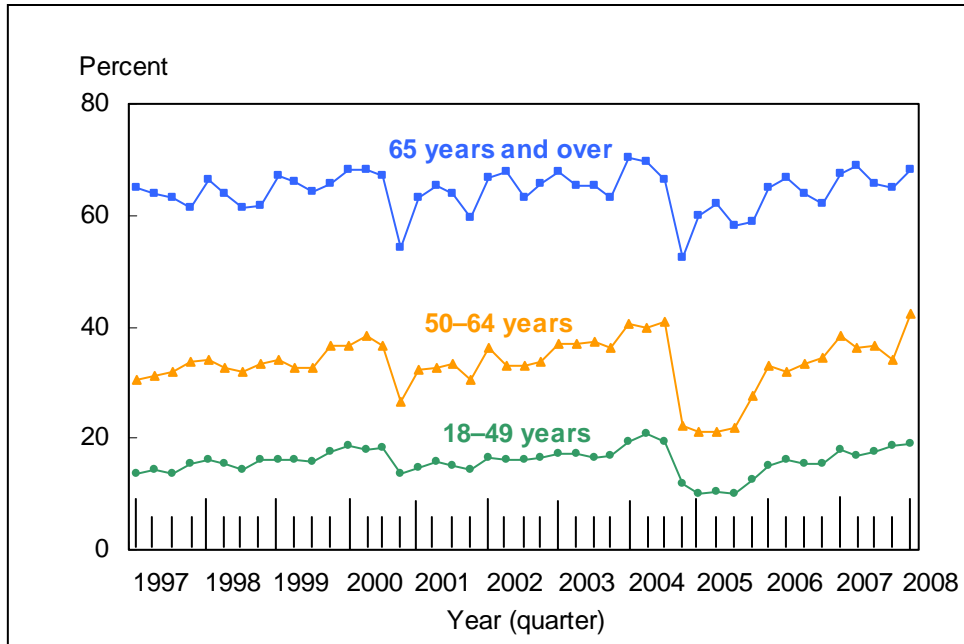


Figure 4.1. Percentage of adults aged 18 years and over who had received an influenza vaccination during the past 12 months, by age group and quarter: United States, 1997–March 2008



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 these 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 (10). 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 implemented until the 2001–2002 influenza season due to a delay in vaccine availability (11). Adults aged 18–49 years are recommended to receive influenza vaccination if they have existing high-risk conditions (including pregnancy during the influenza season), 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 (12). 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 (11,13). The analyses excluded those with unknown influenza vaccination status (about 3% 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” for more details.

DATA SOURCE: Sample Adult Core component of the 1997–March 2008 NHIS. Data are based on household interviews of a sample of the civilian noninstitutionalized population.



- In the first quarter of 2008, the percentage of adults who had received an influenza vaccination during the past 12 months was 68.0% for persons aged 65 years and over, 42.3% for persons aged 50–64 years, and 19.0% for persons aged 18–49 years.
- For the age groups 18–49 years, 50–64 years and 65 years and over, first quarter estimates from 2008 were higher than, but not significantly different from, first quarter estimates from 2007. For all three age groups, first quarter estimates increased from 2005 to 2008. An influenza vaccination shortage occurred during the 2004–2005 influenza season (12). 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 (11,13).

Table 4.1a. Annual percentage of adults aged 50–64 years who had received an influenza vaccination during the past 12 months, by sex: United States, 1997–2007

Year	Percent (95% confidence interval): total	Percent (95% confidence interval): men	Percent (95% confidence interval): women
1997	31.9 (30.5-33.3)	28.0 (26.1-29.9)	35.5 (33.6-37.4)
1998	33.1 (31.7-34.5)	29.0 (27.0-31.0)	37.0 (35.1-38.9)
1999	34.1 (32.8-35.4)	30.5 (28.6-32.4)	37.4 (35.5-39.3)
2000	34.6 (33.1-36.1)	31.9 (29.9-33.9)	37.2 (35.2-39.1)
2001	32.2 (30.9-33.5)	30.3 (28.3-32.2)	34.0 (32.2-35.8)
2002	34.0 (32.7-35.3)	30.7 (28.8-32.5)	37.2 (35.4-38.9)
2003	36.8 (35.4-38.2)	34.5 (32.6-36.3)	38.9 (37.0-40.9)
2004	35.9 (34.6-37.3)	33.3 (31.3-35.3)	38.5 (36.7-40.3)
2005	23.0 (21.93-24.10)	19.7 (18.11-21.36)	26.1 (24.61-27.52)
2006	33.2 (31.59-34.82)	29.9 (27.58-32.18)	36.3 (34.23-38.36)
2007	36.2 (34.56-37.93)	33.0 (30.94-35.05)	39.3 (36.93-41.64)

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 these 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 (10). 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 implemented until the 2001–2002 influenza season due to a delay in vaccine availability (11). Adults aged 18–49 years are recommended to receive influenza vaccination if they have existing high-risk conditions (including pregnancy during the influenza season), 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 (12). 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 (11, 13). The analyses excluded those with unknown influenza vaccination status (about 3% 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” for more details.

DATA SOURCE: Sample Adult Core component of the 1997–2007 NHIS. Data are based on household interviews of a sample of the civilian noninstitutionalized population.



Table 4.1b. Annual percentage of adults aged 65 years and over who had received an influenza vaccination during the past 12 months, by sex: United States, 1997–2007

Year	Crude percent (95% confidence interval): total	Age-adjusted percent (95% confidence interval): total	Percent (95% confidence interval): men	Percent (95% confidence interval): women
1997	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	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	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	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	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	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	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	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	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	64.3 (62.39-66.19)	64.4 (62.51-66.32)	64.7 (62.04-67.43)	63.9 (61.65-66.24)
2007	66.7 (64.90-68.59)	66.8 (65.00-68.68)	66.7 (64.06-69.31)	66.8 (64.62-68.96)

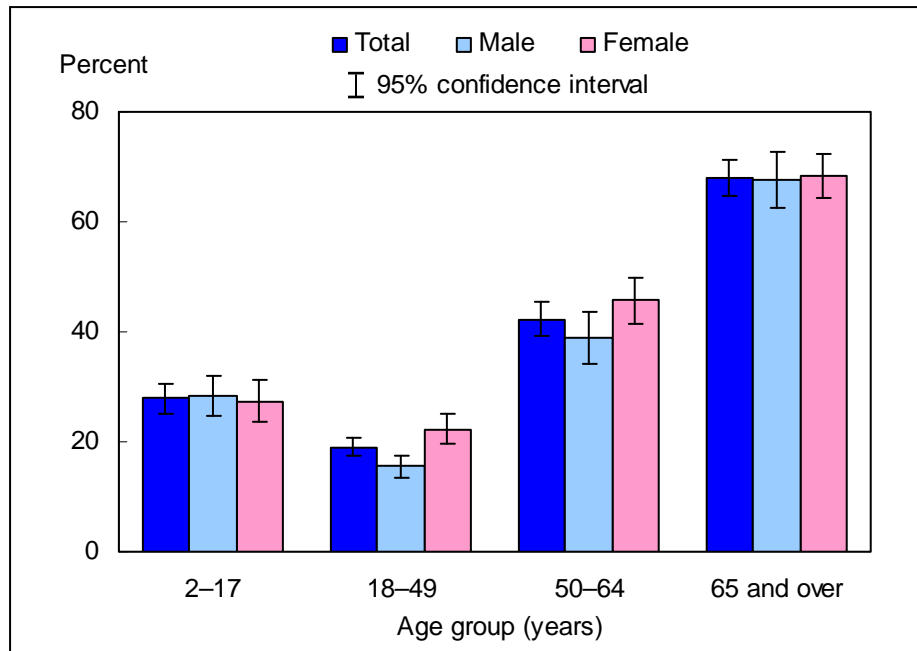
NOTES: From 1997 to August 2003, respondents were asked if they had received a flu shot during the past 12 months. Beginning in September 2003, respondents were asked about influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to the 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 these 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 (10). 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 implemented until the 2001–2002 influenza season due to a delay in vaccine availability (11). Adults aged 18–49 years are recommended to receive influenza vaccination if they have existing high-risk conditions (including pregnancy during the influenza season), 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 (12). 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 (11,13). The analyses excluded those with unknown influenza vaccination status (about 3% 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” for more details.

DATA SOURCE: Sample Adult Core component of the 1997–2007 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 36.2% in 2007. This estimate was higher than the estimate in 2006 (33.2%). This pattern was also seen in men, but the observed increase in women was not significant. Following the influenza vaccination shortage during the 2004–2005 influenza season, estimates for this age group increased from 2005 to 2007 with the 2007 estimates being similar to the estimates in 2004 (12).
- For adults aged 65 years and over, the annual percentage of persons who received an influenza vaccination during the past 12 months was 66.7% in 2007. This estimate was not significantly different than the 2006 estimate (64.3%). This pattern was seen in men and women. Following the influenza vaccination shortage during the 2004–2005 influenza season, estimates for this age group increased from 2005 to 2007 with the 2006 estimates being similar to the estimates in 2004 (12).

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–March 2008

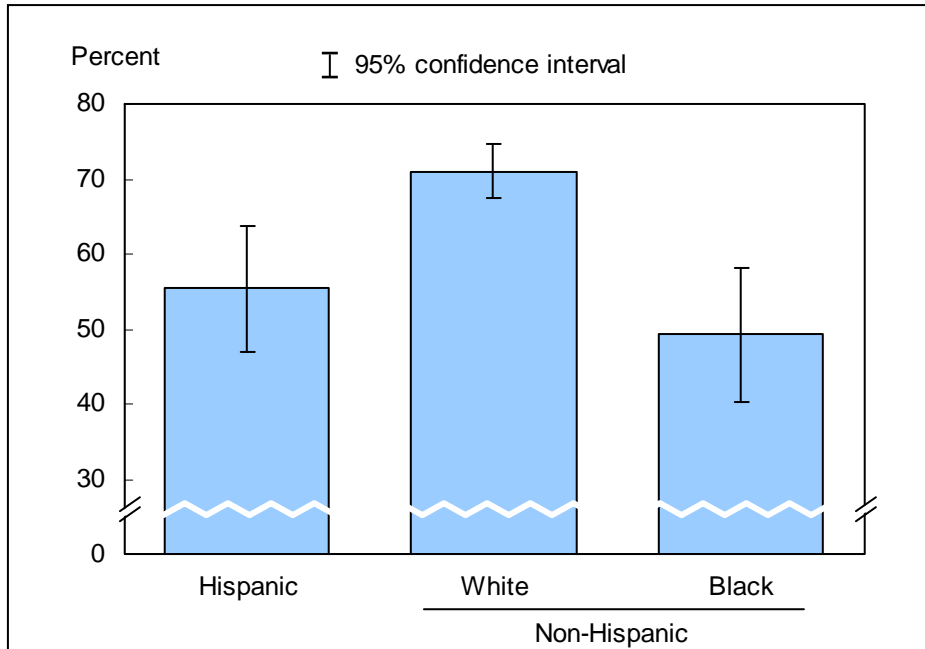


NOTES: Respondents were asked about receipt of influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to a question regarding receipt of a flu shot during the past 12 months. These questions do not indicate whether the vaccination was 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 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, at the time of interview, all children 6–59 months and all adults aged 50 years and over should receive an influenza vaccination (10). Beginning with this Early Release, the minimum age shown for influenza vaccination has been changed from 0 years to 2 years to reflect the 6 month minimum age (and 12 month reference period) for influenza vaccination eligibility. Adults aged 18–49 years are recommended to receive influenza vaccination if they have existing high-risk conditions (including pregnancy during the influenza season), are healthcare workers, or are in close contact with persons at increased risk of influenza (10). The recommendations were recently expanded in February 2008 to include children 5–18 years (14). The analyses excluded 169 persons (2.1%) with unknown influenza vaccination status.

DATA SOURCE: Based on data collected from January through March in the Sample Adult and Sample Child Core components of the 2008 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 (68.0%), followed by persons aged 50–64 years (42.3%), 2–17 years (27.9%), and 18–49 years (19.0%).
- 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–March 2008



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. Responses to these 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 (10). The analyses excluded 24 adults (2.0%) aged 65 years and over with unknown influenza vaccination status.

DATA SOURCE: Based on data collected from January through March in the Sample Adult Core component of the 2008 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 55.4% for Hispanic persons, 71.0% for non-Hispanic white persons, and 49.3% 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–March 2008

Year and quarter	Percent (95% confidence interval): 18–49 years	Percent (95% confidence interval): 50–64 years	Percent (95% confidence interval): 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)
1997, quarter 2	14.5 (13.4-15.5)	31.3 (28.7-34.0)	63.7 (61.1-66.2)
1997, quarter 3	13.6 (12.6-14.6)	32.0 (29.3-34.6)	63.1 (60.3-65.9)
1997, 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)
1998, quarter 2	15.3 (14.1-16.5)	32.8 (30.1-35.5)	64.0 (61.3-66.8)
1998, quarter 3	14.5 (13.3-15.6)	32.0 (29.3-34.6)	61.3 (58.5-64.0)
1998, 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)
1999, quarter 2	16.0 (14.7-17.3)	32.6 (29.8-35.4)	66.1 (63.4-68.8)
1999, quarter 3	15.8 (14.5-17.1)	32.8 (30.1-35.5)	64.1 (61.2-67.0)
1999, 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)
2000, quarter 2	18.0 (16.7-19.4)	38.5 (35.7-41.4)	68.1 (65.6-70.7)
2000, quarter 3	18.2 (16.9-19.4)	36.6 (33.7-39.5)	67.1 (64.4-69.8)
2000, 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)
2001, quarter 2	15.9 (14.7-17.1)	32.6 (30.1-35.1)	65.4 (62.8-68.0)
2001, quarter 3	14.9 (13.9-15.9)	33.3 (30.7-35.8)	64.0 (61.1-66.8)
2001, 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)
2002, quarter 2	16.0 (14.8-17.2)	33.0 (30.5-35.5)	67.8 (65.3-70.3)
2002, quarter 3	16.2 (14.9-17.5)	33.1 (30.6-35.6)	63.1 (60.5-65.8)
2002, 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)
2003, quarter 2	17.2 (15.8-18.6)	36.8 (33.9-39.7)	65.4 (62.6-68.3)
2003, quarter 3	16.4 (15.2-17.6)	37.4 (34.9-39.9)	65.4 (62.8-67.9)
2003, 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)
2004, quarter 2	20.9 (19.1-22.6)	40.0 (37.1-43.0)	69.5 (66.7-72.3)
2004, quarter 3	19.4 (18.2-20.7)	41.0 (38.4-43.6)	66.4 (63.6-69.2)
2004, 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.



Year and quarter	Percent (95% confidence interval): 18–49 years	Percent (95% confidence interval): 50–64 years	Percent (95% confidence interval): 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)
2005, quarter 2	10.3 (9.25-11.37)	21.1 (19.05-23.19)	62.0 (59.02-64.91)
2005, quarter 3	10.0 (9.03-11.03)	21.8 (19.64-24.01)	58.2 (55.42-60.97)
2005, 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)
2006, quarter 2	16.2 (14.78-17.68)	31.8 (29.05-34.50)	66.6 (63.60-69.51)
2006, quarter 3	15.5 (13.56-17.47)	33.5 (29.45-37.51)	63.9 (58.90-68.84)
2006, 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)
2007, quarter 2	16.7 (15.07-18.31)	36.2 (33.37-39.03)	68.8 (65.62-71.91)
2007, quarter 3	17.6 (15.47-19.74)	36.5 (32.10-40.95)	65.6 (60.90-70.39)
2007, quarter 4	18.7 (17.11-20.38)	34.0 (31.14-36.79)	65.1 (62.17-68.02)
2008, quarter 1	19.0 (17.41-20.56)	42.3 (39.12-45.58)	68.0 (64.78-71.22)

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” for more details.

DATA SOURCE: NHIS, 1997–March 2008. 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–March 2008

Age and sex	Percent	95% confidence interval
2–4 years, total	42.7	36.13-49.22
2–4 years, male	40.6	31.02-50.24
2–4 years, female	44.5	36.01-52.91
5–11 years, total	27.1	23.20-30.95
5–11 years, male	28.7	22.99-34.40
5–11 years, female	25.3	20.60-30.01
12–17 years, total	20.5	16.47-24.57
12–17 years, male	21.4	16.14-26.75
12–17 years, female	19.6	14.32-24.91
2–17 years, total	27.9	25.12-30.58
2–17 years, male	28.3	24.55-32.08
2–17 years, female	27.4	23.68-31.10
18–49 years, total	19.0	17.41-20.56
18–49 years, male	15.5	13.50-17.59
18–49 years, female	22.3	19.74-24.91
50–64 years, total	42.3	39.12-45.58
50–64 years, male	38.9	34.13-43.69
50–64 years, female	45.7	41.59-49.78
65 years and over, total	68.0	64.78-71.22
65 years and over, male	67.6	62.63-72.60
65 years and over, female	68.3	64.29-72.29
18 years and over (crude ¹), total	32.8	31.30-34.23
18 years and over (crude ¹), male	29.1	26.97-31.18
18 years and over (crude ¹), female	36.2	34.13-38.31
65 years and over (age-adjusted ²), total	68.2	65.06-71.36
65 years and over (age-adjusted ²), male	68.6	63.86-73.43
65 years and over (age-adjusted ²), female	68.0	64.01-72.04

¹Crude estimates are presented in the figure.

²Estimates 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–March 2008. 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–March 2008

Race/ethnicity	Crude¹ percent (95% confidence interval)	Age-adjusted² percent (95% confidence interval)
Hispanic or Latino	55.4 (46.93-63.79)	55.8 (47.02-64.58)
Not Hispanic or Latino, single race white	71.0 (67.39-74.57)	71.0 (67.49-74.50)
Not Hispanic or Latino, single race black	49.3 (40.31-58.24)	51.9 (43.11-60.68)

¹Crude estimates are presented in the figure.

²Estimates 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–March 2008. Data are based on household interviews of a sample of the civilian noninstitutionalized population.