



*Georgia Department of Public Health*

# Burden of Chronic Disease in Georgia

Presentation to: Chronic Disease University

Presented by: A. Rana Bayakly, MPH, Director  
Chronic Disease, Healthy Behaviors  
and Injury Epidemiology Section

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*We Protect Lives.*



# Presentation Objective

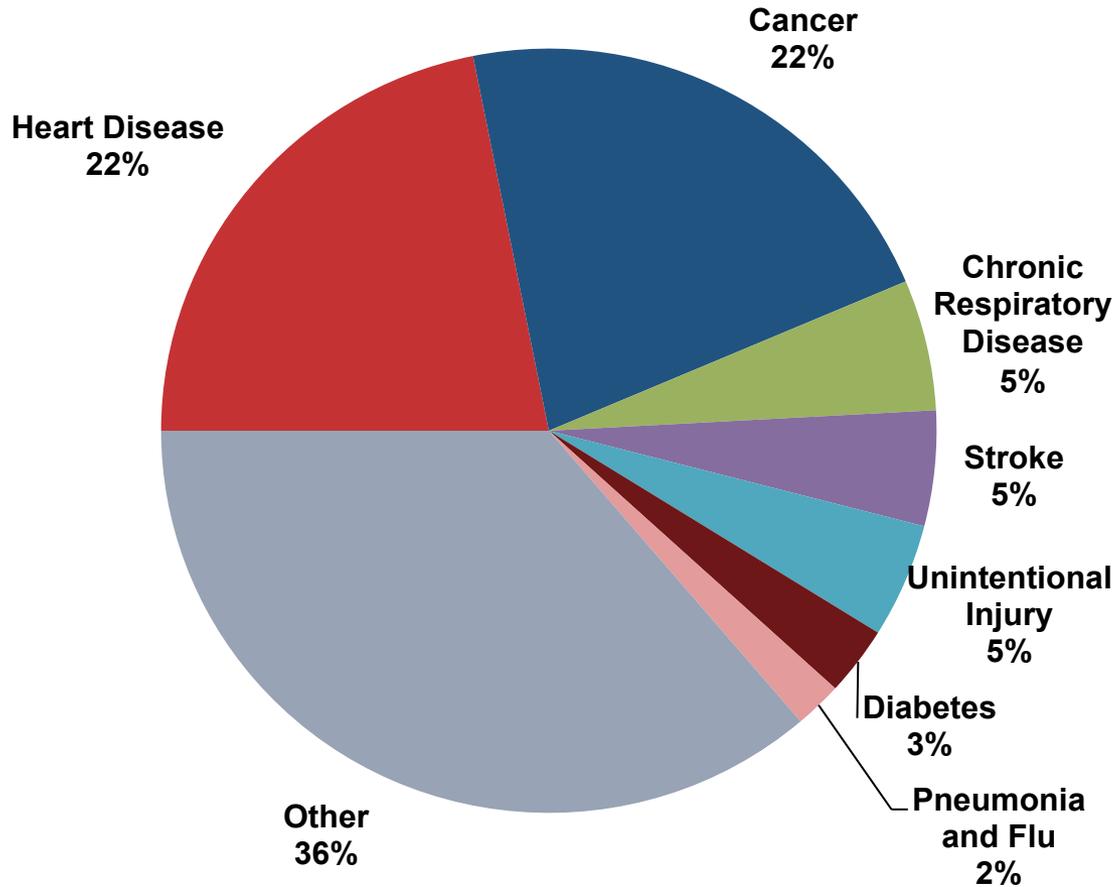
- Leading Causes of Death and Disability
- Chronic Diseases Morbidity
- Health Risk Behaviors Related to Chronic Diseases
- Cost of Chronic Diseases

# **CHRONIC DISEASES DEATH AND DISABILITY**

# Chronic Diseases: Leading Causes of Death and Disability in Georgia

- Chronic diseases —such as heart disease, stroke, cancer, diabetes, and chronic respiratory disease are the leading causes of death in Georgia, however they are preventable.
- Obesity is a serious health concern. In 2013, 30.2% of non-institutionalized adult Georgians 18 years and older were obese (defined as body mass index [BMI]  $\geq 30$  kg/m<sup>2</sup>).
- While 12.7% of Georgia High School students aged 14–18 years were obese (BMI  $\geq 95$ th percentile).

# Leading Causes of Death, Georgia 2013



Heart disease, cancer, stroke, and diabetes contributed to a little bit more than half (51.4% ; 38,624) of all deaths in Georgia

# Chronic Diseases: Leading Causes of Death and Disability in Georgia, 2013

	Number	Age-Adjusted Rate	US Comparison
Cardiovascular Disease	21,831	237/100,000	6% Higher
Heart Disease	16,430	177/100,000	5% Higher
Cancer	16,340	166.9/100,000	Similar
Stroke	3,665	41/100,000	13.3% Higher
Diabetes	2,190	22.9/100,000	8% Higher

# Chronic Diseases: The Leading Causes of Disability

- Arthritis is the most common cause of disability in the US and Georgia, of the 53 million adults in the US with a doctor diagnosed arthritis, more than 22 million say they have trouble with their usual activities because of arthritis.
- In 2013, 24.1% (almost 1 in 4) adult Georgians reported to have doctor diagnosed arthritis.
- Based on CDC 2011 Diabetes fact sheet, Diabetes is the leading cause of kidney failure, lower-limb amputations other than those caused by injury, and new cases of blindness among adults.
- Diabetes is the fifth leading cause of death in Georgia and as of 2013, 1 in 10 adult Georgians are living with diabetes.

# Chronic Diseases: The Leading Causes of Death and Disability in Georgia

- Based on the National Health Interview Survey (NHIS), about half of all US adults—117 million people—had one or more chronic health conditions. One of four adults had two or more chronic health conditions. (Chronic conditions include: hypertension, coronary heart disease, stroke, diabetes, cancer, arthritis, hepatitis, weak or failing kidneys, current asthma, and COPD.)
- Females had significantly higher prevalence of three or more chronic health conditions than males
- Adults 45 years and older were significantly more likely to have one or more chronic health conditions
- Adults with public insurance had the highest prevalence of one or more chronic health conditions

# **CHRONIC DISEASE MORBIDITY**

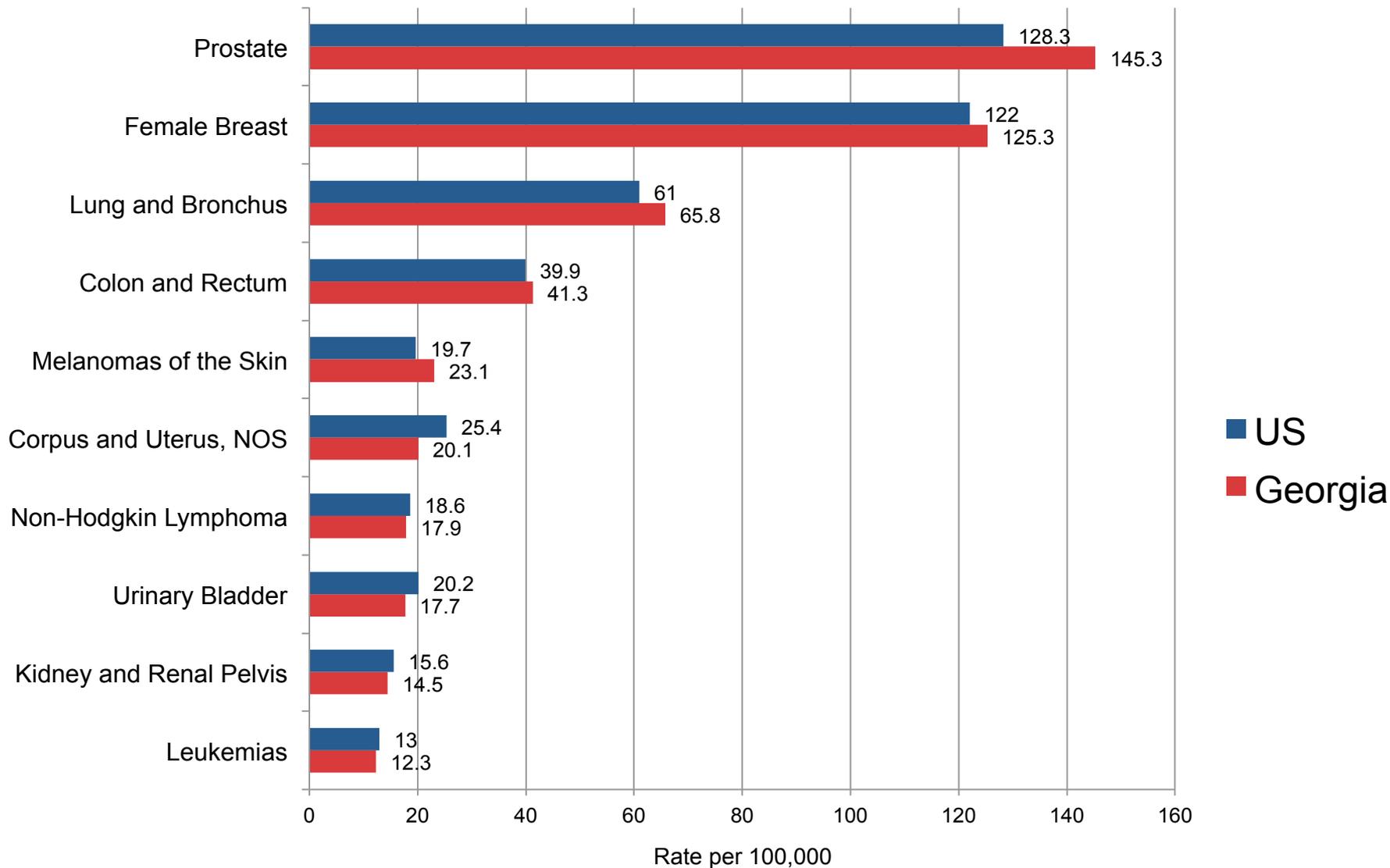
# Chronic Diseases: Morbidity

- In 2012, approximately **133,419** hospitalizations occurred among Georgia residents due to CVD
  - Of the CVD hospitalization, approximately **92,768 (69.5%)** hospitalizations were due to heart disease
  - And **23,833 (17.9%)** were due to stroke
- The average length of hospital stay for CVD in Georgia during 2012 was **5 days**
- Additionally, **12,159** Patients 20 years and older were hospitalized due to type II diabetes.

# Chronic Diseases: Cancer Incidence

- In 2013, an estimated 48,370 new cancers were diagnosed among Georgia residents—about 133 new diagnosis each day. These estimates exclude skin cancer (non-melanoma) and the carcinoma in situ for sites other than urinary bladder.

# Leading Causes of Cancer Incidence, GA vs US



# HEALTH RISK BEHAVIORS

# Health Risk Behaviors that Cause Chronic Diseases

- Health risk behaviors are unhealthy behaviors that can be modifiable. Four of these health risk behaviors—lack of exercise or physical activity, poor nutrition, tobacco use, and drinking too much alcohol—cause much of the illness and early death related to chronic diseases and conditions
- Nearly 80% of cardiovascular diseases and diabetes are attributable to physical inactivity, tobacco use and unhealthy diet
- Nearly 2/3 of cancer deaths can be linked to tobacco use, diet, obesity, and lack of exercise

# Health Risk Behaviors that Cause Chronic Diseases

- More than 42 million adults—close to 1 of every 5—said they currently smoked cigarettes in 2012. Cigarette smoking accounts for more than 480,000 deaths each year in the US.
- Drinking too much alcohol is responsible for 88,000 deaths each year, more than half of which are due to binge drinking. About 38 million US adults report binge drinking an average of 4 times a month, and have an average of 8 drinks per binge, yet most binge drinkers are not alcohol dependent.

# Health Risk Behaviors that Cause Chronic Diseases

- In 2013 and based on the Georgia Behavioral Risk Factor Surveillance System
  - 27.2% of adult Georgians were physically inactive
  - Of adults who were physically active, 79% did not meet the guidelines for aerobic and muscle strengthening exercises
  - 30% of adult Georgians were obese
  - 35% of adult Georgians had high blood pressure
  - 38% of adult Georgians had high cholesterol
  - 43% consumed one or less fruit per day
  - 24% consumed one or less vegetable per day
  - 19% of adult Georgians were current smokers
  - 13.1% of adult Georgians engaged in binge drinking
  - And 4.7% of adult Georgians engaged in heavy drinking

# Health Risk Behaviors that Cause Chronic Diseases

- Stroke Patients—Stroke Registry Data Source
  - 81% had high blood pressure
  - 43% had high cholesterol
  - 35% had diabetes
  - and 23% are current smokers
- Diabetes Patients—BRFSS Data Source
  - 74.2% had high blood pressure
  - 67.3% had high cholesterol level
  - 56.9% were obese
  - 45.8% consumed less than one fruit per day
  - 26.3% consumed less than one vegetable per day
  - 42.2% were physically inactive
  - Of those who were active, 14.1% met recommended physical activity guidelines
  - 14.8% are current smokers



# Prevalence of Risk Behaviors among study participants

<b>Number of Lifestyle Risk Factors</b>	<b>Percent Yes</b>	<b>95% CI</b>
<b>0</b>	<b>11.0</b>	<b>9.5-12.5</b>
<b>1</b>	<b>33.4</b>	<b>31.4-35.4</b>
<b>2</b>	<b>43.0</b>	<b>40.8-45.2</b>
<b>3</b>	<b>11.5</b>	<b>10.1-12.9</b>
<b>4</b>	<b>1.1</b>	<b>0.7-1.5</b>

Note: Smoking; Binge Drinking; Physical Inactivity; Low fruits and vegetables intake

# Adjusted Prevalence Odds Ratios (PORs) of Two or More Chronic Disease Related Risk Behaviors

	S	B	P	F
	POR (95% CI)	POR (95% CI)	POR (95% CI)	POR (95% CI)
<b>S</b>	–	<b>2.1 (1.6-2.8)</b>	1.0 (0.8-1.1)	1.1 (1.0-1.1)
<b>B</b>	–	–	1.2 (1.1-1.2)	1.1 (1.0-1.2)
<b>P</b>	–	–	–	1.1 (1.0-1.2)
<b>F</b>	–	–	–	–
<b>S and B</b>	–	–	0.8 (0.6-1.0)	1.0 (0.9-1.2)
<b>S and P</b>	–	1.4 (0.9-2.1)		1.2 (1.1-1.3)
<b>S and F</b>	–	<b>2.8 (1.8-4.4)</b>	1.3 (1.1-1.5)	
<b>B and P</b>	1.7 (1.2-2.5)	–		1.2 (1.1-1.4)
<b>B and F</b>	<b>2.3 (1.6-3.3)</b>	–	1.1 (0.9-1.3)	–
<b>P and F</b>	1.1 (0.8-1.6)	0.9 (0.6-1.5)	–	–
<b>S and B and P</b>	–	–	–	1.4 (0.9-1.4)
<b>S and B and F</b>	–	–	1.0 (0.7-1.3)	–
<b>S and P and F</b>	–	1.7 (0.9-3.0)	–	–
<b>B and P and F</b>	<b>2.3 (1.7-3.3)</b>	–	–	–

Note: **S**=Smoking; **B**=Binge Drinking; **P**= Physical Inactivity; **F**=Low fruits and vegetables intake

# Adjusted Prevalence Odds Ratios

- After controlling for demographic factors, the strongest association was found for the odds of:
  - binge drinking if a person smokes (POR=2.1;95%CI=1.6-2.8)
  - binge drinking if a person smokes and consumes low fruits and vegetables (POR=2.8;95%CI=1.8-4.4)
  - being physically inactive if a person smokes and consumes low amount of fruits and vegetables (POR=1.3;95%CI=1.1-1.5)

# Health Risk Behaviors that Cause Chronic Diseases

- In 2013 and based on the Youth Risk Behavior Survey
  - 30% of High School Students were obese
  - 43% of High School Students met recommended physical activity
  - 60% of High School Students watched TV and/or played video or computer games or used a computer for something that was not schoolwork for three or more hours per day on an average school day.
  - 45% of High School Students ate at least one vegetable daily
  - 86% of High School Students ate at least one fruit daily

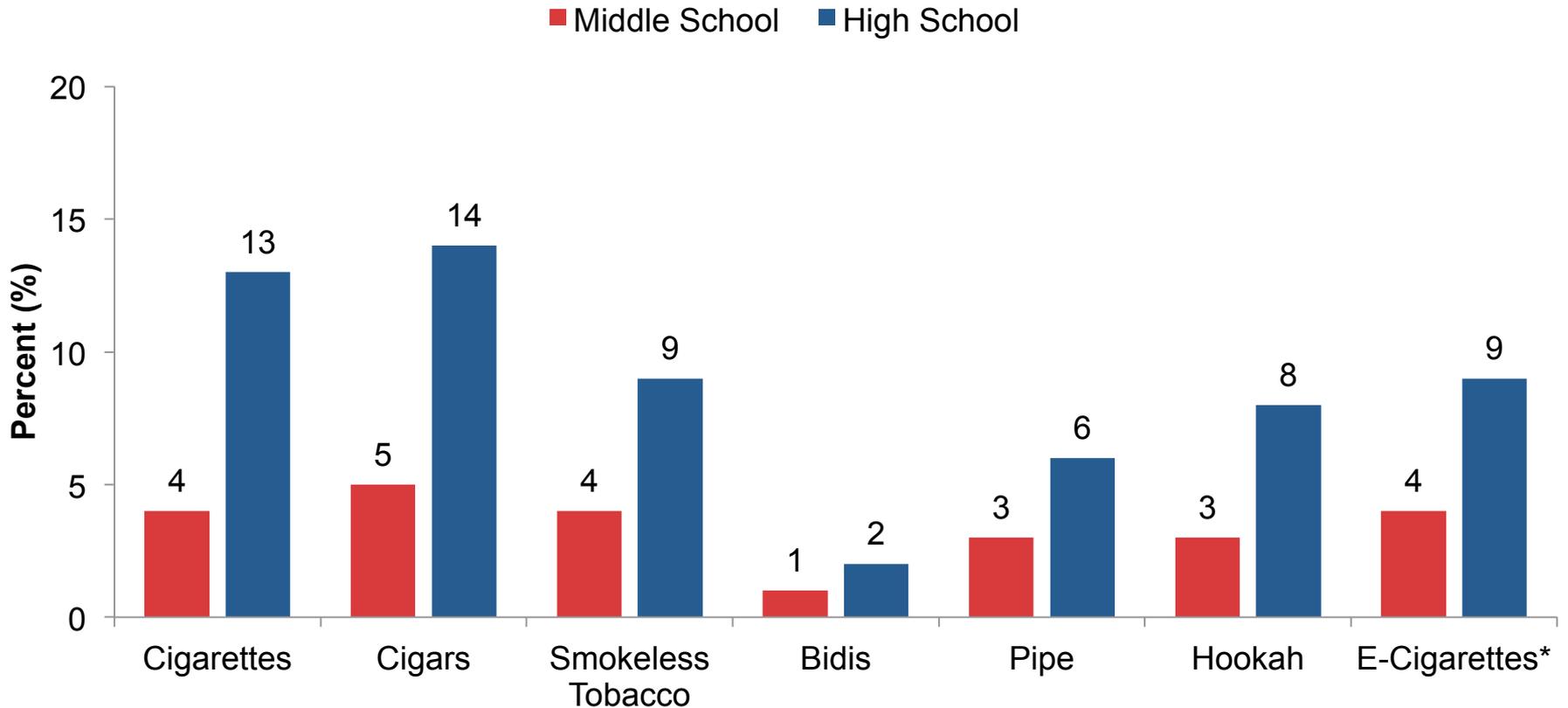
# Health Risk Behaviors that Cause Chronic Diseases

- In 2013 and based on the Youth Risk Behavior Survey
  - 68% of High School Students did not eat breakfast every day during the past week.
  - 16% of High School Students did not eat breakfast during the past week.
  - 77% drank at least one soda or pop during the past week.
  - 72% drank at least one sugar-sweetened beverage such as lemonade, sweetened tea or coffee drinks, flavored milk, Snapple, or Sunny Delight during the past week.
  - 41% did not drink a bottle or glass of plain water at least one time per day during the past week.

# Health Risk Behaviors that Cause Chronic Diseases

- In 2013 and based on the Youth Risk Behavior Survey
  - 13.3% of high school students had five or more drinks of alcohol in a row, that is, within a couple of hours, on one or more of the past 30 days
  - 27.9% of high school students who had at least one drink of alcohol on one or more of the past 30 days

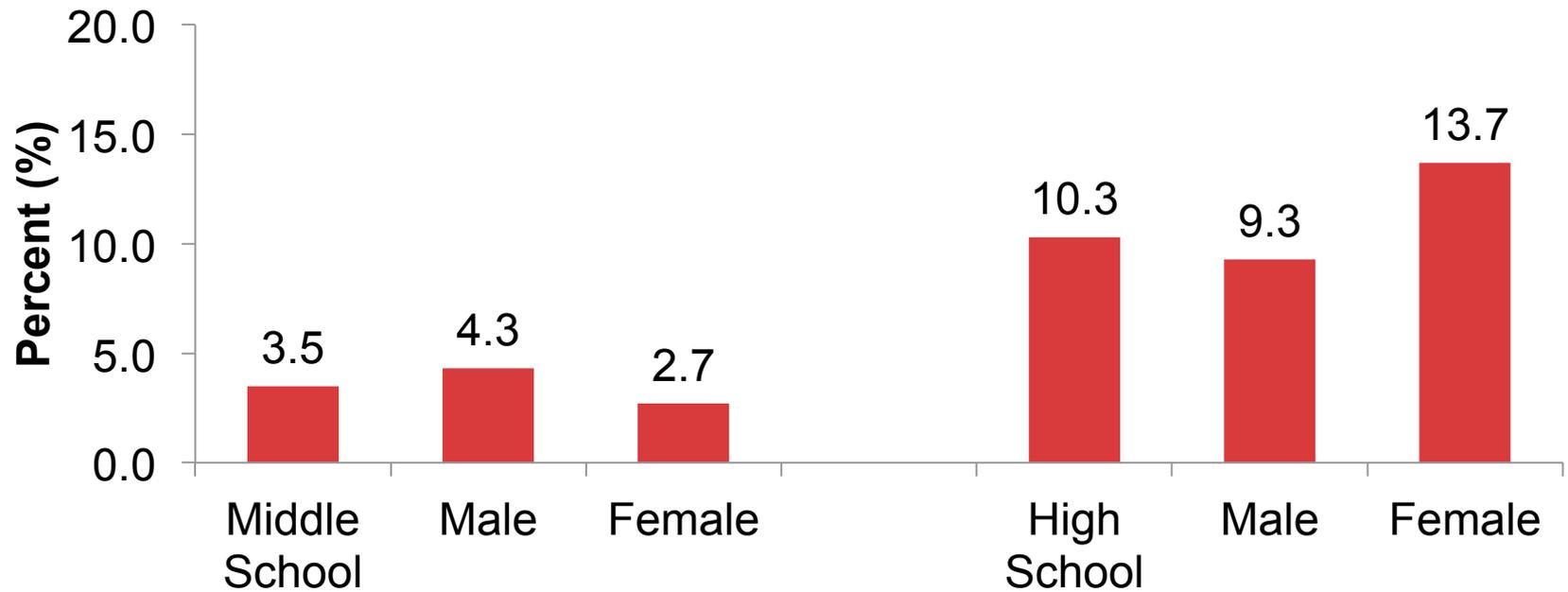
# Percent of youth who currently use any tobacco product, GA, 2013



Data Source: Youth Risk Factor Surveillance System (YRBS)

\* E-cigarette Data Source: Youth Tobacco Survey (YTS)

# Percent of youth who smoked a whole cigarette, Georgia, 2013



← Before age of 11

→ Before age of 13

Data Source: Youth Risk Factor Surveillance System (YRBS)

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- Each day, more than 3,200 youth younger than 18 years smoke their first cigarette, and another 2,100 youth and young adults who smoke every now and then become daily smokers.

# CHRONIC DISEASE COST

# CVD and Heart Disease Cost



- In 2012, the average charge per CVD-related hospitalization in Georgia was **\$45,744**
- Total hospital charges for CVD in Georgia was **\$6.1 billion**
- In 2012, the average charge per heart disease hospitalization in Georgia was **\$45,700**
- Total hospital charges for heart disease in Georgia were **\$4.2 billion**
- Total hospital charges for heart disease (**\$4.2 billion**) accounted for **68%** of all CVD hospital charges (**\$6.1 billion**)

# Stroke and Diabetes Cost



- In 2012, the average cost of stroke per hospitalization was **\$39,453**.
- Total stroke-related hospitalization charges **were \$940 million** in Georgia.
- In 2012, the average cost of diabetes type II per hospitalization was **\$28,083**.
- Based on the US estimates and after adjusting for population age and sex difference, the total cost of diabetes in Georgia is approximately **\$5.1 billion** of these **\$3.3 billion** was due to direct medical costs and **\$1.8 billion** was due to lost of productivity

# Cancer Cost



- Based on CDC estimates in 2010, the overall medical care expenditure for cancer in Georgia is **\$3.7 billion**, additionally CDC estimates that Georgia patients miss more than one million days of work due to cancer an estimate of more than **\$243 million** in lost of productivity

# Data Sources

- Georgia Vital Records (Death Data)
- Georgia Hospital Discharge (Hospitalization)
- Georgia Comprehensive Cancer Registry (Cancer)
- Georgia Coverdell Acute Stroke Registry (Stroke)
- Georgia Behavioral Risk Factor Surveillance System (BRFSS)
- Georgia Youth Risk Behavior Survey (YRBS)
- Georgia Youth Tobacco Survey (YTS)
- CDC Wonder for National Estimates
- United States Cancer Statistics (USCS—Published by NPCR)
- CDC Chronic Disease Prevention website  
<http://www.cdc.gov/chronicdisease/overview/>
- Ward BW, Schiller JS, Goodman RA. Multiple chronic conditions among US adults: a 2012 update. *Prev Chronic Dis.* 2014;11:130389. DOI:<http://dx.doi.org/10.5888/pcd11.130389>.



## Contact Information

Rana Bayakly, MPH

2 Peachtree street

14<sup>th</sup> floor, Suite 14-440

Atlanta, GA 30303

Phone: 404-657-2617

Email: [rana.bayakly@dph.ga.gov](mailto:rana.bayakly@dph.ga.gov)

Website: [http://dph.georgia.gov/  
epidemiology](http://dph.georgia.gov/epidemiology)