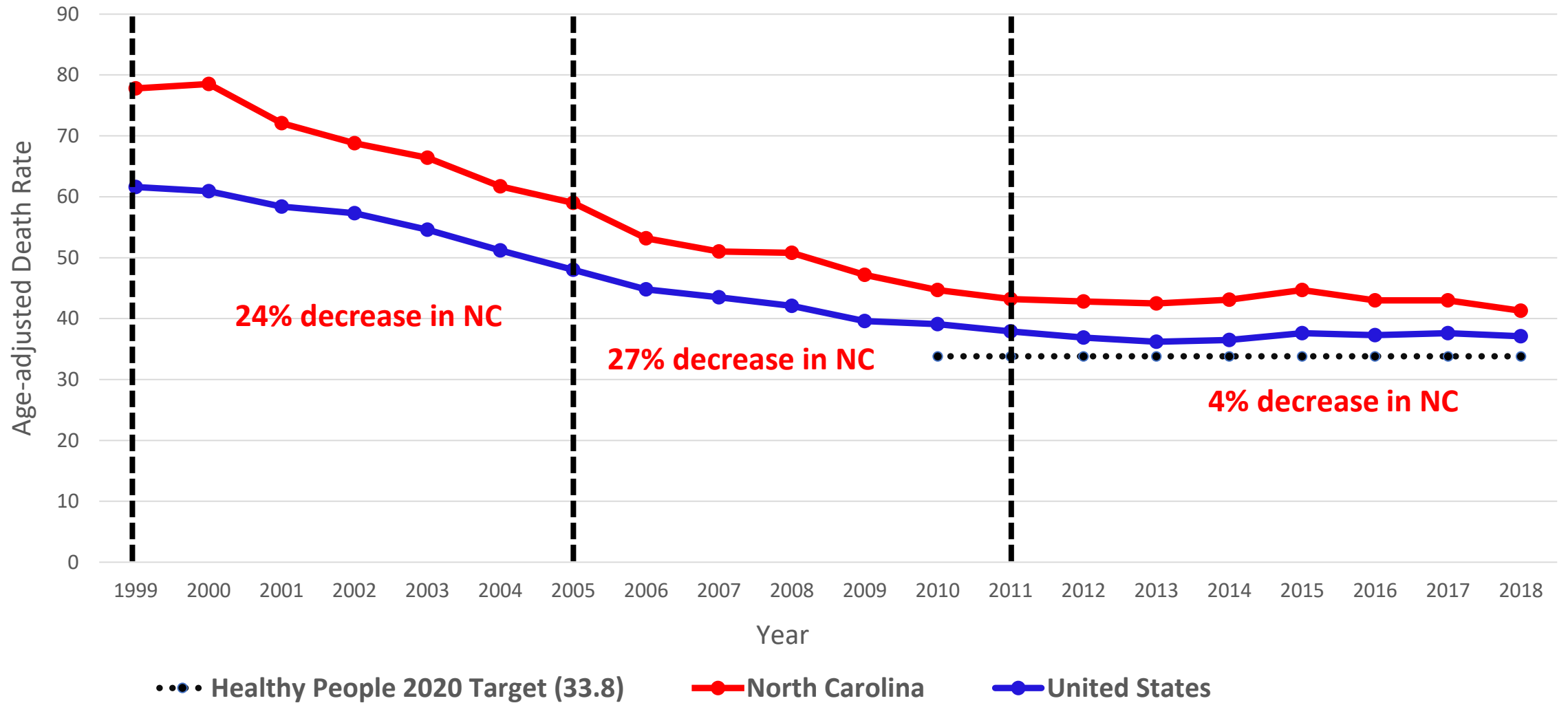


Heart Disease: ICD-10 codes I00-I09, I11, I13, I20-I51

Rates per 100,000 population, age-adjusted to the 2000 U.S. standard population.

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Accessed at <https://wonder.cdc.gov/ucd-icd10.html> on March 06, 2020.

Stroke Death Rates NC vs. US, 1999 - 2018

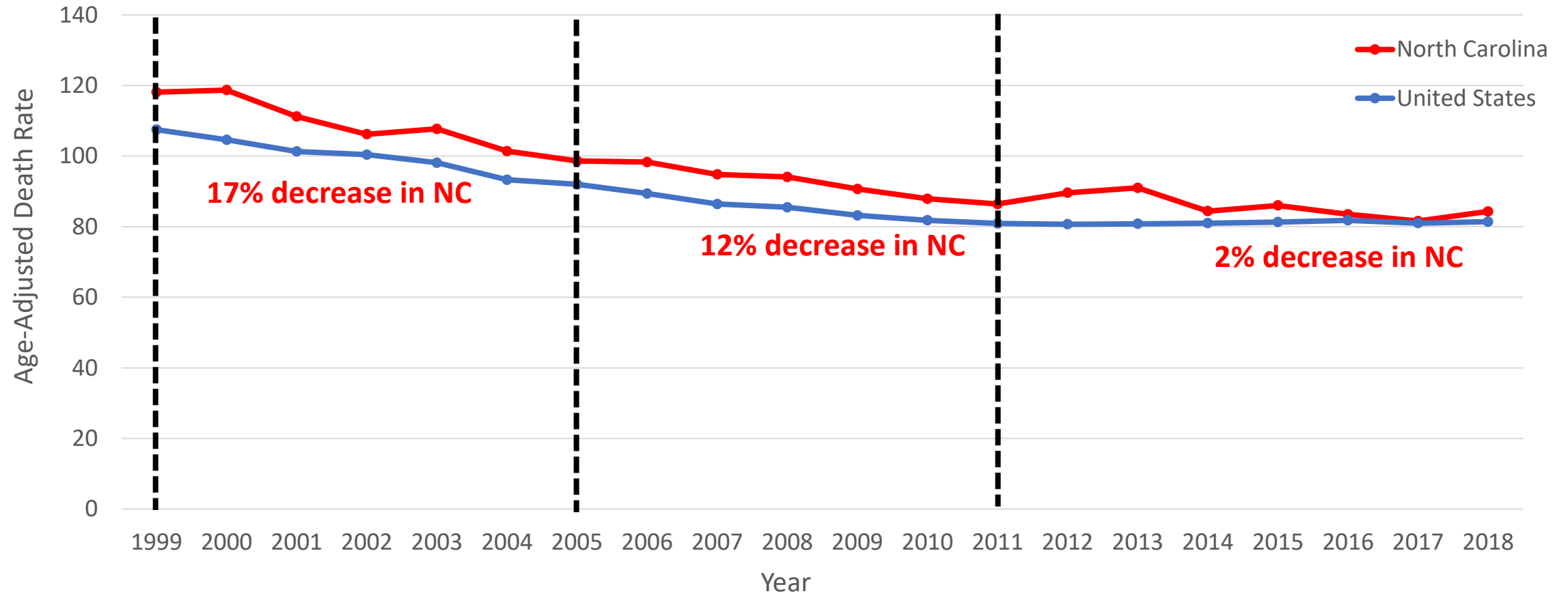


Stroke: ICD-10 codes I60-I69

Rates per 100,000 population, age-adjusted to the 2000 U.S. standard population.

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Accessed at <https://wonder.cdc.gov/ucd-icd10.html> on March 16, 2020.

Heart Disease Death Rates, Ages 35-64 Years, NC vs. US, 1999 - 2018

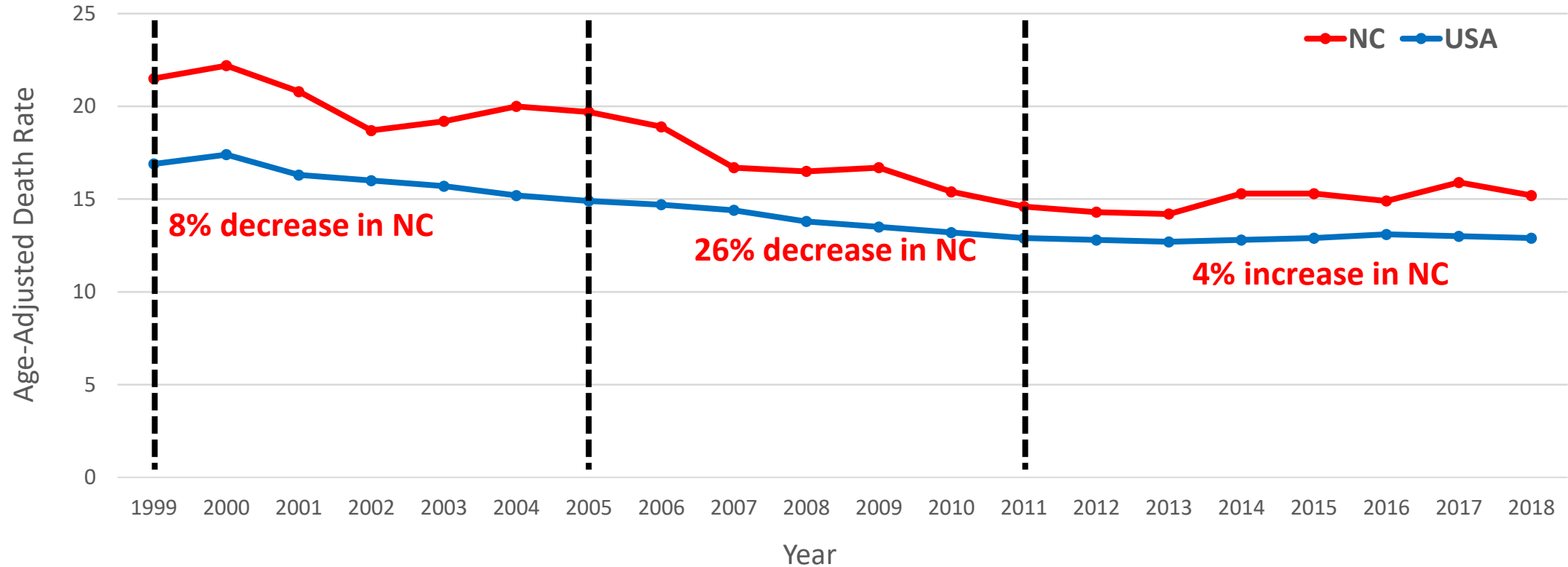


Heart Disease: ICD-10 codes I00-I09, I11, I13, I20-I51

Rates per 100,000 population, age-adjusted to the 2000 U.S. standard population.

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Accessed at <https://wonder.cdc.gov/ucd-icd10.html>. Accessed on March 16, 2020.

Stroke Death Rates, Ages 35-64 Years, NC vs. US, 1999 - 2018



Stroke: ICD-10 codes I60-I69

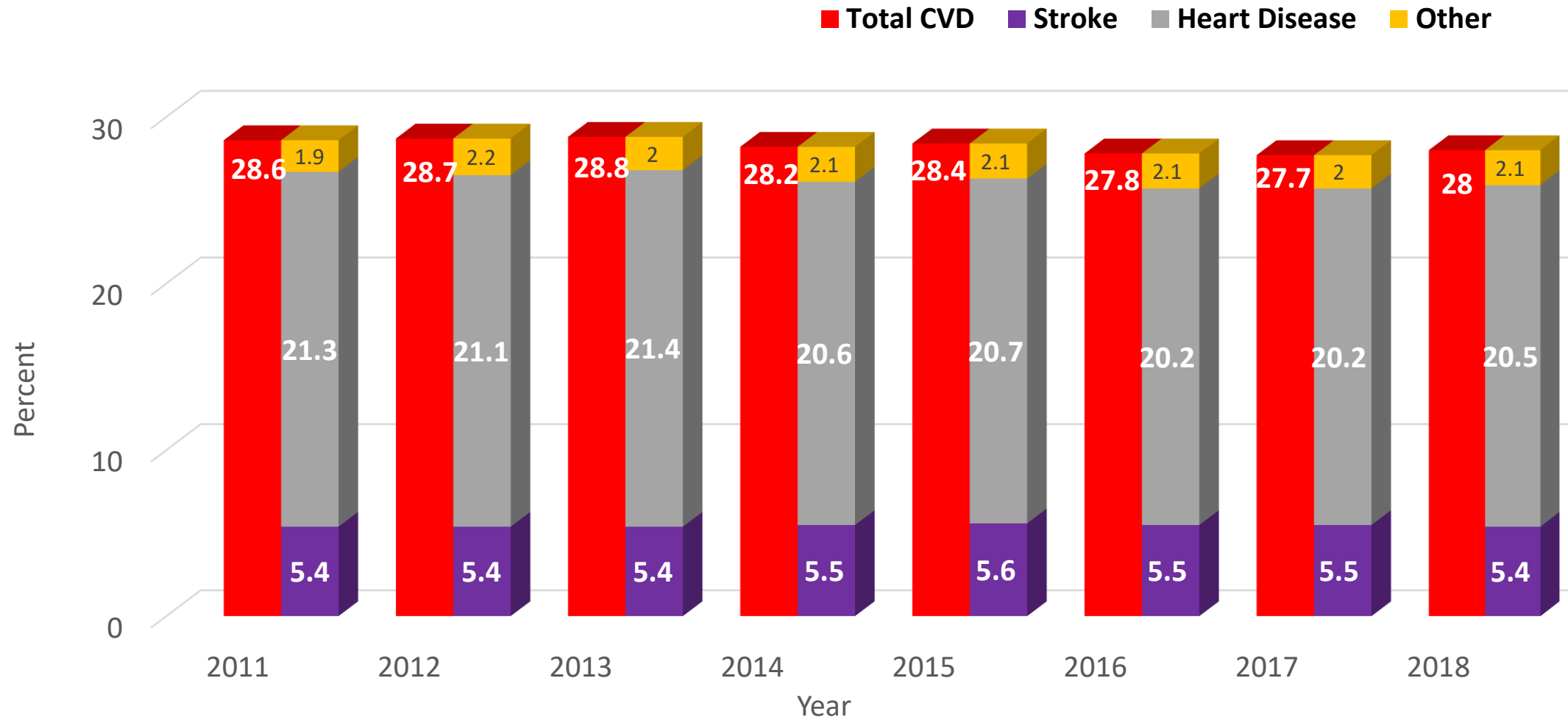
Rates per 100,000 population, age-adjusted to the 2000 U.S. standard population.

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Accessed at <https://wonder.cdc.gov/ucd-icd10.html> on March 16, 2020.

Leading Causes of Death, NC, 2018

Rank	Cause	Number	%
1	Cancer	19,693	20.9
2	Heart Disease	19,254	20.5
3	Chronic Lower Respiratory Diseases	5,367	5.7
4	Stroke	5,072	5.4
5	Alzheimer's Disease	4,502	4.8
6	Other Unintentional Injuries	4,478	4.8
7	Diabetes Mellitus	3,021	3.2
8	Influenza and Pneumonia	2,067	2.2
9	Nephritis, Nephrotic Syndrome and Nephrosis	1,936	2.1
10	Motor vehicle injuries	1,591	1.7
	All Other Causes (Residual)	27,024	28.7
	Total Deaths - All Causes	94,005	100

Percentage of Deaths Caused by CVD, NC, 2011 - 2018



Total CVD Deaths includes deaths from ICD-10 codes I00-I99; Heart Disease ICD -10 codes I00-I09, I11, I13, I20-I51.; Stroke ICD -10 codes I60-I69.

Data Source: North Carolina Division of Public Health, State Center for Health Statistics. Detailed Mortality Statistics for North Carolina. SCHS Online Database, accessed at <https://schs.dph.ncdhhs.gov/data/vital.cfm> on March 16, 2020.

Hospitalization Charges for Selected Cardiovascular Disease Conditions and Risk Factors, NC, 2019

DIAGNOSTIC CATEGORY	TOTAL CHARGES	TOTAL CASES	CHARGE PER CASE
HEART DISEASE	\$6.5 Billion	112,956	\$57,517
STROKE	\$1.8 Billion	31,878	\$56,426
CORONARY HEART DISEASE	\$2.6 Billion	30,654	\$83,650
HEART FAILURE	\$182 Million	3,521	\$51,740
DIABETES MELLITUS	\$893 Million	24,817	\$35,992
HYPERTENSION	\$1.6 Billion	42,387	\$38,241

ICD-10 codes: Heart Disease (I00-I09, I11, I13, I20-I51), Stroke (I60 – I69), Coronary Heart Disease (I20 – I25), Heart Failure (I50), Diabetes Mellitus (E10-E11), Hypertension (I10-I15). Data includes only NC residents served in NC hospitals.

Data Source: North Carolina Division of Public Health, State Center for Health Statistics. Inpatient Hospital Utilization and Charges by Principal Diagnosis.

Data produced on request on October 20, 2020.

Medicaid Expenditures on Beneficiaries with Selected Cardiovascular Disease Conditions and Risk Factors, NC, 2019

DIAGNOSTIC CATEGORY	TOTAL CHARGES	BENEFICIARIES	CHARGE PER CASE
HEART DISEASE	\$805 Million	171,384	\$4,700
STROKE	\$413 Million	53,471	\$7,731
CORONARY HEART DISEASE	\$277 Million	71,861	\$3,851
HEART FAILURE	\$361 Million	59,778	\$6,046
DIABETES MELLITUS	\$677 Million	160,771	\$4,212
HYPERTENSION	\$224 Million	69,779	\$3,216

ICD-10 codes: Heart Disease (I00-I09, I11, I13, I20-I51), Stroke (I60 – I69), Coronary Heart Disease (I20 – I25), Heart Failure (I50), Diabetes Mellitus (E10-E11), Hypertension (I10-I15). Medicaid costs only by principal diagnosis.

Data Source: North Carolina Division of Medical Assistance. Data produced on request on March 31, 2020.

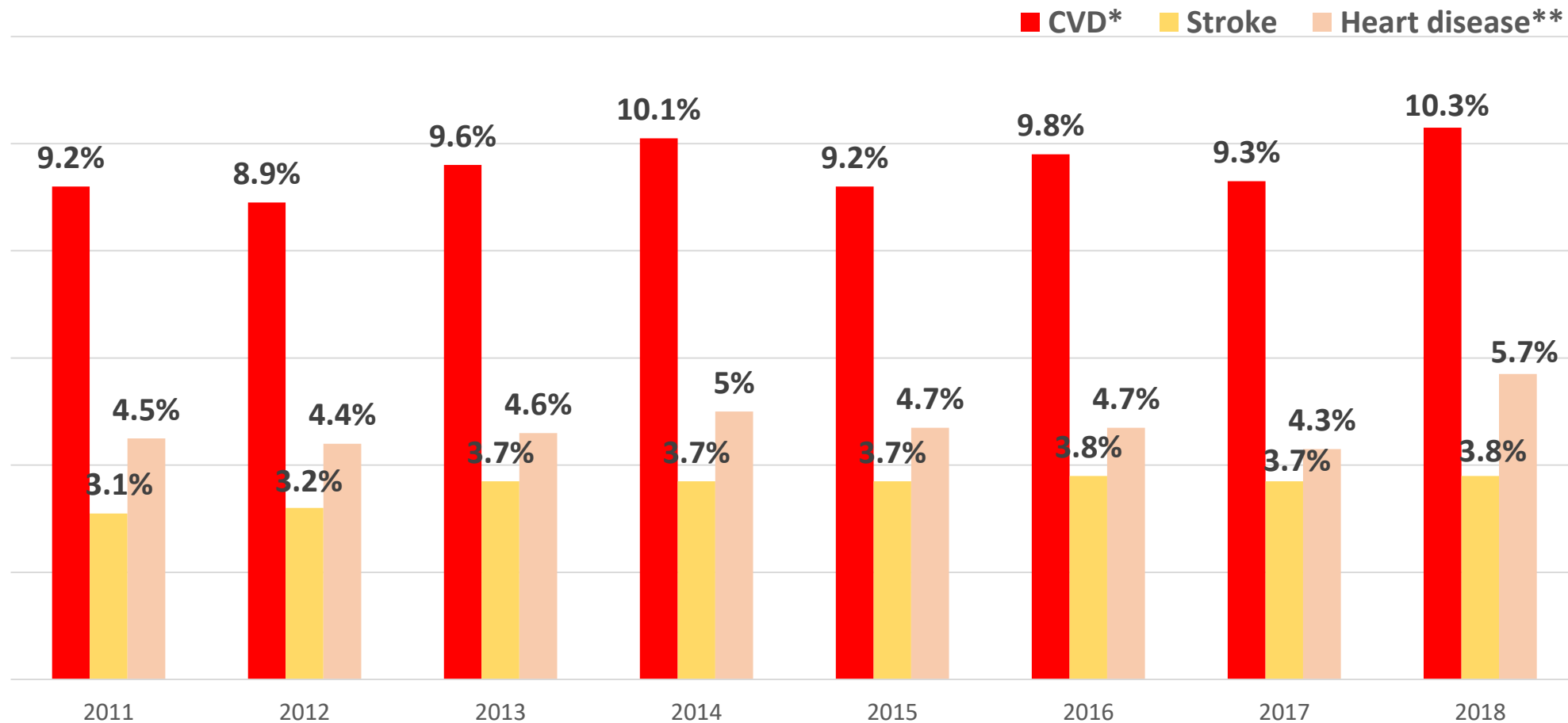
Morbidity, NC, 2018

- Over 800,000 adult North Carolinians (10.3% of the adult population) have a history of either heart attack, angina or stroke¹
- Cardiovascular disease (CVD) is the leading cause of hospitalization in North Carolina²
 - 156,495 CVD hospital discharges (16% of all discharges) in 2018
 - 31,693 stroke
 - 111,567 heart disease

Stroke: ICD-10 codes I60-I69; Heart Disease ICD 10 codes I00-I09, I11, I13, I20 - I51.

Data Sources: North Carolina Division of Public Health, State Center for Health Statistics. Behavioral Risk Factor Surveillance System (BRFSS) accessed at <https://schs.dph.ncdhhs.gov/data/brfss/2018/> on March 20, 2020.
North Carolina Division of Public Health, State Center for Health Statistics. Inpatient Hospital Utilization and Charges by Principal Diagnosis. Data produced on request on October 20, 2020.

Prevalence of Cardiovascular Disease in Adults, NC, 2011 - 2018

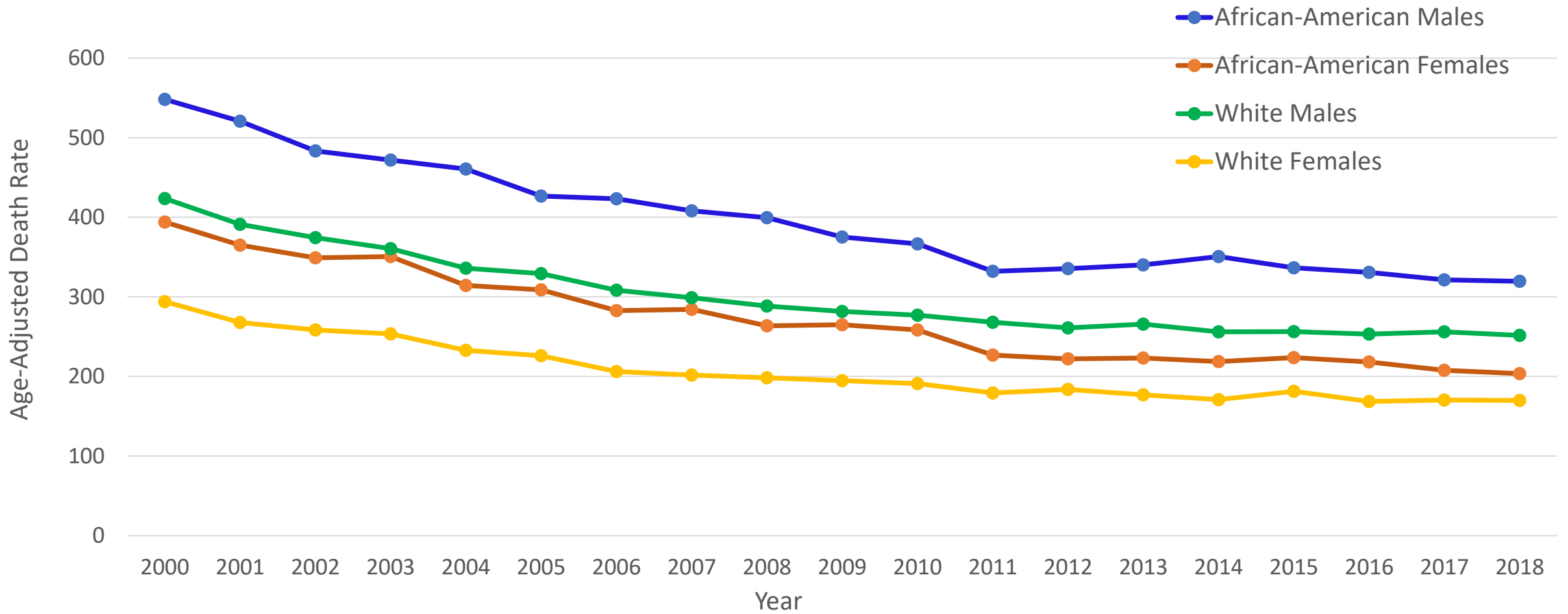


*History of Any Cardiovascular Diseases (heart attack or coronary heart disease or stroke)

** Had angina or coronary heart disease

Data Source: NC State Center for Health Statistics. Behavioral Risk Factor Surveillance System (BRFSS) accessed at <http://www.schs.state.nc.us/data/brfss/survey.htm> on March 20,2020.

Major Cardiovascular Disease Death Rates by Race and Gender, NC, 1999 - 2018

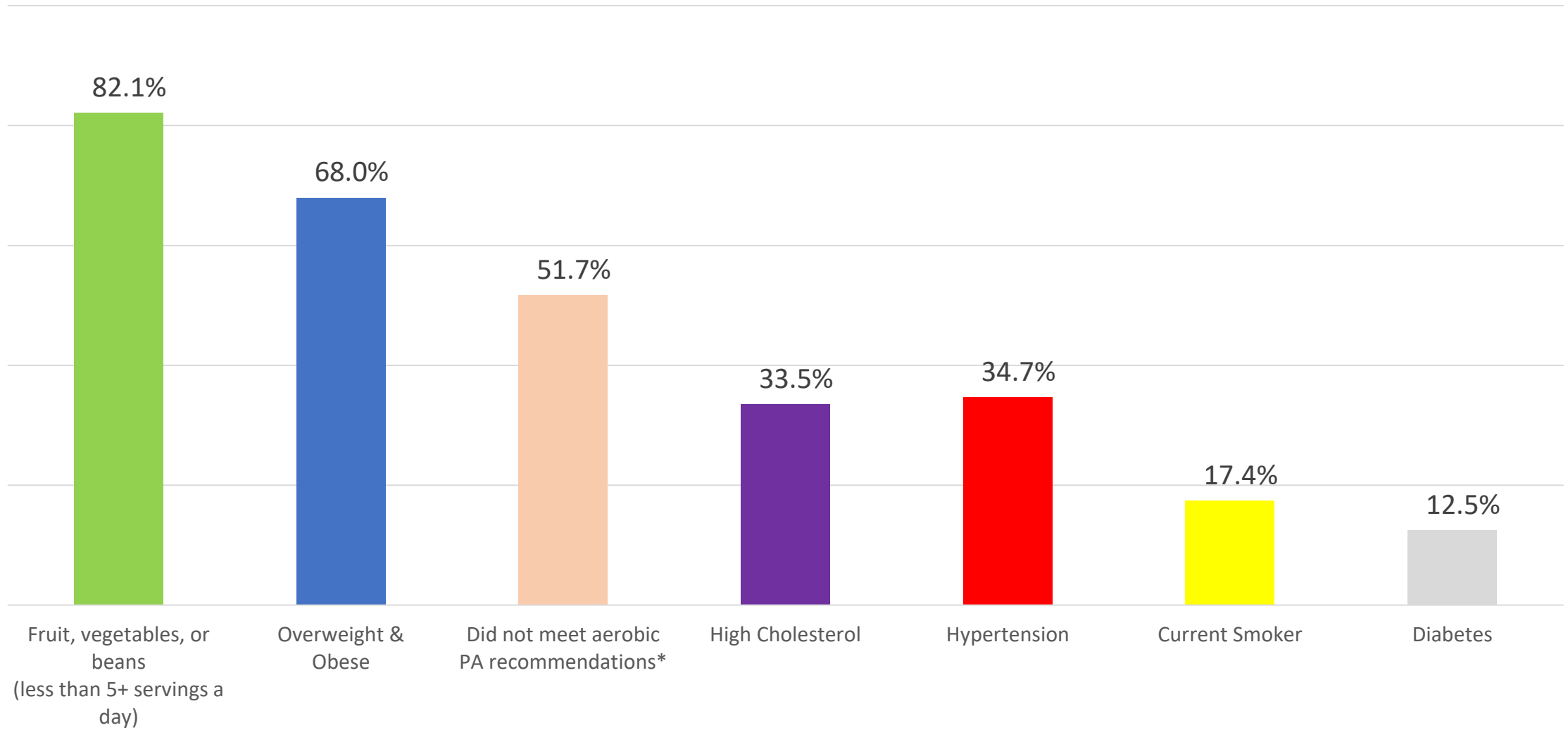


Major Cardiovascular Disease: ICD-10 codes I00-I78

Rates per 100,000 population, age-adjusted to the 2000 U.S. standard population.

Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database, released in 2020. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Nov 24, 2020.

Prevalence of CVD Risk Factors, NC, 2017-2018



Adults=18+; *PA = Physical activity

Data Source: North Carolina Division of Public Health, State Center for Health Statistics. North Carolina Behavioral Risk Factor Surveillance System (BRFSS). Accessed at <https://schs.dph.ncdhhs.gov/data/brfss/survey.htm> on March 20, 2020.

Visit startwithyourheart.com for more data

