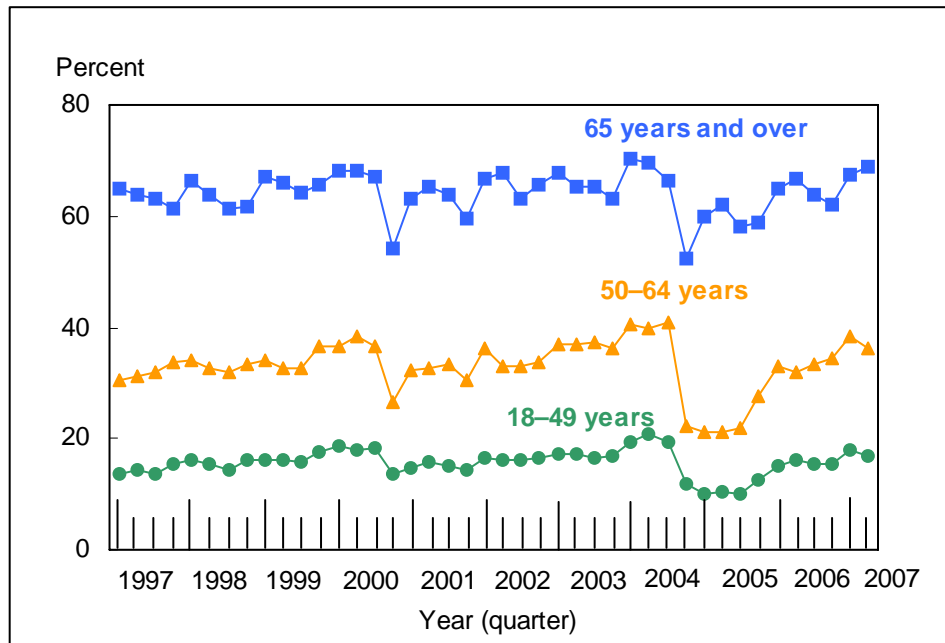


**Figure 4.1. Percentage of adults aged 18 years and over who had received an influenza vaccination during the past 12 months, by age group and quarter: United States, 1997–June 2007**



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 flu vaccinations was included in the calculation of flu vaccination estimates. An error in calculating flu 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 flu vaccination questions cannot be used to determine when during the preceding 12 months the subject received the flu vaccination. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of a flu vaccination is seasonal. According to the recommendations of the Advisory Committee on Immunization Practices, all adults aged 65 years and over should receive an influenza vaccination (9). In the 2000–2001 flu season (but not issued until the 2001–2002 flu season), these recommendations for influenza vaccination were expanded to include persons 50–64 years of age, a group for which influenza vaccination was formerly recommended only if they had existing high-risk conditions (10). Adults aged 18–49 years are recommended to receive influenza vaccination only if they have existing high-risk conditions. The analyses excluded those with unknown flu 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 June. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

■ In the second quarter of 2007, the percentage of adults who had received an influenza vaccination during the past 12 months was 68.8% for persons aged 65 years and over, 36.2% for persons aged 50–64 years, and 16.7% for persons aged 18–49 years.

■ For the age group 50–64 years, the second quarter estimate in 2007 was higher than the second quarter estimate in 2006. For age group 18–49 years and persons aged 65 years and over, the differences between second quarter estimates in 2007 and 2006 were not significant. An influenza vaccination shortage occurred during the 2004–2005 flu season (9). Previous delays in availability of the flu shots also occurred in the fall of 2000 and, to a lesser extent, in the fall of 2001 (10,11).

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

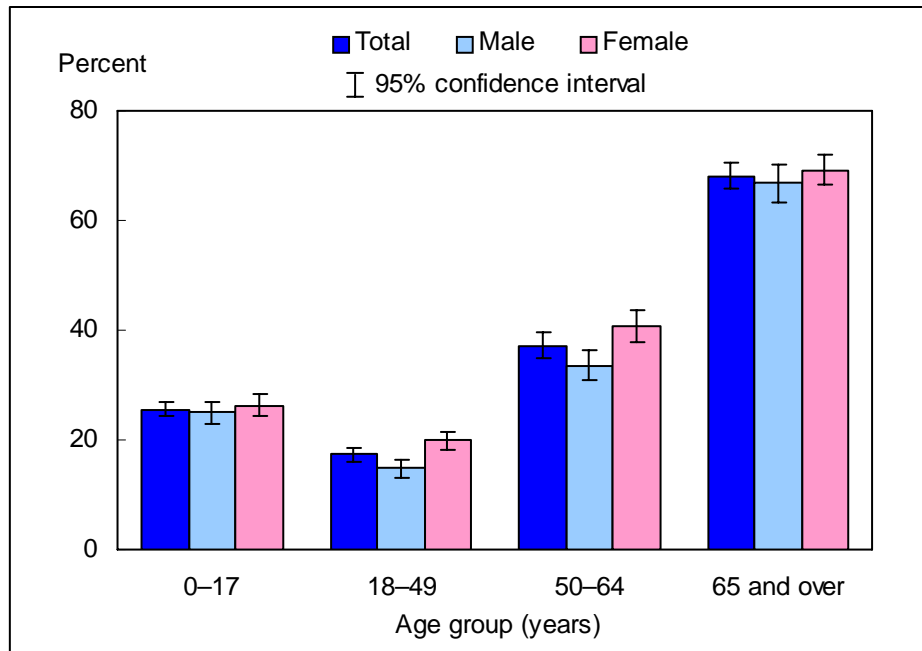
NOTES: From 1997 to August 2003, respondents were asked if they had received a flu shot during the past 12 months. Beginning in September 2003, respondents were asked about influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to the question regarding the flu shot. Beginning in 2005, receipt of nasal spray flu vaccinations was included in the calculation of flu vaccination estimates. An error in calculating flu 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 flu vaccination questions cannot be used to determine when during the preceding 12 months the subject received the flu vaccination. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of a flu vaccination is seasonal. According to the recommendations of the Advisory Committee on Immunization Practices, all adults aged 65 years and over should receive an influenza vaccination (9). In the 2000–2001 flu season (but not issued until the 2001–2002 flu season), these recommendations for influenza vaccination were expanded to include persons aged 50–64 years, a group for which influenza vaccination was formerly recommended only if they had existing high-risk conditions (10). Adults aged 18–49 years are recommended to receive influenza vaccination only if they have existing high-risk conditions. The analyses excluded those with unknown flu 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 33.1% 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 64.1% in 2006. This estimate was higher than the estimate in 2005. 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–June 2007**

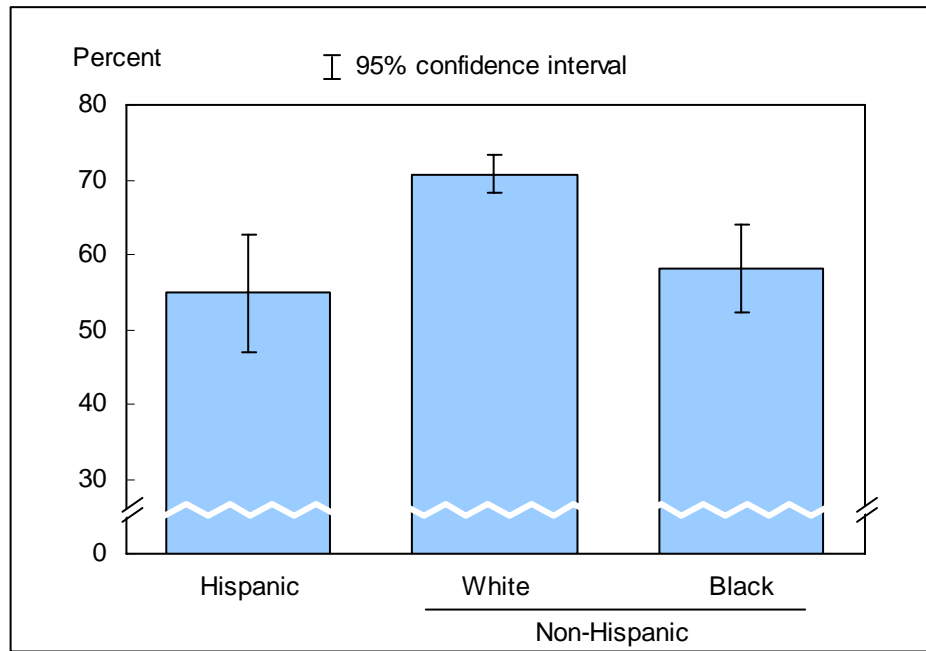


NOTES: Respondents were asked about receipt of influenza vaccination by nasal spray (sometimes called by the brand name FluMist™) during the past 12 months in addition to a question regarding receipt of a flu shot during the past 12 months. An error in calculating flu vaccination rates occurred for the 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 flu vaccination. In addition, estimates are subject to recall error, which will vary depending on when the question is asked because the receipt of a flu vaccination is seasonal. According to the recommendations of the Advisory Committee on Immunization Practices, all adults aged 65 years and over should receive an influenza vaccination (9). In the 2000–2001 flu season (but not issued until the 2001–2002 flu season), these recommendations for influenza vaccination were expanded to include persons 50–64 years of age, a group for which influenza vaccination was formerly recommended only if they had existing high-risk conditions (10). The recommendations were again expanded for the 2003–2004 flu season to include children aged 6–23 months (12) and again for the 2006–2007 flu season to include children 6–59 months (13). Persons aged 2–49 years are recommended to receive an influenza vaccination only if they have existing high-risk conditions. The analyses excluded 468 persons (2.6%) with unknown flu vaccination status.

DATA SOURCE: Based on data collected from January through June 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 a flu vaccination during the past 12 months was highest among persons aged 65 years and over (68.2%), followed by persons aged 50–64 years (37.3%), 0–17 years (25.6%), and 18–49 years (17.3%).
- For adults aged 18–49 years and 50–64 years, women were more likely than men to have received a flu 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–June 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 flu 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 a flu vaccination is seasonal. The analyses excluded 85 adults (3.4%) aged 65 years and over with unknown flu vaccination status.

DATA SOURCE: Based on data collected from January through June 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 a flu vaccination during the past 12 months was 54.9% for Hispanic persons, 70.8% for non-Hispanic white persons, and 58.1% for non-Hispanic black persons.
- Hispanic persons and non-Hispanic black persons were less likely than non-Hispanic white persons to have received a flu 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–June 2007**

| Year and quarter | Percent (95% confidence interval) |                  |                   |
|------------------|-----------------------------------|------------------|-------------------|
|                  | 18–49 years                       | 50–64 years      | 65 years and over |
| <b>1997</b>      |                                   |                  |                   |
| 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)  |
| <b>1998</b>      |                                   |                  |                   |
| 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)  |
| <b>1999</b>      |                                   |                  |                   |
| 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)  |
| <b>2000</b>      |                                   |                  |                   |
| 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)  |
| <b>2001</b>      |                                   |                  |                   |
| 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)  |
| <b>2002</b>      |                                   |                  |                   |
| 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)  |
| <b>2003</b>      |                                   |                  |                   |
| 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)  |
| <b>2004</b>      |                                   |                  |                   |
| 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.

**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–June 2007**

| Year and quarter | Percent (95% confidence interval) |                    |                    |
|------------------|-----------------------------------|--------------------|--------------------|
|                  | 18–49 years                       | 50–64 years        | 65 years and over  |
| <b>2005</b>      |                                   |                    |                    |
| 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) |
| <b>2006</b>      |                                   |                    |                    |
| 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) |
| <b>2007</b>      |                                   |                    |                    |
| Quarter 1        | 18.0 (16.36-19.63)                | 38.3 (35.28-41.39) | 67.5 (64.46-70.62) |
| Quarter 2        | 16.7 (15.07-18.31)                | 36.2 (33.37-39.03) | 68.8 (65.62-71.91) |

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–June 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–June 2007**

| Age and sex  | Percent | 95% confidence interval |
|--|---------|-------------------------|
| <b>0–2 years</b>                                   |         |                         |
| Total  | 36.5    | 32.56-40.50             |
| Male   | 33.7    | 28.19-39.12             |
| Female   | 39.4    | 33.43-45.46             |
| <b>3–4 years</b>                                   |         |                         |
| Total  | 37.3    | 32.51-42.11             |
| Male   | 38.5    | 31.78-45.30             |
| Female   | 36.0    | 29.01-43.02             |
| <b>5–11 years</b>                                  |         |                         |
| Total  | 25.4    | 23.00-27.74             |
| Male   | 25.9    | 22.39-29.34             |
| Female   | 24.9    | 21.39-28.34             |
| <b>12–17 years</b>                                 |         |                         |
| Total  | 16.7    | 14.43-18.99             |
| Male   | 15.3    | 12.54-18.11             |
| Female   | 18.2    | 14.78-21.61             |
| <b>18–49 years</b>                                 |         |                         |
| Total  | 17.3    | 16.10-18.58             |
| Male   | 14.7    | 13.15-16.32             |
| Female   | 19.9    | 18.28-21.55             |
| <b>50–64 years</b>                                 |         |                         |
| Total  | 37.3    | 35.03-39.49             |
| Male   | 33.5    | 30.81-36.25             |
| Female   | 40.7    | 37.66-43.77             |
| <b>65 years and over</b>                           |         |                         |
| Total  | 68.2    | 65.89-70.42             |
| Male   | 66.8    | 63.38-70.28             |
| Female   | 69.1    | 66.37-71.92             |
| <b>0–17 years</b>                                  |         |                         |
| Total  | 25.6    | 24.19-27.04             |
| Male   | 24.9    | 22.91-26.91             |
| Female   | 26.4    | 24.23-28.48             |
| <b>18 years and over: crude<sup>1</sup></b>        |         |                         |
| Total  | 30.2    | 28.94-31.53             |
| Male   | 26.6    | 25.08-28.16             |
| Female   | 33.6    | 31.96-35.24             |
| <b>65 years and over: age-adjusted<sup>2</sup></b> |         |                         |
| Total  | 68.3    | 66.04-70.54             |
| Male   | 67.8    | 64.50-71.13             |
| Female   | 69.0    | 66.19-71.76             |

<sup>1</sup>Crude estimates are presented in the figure.

<sup>2</sup>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–June 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–June 2007**

| Race/ethnicity          | Percent (95% confidence interval) |                           |
|-------------------------|-----------------------------------|---------------------------|
|                         | Crude <sup>1</sup>                | Age-adjusted <sup>2</sup> |
| Hispanic or Latino      | 54.9 (47.06-62.79)                | 55.9 (47.99-63.81)        |
| Not Hispanic or Latino: |                                   |                           |
| White, single race      | 70.8 (68.33-73.28)                | 70.7 (68.21-73.12)        |
| Black, single race      | 58.1 (52.26-63.89)                | 59.6 (53.71-65.56)        |

<sup>1</sup>Crude estimates are presented in the figure.

<sup>2</sup>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–June 2007. Data are based on household interviews of a sample of the civilian noninstitutionalized population.