

Adult Immunization Update

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Overview of Presentation

- ❑ Non – influenza vaccination coverage among U.S. adults**
- ❑ Expanding vaccination coverage tracking**

National Health Interview Survey

- ❑ **Annual In-home survey of U.S. noninstitutionalized population**
- ❑ **Detailed health survey of a sample adult**
- ❑ **Provides national coverage estimates**
- ❑ **Vaccination questions**
 - ≤ 2007 : Influenza, PPV, HepB
 - ≥ 2008 : HPV, Zoster, Td/Tdap, HepA

Highlights: Adult Vaccination Coverage – National Health Interview Survey, 2010

Compared with 2009 NHIS estimates, increases only for :

- ❑ Tdap vaccination (8.2%) – 19-64 years (+1.6)
- ❑ Herpes zoster vaccination (14.4%) – ≥ 60 years (+4.4)
- ❑ HPV vaccination (≥ 1 dose) (20.7%) -- women, 19-26 years (+3.6)
- ❑ Coverage for other vaccines unchanged

Pneumococcal Vaccination*, 19-64 years, High-risk, NHIS, 2010

Age group, high-risk (HR) [†] status, and race/ethnicity [§]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-64 years, HR, total	7,624	18.5 (17.4-19.6)	1.0
19-64 years, HR, not Hispanic or Latino, single race, white	4,478	19.0 (17.7-20.4)	0.8
19-64 years, HR, not Hispanic or Latino, single race, black	1,388	18.6 (16.4-21.1)	0.9
19-64 years, HR, Hispanic or Latino	1,239	14.8 (12.7-17.2) [¶]	2.7
19-64 years, HR, not Hispanic or Latino, single race, Asian	296	11.5 (7.9-16.5) [¶]	-4.8
19-64 years, HR, others	223	26.0 (19.2-34.3)	6.8

* Respondents were asked if they had ever had a pneumonia shot.

† Adults were considered at high risk for pneumococcal disease if they had ever been told by a doctor or other health professional that they had diabetes, emphysema, coronary heart disease, angina, heart attack, or other heart condition; had a diagnosis of cancer during the previous 12 months (excluding nonmelanoma skin cancer); had ever been told by a doctor or other health professional that they had lymphoma, leukemia, or blood cancer; or they had been told by a doctor or other health professional that they had chronic bronchitis or weak or failing kidneys during the preceding 12 months or had an asthma episode or attack; or they were current smokers.

§ Persons of Hispanic or Latino origin may be of any race or combination of races. "Others" included American Indian/Alaska Native, and multiple race. The tables in this report use the complete new Office of Management and Budget race and Hispanic origin terms, and the text uses shorter versions of these terms for brevity.

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

Pneumococcal Vaccination*, 65 and older - NHIS, 2010

Age group and race/ethnicity [†]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
65 years and over, total	5,209	59.7 (58.0-61.4)	-1.0
65 years and over, not Hispanic or Latino, single race, white	3,577	63.5 (61.6-65.4)	-1.3
65 years and over, not Hispanic or Latino, single race, black	781	46.2 (41.8-50.6) [§]	1.5
65 years and over, Hispanic or Latino	551	39.0 (34.2-43.9) [§]	-1.2
65 years and over, not Hispanic or Latino, single race, Asian	246	48.2 (41.6-54.9) [§]	3.3
65 years and over, others	54	58.4 (40.9-74.1)	4.1

* Respondents were asked if they had ever had a pneumonia shot.

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Tetanus Vaccination, Past 10 Years*, 19-49 years - NHIS, 2010

Age group and race/ethnicity [†]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-49 years, total	13,946	64.0 (63.0-65.0)	0.9
19-49 years, not Hispanic or Latino, single race, white	7,061	69.3 (68.0-70.6)	1.0
19-49 years, not Hispanic or Latino, single race, black	2,266	56.8 (54.1-59.4) [§]	0.0
19-49 years, Hispanic or Latino	3,355	54.4 (52.4-56.5) [§]	0.7
19-49 years, not Hispanic or Latino, single race, Asian	972	50.3 (45.8-54.7) [§]	2.8
19-49 years, others	292	62.2 (55.8-68.3) [§]	4.6

* Respondents were asked if they had received a tetanus shot in the past 10 years. Respondents included adults who received tetanus-diphtheria toxoid (Td) during the past 10 years or tetanus, diphtheria, and acellular pertussis vaccine (Tdap) during 2005-2010.

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Tetanus Vaccination, Past 10 Years*, 50-64 years - NHIS, 2010

Age group and race/ethnicity [†]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
50-64 years, total	6,349	63.4 (62.0-64.8)	0.6
50-64 years, not Hispanic or Latino, single race, white	3,966	67.3 (65.6-69.0)	1.0
50-64 years, not Hispanic or Latino, single race, black	1,065	52.7 (48.6-56.8) [§]	0.4
50-64 years, Hispanic or Latino	864	50.9 (46.7-55.1) [§]	-2.6
50-64 years, not Hispanic or Latino, single race, Asian	323	47.8 (40.9-54.8) [§]	-1.0
50-64 years, others	131	68.4 (59.0-76.5)	3.5

* Respondents were asked if they had received a tetanus shot in the past 10 years. Respondents included adults who received tetanus-diphtheria toxoid (Td) during the past 10 years or tetanus, diphtheria, and acellular pertussis vaccine (Tdap) during 2005-2010.

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Tetanus Vaccination, Past 10 Years* 65 and older - NHIS, 2010

Age group and race/ethnicity [†]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
65 years and over, total	5,069	53.4 (51.5-55.2)	0.6
65 years and over, not Hispanic or Latino, single race, white	3,462	56.3 (54.2-58.5)	1.4
65 years and over, not Hispanic or Latino, single race, black	765	39.7 (35.6-44.0) [§]	-1.8
65 years and over, Hispanic or Latino	545	43.8 (39.1-48.6) [§]	-2.8
65 years and over, not Hispanic or Latino, single race, Asian	241	36.5 (29.2-44.5) [§]	-1.7
65 years and over, others	56	62.0 (46.7-75.2)	-9.0

* Respondents were asked if they had received a tetanus shot in the past 10 years. Respondents included adults who received tetanus-diphtheria toxoid (Td) during the past 10 years or tetanus, diphtheria, and acellular pertussis vaccine (Tdap) during 2005-2010.

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Tetanus Vaccination Including Pertussis Vaccine, past 5 years*, 19-64 years - NHIS, 2010

Age group and race/ethnicity [†]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-64 years, total	14,824	8.2 (7.6-8.8)	1.6 [§]
19-64 years, not Hispanic or Latino, single race, white	7,830	9.1 (8.3-9.9)	1.7 [§]
19-64 years, not Hispanic or Latino, single race, black	2,441	7.4 (6.1-8.8) [¶]	1.6
19-64 years, Hispanic or Latino	3,183	4.8 (3.9-5.9) [¶]	0.1
19-64 years, not Hispanic or Latino, single race, Asian	1,058	9.2 (6.9-12.1)	4.8 [§]
19-64 years, others	312	8.4 (5.7-12.4)	1.4
19-64 years, living with an infant aged<1 year	624	10.6 (7.9-14.2)	0.3
19-64 years, not living with an infant aged<1 year	14,200	8.1 (7.5-8.7)	1.7 [§]

* Respondents who had received a tetanus shot in the past 10 years were asked if their most recent shot was given in 2005 or later. Respondents who had received a tetanus shot since 2005 were asked if they were told that their most recent tetanus shot included the pertussis or whooping cough vaccine. Among 21,041 respondents aged 19-64 years, those without a "yes" or "no" classification for tetanus vaccination status within the preceding 10 years (n = 1081 [5.1%], for tetanus vaccination status during 2005-2010 (n = 589 [2.8%], or Tdap status during 2005-2010 (n = 4,789 [22.8%]) were excluded, yielding a sample of 14,824 respondents aged 19-64 years for whom Tdap vaccination status could be assessed. ACIP recommendations on use of Tdap in certain adults >65 were published January 14, 2011.

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§ p<0.05 by T test for comparisons between 2010 and 2009 within each level of each characteristic.

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

Hepatitis A vaccination (at least 2 doses)* and travel status, 19-49 years – NHIS , 2010

Travel status	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-49 years, had traveled outside the United States to countries other than Europe, Japan, Australia, New Zealand, or Canada since 1995	4,595	16.6 (15.2-18.2)	1.6
19-49 years, had not traveled outside the United States to countries other than Europe, Japan, Australia, New Zealand, or Canada since 1995	7,998	7.5 (6.7-8.3)	0.3

* Respondents were asked if they had ever received the hepatitis A vaccine, and if yes, were asked how many shots were received.

Hepatitis A vaccination (at least 2 doses)*, 19-49 years, High Risk – NHIS, 2010

Age group, high-risk (HR) [†] status	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-49 years, HR, overall	981	14.6 (12.1-17.6)	0.4
19-49 years, with chronic liver conditions, overall	100	19.7 (11.8-31.1)	-1.9

* Respondents were asked if they had ever received the hepatitis A vaccine, and if yes, were asked how many shots were received.

[†] Adults were considered at high risk for hepatitis A if they had hemophilia and had received clotting factor concentrations, were a man who had sex with other men, had taken street drugs by needle, had traded sex for money or drugs, had tested positive for HIV, or had sex with someone who would meet any of the previous criteria; considered themselves at high risk for HIV infection, or reported having a sexually transmitted diseases other than HIV/AIDS during the previous 5 years.

Hepatitis B vaccination (at least 3 doses)*, High-risk, 19-49 years – NHIS, 2010

Age group, high-risk (HR) [†] status, and race/ethnicity [§]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-49 years, HR, total	1,023	42.0 (38.3-45.8)	0.2
19-49 years, HR, not Hispanic or Latino, single race, white	504	44.5 (39.4-49.8)	1.7
19-49 years, HR, not Hispanic or Latino, single race, black	242	41.6 (35.0-48.5)	-1.6
19-49 years, HR, Hispanic or Latino	208	33.8 (26.2-42.3) [¶]	-2.9
19-49 years, HR, not Hispanic or Latino, single race, Asian	40	40.2 (25.5-56.9)	13.6
19-49 years, HR, others	**	**	**
19-59 years, with diabetes, overall	1,045	22.8 (19.9-25.9)	-0.3
60 years and over, with diabetes, overall	1,480	10.9 (9.2-13.0)	0.8

* Respondents were asked if they had ever received the hepatitis B vaccine, and if yes, if they had received at least 3 doses or less than 3 doses

† Adults were considered at high risk for hepatitis B if they had hemophilia and had received clotting factor concentrations, were a man who had sex with other men, had taken street drugs by needle, had traded sex for money or drugs, had tested positive for HIV, or had sex with someone who would meet any of the previous criteria; considered themselves at high risk for HIV infection, or reported having a sexually transmitted diseases other than HIV/AIDS during the previous 5 years.

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** Estimates are not reliable due to small sample size (n<30) or relative standard error (standard error/estimates)>0.3.

Herpes Zoster (shingles) vaccination*, 60 years and older – NHIS, 2010

Age group and race/ethnicity [†]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
60 years and over, total	7,290	14.4 (13.4-15.4)	4.4 [§]
60 years and over, not Hispanic or Latino, single race, white	4,978	16.6 (15.4-17.8)	5.3 [§]
60 years and over, not Hispanic or Latino, single race, black	1,079	4.5 (3.4-5.9) [¶]	0.3
60 years and over, Hispanic or Latino	796	4.4 (3.2-6.2) [¶]	-0.4
60 years and over, not Hispanic or Latino, single race, Asian	349	12.7 (9.4-17.0) [¶]	5.8 [§]
60 years and over, others	88	8.2 (3.8-16.6) [¶]	2.0

* Respondents were asked if they had ever received a shingles vaccine.

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Human papillomavirus (HPV) vaccination among females (at least 1 dose)*, 19-26 years – NHIS, 2010

Age group and race/ethnicity [†]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-26 years, total	1,718	20.7 (18.2-23.5)	3.6 [§]
19-26 years, not Hispanic or Latino, single race, white	838	22.4 (18.9-26.3)	2.3
19-26 years, not Hispanic or Latino, single race, black	320	20.4 (14.7-27.6)	7.1
19-26 years, Hispanic or Latino	397	15.1 (11.6-19.5) [¶]	2.5
19-26 years, not Hispanic or Latino, single race, Asian	112	22.6 (13.5-35.4)	10.7
19-26 years, others	51	16.5 (8.1-30.6)	6.2

* Respondents were asked if they had ever received the HPV shot or cervical cancer vaccine.

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Human papillomavirus (HPV) vaccination among males (at least 1 dose)*, 19-26 and 19-21 years – NHIS, 2010

Age group	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
19-26 years, total	1,474	0.6 (0.3-1.1)	†
19-21 years, total	502	0.3 (0.1-1.0)	†

* Respondents were asked if they had ever received the HPV shot or cervical cancer vaccine.

† Data not applicable.

Health care personnel* tetanus vaccination including pertussis vaccine, past 5 years[†]

Race/ethnicity [§]	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
HCP, <65 years, total	1,427	20.3 (17.9-23.0)	7.1 [¶]
HCP, <65 years, not Hispanic or Latino, single race, white	830	21.5 (18.4-25.0)	8.1 [¶]
HCP, <65 years, not Hispanic or Latino, single race, black	239	14.0 (9.2-20.8) ^{**}	0.9
HCP, <65 years, Hispanic or Latino	197	13.8 (8.8-21.0) ^{**}	-0.1
HCP, <65 years, not Hispanic or Latino, single race, asian	135	26.9 (17.0-39.8)	20.9 [¶]
HCP, <65 years, others		††	††

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

† Respondents who had received a tetanus shot in the past 10 years were asked if their most recent shot was given in 2005 or later. Respondents who had received a tetanus shot since 2005 were asked if they were told that their most recent tetanus shot included the pertussis or whooping cough vaccine. Among 1,850 HCP aged 19-64 years, those without a "yes" or "no" classification for tetanus vaccination status within the preceding 10 years (n = 47 [2.5%], for tetanus vaccination status during 2005-2010 (n = 61 [3.3%], or Tdap status during 2005-2010 (n = 451 [24.4%]) were excluded, yielding a sample of 1,427 respondents aged 19-64 years for whom Tdap vaccination status could be assessed. ACIP recommendations on use of Tdap in certain adults ≥ 65 were published January 14, 2011.

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Centers for Disease Control and Prevention. Adult Vaccination Coverage - United States, 2010. MMWR 2012;61, pages 66-72.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6104a2.htm?s_cid=mm6104a2_x

Health care personnel* Hepatitis B vaccination (at least 3 doses), ever†

Race/ethnicity§	Sample size	% 95% CI (Confidence Interval)	Difference from 2009
HCP, ≥19 years, total	1,960	63.2 (60.7-65.7)	3.0
HCP, ≥19 years, not Hispanic or Latino, single race, white	1,147	63.7 (60.7-66.7)	3.1
HCP, ≥19 years, not Hispanic or Latino, single race, black	334	58.7 (53.1-64.2)	-8.4
HCP, ≥19 years, Hispanic or Latino	271	57.0 (49.8-64.0)	3.7
HCP, ≥19 years, not Hispanic or Latino, single race, asian	169	72.7 (62.5-81.0)	7.8
HCP, ≥19 years, others	39	70.2 (48.1-85.7)	11.2

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

† Respondents were asked if they had ever received the hepatitis B vaccine, and if yes, if they had received at least 3 doses or less than 3 doses.

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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 65+ years for Zoster vaccine
- 90% for hepatitis B vaccine for healthcare personnel

Only limited improvement from 2009

- ### – Small increases only for Tdap (19-64 year olds), Zoster and HPV vaccines

Racial and ethnic disparities remain

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

Expanding Vaccination Coverage Tracking-- Rotating Questions on BRFSS Core Questionnaire

- ❑ Place of influenza vaccination**
- ❑ Tetanus Diphtheria Pertussis (Td/Tdap)**
- ❑ Herpes zoster (Shingles)**

Rationale for Rotating Questions on BRFSS Core Questionnaire

- ❑ **State interest in vaccination coverage data for adult vaccines growing**
- ❑ **Cost constraints preventing use of optional modules**
- ❑ **Rotating core questions a feasible, economical approach**
- ❑ **Rotating core questions as described will provide data that will be a major benefit to all States and support *Healthy People 2020***



<http://www.cdc.gov/>