Connecticut Department of Public Health (DPH)
Diabetes and Heart Disease Statistical Update

Diabetes Prevention & Control Program   **Heart Disease & Stroke Prevention Program**   **April 2013**

In 2011, the Behavioral Risk Factor Surveillance System (BRFSS) began including cell phone interviews and using a new weighting method. The following summarizes the changes in BRFSS methodology and the impact of the changes on diabetes- and heart disease-related BRFSS data.

What is BRFSS?

- BRFSS is a state-based system of health surveys sponsored by the Centers for Disease Control and Prevention (CDC). The BRFSS is the world's largest telephone survey and is conducted in all 50 states. Respondents are randomly selected adults (aged 18 years or older who do not live in institutional settings) within randomly selected households.
- BRFSS data are used to identify and track health behaviors and chronic conditions, track health objectives, evaluate disease prevention activities, and rapidly assess emerging health problems.

What are the changes that have been made to BRFSS?

- The first change is including interview calls made to cell phone numbers.
- The second change is to replace the past weighting method with a more advanced method.

How will these two changes affect BRFSS data?

- Due to the methodology changes, BRFSS data will better represent lower-income and minority populations, as well as populations with lower levels of formal education. It is likely that the changes in methods will result in somewhat higher estimates for the occurrence of behaviors that are more common among younger adults and certain racial and ethnic groups.

Why is it necessary to include and increase the number of survey calls to cell phone numbers?

- The proportion of U.S. households with only cellular telephones is rising steadily.
- Research shows that people who have only cellular phone service tend to be younger, rent instead of own homes, are predominately Hispanic, and tend not to be married compared with persons who have landline telephones. Also, there are attitudinal and behavioral differences between the two groups.
- Because of the differences between the two groups, including households that use cell phones only allows the survey sample to be more representative of the population.

## Why is it necessary to adopt a new method of data weighting?

- Weighting is used to statistically adjust the survey sample to make the sample representative of the population.
- Prior to 2011, CDC weighted BRFSS survey data using post stratification – a method that imposes weights for demographic subgroups in a single process.
- In 2011, BRFSS adopted an advanced weighting method called iterative proportional fitting, also known as "raking."
- Raking incorporates adjustor variables one at a time in an iterative process.
- A key advantage of raking is that many more variables are included compared with post stratification. In addition to the standard demographic variables of age, gender, and race and ethnicity, raking uses variables such as education level, marital status, renter or owner status, and phone source.
- Raking allows the survey sample to more accurately represent the population.

Connecticut Department of Public Health: Community Health and Prevention Section
410 Capitol Avenue, MS#11CDD, Hartford, CT 06134-0308
(860) 509-8251
www.ct.gov/DPH/DiabetesData or www.ct.gov/DPH/HeartStrokeData   Page **1** of **2**

Diabetes and Heart Disease Statistical Update – 2013

What is the impact of the changes on state-level diabetes- and heart-disease related indicators?

- Figure 1 displays a comparison of the 2010 and 2011 prevalence rates of the common diabetes- and heart disease-related risk factors among Connecticut adults (18+ years old). The 2010 data were weighted using post stratification and the 2011 data were weighted using raking.

Figure 1. Unadjusted Prevalence Rates of Diabetes- and Heart Disease-Related Indicators among Adults (18+ Years Old), 2010 Data* vs. 2011 Data, BRFSS, Connecticut
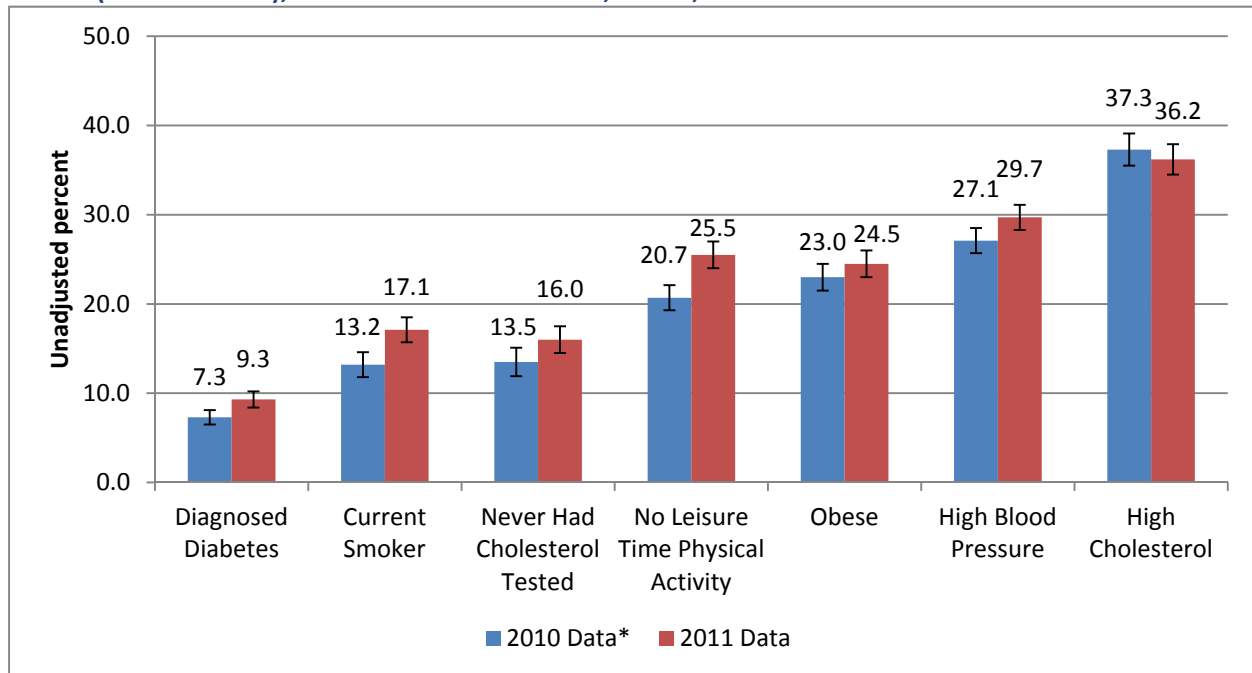
*2009 data are presented for diagnosed high blood pressure, diagnosed high blood cholesterol, and adults who never had their cholesterol tested because data on these indicators are collected in odd-numbered years only.

- The differences in the prevalence rates of diagnosed diabetes, current smoking, and no leisure time physical activity between 2010 and 2011 were statistically significant. A possible explanation for this apparent change is the fact that these risk factors are more prevalent among population groups that are better represented by the revised BRFSS methodology. For example, rates of diagnosed diabetes, current smoking, and no leisure time physical activity tend to be higher among adults with lower household incomes and lower educational attainment. Also, rates of diagnosed diabetes and no leisure physical activity are higher among Black, non-Hispanic and Hispanic adults compared with White, non-Hispanic adults. In addition, rates of current smoking are higher among younger adults compared with older adults (data not shown).

References

- Connecticut DPH. 2013. Connecticut BRFSS, 2011 unpublished data. CT DPH, Hartford, CT.
- CDC. 2012. Behavioral Risk Factor Surveillance System — Improving Survey Methodology Fact Sheet. CDC, Atlanta, GA. Available at www.cdc.gov/surveillancepractice/reports/brfss/brfss.html.
- CDC. 2012. Changes to the Behavioral Risk Factor Surveillance System – Frequently Asked Questions. CDC, Atlanta, GA.