

The Connecticut Behavioral Risk Factor Surveillance System (BRFSS): Tracking Adult Immunization Status in the State

Presented to
The Connecticut Immunization Coalition

by
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What is the CT BRFSS?

- Ongoing anonymous and voluntary statewide phone survey (landline and cell phone);
- Connecticut adult residents (18 years old and older);
- Supported by U.S. Centers for Disease Control and Prevention (CDC) to all states in country;
- Offered in Connecticut since 1989.

How is the CT BRFSS Conducted?

- Households randomly selected and contacted from listed and unlisted phone numbers;
- Surveys conducted mostly in evenings and weekends, or by appointment;
- Toll-free number available for interested respondents;
- One adult household member selected at random;
- Private residences - dormitories recently included - no group quarters.

How are CT BRFSS data processed?

- Annual survey data available about 8 months after close of calendar year;
- CDC conducts quality control, assigns a weight to each response;
- Weighting methodology is complex, adjusted for underrepresented groups;
- Raking ratio estimation based on gender, age, race/ethnicity, education, marital status, own/rent status, and telephone usage.

What core questions are in the CT BRFSS?

- **Core Questions (all years):** Health status, healthy days, health care access, inadequate sleep, chronic health conditions, demographics, tobacco use, alcohol consumption, **immunization (flu & pneumococcal)**, seatbelt use, HIV/AIDS.
- **Core Questions (odd years):** Hypertension awareness, cholesterol awareness, fruits and vegetables, physical activity, arthritis burden.
- **Core Questions (even years):** Exercise, oral health, drinking and driving, breast and cervical cancer screening, prostate cancer screening, colorectal cancer screening.

What other topics are in the CT BRFSS?

- **Modules:** Diabetes management, industry & occupation, tobacco products, sexual orientation and gender identity, random child selection (race/ethnicity, age), childhood asthma prevalence;
 - Shingles (2011, 2012, 2014);
 - HPV (2011-2013);
 - Adult Tdap (2013);
- **State-added questions:** Insurance type, income, child questions, private well water, genetics - breast and ovarian cancer, infertility, drug misuse, asthma call back.

How are CT BRFSS topics selected?

- Planning workgroup representing multiple state agencies;
 - Department of Public Health, includes Infection Disease Section;
 - Department of Social Services, Medicaid program;
 - Office of Early Childhood;
 - Department of Mental Health and Addictions Services;
- Review begins in August of prior year, select about seven minutes of questions, 25 minutes maximum interview time;
- **Selection criteria:** Relevance to public health, value added, good timing, appropriate for survey, simple execution, plan to use data, funding available, expected quality of data.

How are data from the CT BRFSS used?

HEALTH INDICATORS AND RISK BEHAVIORS IN CONNECTICUT: 2014

Results of the Behavioral Risk Factor Surveillance Survey (BRFSS)

March, 2016



Adult Influenza and Pneumococcal Vaccinations

The influenza (flu) virus can cause serious infections, hospitalizations and even death in some susceptible individuals. Seasonal flu vaccines are recommended for everyone over six months of age.⁵⁴ Respondents were asked if they had received the seasonal flu vaccine, either as a shot or nasal spray mist. All respondents were asked if they had received the flu vaccine in the past 12 months.

Pneumonia is a lung infection that can be caused by viruses, bacteria, or fungi. It is the leading cause of death of children under five worldwide.⁵⁴ Infection caused by some types of pneumococcal bacteria can be prevented by a pneumococcal or 'pneumonia' vaccine.⁵⁵ BRFSS respondents were asked if they had ever received the pneumococcal vaccine, which is recommended to children under five years old, adults over 65 years old, and adults at high risk for disease (HIV infection, organ transplantation, leukemia, and severe kidney disease). Results are shown in **Table 29**.

Table 29: Adult Influenza and Pneumococcal Vaccinations, CT 2014

Demographic Characteristics	Had a Flu Vaccine in Past Year			Ever Had Pneumonia Shot		
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Total	42.9	41.4 - 44.5	29.6	28.2 - 31.1		
Age						
18-34 years old	28.5	24.9 - 32.2	15.9	12.5 - 19.2		
35-54 years old	37.4	34.8 - 39.9	14.3	12.4 - 16.3		
55 years old and over	58.6	56.6 - 60.7	50.7	48.6 - 52.9		
Gender						
Male	39.0	36.7 - 41.3	27.5	25.1 - 29.7		
Female	46.7	44.5 - 48.8	31.5	29.5 - 33.4		
Race/Ethnicity						
Non-Hispanic White	46.9	45.0 - 48.7	32.6	30.9 - 34.3		
Non-Hispanic Black	36.0	30.3 - 41.7	23.9	19.2 - 28.6		
Hispanic or Latino/a	32.3	27.6 - 37.0	18.3	14.3 - 22.3		
Income						
Less than \$35,000	40.2	37.2 - 43.3	35.5	32.5 - 38.6		
\$35,000-\$74,999	41.7	38.5 - 45.0	32.1	28.9 - 35.3		
\$75,000 and more	46.2	43.6 - 48.9	21.1	19.0 - 23.1		
Insurance Status						
Insured	45.3	43.7 - 47.0	30.8	29.3 - 32.3		
Not insured	18.9	13.9 - 23.9	*	* - *		
Disability						
Yes	46.1	42.5 - 49.6	44.5	40.8 - 48.1		
No	42.2	40.4 - 43.9	26.0	24.4 - 27.5		
Education						
HS graduate or less	38.3	35.6 - 41.0	30.3	27.7 - 33.0		
More than HS education	45.8	43.9 - 47.7	29.1	27.4 - 30.8		

Connecticut Department of Public Health | Clinical Preventive Practices

All reports available at:
www.ct.gov/dph/BRFSS

Adverse Childhood Experiences in Connecticut

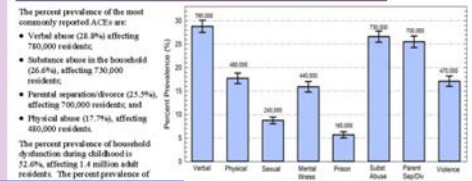
Health Statistics and Surveillance Section
State of Connecticut, Department of Public Health

Definitions & Data Source

Adverse Childhood Experiences (ACEs) are experiences typically reported among adults when they were children less than 18 years of age. There are a total of eight ACEs grouped into two types: Abuse, which includes verbal, physical, and sexual abuse; and Household Dysfunction, which is witnessed as a child and includes mental illness, incarceration, substance abuse, parental separation/divorce, and domestic violence.

Estimates of ACEs in Connecticut were obtained from questions in the Connecticut Behavioral Risk Factor Surveillance System (CT BRFSS), the state's health survey, from September through December, 2012, using previously published methods.¹ A total of 2,481 responses were recorded to the ACEs questions. The CT-BRFSS is a CDC-sponsored voluntary landline cell phone population-based survey of randomly selected adults in the state that monitors the health and well-being of its residents.

Types of ACEs in Connecticut



Connecticut State Department of Public Health

Association between pregnancy planning and health behaviors: Results from the Behavioral Risk Factor Surveillance System (BRFSS) in seven states, 2013

Carol L. Stone,¹ using anonymous responses from randomly selected adult volunteers in Connecticut, Kentucky, Massachusetts, Mississippi, Ohio, Texas, and Utah

Posted on web September, 2016

BACKGROUND: To have the best pregnancy outcomes, women should be as healthy and ready for pregnancy as possible. This requires reduced unhealthy behaviors and increased healthy behaviors among women before pregnancy. **STUDY QUESTION:** The purpose of this study was to evaluate if women planning pregnancy were more likely to engage in healthy behaviors than those who were not planning children. **METHODS:** Analysis was conducted from reproductive health questions offered in the Behavioral Risk Factor Surveillance System (BRFSS) during 2013, by seven states in the U.S. (Connecticut, Kentucky, Massachusetts, Mississippi, Ohio, Texas, and Utah). Analysis was conducted by multivariate logistic regression, among women 18-44 years old who were not pregnant (N=11,889). Outcomes were leisure activity, fruit and vegetable consumption, seatbelt use, check-up in the past year, flu vaccination in the past year, as well as current cigarette smoking, heavy drinking, and binge drinking. The independent variable was pregnancy planning by either timing of plans (not planning (ref), planning within two years, and planning in two or more years) or by history of previous births (no children/not planning (ref), plans with no children, and plans with one or more children). Covariates were age (18-34 years, 35-44 years old), housing type (own, rent/other), body mass index (not overweight/obese, overweight, obese), and race/ethnicity (non-Hispanic White, Minority race/ethnicity). **RESULTS:** Women planning pregnancy within two years were 2.1 times less likely to be heavy drinkers (OR=0.46, 95% CI: 0.25, 0.84). The two family planning variables did not contribute significantly to leisure activity, fruit and vegetable consumption, or check-up or flu vaccination in the past 12 months ($p > 0.10$). Among women without children, those planning pregnancy were 1.9 times more likely to be current cigarette smokers (95% CI: 1.4, 2.7), but 2.0 times more likely to always wear a seatbelt (95% CI: 1.4, 2.8). **CONCLUSIONS:** Generally, pregnancy planning was not a significant factor for healthy behaviors among women of childbearing age, and compared to women without plans for pregnancy, women planning pregnancy were no more likely to reduce unhealthy behaviors. Educational campaigns are needed to raise awareness about the importance of family planning and readiness for pregnancy.

Introduction

Preconception care for women involves the care received from a licensed health professional that is focused on maximizing health before pregnancy [1, 2]. Preconception care is also the care provided to all women of reproductive age who are either planning pregnancy or who may plan pregnancy during their reproductive life stage. This emphasis

on health before pregnancy is linked to healthy and uncomplicated deliveries, and ultimately, healthy mothers and babies [3].

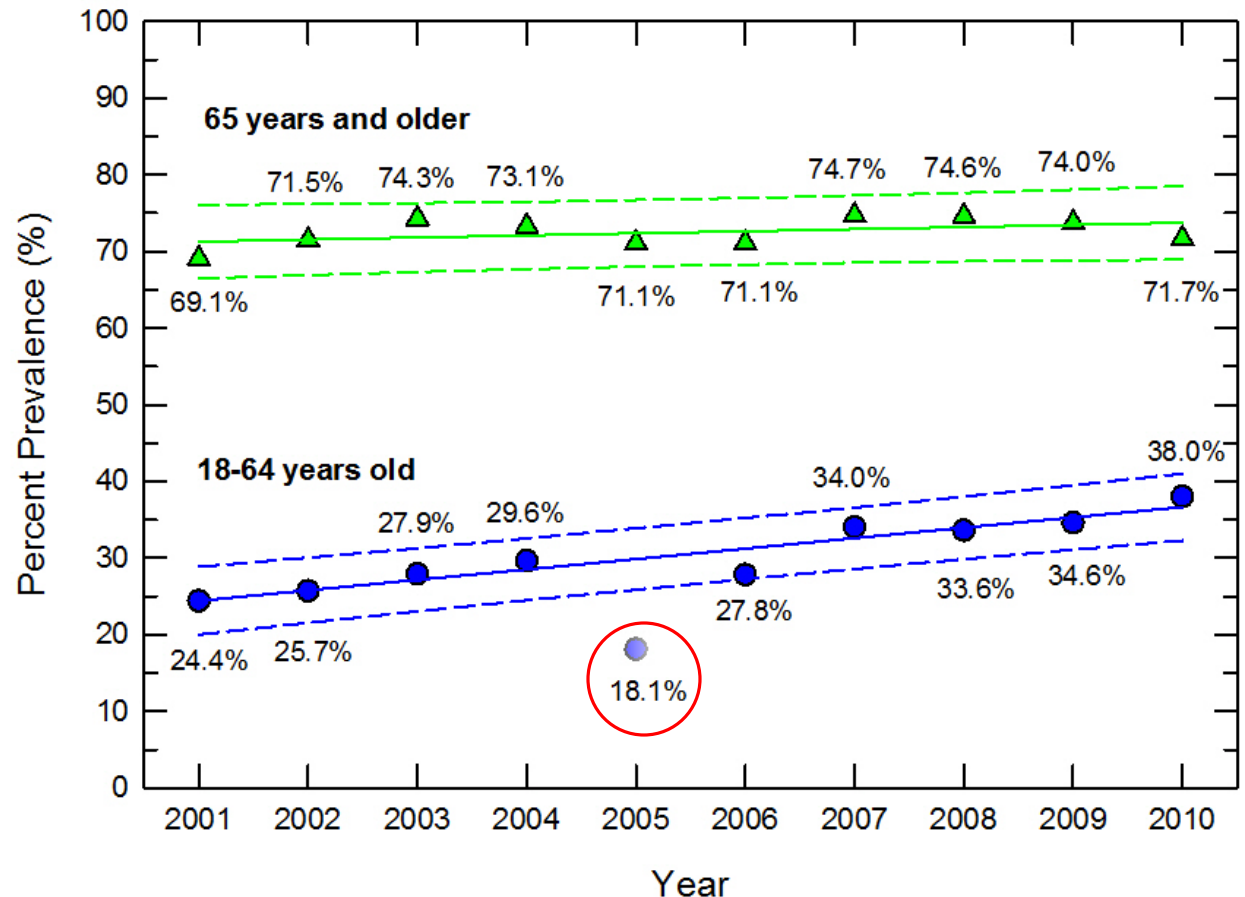
Care for women before pregnancy is especially important for those with plans for imminent pregnancy. For all women to be as healthy and ready for pregnancy as possible, risk behaviors, such as drinking and smoking, need to be reduced or eliminated well in advance of pregnancy [4]. Recommended behaviors, such as receiving recommended vaccinations and eating nutritious meals, need to be increased.

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Trend in Adult Immunizations, 2001-2010

Flu vaccinations among adults 18-64 years old increased significantly from 24.4% in 2001 to 38.0% in 2010;

No significant change occurred among adults 65 years old and older.



Source:

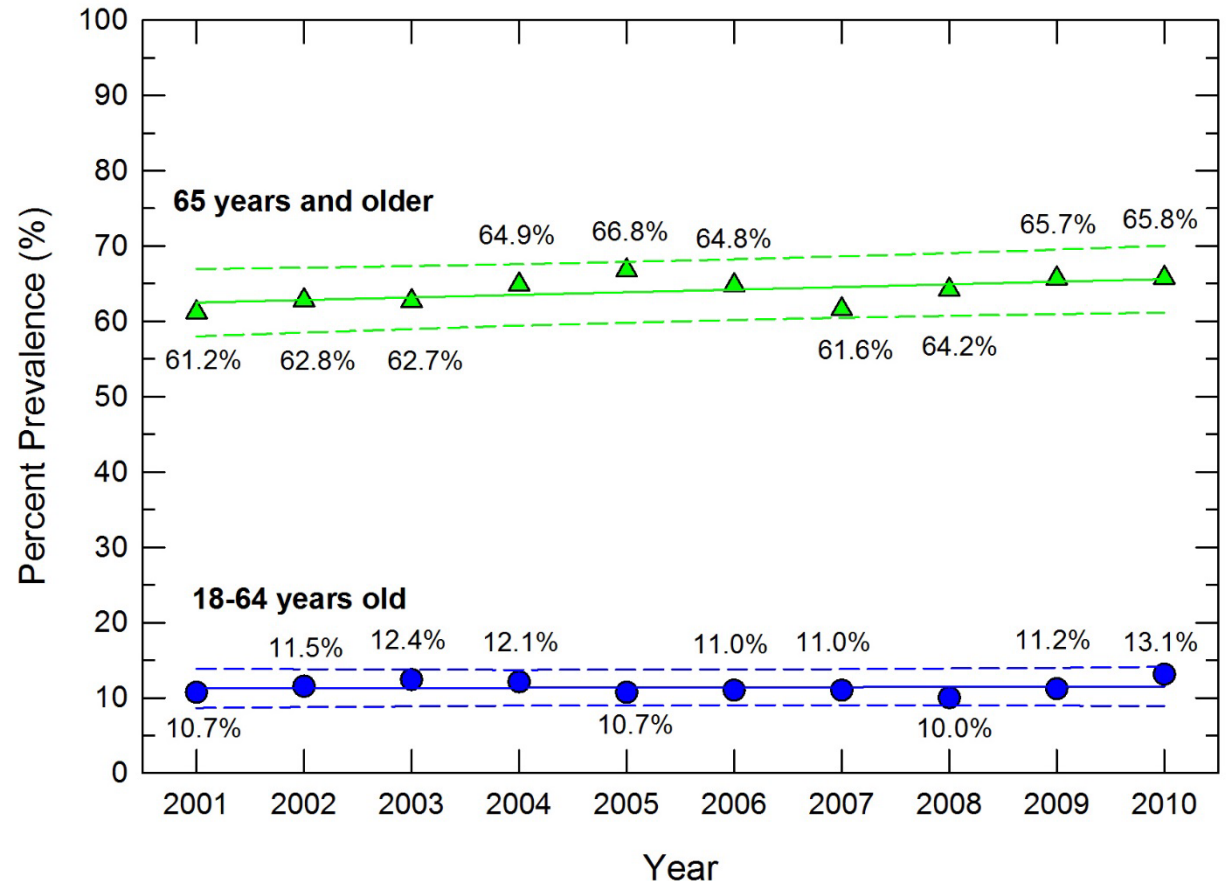
CT Epidemiologist 35(6):23-24, http://www.ct.gov/dph/lib/dph/infectious_diseases/ctepinews/vol35no6.pdf.

Stone C (2015), http://www.ct.gov/dph/lib/dph/hisr/pdf/flu_vaccine_technical_report_2001-2010.pdf.

Trend in Adult Immunizations, 2001-2010

Pneumococcal vaccinations among adults 65 years old and older increased significantly from 61.2% in 2001 to 65.8% in 2010;

Vaccinations among adults 18-64 years old did not increase significantly from 2001 to 2010.

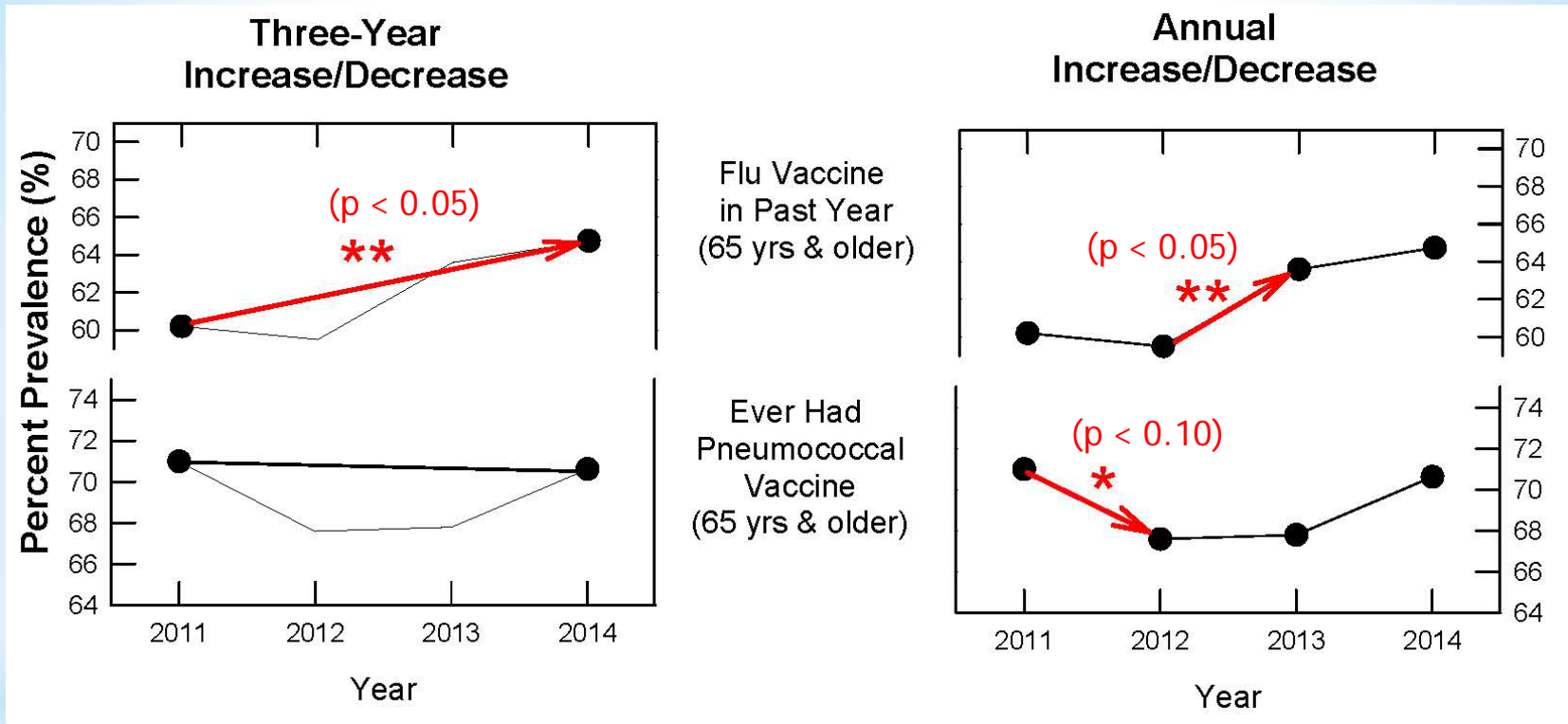


Source:

CT Epidemiologist 35(6):23-24, http://www.ct.gov/dph/lib/dph/infectious_diseases/ctepinews/vol35no6.pdf.

Stone C (2015), http://www.ct.gov/dph/lib/dph/hisr/pdf/flu_vaccine_technical_report_2001-2010.pdf.

Recent Changes in Adult Immunizations (65 years old and older), 2011-2014



There was a significant increase in flu vaccinations from 2011 - 2014 among adults 65 years old and older, attributed to a significant increase from 2012 to 2013. There was no significant increase in pneumococcal vaccinations during the same time period.

Source:

Stone C (2016), http://www.ct.gov/dph/lib/dph/hisr/pdf/health_indicator_trend_ct_brfss_2011-2014.pdf.

Flu and Pneumococcus, 2014

Compared to their counterparts, prevalence of flu and pneumococcal vaccination among CT residents was greater for:

- Older adults;
- Women;
- Non-Hispanic White;
- Insured; and
- More than a high school degree.

Source:
Stone C and coworkers
(2016),
http://www.ct.gov/dph/lib/dph/hisr/pdf/brfss2014_ct_report.pdf.

Demographic Characteristics	Had a Flu Vaccine in Past Year			Ever Had Pneumonia Shot		
	%	95% Confidence Interval		%	95% Confidence Interval	
Total	42.9	41.4	44.5	29.6	28.2	31.1
Age						
18-34 years old	28.5	24.9	32.2	15.9	12.5	19.2
35-54 years old	37.4	34.8	39.9	14.3	12.4	16.3
55 years old and over	58.6	56.6	60.7	50.7	48.6	52.9
Gender						
Male	39.0	36.7	41.3	27.5	25.3	29.7
Female	46.7	44.5	48.8	31.5	29.5	33.4
Race/Ethnicity						
Non-Hispanic White	46.9	45.0	48.7	32.6	30.9	34.3
Non-Hispanic Black	36.0	30.3	41.7	23.9	19.2	28.6
Hispanic or Latino/a	32.3	27.6	37.0	18.3	14.3	22.3
Income						
Less than \$35,000	40.2	37.2	43.3	35.5	32.5	38.6
\$35,000-\$74,999	41.7	38.5	45.0	32.1	28.9	35.3
\$75,000 and more	46.2	43.6	48.9	21.1	19.0	23.1
Insurance Status						
Insured	45.3	43.7	47.0	30.8	29.3	32.3
Not Insured	18.9	13.9	23.9	*	*	*
Disability						
Yes	46.1	42.5	49.6	44.5	40.8	48.1
No	42.2	40.4	43.9	26.0	24.4	27.5
Education						
HS graduate or less	38.3	35.6	41.0	30.3	27.7	33.0
More than HS education	45.8	43.9	47.7	29.1	27.4	30.8
<i>Estimates marked with a "*" are not reported because their coefficients of variation are at least 15% (see page 13).</i>						

Shingles, 2014

Compared to their counterparts, prevalence of shingles vaccination among CT residents was greater for:

- Older adults;
- No disability; and
- More than a high school degree

Source:
Stone C and coworkers (2016),
http://www.ct.gov/dph/lib/dph/hisr/pdf/brfss2014_ct_report.pdf.

Demographic Characteristics	%	95% Confidence Interval	
Total	21.1	19.7	22.6
Age			
50-54 years old	4.1	2.3	5.9
55 years old and over	25.9	24.2	27.7
Gender			
Male	20.9	18.7	23.1
Female	21.3	19.5	23.2
Race/Ethnicity			
Non-Hispanic White	23.4	21.8	25.0
Non-Hispanic Black	*	*	*
Hispanic or Latino/a	*	*	*
Income			
Less than \$35,000	16.4	13.8	19.0
\$35,000-\$74,999	23.9	20.9	27.0
\$75,000 and more	21.4	19.0	23.8
Insurance Status			
Insured	21.8	20.3	23.2
Not Insured	*	*	*
Disability			
Yes	17.4	14.7	20.1
No	22.3	20.7	24.0
Education			
HS graduate or less	16.6	14.3	19.0
More than HS education	23.8	22.1	25.6
<i>Estimates marked with a "*" are not reported because their coefficients of variation are at least 15% (see page 13).</i>			

Adult Tdap and HPV (2013)

	Ever had TDAP	
Demographic Characteristics	%	95% Confidence Interval
Total	18.2%	(16.8%-19.7%)
Age		
18-34 years old	27.3%	(23.2%-31.5%)
35-54 years old	16.5%	(14.4%-18.6%)
55 years old and older	13.6%	(12.0%-15.2%)
Gender		
Male	17.2%	(15.0%-19.3%)
Female	19.2%	(17.2%-21.2%)
Race/Ethnicity		
Non-Hispanic White	18.1%	(16.5%-19.6%)
Non-Hispanic Black	17.0%	(12.3%-21.8%)
Hispanic	20.7%	(14.7%-26.7%)
Income		
Less than \$35,000	17.3%	(14.0%-20.6%)
\$35,000-\$74,999	16.5%	(13.8%-19.1%)
\$75,000 or more	21.4%	(19.0%-23.9%)
Has Healthcare Coverage		
Yes	18.5%	(16.9%-20.0%)
No	*	*
Disability		
Yes	14.0%	(10.7%-17.2%)
No	19.3%	(17.6%-20.9%)
Education		
HS Graduate or Less	14.3%	(11.7%-16.8%)
Some Post-HS Education	20.9%	(19.1%-22.7%)

Compared to their counterparts, prevalence of Tdap vaccination among CT residents was greater for:

- Younger adults;
- Not disabled; and
- More than a high school degree.

Source:
Stone C and coworkers (2016),
http://www.ct.gov/dph/lib/dph/hisr/pdf/brfss2013_ct_report.pdf.

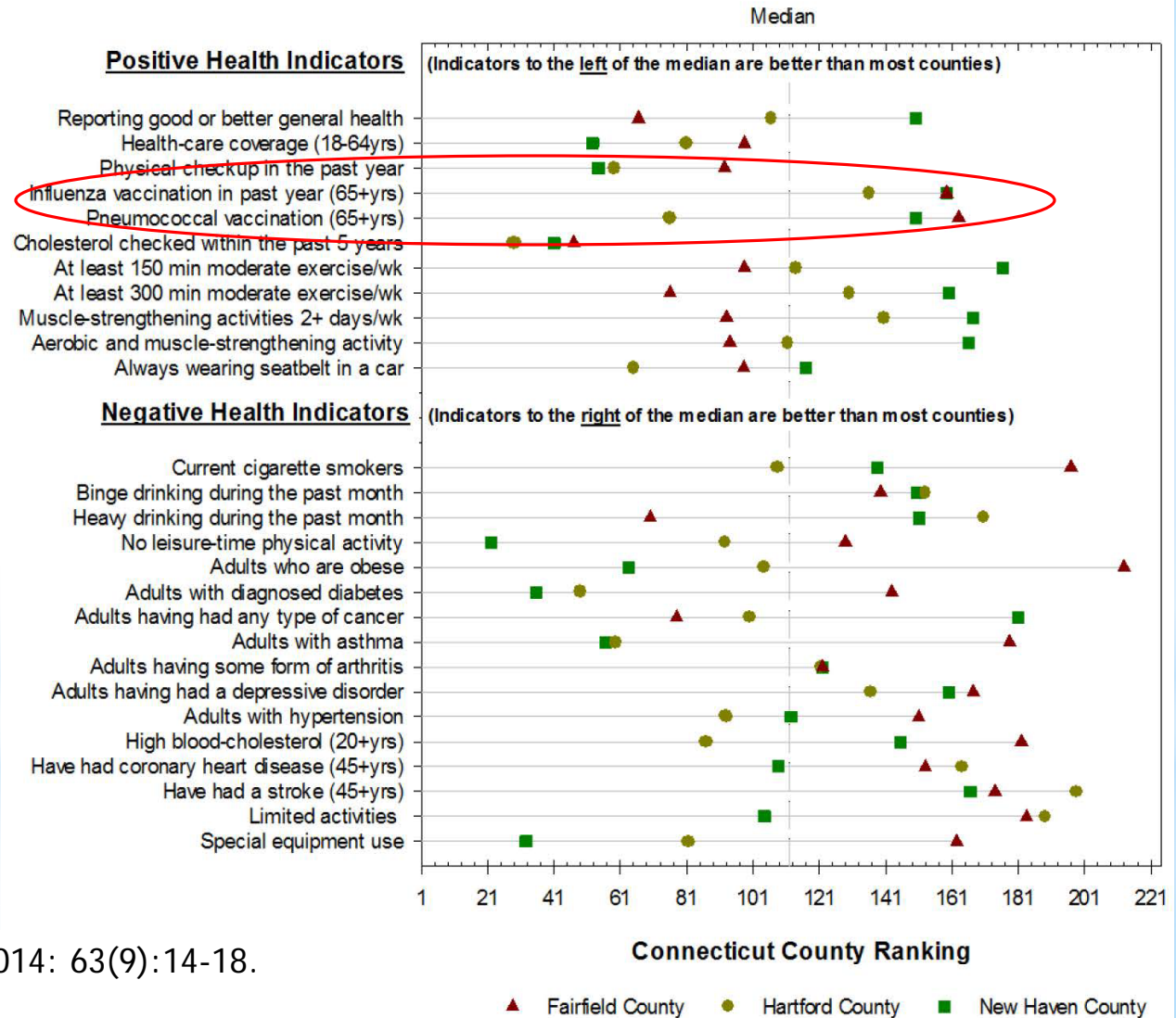
	Ever Had HPV vaccination?	
Demographic Characteristics	%	95% Confidence Interval
Total	14.5%	(12.0%-17.0%)
Age		
18-34 years old	26.7%	(22.2%-31.2%)
35-54 years old	*	*
55 years old or older	*	*
Gender		
Male	*	*
Female	21.9%	(18.0%-25.9%)
Race/Ethnicity		
Non-Hispanic White	14.6%	(11.4%-17.8%)
Non-Hispanic Black	*	*
Hispanic	*	*
Income		
Less than \$35,000	*	*
\$35,000-\$74,999	*	*
\$75,000 or more	*	*
Has Healthcare Coverage		
Yes	15.2%	(12.4%-17.9%)
No	*	*
Disability		
Yes	*	*
No	13.5%	(10.8%-16.2%)
Education		
HS Graduate or Less	*	*
Some Post-HS Education	14.9%	(11.7%-18.0%)

County Rankings, Flu and Pneumococcal Vaccination (2011)

In 2011, Hartford County ranked better than most counties in the U.S. for pneumococcal vaccinations among adults 65 years old and older.

Source:
 Smart, A and Stone, C
 (2016),
http://www.ct.gov/dph/lib/dph/hisr/pdf/ct_health_behavior_rankings_by_county2011_dph.pdf.

Data extracted from MMWR 2014: 63(9):14-18.



- Completion of 2015 CT BRFSS Summary Report;
- Local Area analysis of Flu and Pneumococcal vaccination, 2011-2015;
- Questions in the CT BRFSS Survey:
 - Shingles, 2017;
 - HPV, 2016;
 - Adult Tdap, 2016, 2017.

All written documents are located on the CT BRFSS webpage:

<http://www.ct.gov/dph/BRFSS>

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Thank you!