

Non-Influenza Vaccination Coverage Among Adults

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Overview of Presentation

- ❑ **Data Source**
- ❑ **Coverage Highlights**
- ❑ **Non – influenza adult vaccination coverage by age, race/ethnicity, and target group status**
- ❑ **Conclusions**

Data Source: National Health Interview Survey, 2011

- ❑ **Annual in-home survey of U.S. noninstitutionalized civilian population**
- ❑ **Detailed health survey of one sample adult in the household**
- ❑ **Provides national coverage estimates**
- ❑ **Vaccination questions**
 - ≤ 2007 : Influenza, PPSV, HepB
 - ≥ 2008 : HPV, Zoster, Td/Tdap, HepA
- ❑ **Information on high-risk status for hepatitis A or B was not collected**
- ❑ **Final sample adult component Response Rate: 66.3%**

Highlights: Non-Influenza Adult Vaccination Coverage – NHIS, 2011

Compared with 2010 NHIS, modest increases only for :

- ❑ HPV vaccination (≥ 1 dose) (29.5%) -- women, 19-26 years (+8.8 percentage points)
- ❑ Tdap vaccination (12.5%) – 19-64 years (+4.3 percentage points)
- ❑ Coverage for overall tetanus vaccination past 10 years unchanged

Highlights: Non-Influenza Adult Vaccination Coverage – NHIS, 2011

Compared with 2010 NHIS, limited increases for :

- ❑ Pneumococcal vaccination (62.3%) -- adults ≥ 65 years (+2.6 percentage points)
- ❑ Hepatitis B vaccination (≥ 3 doses) (35.9%) – adults, 19-49 years (+2.1 percentage points)
- ❑ Hepatitis A vaccination (≥ 2 doses) (12.5%) – adults, 19-49 years (+1.8 percentage points)
- ❑ Pneumococcal vaccination (20.1%) -- high-risk adults, 19-64 years (+1.6 percentage points)
- ❑ HPV vaccination (≥ 1 dose) (2.1%) -- men, 19-26 years (+1.5 percentage points)
- ❑ Herpes zoster (shingles) vaccination (15.8%) – adults, ≥ 60 years (+1.4 percentage points)

Pneumococcal Vaccination, 19-64 years, High-risk by Race/Ethnicity

Group	2010 (%)	2011 (%)	Difference*
19-64 years, HR, Overall	18.5	20.1	+1.6
Race/ethnicity			
White, non-Hispanic	19.0	20.1	
Black, non-Hispanic	18.6	22.8	
Hispanic	14.8†	18.3†	
Asian, non-Hispanic	11.5†	12.0†	
Others	26.0	21.7	

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† p<0.05 by T test for comparisons with non-Hispanic white as the reference.

Pneumococcal Vaccination, ≥ 65 years by Race/Ethnicity

Group	2010 (%)	2011 (%)	Difference*
≥ 65 years, Overall	59.7	62.3	+2.6
Race/ethnicity			
White, non-Hispanic	63.5	66.5	+3.0
Black, non-Hispanic	46.2†	47.6†	
Hispanic	39.0†	43.1†	
Asian, non-Hispanic	48.2†	40.3†	
Others	58.4	67.4	

* $p < 0.05$ by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† $p < 0.05$ by T test for comparisons with non-Hispanic white as the reference.

Tetanus Vaccination, Past 10 Years, 19-49 years, NHIS 2011

Group	2010 (%)	2011 (%)	Difference*
19-49 years, Overall	64.0	64.5	
Race/ethnicity			
White, non-Hispanic	69.3	69.6	
Black, non-Hispanic	56.8†	54.8†	
Hispanic	54.4†	56.3†	
Asian, non-Hispanic	50.3†	52.5†	
Others	62.2†	69.6	

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† p<0.05 by T test for comparisons with non-Hispanic white as the reference.

Tetanus Vaccination, Past 10 Years, 50-64 years, NHIS 2011

Group	2010 (%)	2011 (%)	Difference*
50-64 years, Overall	63.4	63.9	
Race/ethnicity			
White, non-Hispanic	67.3	67.7	
Black, non-Hispanic	52.7†	54.4†	
Hispanic	50.9†	52.6†	
Asian, non-Hispanic	47.8†	45.1†	
Others	68.4	67.9	

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† p<0.05 by T test for comparisons with non-Hispanic white as the reference.

Tetanus Vaccination, Past 10 Years, ≥ 65 years, NHIS 2011

Group	2010 (%)	2011 (%)	Difference*
≥ 65 years, Overall	53.4	54.4	
Race/ethnicity			
White, non-Hispanic	56.3	57.0	
Black, non-Hispanic	39.7†	44.4†	
Hispanic	43.8†	45.1†	
Asian, non-Hispanic	36.5†	37.9†	
Others	62.0	63.2	

* $p < 0.05$ by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† $p < 0.05$ by T test for comparisons with non-Hispanic white as the reference.

Tetanus Vaccination Including Pertussis Vaccine, Past 6 Years, 19-64 years - NHIS, 2011

Group and Race/ethnicity	2010 (%)	2011 (%)	Difference*
19-64 years, Overall	8.2	12.5	+4.3
White, non-Hispanic	9.1	13.8	+4.7
Black, non-Hispanic	7.4†	11.0†	+3.6
Hispanic	4.8†	7.7†	+2.9
Asian, non-Hispanic	9.2	11.7	
Others	8.4	19.7	+11.3
Living with an infant aged<1 year	10.6	21.5	+10.9
Not living with an infant aged<1 year	8.1	12.1	+4.0

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† p<0.05 by T test for comparisons with non-Hispanic white as the reference.

Tdap Estimates – NHIS, 2011: Potential for Bias

Many were excluded (32.1% of respondents[n=25,783]):

- ❑ All those without a “yes” or “no” response for tetanus vaccination, past 10 years (4.3%)**
- ❑ All those without response to tetanus vaccination during 2005-2011 (3.1%)**
- ❑ Those who reported tetanus vaccination but not told what type (3.4%)**
- ❑ Those who reported tetanus vaccination but did not know the vaccine type (21.3%)**
- ❑ Sensitivity analysis to assess magnitude of bias: Tdap coverage could range from: 8.0% -36.4%**

Tetanus Vaccination: Proportion Tdap, 19-64 years, NHIS 2011

Group	Not Told (%)	Not Recall (%)	Tdap/Td+Tdap*
Adults, 19-64 years, Overall	55.9	8.9	61.1
HCP, 19-64 years†	38.8	5.4	66.8[§]
Non-HCP, 19-64 years	58.3	9.4	59.7

*Respondents who reported that the doctor did not inform them of the vaccine type they received and those who could not recall the vaccine type were excluded.

† Adults were classified as HCP if they reported they currently work in a hospital, medical clinic, doctor's office, dentist's office, nursing home or some other healthcare facility, including part-time and unpaid work as well as professional nursing care provided in the home.

§p<0.05 by T test for comparisons between HCP and non-HCP 19-64 years.

Hepatitis A Vaccination (at least 2 doses) Ever and Travel Status, 19-49 years – NHIS , 2011

Travel status	2010 (%)	2011 (%)	Difference*
Had traveled outside the United States since 1995 (to countries other than Europe, Japan, Australia, New Zealand, or Canada)	16.6	20.1	+3.5
Had not traveled outside the United States since 1995 (except to Europe, Japan, Australia, New Zealand, or Canada)	7.5	8.4	

* p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

Hepatitis A Vaccination (at least 2 doses) Ever, 19-49 years, NHIS 2011

Group	2010 (%)	2011 (%)	Difference*
19-49 years, Overall	10.7	12.5	+1.8
19-49 years, Chronic Liver Dis	19.7	17.1	
Race/ethnicity			
White, non-Hispanic	10.4	12.3	+1.9
Black, non-Hispanic	10.3	11.2	
Hispanic	10.3	11.3	
Asian, non-Hispanic	15.3†	19.1†	
Others	16.5†	21.1†	

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† p<0.05 by T test for comparisons with non-Hispanic white as the reference.

Hepatitis B Vaccination (at least 3 doses) Ever – NHIS, 2011

Age Group and Race/ethnicity	2010 (%)	2011 (%)	Difference*
19-49 years, Overall	33.8	35.9	+2.1
White, non-Hispanic	35.6	37.8	
Black, non-Hispanic	34.5	33.0†	
Hispanic	25.3†	28.9†	+3.6
Asian, non-Hispanic	37.2	40.7	
Others	37.5	44.1	
19-59 years, with diabetes, overall	22.8	26.9	
60 years and over, with diabetes, overall	10.9	12.4	

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† p<0.05 by T test for comparisons with non-Hispanic white as the reference.

Herpes Zoster (shingles) Vaccination, 60 years and older – NHIS, 2011

Group and Race/ethnicity	2010 (%)	2011 (%)	Difference*
60 years and over, Overall	14.4	15.8	
White, non-Hispanic	16.6	17.6	
Black, non-Hispanic	4.5†	7.9†	+3.4
Hispanic	4.4†	8.0†	+3.6
Asian, non-Hispanic	12.7†	14.0†	
Others	8.2†	12.0	

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

†p<0.05 by T test for comparison with non-Hispanic white as the reference.

Human Papillomavirus Vaccination Among Females (at least 1 dose) – NHIS, 2011

Age Group and Race/ethnicity	2010 (%)	2011 (%)	Difference*
19-26 years, Overall	20.7	29.5	+8.8
White, non-Hispanic	22.4	32.5	+10.1
Black, non-Hispanic	20.4	28.3	
Hispanic	15.1 [†]	20.2 [†]	
Asian, non-Hispanic	22.6	22.3	
Others	16.5	39.0	
19-21 years, Overall	28.2	43.1	+14.9
22-26 years, Overall	16.5	21.5	+5.0

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

[†]p<0.05 by T test for comparison with non-Hispanic white as the reference.

Human Papillomavirus Vaccination Among Males (at least 1 dose) – NHIS, 2011

Age group	2010 (%)	2011 (%)	Difference*
19-26 years, total	0.6	2.1	+1.5
19-21 years, total	0.3	2.8	+2.5
22-26 years, total	0.8	1.7	

* $p < 0.05$ by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† $p < 0.05$ by T test for comparison with non-Hispanic white as the reference.

Health Care Personnel (HCP) Tetanus Vaccination Including Pertussis Vaccine, past 6 years, 19-64 years

Race/ethnicity	2010 (%)	2011 (%)	Difference*
HCP, 19-64 years, Overall	20.3	26.8	+6.5
White, non-Hispanic	21.5	27.2	
Black, non-Hispanic	14.0	21.7†	
Hispanic	13.8	30.1	+16.3
Asian, non-Hispanic	26.9	27.8	
Others	--- §	--- §	--- §

*p<0.05 by T test for comparisons between 2011 and 2010 within each level of each characteristic.

†p<0.05 by T test for comparison with non-Hispanic white as the reference.

§Estimates are not reliable because of small sample size or relative standard error (standard error/estimates) >0.3.

Health Care Personnel (HCP) Hepatitis B Vaccination (at least 3 doses) Ever, ≥ 19 years

Race/ethnicity	2010 (%)	2011 (%)	Difference*
HCP, ≥ 19 years, Overall	63.2	63.8	
White, non-Hispanic	63.7	65.1	
Black, non-Hispanic	58.7	57.1†	
Hispanic	57.0	59.4†	
Asian, non-Hispanic	72.7	70.4†	
Others	70.2	70.0	

* $p < 0.05$ by T test for comparisons between 2011 and 2010 within each level of each characteristic.

† $p < 0.05$ by T test for comparison with non-Hispanic white as the reference.

Limitations of Findings

- ❑ **NHIS excludes persons in the military and those residing in institutions – might result in underestimation or overestimation of coverage estimates**
- ❑ **Response rate 66.3% -- low response rate can result in sampling bias if the nonresponse is unequal among participants regarding vaccination**
- ❑ **Self-report of vaccination subject to recall bias**
- ❑ **Tdap estimates: potential bias due to exclusions**
- ❑ **Age of vaccination not known for vaccines reported as “ever” received – unclear if vaccination occurred as an adult or as part of child or adolescent programs**

Conclusions

❑ Overall coverage remains low

– Far below HP2020 targets of

- 90% for 65+ years for pneumococcal vaccine
- 60% for high risk 19-64 years for pneumococcal vaccine
- 30% for 60+ years for Zoster vaccine
- 90% for hepatitis B vaccine for healthcare personnel

❑ Some improvement from 2010

- Modest increases for HPV (women, 19-26) and Tdap (19-64 year olds) vaccines
- Limited increases for other vaccines

❑ Racial and ethnic disparities remain

❑ Much remains to be done to increase vaccine utilization among adults and to eliminate disparities

Collaborators

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