

# Pneumococcal Vaccination Among Adults with Diabetes in Florida, 2002



Bureau of Epidemiology  
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Pneumococcal disease is caused by bacteria (*Streptococcus pneumoniae*) that can attack different parts of the body. The bacteria can cause serious infections of the lungs (pneumonia), the bloodstream (bacteremia), and the covering of the brain (meningitis). Pneumococcal disease kills more people in the United States each year than all other vaccine-preventable diseases combined.<sup>1</sup> Vaccination of persons at risk for complications from pneumococcal disease is a key public health strategy for preventing associated morbidity and mortality in the United States. Pneumococcal vaccine is recommended for anyone aged 2 or older who, because of chronic health problems (such as diabetes) or age, has a greater chance of getting and dying from pneumonia. People with diabetes<sup>2</sup> may have abnormalities in immune function, which make them more susceptible to infection and increases their chances of dying from pneumonia by about three times the rate of that for people without diabetes. One vaccination is usually enough to last a lifetime and it can provide protection from other infections caused by the same bacteria. Therefore, receiving a pneumonia vaccination<sup>3</sup> has the potential to reduce the risk of complications associated with diabetes.

Data from the 2002 Florida County Behavioral Risk Factor Surveillance System (BRFSS) survey were used for analysis and are based on a sample size of 34,551 respondents, of whom 3,582 reported being told by their doctors that they have diabetes. The focus of this report is pneumococcal vaccination among adults with diagnosed diabetes in Florida.

The prevalence of receiving pneumococcal vaccination among adults with diagnosed diabetes (43.5 percent) is significantly higher than among adults without diagnosed diabetes (20.8 percent). (See Table 1.)

**Pneumococcal vaccination among adults with diagnosed diabetes:** The prevalence of receiving pneumococcal vaccination among adults with diabetes is significantly different by age. Adults with diabetes between the ages 18 and 44 years (19.4 percent) and adults 45 to 64 years of age (33.5 percent) have a lower prevalence of receiving vaccination than adults ages 65 years and older (60.5 percent). (See Figure 1.)

The prevalence of receiving a vaccination is different among race/ethnic groups. Overall, Hispanics with diabetes are significantly less likely to receive vaccinations (12.4 percent) than non-Hispanic Whites (49.9 percent) and non-Hispanic Blacks (41.8 percent). Specifically, Hispanic men are significantly less likely to receive vaccination (8.3 percent) than non-Hispanic White men (48.1 percent). Hispanic women are also significantly less likely to receive vaccination (18.6 percent) than non-Hispanic White women (51.8 percent). (See Figure 2.)

Receiving pneumococcal vaccination differs by marital status such that never-married adults with diabetes are significantly less likely to receive vaccination (25.6 percent) than adults who are married or living together (42.1 percent), or adults who are divorced, widowed or separated (52.0 percent).

The prevalence of receiving a pneumococcal vaccination among adults with diabetes does not differ significantly by income or education.

Figure 1: Prevalence of Receiving Pneumococcal Vaccination Among Adults with Diabetes, FL, 2002

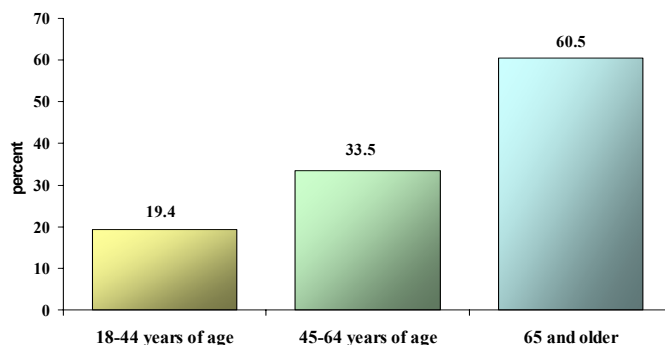
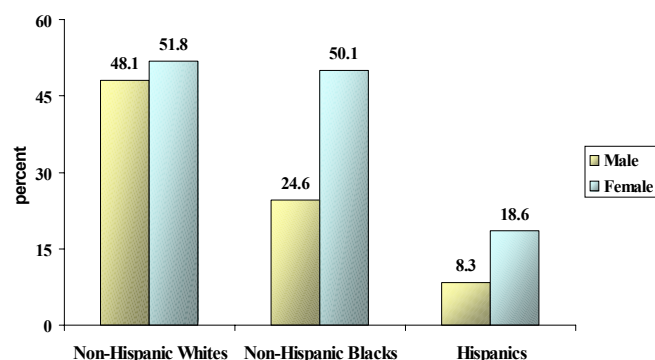


Figure 2: Prevalence of Receiving Pneumococcal Vaccination Among Adults with Diabetes, FL, 2002



**Conclusion:** Receiving pneumococcal vaccination is more prevalent among adults with diabetes than among adults without diabetes. Among people with diabetes, Hispanic men and women, young and middle-aged adults, and the never-married are less likely to receive pneumococcal vaccination, and thus are at a greater risk for morbidity due to pneumococcal infections than are non-Hispanics, adults aged-65-years-and-older, and the married as well as the divorced.

## The Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS survey is a telephone survey of civilian, non-institutionalized adults (age 18 and older) with telephones, designed to monitor trends in risk behaviors related to preventable chronic diseases and conditions. Respondents are asked about health status, including diabetes and blood pressure; health behaviors, such as nutrition, physical activity, tobacco, and alcohol use; use of screening services, such as mammography; and access to health insurance and health care.

The BRFSS data are weighted. Because the BRFSS is a random survey, the results from the county survey are slightly different from results from the state survey. For more information on the Florida BRFSS, please visit our website at [http://www.doh.state.fl.us/disease\\_ctrl/epi/brfss/index.htm](http://www.doh.state.fl.us/disease_ctrl/epi/brfss/index.htm). For strengths and limitations of the BRFSS, please visit The Centers for Disease Control and Prevention website at [www.cdc.gov/brfss/](http://www.cdc.gov/brfss/).

<sup>1</sup>For more information on pneumococcal disease, visit the National Foundation for Infectious Diseases website at <http://www.nfid.org/library/influenza/what/index.html>.

<sup>2</sup> Diabetes is assessed by the following question, "Have you ever been told by a doctor that you have diabetes?"

<sup>3</sup> Pneumococcal vaccination is measured by the following question, "Have you ever had a pneumonia shot?"

\*Confidence intervals for Table 1 are constructed utilizing the SAS 9.1 version.

Table 1: Prevalence of receiving pneumococcal vaccination among adults without and with diabetes, Florida, 2002

	Adults without Diabetes			Adults with Diabetes		
	%	95% CI*		%	95% CI*	
<b>All</b>	20.8	19.8	21.8	43.5	39.7	47.3
<b>Sex</b>						
Male	21.7	20.1	23.2	39.3	34.1	44.5
Female	20.1	18.9	21.4	47.6	42.2	52.9
<b>Age group</b>						
18-44	9.3	8.1	10.4	19.4	10.8	28.0
45-64	14.0	12.6	15.4	33.5	27.7	39.2
65+	55.7	53.1	58.2	60.5	55.1	65.8
<b>Race/ethnicity</b>						
White, non-Hispanic	24.2	23.1	25.2	49.9	46.0	53.8
Black, non-Hispanic	10.9	8.5	13.4	41.8	29.7	53.8
Hispanic	15.1	10.2	20.0	12.4	1.8	23.1
<b>Marital status</b>						
Never Married	13.3	10.9	15.8	25.6	14.2	37.0
Married/cohabitating	20.7	19.4	21.9	42.1	37.1	47.2
Divorced/ widowed/ separated	27.1	25.2	29.0	52.0	46.0	58.0
<b>Education</b>						
Less than high school	22.3	18.5	26.1	40.2	31.1	49.3
High School, GED	22.5	20.7	24.3	44.9	38.0	51.8
More than high school	19.7	18.5	20.9	43.9	38.7	49.2
<b>Annual household income</b>						
Less than \$25,000	23.7	21.4	26.0	42.6	36.6	48.5
\$25,000—\$50,000	20.5	18.7	22.3	48.3	40.6	56.0
More than \$50,000	14.5	12.9	16.0	43.0	34.0	52.0

**For more information about the BRFSS survey,  
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