

Vital Signs: Health Insurance Coverage and Health Care Utilization — United States, 2006–2009 and January–March 2010

ABSTRACT

Background: The increasing number of persons in the United States with no health insurance has implications both for individual health and societal costs. Because of cost concerns, millions of uninsured persons forgo some needed health care, which can lead to poorer health and potentially to greater medical expenditures in the long term.

Methods: CDC analyzed data from the National Health Interview Survey (NHIS) for 2006, 2007, 2008, and 2009 and early release NHIS data from the first quarter of 2010 to determine the number of persons without health insurance or with gaps in coverage and to assess whether lack of insurance coverage was associated with increased levels of forgone health care. Data were analyzed further by demographic characteristics, family income level, and selected chronic conditions.

Results: In the first quarter of 2010, an estimated 59.1 million persons had no health insurance for at least part of the year before their interview, an increase from 58.7 million in 2009 and 56.4 million in 2008. Of the 58.7 million in 2009, 48.6 million (82.8%) were aged 18–64 years. Among persons aged 18–64 years with family incomes two to three times the federal poverty level (approximately \$43,000–\$65,000 for a family of four in 2009), 9.7 million (32.1%) were uninsured for at least part of the preceding year. Persons aged 18–64 years with no health insurance during the preceding year were seven times as likely (27.6% versus 4.0%) as those continuously insured to forgo needed health care because of cost. Among persons aged 18–64 years with diabetes mellitus, those who had no health insurance during the preceding year were six times as likely (47.5% versus 7.7%) to forgo needed medical care as those who were continuously insured.

Conclusions: An increasing number of persons in the United States, including those at middle income levels, have had periods with no health insurance coverage in recent years, which is associated with increased levels of forgone health care. Persons aged 18–64 years with chronic conditions and without consistent health insurance coverage are much more likely to forgo needed medical care than persons with the same conditions and continuous coverage.

Implications for Public Health Practice: Increasing the number of persons with continuous health insurance coverage can reduce the number of occasions that persons forgo needed health care, which can reduce complications from illness and avoidable long-term expenditures.

Millions of persons in the United States have no health insurance. In addition to paying for their health care out of pocket, uninsured persons often are charged significantly higher fees than insured persons for the same care because of insurance plan discounts negotiated with health-care providers (1). Consequently, uninsured persons forgo needed care, including preventive care, because of cost concerns (2,3). Absent or

delayed health care can lead to poorer health and potentially to greater medical expenditures in the long term (4,5). Although Medicare provides near-universal health insurance coverage for persons aged ≥ 65 years, and expansions in Medicaid and the Children's Health Insurance Program have increased coverage for children in the United States, a substantial percentage of adults aged 18–64 years have experienced disruptions in access



to health care during the past decade, including those with chronic conditions, who have a greater need for care than the general population (6). In this report, CDC uses NHIS data to assess the association between lack of health insurance coverage and delaying or forgoing health care.

Methods

NHIS data regarding health insurance status and health-care utilization were collected via in-person interviews of a sample of the noninstitutionalized civilian population. Persons were considered uninsured if they did not have private health insurance, Medicare, Medicaid, Children's Health Insurance Program insurance, a state-sponsored or other government-sponsored health plan, or a military plan. Persons also were defined as uninsured if they had only a private plan that paid for one type of coverage (e.g., injury, eye care, or dental care) or had only Indian Health Service coverage.* Participants were asked whether they had insurance at the time of interview; whether they had been uninsured for at least part (i.e., even if only 1 day) of the preceding 12 months and, if so, for how long; whether they had delayed or forgone health care because of cost in the preceding 12 months†; whether they had ever been diagnosed with hypertension, diabetes mellitus, or asthma; and whether they had a usual source of care. Persons reporting that they typically visited an emergency department were considered not to have a usual source of care.

Of the households contacted, 82.2% participated in the 2009 survey. The response rate from participants exceeded 98% for the questions that produced the findings in this report, except for questions on income and race/ethnicity. Multiple imputations were performed on family‡ income and personal earnings

data and hot-deck imputations were performed on race/ethnicity data to account for missing responses to these questions.§ NHIS data were adjusted for non-response and weighted to provide national estimates of insurance status, usual source of care, and care utilization; 95% confidence intervals were calculated, taking into account the survey's multistage probability sample design. The Wald test and logistic regression analyses were used to identify the statistical significance of differences in care utilization between persons who were continuously insured and those with either a 1–3 month gap in coverage in the preceding 12 months or with no health insurance for >12 months before the interview. Insurance status, usual source of care, and care utilization were examined by age group, sex, race/ethnicity, income level, and the highest level of education attained in the family. Data from the final release 2009 NHIS and early release NHIS data (i.e., compiled before final data editing and weighting) for the first quarter of 2010 were analyzed. Additional data from NHIS for 2006, 2007, and 2008 were used for comparison purposes.

Results

In 2009, an estimated 58.7 million (19.5%) persons of all ages had no health insurance for at least part of the year preceding their interview (Table 1). Of these 58.7 million, 48.6 million (82.8%) were persons aged 18–64 years, and 9.5 million (16.2%) were persons aged ≤17 years. From 2008 to 2009, the number of children without coverage for at least part of the year decreased 5.0%, from 10.0 million to 9.5 million. In contrast, the number of adults aged 18–64 years in this same insurance category increased 5.7%, from 46.0 million to 48.6 million. In 2009, 25.7% of all adults aged 18–64 years were without coverage for at least part of the preceding year; 15.4% reported being uninsured for more than a year (Table 1).

In the first quarter of 2010, the estimated number of persons without coverage for at least part of the year increased by 400,000 (0.7%), from 2009 to 59.1 million. The number of persons aged 18–64 years without coverage for at least part of the year increased by 1.3 million (2.7%) to 49.9 million, and the number without coverage for more than a year increased by 1.3 million (4.5%) to 30.4 million (Table 1).

In 2009, among persons aged 18–64 years with family incomes two to three times the federal poverty

* Consistent with other population surveys conducted by U.S. federal agencies, CDC does not regard Indian Health Service coverage as health insurance for the purpose of identifying uninsured populations.

† Participants were asked two different questions: "During the past 12 months, has [person] delayed seeking medical care because of worry about the cost?" and "During the past 12 months, was there any time when [person] needed medical care but did not get it because [person] couldn't afford it?" Additional information available at http://www.cdc.gov/nchs/nhis/nhis_2009_data_release.htm.

‡ The 2009 NHIS defined a family as "an individual or group of two or more related persons who are living together in the same occupied housing unit (i.e., household) in the sample. In some instances, unrelated persons sharing the same household may also be considered as one family, such as unmarried couples who are living together." Additional information available at http://www.cdc.gov/nchs/nhis/quest_data_related_1997_forward.htm.

§ Additional information available at <http://www.cdc.gov/nchs/nhis/2009imputedincome.htm>.

TABLE 1. Number and percentage of persons with no health insurance coverage for at least part of the 12 months before interview* or for >12 months before interview, by age group — National Health Interview Survey, United States, 2008, 2009, and January–March 2010

Age group/Insurance status	2008		2009		January–March 2010†	
	No. in millions	(%)	No. in millions	(%)	No. in millions	(%)
≤17 yrs						
No health insurance for at least part of the 12 mos before interview	10.0	(13.5)	9.5	(12.8)	8.7	(11.7)
No health insurance for >12 mos before interview	4.1	(5.6)	3.6	(4.8)	3.4	(4.6)
18–64 yrs						
No health insurance for at least part of the 12 mos before interview	46.0	(24.5)	48.6	(25.7)	49.9	(26.2)
No health insurance for >12 mos before interview	27.5	(14.6)	29.1	(15.4)	30.4	(16.0)
All ages						
No health insurance for at least part of the 12 mos before interview	56.4	(18.9)	58.7	(19.5)	59.1	(19.5)
No health insurance for >12 mos before interview	31.7	(10.6)	32.8	(10.9)	33.9	(11.2)

* No insurance even if only for 1 day.

† Early release of estimates. Additional information available at <http://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201009.htm>.

level (approximately \$43,000–\$65,000 for a family of four),** 9.7 million (32.1%) were uninsured for at least part of the preceding year. Among persons aged 18–64 years with family incomes three to four times the federal poverty level (approximately \$65,000–\$87,000 for a family of four), 5.2 million (20.6%) were uninsured for at least part of the preceding year (Table 2). From 2006 to 2009, the largest increase of any income group in the number (from 8.0 million to 9.7 million) and percentage (27.8% to 32.1%) of adults aged 18–64 without insurance at some point during the prior year occurred among those with a family income of two to three times the federal poverty level.

Persons aged 18–64 years who were without health insurance for more than a year were approximately six times as likely (55.2% versus 9.3%) to not have a

usual source of care, compared with those who were continuously insured (Table 3). Similarly, persons aged 18–64 years with no health insurance during the preceding year were seven times as likely (27.6% versus 4.0%) to forgo needed health care because of cost, compared with those continuously insured (Table 4). Persons aged 18–64 years with no health insurance during the preceding year were approximately six times as likely to forgo needed care if they had hypertension (42.7% versus 6.7%) or diabetes mellitus (47.5% versus 7.7%) and five times as likely (40.8% versus 8.0%) to forgo needed care if they had asthma, compared with those with continuous coverage who had the same chronic condition (Table 4).

Currently insured persons aged 18–64 years who had a 1–3 month gap in coverage during the preceding year were nearly twice as likely (16.4% versus 9.3%) to not have a usual source of care, and three times as likely (26.5% versus 7.1%) to delay care because of cost, compared with persons with continuous coverage

** Additional information available at <http://www.census.gov/hhes/www/poverty/about/overview/measure.html>.

TABLE 2. Number* and percentage of persons aged 18–64 years with no health insurance coverage for at least part of the 12 months† before interview, by household income level — National Health Interview Survey, United States, 2006–2009

Annual family income relative to the federal poverty level§	2006		2007		2008		2009	
	No. in millions	(%)						
≤100%	11.4	(47.2)	10.0	(45.5)	10.1	(45.3)	11.8	(49.1)
101%–200%	13.6	(43.2)	13.9	(44.0)	14.2	(46.0)	15.2	(45.9)
201%–300%	8.0	(27.8)	8.9	(29.9)	8.9	(29.8)	9.7	(32.1)
301%–400%	4.8	(18.6)	5.2	(20.0)	5.3	(20.3)	5.2	(20.6)
>400%	7.5	(10.0)	6.8	(8.8)	7.6	(9.7)	6.9	(9.0)
Total	45.2	(24.4)	44.8	(23.9)	46.0	(24.5)	48.6	(25.7)

* Numbers might not sum to totals because of rounding.

† No insurance even if only for 1 day.

§ In 2009, the poverty level for a family with two adults and two children was \$21,756. Additional information available at <http://www.census.gov/hhes/www/poverty/about/overview/measure.html>.

TABLE 3. Percentage of adults aged 18–64 years who did not have a usual source of health care or who delayed care because of cost during the 12 months before interview, by selected health insurance status — National Health Interview Survey, United States, 2009

Health-care characteristic	Continuously insured during 12 months before interview %	Currently insured, but had a 1–3 month gap in coverage during the 12 months before interview %	No health insurance for >12 months before interview %
No usual source of health care, excluding emergency room	9.3	16.4*	55.2*
Delayed health care because of cost	7.1	26.5*	32.3*

* Significantly different from the percentage for continuous coverage ($p < 0.005$).

TABLE 4. Percentage of adults aged 18–64 years who chose to forgo needed health care because of cost during the 12 months before interview, by selected health insurance status, chronic conditions, and household income level — National Health Interview Survey, United States, 2009

Chronic condition*	Annual household income relative to the federal poverty level [†]	Health insurance status		
		Continuously insured during 12 months before interview %	Currently insured, but had a 1–3 month gap in coverage during the 12 months before interview %	No health insurance for >12 months before interview %
Total population aged 18–64 yrs	≤200%	7.7	21.0 [§]	28.1 [§]
	>200%	3.1	13.8 [§]	22.6 [§]
	All income levels	4.0	16.4 [§]	27.6 [§]
Hypertension	≤200%	13.2	28.4	49.1 [§]
	>200%	4.6	23.6 [§]	31.6 [§]
	All income levels	6.7	25.3 [§]	42.7 [§]
Diabetes mellitus	≤200%	12.8	— [¶]	47.9 [§]
	>200%	5.1	—	46.8 ^{**}
	All income levels	7.7	30.8 ^{**}	47.5 [§]
Asthma	≤200%	12.3	41.9 [§]	44.5 [§]
	>200%	6.2	17.2	36.1 [§]
	All income levels	8.0	26.0 [§]	40.8 [§]

* In the total population aged 18–64 years, 23.1% reported having been diagnosed with hypertension, 13.8% with asthma, and 7% with diabetes.

[†] In 2009, the poverty level for a household with two adults and two children was \$21,756. Additional information available at <http://www.census.gov/hhes/www/poverty/about/overview/measure.html>.

[§] Significantly different from the percentage for continuous coverage ($p < 0.005$).

[¶] Data not reported because of standard error >30%.

** Significantly different from the percentage for continuous coverage ($p < 0.05$).

(Table 3). Currently insured persons aged 18–64 years who had a 1–3 month gap in coverage during the preceding year were approximately four times as likely (16.4% versus 4.0%) to forgo needed care because of cost, compared with persons with continuous coverage (Table 4). Among persons aged 18–64 years with continuous coverage, those with family income less than or equal to twice the federal poverty level were twice as likely (7.7% versus 3.1%) to forgo needed care because of cost as those with continuous coverage and income greater than twice the poverty level (Table 4).

Among those aged 18–64 years with family income less than or equal to twice the federal poverty level, currently insured persons who had a 1–3 month gap in coverage during the preceding year were approximately three times as likely (21.0% versus 7.7%) to forgo needed health care, compared with those with continuous

coverage. Among those with income greater than twice the poverty level, currently insured persons who had a 1–3 month gap in coverage during the preceding year were four times as likely (13.8% versus 3.1%) to forgo needed health care, compared with those with continuous coverage (Table 4). Currently insured persons aged 18–64 years who had a 1–3 month gap in coverage during the preceding year were approximately three times as likely to forgo needed care if they had hypertension (25.3% versus 6.7%), diabetes (30.8% versus 7.7%), or asthma (26.0% versus 8.0%), compared with those with continuous coverage who had the same chronic condition (Table 4).

Among persons aged 18–64 years, those who were uninsured at the time of the interview were approximately three times as likely to forgo needed care because of cost as those with Medicaid (26.3%

versus 8.7%) at the time of interview and six times as likely to forgo needed care because of cost as those with private insurance (26.3% versus 4.2%) at the time of interview (Table 5). Persons aged 18–64 years living in a family in which no one had a high school diploma or equivalent were approximately four times as likely to forgo needed care because of cost as those living in a family with a holder of a graduate degree (16.3% versus 4.2%) (Table 5).

Conclusions and Comments

This report indicates that an increasing proportion of persons aged 18–64 years in the United States lack health insurance, even for brief periods, and that gaps

in insurance coverage are associated with delaying or forgoing health care, irrespective of family income level. These findings are particularly important for persons with chronic diseases. Approximately 40% of persons in the United States have one or more chronic diseases, and continuity in the health care they receive is essential to prevent complications, avoidable long-term expenditures, and premature mortality (6). The number of uninsured persons increased in 2009 and the first quarter of 2010, but the Affordable Care Act of 2010 (ACA) is projected to reverse this trend by extending insurance coverage to 94% of the nonelderly population by 2019 (7).

TABLE 5. Percentage of persons who had a usual source of health care, who delayed care because of cost, or who went without some needed health care because of cost during the 12 months before interview, by age group and selected characteristics — National Health Interview Survey, United States, 2009

Age group/Characteristic	Had usual source of health care, excluding emergency room		Delayed health care because of cost		Went without some needed health care because of cost	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
≤17 yrs						
Sex						
Men	95.1	(94.5–95.8)	4.7	(4.1–5.2)	2.5	(2.1–2.9)
Women	95.6	(95.1–96.2)	4.8	(4.1–5.4)	2.5	(2.1–2.8)
Race/Ethnicity						
Hispanic	92.1	(90.9–93.2)	5.9	(4.8–7.1)	3.7	(2.9–4.4)
White, non-Hispanic	96.5	(96.0–97.1)	4.4	(3.7–5.1)	1.9	(1.5–2.3)
Black, non-Hispanic	95.5	(94.4–96.5)	4.5	(3.7–5.4)	2.8	(2.1–3.5)
Highest education level in family						
No high school diploma	90.0	(88.0–92.0)	5.0	(3.8–6.1)	3.4	(2.4–4.3)
High school diploma or GED	95.0	(94.3–95.6)	5.9	(5.0–6.7)	2.9	(2.4–3.4)
Bachelor's degree	97.2	(96.3–98.0)	3.4	(2.7–4.1)	1.9*	(1.3–2.5)*
Graduate degree	97.6	(96.7–98.4)	2.2*	(1.5–2.9)*	1.1*	(0.6–1.6)*
Health insurance status at interview						
Uninsured	74.7	(71.6–77.9)	22.6	(19.7–25.5)	13.8	(11.8–15.8)
Medicaid	96.2	(95.4–97.1)	3.1	(2.3–3.9)	1.9*	(1.4–2.5)*
Private insurance	97.7	(97.3–98.2)	3.3	(2.7–3.8)	1.3	(1.0–1.7)
18–64 yrs						
Sex						
Men	75.2	(74.1–76.4)	12.2	(11.6–12.7)	8.9	(8.4–9.4)
Women	86.7	(85.9–87.5)	14.4	(13.9–15.0)	10.2	(9.7–10.7)
Race/Ethnicity						
Hispanic	69.8	(67.9–71.7)	13.5	(12.6–14.5)	11.1	(10.3–12.0)
White, non-Hispanic	83.6	(82.7–84.5)	13.4	(12.9–14.0)	9.0	(8.5–9.5)
Black, non-Hispanic	82.0	(80.5–83.5)	14.0	(12.9–15.1)	12.2	(11.1–13.2)
Highest education level in family						
No high school diploma	67.1	(64.5–69.8)	17.6	(16.0–19.2)	16.3	(14.7–17.8)
High school diploma or GED	79.9	(78.9–80.8)	15.9	(15.2–16.5)	11.9	(11.3–12.4)
Bachelor's degree	85.3	(84.0–86.6)	10.2	(9.3–11.0)	5.9	(5.3–6.4)
Graduate degree	88.7	(87.0–90.3)	7.4	(6.5–8.2)	4.2	(3.6–4.8)
Health insurance status at interview						
Uninsured	48.5	(46.8–50.2)	31.5	(30.3–32.7)	26.3	(25.1–27.4)
Medicaid	90.8	(89.1–92.5)	10.9	(9.5–12.3)	8.7	(7.5–9.8)
Private insurance	89.7	(89.0–90.4)	7.8	(7.4–8.2)	4.2	(3.9–4.5)

Abbreviations: CI = Confidence interval; GED = General Education Development.

* Estimates have a relative standard error between 30% and 50% and should be used with caution.

Key Points

- In the first quarter of 2010, approximately 50 million (26%) persons aged 18–64 years had no health insurance for at least part of the 12 months preceding their interview, and 30 million (16%) had no insurance for more than a year.
- From 2006 to 2009, the number of adults aged 18–64 years without health insurance at some point during the prior year increased by an average of about 1.1 million per year. About half of the total increase occurred among those with family incomes two to three times the federal poverty level.
- Although lack of insurance can be linked to poverty, in 2009, 32% of persons aged 18–64 years with family incomes two to three times the poverty level and 21% with family incomes three to four times the poverty level went without health insurance for part of the preceding 12 months.
- In 2009, adults aged 18–64 years with no health insurance for the previous 12 months were seven times as likely to forgo needed health care because of cost as those with continuous insurance coverage.
- In 2009, more than 40% of adults aged 18–64 years who had high blood pressure, asthma, or diabetes and no health insurance went without some medical care because of cost during the preceding 12 months.
- Additional information is available at <http://www.cdc.gov/vitalsigns>.

The data in this report support previous findings that continuous insurance coverage is an important factor in reducing delayed or forgone health care, which other studies have associated with avoidable hospitalizations for persons with chronic conditions (8). In addition, the data demonstrate that cost can be a barrier to health care, even for those with insurance coverage. Increasing the number of persons who receive five high-value prevention services (i.e., smoking cessation assistance, colorectal cancer screening, breast cancer screening, annual influenza immunization, and daily aspirin to prevent heart disease) could save an estimated 100,000 lives each year (9). By

requiring insurance coverage and no cost-sharing for these and other recommended prevention services,^{††} ACA is projected to help increase the number of persons who receive preventive care.

Like insurance coverage, family income is an important influence on receipt of health care. The data show that among persons aged 18–64 years with continuous insurance coverage, those with lower family incomes are twice as likely to forgo needed care because of cost when compared to those with higher family incomes. This disparity in health-care utilization might result from multiple factors outside the scope of this analysis, including personal choice, underinsurance, more difficulty making copayments, and barriers to accessing care (e.g., transportation costs and physician acceptance of publicly insured patients). This report focuses on persons aged 18–64 years and particularly those with chronic conditions, because these populations are large and their ability to receive all needed care has decreased substantially in recent years (6). As a result of near-universal coverage of persons aged ≥65 years through Medicare and expansions in coverage for persons aged ≤17 years through Medicaid and the Children's Health Insurance Program, coverage for these age groups has improved or remained relatively stable in recent years.^{§§}

The findings in this report are subject to at least two limitations. First, although the data show that insurance coverage is a key factor in receipt of health care, coverage alone does not guarantee receipt of care or even having a usual source of care. Whether a person has a usual source of care is dependent, in part, on personal and societal characteristics. For example, some healthy persons might not have a usual source of care because they have not needed care or have moved recently. Also, some persons might not attach importance to having a usual source of care, yet still might be able to receive any care they need. Second, the association between receipt of care and health outcomes is beyond the scope of this analysis. NHIS respondents were not asked to identify the nature, cost, frequency, or urgency of any medical care that they delayed or went without because of cost concerns. Delaying or forgoing certain health care on an infrequent basis might not negatively impact health.

^{††} Additional information available at <http://www.healthcare.gov/center/regulations/prevention/recommendations.html>.

^{§§} Additional information available at <http://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201009.htm>.

Even after ACA is implemented fully, some persons eligible for coverage might go uninsured. ACA is expected to extend Medicaid eligibility to a large number of persons, and 16 million are projected to enroll, which amounts to approximately half of the total insurance expansion estimated in response to the legislation (7). Some persons will be eligible for Medicaid but might remain uninsured. Studies have indicated that 60%–74% of children who are eligible for Medicaid are uninsured, in part as a result of failure to renew enrollment in Medicaid (10). Because ACA will require persons to obtain insurance coverage, the proportion of persons who are eligible for Medicaid but not enrolled likely will decline from current levels. Further efforts to increase enrollment and coverage retention for children and to add persons aged 18–64 years who will be newly eligible for Medicaid could help these populations maintain continuous coverage, thereby increasing receipt of preventive services and reducing avoidable complications from illness, long-term health-care costs, and premature deaths (10).

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