

Cancer-Related Behavioral Risk Factors of Delaware Adults: 2009-2010 Data

from the Delaware Behavioral
Risk Factor Survey (BRFS)

Cancer Consortium Retreat, February 20, 2012



DELAWARE HEALTH & SOCIAL SERVICES

Division of Public Health

Health Promotion & Disease Prevention

Adult Data from BRFSS



- Behavioral Risk Factor Surveillance System (BRFSS) is a core public health system which gathers data on behavioral risks for leading causes of premature death, disability and illness.
- U. S. Centers for Disease Control and Prevention (CDC) in partnership with all 50 states, D.C., and three territories
- State-based samples
- National core questionnaire, with optional modules and state-added questions



DELAWARE HEALTH AND SOCIAL SERVICES
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Behavioral Risk Factor Survey (BRFS)

- Random-sample telephone interview survey of non-institutionalized adult Delaware residents
- Ongoing survey; data reported on calendar-year basis
- Annual sample size > 4,000 adults age 18 and older
- Stratified by county since 2000, and now Wilmington
- Interviewing conducted by U.D. Center for Applied Demography and Survey Research (CADSR)



BRFS
Turning Information Into Health

Limitations

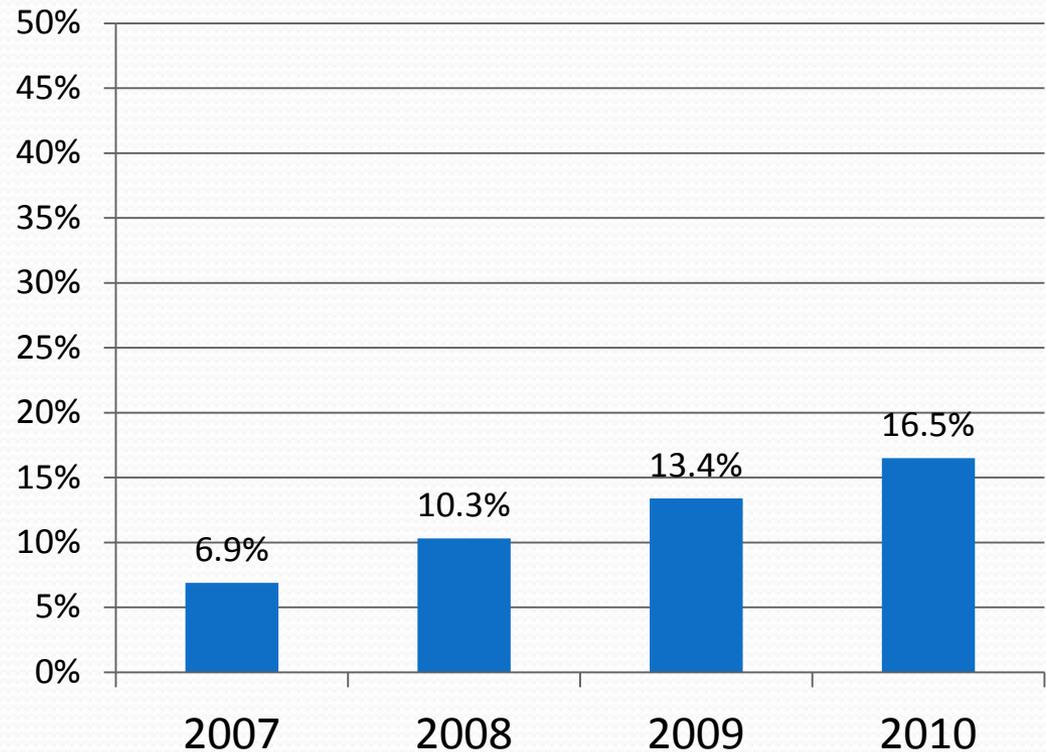


- Does not include institutionalized adults
- Self-reported data
- Declining response rates in all surveys due to social and technological changes
- Landline calls only from 2005 to 2010
- Rapidly increasing proportion of “cell phone only” and “cell phone primarily” households, especially among young and minority populations

Rapidly Changing Trend



Delaware Cell-Phone Only Households



Source: National Center for Health Statistics, National Health Interview Survey, reported in National Health Statistics Reports, 39, April 20, 2011.

How the BRFSS is Adapting

- We tested cell phone interviewing in 2009 and 2010
- Other methods are being explored and tested, including:
 - Internet follow-up survey
- New method of “weighting” the data to make it conform more closely with the real population of Delaware, based on 2010 census.
 - From standard weights to “raking” weights



Behavioral Risk Factor Surveillance System (BRFSS) Fact Sheet: Raking



Changing Weighting Methodology

In 2011, the BRFSS will begin using raking weighting as the only source of data weighting. Raking methodology represents an enhancement over previous post stratification weighting procedures.

Raking weighting adjusts within each state using:

- Telephone source
- Detailed race and ethnicity
- Regions within states
- Education level
- Marital status
- Age group by gender
- Gender by race and ethnicity
- Age group by race and ethnicity
- Renter/owner status

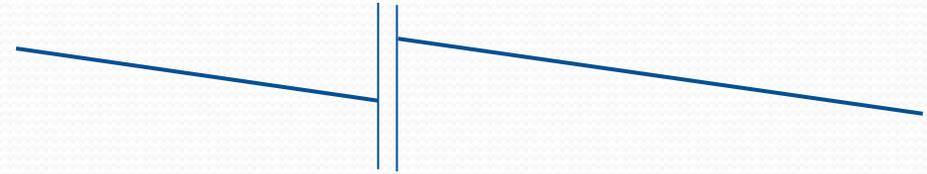
The Process of Iterative Proportional Fitting (Raking)

Changeover This Year

- BRFS is now a multi-mode survey
- 2011 data – to be released early in 2012 – will be reported with combined modes and new weights.

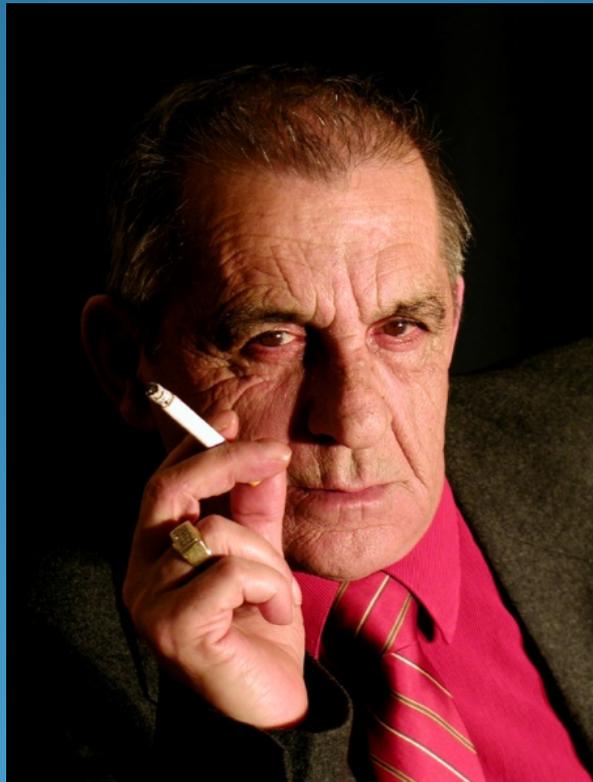


What These Changes Will Mean

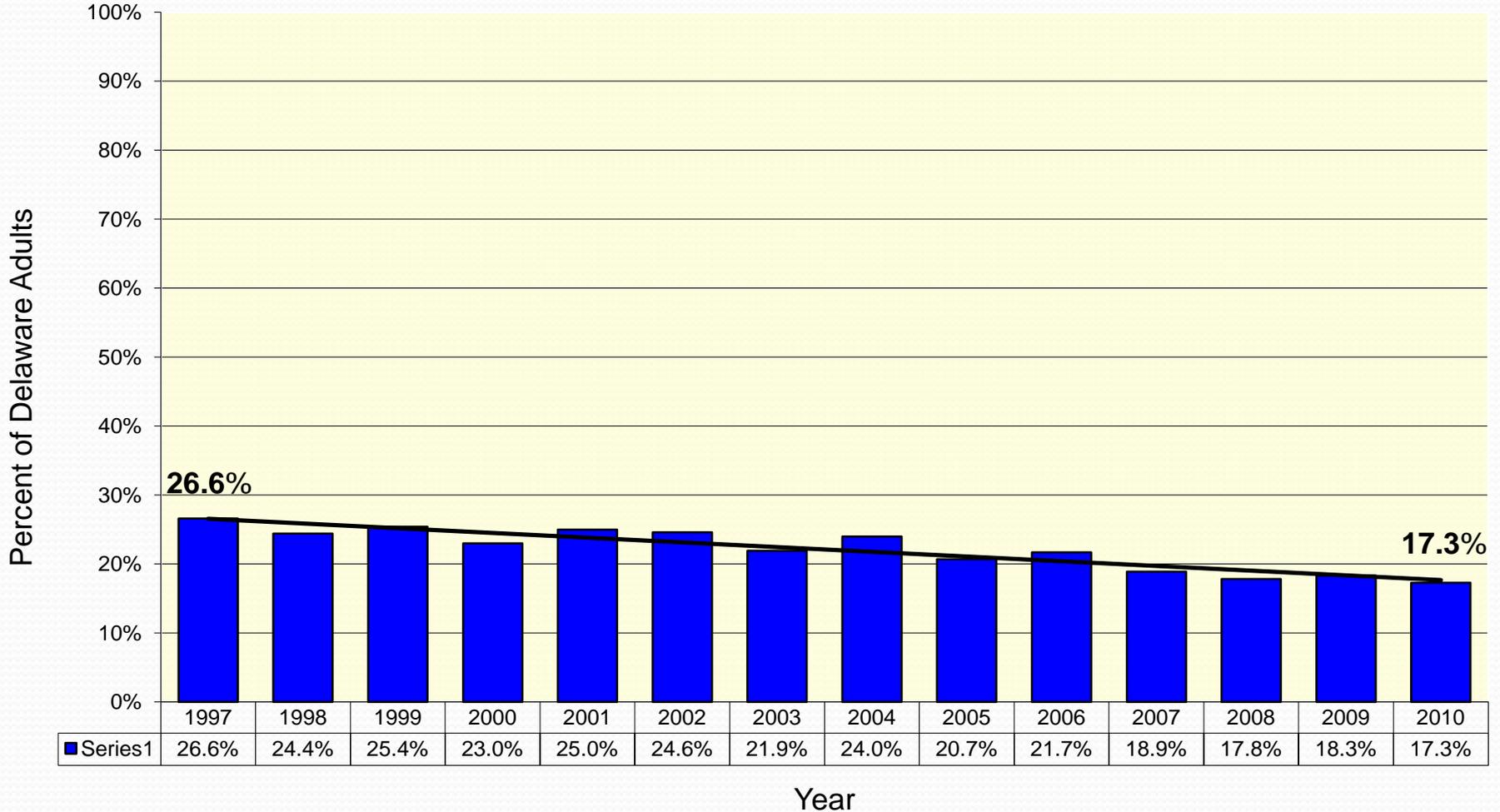


- Breaks in trend lines
- 2011 will be new baseline for many items
- Data will more accurately reflect the population
 - Young adults, males, and minorities will be more accurately represented
- Some prevalence rates will change significantly
 - *e.g.* smoking prevalence; health insurance status

Delaware Adult Tobacco Use



Delaware Adult Smoking Prevalence: Declining from 1997 to 2010 (landline only)



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 1997-2010.

Current Smoking x Income & Education

2010 BRFSS Income Level	Smoking Prevalence
\$15,000 - \$24,999	29.6%
\$25,000 - \$34,999	29.5%
\$35,000 - \$49,999	19.9%
\$50,000 - \$74,999	18.4%
\$75,000 +	9.7%
2010 BRFSS Educational Level	Smoking Prevalence
High School or G.E.D.	24.6%
Some Post-High School	17.9%
College Graduate or Higher	7.3%

Source: DHSS, Division of Public Health, Behavioral Risk Factor Survey (BRFSS), landline sample only, 2010.

Other 2010 Tobacco Information

- **59.9%** of adult Delaware smokers have tried to quit during the past year (2010 BRFSS)
- **3.2%** of adult males use chewing tobacco, snuff, or snus either every day or some days (2010 BRFSS)
 - Compared with 0.2% of adult females
 - More likely white, poorly educated, and young
- Among adults who do not smoke cigarettes, about **2.6%** use other tobacco products. (2010 ATS)



Change In Smoking Initiation?

- According to the 2009 YRBS, about **13.3%** of public high school seniors were current regular smokers.
- According to the 2009 BRFSS, about **18%** of 18-24 year olds were current smokers.
- **Why the gap?**
 - Higher smoking prevalence among school drop-outs?
 - Marketing to college-age adults by tobacco industry?
 - Initiation by adults in their twenties?
- *It may no longer be true that “if you haven’t started by 18 you’re not likely to start smoking.”*

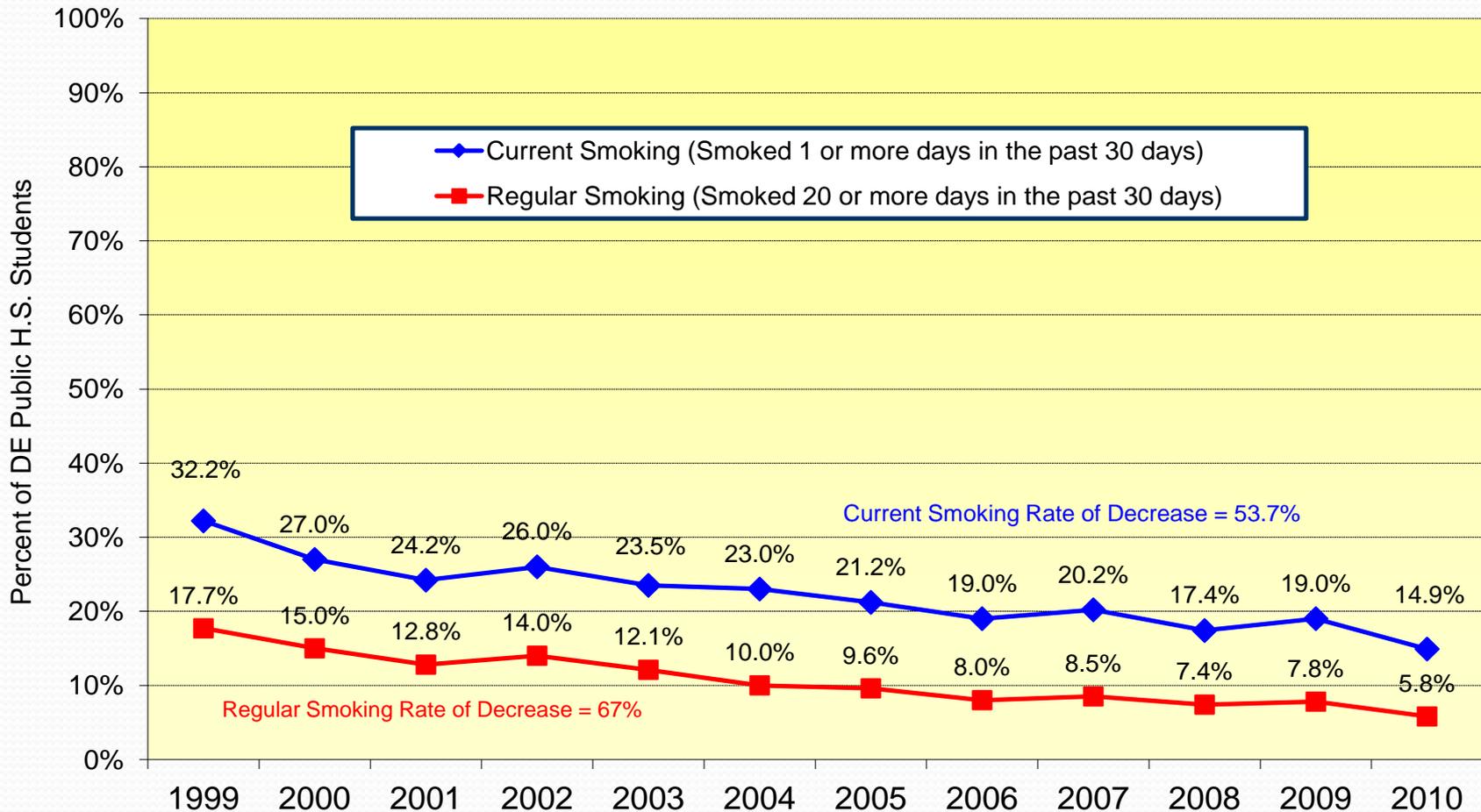
Smoking by County: 2010

(landline data only)

County	Smoking Prevalence
New Castle County	15.9%
Kent County	20%
Sussex County	19.1%

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline, 2010.

Prevalence of Current Smoking Decreased Among Delaware High School Students from 1999-2010



Sources: DOE, Youth Risk Behavior Survey (YRBS) - Odd Years / DHSS,DPH, Youth Tobacco Survey (YTS) - Even Years

Problems with 2009-10 data:

- The BRFSS adult prevalence rate is actually ***higher than reported for the past 2-3 years.***
- Probable reasons include:
 - Cell phones – improved sampling
 - New tobacco products
 - Changing tobacco use patterns
 - Economic recession



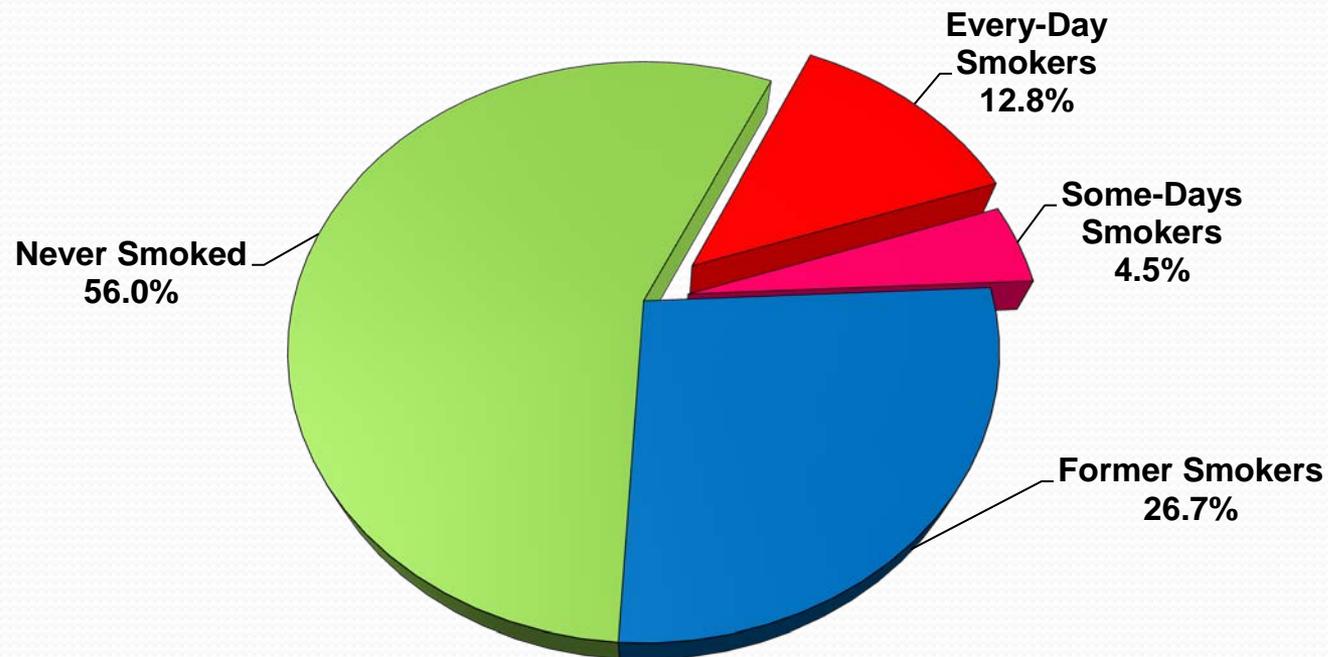
Are you ready?

Impact of Cell Phone Sample:

- The next few slides show the difference that addition of a pilot cell phone sample made in the overall prevalence rate for cigarette smoking.
- *These numbers are preliminary – and from a pilot sample. They should not be cited as the actual prevalence rate for 2010. The rates in slide 19 are provided for illustration purposes only.*

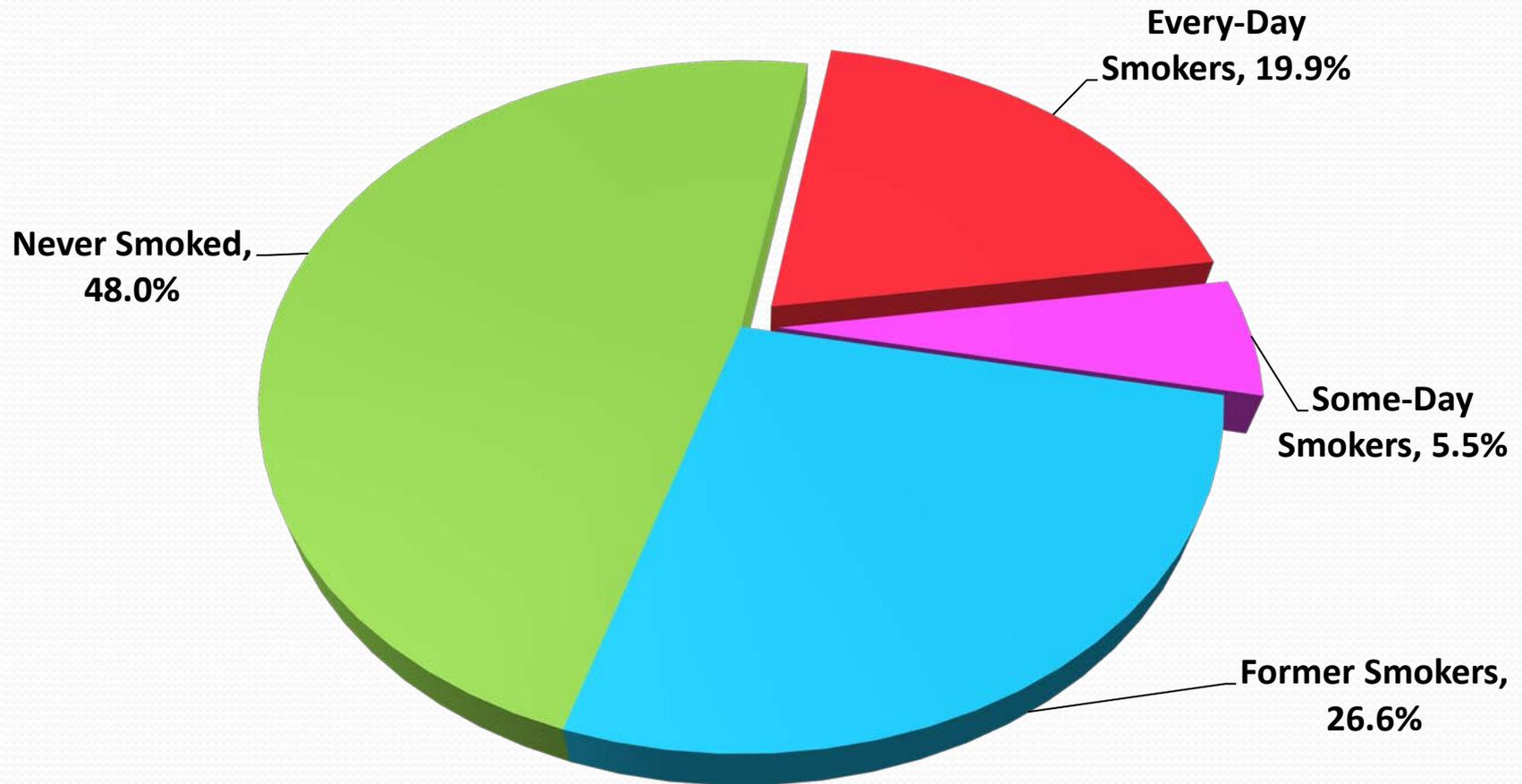


Cigarette Smoking Among Delaware Adults, 2010: Landline Survey



Source: Delaware Health and Social Services, Division of Public Health,
Behavioral Risk Factor Survey (BRFS) **Landline Sample only**, 2010.

Cigarette Smoking Among Delaware Adults, 2010: Combined LLCP Sample



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2010. This chart combines the landline and cell phone samples, and uses new raking weights.

Alcohol Use and Abuse



Alcohol Use Among DE Adults

- Nearly 60% of Delaware adults drink alcoholic beverages.
 - *They report having had at least one alcoholic drink during the past month.*

Delaware Adults Drinking During Past Month, 2010

Total Adults	59.3% (57.1-61.5%)
Males	68.3% (65.2-71.4%)
Females	51.1% (48.6-53.6%)
White (non-Hispanic)	63.8% (61.6-66%)
African American	42.3% (35.6-49%)



“Binge” or Acute Drinking

- **18.8%** (ci 16.6-21%) of Delaware adults report binge drinking during the past month
 - **26.4%** (22.5-30.2%) of males
 - **12%** (10-13.9%) of females
- Slightly higher than the national median of **15.1%**
- *For this survey, “binge” drinking is defined as males having five or more drinks on one occasion, females having four or more drinks on one occasion.*



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2010. Landline sample only.

Binge Drinking by Race & Education – *a somewhat different picture*

“Binge” Drinking Among Delaware Adults, 2010

White (non-Hispanic)	20.8% (18.4-23.2%)
African American	10.3% (4.2-16.3%)
Hispanic	N/A
High School or G.E.D. Education	19.2% (15.4-23.0%)
Some Post High School Education	19% (14.2-23.8)
College Degree or Higher	17.8% (14.8-20.8)

Binge drinking also increases somewhat with income, from 11% (< \$15,000/year) to 22.5% (over \$50,000/year).

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2010.
Landline data only.

Binge Drinking by Age

Delaware Adult Binge Drinking by Age, 2010

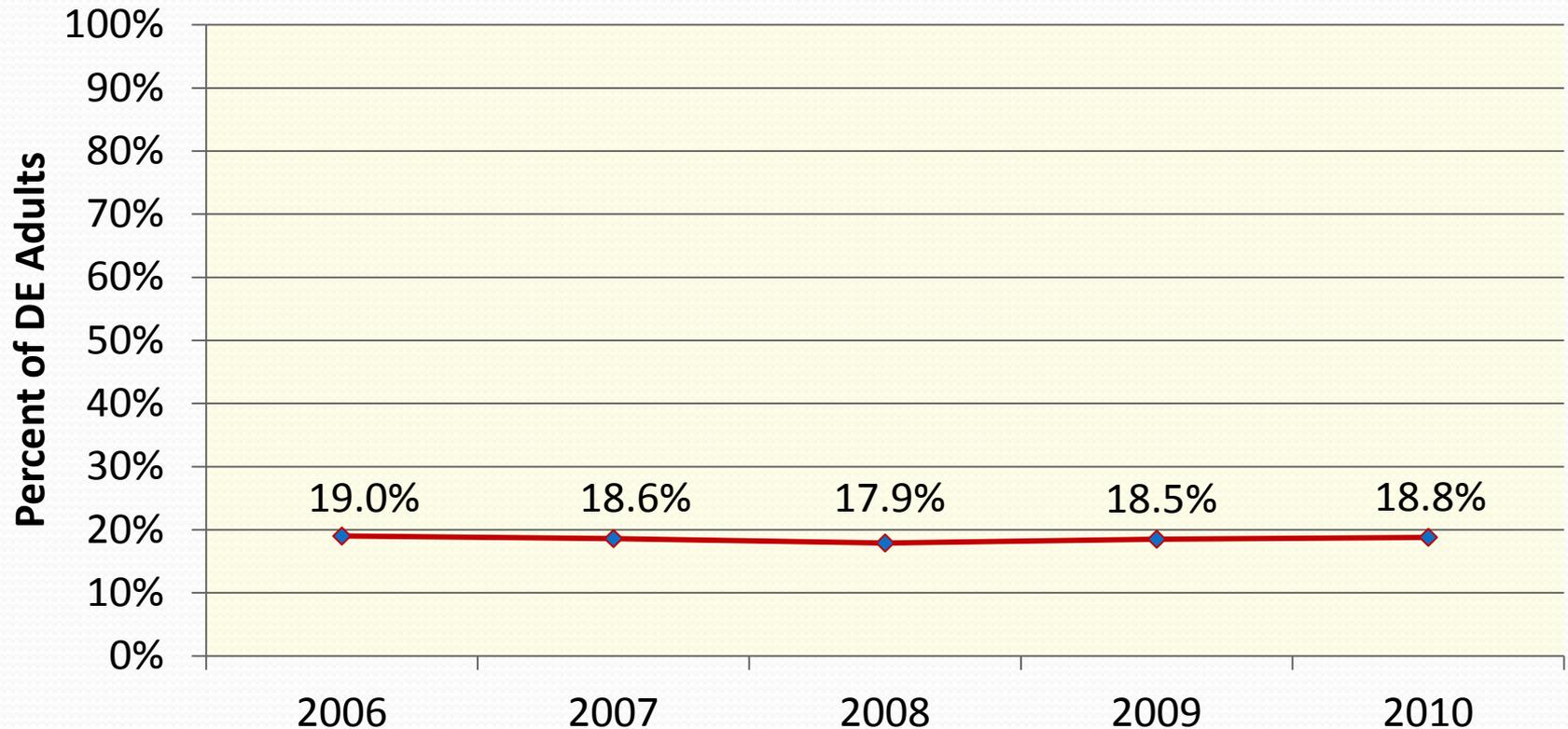
18-24 Years Old	N/A*
25-34 Years Old	25.8% (19.3-32.3%)
35-44 Years Old	19.7% (15.6-23.8%)
45-54 Years Old	19.5% (16-23%)
55-64 Years Old	13.1% (10.2-16%)
65 +	3.5% (2.3-4.7%)

* BRFSS suppression rules remove cells that contain less than 50 observations or which have a confidence interval with a half-width greater than 10. However, this is undoubtedly the group with highest prevalence, based on looking at combined data.

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2010.

No Change in Recent Years

DE Adult Binge Drinking, 2006-2010



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2010.
Landline sample only.



Chronic Heavy Drinking

- **5.9%** (4.7-7.1%) of Delaware adults report heavy drinking.
 - *“Heavy drinking” is defined for this survey, as more than 2 drinks per day for men, and more than 1 drink per day for women.*
- **6.7%** (4.7-8.7%) of males
- **5.1%** (3.9-6.3%) of females
- Delaware’s prevalence is about the same as the national median of **5%**.

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2010.
National data from CDC, Behavioral Risk Factor Surveillance System (BRFSS), 2010. Landline samples only.

Heavy Drinking by Race & Education

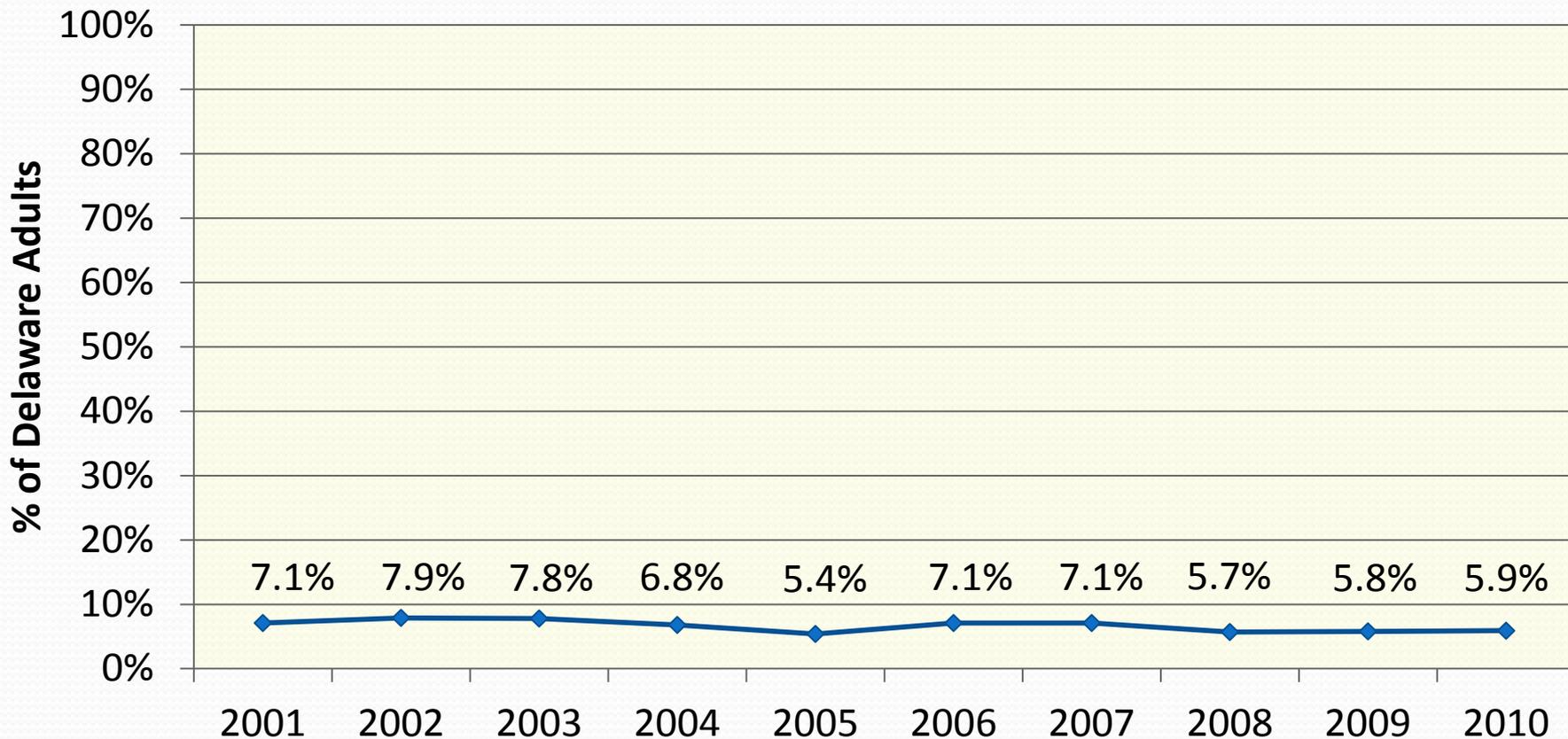
Delaware Adults: Heavy Drinking, 2010

White (non-Hispanic)	6.8% (5.4-8.2%)
African American	1.8% (0.2-3.4%)
Other Races (non-Hispanic)	4.3% (0.6-8%)
Hispanic	6.8% (0-15.8%)
Educational Level	
Less Than High School Education	9.7% (2.6-16.8%)
High School or G.E.D.	6.4% (4.2-8.6%)
Some Post High School Education	5.8% (3.3-8.3%)
College Degree or Higher	5% (3.6-6.4%)

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2010.
Landline sample only.

Little Change in Adult Heavy Drinking

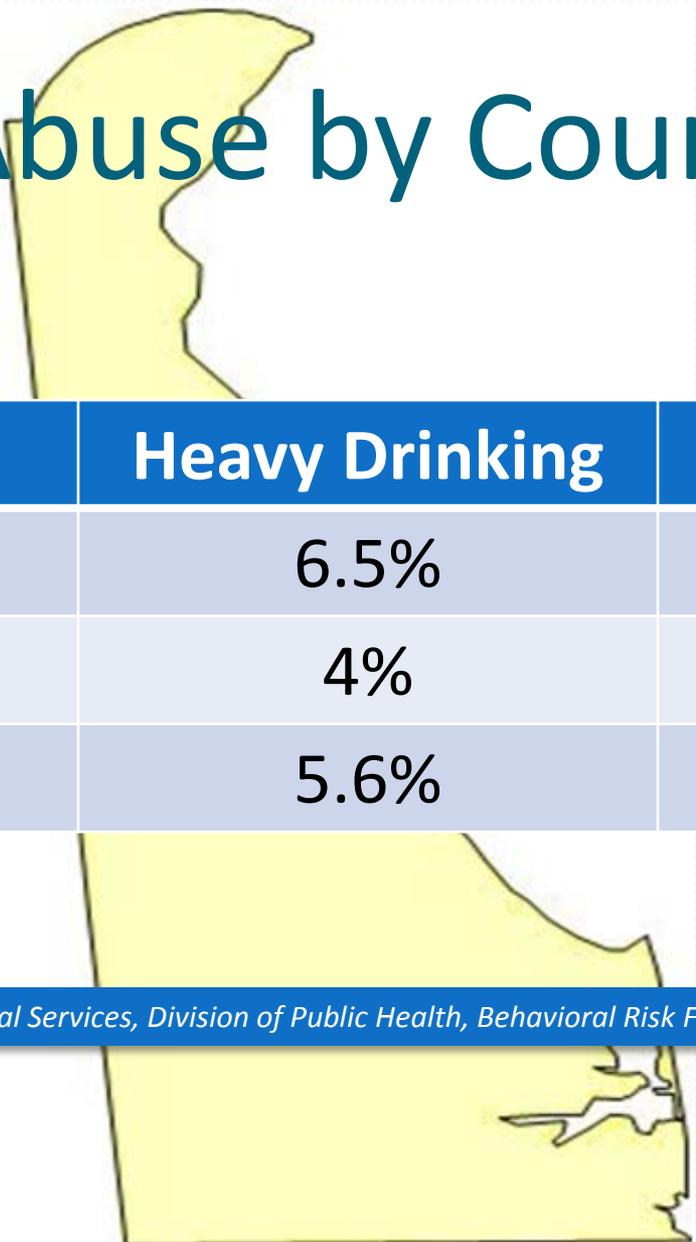
Delaware Adult Heavy Drinking: Trend 2001-2010



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline 2001-2010.

Alcohol Abuse by County:

(landline data only)



County	Heavy Drinking	Binge Drinking
New Castle	6.5%	21%
Kent	4%	14%
Sussex	5.6%	16.8%

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline, 2010.

Cell Phone Impact

- Addition of the cell phone sample in 2010 had no impact on the overall prevalence rate for **binge drinking**:
 - Landline = **18.8%**; LLCP/new weights = **18.7%**
- The impact on prevalence of **heavy drinking** was insignificant:
 - Landline = **5.9%**; LLCP/new weights = **6.3%**

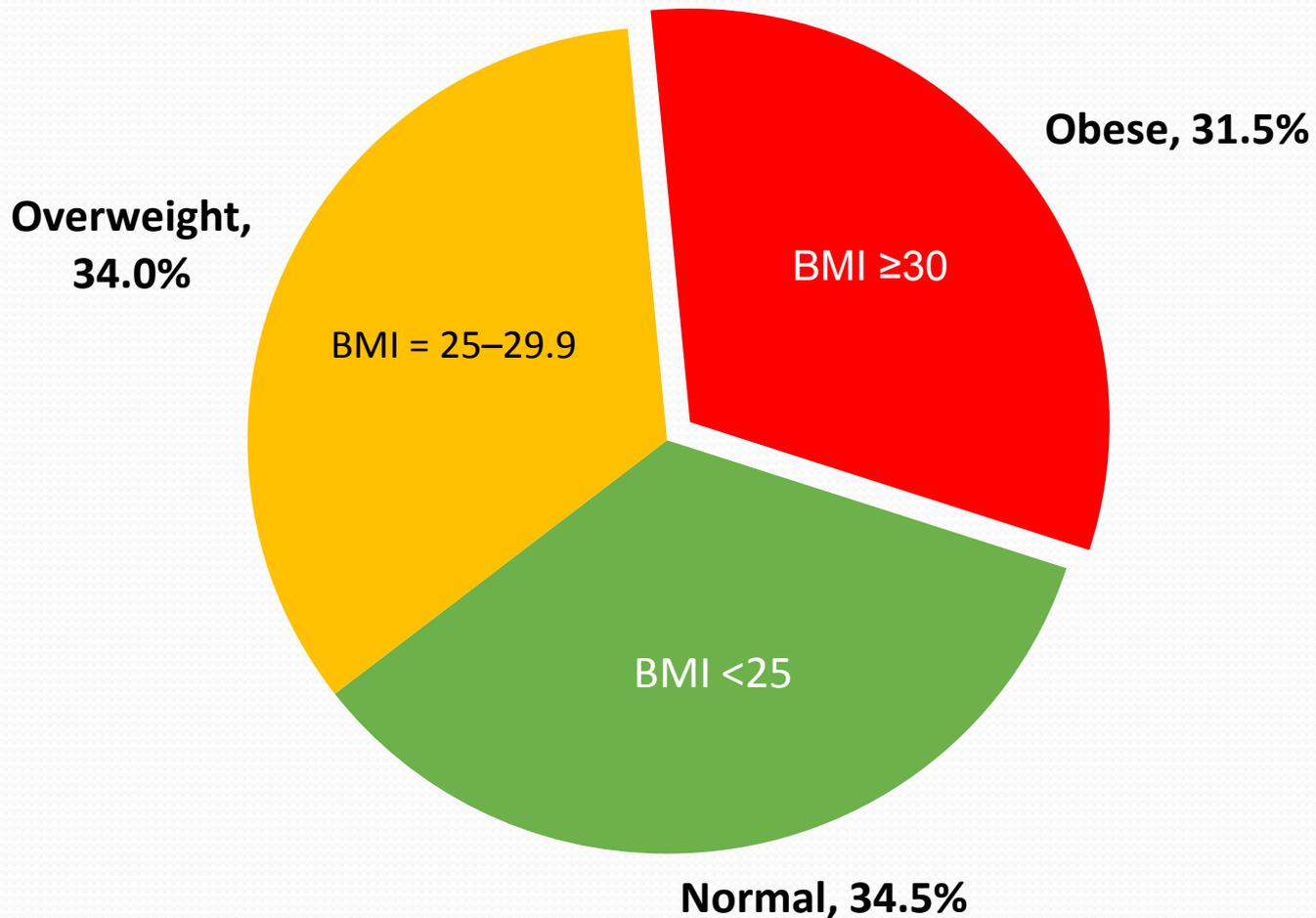
Source: DHSS, Division of Public Health, Behavioral Risk Factor Survey (BRFSS), combined data, 2010.



Overweight, Obesity & Nutrition



Percentage of Delaware Adults Who Report Normal, Overweight, and Obese BMIs, 2010



Weight by Gender, Education: 2010

(landline data only)

Demographic	Overweight	Obese
Male	42.1%	29.2%
Female	28.7%	28.3%
< H.S. Education	27.6%	31.3%
High School	37.5%	30.8%
Some Post H.S.	33.6%	32.8%
College Graduate	36.2%	23.8%

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline , 2010.

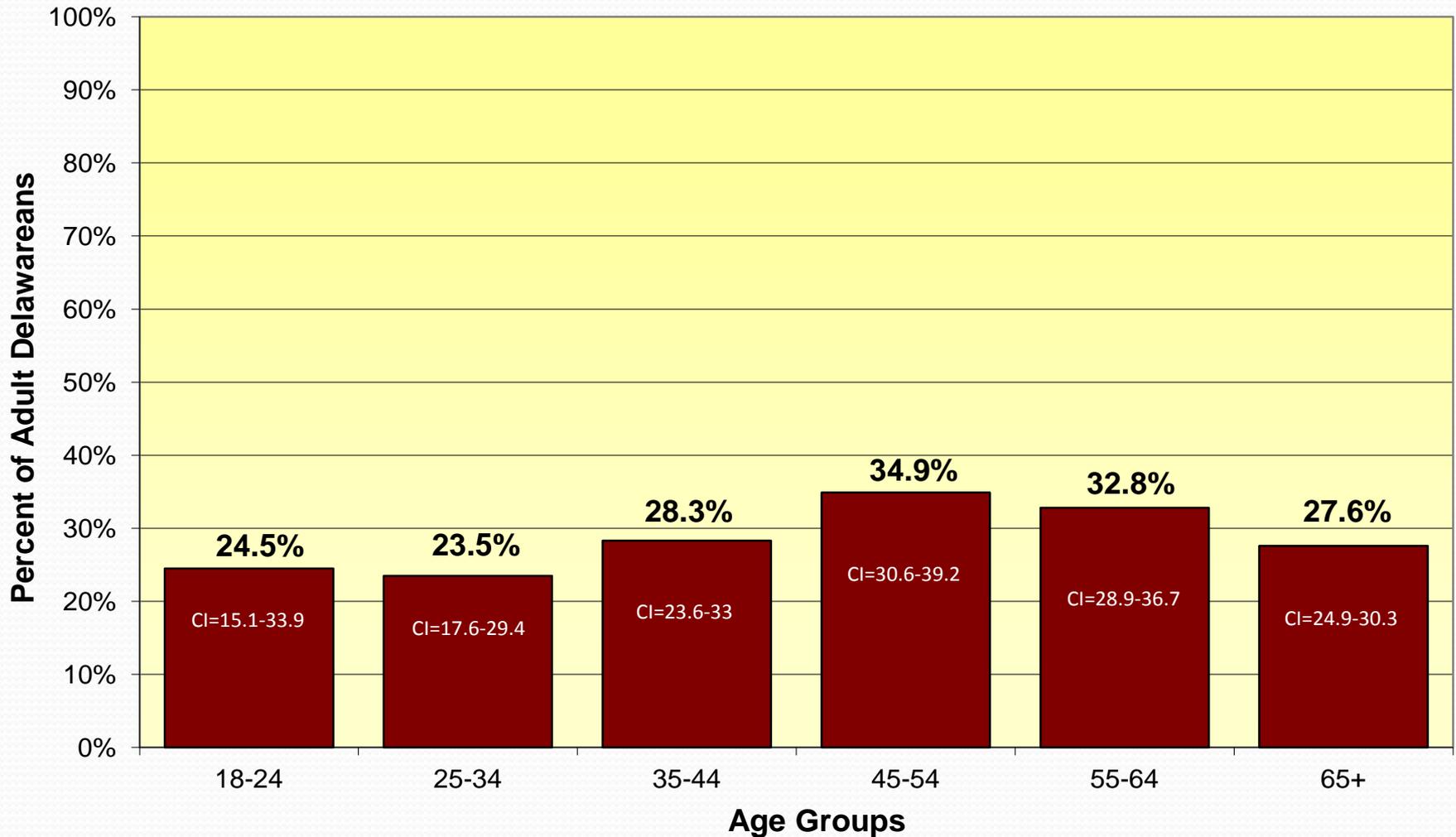
Obesity by Income, 2010

(landline data only)

Income Level	Overweight	Obese
< \$15,000/yr	30.9%	38.1%
\$15,000-24,999	28.8%	37.2%
\$25,000-34,999	31.3%	31%
\$35,000-49,999	40%	33.5%
\$50,000-74,999	33.9%	32.3%
≥\$75,000	38.4%	22.8%

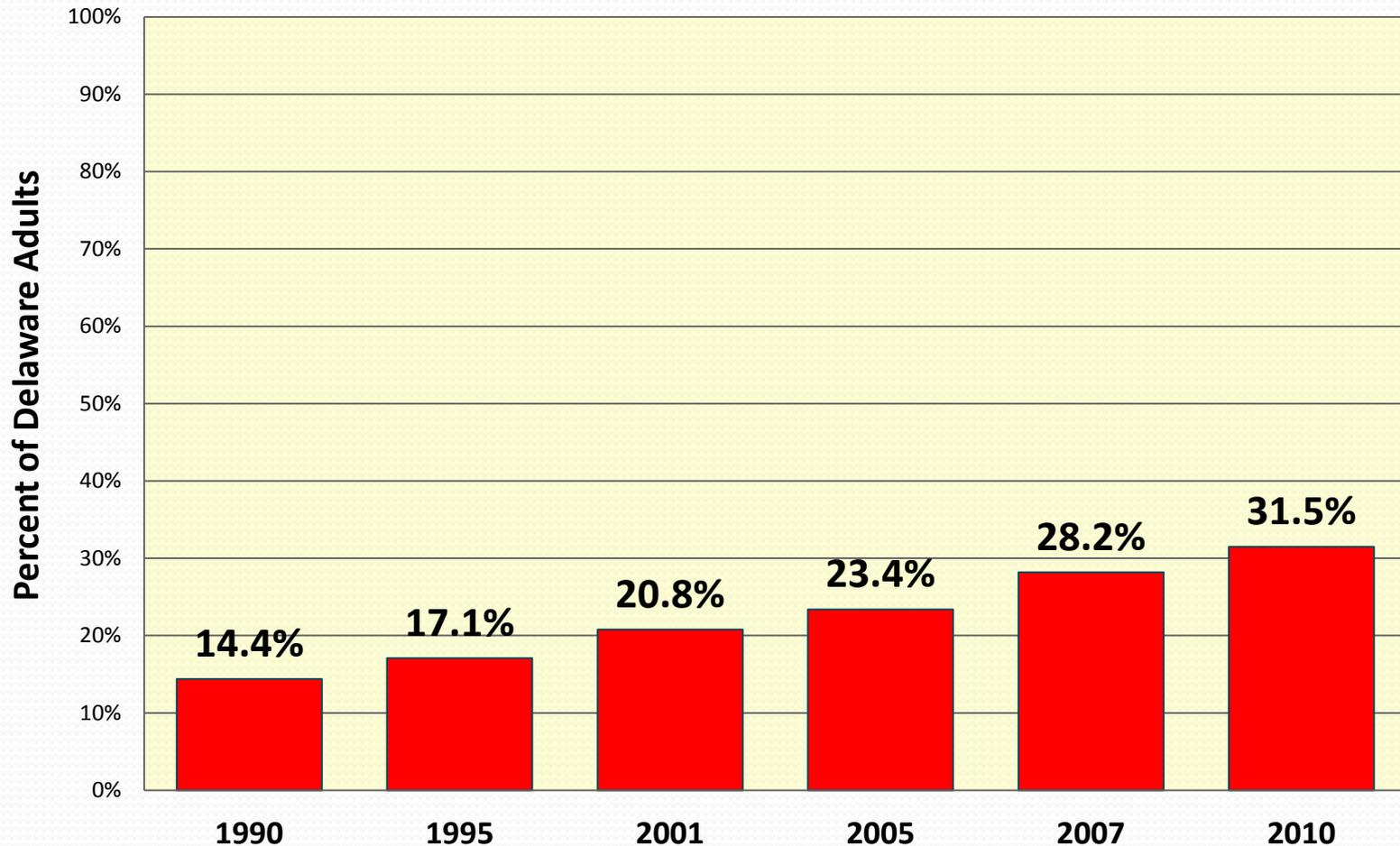
Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline, 2010.

Obesity in Delaware by Age, 2010



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline only, 2010.

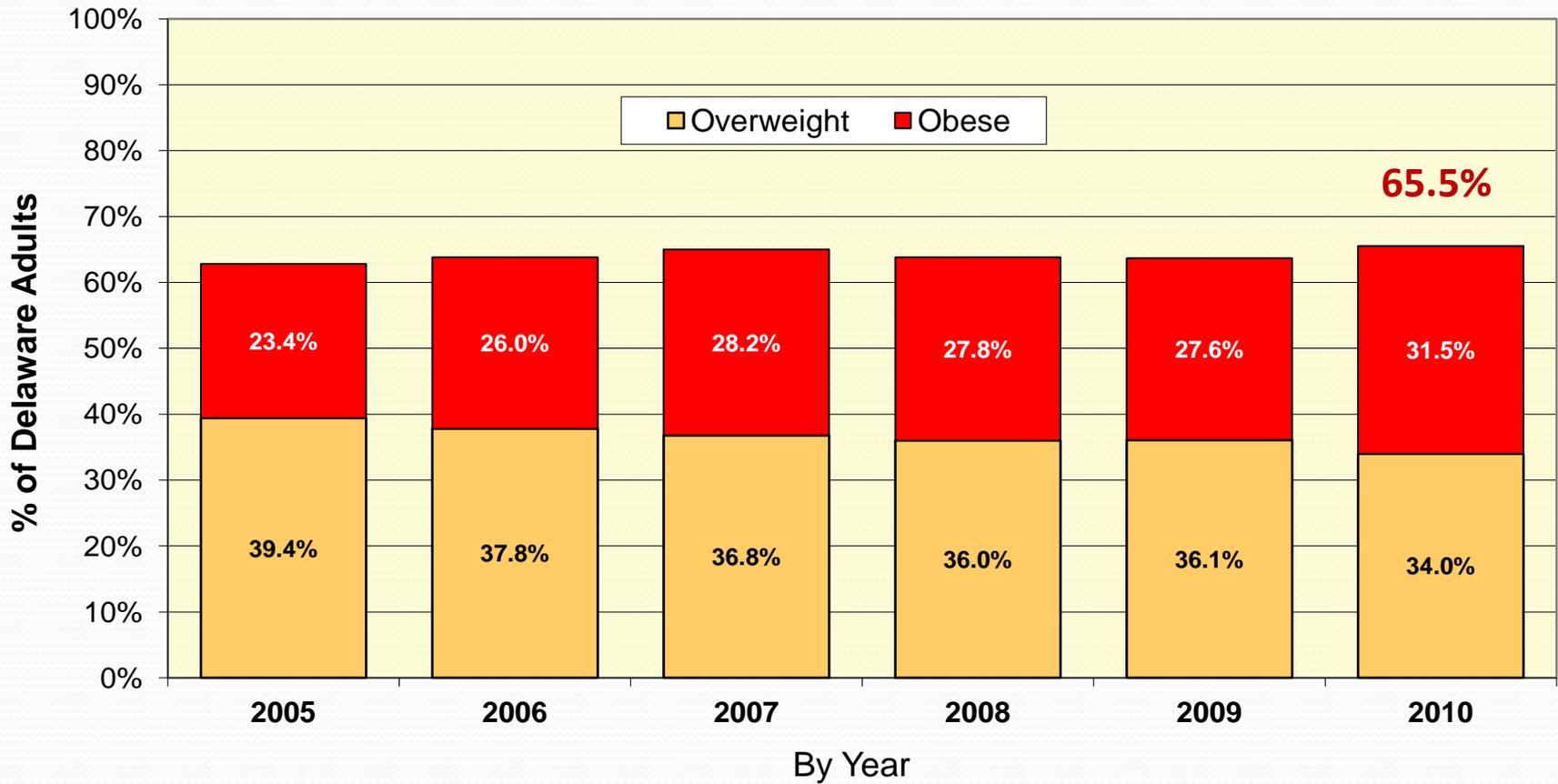
Delaware Adult Obesity Prevalence More Than Doubled in Past 20 Years



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 1990-2010.



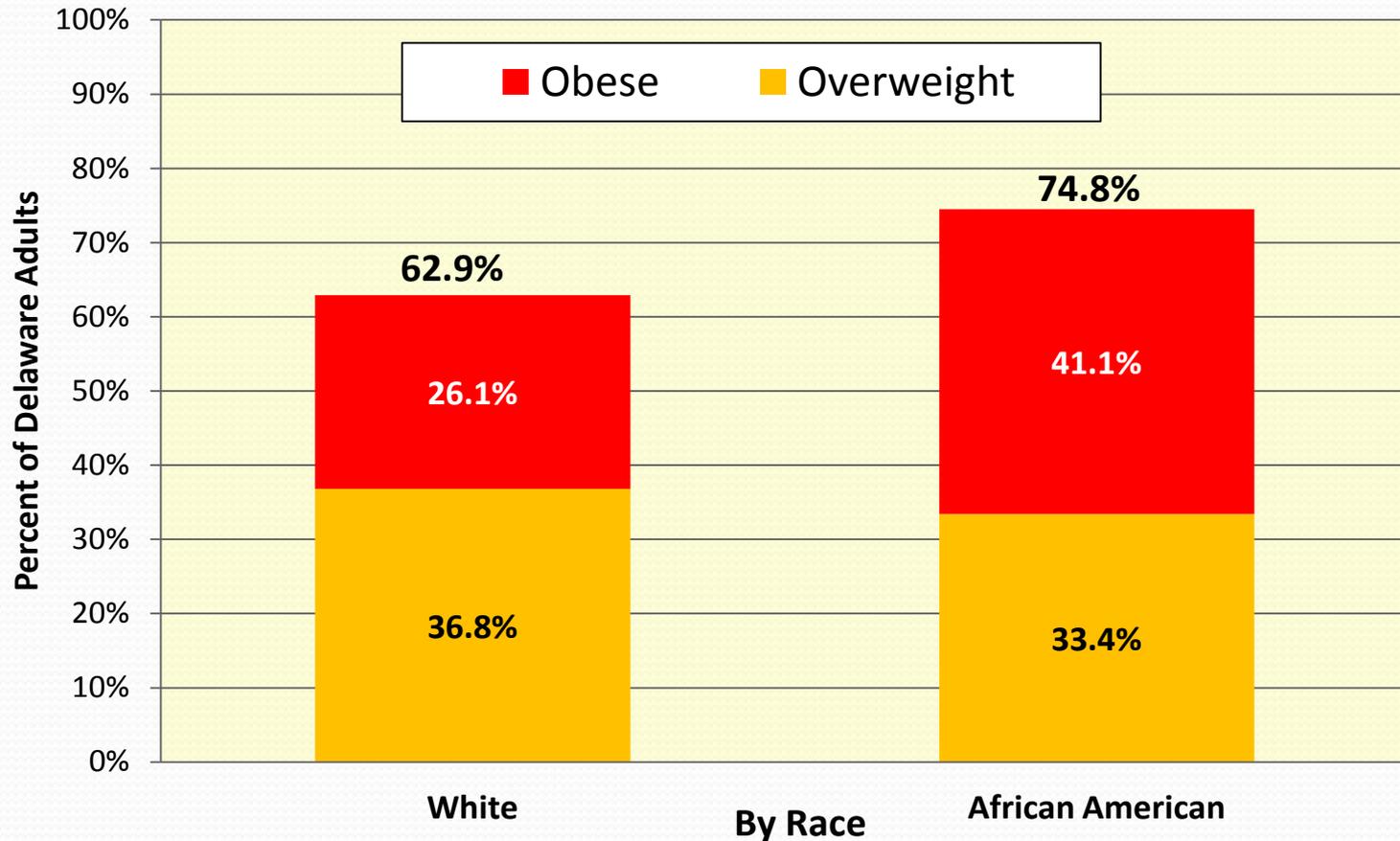
Overweight & Obesity Among DE Adults: 2005-2010



Source: Delaware Health and Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2005-2010.
Overweight = BMI 25-29.9; Obese = BMI \geq 30

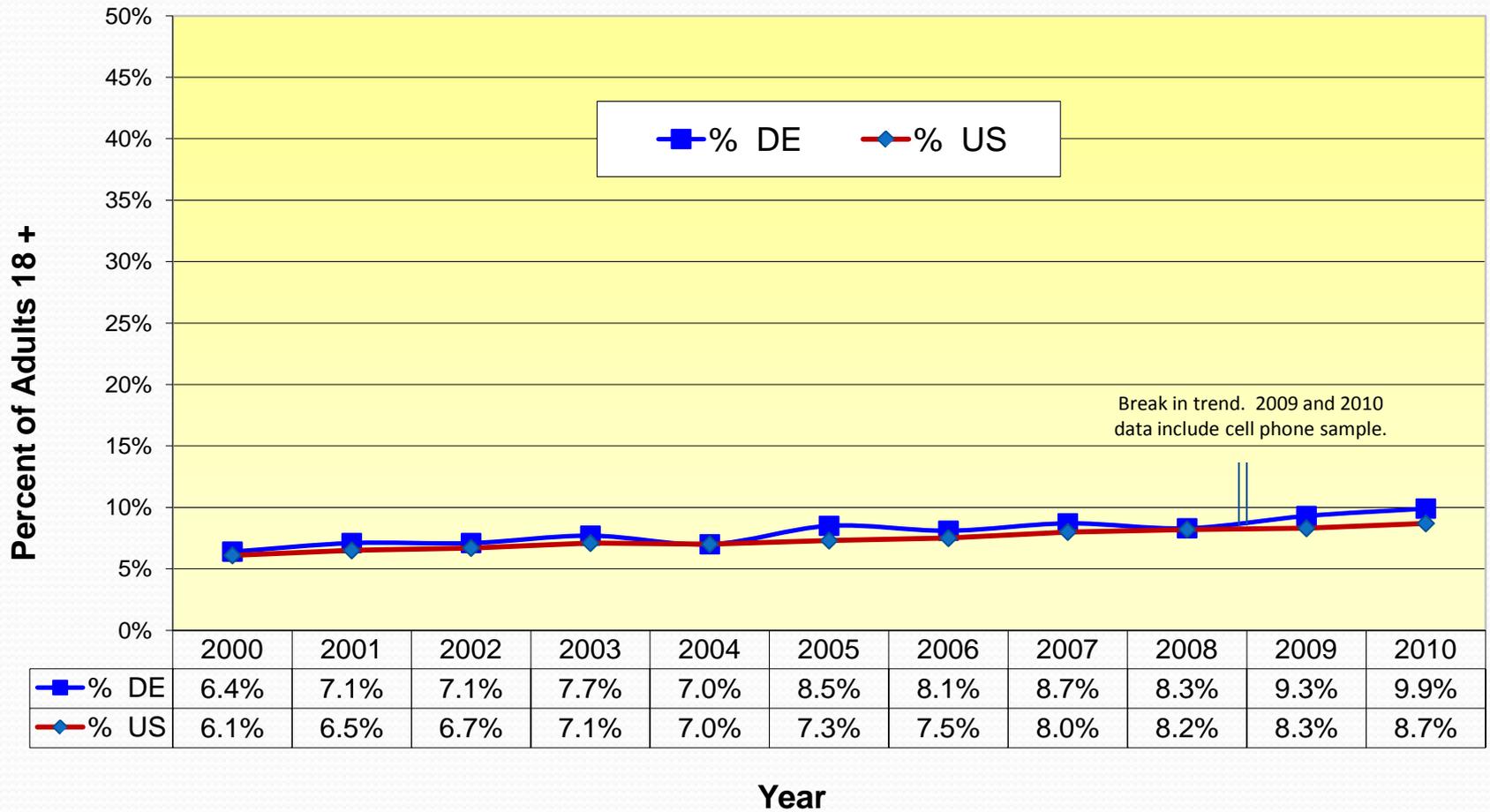
(landline only)

Significant Disparity for Obesity, 2010



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline data only, 2010.
Overweight = BMI 25-29.9; Obesity = BMI \geq 30.

Diabetes Prevalence Trend Among Adults in DE and US 2000-2010



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRRS), 2000-2010.

Obesity & Overweight x County

(landline data only)

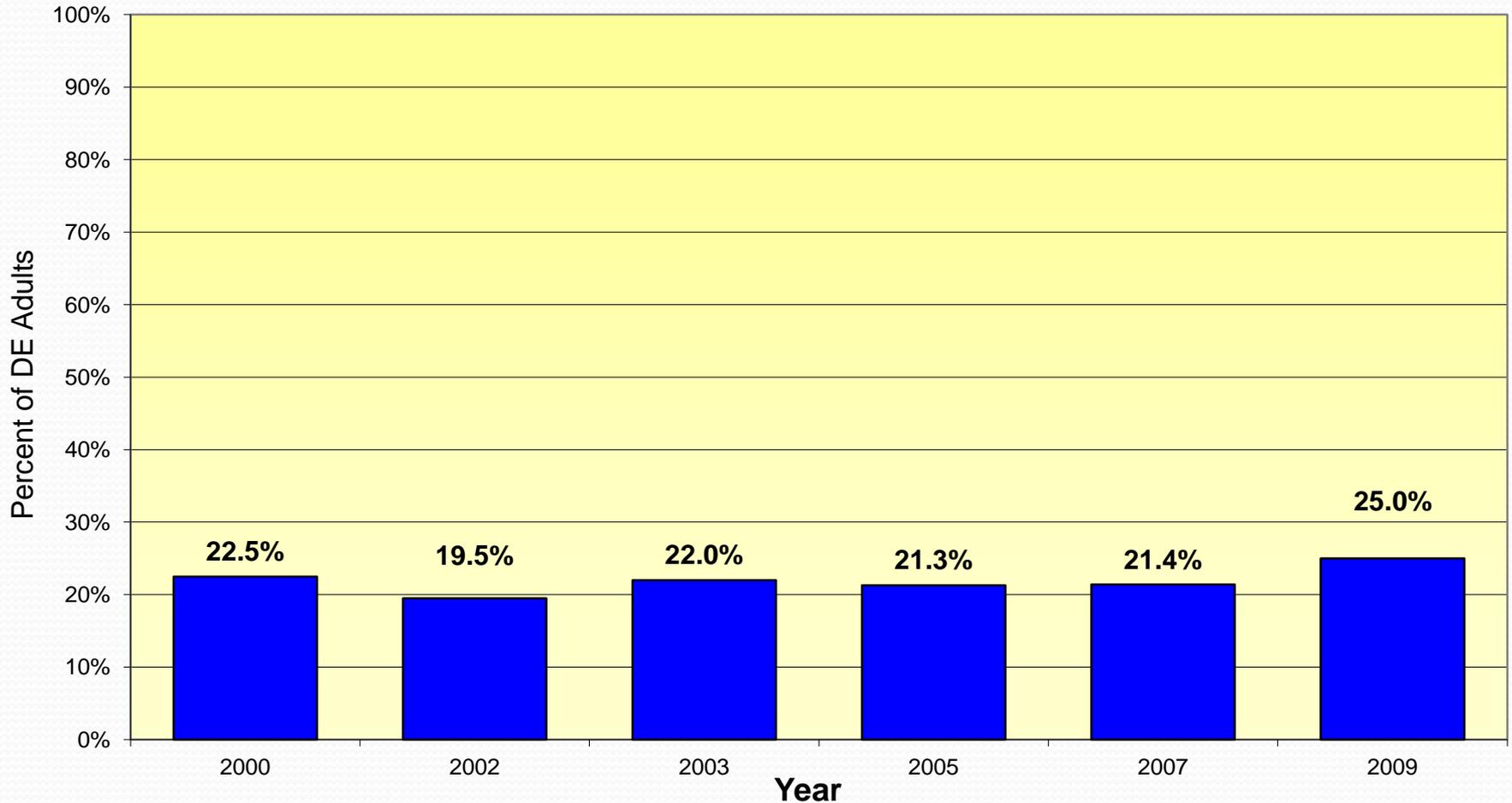
County	Overweight	Obese
New Castle	33.3%	26.8%
Kent	38.8%	31.9%
Sussex	37.7%	31.8%

Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline, 2010.

Fruits and Veggies



Adults Who Eat 5 or More Servings of Vegetables and Fruits Daily: 2000-2009

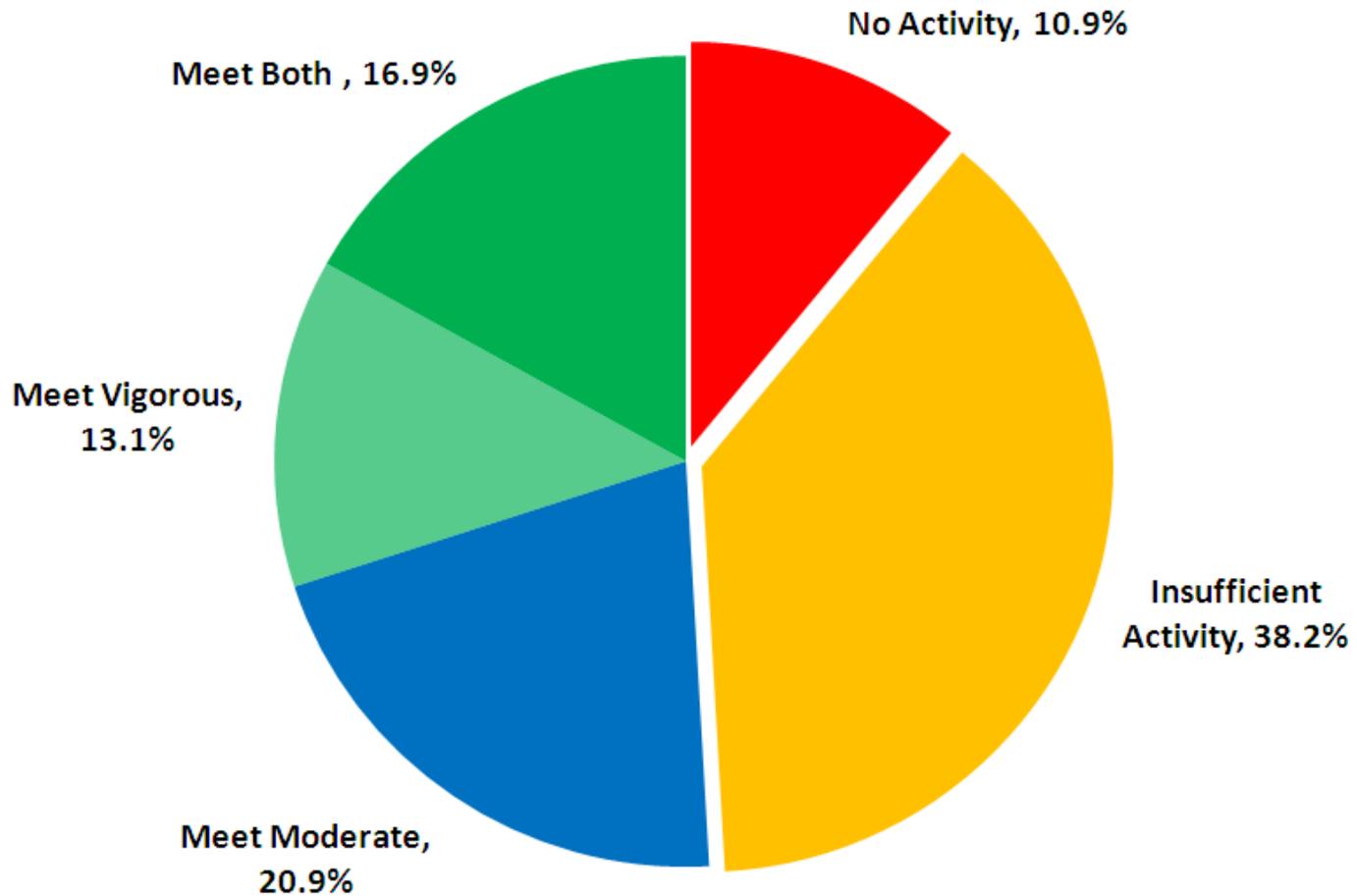


Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline only, 2000-2009. Questions asked in alternate years.

Healthy Physical Activity



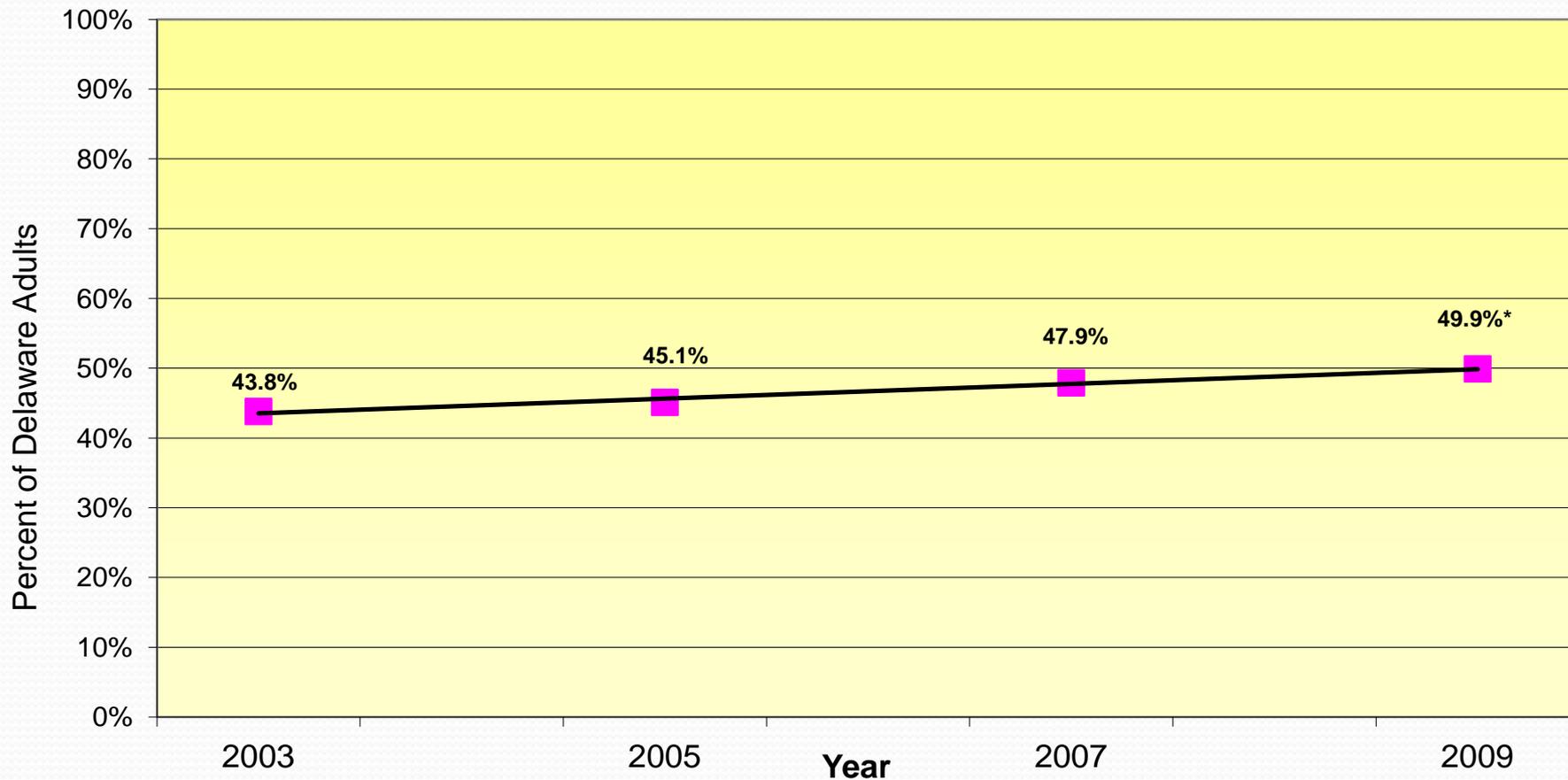
Percent of DE Adults Meeting CDC Recommendations for Physical Activity: 2009



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline only, 2009.

Slow, but Steady Improvement

Delaware Adults Who Meet Recommendations for Moderate and/or Vigorous Physical Activity: 2003-2009



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2003-2009. Questions asked in odd-numbered years. *2009 data are combined landline-cell phone sample with raking weights.

Physical Activity: 2009

- Decreases steadily with age, from 58.3% of 18-24 year olds to 41.3% of those over 65.
- Most of the older adults meet only the recommendations for moderate activity.
- Meeting recommendations for **both** (moderate and vigorous activity) increases with income and education.
- Moderate activity is not significantly impacted by education or income.
- Men (53.8%) are more likely to meet recommendations than women (48.3%).
- There is no significant difference by race/ethnicity.

Cancer Screening

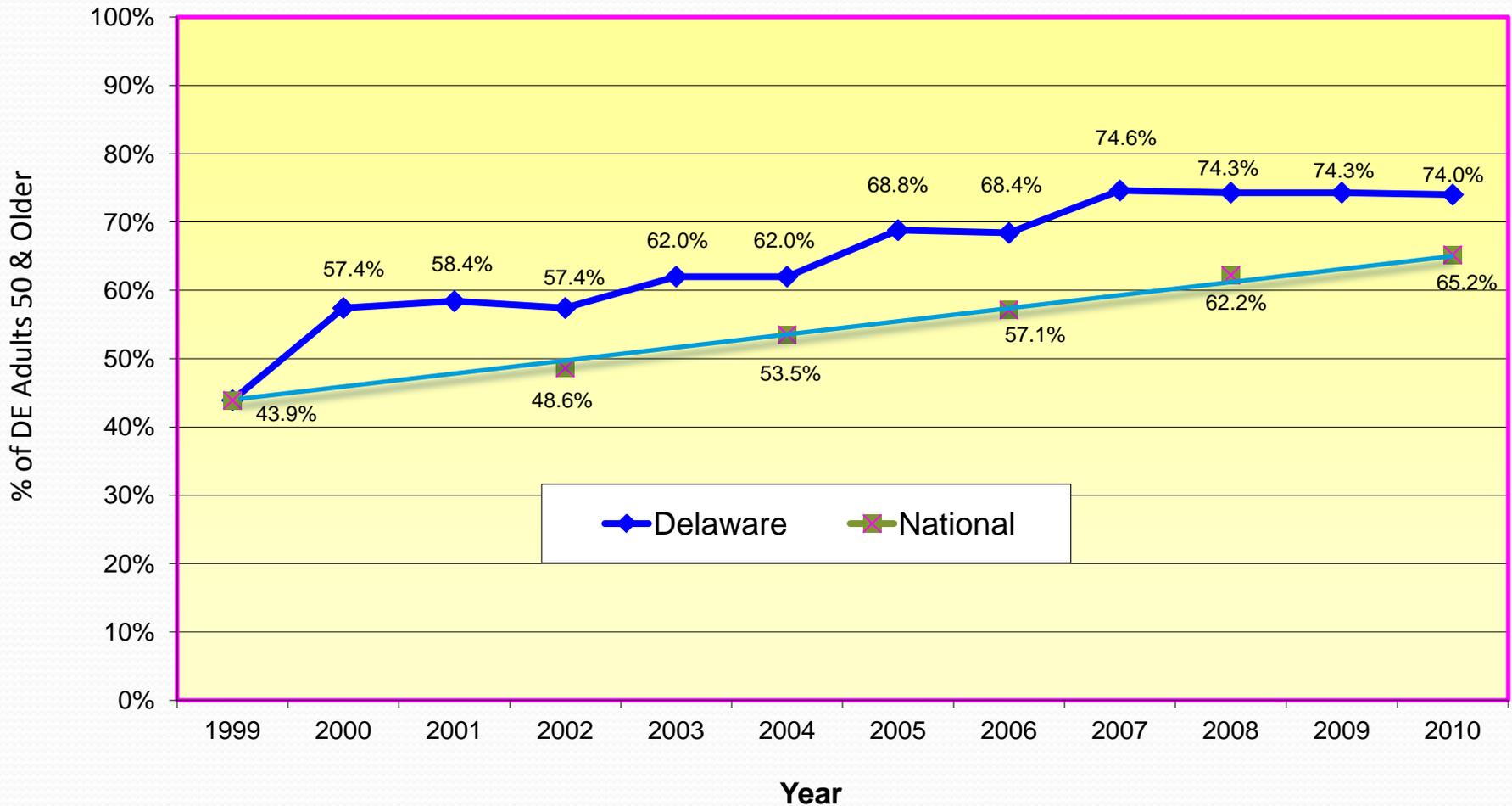
colonoscopy, mammography, Pap testing, prostate



Improvement in CRC Screening

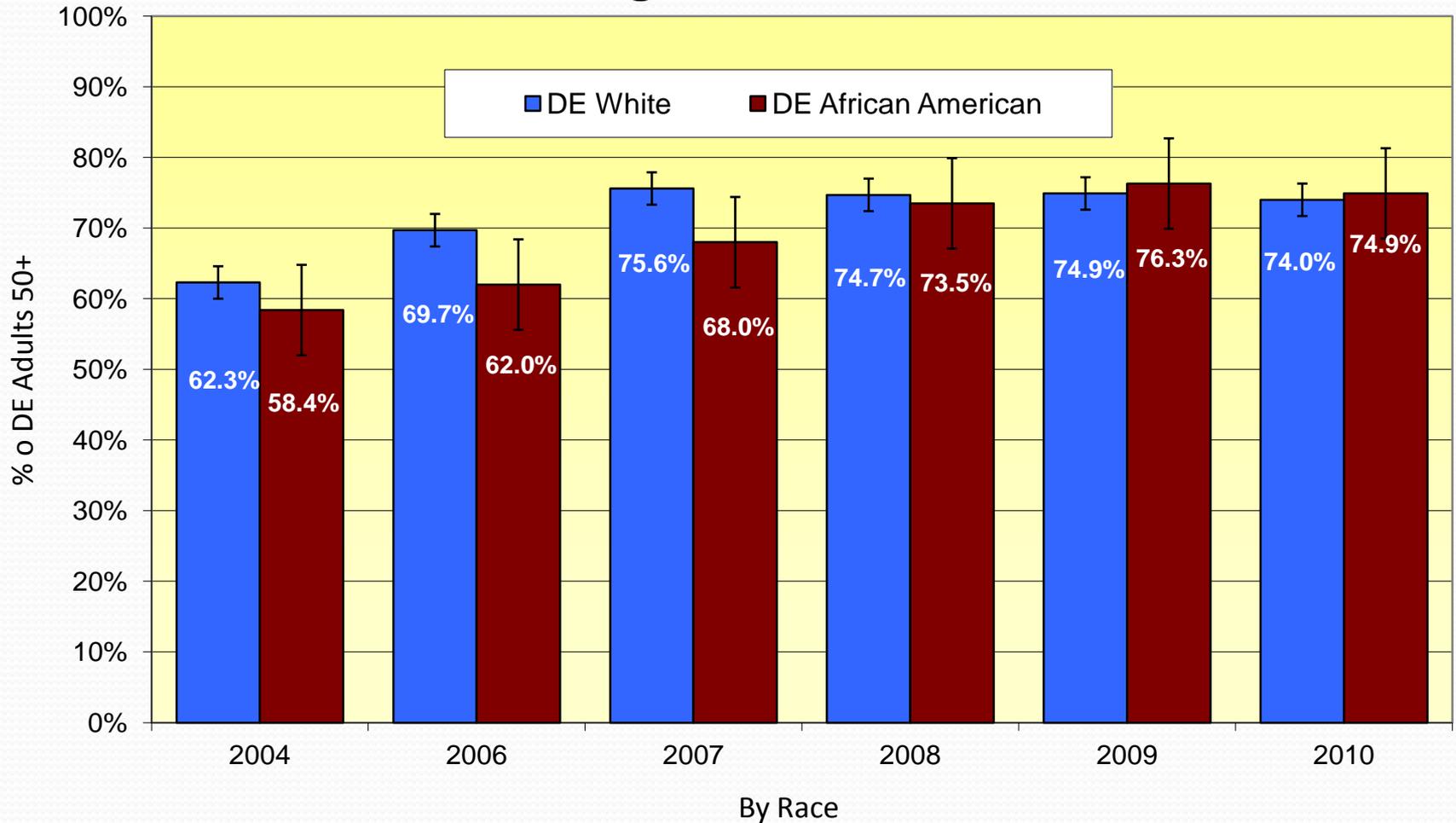
- Delaware is in the **top 5 states** in the nation for prevalence of colorectal screening.
- For the past three years, there has been **no significant disparity** between rates for white and African American adults.
- We do not yet know if the addition of cell phone sampling and new weights will affect the CRC screening data.

Colonoscopies Increased Among Adults 50+; "Ever Had Sigmoidoscopy/Colonoscopy"



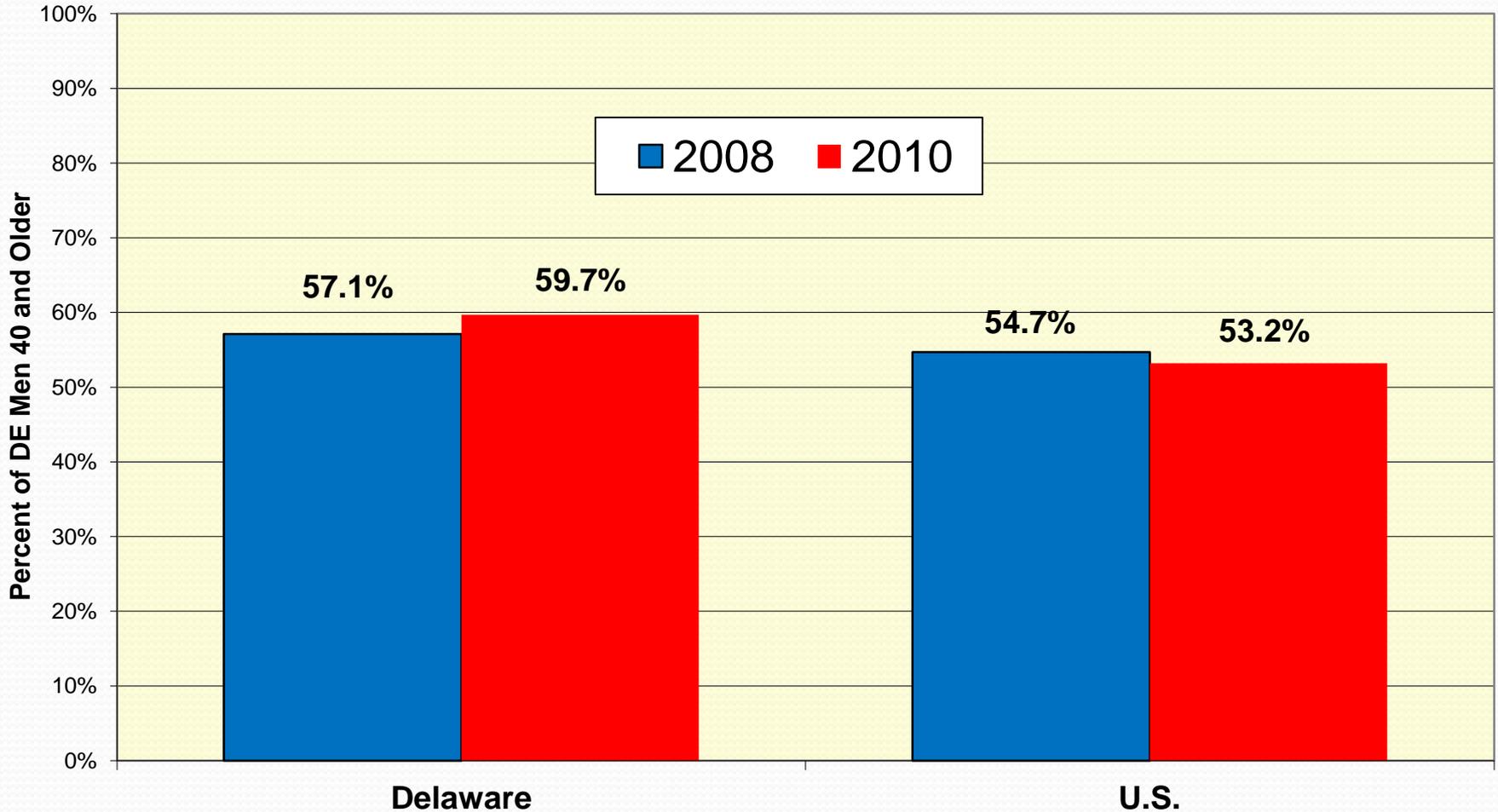
Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 1999-2010.

"Ever Had Sigmoidoscopy/Colonoscopy" DE Adults Age 50 & Older, 2004-2010



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2004-2010.

Delaware Men 40+ Who Had PSA Test in Past 2 Years: DE and US in 2008 & 2010

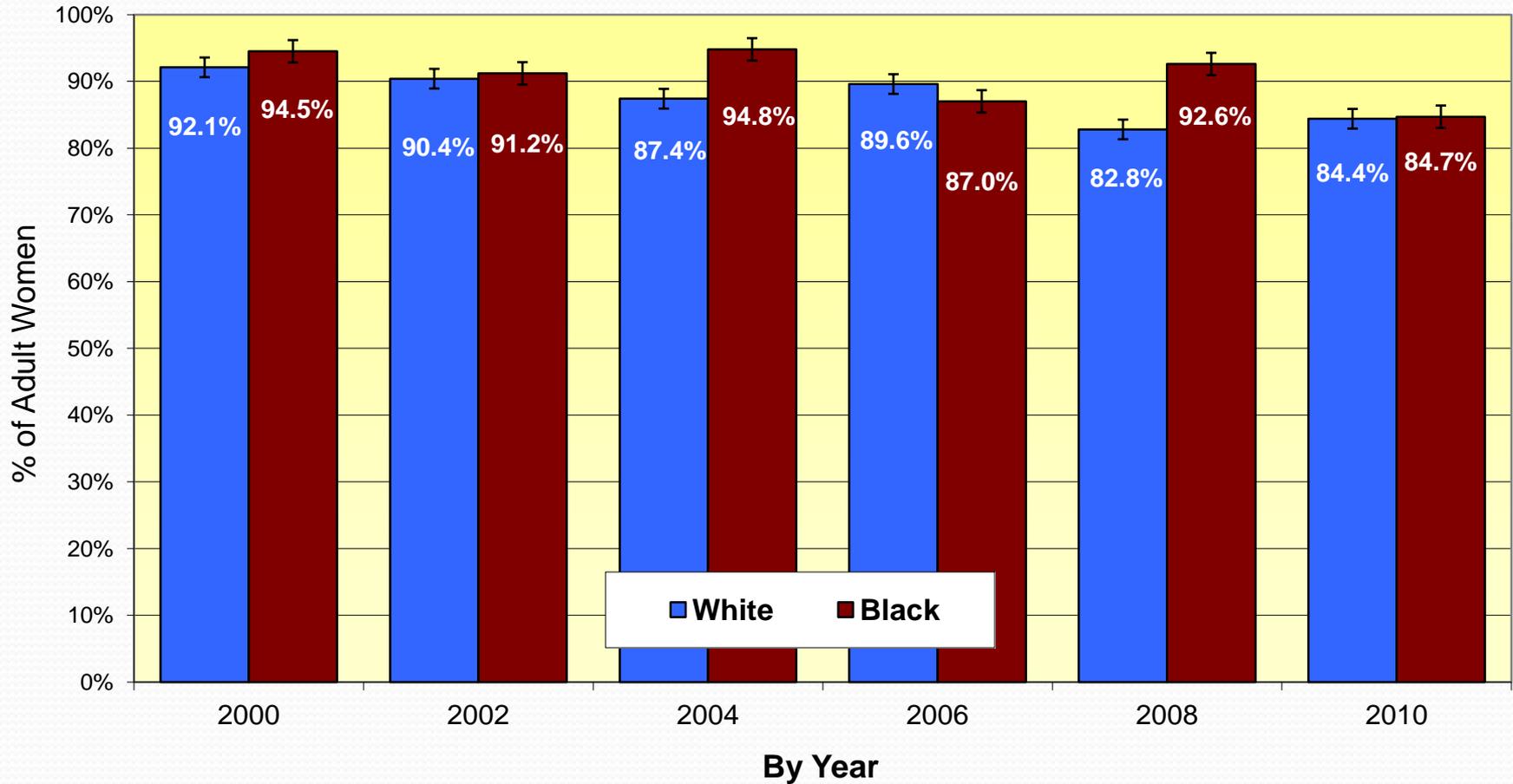


Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline, 2008-2010.

2012 Extra PSA Questions

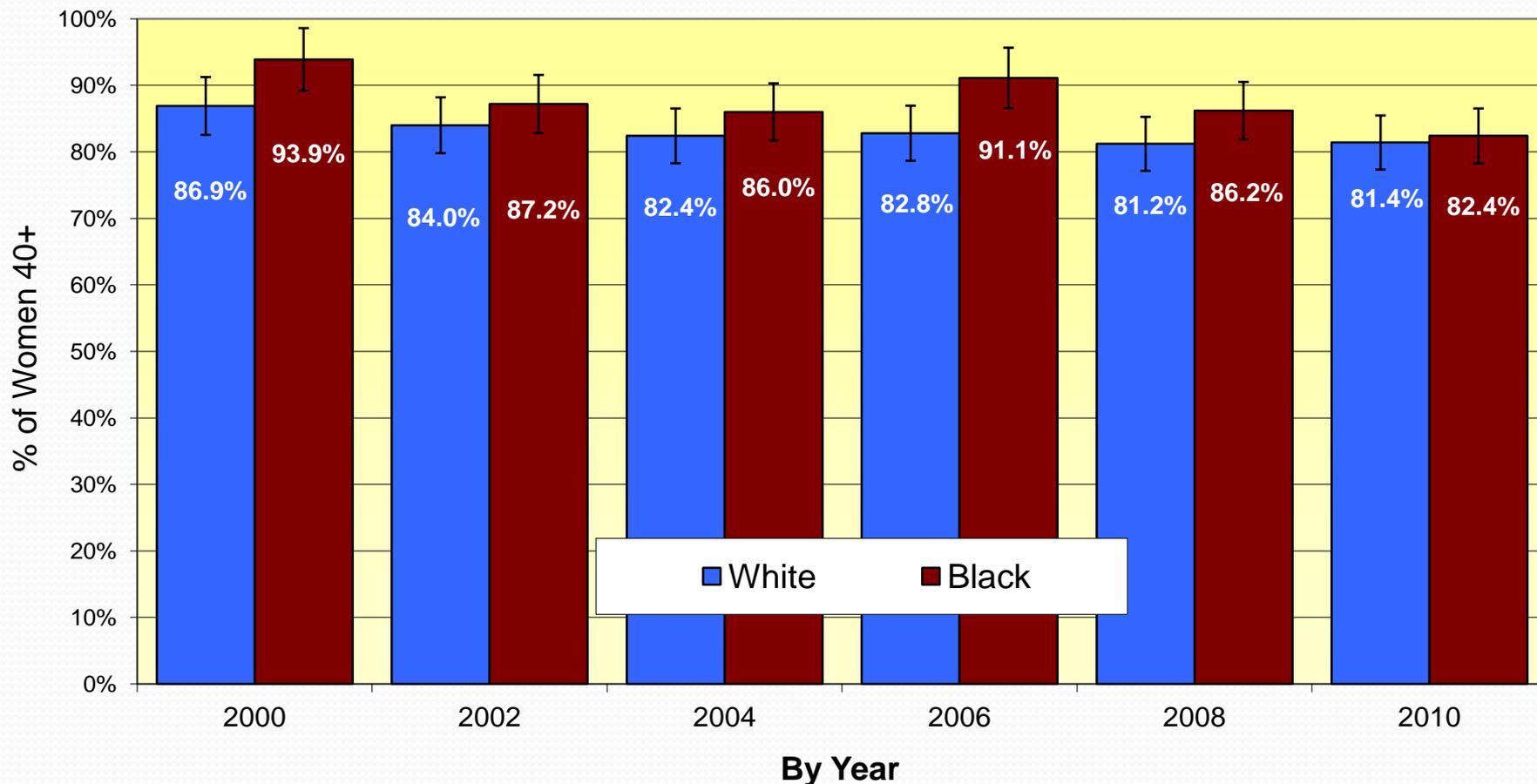
- Decision making module
- Which of the following best describes the decision to have a PSA test done?
 - You made the decision alone
 - Your doctor, nurse or health care provider made the decision alone.
 - You and one or more other persons made the decision together.
 - You don't remember.
- Who made the decision with you?

DE Women 18 and Older Who Have Had Pap Test in Past 3 Years



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline, 2000-2010.

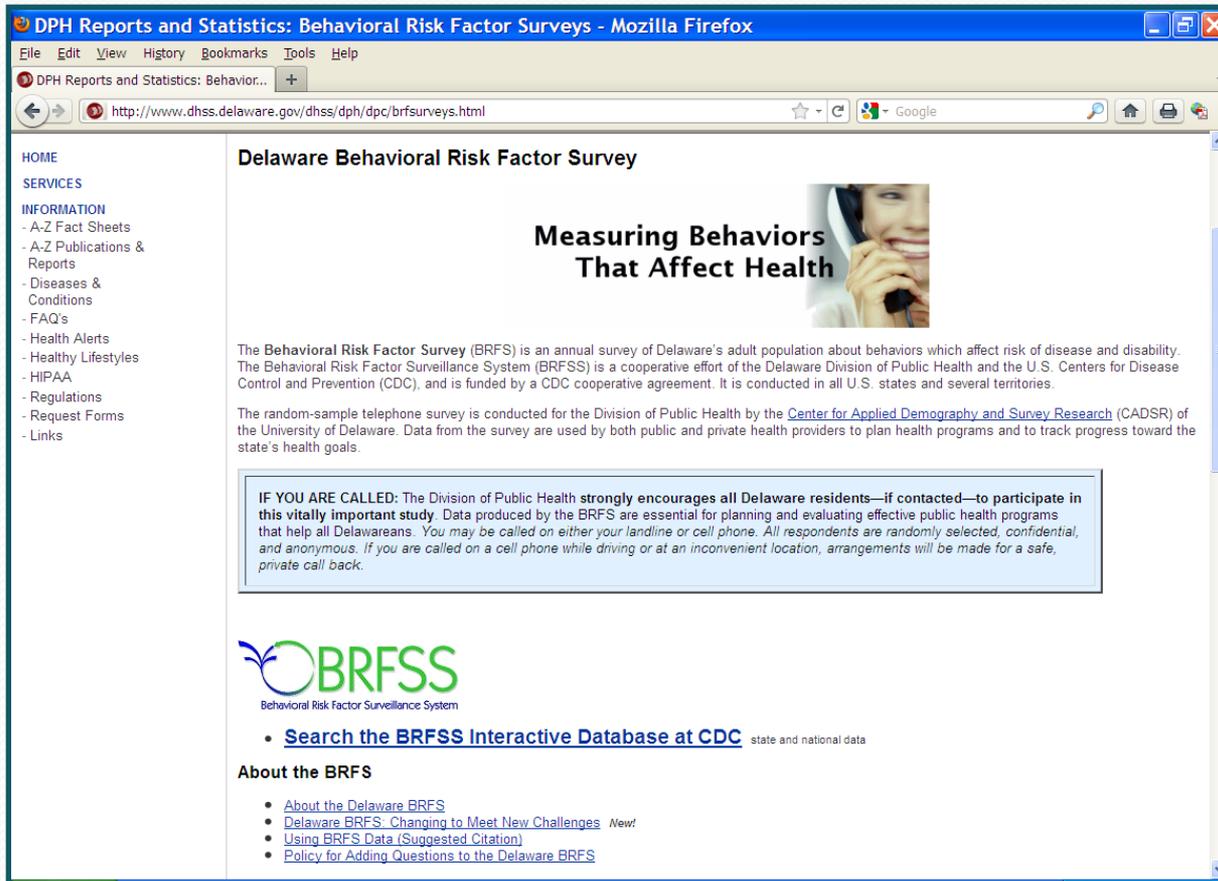
DE Women Age 40+ with Mammogram in Past 2 Years



Source: Delaware Health & Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), landline, 2000-2010.

BRFS on the Web

dhss.delaware.gov/dph/dpc/brfsurveys.html



The screenshot shows a Mozilla Firefox browser window displaying the Delaware Behavioral Risk Factor Survey website. The browser's address bar shows the URL <http://www.dhss.delaware.gov/dhss/dph/dpc/brfsurveys.html>. The website's main heading is "Delaware Behavioral Risk Factor Survey". Below this, there is a sub-heading "Measuring Behaviors That Affect Health" accompanied by a photograph of a woman smiling while talking on a mobile phone. The text explains that the Behavioral Risk Factor Survey (BRFS) is an annual survey of Delaware's adult population, and the Behavioral Risk Factor Surveillance System (BRFSS) is a cooperative effort of the Delaware Division of Public Health and the U.S. Centers for Disease Control and Prevention (CDC). A callout box encourages Delaware residents to participate in the study, stating that data is essential for planning and evaluating public health programs. At the bottom, there is a logo for the Behavioral Risk Factor Surveillance System (BRFSS) and a link to "Search the BRFSS Interactive Database at CDC".

Delaware Behavioral Risk Factor Survey

Measuring Behaviors That Affect Health

The **Behavioral Risk Factor Survey (BRFS)** is an annual survey of Delaware's adult population about behaviors which affect risk of disease and disability. The Behavioral Risk Factor Surveillance System (BRFSS) is a cooperative effort of the Delaware Division of Public Health and the U.S. Centers for Disease Control and Prevention (CDC), and is funded by a CDC cooperative agreement. It is conducted in all U.S. states and several territories.

The random-sample telephone survey is conducted for the Division of Public Health by the [Center for Applied Demography and Survey Research \(CADSR\)](#) of the University of Delaware. Data from the survey are used by both public and private health providers to plan health programs and to track progress toward the state's health goals.

IF YOU ARE CALLED: The Division of Public Health **strongly encourages all Delaware residents—if contacted—to participate in this vitally important study.** Data produced by the BRFS are essential for planning and evaluating effective public health programs that help all Delawareans. You may be called on either your landline or cell phone. All respondents are randomly selected, confidential, and anonymous. If you are called on a cell phone while driving or at an inconvenient location, arrangements will be made for a safe, private call back.

BRFSS
Behavioral Risk Factor Surveillance System

- [Search the BRFSS Interactive Database at CDC](#) state and national data

About the BRFS

- [About the Delaware BRFS](#)
- [Delaware BRFS: Changing to Meet New Challenges](#) *New!*
- [Using BRFS Data \(Suggested Citation\)](#)
- [Policy for Adding Questions to the Delaware BRFS](#)