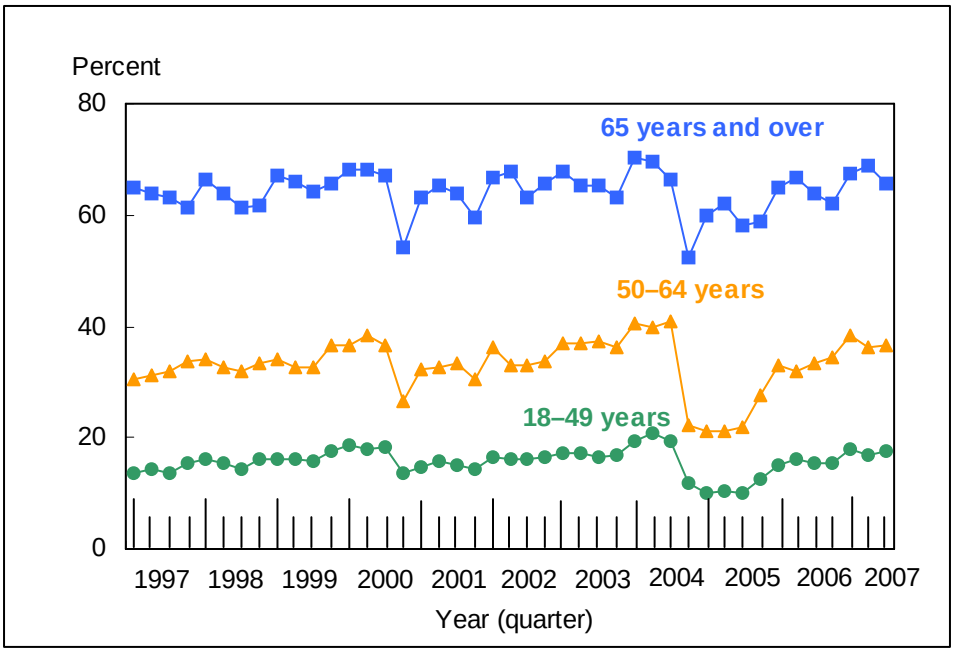
Figure 4.1. Percentage of adults aged 18 years and over who had received an influenza vaccination during the past 12 months, by age group and quarter: United States, 1997–September 2007



NOTES: From 1997 to August 2003, respondents were asked if they had received a flu shot during the past 12 months. Beginning in September 2003, respondents were asked about influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to the question regarding the flu shot. Beginning in 2005, receipt of nasal spray influenza vaccinations was included in the calculation of influenza vaccination estimates. An error in calculating influenza vaccination rates occurred for the first quarter of 2005 to the first quarter of 2007. The effect of this error on estimates was small. Compared with the original estimates, corrected estimates are slightly higher, usually by no more than 0.3 percentage points. The error has been corrected for all estimates in this Early Release and the correction of estimates had no perceptible impact on the graphs. Responses to the influenza vaccination questions cannot be used to determine when during the preceding 12 months the subject received the influenza vaccination. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of an influenza vaccination is seasonal. According to the recommendations of the Advisory Committee on Immunization Practices, all adults aged 50 years and over should receive an influenza vaccination (9). The expansion of the recommendations to include adults aged 50–64 years, a group for which influenza vaccination was formerly recommended only if they had existing high-risk conditions, occurred in the 2000–2001 influenza season but was not issued until the 2001–2002 influenza season (10). Adults aged 18–49 years are recommended to receive influenza vaccination if they have existing high-risk conditions, are healthcare workers, or are in close contact with persons at increased risk of influenza. An influenza vaccination shortage occurred during the 2004–2005 influenza season (11). Previous delays in availability of the influenza shots also occurred in the fall of 2000 and, to a lesser extent, in the fall of 2001 (10,12). The analyses excluded those with unknown influenza vaccination status (about 1% of respondents each year). Beginning with the 2003 data, the National Health Interview Survey (NHIS) transitioned to weights derived from the 2000 census. In this Early Release, estimates for 2000–2002 were recalculated using weights derived from the 2000 census. See “About This Early Release” and Table III in the Appendix for more details.

DATA SOURCE: Sample Adult Core component of the 1997–2007 NHIS. The estimate for 2007 was based on data collected from January through September. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

- In the third quarter of 2007, the percentage of adults who had received an influenza vaccination during the past 12 months was 65.6% for persons aged 65 years and over, 36.5% for persons aged 50–64 years, and 17.6% for persons aged 18–49 years.

- For the age groups 18–49 years, 50–64 years, and 65 years and over, the differences between third quarter estimates in 2007 and 2006 were not significant. For all three age groups, third quarter estimates increased from 2004 to 2007. An influenza vaccination shortage occurred during the 2004–2005 influenza season (11). Previous delays in availability of the influenza shots also occurred in the fall of 2000 and, to a lesser extent, in the fall of 2001 (10,12).

Table 4.1. Annual percentage of adults aged 50 years and over who had received an influenza vaccination during the past 12 months, by age group and sex: United States, 1997–2006

Year	50-64 years			65 years and over			
				Total			
	Total	Men	Women	Crude	Age-adjusted	Men	Women
1997	31.9 (30.5-33.3)	28.0 (26.1-29.9)	35.5 (33.6-37.4)	63.2 (61.9-64.6)	63.1 (61.7-64.4)	64.8 (62.5-67.1)	62.1 (60.5-63.7)
1998	33.1 (31.7-34.5)	29.0 (27.0-31.0)	37.0 (35.1-38.9)	63.3 (61.9-64.7)	63.3 (61.9-64.6)	63.7 (61.5-65.9)	63.0 (61.2-64.8)
1999	34.1 (32.8-35.4)	30.5 (28.6-32.4)	37.4 (35.5-39.3)	65.7 (64.3-67.2)	65.1 (63.6-66.5)	67.2 (65.0-69.4)	64.6 (62.7-66.5)
2000	34.6 (33.1-36.1)	31.9 (29.9-33.9)	37.2 (35.2-39.1)	64.4 (63.0-65.9)	64.6 (63.2-66.0)	66.0 (63.8-68.3)	63.3 (61.6-65.0)
2001	32.2 (30.9-33.5)	30.3 (28.3-32.2)	34.0 (32.2-35.8)	63.1 (61.7-64.5)	63.2 (61.8-64.6)	64.8 (62.5-67.1)	61.8 (60.1-63.5)
2002	34.0 (32.7-35.3)	30.7 (28.8-32.5)	37.2 (35.4-38.9)	65.7 (64.3-67.2)	65.9 (64.5-67.3)	67.1 (64.7-69.5)	64.7 (62.8-66.6)
2003	36.8 (35.4-38.2)	34.5 (32.6-36.3)	38.9 (37.0-40.9)	65.5 (64.1-66.9)	65.6 (64.2-66.9)	66.0 (63.9-68.1)	65.1 (63.2-67.0)
2004	35.9 (34.6-37.3)	33.3 (31.3-35.3)	38.5 (36.7-40.3)	64.6 (63.2-66.1)	64.7 (63.2-66.1)	64.1 (61.9-66.3)	65.0 (63.3-66.7)
2005	23.0 (21.93-24.10)	19.7 (18.11-21.36)	26.1 (24.61-27.52)	59.7 (58.16-61.15)	59.7 (58.24-61.23)	58.9 (56.64-61.17)	60.2 (58.22-62.20)
2006	33.2 (31.59-34.82)	29.9 (27.58-32.18)	36.3 (34.23-38.36)	64.3 (62.39-66.19)	64.4 (62.51-66.32)	64.7 (62.04-67.43)	63.9 (61.65-66.24)

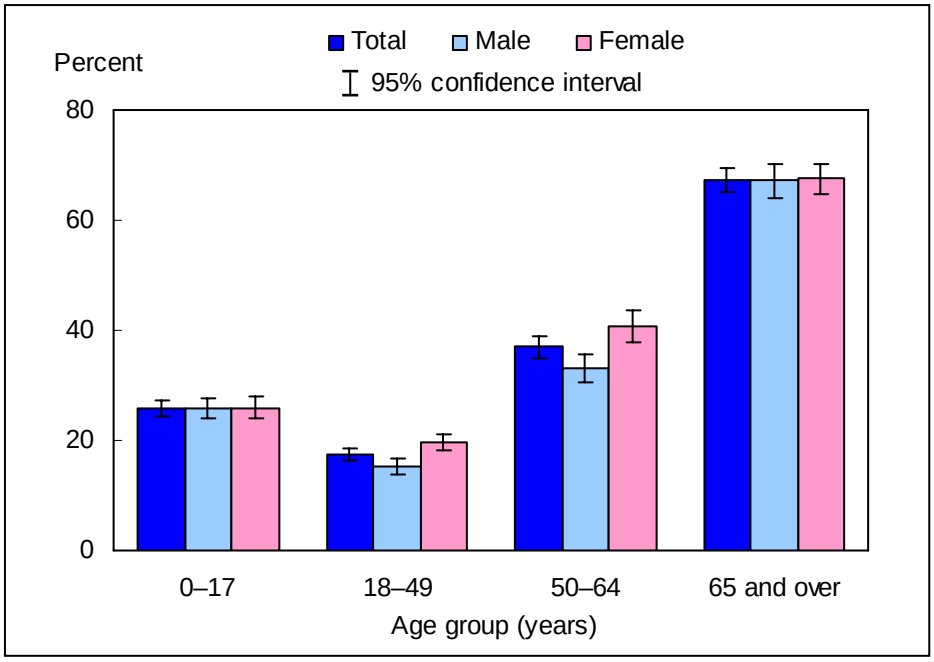
NOTES: From 1997 to August 2003, respondents were asked if they had received a flu shot during the past 12 months. Beginning in September 2003, respondents were asked about influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to the question regarding the flu shot. Beginning in 2005, receipt of nasal spray influenza vaccinations was included in the calculation of influenza vaccination estimates. An error in calculating influenza vaccination rates occurred for the first quarter of 2005 to the first quarter of 2007. The effect of this error on estimates was small. Compared with the original estimates, corrected estimates are slightly higher, usually by no more than 0.3 percentage points. The error has been corrected for all estimates in this Early Release and the correction of estimates had no perceptible impact on the graphs. Responses to the influenza vaccination questions cannot be used to determine when during the preceding 12 months the subject received the influenza vaccination. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of an influenza vaccination is seasonal. According to the recommendations of the Advisory Committee on Immunization Practices, all adults aged 50 years and over should receive an influenza vaccination (9). The expansion of the recommendations to include adults aged 50–64 years, a group for which influenza vaccination was formerly recommended only if they had existing high-risk conditions, occurred in the 2000–2001 influenza season but was not issued until the 2001–2002 influenza season (10). Adults aged 18–49 years are recommended to receive influenza vaccination if they have existing high-risk conditions, are healthcare workers, or are in close contact with persons at increased risk of influenza. An influenza vaccination shortage occurred during the 2004–2005 influenza season (11). Previous delays in availability of the influenza shots also occurred in the fall of 2000 and, to a lesser extent, in the fall of 2001 (10,12). The analyses excluded those with unknown influenza vaccination status (about 1% of respondents each year). Age-adjusted estimates for persons aged 65 years and over for this Healthy People 2010 Leading Health Indicator are based on the 2000 projected U.S. standard population using two age groups: 65–74 years and 75 years and over. Beginning with the 2003 data, the National Health Interview Survey (NHIS) transitioned to weights derived from the 2000 census. In this Early Release, estimates for 2000–2002 were recalculated using weights derived from the 2000 census. See "About This Early Release" and Table III in the Appendix for more details.

DATA SOURCE: Sample Adult Core component of the 1997–2006 NHIS. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

- For adults aged 50–64 years, the annual percentage of persons who received an influenza vaccination during the past 12 months was 33.2% in 2006. This estimate was higher than the estimate in 2005. This pattern was seen in men and women.

- For adults aged 65 years and over, the annual percentage of persons who received an influenza vaccination during the past 12 months was 64.3% in 2006. This estimate was higher than the 2005 estimate. This pattern was seen in men and women.

Figure 4.2. Percentage of persons who had received an influenza vaccination during the past 12 months, by age group and sex: United States, January–September 2007



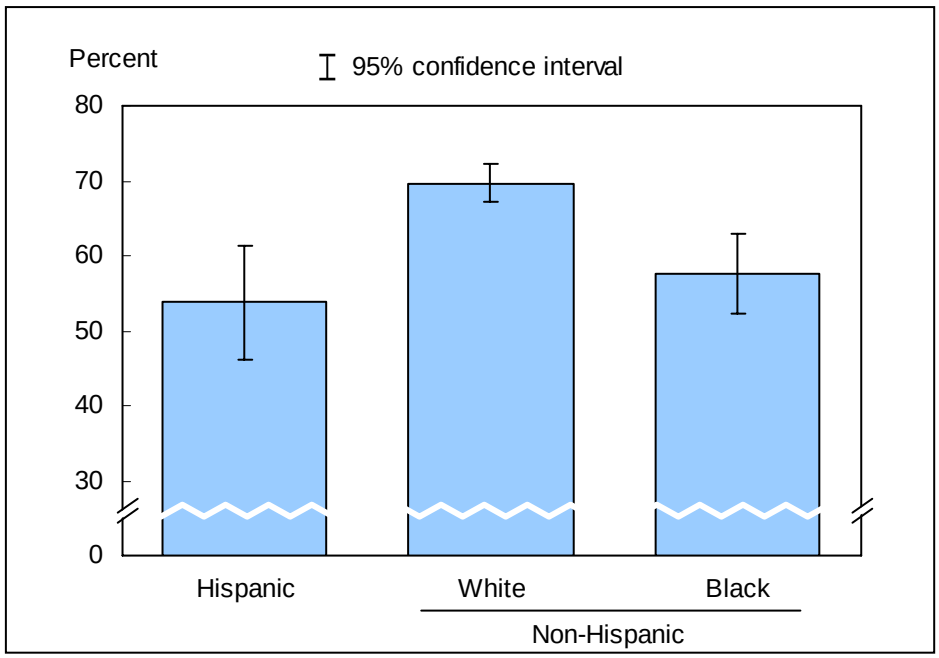
NOTES: Respondents were asked about receipt of influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to a question regarding receipt of a flu shot during the past 12 months. These questions do not indicate whether the vaccination was a first or second dose. An error in calculating influenza vaccination rates occurred for the first quarter of 2005 to the first quarter of 2007. The effect of this error on estimates was small. Compared with the original estimates, corrected estimates are slightly higher, usually by no more than 0.3 percentage points. The error has been corrected for all estimates in this Early Release and the correction of estimates had no perceptible impact on the graphs. Responses to these questions cannot be used to determine when during the preceding 12 months the subject received the influenza vaccination. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of an influenza vaccination is seasonal. According to the recommendations of the Advisory Committee on Immunization Practices, all children 6–59 months and all adults aged 50 years and over should receive an influenza vaccination (9). Adults aged 18–49 years are recommended to receive influenza vaccination if they have existing high-risk conditions, are healthcare workers, or are in close contact with persons at increased risk of influenza (9). The recommendations were recently expanded in February 2008 to include children 5–18 years, however, this change is not yet reflected in the data presented in the chart above (13). The analyses excluded 578 persons (2.6%) with unknown influenza vaccination status.

DATA SOURCE: Based on data collected from January through September in the Sample Adult and Sample Child Core components of the 2007 National Health Interview Survey. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

- For both sexes combined, the percentage of persons who had an influenza vaccination during the past 12 months was highest among persons aged 65 years and over (67.3%), followed by persons aged 50–64 years (37.0%), 0–17 years (25.9%), and 18–49 years (17.4%).

- For adults aged 18–49 years and 50–64 years, women were more likely than men to have received an influenza vaccination during the past 12 months.

Figure 4.3. Percentage of adults aged 65 years and over who had received an influenza vaccination during the past 12 months, by race/ethnicity: United States, January–September 2007



NOTES: Respondents were asked about receipt of influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to a question regarding receipt of a flu shot during the past 12 months. An error in calculating influenza vaccination rates occurred for the first quarter of 2005 to the first quarter of 2007. The effect of this error on estimates was small. Compared with the original estimates, corrected estimates are slightly higher, usually by no more than 0.3 percentage points. The error has been corrected for all estimates in this Early Release and the correction of estimates had no perceptible impact on the graphs. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of an influenza vaccination is seasonal. According to the recommendations of the Advisory Committee on Immunization Practices, all adults aged 50 years and over should receive an influenza vaccination (9). The analyses excluded 104 adults (3.2%) aged 65 years and over with unknown influenza vaccination status.

DATA SOURCE: Based on data collected from January through September in the Sample Adult Core component of the 2007 National Health Interview Survey. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

- For adults aged 65 years and over, the percentage of persons receiving an influenza vaccination during the past 12 months was 53.8% for Hispanic persons, 69.7% for non-Hispanic white persons, and 57.6% for non-Hispanic black persons.
- Hispanic persons and non-Hispanic black persons were less likely than non-Hispanic white persons to have received an influenza vaccination during the past 12 months.

Data tables for Figures 4.1–4.3:

Data table for Figure 4.1. Percentage of adults aged 18 years and over who had received an influenza vaccination during the past 12 months, by age group and quarter: United States, 1997–September 2007

	Percent (95% confidence interval)		
Year and quarter	18–49 years	50–64 years	65 years and over
1997			
Quarter 1	13.6 (12.5-14.6)	30.5 (27.8-33.2)	65.0 (62.3-67.6)
Quarter 2	14.5 (13.4-15.5)	31.3 (28.7-34.0)	63.7 (61.1-66.2)
Quarter 3	13.6 (12.6-14.6)	32.0 (29.3-34.6)	63.1 (60.3-65.9)
Quarter 4	15.6 (14.5-16.7)	33.6 (31.1-36.2)	61.2 (58.7-63.8)
1998			
Quarter 1	16.1 (14.8-17.3)	34.2 (31.3-37.1)	66.3 (63.2-69.4)
Quarter 2	15.3 (14.1-16.5)	32.8 (30.1-35.5)	64.0 (61.3-66.8)
Quarter 3	14.5 (13.3-15.6)	32.0 (29.3-34.6)	61.3 (58.5-64.0)
Quarter 4	16.0 (14.8-17.2)	33.5 (30.8-36.1)	61.6 (58.7-64.5)
1999			
Quarter 1	16.3 (14.8-17.7)	34.2 (31.1-37.3)	67.0 (64.0-70.1)
Quarter 2	16.0 (14.7-17.3)	32.6 (29.8-35.4)	66.1 (63.4-68.8)
Quarter 3	15.8 (14.5-17.1)	32.8 (30.1-35.5)	64.1 (61.2-67.0)
Quarter 4	17.6 (16.2-18.9)	36.7 (34.2-39.2)	65.7 (62.7-68.6)
2000			
Quarter 1	18.6 (17.2-19.9)	36.6 (33.7-39.4)	68.2 (65.3-71.0)
Quarter 2	18.0 (16.7-19.4)	38.5 (35.7-41.4)	68.1 (65.6-70.7)
Quarter 3	18.2 (16.9-19.4)	36.6 (33.7-39.5)	67.1 (64.4-69.8)
Quarter 4	13.6 (12.4-14.8)	26.6 (24.2-29.0)	54.3 (51.6-57.1)
2001			
Quarter 1	14.7 (13.4-16.0)	32.3 (29.6-35.0)	63.3 (60.2-66.3)
Quarter 2	15.9 (14.7-17.1)	32.6 (30.1-35.1)	65.4 (62.8-68.0)
Quarter 3	14.9 (13.9-15.9)	33.3 (30.7-35.8)	64.0 (61.1-66.8)
Quarter 4	14.5 (13.6-15.9)	30.6 (28.0-33.1)	59.6 (56.7-62.4)
2002			
Quarter 1	16.4 (15.2-17.7)	36.3 (33.6-38.9)	66.6 (63.8-69.4)
Quarter 2	16.0 (14.8-17.2)	33.0 (30.5-35.5)	67.8 (65.3-70.3)
Quarter 3	16.2 (14.9-17.5)	33.1 (30.6-35.6)	63.1 (60.5-65.8)
Quarter 4	16.4 (15.1-17.8)	33.8 (31.0-36.6)	65.5 (62.4-68.6)
2003			
Quarter 1	17.1 (15.7-18.4)	36.8 (34.2-39.4)	67.8 (65.0-70.6)
Quarter 2	17.2 (15.8-18.6)	36.8 (33.9-39.7)	65.4 (62.6-68.3)
Quarter 3	16.4 (15.2-17.6)	37.4 (34.9-39.9)	65.4 (62.8-67.9)
Quarter 4	16.7 (15.2-18.1)	36.1 (33.3-39.0)	63.3 (60.1-66.5)
2004			
Quarter 1	19.3 (17.9-20.8)	40.6 (38.0-43.3)	70.3 (67.5-73.0)
Quarter 2	20.9 (19.1-22.6)	40.0 (37.1-43.0)	69.5 (66.7-72.3)
Quarter 3	19.4 (18.2-20.7)	41.0 (38.4-43.6)	66.4 (63.6-69.2)
Quarter 4	12.0 (10.9-13.1)	22.3 (20.2-24.5)	52.4 (49.5-55.4)

See footnotes at end of table.

	Percent (95% confidence interval)		
Year and quarter	18–49 years	50–64 years	65 years and over
2005			
Quarter 1	10.2 (9.03-11.41)	21.2 (19.05-23.42)	59.8 (56.66-62.90)
Quarter 2	10.3 (9.25-11.37)	21.1 (19.05-23.19)	62.0 (59.02-64.91)
Quarter 3	10.0 (9.03-11.03)	21.8 (19.64-24.01)	58.2 (55.42-60.97)
Quarter 4	12.4 (11.28-13.51)	27.8 (25.47-30.19)	58.7 (55.68-61.71)
2006			
Quarter 1	15.0 (13.69-16.36)	33.1 (29.95-36.20)	64.9 (61.65-68.15)
Quarter 2	16.2 (14.78-17.68)	31.8 (29.05-34.50)	66.6 (63.60-69.51)
Quarter 3	15.5 (13.56-17.47)	33.5 (29.45-37.51)	63.9 (58.90-68.84)
Quarter 4	15.4 (14.07-16.82)	34.5 (31.81-37.11)	61.9 (58.72-65.00)
2007			
Quarter 1	18.0 (16.36-19.63)	38.3 (35.28-41.39)	67.5 (64.47-70.62)
Quarter 2	16.7 (15.07-18.31)	36.2 (33.37-39.03)	68.8 (65.62-71.91)
Quarter 3	17.6 (15.47-19.74)	36.5 (32.10-40.95)	65.6 (60.90-70.39)

NOTES: Beginning with the 2003 data, the National Health Interview Survey (NHIS) transitioned to weights derived from the 2000 census. In this Early Release, estimates for 2000–2002 were recalculated using weights derived from the 2000 census. See “About This Early Release” and Table III in the Appendix for more details.

DATA SOURCE: NHIS, 1997–September 2007. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

Data table for Figure 4.2. Percentage of persons who had received an influenza vaccination during the past 12 months, by age group and sex: United States, January–September 2007

Age and sex	Percent	95% confidence interval
0–2 years		
Total	34.8	31.44-38.18
Male	33.4	28.88-37.86
Female	36.3	31.14-41.39
3–4 years		
Total	39.2	34.60-43.71
Male	39.8	33.36-46.17
Female	38.5	32.37-44.66
5–11 years		
Total	25.3	22.95-27.71
Male	26.7	23.35-30.05
Female	23.9	20.60-27.28
12–17 years		
Total	17.8	15.71-19.87
Male	16.9	14.13-19.65
Female	18.8	15.61-21.91
18–49 years		
Total	17.4	16.32-18.53
Male	15.3	13.84-16.77
Female	19.5	18.04-20.99
50–64 years		
Total	37.0	35.04-38.98
Male	33.0	30.57-35.52
Female	40.7	37.95-43.54
65 years and over		
Total	67.3	65.08-69.54
Male	67.1	63.84-70.36
Female	67.5	64.79-70.15
0–17 years		
Total	25.9	24.48-27.27
Male	25.8	23.90-27.79
Female	25.9	23.95-27.87
18 years and over: crude[1]		
Total	30.1	28.93-31.32
Male	27.0	25.53-28.38
Female	33.1	31.61-34.55
65 years and over: age-adjusted[2]		
Total	67.4	65.20-69.58
Male	68.0	64.82-71.09
Female	67.3	64.58-69.95

[1]Crude estimates are presented in the figure.
[2]Estimates for this Healthy People 2010 Leading Health Indicator are age adjusted using the projected 2000 U.S. population as the standard population and using two age groups: 65–74 years and 75 years and over.

DATA SOURCE: National Health Interview Survey, January–September 2007. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

Data table for Figure 4.3. Percentage of adults aged 65 years and over who had received an influenza vaccination during the past 12 months, by race/ethnicity: United States, January–September 2007

	Percent (95% confidence interval)	
Race/ethnicity	Crude[1]	Age-adjusted[2]
Hispanic or Latino	53.8 (46.13-61.40)	54.6 (47.10-62.19)
Not Hispanic or Latino:		
White, single race	69.7 (67.28-72.18)	69.6 (67.17-72.02)
Black, single race	57.6 (52.25-62.88)	58.6 (53.21-63.93)

[1]Crude estimates are presented in the figure.
[2]Estimates for this Healthy People 2010 Leading Health Indicator are age adjusted using the projected 2000 U.S. population as the standard population and using two age groups: 65–74 years and 75 years and over.

DATA SOURCE: National Health Interview Survey, January–September 2007. Data are based on household interviews of a sample of the civilian noninstitutionalized population.